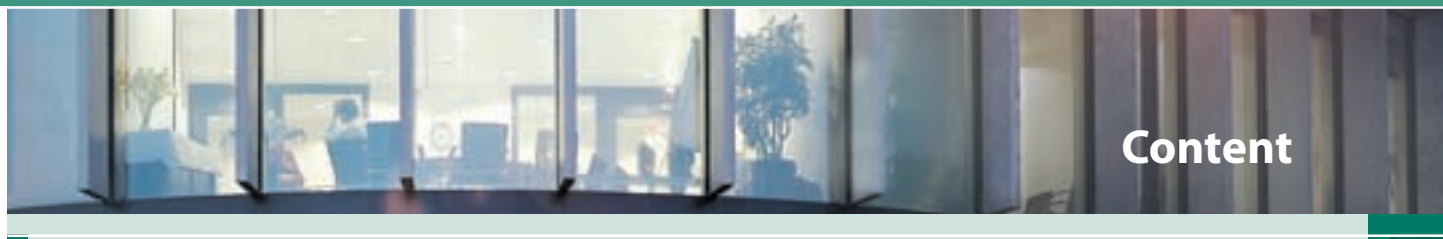
Communication technology – U



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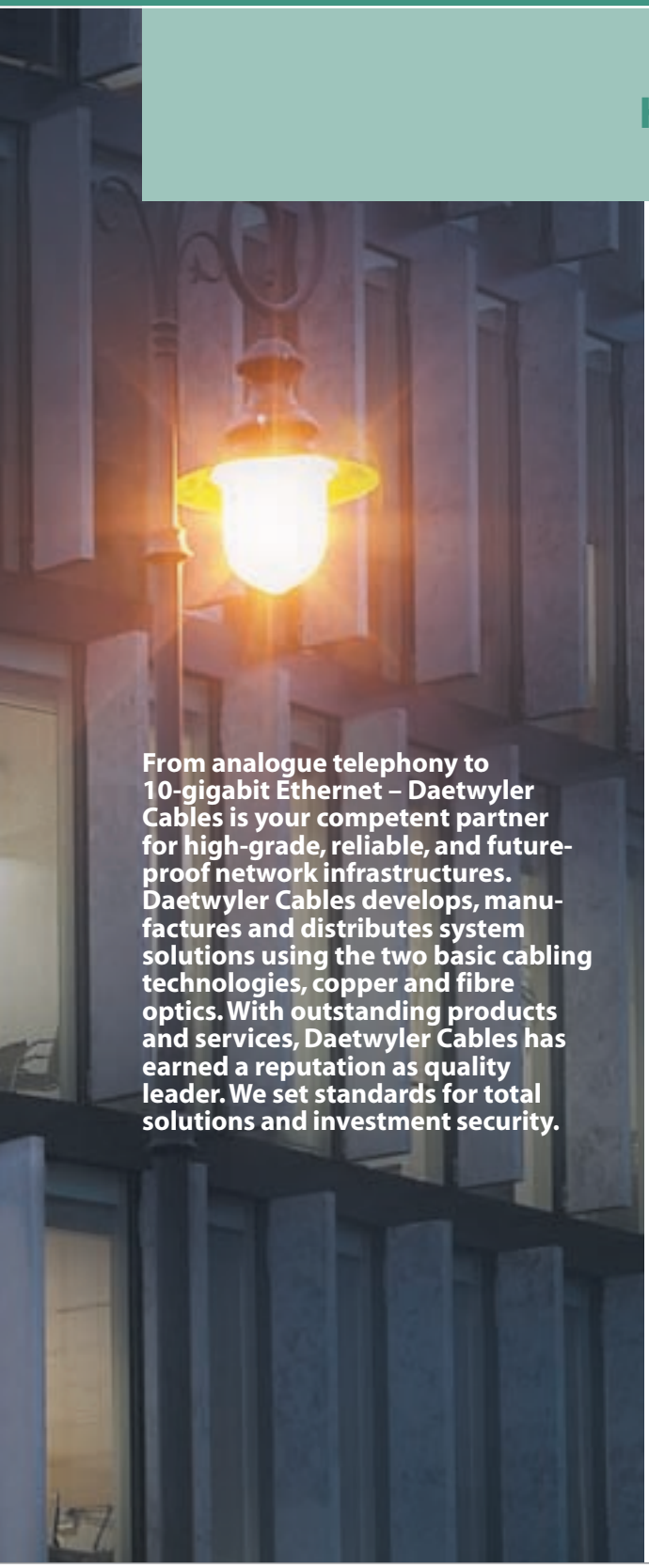
Data networks

High-speed communication



From analogue telephony to 10-gigabit Ethernet – Daetwyler Cables is your competent partner for high-grade, reliable, and future-proof network infrastructures. Daetwyler Cables develops, manufactures and distributes system solutions using the two basic cabling technologies, copper and fibre optics. With outstanding products and services, Daetwyler Cables has earned a reputation as quality leader. We set standards for total solutions and investment security.

Media convergence in communication is an irreversible trend, and the demand for ever increasing bandwidth continues to boom. IP technology is merging telephone, television and Internet. Multimedia – a magic word just a few years ago – is already reality.

Future-proof thanks to high-quality solutions

With the technical possibilities to constantly increase transfer rates, requirements for cable systems are becoming more demanding. The high-quality solutions of Daetwyler Cables exploit the full potential of networks and offer high investment security for the future. The comprehensive product range extends from single cables and components to complete end-to-end systems.

Modular solutions for every application

The modular solutions of Daetwyler Cables are suitable for all sizes and types of networks – from residential cabling to cabling systems for offices or industrial buildings to campus, access, or carrier networks for thousands of users. Telecom providers rely on our experience and know-how, as do banks, insurance companies, universities, hospitals, airports, car manufacturers and industrial companies.

Data networks

Leading know-how
As a provider of total solutions for data networks, Daetwyler Cables possesses extensive know-how accumulated over decades:

- Over 90 years of experience in cable production.
- Leading material, production and process know-how in the fabrication of data cables and components incorporating copper and fibre optic cable.
- Solid electro-technical competency.
- Collaboration with renowned technical universities, international standards committees, and independent testing institutes.
- Broad systems competence.

Diverse applications
In the field of data networks Daetwyler Cables concentrates on building types such as:

- Office, industrial and exposition buildings
- IT centres
- Hotels and hospitals
- Stadiums, theatres, concert halls
- Airports and train stations

For these and other building types we can also flexibly meet individual customer requirements with our modular system solutions.

System solutions from a single source

Yangshan Deepwater Port administration centre, Shanghai

Allianz Arena, Munich

Selected reference projects

UBS central administration, Flurhof	Zurich	Swiss parliament building	Berne
Allianz Arena	Munich	Dexia BIL	Luxemburg
KPMG German headquarters	Berlin	Hypo Group Alpe Adria	Udine
Yangshan Deepwater Port admin. centre	Shanghai		

System solutions

- The unilan® product line includes screened and unscreened copper system solutions (categories 5e to 7a) for the transmission of voice, data, video, control signals and remote power (power over Ethernet, PoE).
- The optofil® product line includes innovative fibre-optic system solutions with single and multimode fibres (up to OM3) for indoor and outdoor applications.
- The sophisticated unilan training and certification programme for installation partners guarantees the optimal installation quality of our products. Certified installers are authorised to extend our unilan system warranty to customers.
- 20-year warranty covering the entire system.

Customer value in focus

Daetwyler Cables stands for more than the fabrication and distribution of products. For your cabling infrastructures we offer everything from one source: consultation, support, logistics, warranty and of course modular and custom system solutions with top-quality cables and components. Integrating these elements into powerful systems creates added value. As a customer you benefit from highest network availability and high investment security to meet future requirements.

unilan® Product Overview

... total solution for structured building data cabling systems; future optimised for Voice, Data, Video and CATV- Applications

More than just Products

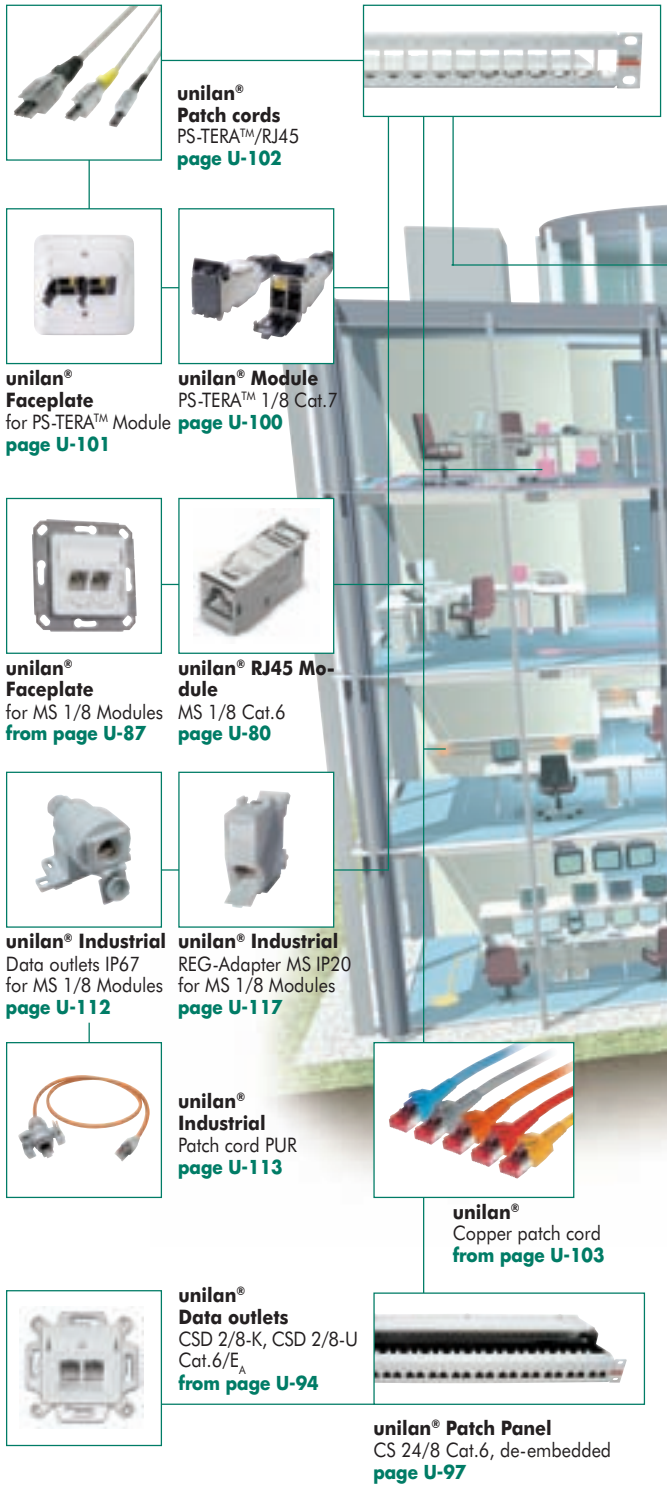
unilan® offers comprehensive system solutions around the complete communication infrastructure for office and industry.

Quality safety and control is a very important point during the cable production. Corresponding electrical and mechanical data are recorded online and compared with the predefined specifications. These specifications considerably exceed the standards.

The same applies for the production of copper and FO components.

Marking of individual components ensures that performance recorded at the time of production can be called up at any point in the future.

Therefore the user or investor has a high degree of certainty that the used and processed products offer the longevity which is demanded by them.



unilan® Patch cords
PS-TERA™/RJ45
page U-102

unilan® Faceplate
for PS-TERA™ Module
page U-101

unilan® Module
PS-TERA™ 1/8 Cat.7
page U-100

unilan® Faceplate
for MS 1/8 Modules
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unilan® RJ45 Module
MS 1/8 Cat.6
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unilan® Industrial
Data outlets IP67
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REG-Adapter MS IP20
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Patch cord PUR
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unilan®
Copper patch cord
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unilan® Data outlets
CSD 2/8-K, CSD 2/8-U
Cat.6/E_A
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unilan® Patch Panel
CS 24/8 Cat.6, de-embedded
page U-97

unilan®
Patch Panel
MPS 12x, 16x, 24x, 32x
for MS 1/8 or PS-TERA™
Modules
page U-83

unilan®
FO Patch panel OV-A
page U-223

unilan®
FO data outlet
page U-230

unilan®
FO-Patch panel
from page U-215

optodeskPLUS
Fibre To The Desk
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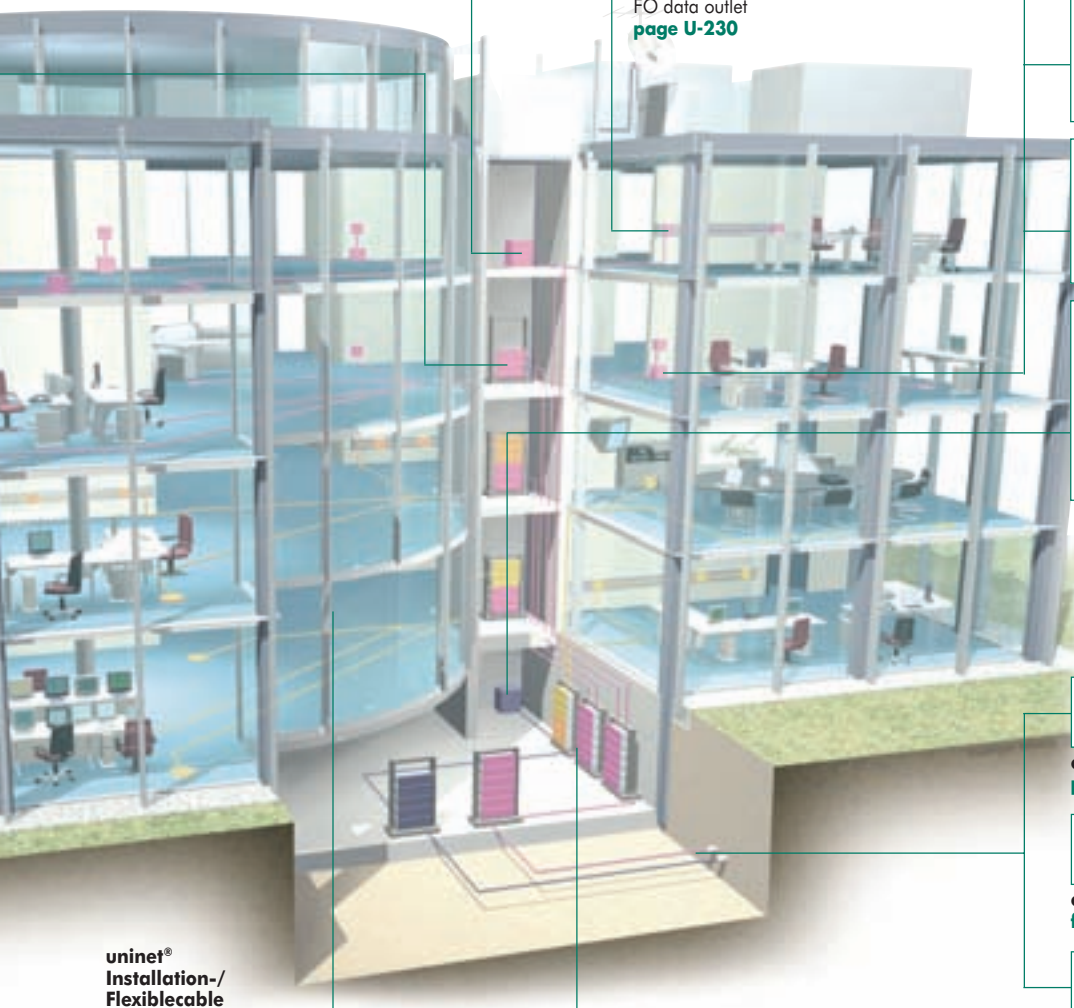
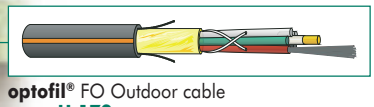
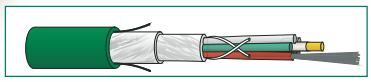
optomodPLUS2
Fibre To The Desk
page U-210

unilan®
FO wall mounted
distribution box OV-W
from page U-231





optofil® FO Outdoor cable
page U-172



optoversal® FO In- and Outdoor cable
from page U-168

optofil®-Safety FO Outdoor cable
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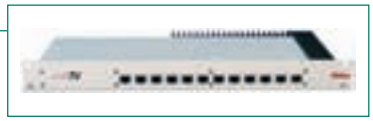
uninet®
Installation-/
Flexiblecable

Cat.6: 6702 4P
page U-28

Cat.7: 7002 4P
page U-18

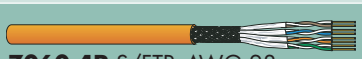
better than Cat.7:
7150 4P
page U-12

unilan® Multimedia
catTV-Balun, active Balun up to
862 MHz for the distribution of
CATV-Signals
page U-264

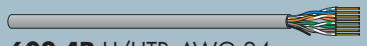
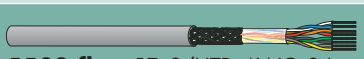


unilan® Multimedia
catTV-Panel, active distributor field up to
862 MHz for the distribution of CATV-Signals
page U-263

uninet® Product Overview
Data Cables – Copper

Category/Class	Data cable screened
7_A / F_A (1000 MHz) **40GBase-T (future)**	 **7150 4P** S/FTP, AWG 22 Article No. 182 925 (LSOH)  **7702 4P** S/FTP, AWG 22 Article No. 177 400 (LSOH)  **7120 4P** S/FTP, AWG 23 Article No. 191 467 (LSOH)
7/ F (600 MHz)	 **7002 4P** S/FTP, AWG 23 Article No. 177 388 (LSOH)  **7002 4P**/Industrial, S/FTP, AWG 23 Article No. 187 689 (PUR)  **7080 4P** S/FTP, AWG 23 Article No. 182 911 (LSOH)
6_A / E_A (500 MHz) **10GBase-T**	**For 10GBase-T (Class E_A) applications the data cables with category 7 or 7_A are recommended.**
6 / E (250 MHz)	 **7060 4P** S/FTP, AWG 23 Article No. 182 924 (LSOH)  **6702 4P** SF/UTP, AWG 24 Article No. 182 9143 (LSOH)  **6002 4P** U/FTP, AWG 23 Article No. 182 936 (LSOH)
5e/ D (100 MHz) **1000Base-T / 100Base-T**	 **5602 4P** SF/UTP, AWG 23 Article No. 182 938 (LSOH), 182 937 (PVC)  **5502 4P** SF/UTP, AWG 24 Article No. 181 111 (LSOH), 181 112 (PVC)  **5002 4P** F/UTP, AWG 24 Article No. 181 113 (LSOH), 181 114 (PVC)

Cables with a higher category implements all requirements of the category below.

Flexible cable screened	Data cable unscreened	Flexible cable unscreened
 **7150 flex 4P** S/FTP, AWG 26 Article No. 191 410 (LSOH)		
 **7702 flex 4P** S/FTP, AWG 26 Article No. 179 500 (grey, PVC), 181 146 (grey, LSOH), 182 784 (orange, LSOH),182 871 (black, LSOH), 182 872 (green, LSOH), 181 243 (yellow, LSOH), 182 773 (red, LSOH), 182 873 (blue, LSOH)  **7702 flex 4P** Industrial S/FTP, AWG 26 Article No. 187 688 (PUR)		
For 10GBase-T (Class E_A) applications the flexible cables with category 7 are recommended.		
	 **662 4P** U/UTP+, AWG 24 Article No. 185 596 (LSOH), 185 595 (PVC)  **602 4P** U/UTP, AWG 24 Article No. 181 235 (LSOH), 181 234 (PVC)	 **602 flex 4P** U/UTP, AWG 24 Article No. 182 771 (grey, PVC), 182 772 (grey, LSOH), 187 667 (black, LSOH), 187 665 (white, LSOH), 187 666 (yellow, LSOH), 182 845 (blue, LSOH), 187 630 (red, LSOH)
 **5502 flex 4P** S/UTP, AWG 26 Article No. 179 595 (grey, PVC), 179 517 (black, PVC), 179 513 (green, PVC), 179 514 (yellow, PVC), 179 515 (red, PVC), 179 516 (blue, PVC), 181 101 (grey, LSOH), 181 100 (orange, LSOH), 181 106 (black, LSOH), 181 102 (green, LSOH), 181 103 (yellow, LSOH), 181 104 (red, LSOH), 181 105 (blue, LSOH), 181 107 (violet, LSOH)	 **502 4P** U/UTP, AWG 24 Article No. 382 981, 182 981 (LSOH), 382 980, 182 980 (PVC)	

unilan® Product Overview
Connecting hardware – Copper

Category/Class	Connecting hardware copper shielded
7_A / F_A (1000 MHz) **40GBase-T (future)**	 **PS-GG45 7A** Cat. 7_A Article No. 400 102,400 103  **PS-TERA 4P** Cat. 7_A Article No. 1408 502
7/ F (600 MHz)	**All Cat. 7 components have been optimized for the Cat. 7_A requirements.**
6_A / E_A (500 MHz) **10GBase-T *** *) In case of using these modules for 10GBase-T (Class E_A) applicationens is recommended the connection with Cat.7 oder 7_A datacables.	 **KS-T 6A 1/8** Cat. 6A/E_A Article No. 418 060  **MS-K 1/8** Cat. 6a/E_A Article No. 440 001  **MS 1/8** Cat. 6a/E_A Article No. 185 700  **KS-T 1/8** Cat. 6/E_A Article No. 418 053  **CSD 2/8** Cat. 6/E_A Article No.417 962, 417
6 / E (250 MHz)	**All Cat. 6 components has been optimized for the Cat. 6_A (draft) requirements.**
5e/ D (100 MHz) **1000Base-T / 100Base-T**	 **KS-T 5 1/8** Cat. 5e Article No. 418055

Modules with a higher category implements all requirements of the category below.

Connesting hardware copper unshielded

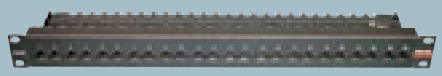
CSA 24/8
Cat. 6/E_A
Article No. 417 980

963

CS 24/8
Cat. 6
Article No. 1415 020

KU-T 1/8
Cat. 6
Article No. 418 070, 418 071

MU 1/8
Cat. 6
Article No. 418 050



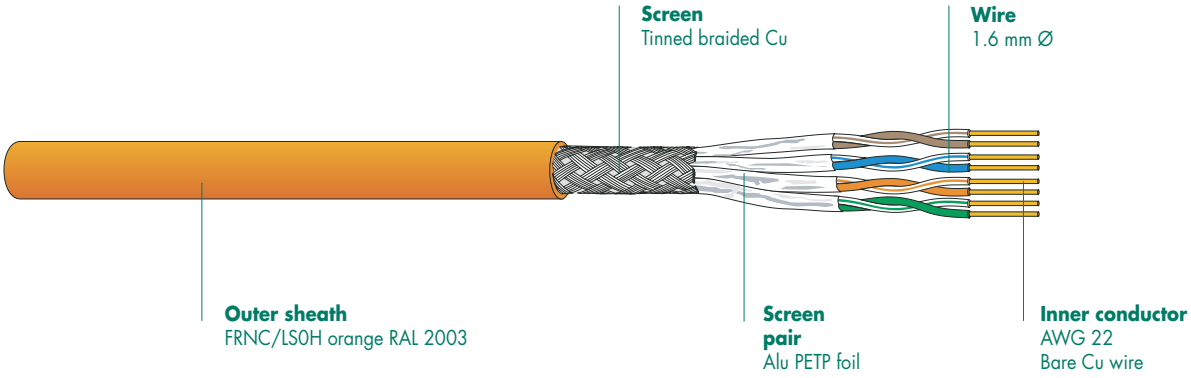
ECU 24/8
Cat. 6
Article No. 1414 725

KU-T 1/8
Cat. 5e
Article No. 418 072, 418 073

Data cable S/FTP Cat.7_A AWG22

uninet® 7150 4P Multimedia

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat.7_A data cable - satisfying the highest demands!
Excellent screen effect due to individual foil screened pairs and overall copper braid.
Easy identification of wires thanks to longitudinal colour markings.
Compatible with all current connecting hardware to EN 50173-1 and ISO/IEC 11801:2002.
Guaranteed limit values according to Cat.7_A: ISO/IEC 11801, EN 50173-1, EN 50288-4-1, IEC 61156-5 Cat.7_A Draft 46C / 844 / CDV and ISO/IEC 61156-7

Applications

Data cable for structured premises cabling.
For transmission of digital and analogue voice, video and data signals.
Especially suitable for all class F_A applications and multimedia applications according ISO/IEC 15018
Optimized for the transmission of Broadband signals (such as TV).
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.
There is a possibility of transmitting two different communication services (e.g. EDP + telephony, Ethernet + Token Ring) simultaneously over one cable. (Cable sharing)

Versions

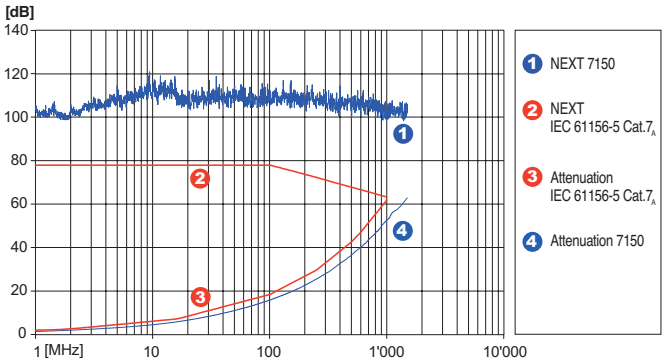
Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
182 925	4 x 2 x 0,64 (AWG22)	HF-4390-U	FRNC/LS0H[1)]	7,8	69,2	40,2	0,18	0,65	1000m Drum
182 926	2 x (4 x 2 x 0,64 (AWG22))	HF-4391-U	FRNC/LS0H[1)]	7,8 x 16,4	139,2	80,4	0,36	1,30	500m Drum

[1)] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Stripping Tool see under accessories.

Electrical Characteristics

Loop resistance at 20°C:	111	Ω/km
Mutual capacitance	41	pF/m
Impedance at 100MHz:	100	Ω ± 5 Ω
Transfer impedance at 1/10/30 MHz:	< 5/5/8	mΩ/m
Coupling attenuation 30-1500 MHz:	80	dB
Near end unbalance att. LCL:	> 40	dB
Delay skew:	17	ns/100m
NVP:	80	%



Category				5e	6	6$_A$	7	catTV	7$_A$		
Frequency [MHz]	1	4	10	100	250	500	600	862	1000	1200	1500
Attenuation [dB/100m]	1,7	3,2	4,9	16,2	26	38	40	49	54	58	68
NEXT [dB]	103	103	103	103	103	98	96	92	90	85	80
PS NEXT [dB]	100	100	100	100	100	95	93	89	87	82	77
ACR [dB]	101	100	98	87	77	60	56	43	36	27	12
PS ACR [dB]	98	97	95	84	74	57	53	40	33	24	9
ELFEXT [dB]	100	100	100	85	78	63	60	48	40	35	30
PS ELFEXT [dB]	97	97	97	82	75	60	57	45	37	32	27
Return loss [dB]	26	30	33	33	28	26	25	24	23	23	20

These performance data are typical measured values.

Mechanical Characteristics

Bending radius (flat side)	- during draw-in	≥ 64 mm
	- permanently installed	≥ 32 mm
Tensile strength		≤ 130 N
Crush resistance:		≥ 1000 N/10 cm
Impact resistance:		≥ 10 Impacts
Temperature range:	- during installation	0 °C to +50 °C
	- in operation	-20 °C to +60 °C

Environmental conditions

Halogen content	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning behaviour	according to IEC 60332-1 and IEC 60332-3-24
Wire colour code	white-blue/blue white-orange/orange white-green/green white-brown/brown (with longitudinal stripes) according to IEC 189 and IEC 708

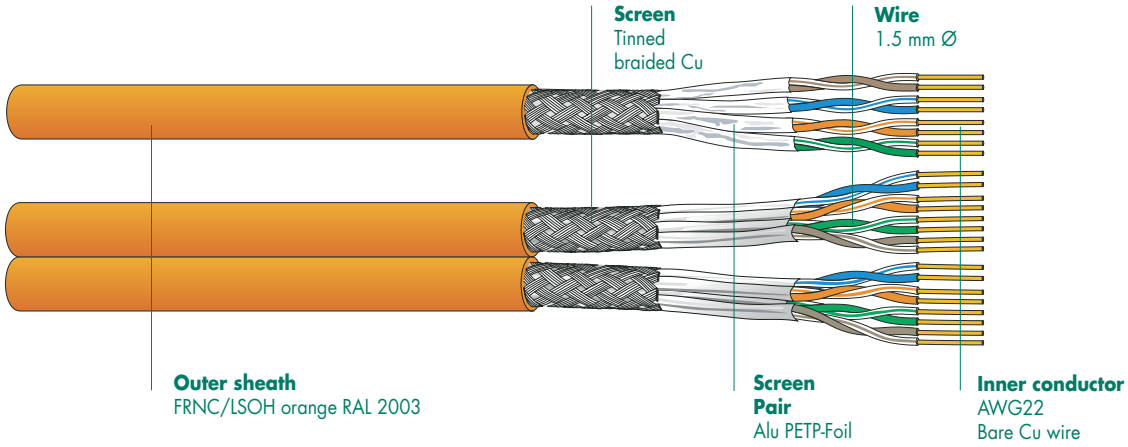
General Characteristics

Imprint	DAETWYLER UNINET 7150 4P MULTIMEDIA AWG 22 FRNC/LSOH (+batch code+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24, EN 50266-2-4 Cat. C, VDE 0482-266-2-4 Cat. C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	Cat.7$_A$, Class F$_A$

Data cable S/FTP Cat.7_A AWG22

uninet® 7702 4P / 2x4P F8

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat. 7 data cable - satisfying the highest demands!
Excellent screen effect due to individual foil screened pairs and overall copper braid.
Easy identification of wires for termination thanks to longitudinal colour markings.
Compatible with all current connecting hardware to EN 50173 and ISO/IEC 11801.
Guaranteed limit values according to Cat.7_A: ISO/IEC 11801, EN 50173-1 and EN 50288-4-1, IEC 61156-5 Cat.7_A Draft 46C/844/CDV.

Applications

Data cable for structured premises cabling
For transmission of digital and analogue voice and data signals.
Especially suitable for all Class F applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s,TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.
There is a possibility, of transmitting two different communication services (e.g., EDP + telephony, Ethernet + Token Ring) simultaneously over one cable. (Cable sharing).

Versions

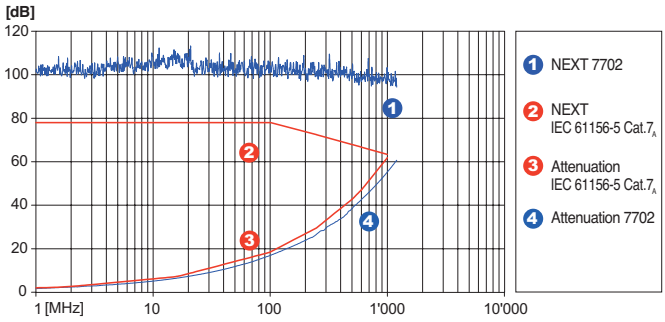
Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
177 400	4 x 2 x 0,62 (AWG22)	HF-4942-U	FRNC/LSOH [1]	7,8	65,1	34,9	0,18	0,65	1000m Drum
177 390	2 x (4 x 2 x 0,62 (AWG22))	HF-4947-U	FRNC/LSOH [1]	7,8 x 16,4	131,0	69,8	0,36	1,30	420m Drum

[1] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable S/FTP Cat.7_A AWG22
uninet® 7702 4P / 2x4P F8

Electrical Characteristics

Loop resistance at 20°C:	116	Ω/km
Mutual capacitance:	43	pF/m
Impedance at 100 MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 5/5/8	mΩ/m
Near end unbalance att.LCL:	> 40	dB
Delay Skew:	15	ns/100m
NVP:	15	%



Category				5e	6	6_A	7	catTV	7_A	
Frequency [MHz]	1	4	10	100	250	500	600	862	1000	1200
Attenuation [dB/100m]	1,7	3,4	5,3	16,9	27	40	42	53	56	62
NEXT [dB]	103	103	103	103	103	98	96	92	90	85
PS NEXT [dB]	100	100	100	100	100	95	93	89	87	82
ACR [dB]	101	100	98	86	76	58	54	39	34	23
PS ACR [dB]	98	97	95	83	73	55	51	36	31	20
ELFEXT [dB]	100	100	100	85	77	62	58	46	38	33
PS ELFEXT [dB]	97	97	97	82	74	59	55	43	35	30
Return loss [dB]	26	30	33	33	28	26	25	24	23	21

These performance data are typical measured values.

Mechanical Characteristics

		7702 4P	7702 2x4P F8
Bending radius (flat side)	- during draw-in	≥ 64 mm	≥ 64 mm
	- permanently installed	≥ 32 mm	≥ 32 mm
Tensile strength		≤ 120 N	≤ 240 N
Crush resistance		≥ 1000 N/10 cm	≥ 1000 N/10 cm
Impact		≥ 10 Impacts	≥ 10 Impacts
Temperature range	- during installation	0°C to + 50°C	0°C to + 50°C
	- in operation	-20°C to + 60°C	-20°C to + 60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning characteristics	according to IEC 60332-1 and IEC 60332-3-24
Wire colour code	white-blue/blue white-orange/orange white-green/green white-brown/brown (with longitudinal stripes) according to IEC 189 and IEC 708

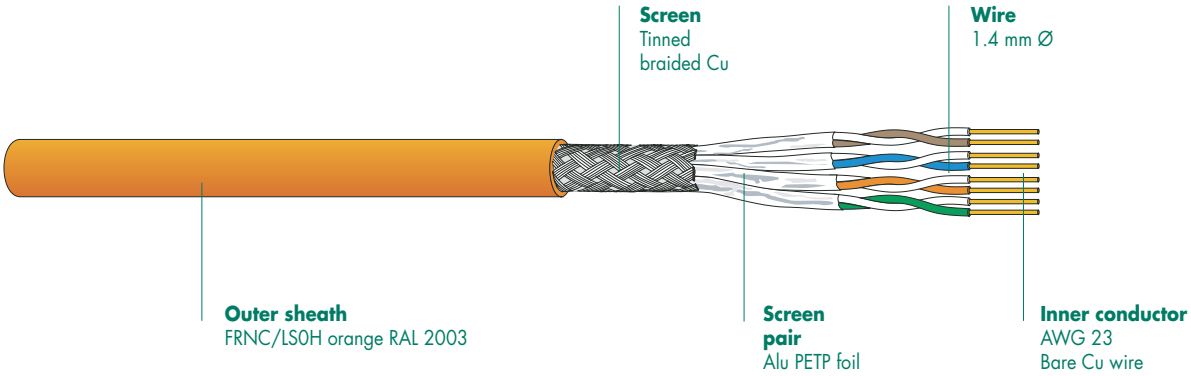
General Characteristics

Printing	DAETWYLER UNINET 7702 4P AWG 22 FRNC/LSOH resp. DAETWYLER UNINET 7702 2X4P AWG 22 FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24, EN 50266-2-4 Cat. C, VDE 0482-266-2-4 Cat. C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	better than Cat.7_A, Class F_A

Data cable S/FTP Cat.7_A AWG23

uninet® 7120 4P

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat.7_A data cable - satisfying the highest demands!
Excellent screen effect due to individual foil screened pairs and overall copper braid.
Compatible with all current connecting hardware to EN 50173-1 and ISO/IEC 11801:2002.
Guaranteed limit values according to Cat.7_A: ISO/IEC 11801, EN 50173-1,
EN 50288-4-1, IEC 61156-5 Cat.7_A Draft 46C / 844 / CDV.

Applications

Data cable for structured premises cabling.
For transmission of digital and analogue voice, video and data signals.
Especially suitable for all class F_A applications.
Optimized for the transmission of Broadband signals (such as TV).
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T,
Token Ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.
There is a possibility of transmitting two different communication services (e.g. EDP + telephony,
Ethernet + Token Ring) simultaneously over one cable. (Cable sharing)

Versions

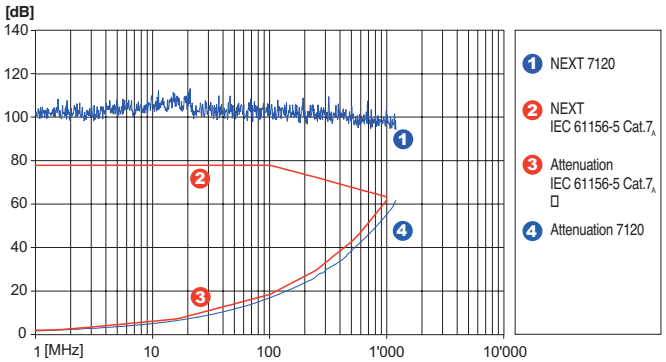
Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
191 466	4 x 2 x 0,58 (AWG23)	HF-4402-U	FRNC/LS0H[1)]	7.5	63.0	32.3	0.18	0.649	1000m Drum
191 467	2 x (4 x 2 x 0,58 (AWG23))	HF-4403-U	FRNC/LS0H[1)]	7,5 x 15,8	126,0	64,6	0,36	1,298	500m Drum

[1)] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Stripping Tool see under accessories.

Electrical Characteristics

Loop resistance at 20°C:	136	Ω/km
Mutual capacitance	43	pF/m
Impedance at 100MHz:	100	Ω ± 5 Ω
Transfer impedance at 1/10/30 MHz:	< 5/5/8	mΩ/m
Coupling attenuation 30-1000 MHz:	> 80	dB
Near end unbalance att. LCL:	> 40	dB
Delay skew:	14	ns/100m
NVP:	76	%



Category				5e	6	6_A	7	catTV	7_A	
Frequency [MHz]	1	4	10	100	250	500	600	862	1000	1200
Attenuation [dB/100m]	1,8	3,5	5,4	17,7	28	41	46	54	57	64
NEXT [dB]	103	103	103	103	103	98	96	92	90	85
PS NEXT [dB]	100	100	100	100	100	95	93	89	87	82
ACR [dB]	101	100	98	85	75	57	50	38	33	21
PS ACR [dB]	98	97	95	82	72	54	47	35	30	18
ELFEXT [dB]	100	100	100	85	77	61	57	44	36	30
PS ELFEXT [dB]	97	97	97	82	74	58	54	41	33	27
Return loss [dB]	26	30	33	33	28	26	25	24	23	20

These performance data are typical measured values.

Mechanical Characteristics

Bending radius (flat side)	- during draw-in	≥ 60 mm
	- permanently installed	≥ 30 mm
Tensile strength		≤ 110 N
Crush resistance:		≥ 1000 N/10 cm
Impact resistance:		≥ 10 Impacts
Temperature range:	- during installation	0 °C to +50 °C
	- in operation	-20 °C to +60 °C

Environmental conditions

Halogen content	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning behaviour	according to IEC 60332-1 and IEC 60332-3-24
Wire colour code	white/blue white/orange white/green white/brown according to IEC 189 and IEC 708

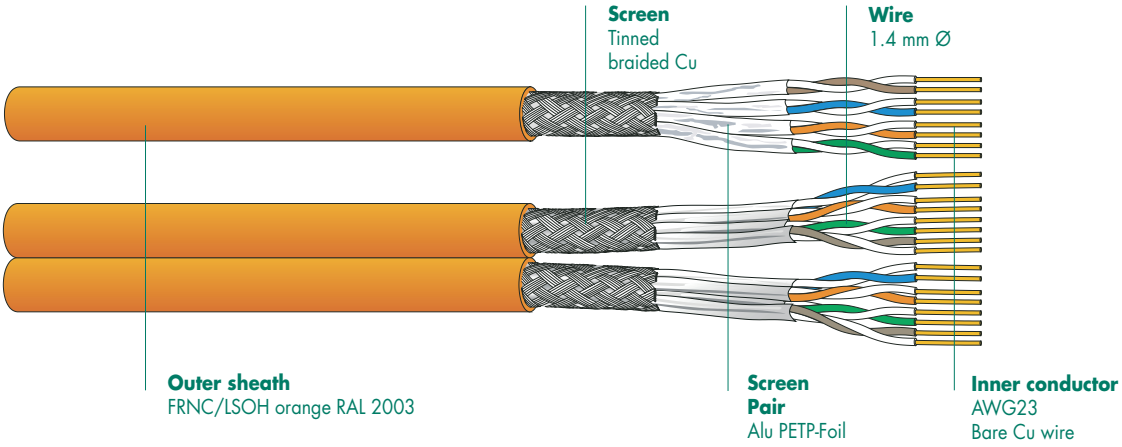
General Characteristics

Imprint	DAETWYLER UNINET 7120 4P AWG 23 FRNC/LSOH (+batch code+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24, EN 50266-2-4 Cat. C, VDE 0482-266-2-4 Cat. C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	Cat.7_A, Class F_A

Data cable S/FTP Cat.7 AWG23

uninet® 7002 4P / 2x4P F8

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat. 7 data cable - satisfying the highest demands!
Excellent screen effect due to individual foil screened pairs and overall copper braid.
Compatible with all current connecting hardware to EN 50173 and ISO/IEC 11801.
Guaranteed limit values according to Cat.7: ISO/IEC 11801, EN 50173-1
and EN 50288-4-1.

Applications

Data cable for structured premises cabling
For transmission of digital and analogue voice and data signals.
Especially suitable for all Class E applications. Class F.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T,
Token Ring 4/16 Mbit/s,TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.
There is a possibility, of transmitting two different communication services
(e.g., EDP + telephony, Ethernet + Token Ring) simultaneously over one cable.
(Cable sharing).

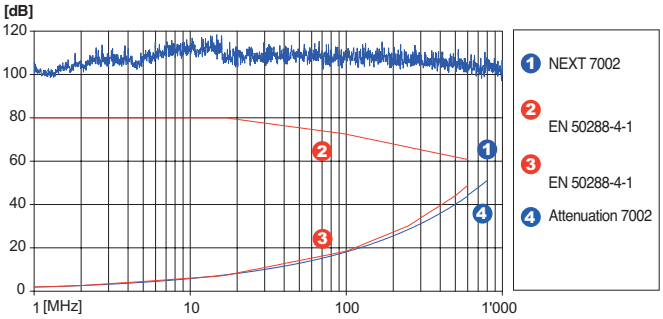
Versions

Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
177 388	4 x 2 x 0,57 (AWG23)	HF-4944-U	FRNC/LSOH [1]	7,4	60	31,1	0,16	0,57	1000m Drum
177 398	2 x (4 x 2 x 0,57 (AWG23))	HF-4948-U	FRNC/LSOH [1]	7,4 x 15,6	120	62,2	0,32	1,14	500m Drum

[1] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Electrical Characteristics

Loop resistance at 20°C:	140	Ω/km
Mutual capacitance:	42	pF/m
Impedance at 100 MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 6/6/10	mΩ/m
Near end unbalance att. LCL at 1/10/100 MHz:	> 40	dB
Delay Skew:	4	ns/100m
NVP:	81	%



Category				5e	6	6_A	7			
Frequency [MHz]	1	4	10	100	250	500	600	800	862	1000
Attenuation [dB/100m]	1,9	3,7	5,6	17,9	28	41	46	52	54	57
NEXT [dB]	100	100	100	100	100	92	90	84	83	80
PS NEXT [dB]	97	97	97	97	97	89	87	81	80	77
ACR [dB] [dB]	98	96	94	82	72	58	44	32	29	23
PS ACR [dB]	95	93	91	79	69	55	41	29	26	20
ELFEXT [dB]	98	98	98	78	69	56	45	39	37	33
PS ELFEXT [dB]	95	95	95	75	66	53	42	36	34	30
Return loss [dB]	26	30	33	33	28	26	25	23	22	20

These performance data are typical measured values.

Mechanical Characteristics

		7002 4P	7002 2x4P F8
Bending radius (flat side)	- during draw-in	≥ 60 mm	≥ 60 mm
	- permanently installed	≥ 30 mm	≥ 30 mm
Tensile strength		≤ 110 N	≤ 220 N
Crush resistance		≥ 1000 N/10 cm	≥ 1000 N/10 cm
Impact		≥ 10 Impacts	≥ 10 Impacts
Temperature range	- during installation	0°C to + 50°C	0°C to + 50°C
	- in operation	-20°C to + 60°C	-20°C to + 60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning characteristics	according to IEC 60332-1 and IEC 60332-3-24

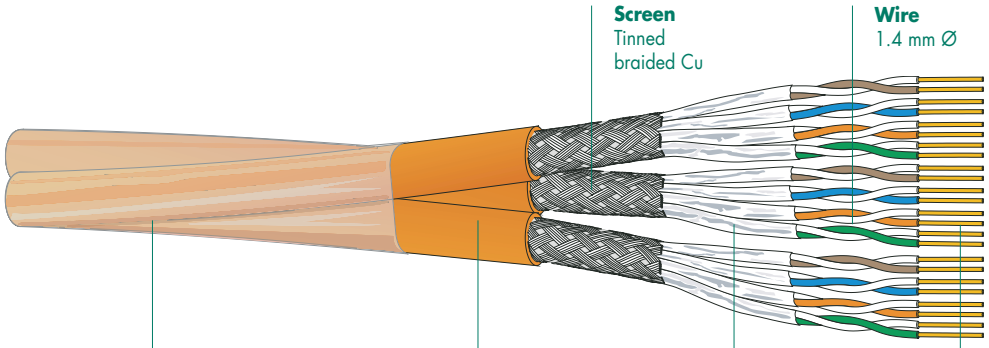
General Characteristics

Wire colour code	white/blue white/orange white/green white/brown according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 7002 4P AWG 23 FRNC/LSOH resp. DAETWYLER UNINET 7002 2X4P AWG 23 FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24, EN 50266-2-4 Cat. C, VDE 0482-266-2-4 Cat. C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	better than Cat.7, Class F

Data cable S/FTP Cat.7 AWG23

uninet® 7002 nx4P Breakout Light (BOL)

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat. 7 data cable - satisfying the highest demands!
Excellent screen effect due to individual foil screened pairs and overall copper braid.
Easy handling, small outer diameter and reduced weight thanks to the Breakout Light construction.
Outer foil instead of an overall cable sheath.
Considerable shorter installation time due to the multi-construction
Compatible with all current connecting hardware to EN 50173 and ISO/IEC 11801.
Guaranteed limit values according to Cat.7: ISO/IEC 11801, EN 50173-1 and EN 50288-4-1.

Applications

Data cable for structured premises cabling
For transmission of digital and analogue voice and data signals.
Especially suitable for all Class E applications. Class F.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s,TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

Article No.	Number of elements 4P	Type	Sheath	Sheath Ø	Weight	Cu weight	Fireload	VE*
	1 x 4 x 0,57 (AWG 23)			mm	kg/km	kg/km	MJ/m	
182 976	3 x 4P	HF-4951-U	FRNC/LSOH [1]	16,1	185	93,3	1,71	1000m Drum
182 874	4 x 4P	HF-4951-U	FRNC/LSOH [1]	18,0	245	124,4	2,28	1000m Drum
188 486	6 x 4P	HF-4951-U	FRNC/LSOH [1]	21,2	390	186,6	3,42	1000m Drum

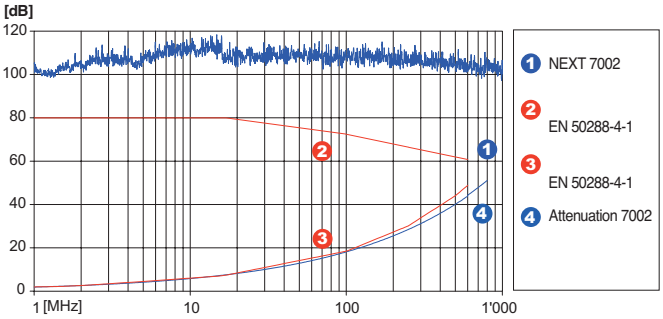
* 500 m and 2000 m on request

[1] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable S/FTP Cat.7 AWG23
uninet® 7002 nx4P Breakout Light

Electrical Characteristics

Loop resistance at 20°C:	140	Ω/km
Mutual capacitance:	42	pF/m
Impedance at 100 MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 6/6/10	mΩ/m
Near end unbalance att. LCL at 1/10/100 MHz:	> 40	dB
Delay Skew:	4	ns/100m
NVP:	81	%



Category				5e	6	6_A	7
Frequency [MHz]	1	4	10	100	250	500	600
Attenuation [dB/100m]	1,9	3,7	5,6	17,9	28	41	46
NEXT [dB]	100	100	100	100	100	92	90
PS NEXT [dB]	97	97	97	97	97	89	87
ACR [dB]	98	96	94	82	72	58	44
PS ACR [dB]	95	93	91	79	69	55	41
ELFEXT [dB]	98	98	98	78	69	56	45
PS ELFEXT [dB]	95	95	95	75	66	53	42
Return loss [dB]	26	30	33	33	28	26	25

These performance data are typical measured values.

Mechanical Characteristics

		3 x 4P	4 x 4P	6 x 4P
Bending radius (flat side)	- during draw-in	≥ 130mm	≥ 144mm	≥ 170mm
	- permanently installed	≥ 65mm	≥ 72mm	≥ 85mm
Tensile strength		≤ 300N	≤ 400N	≤ 600N
Crush resistance		≥ 1000N/10cm		
Impact		≥ 10 Impacts		
Temperature range	- during installation	0°C to + 50°C		
	- in operation	-20°C to + 60°C		

Environmental conditions

Zero halogen	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning characteristics	according to IEC 60332-1

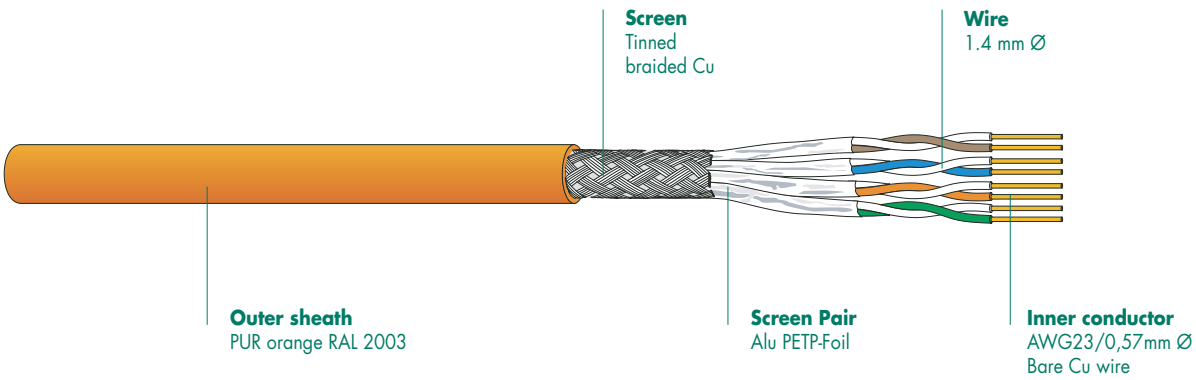
General Characteristics

Wire colour code	white/blue white/orange white/green white/brown according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 7002 4P AWG 23 FRNC/LSOH (+Batch number+meter marks) (X=Number of the single cable)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	Cat.7, Class F

Industrial Data cable S/FTP Cat.7 AWG23

uninet® 7002 4P Industrial PUR

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat. 7 data cable with PUR sheath - satisfying the highest demands!
Compatible with Dätwyler unilan® Modular Solution IP67 connecting hardware.
Excellent screen effect due to individual foil screened pairs and overall copper braid.
Compatible with all current connecting hardware to EN 50173-1 and ISO/IEC 11801.
Guaranteed limit values according to Cat.7: ISO/IEC 11801, EN 50173-1 and EN 50288-4-1.

Applications

Data cable for structured premises cabling in the industrial environment.
Designed for use in industrial areas. Oil resistant according EN 60811-2-1
For transmission of digital and analogue voice and data signals.
Especially suitable for all Class E applications. Class F.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s,TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
187 689	4 x 2 x 0,57 (AWG23)	HF-4341-U	PUR [1]	7,9	73,9	31,1	0,19	0,70	1000m Drum

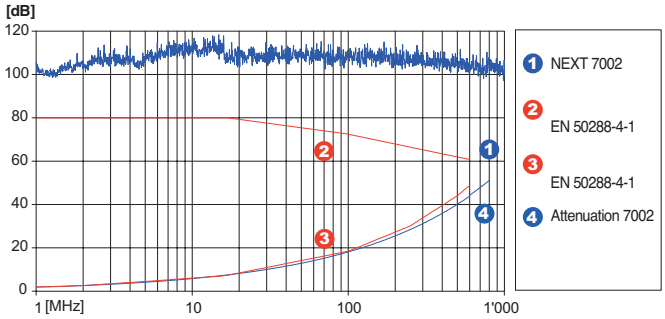
[1] PUR = Polyurethane

Industrial Data cable S/FTP Cat.7 AWG23

uninet® 7002 4P Industrial PUR

Electrical Characteristics

Loop resistance at 20°C:	140	Ω/km
Mutual capacitance:	42	pF/m
Impedance at 100 MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 6/6/10	mΩ/m
Near end unbalance att. LCL:	> 40	dB
Delay Skew:	4	ns/100m
NVP:	81	%



Category				5e	6	6_A	7
Frequency [MHz]	1	4	10	100	250	500	600
Attenuation [dB/10m]	1,9	3,7	5,6	17,9	28	41	46
NEXT [dB]	100	100	100	100	100	92	90
PS NEXT [dB]	97	97	97	97	97	89	87
ACR [dB]	98	96	94	82	72	58	44
PS ACR [dB]	95	93	91	79	69	55	41
ELFEXT [dB]	98	98	98	78	69	56	45
PS ELFEXT [dB]	95	95	95	75	66	53	42
Return loss [dB]	26	30	33	33	28	26	25

These performance data are typical measured values.

Mechanical Characteristics

Bending radius	- during draw-in	≥ 60 mm
	- permanently installed	≥ 30 mm
Tensile strength		≤ 110 N
Crush resistance		≥ 1000 N/10 cm
Impact		≥ 10 Impacts
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Burning characteristics	according to IEC 60332-1
Oil-resistant	according to EN 60811-2-1

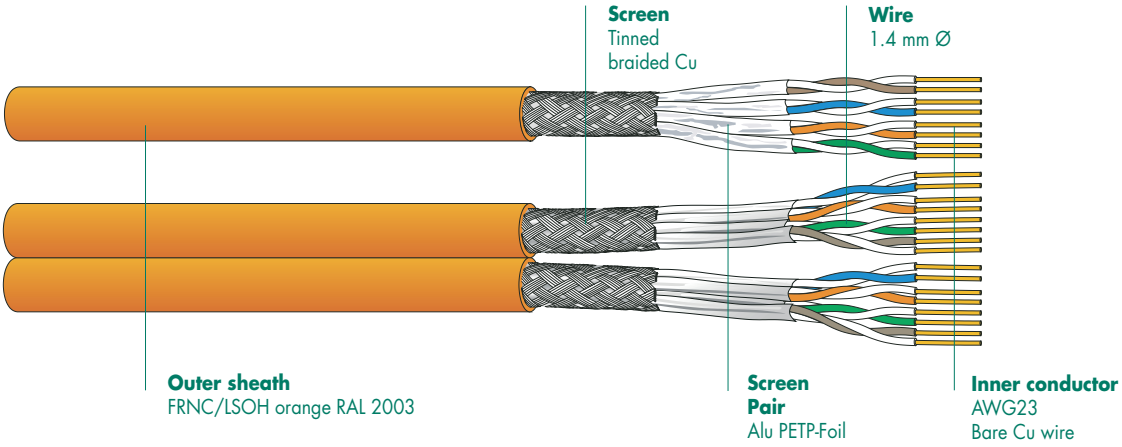
General Characteristics

Wire colour code	white/blue white/orange white/green white/brown according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 7002 4P INDUSTRIAL PUR (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Oil-resistant	EN 60811-2-1
EMC	screened
Cat./Class	better than Cat.7, Class F

Data cable S/FTP Cat.7 AWG23

uninet® 7080 4P / 2x4P F8

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat. 7 data cable - satisfying the highest demands!
Excellent screen effect due to individual foil screened pairs and overall copper braid.
Compatible with all current connecting hardware to EN 50173 and ISO/IEC 11801.
Guaranteed limit values according to Cat.7: ISO/IEC 11801, EN 50173-1 and EN 50288-4-1.

Applications

Data cable for structured premises cabling
For transmission of digital and analogue voice and data signals.
Especially suitable for all Class F applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s,TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.
There is a possibility, of transmitting two different communication services (e.g., EDP + telephony, Ethernet + Token Ring) simultaneously over one cable. (Cable sharing).

Versions

Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
182 911	4 x 2 x 0,57 (AWG23)	HF-4307-U	FRNC/LSOH [1]	7,4	60	31,1	0,16	0,57	1000m Drum
182 912	2 x (4 x 2 x 0,57 (AWG23))	HF-4308-U	FRNC/LSOH [1]	7,4 x 15,6	120	62,2	0,32	1,14	500m Drum

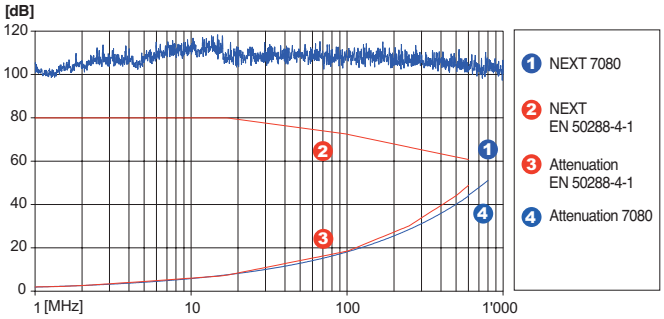
[1] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable S/FTP Cat.7 AWG23

uninet® 7080 4P / 2x4P F8

Electrical Characteristics

Loop resistance at 20°C:	140	Ω/km
Mutual capacitance:	42	pF/m
Impedance at 100 MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 6/6/10	mΩ/m
Near end unbalance att. LCL at 1/10/100 MHz:	> 40	dB
Delay Skew:	4	ns/100m
NVP:	81	%



Category				5e	6	6_A	7			
Frequency [MHz]	1	4	10	100	250	500	600	800	862	1000
Attenuation [dB/100m]	1,9	3,7	5,6	17,9	28	41	46	52	54	57
NEXT [dB]	100	100	100	100	100	92	90	84	83	80
PS NEXT [dB]	97	97	97	97	97	89	87	81	80	77
ACR [dB]	98	96	94	82	72	58	44	32	29	23
PS ACR [dB]	95	93	91	79	69	55	41	29	26	20
ELFEXT [dB]	98	98	98	78	69	56	45	39	37	33
PS ELFEXT [dB]	95	95	95	75	66	53	42	36	34	30
Return loss [dB]	26	30	33	33	28	26	25	23	22	20

These performance data are typical measured values.

Mechanical Characteristics

		7080 4P	7080 2x4P F8
Bending radius (flat side)	- during draw-in	≥ 60 mm	≥ 60 mm
	- permanently installed	≥ 30 mm	≥ 30 mm
Tensile strength		≤ 110 N	≤ 220 N
Crush resistance		≥ 1000 N/10 cm	≥ 1000 N/10 cm
Impact		≥ 10 Impacts	≥ 10 Impacts
Temperature range	- during installation	0°C to + 50°C	0°C to + 50°C
	- in operation	-20°C to + 60°C	-20°C to + 60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning characteristics	according to IEC 60332-1 and IEC 60332-3-24

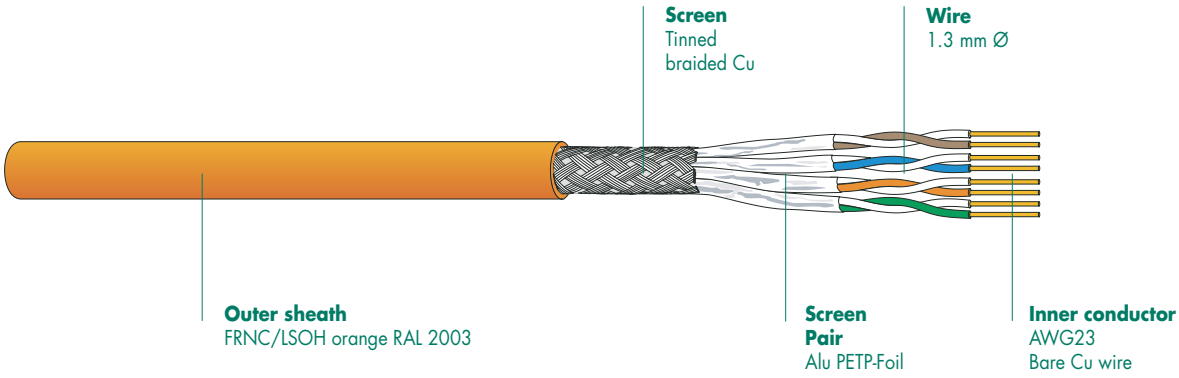
General Characteristics

Wire colour code	white/blue white/orange white/green white/brown according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 7080 4P AWG 23 FRNC/LSOH resp. DAETWYLER UNINET 7080 2X4P AWG 23 FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24, EN 50266-2-4 Cat. C, VDE 0482-266-2-4 Cat. C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	better than Cat.7, Class F

Data cable S/FTP Cat.6 (7) AWG23

uninet® 7060 4P

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat.6 (7) data cable - satisfying the highest demands!
Optimised pairs-in-metal-foil (PiMF) construction for class E and F terminations.
Compatible with all current connecting hardware to EN 50173-1 and ISO/IEC 11801.
Guaranteed limit values according to Cat.6, typical values according to Cat.7: ISO/IEC 11801, EN 50173-1 and EN 50288-5-1 for length up to ca. 70 m.

Applications

Data cable for structured premises cabling
For transmission of digital and analogue voice and data signals.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s,TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.
There is a possibility, of transmitting two different communication services (e.g., EDP + telephony, Ethernet + Token Ring) simultaneously over one cable. (Cable sharing).

Versions

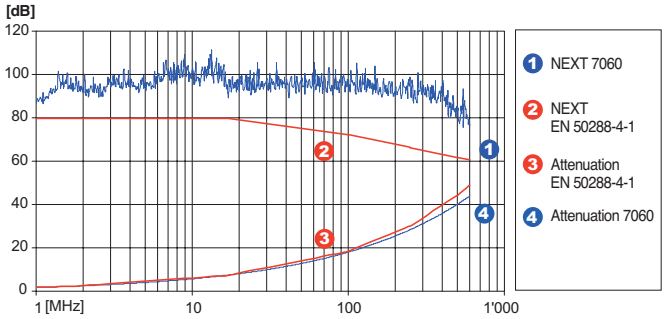
Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm			mm	kg/km	kg/km	kWh/m	MJ/m	
182 924	4 x 2 x 0,55 (AWG23)	HF-4304-U	FRNC/LS0H[1)]	7,1	55,0	26,4	0,152	0,55	1000m Drum
182 927	2 x (4 x 2 x 0,55 (AWG23))	HF-4306-U	FRNC/LS0H[1)]	7,1 x 15	110,0	52,8	0,304	1,10	500m Drum

[1)] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable S/FTP Cat.6 (7) AWG23
uninet® 7060 4P

Electrical Characteristics

Loop resistance at 20°C:	146	Ω/km
Mutual capacitance:	42	pF/m
Impedance at 100 MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 6/10/20	mΩ/m
Near end unbalance att. LCL:	> 40	dB
Delay Skew:	4	ns/100m
NVP:	80	%



Category				5e	6			
Frequency [MHz]	1	4	10	100	250	300	500	600
Attenuation [dB/100m]	2,1	3,8	5,9	19,8	30	32	43	47
NEXT [dB]	93	93	93	93	82	80	77	75
PS NEXT [dB]	90	90	90	90	79	77	74	72
ACR [dB]	91	89	87	73	52	48	34	28
PS ACR [dB]	88	86	84	70	49	45	31	25
ELFEXT [dB]	96	96	96	74	61	58	43	39
PS ELFEXT [dB]	93	93	93	71	58	55	40	36
Return loss [dB]	26	28	30	30	27	26	25	24

These performance data are typical measured values.

Mechanical Characteristics

Bending radius	- during draw-in	≥ 65 mm
	- permanently installed	≥ 30 mm
Tensile strength		≤ 95 N
Crush resistance		≥ 1000 N/10 cm
Impact		≥ 10 Impacts
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning characteristics	according to IEC 60332-1 and IEC 60332-3-24

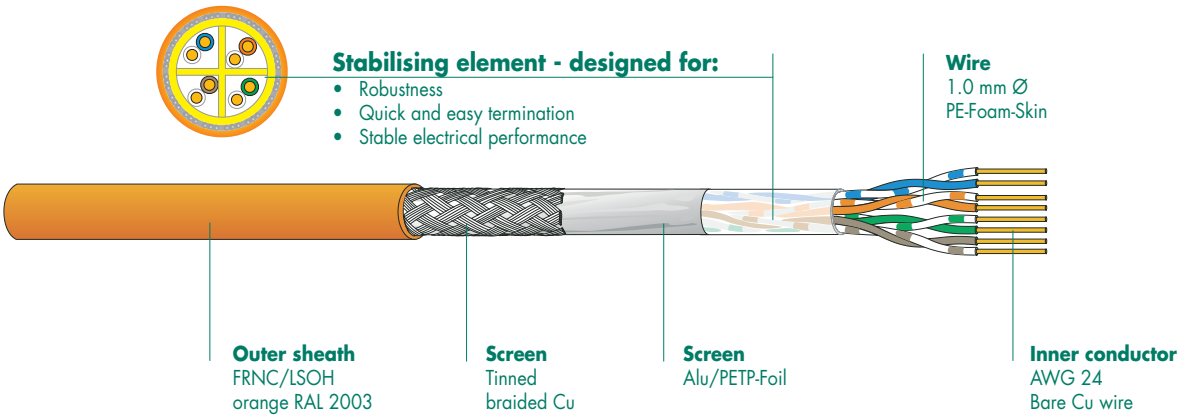
General Characteristics

Wire colour code	white/blue white/orange white/green white/brown according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 7060 4P AWG 23 FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24, EN 50266-2-4 Cat. C, VDE 0482-266-2-4 Cat. C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	better than Cat.6 (typical values of Cat.7 for length up to ca. 70 m), Class E (F)

Data cable SF/UTP Cat.6 AWG24

uninet® 6702 4P

Dätwyler Cables



Product information

Features

Robust cable design with a very high mechanical stability and reliable electrical performance thanks to the stabilising element.
Excellent screen effect due to overall foil and copper braid.

Simple, fast and reliable terminations thanks to the special cable stripper Abi 62

Article number 185 640

Tool to
1. cut
2. remove the stabilising element from the pairs

Compatible with all current connecting hardware to EN 50173-1 and ISO/IEC 11801.
Guaranteed limit values according to Cat.6: ISO/IEC 11801, EN 50173-1 and EN 50288-5-1.

Applications

Data cable for structured premises cabling
For transmission of digital and analogue voice and data signals.
Especially suitable for all Class E applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, Token Ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
182 943	4 x 2 x 0,54 (AWG24)	HF-4969-U	FRNC/LSOH [1]	7,4	63,7	27,7	0,25	0,89	1000m Drum

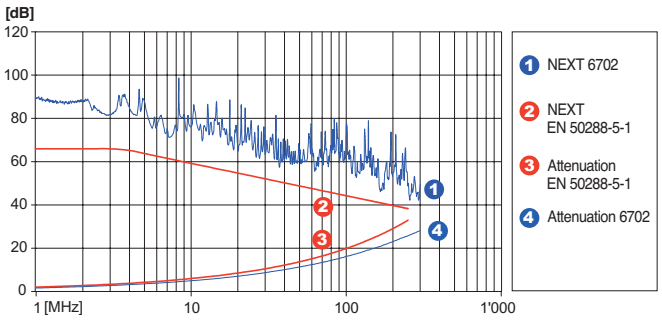
[1] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Stripping Tool see under accessories.

Data cable SF/UTP Cat.6 AWG24
uninet® 6702 4P

Electrical Characteristics

Loop resistance at 20°C:	157	Ω/km
Mutual capacitance:	50	pF/m
Impedance at 100 MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 40/80/180	mΩ/m
Near end unbalance att. LCL at 1-250 MHz:	> 40	dB
Delay Skew:	25	ns/100m
NVP:	68	%



Category				5e	6	
Frequency [MHz]	1	4	10	100	250	300
Attenuation [dB/100m]	1,8	3,4	5,1	17,2	26	30
NEXT [dB]	84	75	71	50	43	40
PS NEXT [dB]	81	72	68	47	40	37
ACR [dB]	82	72	66	33	17	10
PS ACR [dB]	79	69	63	30	14	7
ELFEXT [dB]	90	80	71	42	35	31
PS ELFEXT [dB]	87	77	68	39	32	28
Return loss [dB]	27	30	32	30	25	25

These performance data are typical measured values.

Mechanical Characteristics

Bending radius	- during draw-in	≥ 58 mm
	- permanently installed	≥ 29 mm
Tensile strength		≤ 110 N
Crush resistance		≥ 3000 N/10 cm
Impact		≥ 30 Impacts
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning characteristics	according to IEC 60332-1 and IEC 60332-3-24

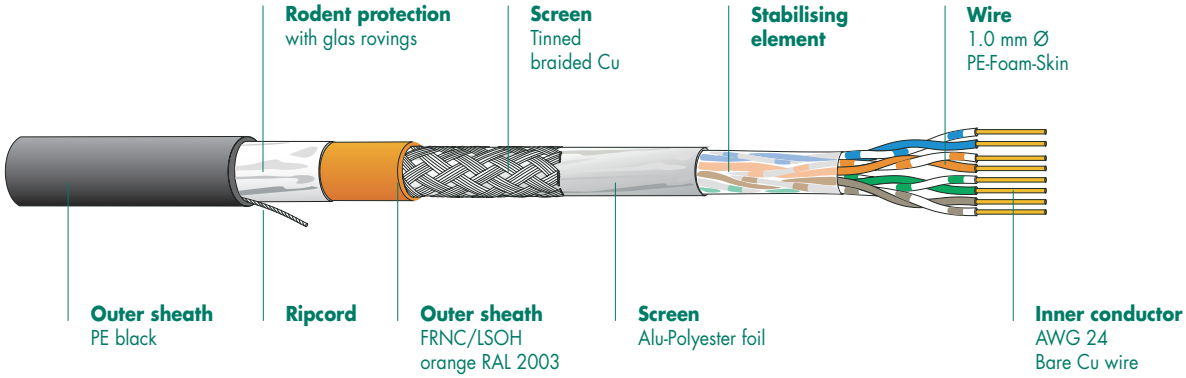
General Characteristics

Wire colour code	white - blue/blue white - orange/orange white - green/green white - brown/brown according to IEC 189 and IEC 708 (ring marked)
Printing	DAETWYLER UNINET 6702 4P FRNC/LSOH (+Batch number+meter marks)
Patent	Patented cable construction according to DE 199 47 825, EP 1091363
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24, EN 50266-2-4 Cat. C, VDE 0482-266-2-4 Cat. C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	better than Cat.6, Class E

Data cable SF/UTP Cat.6 AWG24

uninet® 6702 4P GG-PE
with rodent protection and PE cable sheeth

Dätwyler Cables



Product information

Features

Appropriate to outdoor installation thanks to rodent protection and PE outer cable sheath.
Robust cable design with a very high mechanical stability and reliable electrical performance thanks to the stabilising element.
Excellent screen effect due to overall foil and copper braid.

Simple, fast and reliable terminations thanks to the special cable stripper Abi 62

Article number 185 640

Tool to
1. cut
2. remove the stabilising element from the pairs

Compatible with all current connecting hardware to EN 50173-1 and ISO/IEC 11801. Guaranteed limit values according to Cat.6: ISO/IEC 11801:2002, EN 50173-1 and EN 50288-5-1.

Applications

Data cable for structured premises cabling
For transmission of digital and analogue voice and data signals.
Especially suitable for all Class E applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, Token Ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
187 668	4 x 2 x 0,54 (AWG24)	HF-4969/09-U	FRNC/LSOH[1)]-PE	11,6	145	28,0	0,88	3,15	on request

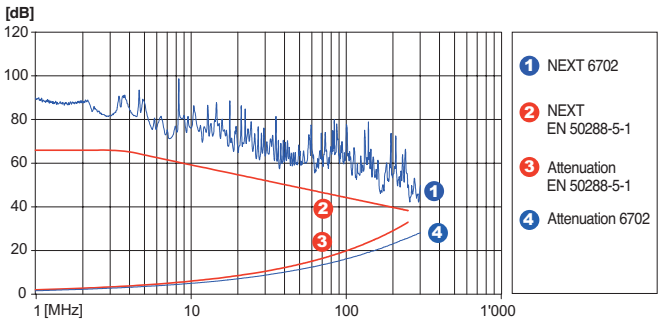
[1)] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable SF/UTP Cat.6 AWG24

uninet® 6702 4P GG-PE
with rodent protection and PE cable sheeth

Electrical Characteristics

Loop resistance at 20°C:	160	Ω/km
Mutual capacitance:	41	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Transfer impedance 1/10/30 MHz:	< 40/80/180	mΩ/m
Near end unbalance att. LCL 1/10/100 MHz::	> 40	dB
Delay Skew:	9	ns/100m
NVP:	73	%



Category				5e	6	
Frequency [MHz]	1	4	10	100	250	300
Attenuation [dB/10m]	1,8	3,4	5,1	17,2	26	30
NEXT [dB]	84	75	71	50	43	40
PS NEXT [dB]	82	73	69	48	41	38
ACR [dB]	82	72	66	33	17	10
PS ACR [dB]	80	70	64	31	15	8
ELFEXT [dB]	90	80	71	42	35	31
PS ELFEXT [dB]	88	78	69	40	33	29
Return loss [dB]	27	30	33	30	25	25

These performance data are typical measured values.

Mechanical Characteristics

Bending radius	- during draw-in	≥ 92 mm
	- permanently installed	≥ 46 mm
Tensile strength		≤ 91 N
Crush resistance		≥ 3000 N/10 cm
Impact		≥ 20 Impacts
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen: according to IEC 60754-2

General Characteristics

Wire colour code:
white - blue/blue
white - orange/orange
white - green/green
white - brown/brown
according to IEC 189 and IEC 708 (ring marked)

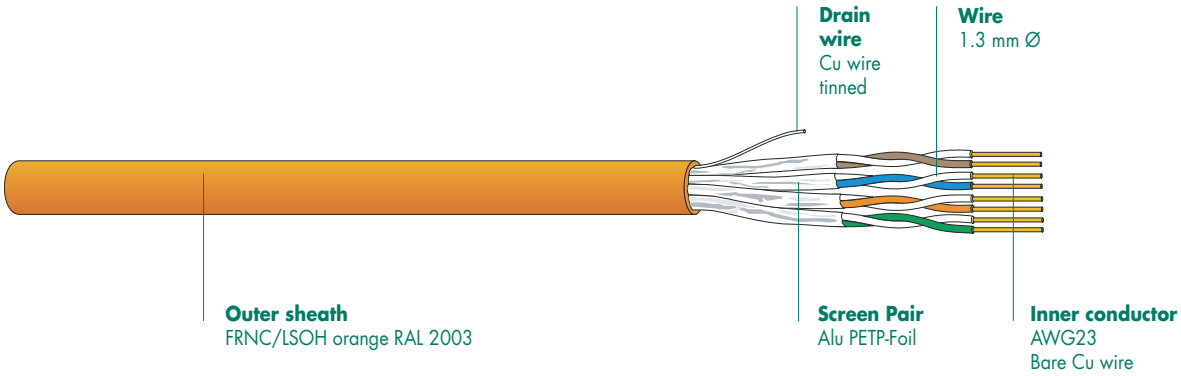
Printing: DAETWYLER UNINET 6702 4P INDUSTRIAL AWG24 S/FTP GGT (+Batch number+meter marks)

Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	better than Cat.6, Class E

Data cable U/FTP Cat.6 AWG23

uninet® 6002 4P

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat.6 data cable satisfying the highest demands!
Excellent screen effect due to individual foil screened pairs.
Compatible with all current connecting hardware to EN 50173-1 and ISO/IEC 11801.
Guaranteed limit values according to ISO/IEC 11801, EN50173-1, Cat.6: IEC 61156-5 and EN 50288-5-1.

Applications

Data cable for structured premises cabling.
For transmission of digital and analogue voice, video and data signals.
Especially suitable for all class E and Cat.6 applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

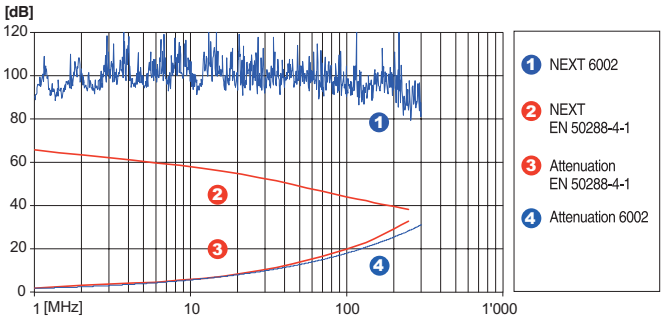
Versions

Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
182 936	4 x 2 x 0.55 (AWG 23)	HF-4301-U	FRNC/LS0H [1]	7,0	47,8	20,0	0,15	0,55	1000m Drum

[1] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Electrical Characteristics

Loop resistance at 20°C:	150 Ω/km
Mutual capacitance:	42 pF/m
Impedance at 100 MHz:	100 Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 50/100/200 mΩ/m
Near end unbalance att. LCL:	> 40 dB
Delay Skew:	5 ns/100m
NVP:	79 %



Category				5e	6		
Frequency [MHz]	1	4	10	100	250	300	500
Attenuation [dB/100m]	2,1	3,8	5,9	19,8	30	32	43
NEXT [dB]	93	93	93	93	83	80	75
PS NEXT [dB]	90	90	90	90	80	79	72
ACR [dB]	91	89	87	73	53	48	32
PS ACR [dB]	88	86	84	70	50	45	29
ELFEXT [dB]	96	96	96	74	56	49	33
PS ELFEXT [dB]	93	93	93	71	53	46	30
Return loss [dB]	26	28	30	30	27	26	21

These performance data are typical measured values.

Mechanical Characteristics

Bending radius	- during draw-in	≥ 56 mm
	- permanently installed	≥ 28 mm
Tensile strength		≤ 95 N
Crush resistance		≥ 1000 N/10 cm
Impact		≥ 10 Impacts
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning characteristics	according to IEC 60332-1

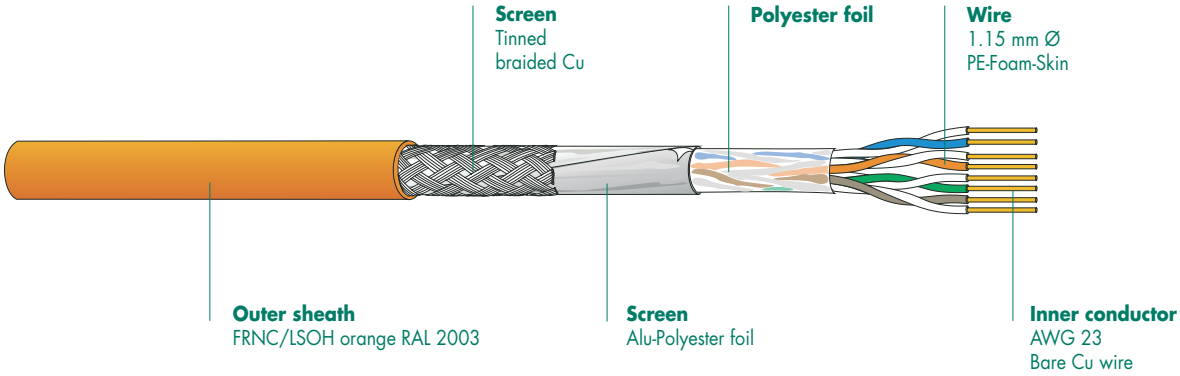
General Characteristics

Wire colour code	white/blue white/orange white/green white/brown according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 6002 4P AWG 23 FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
EMC	screened
Cat./Class	Cat.6, Class E

Data cable SF/UTP Cat.5e AWG23

uninet® 5602 4P

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat 5e cable satisfying the highest demands!
Excellent screen effect thanks to foil and braid.
Compatible with all current connecting hardware to EN 50173-1, ISO/IEC 11801:2002 and Cat 5e: ANSI/TIA/EIA 568-B

Applications

Data cable for structured premises cabling. For the transmission the transmission of digital and analogue signals, voice, video and data applications.
Especially suitable for all class D applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, Token Ring 4/16 Mbit/s,TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

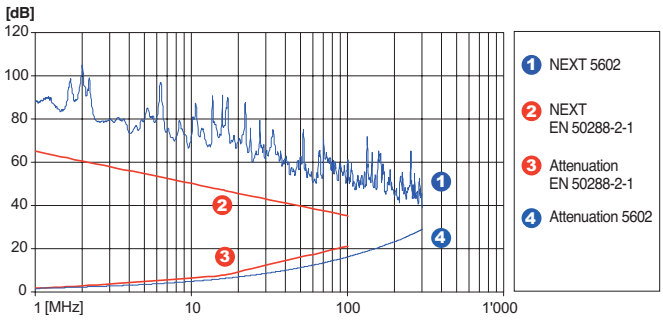
Aticle No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
182 937	2 x 2 x 0,60 (AWG23)	HF-4324-U	FR/PVC [1]	5,8	38	21,1	0,13	0,46	1000m Drum
182 938	2 x 2 x 0,60 (AWG23)	HF-4323-U	FRNC/LSOH [2]	5,8	38	21,1	0,10	0,37	1000m Drum
182 939	4 x 2 x 0,60 (AWG23)	HF-4322-U	FR/PVC [1]	6,8	55	37,5	0,18	0,63	1000m Drum
182 940	4 x 2 x 0,60 (AWG23)	HF-4321-U	FRNC/LSOH [2]	6,8	55	37,5	0,14	0,50	1000m Drum

[1] FR/PVC = Flame Retardant/Polyvinylchlorid;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable SF/UTP Cat.5e AWG23
uninet® 5602 4P

Electrical Characteristics

Loop resistance at 20°C:	125	Ω/km
Mutual capacitance:	44	pF/m
Impedance at 100 MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	6/8/12	mΩ/m
Near end unbalance att. LCL:	> 40	dB
Delay Skew:	15	ns/100m
NVP:	76	%



Category				5e		
Frequency [MHz]	1	4	10	100	250	300
Attenuation [dB/100m]	1,8	3,0	4,8	17,0	26	29
NEXT [dB]	77	72	67	46	42	40
PS NEXT [dB]	74	69	64	43	39	37
ACR [dB]	75	69	62	29	16	11
PS ACR [dB]	72	66	59	26	13	8
ELFEXT [dB]	84	69	63	41	31	29
PS ELFEXT [dB]	81	66	60	38	28	26
Return loss [dB]	27	31	31	28	24	22

These performance data are typical measured values.

Mechanical Characteristics

Bending radius	- during draw-in	≥ 56 mm
	- permanently installed	≥ 28 mm
Tensile strength		≤ 113 N
Crush resistance		≥ 1000 N/10 cm
Impact		≥ 10 Impacts
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning characteristics	FRNC/LSOH according to IEC 60332-1 and IEC 60332-3-24 FR/PVC according to IEC 60332-1

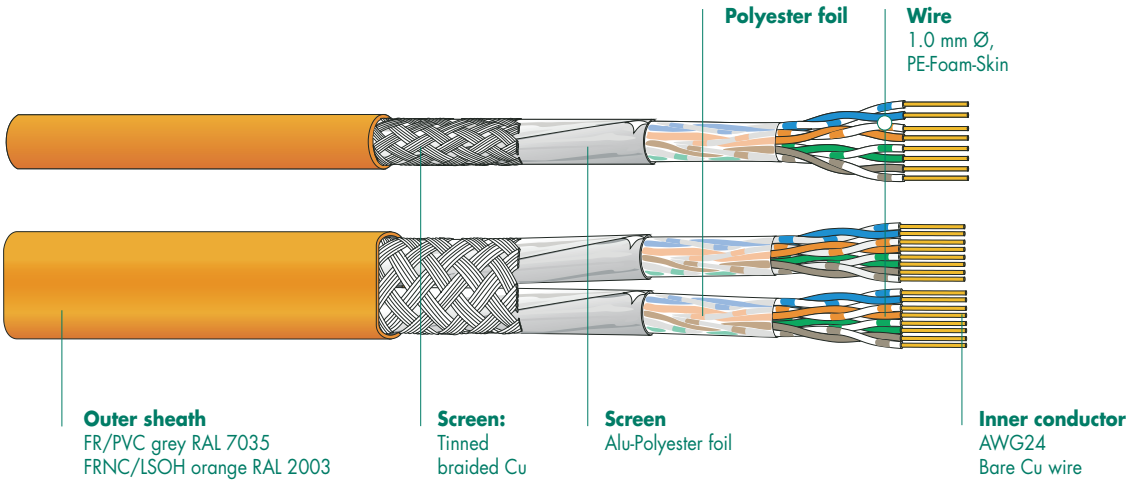
General Characteristics

Wire colour code	4P	2P
	white/blue	white/blue
	white/orange	white/orange
	white/green	
	white/brown	
	according to IEC 189 and IEC 708	
Printing	DAETWYLER UNINET 5602 4P FRNC/LSOH (+Batch number+meter marks)	
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)	
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2	
Fire resistant (no flame propagation)	IEC 60332-3-24, EN 50266-2-4 Cat. C, VDE 0482-266-2-4 Cat. C (acc.to FRNC/LSOH)	
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)	
EMC	screened	
Cat./Class	better than Cat.5e, Class D	

Data cable SF/UTP Cat.5e AWG24

uninet® 5502 4P / 2x4P BD

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat 5e cable satisfying the highest demands!
Excellent screen effect thanks to foil and braid.
Compatible with all current connecting hardware to Cat 5: EN 50173-1, ISO/IEC 11801 Ed.2 and Cat 5e: EN 50288-2-1

Applications

Data cable for structured premises cabling. For the transmission of digital and analogue signals, voice, video and data applications.
Especially suitable for all class D applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, token ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s.

Versions

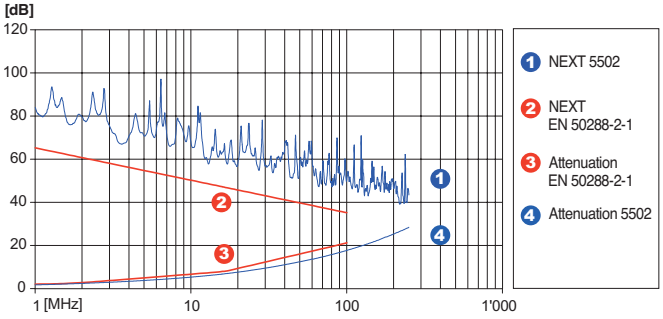
Aticle No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
181 112	4 x 2 x 0,54 (AWG24)	HF-4249-U	FR/PVC [1]	6,1	45,1	26,0	0,15	0,55	1000m Drum
181 111	4 x 2 x 0,54 (AWG24)	HF-4248-U	FRNC/LSOH [2]	6,1	45,9	26,0	0,13	0,44	1000m Drum
181 160	2x (4 x 2 x 0,54) (AWG24)	HF-4251-U	FR/PVC [1]	9,7 x 6,9	77,7	46,8	0,26	0,94	on request
181 162	2x (4 x 2 x 0,54) (AWG24)	HF-4250-U	FRNC/LSOH [2]	9,7 x 6,9	78,8	46,8	0,21	0,76	on request

[1] FR/PVC = Flame Retardant/Polyvinylchloride;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable SF/UTP Cat.5e AWG24
uninet® 5502 4P / 2x4P BD

Electrical Characteristics

Loop resistance at 20°C:	155	Ω/km
Mutual capacitance:	43	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 30/60/170	mΩ/m
Unbalance to ground Attenuation LCL :	> 40	dB
Delay Skew:	8	ns/100m
NVP:	76	%



Category				5e	
Frequency [MHz]	1	4	10	100	250
Attenuation [dB/100m]	1,9	3,6	5,6	18,2	29
NEXT [dB]	75	70	65	44	40
PS NEXT [dB]	72	67	62	41	37
ACR [dB]	73	66	59	26	11
PS ACR [dB]	70	63	56	23	8
ELFEXT [dB]	84	69	63	41	31
PS ELFEXT [dB]	81	66	60	38	28
Return loss [dB]	27	31	31	28	24

These performance data are typical measured values.

Mechanical Characteristics

		4P	2x4P
Bending radius (flat side)	- during draw-in	≥ 48 mm	≥ 54 mm
	- permanently installed	≥ 24 mm	≥ 27 mm
Tensile strength		≤ 91 N	≤ 182 N
Crush resistance		≥ 1000 N/10 cm	
Impact		≥ 10 Impacts	
Temperature range	- during installation	0°C to + 50°C	
	- in operation	-20°C to + 60°C	

Environmental conditions

Zero halogen	FRNC/LSOH-Variant is Zero halogen according to IEC 60754-2
Smoke density	FRNC/LSOH-Variant according to IEC 61034
Burning characteristics	FR/PVC according to IEC 60332-1
	FRNC/LSOH according to IEC 60332-1 and IEC 60332-3-24

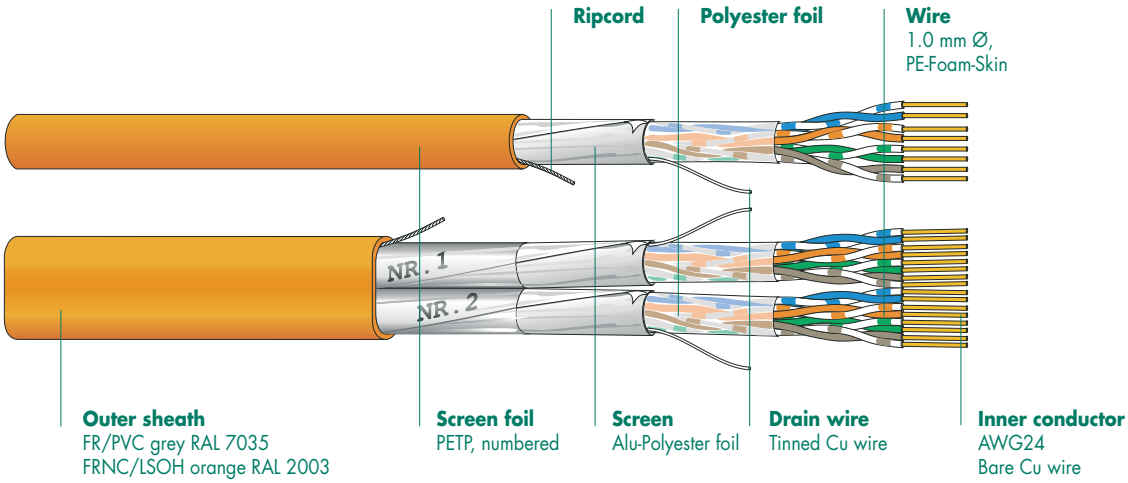
General Characteristics

Wire colour code	white - blue/blue white - orange/orange white - green/green white - brown/brown (ring marked) according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 5502 4P FR/PVC resp. DAETWYLER UNINET 5502 4P FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24, EN 50266-2-4 Cat. C, VDE 0482-266-2-4 Cat. C (acc.to FRNC/LSOH)
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
EMC	screened
Cat./Class	better than Cat.5e, Class D

Data cable F/UTP Cat.5e AWG24

uninet® 5002 4P / 2x4P BD

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat 5e cable satisfying the highest demands!
Excellent screen effect thanks to foil and braid.
Compatible with all current connecting hardware to: ISO/IEC 11801, EN 50173-1 and EN 50288-2-1.

Applications

Data cable for structured premises cabling. For the transmission of digital and analogue signals, voice, video and data applications.
Especially suitable for all class D applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, token ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s.

Versions

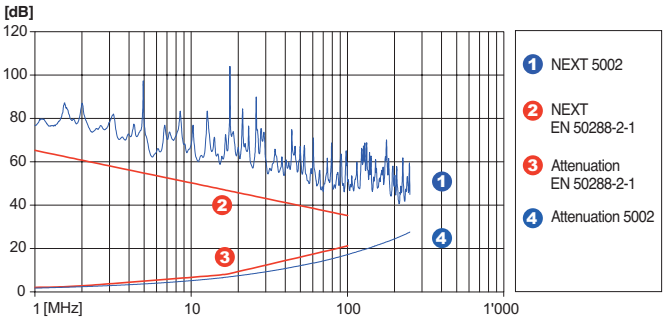
Aticle No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
181 114	4 x 2 x 0,54 (AWG24)	HF-4253-U	FR/PVC [1]	6,0	40,0	19,5	0,16	0,56	1000m Drum
181 113	4 x 2 x 0,54 (AWG24)	HF-4252-U	FRNC/LSOH [2]	6,0	40,8	19,5	0,14	0,51	1000m Drum
181 170	2x (4 x 2 x 0,54) (AWG24)	HF-4255-U	FR/PVC [1]	10,7 x 6,1	73,2	39,0	0,27	0,96	on request
181 171	2x (4 x 2 x 0,54) (AWG24)	HF-4254-U	FRNC/LSOH [2]	10,7 x 6,1	74,4	39,0	0,23	0,82	on request

[1] FR/PVC = Flame Retardant/Polyvinylchloride;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable F/UTP Cat.5e AWG24
uninet® 5002 4P / 2x4P BD

Electrical Characteristics

Loop resistance at 20°C:	155	Ω/km
Mutual capacitance:	43	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	< 45/90/190	mΩ/m
Near end unbalance att. LCL :	> 40	dB
Delay Skew:	8	ns/100m
NVP:	76	%



Category				5e	
Frequency [MHz]	1	4	10	100	250
Attenuation [dB/100m]	1,9	3,6	5,6	18,2	29
NEXT [dB]	75	70	65	44	40
PS NEXT [dB]	72	67	62	41	37
ACR [dB]	73	66	59	26	11
PS ACR [dB]	70	63	56	23	8
ELFEXT [dB]	84	69	63	41	31
PS ELFEXT [dB]	81	66	60	38	28
Return loss [dB]	27	31	31	28	24

These performance data are typical measured values.

Mechanical Characteristics

		4P	2x4P
Bending radius (flat side)	- during draw-in	≥ 48 mm	≥ 48 mm
	- permanently installed	≥ 24 mm	≥ 24 mm
Tensile strength		≤ 91 N	≤ 182 N
Crush resistance		≥ 1000 N/10 cm	
Impact		≥ 10 Impacts	
Temperature range	- during installation	0°C to + 50°C	
	- in operation	-20°C to + 60°C	

Environmental conditions

Zero halogen	FRNC/LSOH-Variant is Zero halogen according to IEC 60754-2
Smoke density	FRNC/LSOH-Variant according to IEC 61034
Burning characteristics	according to IEC 60332-1

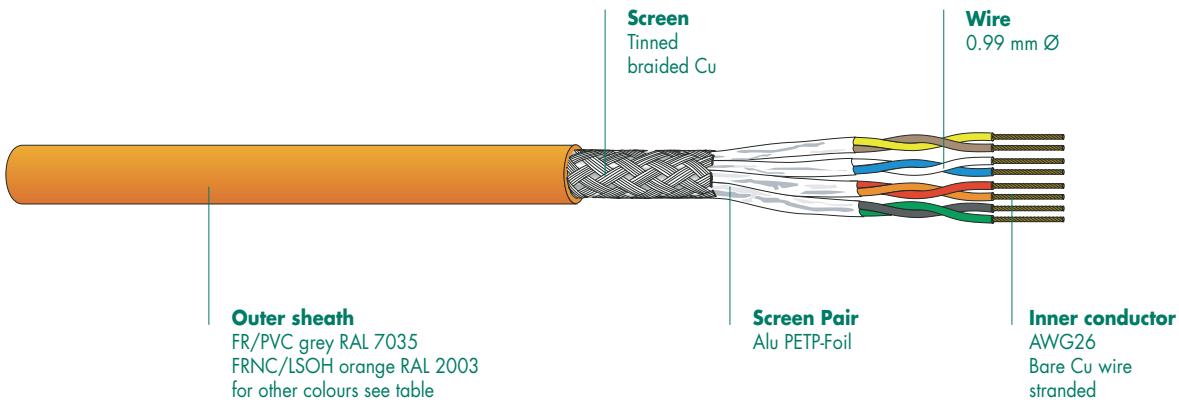
General Characteristics

Wire colour code	white - blue/blue white - orange/orange white - green/green white - brown/brown (ring marked) according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 5002 4P FR/PVC resp. DAETWYLER UNINET 5002 4P FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
EMC	screened
Cat./Class	better than Cat.5e, Class D

Flexible data cable S/FTP Cat.7_A AWG26

uninet® 7150 flex 4P

Dätwyler Cables



Product information

Features

Electrically and mechanically excellent 1200 MHz flexible data cable - satisfying the highest demands!
Easy identification of wires for termination thanks to different coloured wires.
Compatible with all current connecting hardware to EN 50173 and ISO/IEC 11801, D-Sub systems and optimised for RJ45 connecting systems.
Compatible with connecting systems of the New generation. for Cat.7_A/Class F_A.
Guaranteed limit values according to ISO/IEC 11801, EN 50173-1 and IEC 61156-6 Cat.7_A.

Applications

As data Patch cord in Patch panels and as an equipment connection cable.
For the transmission of digital and analogue voice and data signals.
For flexible working station cabling with long patch cables.
Especially suitable for all Class F_A and CP (Consolidation Point) applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

Article No.	colour	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
		n x n x mm² (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
191 410	grey	4 x 2 x 0,132 (AWG26)	HF-4396-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
auf Anfrage	orange	4 x 2 x 0,132 (AWG26)	HF-4396-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
auf Anfrage	black	4 x 2 x 0,132 (AWG26)	HF-4396-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
auf Anfrage	green	4 x 2 x 0,132 (AWG26)	HF-4396-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
auf Anfrage	yellow	4 x 2 x 0,132 (AWG26)	HF-4396-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
auf Anfrage	red	4 x 2 x 0,132 (AWG26)	HF-4396-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
auf Anfrage	blue	4 x 2 x 0,132 (AWG26)	HF-4396-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum

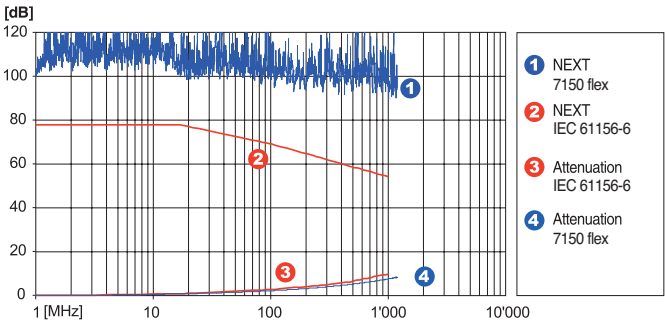
PVC versions on request

[1] FR/PVC = Flame Retardant/Polyvinylchloride;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Flexible data cable S/FTP Cat.7_A AWG26
uninet® 7150 flex 4P

Electrical Characteristics

Loop resistance at 20°C:	270	Ω/km
Mutual capacitance:	43	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Transfer impedance	10	mΩ/m
Near end unbalance att. LCL :	> 40	dB
Delay Skew:	4	ns/100m
NVP:	78	%



Category				5e	6	6_A	7	catTV	7_A	
Frequency [MHz]	1	4	10	100	250	500	600	862	1000	1200
Attenuation [dB/10m]	0,25	0,49	0,76	2,55	4,10	5,90	6,50	7,7	8,50	9,20
NEXT [dB]	100	100	100	100	95	92	90	90	90	90
PS NEXT [dB]	97	97	97	97	92	89	87	87	87	87
ACR [dB/10m]	100	99	99	97	91	86	83	82	81	80
PS ACR [dB/10m]	97	96	96	94	88	83	80	79	78	77
ELFEXT [dB/10m]	100	99	99	97	95	91	88	87	86	85
PS ELFEXT [dB/10m]	97	96	96	94	92	88	85	84	83	82
Return loss [dB]	26	32	35	30	27	24	23	21	20	19

These performance data are typical measured values.

Mechanical Characteristics

Bending radius		≥ 20 mm
repeated bending		≥ 1000 Impacts
Tensile strength		≤ 56 N
Temperature range	- during installation	0°C to +50°C
	- in operation	-20°C to +60°C

Environmental conditions

Zero halogen	FRNC/LSOH-Variant is Zero halogen according to IEC 60754-2
Smoke density	FRNC/LSOH-Variant according to IEC 61034
Burning characteristics	according to IEC 60332-1

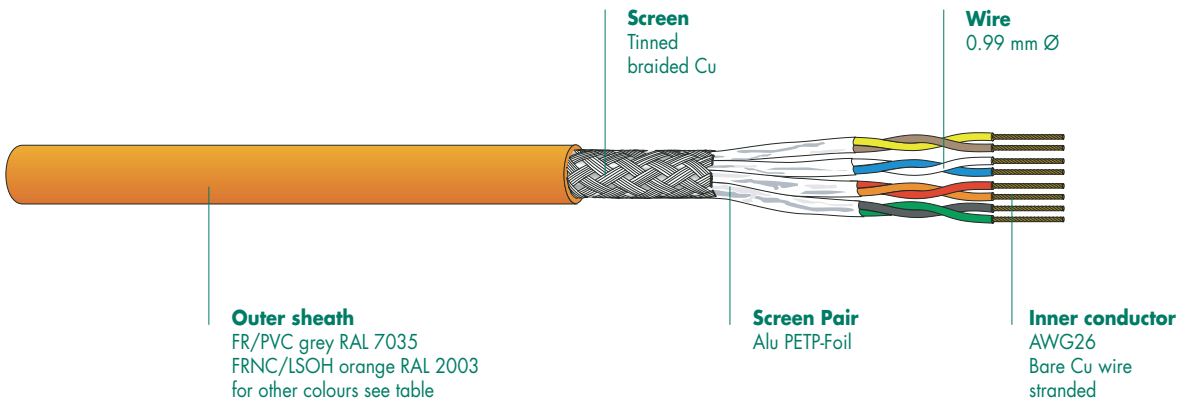
General Characteristics

Wire colour code	white /blue red/orange black/green yellow/brown according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 7150 FLEX 4P FR/PVC resp. DAETWYLER UNINET 7150 FLEX 4P FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
EMC	screened
Cat./Class	Cat.7_A, Class F_A

Flexible data cable S/FTP Cat.7 AWG26

uninet® 7702 flex 4P

Dätwyler Cables



Product information

Features

Electrically and mechanically excellent 1200 MHz flexible data cable - satisfying the highest demands!
Easy identification of wires for termination thanks to different coloured wires.
Compatible with all current connecting hardware to EN 50173 and ISO/IEC 11801, D-Sub systems and optimised for RJ45 connecting systems.
Compatible with connecting systems of the New generation. for Cat.7/Class F.
Guaranteed limit values according to ISO/IEC 11801, EN 50173-1 and EN 50288-4-2.

Applications

As data Patch cord in Patch panels and as an equipment connection cable.
For the transmission of digital and analogue voice and data signals.
For flexible working station cabling with long patch cables.
Especially suitable for all Class F and CP (Consolidation Point) applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

Article No.	colour	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
		n x n x mm² (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
179 500	grey	4 x 2 x 0.132 (AWG26)	HF-4952-F	FR/PVC [1]	5,8	38,8	18,1	0,13	0,48	1000m Drum
181 146	grey	4 x 2 x 0,132 (AWG26)	HF-4953-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
182 784	orange	4 x 2 x 0,132 (AWG26)	HF-4953-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
182 871	black	4 x 2 x 0,132 (AWG26)	HF-4953-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
182 872	green	4 x 2 x 0,132 (AWG26)	HF-4953-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
181 243	yellow	4 x 2 x 0,132 (AWG26)	HF-4953-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
182 773	red	4 x 2 x 0,132 (AWG26)	HF-4953-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum
182 873	blue	4 x 2 x 0,132 (AWG26)	HF-4953-F	FRNC/LSOH [2]	5,8	39,5	18,1	0,11	0,38	1000m Drum

PVC versions on request

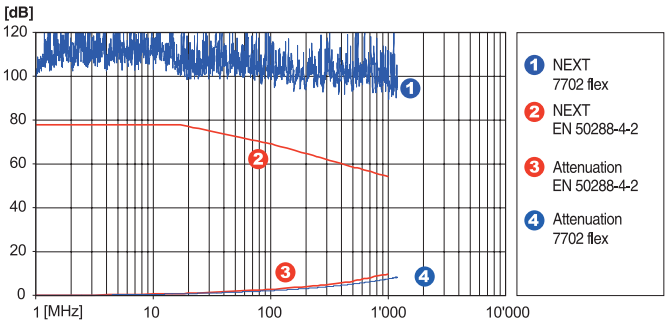
[1] FR/PVC = Flame Retardant/Polyvinylchloride;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Flexible data cable S/FTP Cat.7 AWG26

uninet® 7702 flex 4P

Electrical Characteristics

Loop resistance at 20°C:	270	Ω/km
Mutual capacitance:	43	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Transfer impedance	10	mΩ/m
Near end unbalance att. LCL :	> 40	dB
Delay Skew:	4	ns/100m
NVP:	78	%



Category				5e	6	6_A	7				
Frequency [MHz]	1	4	10	100	250	500	600	800	862	1000	1200
Attenuation [dB/10m]	0,26	0,50	0,79	2,67	4,30	6,20	6,71	7,90	8,30	8,90	9,90
NEXT [dB]	100	100	100	100	95	92	90	90	90	90	90
PS NEXT [dB]	97	97	97	97	92	89	87	87	87	87	87
ACR [dB/10m]	100	99	99	97	91	86	83	82	82	81	80
PS ACR [dB/10m]	97	96	96	94	88	83	80	79	79	78	77
ELFEXT [dB/10m]	100	99	99	97	95	91	88	87	87	86	85
PS ELFEXT [dB/10m]	97	96	96	94	92	88	85	84	84	83	82
Return loss [dB]	26	32	35	30	27	24	23	21	21	20	19

These performance data are typical measured values.

Mechanical Characteristics

Bending radius		≥ 20 mm
repeated bending		≥ 1000 Impacts
Tensile strength		≤ 56 N
Temperature range	- during installation	0°C to +50°C
	- in operation	-20°C to +60°C

Environmental conditions

Zero halogen	FRNC/LSOH-Variant is Zero halogen according to IEC 60754-2
Smoke density	FRNC/LSOH-Variant according to IEC 61034
Burning characteristics	according to IEC 60332-1

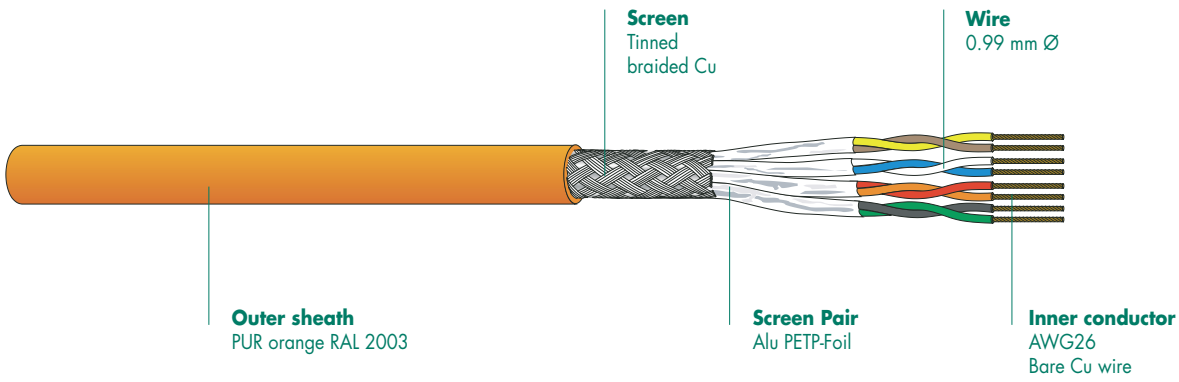
General Characteristics

Wire colour code	white /blue red/orange black/green yellow/brown according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 7702 flex 4P FR/PVC resp. DAETWYLER UNINET 7702 flex 4P FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
EMC	screened
Cat./Class	better than Cat.7, Class F

Industrial Flexible data cable S/FTP Cat.7 AWG26

uninet® 7702 flex 4P Industrial PUR

Dätwyler Cables



Product information

Features

Electrically and mechanically excellent Cat.7-flexible data cable with PUR sheath - satisfying the highest demands!
Compatible with Dätwyler unilan® Modular Solution IP67 RJ45 plugs.
Easy identification of wires for termination thanks to different coloured wires.
Compatible with all current connecting hardware to EN 50173 and ISO/IEC 11801, D-Sub systems and optimised for RJ45 connecting systems.
Compatible with connecting systems of the New generation. for Cat.7/Class F.
Guaranteed limit values according to ISO/IEC 11801, EN 50173-1 and EN 50288-4-2.

Applications

For the flexible workstation wiring in the industrial environment.
Designed for use in industrial areas. Oil resistant according EN 60811-2-1
As data Patch cord in Patch panels and as an equipment connection cable.
For the transmission of digital and analogue voice and data signals.
Especially suitable for all Class F and CP (Consolidation Point) applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, 10G Base-T, Token Ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm² (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
187 688	4 x 2 x 0,132 (AWG26)	HF-4338-F	PUR[1)]	6,4	52,4	18,1	0,15	0,54	1000m Drum

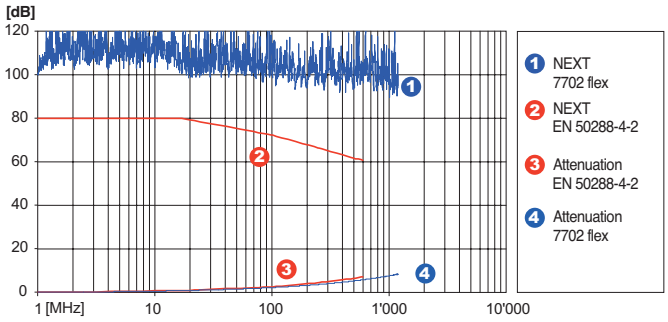
[1)] PUR = Polyurethane

Industrial Flexible data cable S/FTP Cat.7 AWG26

uninet® 7702 flex 4P Industrial PUR

Electrical Characteristics

Loop resistance at 20°C:	270	Ω/km
Mutual capacitance:	43	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Transfer impedance	10	mΩ/m
Near end unbalance att. LCL :	> 40	dB
Delay Skew:	4	ns/100m
NVP:	78	%



Category				5e	6	6_A	7
Frequency [MHz]	1	4	10	100	250	500	600
Attenuation [dB/10m]	0,26	0,50	0,79	2,67	4,30	6,20	6,71
NEXT [dB]	100	100	100	100	95	92	90
PS NEXT [dB]	97	97	97	97	92	89	87
ACR [dB/10m]	100	99	99	97	91	86	83
PS ACR [dB/10m]	97	96	96	94	88	83	80
ELFEXT [dB/10m]	100	99	99	97	95	91	88
PS ELFEXT [dB/10m]	97	96	96	94	92	88	85
Return loss [dB]	26	32	35	30	27	24	23

These performance data are typical measured values.

Mechanical Characteristics

Bending radius		≥ 34 mm
repeated bending		≥ 1000 Impacts
Tensile strength		on request
Temperature range	- during installation	0°C to +50°C
	- in operation	-30°C to + 60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Burning characteristics	according to IEC 60332-1
Oil-resistant	according to EN 60811-2-1

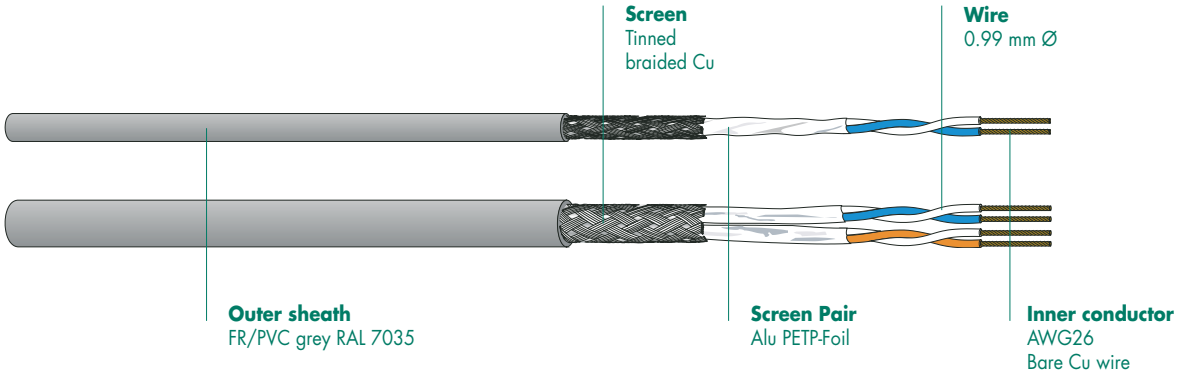
General Characteristics

Wire colour code	white /blue red/orange black/green yellow/brown according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 7702 flex 4P INDUSTRIAL PUR (+Batch number+meter marks) resp.
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Oil-resistant	EN 60811-2-1
EMC	screened
Cat./Class	better than Cat.7, Class F

Flexible data cable S/FTP Cat.7 AWG26

uninet® flex 1P/2P Multimedia

Dätwyler Cables



Product information

Features

Electrically and mechanically excellent 1 pair/2pair 1200 MHz flexible data cable - satisfying the highest demands!
Easy identification of wires for termination thanks to different coloured wires.
Compatible with all current connecting hardware to EN 50173 and ISO/IEC 11801, D-Sub systems and optimised for RJ45 connecting systems.
Compatible with connecting systems of the New generation. for Cat.7/Class F.
Guaranteed limit values according to ISO/IEC 11801, EN 50173-1 and EN 50288-4-2.

Applications

As data Patch cord in Patch panels and as an equipment connection cable.
For the transmission of digital and analogue voice and data signals.
For flexible working station cabling with long patch cables.
Especially suitable for all Class E applications. Class F.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Token Ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

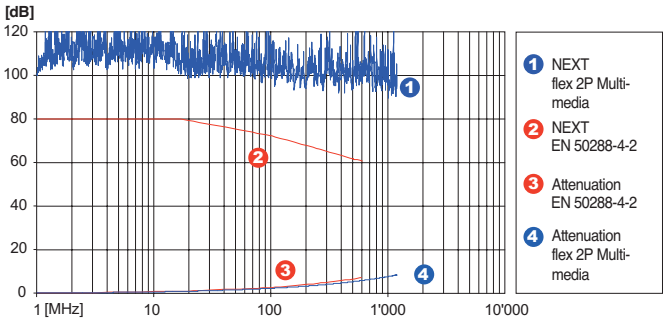
Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm² (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
182 884	1 x 2 x 0,132 (AWG26)	HF-4953-F	FRNC/LSOH [1]	3,5	18,4	9,5	0,05	0,18	1000m Drum
182 885	2 x 2 x 0,132 (AWG26)	HF-4953-F	FRNC/LSOH [1]	5,0	28,8	12,0	0,09	0,35	1000m Drum

[1] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Flexible data cable S/FTP Cat.7 AWG26
uninet® flex 1P/2P Multimedia

Electrical Characteristics

Loop resistance at 20°C:	270	Ω/km
Mutual capacitance:	43	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Transfer impedance	10	mΩ/m
Near end unbalance att. LCL :	> 40	dB
Delay Skew:	2	ns/100m
NVP:	78	%



Category				5e	6	6_A	7				
Frequency [MHz]	1	4	10	100	250	500	600	800	862	1000	1200
Attenuation [dB/10m]	0,26	0,50	0,79	2,67	4,30	6,20	6,71	7,90	8,30	8,90	9,90
NEXT [dB]	100	100	100	100	95	92	90	90	90	90	90
ACR [dB/10m]	100	99	99	97	91	86	83	82	82	81	80
ELFEXT [dB/10m]	100	99	99	97	95	91	88	87	87	86	85
Return loss [dB]	26	32	35	30	27	24	23	21	21	20	19

These performance data are typical measured values.

Mechanical Characteristics

Bending radius		≥ 28 mm
repeated bending		≥ 1000 Impacts
Tensile strength		≤ 14 N (1P)/18 N (2P)
Temperature range	- during installation	0°C to +50°C
	- in operation	-20°C to +60°C

Environmental conditions

Zero halogen	according to IEC 60754-2
Smoke density	according to IEC 61034
Burning characteristics	according to IEC 60332-1

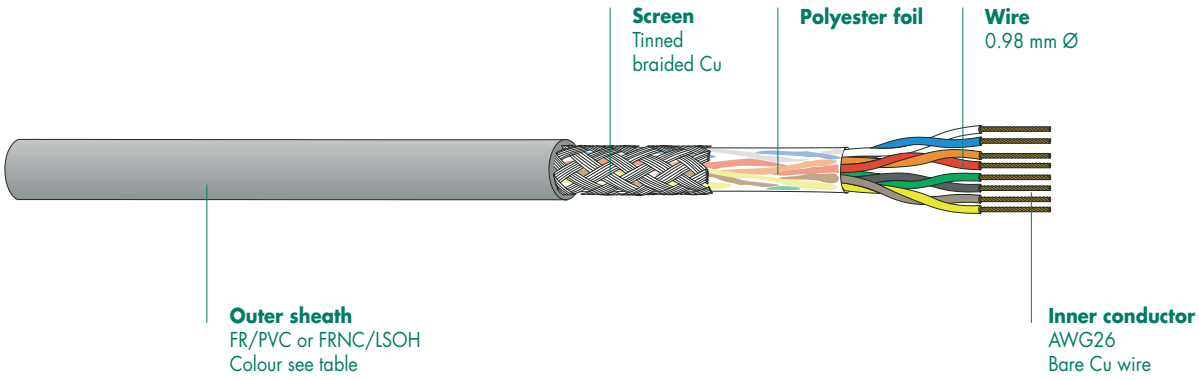
General Characteristics

Wire colour code	1P: withe/blue 2P: withe/blue, withe/orange
Printing	DAETWYLER UNINET MULTIEDIA flex 1P FRNC/LSOH resp. DAETWYLER UNINET MULTIEDIA flex 2P FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2
EMC	screened
Cat./Class	better than Cat.7, Class F

Flexible data cable S/UTP Cat.5e AWG26

uninet® 5502 flex 4P

Dätwyler Cables



Product information

Features

Construction optimised for fast and reliable terminations.
Electrically and mechanically high quality 300 MHz flexible data cable - satisfying the highest demands!
Easy identification of wires for termination thanks to different coloured wires.
Available in a range of sheath colours - ideal for the easy visual identification of patch cords, carrying different services.
Compatible with all current connecting hardware to EN 50173 and ISO/IEC 11801 as well as with D Sub systems.
Guaranteed limit values according to Cat.5: ISO/IEC 11801 and EN 50173-1, EN 50288-2-2.

Applications

As data Patch cord in Patch panels and as an equipment connection cable.
For the transmission of digital and analogue voice and data signals.
Especially suitable for all class D applications.
ISDN, Ethernet 10 BASE- T, Fast Ethernet 100 BASE- T, Gigabit Ethernet 1000 BASE T, token ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

Article No.	colour	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
		n x n x mm² (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
179 595	grey	4 x 2 x 0,16 (AWG26)	HF-4244-F	FR/PVC [1]	5,1	34	23,5	0,11	0,38	1000m Drum
179 517	black	4 x 2 x 0,16 (AWG26)	HF-4244-F	FR/PVC [1]	5,1	34	23,5	0,11	0,38	1000m Drum
179 513	green	4 x 2 x 0,16 (AWG26)	HF-4244-F	FR/PVC [1]	5,1	34	23,5	0,11	0,38	1000m Drum
179 514	yellow	4 x 2 x 0,16 (AWG26)	HF-4244-F	FR/PVC [1]	5,1	34	23,5	0,11	0,38	1000m Drum
179 515	red	4 x 2 x 0,16 (AWG26)	HF-4244-F	FR/PVC [1]	5,1	34	23,5	0,11	0,38	1000m Drum
179 516	blue	4 x 2 x 0,16 (AWG26)	HF-4244-F	FR/PVC [1]	5,1	34	23,5	0,11	0,38	1000m Drum
181 101	grey	4 x 2 x 0,16 (AWG26)	HF-4245-F	FRNC/LSOH [2]	5,1	35	23,5	0,09	0,31	1000m Drum
181 100	orange	4 x 2 x 0,16 (AWG26)	HF-4245-F	FRNC/LSOH [2]	5,1	35	23,5	0,09	0,31	1000m Drum
181 106	black	4 x 2 x 0,16 (AWG26)	HF-4245-F	FRNC/LSOH [2]	5,1	35	23,5	0,09	0,31	1000m Drum
181 102	green	4 x 2 x 0,16 (AWG26)	HF-4245-F	FRNC/LSOH [2]	5,1	35	23,5	0,09	0,31	1000m Drum
181 103	yellow	4 x 2 x 0,16 (AWG26)	HF-4245-F	FRNC/LSOH [2]	5,1	35	23,5	0,09	0,31	1000m Drum
181 104	red	4 x 2 x 0,16 (AWG26)	HF-4245-F	FRNC/LSOH [2]	5,1	35	23,5	0,09	0,31	1000m Drum
181 105	blue	4 x 2 x 0,16 (AWG26)	HF-4245-F	FRNC/LSOH [2]	5,1	35	23,5	0,09	0,31	1000m Drum
181 107	violet	4 x 2 x 0,16 (AWG26)	HF-4245-F	FRNC/LSOH [2]	5,1	35	23,5	0,09	0,31	1000m Drum

[1] FR/PVC = Flame Retardant/Polyvinylchloride;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

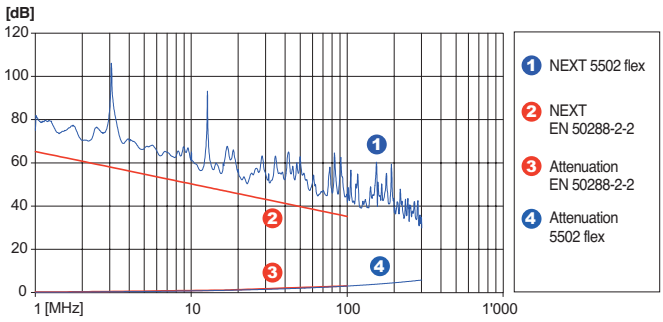
Technical changes reserved.

Flexible data cable S/UTP Cat.5e AWG26

uninet® 5502 flex 4P

Electrical Characteristics

Loop resistance at 20°C:	220	Ω/km
Mutual capacitance:	45	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Transfer impedance at 1/10/30 MHz	20/9/25	mΩ/m
Unbalance to ground Attenuation LCL :	> 40	dB
Delay Skew:	15	ns/100m
NVP:	76	%



Category				5e		
Frequency [MHz]	1	4	10	100	250	300
Attenuation [dB/10m]	0,2	0,5	0,8	3,0	5,2	5,8
NEXT [dB]	75	70	65	42	35	33
PS NEXT [dB]	72	67	62	39	32	30
ACR [dB/10m]	74	69	64	39	30	27
PS ACR [dB/10m]	71	66	61	36	27	24
ELFEXT [dB/10m]	80	78	75	60	53	50
PS ELFEXT [dB/10m]	77	75	72	57	50	47
Return loss [dB]	24	30	30	28	23	23

These performance data are typical measured values.

Mechanical Characteristics

Bending radius		≥ 20 mm
repeated bending		≥ 1000 Cycles
Tensile strength		≤ 63 N
Crush resistance		≥ 1000 N/10 cm
Impact		≥ 10 Impacts
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen	FRNC/LSOH-Variant is Zero halogen according to IEC 60754-2
Smoke density	FRNC/LSOH-Variant according to IEC 61034
Burning characteristics	according to IEC 60332-1

General Characteristics

Wire colour code	white/blue red/orange black/green yellow/brown
Printing	DAETWYLER UNINET 5502 flex 4P FR/PVC resp. DAETWYLER UNINET 5502 flex 4P FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
EMC	screened
Cat./Class	better than Cat.5e, Class D

Colourcode

according to IEC 189-2

Dätwyler Cables

V	St	a	b	c	d
1	1	white	blue		
	2			turquoise	violet
2	3	white	orange		
	4			turquoise	violet
3	5	white	green		
	6			turquoise	violet
4	7	white	brown		
	8			turquoise	violet
5	9	white	grey		
	10			turquoise	violet
6	11	red	blue		
	12			turquoise	violet
7	13	red	orange		
	14			turquoise	violet
8	15	red	green		
	16			turquoise	violet
9	17	red	brown		
	18			turquoise	violet
10	19	red	grey		
	20			turquoise	violet
11	21	black	blue		
	22			turquoise	violet
12	23	black	orange		
	24			turquoise	violet
13	25	black	green		
	26			turquoise	violet
14	27	black	brown		
	28			turquoise	violet
15	29	black	grey		
	30			turquoise	violet
16	31	yellow	blue		
	32			turquoise	violet
17	33	yellow	orange		
	34			turquoise	violet
18	35	yellow	green		
	36			turquoise	violet
19	37	yellow	brown		
	38			turquoise	violet
20	39	yellow	grey		
	40			turquoise	violet
21	41	white/blue	blue		
	42			turquoise	violet
22	43	white/blue	orange		
	44			turquoise	violet
23	45	white/blue	green		
	46			turquoise	violet
24	47	white/blue	brown		
	48			turquoise	violet
25	49	white/blue	grey		
	50			turquoise	violet

V	St	a	b	c	d
26	51	red/blue	blue		
	52			turquoise	violet
27	53	red/blue	orange		
	54			turquoise	violet
28	55	red/blue	green		
	56			turquoise	violet
29	57	red/blue	brown		
	58			turquoise	violet
30	59	red/blue	grey		
	60			turquoise	violet
31	61	black/blue	blue		
	62			turquoise	violet
32	63	black/blue	orange		
	64			turquoise	violet
33	65	black/blue	green		
	66			turquoise	violet
34	67	black/blue	brown		
	68			turquoise	violet
35	69	black/blue	grey		
	70			turquoise	violet
36	71	yellow/blue	blue		
	72			turquoise	violet
37	73	yellow/blue	orange		
	74			turquoise	violet
38	75	yellow/blue	green		
	76			turquoise	violet
39	77	yellow/blue	brown		
	78			turquoise	violet
40	79	yellow/blue	grey		
	80			turquoise	violet
41	81	white/orange	blue		
	82			turquoise	violet
42	83	white/orange	orange		
	84			turquoise	violet
43	85	white/orange	green		
	86			turquoise	violet
44	87	white/orange	brown		
	88			turquoise	violet
45	89	white/orange	grey		
	90			turquoise	violet
46	91	red/orange	blue		
	92			turquoise	violet
47	93	red/orange	orange		
	94			turquoise	violet
48	95	red/orange	green		
	96			turquoise	violet
49	97	red/orange	brown		
	98			turquoise	violet
50	99	red/orange	grey		
	100			turquoise	violet

V	St	a	b	c	d
51	101	black/orange	blue		
	102			turquoise	violet
52	103	black/orange	orange		
	104			turquoise	violet
53	105	black/orange	green		
	106			turquoise	violet
54	107	black/orange	brown		
	108			turquoise	violet
55	109	black/orange	grey		
	100			turquoise	violet
56	111	yellow/orange	blue		
	112			turquoise	violet
57	113	yellow/orange	orange		
	114			turquoise	violet
58	115	yellow/orange	green		
	116			turquoise	violet
59	117	yellow/orange	brown		
	118			turquoise	violet
60	119	yellow/orange	grey		
	120			turquoise	violet
61	121	white/green	blue		
	122			turquoise	violet
62	123	white/green	orange		
	124			turquoise	violet
63	125	white/green	green		
	126			turquoise	violet
64	127	white/green	brown		
	128			turquoise	violet
65	129	white/green	grey		
	130			turquoise	violet
66	131	red/green	blue		
	132			turquoise	violet
67	133	red/green	orange		
	134			turquoise	violet
68	135	red/green	green		
	136			turquoise	violet
69	137	red/green	brown		
	138			turquoise	violet
70	139	red/green	grey		
	140			turquoise	violet
71	141	black/green	blue		
	142			turquoise	violet
72	143	black/green	orange		
	144			turquoise	violet
73	145	black/green	green		
	146			turquoise	violet
74	147	black/green	brown		
	148			turquoise	violet
75	149	black/green	grey		
	150			turquoise	violet

V	St	a	b	c	d
76	151	yellow/green	blue		
	152			turquoise	violet
77	153	yellow/green	orange		
	154			turquoise	violet
78	155	yellow/green	green		
	156			turquoise	violet
79	157	yellow/green	brown		
	158			turquoise	violet
80	159	yellow/green	grey		
	160			turquoise	violet
81	161	white/brown	blue		
	162			turquoise	violet
82	163	white/brown	orange		
	164			turquoise	violet
83	165	white/brown	green		
	166			turquoise	violet
84	167	white/brown	brown		
	168			turquoise	violet
85	169	white/brown	grey		
	170			turquoise	violet
86	171	red/brown	blue		
	172			turquoise	violet
87	173	red/brown	orange		
	174			turquoise	violet
88	175	red/brown	green		
	176			turquoise	violet
89	177	red/brown	brown		
	178			turquoise	violet
90	179	red/brown	grey		
	180			turquoise	violet
91	181	black/brown	blue		
	182			turquoise	violet
92	183	black/brown	orange		
	184			turquoise	violet
93	185	black/brown	green		
	186			turquoise	violet
94	187	black/brown	brown		
	188			turquoise	violet
95	189	black/brown	grey		
	190			turquoise	violet
96	191	yellow/brown	blue		
	192			turquoise	violet
97	193	yellow/brown	orange		
	194			turquoise	violet
98	195	yellow/brown	green		
	196			turquoise	violet
99	197	yellow/brown	brown		
	198			turquoise	violet
100	199	yellow/brown	grey		
	200			turquoise	violet

Swiss Standard

Telephone Cable Type U72

according to Swisscom Specifications 844.13

Dätwyler Cables

Type 8334-U

Product information

Application

Connection cable for telephone and home
Universal building telephone installation cable
Signal and control cable for low-current installations

Construction

Conductor	0,5 mm or 0,8 mm Cu wire solid, tinned
Core	0,90 mm or 1,40 mm, PE or PVC
Twisting type	quad
Ribbon	transparent synthetic tape
Outer sheath	zero-halogen, grey RAL 7035 or zero-halogen, white RAL 9010

Mechanical properties

Min. bending radius	8 x cable diameter
Temperature range	-20°C to +80°C

General properties

Colour coding	according to IEC 189-2
Marking	Dätwyler U72, manufacturing year, manufacturing no, metre

Electrical properties

Description		Conductor 0.50 mm	Conductor 0.80 mm
Electrical resistance Ω/km		≤ 195.6	≤ 75
Resistance unbalance core-to-core %		≤ 2	≤ 2
Mutual Capacitance (nom.) pF/m		55	55
Mutual Capacitance (max.) pF/m		70	70
Coupling Capacitance (at f= 800 Hz)	k_1	≤ 450	≤ 450
pF/500m	$k_{2,3}$	≤ 1500	≤ 1500
Characteristic Impedance Ω	at f = 10 kHz	246	162
(guidance values)	20 kHz	180	133
	100 kHz	125	116
	340 kHz	118	111
	600 kHz	113	108
	1000 kHz	111	107
	2000 kHz	109	106
	5000 kHz	107	105
Characteristic Attenuation dB/100m	at f = 10 kHz	0.44	0.24
(guidance values)	20 kHz	0.56	0.20
	100 kHz	0.76	0.44
	340 kHz	1.30	0.86
	600 kHz	1.70	1.20
	1000 kHz	2.30	1.60
	2000 kHz	3.50	2.40
	5000 kHz	6.00	4.40
Test voltage core-to-core kV	1 min. at 50 Hz	2	2

Type 8334-U

Product information

Standard execution type 8334-U, Core 0.50 / 0.90 mm

Part no.	Part no.	Part no.	Dimension	External diameter	Cable weight	Copper weight	max. tensile load*
[halogen-free grey]	[halogen-free white]	[PVC grey]		[mm]	[kg/km]	[kg/km]	[daN]
177 180	177 181	128 991	1 x 4 x 0.50	3.7	19	7	15
177 182	177 183	128 992	2 x 4 x 0.50	5.6	36	14	20
177 184	177 185	128 993	3 x 4 x 0.50	5.9	44	22	25
177 186			5 x 4 x 0.50	7.0	68	36	30
177 187			7 x 4 x 0.50	7.9	91	50	35
177 189			10 x 4 x 0.50	9.6	128	71	40
177 190			15 x 4 x 0.50	11.3	185	107	50
177 191			20 x 4 x 0.50	13.0	246	142	60
178 783			30 x 4 x 0.50	15.4	348	213	80

Packing unit: Ring 100 m		Dimension	
277 180	277 181	228 991	1 x 4 x 0.50
277 182	277 183	228 992	2 x 4 x 0.50
277 184	277 185	228 993	3 x 4 x 0.50
277 186			5 x 4 x 0.50

Packing unit: Pull-Quick 300 m			Dimension	Weight/kg
377 180	377 181	328 991	1 x 4 x 0.50	5,7
377 182	377 183	328 992	2 x 4 x 0.50	10,8
377 184	377 185	328 993	3 x 4 x 0.50	13,2
377 186			5 x 4 x 0.50	20,4

* the max. tensile load refers to a cable laying with a directional change ≤ 45°

Standard execution type 8334-U, Core 0.80 / 1.40 mm

Part no.	Part no.	Part no.	Dimension	External diameter	Cable weight	Copper weight	max. tensile load*
[halogen-free grey]				[mm]	[kg/km]	[kg/km]	[daN]
177 192			1 x 4 x 0.80	4.7	36	18	20
177 193			2 x 4 x 0.80	7.8	75	36	25
177 194			3 x 4 x 0.80	8.2	95	54	30
177 195			5 x 4 x 0.80	10.2	154	90	35
177 196			7 x 4 x 0.80	11.1	202	127	40
177 197			10 x 4 x 0.80	14.0	295	181	50
177 198			15 x 4 x 0.80	16.2	418	272	60
177 199			20 x 4 x 0.80	18.6	559	363	80

Packing unit: Ring 100 m			Dimension
277 192			1 x 4 x 0.80
277 193			2 x 4 x 0.80

Packing unit: Pull-Quick 300 m			Dimension	Weight/kg
377 192			1 x 4 x 0.80	10,8
377 193			2 x 4 x 0.80	22,5

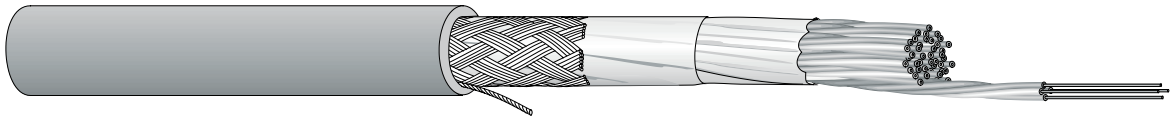
* the max. tensile load refers to a cable laying with a directional change ≤ 45°

Swiss Standard

Telephone Cable Type U72 M

according to Swisscom Specifications 844.13

Dätwyler Cables



Type 8635-U

Product information

Application

Building installation cable according to ISDN range (Swissnet)
Screened connection cable for measurement, control and closed loop systems

Construction

Conductor	0,6 mm Cu wire solid, tinned
Core	1,20 mm, PE insulation
Twisting type	quad
Ribbon	transparent synthetic tape
Screening	Alu laminated tape, and Cu tinned braiding
Outer sheath	zero-halogen, grey RAL 7035

Mechanical properties

Min. bending radius	8 x cable diameter
Temperature range	-20°C to +80°C

General properties

Colour coding	according to IEC 189-2
Marking	Dätwyler U72M, manufacturing year, manufacturing no, metre

Electrical properties

Description		Conductor 0.60 mm	
Electrical resistance Ω/km		≤ 136	
Resistance unbalance core-to-core %		≤ 2	
Mutual Capacitance (nom.) pF/m	1 quad	48 (55 max.)	
Mutual Capacitance (max.) pF/m	≥ 2 quad	44 (55 max.)	
Coupling Capacitance (at f= 800 Hz)	k_1	≤ 100	
pF/500m	$k_{2,3}$	≤ 750	
Earth unbalance pF/500m	e_1, e_2	≤ 750	
Characteristic Impedance Ω		1 quad	≥ 2 quad
(guidance values)	at f = 10 kHz	221	229
	20 kHz	165	173
	100 kHz	120 (130± 15)	130 (130± 15)
	340 kHz	116	125
	600 kHz	111	121
	1000 kHz	109	120
	2000 kHz	108	118
	5000 kHz	106	117
Characteristic Attenuation dB/100m		1 quad	≥ 2 quad
(guidance values)	at f = 10 kHz	0.35	0.32
	20 kHz	0.43	0.39
	100 kHz	0.56 (max. 0.70)	0.50 (max. 0.70)
	340 kHz	0.90 (max. 1.20)	0.81 (max. 1.20)
	600 kHz	1.20	1.08
	1000 kHz	1.54	1.37
	2000 kHz	2.16	1.93
	5000 kHz	3.41	3.30
Near Cross talk attenuation dB	≤ 7 quad	60 - 65	
	> 7 quad	55 - 60	
Earth unbalance attenuation dB	at f ≤ 100 kHZ	≥ 46	
	at f ≤ 1000 kHZ	≥ 43	
Transfer impedance mΩ/m	at ≥ f ≥ 2000 kHz		
With >4 twisted elements under common screen		10 max.	
With ≤ 4 twisted elements under common screen		30 max.	
Test voltage core-to-core kV	1 min. at 50 Hz	2	
Test voltage core-to-screen kV	1 min. at 50 Hz	2	

Type 8635-U

Product information

Standard execution type 8635-U, Core 0.60 / 1.20 mm

Part no.	Dimension	External diameter	Cable weight	Copper weight	max. tensile load*
		[mm]	[kg/km]	[kg/km]	[daN]
177 200	1 x 4 x 0.60	5.4	45	26	20
177 201	2 x 4 x 0.60	7.9	80	43	40
177 202	3 x 4 x 0.60	8.2	93	55	45
177 203	5 x 4 x 0.60	10.3	150	90	50
177 205	10 x 4 x 0.60	14.2	267	161	60
177 206	15 x 4 x 0.60	16.2	351	220	70
177 207	20 x 4 x 0.60	18.1	457	289	80
178 795	30 x 4 x 0.60	21.8	627	399	100
178 849	50 x 4 x 0.60	27.4	981	633	130

Packing unit: Ring 100 m	Dimension
277 200	1 x 4 x 0.60
277 201	2 x 4 x 0.60
277 202	3 x 4 x 0.60
277 203	5 x 4 x 0.60

Packing unit: Pull-Quick 300 m	Dimension	Weight/kg
377 200	1 x 4 x 0.60	13,5

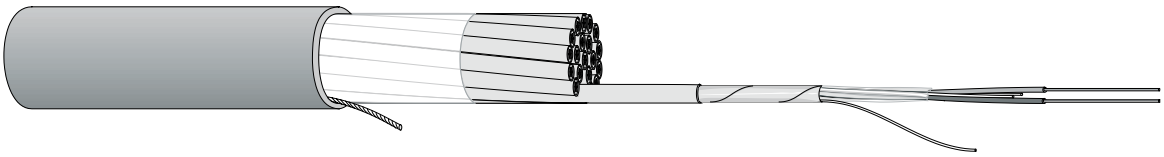
* the max. tensile load refers to a cable laying with a directional change ≤ 45°

Swiss Standard

Telephone Cable Type U72 MP

according to Swisscom Specifications 844.13

Dätwyler Cables



Type HF 4834-U

Product information

Application

Connection cable for data transmission, 2 Mbit/s interface cable
May be used where high near end cross talk attenuation values are required

Construction

Single cable

Conductor	0,4 mm Cu wire solid, tinned
Core	0,90 mm, PE insulation
Twisting type	pair
Ribbon	transparent synthetic tape
Screening	u metal mixture
Outer sheath	PVC, grey RAL 7035

Multiple cable

Twisting type	layer
Outer sheath	PVC, grey RAL 7035

Mechanical properties

Min. bending radius	8 x cable diameter
Temperature range	-20°C to +80°C

General properties

Colour coding	according to IEC 189-2
Marking	Dätwyler U72MP, manufacturing year, manufacturing no, metre

Electrical properties

Description		Conductor 0.40 mm
Electrical resistance Ω/km		≤ 306
Resistance unbalance core-to-core %		≤ 2
Mutual Capacitance (nom.) pF/m		53
Mutual Capacitance (max.) pF/m		59
Earth unbalance pF/500m		≤ 1000
Characteristic Impedance Ω (guidance values)	at f = 10 kHz	306
	20 kHz	223
	100 kHz	147
	340 kHz	133
	600 kHz	129
	1000 kHz	127 (max. 135)
	2000 kHz	125
	5000 kHz	123
Characteristic Attenuation dB/100m (guidance values)	f = 10 kHz	0.56
	20 kHz	0.71
	100 kHz	1.00
	340 kHz	1.50
	600 kHz	2.10
	1000 kHz	2.80 (max. 3.10)
	2000 kHz	4.90
	5000 kHz	11.00
Near Cross talk attenuation dB	at f ≤ 1 MHz	≥ 80
Earth unbalance attenuation dB	at f ≤ 100 kHZ	≥ 46
	100 < f ≤ 1000 kHZ	≥ 43
Transfer impedance mΩ/m	at f ≤ 2 MHz	600
	at f ≤ 30 MHz	2000
Test voltage core-to-core kV	1 min. at 50 Hz	2
Test voltage core-to-screen kV	1 min. at 50 Hz	2
Test voltage screen-to-screen kV	1 min. at 50 Hz	2

Typ HF 4834-U

Product information

Single Cable 1 x 2 x 0.40, type HF 2605/1-U, Core 0.40 / 0.90 mm

Part no.	Dimension	External diameter	Cable weight	Copper weight	max. tensile load*
		[mm]	[kg/km]	[kg/km]	[daN]
165 554	1 x 2 x 0.40	3.1	22	3.5	5
Packing unit: Ring 100 m	**Dimension**				
265 554	1 x 2 x 0.40				
Packing unit: Pull-Quick 300 m	**Dimension**	**Weight/kg**			
365 554	1 x 2 x 0.40	6,6			

* the max. tensile load refers to a cable laying with a directional change ≤ 45°

Multiple cable n x 2 x 0.40, type HF 4834-U, Core 0.40 / 0.90 mm

Part no.	Dimension	External diameter	Cable weight	Copper weight	max. tensile load*
		[mm]	[kg/km]	[kg/km]	[daN]
165 552	2 x 2 x 0.40	7.3	50	7	8
168 329	3 x 2 x 0.40	7.5	62	10	11
165 553	4 x 2 x 0.40	8.5	73	14	15
165 540	8 x 2 x 0.40	13.1	150	27	25
165 543	10 x 2 x 0.40	13.1	162	34	30
163 288	20 x 2 x 0.40	17.1	295	68	40
Packing unit: Ring 100 m	**Dimension**				
265 552	2 x 2 x 0.40				
268 329	3 x 2 x 0.40				
Packing unit: Pull-Quick 300 m	**Dimension**	**Weight/kg**			
365 552	2 x 2 x 0.40	15,0			
468 329	3 x 2 x 0.40	18,6			

* the max. tensile load refers to a cable laying with a directional change ≤ 45°

Swiss Standard

Telephone Cable Type U92 M (Connection Cable)

according to Swisscom Specifications 844.13

Dätwyler Cables

Single Cable type HF-4803-U

Product information

Application

Connection cable for data transmission, 2 Mbit/s interface cable
May be used where high near end cross talk attenuation values are required

Construction

Single cable

Conductor	0,5 mm Cu wire solid
Core	0,95 mm, PE Insulation
Twisting type	quad
Intermediate Sheath	PE
Screening	Al-PETP layer and Cu tinned braiding, with screen connection wire
Sheath	Zero-halogen grey RAL 7035

Mechanical properties

Min. bending radius	8 x cable diameter
Temperature range	-20°C to +80°C

General properties

Colour coding	according to IEC 189-2
Marking	Dätwyler U92M, manufacturing year, manufacturing no, metre

With Inspection Wire

Part no.	Dimension	External diameter [mm]	Cable weight [kg/km]	Copper weight [kg/km]	max. tensile load* [daN]
191 363	1 x 4 x 0.50	5.2	42	24	30

Packing unit: Ring 100 m	Dimension
291 363	1 x 4 x 0.50

Packing unit: Pull-Quick 300 m	Dimension	Weight/kg
391 363	1 x 4 x 0.50	12,6

* the max. tensile load refers to a cable laying with a directional change ≤ 45 deg

Swiss Standard

Telephone Cable Type U92 M (Connection Cable)

according to Swisscom Specifications 844.13

Type HF-4803-U

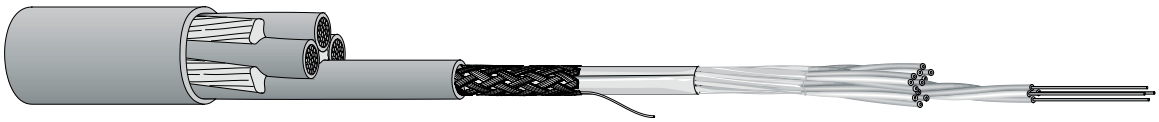
Product information

Electrical properties

Description		Conductor 0.50mm
Electrical resistance Ω/km		≤ 195.6
Resistance unbalance core-to-core %		≤ 2
Mutual Capacitance (nom.) pF/m		41
Mutual Capacitance (max.) pF/m		50
Coupling Capacitance	k_1	≤ 100
(at f= 800 Hz) pF/500m	$k_{2,3}$	≤ 750
Earth unbalance pF/500m	e_1, e_2	≤ 750
Characteristic Impedance Ω	at f = 10 kHz	272
(guidance values)	20 kHz	199
	100 kHz	130
	200 kHz	124
	600 kHz	117
	1000 kHz	115 (120± 12)
	2000 kHz	113
	5000 kHz	111
Characteristic Attenuation dB/100m	at f = 10 kHz	0.38
(guidance values)	20 kHz	0.49
	100 kHz	0.69
	200 kHz	0.84
	600 kHz	1.38
	1000 kHz	1.78 ≤ 2.1
	2000 kHz	2.51
	5000 kHz	3.95
Near Cross talk attenuation dB	for f ≤ 1 MHz	≥ 60
Earth unbalance attenuation dB	for f ≤ 100 kHz	≥ 46
	for 100 < f ≤ 1000 kHz	≥ 43
Transfer impedance mΩ/m	for f ≤ 2 MHz	≤ 20
	for 2< f ≤ 100 MHz	≤ 2
Test voltage core-to-core kV	1 min. at 50 Hz	2
Test voltage core-to-screen kV	1 min. at 50 Hz	2
Test voltage screen-to-screen kV	1 min. at 50 Hz	2

Telephone Cable Type U92 M
according to Swisscom Specifications 844.13

Dätwyler Cables



Single Cable type HF-4811-U
Multiple Cable type HF-4202-U

Product information

Application

Exchange cable for data transmission in central offices

Construction

Single cable

Conductor	0,5 mm Cu wire solid
Core	0,95 mm, PE Insulation
Twisting type	4 x quad
Ribbon	transparent synthetic tape
Screening	AL-PETP layer and Cu tinned braiding, with screen connection wire
Sheath	Zero-halogen grey RAL 7035

Multiple cable

Twisting type	2 – 10 single cable, layer-twisted with synthetic tape wrapped around
Outer Sheath	Zero-halogen grey RAL 7035; with ripping yarn

Mechanical properties

Min. bending radius	single cable: 8 x cable diameter multiple cable: 10 x cable diameter
Temperature range	-20°C to +80°C

General properties

Colour coding	according to IEC 189-2
Marking	Dätwyler U92M, manufacturing year, manufacturing no, metre

Single Cable

Part no.	Dimension	External diameter	Cable weight	Copper weight	max. tensile load*
		[mm]	[kg/km]	[kg/km]	[daN]
191 364	1 x (4 x 4 x 0.50)	7.7	88	56	30

Packing unit: Ring 100m	Dimension
291 364	1 x (4 x 4 x 0.50)

Packing unit: Pull-Quick 200m	Dimension	Weight/kg
391 364	1 x (4 x 4 x 0.50)	26,4

* the max. tensile load refers to a cable laying with a directional change ≤ 45 deg

Multiple Cable

Part no.	Dimension	External diameter	Cable weight	Copper weight	max. tensile load*
		[mm]	[kg/km]	[kg/km]	[daN]
188 493	2 x (4 x 4 x 0.50)	16.6	253	123	40
191 365	4 x (4 x 4 x 0.50)	20.0	440	246	50
191 366	6 x (4 x 4 x 0.50)	24.5	646	369	60

* the max. tensile load refers to a cable laying with a directional change ≤ 45 deg

Telephone Cable Type U92 M

according to Swisscom Specifications 844.13

Single Cable type HF-4811-U
Multiple Cable type HF-4202-U

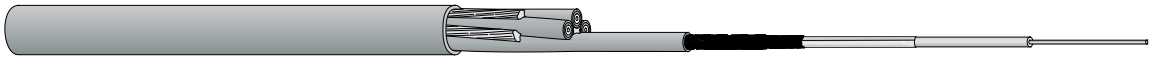
Product information

Electrical properties

Description		Conductor 0.50 mm
Electrical resistance Ω/km		≤ 195.6
Resistance unbalance core-to-core %		≤ 2
Mutual Capacitance (nom.) pF/m		39
Mutual Capacitance (max.) pF/m		50
Coupling Capacitance	k_1	≤ 100
(at f= 800 Hz) pF/500m	$k_{2,3}$	≤ 750
Earth unbalance pF/500m	e_1, e_2	≤ 750
Characteristic Impedance Ω	at f = 10 kHz	284
(guidance values)	20 kHz	208
	100 kHz	140
	200 kHz	133
	600 kHz	127
	1000 kHz	125 (120± 12)
	2000 kHz	123
	5000 kHz	121
Characteristic Attenuation dB/100m	at f = 10 kHz	0.38
(guidance values)	20 kHz	0.48
	100 kHz	0.66
	200 kHz	0.79
	600 kHz	1.29
	1000 kHz	1.66 ≤ 2.1
	2000 kHz	2.33
	5000 kHz	3.65
Near Cross talk attenuation dB	for f ≤ 1 MHz	≥ 60
Earth unbalance attenuation dB	bei f ≤ 100 kHz	≥ 46
	for 100 < f ≤ 1000 kHz	≥ 43
Transfer impedance mΩ/m	for f ≤ f 2 MHz	≤ 20
	for 2< f ≤ 100 MHz	≤ 2
Test voltage core-to-core kV	1 min. at 50 Hz	2
Test voltage core-to-screen kV	1 min. at 50 Hz	2
Test voltage screen-to-screen kV	1 min. at 50 Hz	2

Telephone Cable Type U92 K
according to Swisscom Specifications 844.13

Dätwyler Cables



Single Cable type HF-4806-U
Multiple Cable type HF-4807-U

Product information

Application

Exchange cable for data transmission in central offices

Construction

Single cable

Conductor	0,62 mm Cu wire solid
Core	2,85 mm, PE Insulation
Screening	AL-PETP layer and Cu tinned braiding
Sheath	Zero-halogen

Multiple cable

Twisting type	2 – 10 single cable, layer-twisted with synthetic tape wrapped around
Outer Sheath	Zero-halogen; with ripping yarn

Mechanical properties

Min. bending radius	single cable: 8 x cable diameter multiple cable: 10 x cable diameter
Temperature range	-20°C to +80°C

General properties

Colour coding	according to IEC 189-2
Marking	Dätwyler U92K, manufacturing year, manufacturing no, metre

Single Cable

Part no.	Dimension	External diameter	Cable weight	Copper weight	max. tensile load*
		[mm]	[kg/km]	[kg/km]	[daN]
191 367	1 x Coax	5.2	48	36	8
Packing unit: Ring 100m					
291 367					
Packing unit: Pull-Quick 300m					
391 367					

* the max. tensile load refers to a cable laying with a directional change ≤ 45 deg

Multiple Cable

Part no.	Dimension	External diameter	Cable weight	Copper weight	max. tensile load*
		[mm]	[kg/km]	[kg/km]	[daN]
191 368	4 x Coax	14.7	253	143	25
191 369	8 x Coax	20.2	485	285	40

* the max. tensile load refers to a cable laying with a directional change ≤ 45 deg

Swiss Standard

Telephone Cable Type U92 K
according to Swisscom Specifications 844.13

Single Cable type HF-4806-U
Multiple Cable type HF-4807-U

Product information

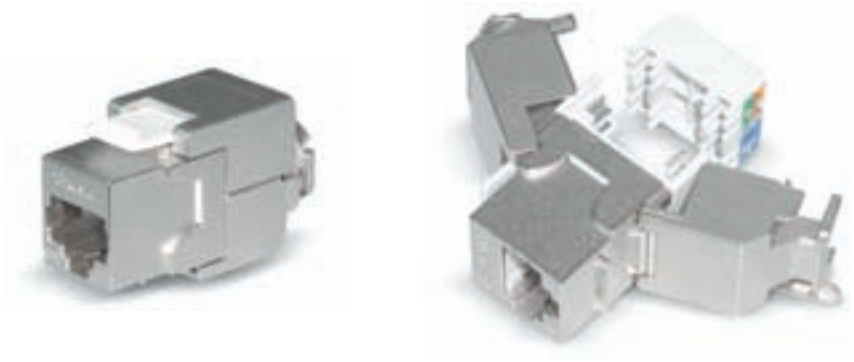
Electrical properties

Description		Conductor 0.62 mm
Electrical resistance Ω/km	Coaxial Inside conductor Coaxial Outside conductor	≤ 67.9 8
Operating Capacitance nF/km	at 800 Hz	58
Characteristic Impedance Ω (guidance values)	Duty value at f = 1 MHz for 10 – 100 MHz	75 ± 3 75 ± 2
Characteristic Attenuation dB/100 m (guidance values)	for f = 1 MHz 4 MHz 10 MHz 17 MHz 40 MHz 70 MHz 78 MHz 100 MHz 155 MHz	1.2 2.3 3.6 4.7 ≤ 5.5 7.2 9.5 ≤ 9.8 9.7 ≤ 10.0 11.4 14.1
Near and Far Cross talk attenuation dB	for 2 < f ≤ 100 MHz	≥ 80
Transfer impedance mΩ/m	for f ≤ 2 MHz 2 < f ≤ 100 MHz	≤ 15 ≤ 2
Return Loss dB	for 0.1 ≤ f ≤ 0.4 MHz 0.4 < f ≤ 7.0 MHz 7.0 < f ≤ 34 MHz 34 < f ≤ 240 MHz	Length ≥ 600 m ≥ 18 Length ≥ 600 m ≥ 24 Length ≥ 150 m ≥ 24 Length ≥ 50 m ≥ 21
Test voltage V_{eff} 1 min. 50Hz	Single cable: Multiple cable:	Inside conductor – Outside conductor 500 Outside conductor – Earth 2000 Outside conductor – Outside conductor 3000

RJ45 Module shielded Cat. 6A/E_A

unilan® Module KS-T 6A 1/8 Tool-less Cat. 6A/E_A for 10GBase-T

Dätwyler Cables



unilan® Module KS-T 6A 1/8 Tool-less Cat. 6A/E_A shielded

Product information

unilan® Module KS-T 6A 1/8 Tool-less Cat. 6A/E_A shielded

Application

The Module KS-T 6A toolless is designed to shorten the termination time and reduce installation labors. It is spezified according to the connecting hardware standard TIA/EIA 568-B.2-10: 2008 for augmented Cat.6 (Cat 6A) up to 500 MHz.
In connection with data cables Cat.7 all international Channel requirements for class E_A according to ISO/IEC 11801:2002/Amd.1:2008 are fulfilled.
Therfore all applications up to class EA are safe usable, such as 10 Gigabit Ethernet in compliance with IEEE 802.3an.

Description

Solid build zinc alloy connector housing with snap-in mounting for installation into Keystone-Solution panels and outlets.
Spring wire with phosphor bronze alloy plated with gold.
For wire connecting a wire-manager is used in combination with 2 integrated moveable housing wings for tool-less IDCconnecting
The complete metal shield ensure a durable fully shielded environment, protects the module and guarantees stable electric performance. Strain relief via cable tie. Only for cutting the wires a plane wire cutter is necessary.
If wanted, an equipotential bondig cable can be connected to a groundig bar directly on the module.

In case of mistake, the wiring is re-usable !

Mechanical properties

Wire Diameter	0.40mm (AWG 26) to 0.65mm (AWG 22) for solid wires AWG26/7 bare stranded copper wire with 7 stranded wires Re-usable for AWG 22, AWG 23 and AWG 24 when using a wire with the same or bigger cross section.
Diameter over insulation	0.7mm to 1.4mm (1.6mm)
Temperature range	Storage: -40°C to +70°C Installation: -10°C to +60°C Operation: -10°C to +60°C

Standards

ISO/IEC 60603-7-5
ISO/IEC 11801:2002 / Amd. 1:2008 (Class E_A)
EN 50173:2007
TIA/EIA 568-B.2-10:2008 (Channel Cat.6A)
EN 55022

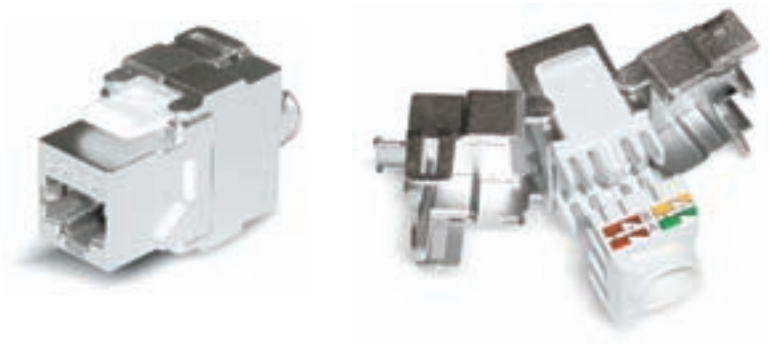
General Characteristics

Termination	Wire guides with colour coding according to T568-A or T568-B
M	Modular
Cat/Class	Cat 6A / Class E_A

Article No.	Description	Colour	PU
418 060	unilan® Module KS-T 6A 1/8 Tool-less Cat. 6A/E_A shielded	metallic	10 pieces

RJ45 Module shielded Cat. 6/E_A

unilan® Module KS-T 1/8 Tool-less Cat. 6/E_A for 10GBase-T



unilan® Module KS-T 1/8 Tool-less Cat. 6/E_A shielded

Product information

unilan® Module KS-T 1/8 Tool-less Cat. 6/E_A shielded

Application

KS-T 1/8 Tool-less is a Modul which is designed to shorten the termination time and reduce installation labors. For the transmission of digital and analogue voice, video and data signals, that are all solutions according to Class E respectively D.
In connection with data cables Cat.7 all applications are also usable up to class E_A, that is10 Gigabit Ethernet in compliance with IEEE 802.3an.

Description

Solid build zinc alloy connector housing with snap-in mounting for installation into Keystone-Solution panels and outlets.
Spring wire with phosphor bronze alloy plated with gold.
For wire connecting a wire-manager is used in combination with 2 integrated moveable housing wings for tool-less IDCconnecting
The complete metal shield ensure a durable fully shielded environment, protects the module and guarantees stable electric performance. Strain relief via cable tie. Only for cutting the wires a plane wire cutter is necessary.

In case of mistake, the wiring is re-usable !

Mechanical properties

Wire Diameter	0.40mm (AWG 26) to 0.65mm (AWG 22) for solid wires AWG26/7 bare stranded copper wire with 7 stranded wires Re-usable for AWG 22, AWG 23 and AWG 24 when using a wire with the same or bigger cross section.
Diameter over insulation	0.7mm to 1.4mm (1.6mm)
Temperature range	Storage: -40°C to +70°C Installation: -10°C to +60°C Operation: -10°C to +60°C

Standards

ISO/IEC 60603-7-5
ISO/IEC 11801:2002 / Amd. 1:2008 (Class E_A)
EN 50173:2007
TIA/EIA 568-B.2-10:2008
EN 55022

General Characteristics

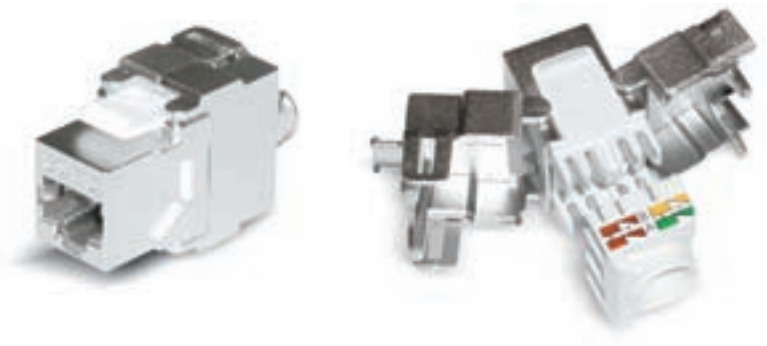
Termination	Wire guides with colour coding according to T568-A or T568-B
M	Modular
Cat/Class	Cat 6 / Class E_A

Article No.	Description	Colour	PU
418 053	unilan® Module KS-T 1/8 Tool-less Cat. 6/E_A shielded	metallic	10 pieces

RJ45 Module shielded Cat. 5e

unilan® Module KS-T5 1/8 Tool-less Cat. 5e f0r 1GBase-T

Dätwyler Cables



unilan® Module KS-T 1/8 Tool-less Cat. 5e shielded

Product information

unilan® Module KS-T 1/8 Tool-less Cat. 5e shielded

Application

KS-T5 1/8 is a Modul which is designed to shorten the termination time and reduce installation labors. For the transmission of digital and analogue voice, video and data signals, that are all solutions according to Class D, (e.g. 1GBase-T)

Description

Solid build zinc alloy connector housing with snap-in mounting for installation into Keystone-Solution panels and outlets.
Spring wire with phosphor bronze alloy plated with gold.
For wire connecting a wire-manager is used in combination with 2 integrated moveable housing wings for tool-less IDCconnecting
The complete metal shield ensure a durable fully shielded environment, protects the module and guarantees stable electric performance. Strain relief via cable tie. Only for cutting the wires a plane wire cutter is necessary.

In case of mistake, the wiring is re-usable !

Mechanical properties

Wire Diameter	0.40mm (AWG 26) to 0.65mm (AWG 22) for solid wires AWG26/7 bare stranded copper wire with 7 stranded wires Re-usable for AWG 22, AWG 23 and AWG 24 when using a wire with the same or bigger cross section.
Diameter over insulation	0.7mm to 1.4mm (1.6mm)
Temperature range	Storage: -40°C to +70°C Installation: -10°C to +60°C Operation: -10°C to +60°C

Standards

ISO/IEC 60603-7-3
ISO/IEC 11801:2002
EN 50173:2007
TIA/EIA 568-B.2-1:2002
EN 55022

General Characteristics

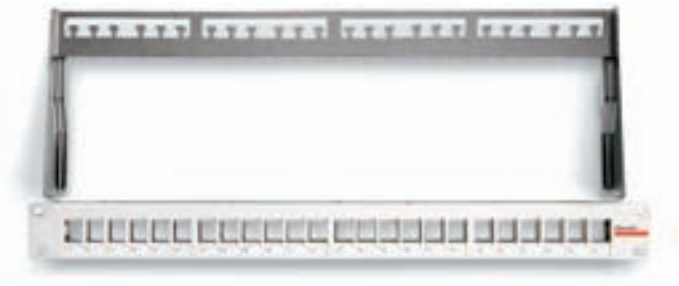
Termination	Wire guides with colour coding according to T568-A or T568-B
M	Modular
Cat/Class	Cat 5e / Class D

Article No.	Description	Colour	PU
418 055	unilan® Modul KS-T5 1/8 Tool-less Cat. 5e shielded	metallic	10 pieces

Patch Panel KS 24x

for 24 Modules with Keystone fitting
shielded

Blank covers in black and white, for Keystone openings in Patch Panels



unilan® Patch Panel KS 24x - shielded

Product information

unilan® Patch Panel KS 24x shielded

Application

Shielded patch panel to be used with up to 24 Modules with Keystone fitting.

For the modules PS-GG45 7A is recommended the Patch Panel MGK 24x with front made of stainless steel.
Snap in modules are easily fitted into the patch panel.
Unused ports can be covered with blanking elements.

Description

Front cover made of flame retardant compound, UL94V-0 rated in combination with stainless steel and a cable strain relief.
Frontview in grey, similar to RAL 7035 or in black, similar to RAL 9005.
Modules are not part of the delivery.
Strain relief with cable ties.

Suitable for the following unilan® Modules:
- PS-GG45 7A 1000 MHz 4P shielded (Patch Panel MGK 24x)
- RJ45 Modul KS-T 1/8 Tool-Less shielded

Dimensions

Width	482 mm (19'')
Depth	160 mm (including cable strain relief)
Height	44 mm (1U)

Article No.	Description	Colour (similar)	PU
418 019	unilan® Patch Panel KS 24x, 19'' 1U , for 24x RJ45-Keystone Modules (FTP) (delivered without modules)	black RAL 9005	1 piece
418 020	unilan® Patch Panel KS 24x, 19'' 1U , for 24x RJ45-Keystone Modules (FTP) (delivered without modules)	grey RAL 7035	1 piece
440 042	unilan® Patch PanelMGK 24x, 19'' 1U , for 24x RJ45-Keystone Modules (FTP) (delivered without modules) specially for PS-GG45 7A Modules	stainless steel	1 piece

Article No.	Accessories/Description	Colour (similar)	PU
418 010	Blank cover for Keystone Openings	white	10 pieces
418 011	Blank cover for Keystone Openings	black	10 pieces
418 060	unilan® Module KS-T 6A 1/8 Tool-less Cat. 6A/E_A shielded	metall	10 pieces
418 053	unilan® Module KS-T 1/8 Tool-less Cat. 6/E_A shielded	metallic	10 pieces
418 055	unilan® Module KS-T5 1/8 Tool-less Cat. 5e shielded	metallic	10 pieces
400 100	unilan® Module PS-GG45 7A 1000 MHz 4P shielded	metallic	1 piece

Faceplate 1x, 2x, 3x

flush duct mounted
for 1, 2 or 3 RJ45-Modules
with Keystone fitting

Dätwyler Cables

Faceplate 1- Port angled

Faceplate 2- Ports angled

Faceplate 3- Ports angled

Similar figures

Product information

unilan® Faceplates for unilan® RJ45-Keystone Modules, angled

Description

Faceplates applicable for installation of 1, 2 or 3 Modules with Keystone fitting
The modules are easily fitted into the faceplates. Fitted with integrated shutters.
Supplied with integrated labeling strips. Delivered without modules.

Suitable for the following unilan® Modules:
- PS-GG45 7A 1000 MHz 4P shielded
- RJ45 Modul KS-T 1/8 Tool-Less shielded
- RJ45 Modul KU-T 1/8 Tool-Less unshielded

Dimension

unilan® faceplates:	German standard
Mounting plate:	70 x 70mm
Central Plate:	50 x 50 mm
Cover Frame:	80 x 80 mm

Colour

similar RAL 9010, white

Article No.		Description	Colour (similar)	PU
185 866	UP-K	unilan® Faceplate for 1 Module withKeystone Snap-in fitting	white, RAL 9010	1 Piece
185 867	UP-K	unilan® Faceplate for 2 Modules withKeystone Snap-in fitting	white, RAL 9010	1 Piece
185 869	UP-K	unilan® Faceplate for 3 Modules withKeystone Snap-in fitting	white, RAL 9010	1 Piece

German Standard

Faceplate 2x

flush mounted

with straight outlet for 2 RJ45-Modules
with Keystone fitting

unilan® Faceplate 2 Port
with straight outlet

Blank covers for
unused openings

Similar figures

Product information

unilan® Faceplate for RJ45-Keystone Modules with straight outlet

Description

German standard faceplate for wall mounting.
The snap in modules are easily fitted into the faceplate.
Supplied with labeling strips.
Delivered without Keystone modules.
Easy to assemble.

Suitable for the following unilan® Modules:

- PS-GG45 7A 1000 MHz 4P shielded
- RJ45 Modul MS-K 1/8 Cat.6/E_A shielded
- RJ45 Modul KS-T 1/8 Tool-Less shielded
- RJ45 Modul KU-T 1/8 Tool-Less unshielded

Dimension

unilan® faceplates:	German standard
Central Plate:	50 x 50 mm
Cover Frame:	80 x 80 mm

Colour

similar RAL 9010, white

Article No.		Description	Colour (similar)	PU	
185 861	UP	unilan® Faceplate, straight outlet for 2 x RJ45-Keystone modules, without modules	white, RAL 9010	1 Piece	

Article No.	Accessories/Description	Colour (similar)	PU
418 010	Blank cover for Keystone Openings	white	10 pieces

Faceplate 2x

flush or surface mounted /duct mounted

for 2 RJ45 Modules with Keystone-fitting

Dätwyler Cables

Duct mounted (UP-K)
without cover frame
with mounting plate
70 x 70 mm

Flush mounted (UP)
With cover frame
88 x 88 mm

Flush mounted (UP)
with distance- and
cover frame

Surface mounted (AP)
with surface mount box

Product information

unilan® Faceplate 2x for 2 RJ45 Modules - angled

Description

Modular designed data faceplate in different variants for need-based Installations: for flush oder surface mounting or duct systems.

Application

All faceplate variants are assembled with inserts for two RJ45-Modules.

Suitable for the following unilan Modules:

- RJ45 Module KS-T 1/8 shielded
- RJ45 Module KU-T 1/8 unshielded
- PS-GG45 7A 4P 1000 MHz shielded
- Blind Cover

In Order that the mounting in a flush-assembly cup offers enough space for the cable installation and also an angled-outlet is possible, a faceplate with a distance-frame is available.

Dimensions

Cover frame	88 x 88 mm
Mounting plate	70 x 70 mm
Distance frame	60 x 60 mm
Surface mount box	86 x 86 x 67 mm

Article No.	Description	Colour (similar)	PU
on request	UP-K Faceplate 2x with insert for 2 modules KS-T, KU-T, PS-GG45 without cover frame (without modules)	white RAL 9016	1 piece
on request	UP Faceplate 2x with insert for 2 Modules KS-T, KU-T, PS-GG45 + distance frame + cover frame (without modules)	white RAL 9016	1 piece
on request	AP Faceplate 2x with insert for 2 Modules KS-T, KU-T, PS-GG45 with surface mount box (without modules)	white RAL 9016	1 piece
on request	Blank cover (for above Faceplates 2x)	white RAL 9016	10 pieces
on request	UP Faceplate 2x with insert for 2 Modules KS-T, KU-T, PS-GG45 with cover frame (wihout modules)	white RAL 9016	1 piece

FLF Faceplate 2x white
for 2 Modules KS-T 1/8, KU-T 1/8
or PS-GG45

FLF Faceplate 2x black
for 2 Modules KS-T 1/8, KU-T 1/8
or PS-GG45

Product information

unilan® FLF faceplate 2x for 2 Modules KS-T 1/8, KU-T 1/8 or PS-GG45

Description

FLF-Faceplate Standard for the integration of up to 2 modules.
Easy mounting in frames, profiles, ducts, control panels etc. through screw-less fastening, using a catch spring. Equipped with dust protection covers, which also serve as covers for unused ports. Delivered unloaded.

Suitable for the following unilan Modules:

- RJ45 Module KS-T 1/8 shielded
- RJ45 Module KU-T 1/8 unshielded
- PS-GG45 7A 4P 1000 MHz shielded

Dimensions

W x H x D 37,5 x 62,5 x 40 mm

Article No.	Description	Colour (similar)
on request	FLF Faceplate, for 2 Modules KS-T 1/8, KU-T 1/8 or PS-GG45 (without modules)	white RAL 9010
on request	FLF Faceplate, for 2 Modules KS-T 1/8, KU-T 1/8 or PS-GG45 (without modules)	black

Article No.	Accessories/Description	Colour	PU
418 060	unilan® Module KS-T 6A 1/8 Tool-less Cat. 6A/E_A shielded	metallic	10 pieces
418 053	unilan® Module KS-T 1/8 Tool-less Cat. 6/E_A shielded	metallic	10 pieces
418 055	unilan® Module KS-T5 1/8 Tool-less Cat. 5e shielded	metallic	10 pieces
418 070	unilan® RJ45 Module KU-T 1/8 Cat.6 unshielded Tool-less	white	10 pieces
418 071	unilan® RJ45 Module KU-T 1/8 Cat.6 unshielded Tool-less	black	10 pieces
418 072	unilan® RJ45 Module KU-T 1/8 Cat.5e unshieldedTool-less	white	10 pieces
418 073	unilan® RJ45 Module KU-T 1/8 Cat.5e unshielded Tool-less	black	10 pieces
400 102	unilan® Module PS-GG45 7A 1000 MHz 4P shielded	metallic	1 piece

Faceplate 1x, 2x

flush duct mounted
for 1 or 2 RJ45-Modules
with Keystone fitting

Dätwyler Cables

Faceplate 1- Port angled

Faceplate 2- Ports angled

Similar figures

Product information

unilan® Faceplates for unilan® RJ45-Keystone Modules, angled

Description

Applicable for 1x respectively 2x Keystone modules Cat.6 or Cat.5e, screened or unscreened.
The Keystone Modules are easily fitted into the faceplates.
Fitted with integrated shutters.
Supplied with labeling strips.
Delivered without Keystone modules.

Suitable for the following unilan® Modules:
- PS-GG45 7A 1000 MHz 4P shielded
- RJ45 Modul KS-T 1/8 Tool-Less shielded
- RJ45 Modul KU-T 1/8 Tool-Less unshielded

Dimension

unilan® faceplates:	British standard
Cover Frame:	86 x 86 mm

Colour

similar RAL 9010, white

Article No.		Description	Colour (similar to)	PU
185 862	UP-K	unilan® Faceplate for 1 x RJ45-Keystone modules, without modules	white, RAL 9010	1 Piece
185 863	UP-K	unilan® Faceplate for 2 x RJ45-Keystone modules, without modules	white, RAL 9010	1 Piece

British Standard

Faceplate 1x, 2x

flush mounted

with straight outlet for 1 or 2 RJ45-Modules
with Keystone fitting

Faceplate 1- Port straight outlet

Faceplate 2- Ports straight outlet

Similar figures

Product information

unilan® Faceplates for unilan® RJ45-Keystone Modules, straight outlet

Description

Applicable for 1x respectively 2x Keystone modules, screened or unscreened.
The Keystone modules are easily fitted into the faceplates.
Fitted with integrated shutters.
Supplied with labeling strips.
Delivered without Keystone modules.

Suitable for the following unilan® Modules:

- PS-GG45 7A 1000 MHz 4P shielded
- RJ45 Modul KS-T 1/8 Tool-Less shielded
- RJ45 Modul KU-T 1/8 Tool-Less unshielded

Dimension

unilan® faceplates:	British standard
Central Plate:	50 x 50 mm (2 x 25 x 50 mm)
Cover Frame:	86 x 86 mm

Colour

similar RAL 9010, white

Article No.	Description	Colour (similar to)	PU
185 864	unilan® Faceplate for 1 x RJ45-Keystone module, without module	white, RAL 9010	1 Piece
185 865	unilan® Faceplate for 2 x RJ45-Keystone module, without modules	white, RAL 9010	1 Piece

Surface Mount Box 2x, 4x

for installation on wall

for 2 or 4 RJ45 Modules with Keystone fitting

Dätwyler Cables

unilan® Surface Mount Box
for 2 or 4 Keystone Modules
without dust shutters

Blank cover for
unused openings

unilan® Surface Mount Box
for 2 or 4 Keystone Modules
with dust shutters

Product information

unilan® Surface Mount Box Series for RJ45 Keystone Modules

Description

Serie of compact boxes made of plastic for fast surface mount installation, prepared for intake max. 2 respectively 4 modules. All boxes with label area and optional with integrated dust shutters. All shielded and unshielded Keystone modules toolless KS-T 1/8, KU-T 1/8 as well as the PS-GG45 Modul (with clip) are easily fitted into the boxes. In case of mounting the toolless modules, the „knock out" in the bottem of the box must be removed. Delivery without modules.

Suitable for the following unilan® Modules:

- PS-GG45 7A 1000 MHz 4P shielded
- RJ45 Modul KS-T 1/8 Tool-Less shielded
- RJ45 Modul KU-T 1/8 Tool-Less unshielded

Dimension

unilan® Surface Mount Box for 2 Modules: 68 x 65 x 30 mm
unilan® Surface Mount Box for 4 Modules : 118 x 85 x 30 mm

Colour

similar RAL 9010, white

Article No.		Description	Colour (similar to)	PU
418 035	AP	unilan® Surface Mount Box for 2 Keystone Modules, delivery without modules	RAL 9010	1 Piece
418 036	AP	unilan® Surface Mount Box for 4 Keystone Modules, delivery without	RAL 9010	1 Piece
418 037	AP	unilan® Surface Mount Box with dust shutters for 2 Keystone Modules, delivery without modules	RAL 9010	1 Piece
418 038	AP	unilan® Surface Mount Box with dust shutters for 4 Keystone Modules, delivery without modules	RAL 9010	1 Piece

Article No.	Accessories/Description	Colour (similar)
418 010	Blank cover for Keystone Openings (1 Set = 10 pieces)	white

French Standard

Keystone Bezel for Modul 45 Systems

Bezel 1 Port
45 x 45 mm

Bezel 2 Ports
45 x 45 mm

Bezel 1 Port slim
45 x 22,5 mm

Similar figures

Product information

unilan® Keystone Bezels - for assembling with Modul 45 Systems, compatible with all unilan® Keystone jacks

Description

Keystone Bezel for assembling with Modul 45 Systems, with straight outlet
Fits in standard Legrand openings
Made of fire retardant material
All unilan Keystone modules (FTP, UTP) are easily fitted into the bezels
Fitted with integrated shutters and labeling strips
Delivery without Keystone modules

Suitable for the following unilan® Modules:

- PS-GG45 7A 1000 MHz 4P shielded
- RJ45 Modul KS-T 1/8 Tool-Less shielded
- RJ45 Modul KU-T 1/8 Tool-Less unshielded

Dimension

1 Port	45 x 45 mm	(French Standard)
1 Port (slim)	45 x 22,5 mm	(French Standard)
2 Ports	45 x 45 mm	(French Standard)

Colour

Bright white

Applications

Faceplate for 1 Module

Faceplate for 2 Modules

Samples for installation in Legrand Faceplates
(Faceplates are not deliverable by Dätwyler!)

Article No.	Description	Colour (similar)	PU
418 030	Keystone Bezel 1 Port, 45 x 45 mm for Modul 45 Systems	bright white	1 Piece
418 031	Keystone Bezel 1 Port - slim, 45 x 22,5 mm for Modul 45 Systems	bright white	1 Piece
418 032	Keystone Bezel 2 Ports, 45 x 45 mm for Modul 45 Systems	bright white	1 Piece

Technical changes reserved.

RJ45 Module shielded Cat. 6/E_A

unilan® Modul MS-K 1/8 Cat. 6/E_A for 10GBase-T

Dätwyler Cables

unilan® Module MS-K 1/8 Cat.6/E_A shielded

Dust cover
Set with 25 pieces
(for reparation)

Product information

unilan® RJ45-Module MS-K 1/8 Cat.6/E_A shielded

Application

For the transmission of digital and analogue voice- , video- and data signals.
The Module is specified up to 500 MHz. In connection with data cables Cat.7 or 7_A all applications of class D, E and E_A can be supported, that is including 10 Gigabit Ethernet in compliance with IEEE 802.3an

Description

Compact connector housing made of zink die casting.
Special construction for high packing density (max. 3 Modules per outlet).
2-Port version is design-compatible with faceplates of other manufacturers.
Excellent electrical performance, most suitable for 10 Gigabit Ethernet applications.
Suitable for Power over Ethernet (PoE) in compliance with IEEE 802.3 af
Tool-less wire connection.
360°-braid connection to the strain relief bar.
Strain relief bar fixed with a cable tie.
With snap-in mounting in patch panels and faceplates (special style of keystone module)

Mechanical properties

Wire range - solid	0,51 mm (AWG24) bis 0,63 mm (AWG22)
Wire range - flexible	dependent on the construction
Re-connection frequency	≤ 10-times at using the same or bigger wire
Wire sheath range	0,7 – 1,4 mm (1,6 mm)
Temperature range	on stock: - 40°C bis + 70°C
	during installation: - 10°C bis + 60°C
	in operation: - 20°C bis + 60°C

Standards

ISO/IEC 60603-7-5 (und -51 draft)
ISO/IEC 11801:2002 / Amd.1:2008 (Klasse E_A)
EN 50173:2007
TIA/EIA 568-B.2-10:2008
EN 55022

General Characteristics

Configuration	Pair-configuration according to T568- A clearly marked with a color code
Potential balancing	Module with connection option for a flat plug 6,3 mm
Mounting possibilites	suitable for Patch Panel PS-K 24x suitable for Faceplates MS-K 2 or 3-Port Version

Article No.	Description	Colour	PU
440 001	unilan® RJ45-Module MS-K 1/8 Cat.6a shielded, TIA-A	metallic	10 pieces
	OPTION: variant kind of mounting in existing installations with modules MS 1/8		
440 000	unilan® RJ45-Module MS-N 1/8 Cat.6a shielded, variant with MS-mounting, TIA-A	metallic	10 pieces
417 985	Dust cover MS-K for reparation (1 Set = 25 pieces)	grey	
417 986	Dust cover MS-K for reparation (1 Set = 25 pieces)	white RAL 9010	

Technical changes reserved.

Faceplate 2x, 3x
flush duct mounted
for 2 and 3 RJ45-Modules MS-K

Fig.1

Fig.2

unilan® faceplate RAL 1013
for 2 or 3 Modules MS-K 1/8,
with central plate, without cover frame

Fig.3

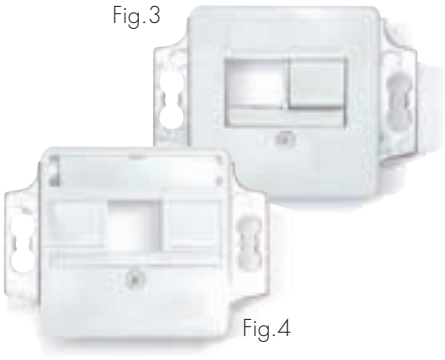


Fig.4

unilan® faceplate RAL 9010
for 2 or 3 Modules MS-K 1/8,
with central plate, without cover frame

Fig.5
cover frame
for unilan® faceplates

Product information

unilan® Faceplates for 2 and 3 RJ45 Modules MS-K 1/8 Cat.6/E_A shielded

Description

Useable for installation in cable flush duct - or flooring-systems.
In case of an installation in a flush mounted cup please use the Faceplate 2x UP !
Der mounting frame consists of zink die casting with connection possibility for equal potential bonding. The snap in modules are easily fitted into the faceplates. Unused ports are covered with blanking elements, which are able to break off. All faceplates have an area for labelling with transparent cover. The types No. 3 and 4 are complete in pure white, similar RAL 9010 and will supplied with pure white dust shutters for replacing against the preconnected shutters in grey at the modul.

The 2-port types (1+3) are design able with usual in trade TAE central plates.
The Modules are not part of the delivery!

Suitable for the following unilan® Modules:
- RJ45 Module MS-K 1/8 Cat.6/E_A shielded

Dimension

unilan® faceplates:

Mounting-Dimension	60 mm
Central Plate	50 x 50 mm
Cover frame	80 x 80 mm

Article No.	Fig.	Description	Colour (similar)
440 012	-	UP-K unilan® faceplate for 2x MS-K 1/8, without Central Plate, Cover Frame and Modules	
440 013	-	UP-K unilan® faceplate for 3x MS-K 1/8, without Central Plate, Cover Frame and Modules	
440 027	3	UP-K unilan® faceplate for 2x MS-K 1/8, without Cover Frame and Modules, with Central Plate and 2 dust shutter	pure white RAL 9010
440 015	1	UP-K unilan® faceplate for 2x MS-K 1/8, without Cover Frame and Modules, with Central Plate	oyster white RAL 1013
440 017	2	UP-K unilan® faceplate for 3x MS-K 1/8, without Cover Frame and Modules, with Central Plate	oyster white RAL 1013
440 028	4	UP-K unilan® faceplate for 3x MS-K 1/8, without Cover Frame and Modules, with Central Plate and 3 dust shutter	pure white RAL 9010

Article No.	Fig.	Accessories/Description	Colour (similar)
440 001	-	unilan® RJ45-Module MS-K 1/8 Cat.6a shielded	
1400 830	5	Cover frame 1-port	pure white RAL 9010
1401 630	5	Cover frame 1-port	oyster white RAL 1013
1403 924	-	Cover frame 2-port	pure white RAL 9010
1403 700	-	Cover frame 2-port	oyster white RAL 1013

Faceplate 2x
flush mounted
with straight outlet for 2 RJ45-Modules

Dätwyler Cables

Similar figures

Faceplate 2x UP - straight outlet
flush mounted, with cental plate

unilan® Cover Frame
80x80 mm

Excample:
Faceplate complete with central plate and coverframe and a module

Product information

unilan® Faceplate for 2 RJ45 Modules with straight outlet

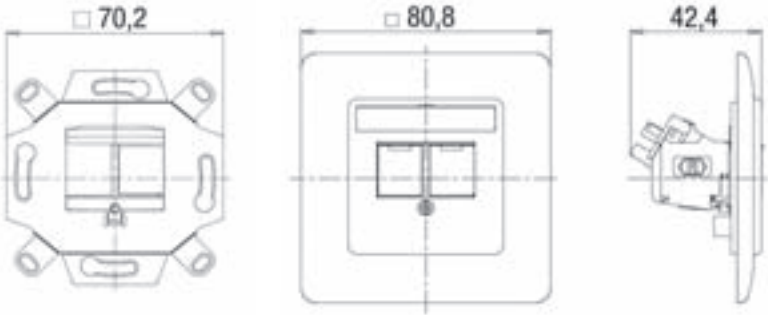
Description

Ideal suitable for flush mounting with constricted space, for instance in a flush mount cup. .
Der mounting frame consists of zink die casting with connection possibility for equal potential bonding. The snap in modules are easily fitted into the faceplates. Unused ports are covered with blanking elements (metal), which are able to break off. The faceplate has an area for labelling with transparent cover.
The faceplate is design able with an usual in trade TAE central plate.
The modules are not part of the delivery!

Suitable for the following unilan® Modules:
- RJ45 Module MS-K 1/8 Cat.6/E_A shielded
- RJ45 Module KS-T 1/8 Tool-Less shielded
- RJ45 Module KU-T 1/8 Tool-Less unshielded

Dimension

unilan® UP Faceplate:	German standard
Central Plate	50 x 50 mm
Cover Frame	80 x 80 mm



Colour

similar RAL 9010, white

Article No.		Description	Colour (similar to)	PU
440 020	UP	unilan® Faceplate for 2 RJ45 Modules with straight outlet (without modules)	white RAL 9010	1 piece
1 400 830		cover frame 80 x 80 mm	white RAL 9010	1 piece

Article No.	Accessories/Description	Colour (similar)
417 985	Dust cover MS-K for reparation (1 Set = 25 pieces)	grey
417 986	Dust cover MS-K for reparation (1 Set = 25 pieces)	white RAL 9010

Blank cover
in black and white

unilan® Patch Panel MS-K 24x - shielded

Product information

unilan® Patch Panel MS-K 24x (shielded)

Applications

Screened patch panel to be used with up to 24 x MS-K 1/8 RJ45-Modules Cat.6/E_A.

Snap in modules are easily fitted into the patch panel.
The patch panel is designed for shielded applications.
Unused ports can be covered with blanking elements.

Description

Front cover in combination with stainless steel.
Frontview in grey, similar to RAL 7035 or stainless steel.
Front imprint with numbers 1–24.
Connecting point for EMC (potential balancing).
Modules are not part of the delivery.

Suitable for the following unilan® Modules:
- RJ45 Module MS-K 1/8 Cat.6/E_A shielded

Dimension

Width	482 mm (19'')
Depth	110 mm (including cable strain relief)
Height	44 mm (1U)

Article No.	Description	Colour (similar)	PU
440 040	unilan® Patch Panel MS-K 24x , 19''/1U, for 24 x RJ45-Modules MS-K 1/8 (exclusiv modules)	stainless steel	1 Stück
440 041	unilan® Patch Panel MS-K 24x , 19''/1U, for 24 x RJ45-Modules MS-K 1/8 (exclusiv modules)	RAL 7035	1 Stück

Article No.	Accessories/Description	Colour (similar)	PU
418 010	Blank cover for Keystone Patch Panels (1 Set = 10 pieces)	white	
418 011	Blank cover for Keystone Patch Panels (1 Set = 10 pieces)	black	
440 001	unilan® RJ45-Module MS-K 1/8 Cat.6/E_A shielded		1 piece

RJ45 Module shielded Cat. 6/E_A

unilan® Module MS 1/8 Cat. 6/E_A
for 10 Gigabit Ethernet

Dätwyler Cables

unilan® module MS 1/8 Cat. 6/E_A shielded

Parallel pliers for easy termination

Product information

unilan® Module MS 1/8 Cat. 6/E_A shielded

Application

For the transmission of digital and analogue voice, video and data signals.
The Module is specified up to 500 MHz. In connection with data cables Cat.7 all applications are usable up to class E_A, that is 10 Gigabit Ethernet im compliance with IEEE 802.3an.

Description

Closed metal casing, zinc casting
360° degree screen connection with flat plug connector for equipotential bonding modules with integrated strain relief (cable tie)
High component density possible owing to the very small module dimension
Stable mounting in Patch Panels and data outlets with a metal spring at the module.

Mechanical properties

Diameter wire solid	0.40mm (AWG 26) to 0.65mm (AWG 22)
Diameter wire standed	AWG26/7 bare stranded copper wire with 7 strands
Reusable	for AWG 22, AWG 23 and AWG 24 when using a wire with the same or bigger cross section.
Diameter over insulation	0.70mm to 1.40mm (1.60mm)
Temperature range	Storage: -40°C to +70°C
	Installation: -10°C to +60°C
	In use: -10°C to +60°C

Applicable Standards

ISO/IEC 60603-7-5 (and -51 Draft)
ISO/IEC 11801:2002 / Amd.1:2008 (Class E_A)
EN 50173:2007
TIA/EIA 568-B.2-10:2008
EN 55022

General Characteristics

Termination	Wire guides with colour coding according to T568-A and T568-B
Cat./Class	Cat 6, Class E

Article No.	Description	Termination	Colour	PU
185 700	unilan® RJ45-Modul MS 1/8 Cat.6/E_A shielded	TIA-A	metallic	10 pieces
1414 227	unilan® RJ45-Modul MS 1/8 Cat.6/E_A shielded	TIA-B	metallic	10 pieces
1412 330	Parallel pliers for termination of Modules MS 1/8			1 piece

Feed-trough coupler RJ45-RJ45

Cat. 6 Link/Class E, angled 90 degree and straight 180 degree

Side 1
RJ45- feed-trough coupling angled
MS fitting

Side 2
RJ45- feed-trough coupling angled
Keystone fitting

Side 1
RJ45- feed-trough coupling straight
MS fitting

Side 2
RJ45- feed-trough coupling straight
Keystone fitting

Product information

unilan® RJ45-Feed-trough coupling angled and straight – Cat 6 (Link) screened

Application

Optimally suitable for the setting up of Consolidation Points and Cross-Connect wirings.
For all digital and analogue applications according to Cat6 Link (class E) according ISO/IEC 11801:2002, EN 50173-1:2002 and EIA/TIA 568-B.2-1

Description

Compact cover, die cast zinc
small depth by angled design (90 degrees)
Straight design (180 degrees)
Two types of mounting in a coupling:
Side 1 with MS module fixing (straight design for example to use in unilan Patch Panel MPS 24x)
Side 2 with keystone fixing (straight design for example to use in unilan Patch Panel KS 24x)
Manufacturer: BTR

Applicable Standards

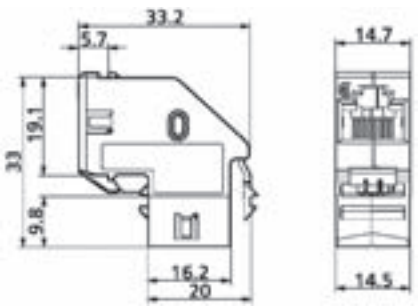
ISO/IEC 11801:2002
IEC 60603-7-5 (Ed.1.0 2003-01-10)
EIA/TIA 568-B.2-1 2002

General Characteristics

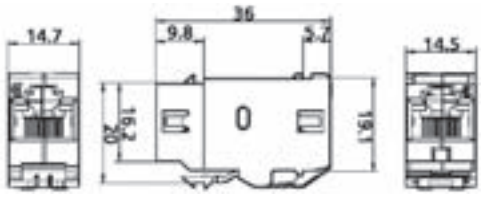
M — Modular
Cat./Class — Cat 6, Class E

Dimensions

Angled design (90 degrees)



Straight design (180 degrees)



Article No.	Description	Colour	PU
417 445	unilan® RJ45- feed-trough coupler Cat 6 (Link) / angled 90 degree	metal	1 piece
417 446	unilan® RJ45- feed-trough coupler Cat 6 (Link) / straight 180 degree	metal	1 piece

Technical changes reserved.

Blank-Module MS

Koax-Module MS
with F-Jack, IEC-Jack,
IEC-Jack

LC-Duplex Module MS

Product information

Blank-Module with MS-adapter

Description

For closing the unused ports in all MS applications as patch panels, data outlets and so on.

Koax Modules with MS-adapter

Description

Available for
a) F-Jack 75 Ohm
b) IEC-Jack 75 Ohm
c) IEC-Jack 75 Ohm

LC-Duplex Kupplung mit MS-Adapter

Description

Available for optic fibres with Singlemode (SM) and Multimode (MM)

Article No.	Description	Colour	PU
190 977	Blank Module for covering the unused MS-openings	light grey	1 piece
417 447	LC-Duplex coupler with MS-adapter, MM ceramic	light grey	1piece
417 448	LC-Duplex coupler with MS-adapter, SM ceramic	light grey	1 piece
on request	Koax Module with MS-adapter, Type F-Jack 75 Ohm	light grey	1 piece
on request	Koax Module with MS-adapter, Type IEC-Jack 75 Ohm	light grey	1 piece
on request	Koax Module with MS-adapter, Type F-Plug 75 Ohm	light grey	1 piece

Patch Panel MPS 12x, 16x, 24x, 32x
for x Modules MS 1/8 or PS-TERA

unilan® patch panel MPS 24x

unilan® Patch Panel MPS 12x

Blank-Module MS

Product information

unilan® Patch Panel MPS 12x, 16x, 24x, 32x

Description

Shielded patch panels in need-based sizes for fitting 12, 16, 24 or 32 modules.
The modules are easily fitted into the patch panels.

Patch panel in light grey, similar to RAL 7035 and stainless steel blank
Patch panel delivered without modules

Suitable for the following unilan® Modules:
- Module PS-TERA 4P Cat. 7A shielded
- RJ45 Module MS 1/8 Cat. 6/E_A shielded
- Feed-Trough coupler RJ45-RJ45 Cat.6 shielded 180 degree
- Blanking Module MS for unused openings
- other Modules with MS adapter

Dimensions

Width	19" and 10"
Height	1 Unit or 2 Units

Article No.	Description	Colour (similar)	PU
185 840	unilan® patch panel MPS 24x; 19" 1U; for 24 modules (delivered without modules)	light grey RAL 7035	1 piece
185 841	unilan® patch panel MPS 24x; 19" 1U; for 24 modules (delivered without modules)	stainless steel blank	1 piece
184 099	unilan® patch panel MPS 12x; 10" 1U; for 10 modules (delivered without modules)	light grey RAL 7035	1 piece
417 444	unilan® patch panel MPS 12x; 10" 1U; for 10 modules (delivered without modules)	stainless steel blank	1 piece
417 480	unilan® patch panel MPS 16x; 19" 1U; for 16 modules (delivered without modules)	light grey RAL 7035	1 piece
417 481	unilan® patch panel MPS 32x; 19" 2U; for 32 modules (delivered without modules)	stainless steel blank	1 piece

Article No.	Accessories/Description	Colour	PU
1408 502	unilan® Modul PS-TERA 1/8 Cat.7A, shielded	black	1 piece
185 700	unilan® Modul MS 1/8 Cat.6/E_A, shielded	metal	10 pieces
417 446	Feed-trough coupling RJ45-RJ45, Cat.6, 180 degree, sshielded	metal	10 pieces
417 447	LC-Duplex coupler with MS-adapter, MM ceramic		10 pieces
417 448	LC-Duplex coupler with MS-adapter, SM ceramic		10 pieces
185 731	Fastening kit (8 of each: screws, washers and captive nuts)		
190 977	Blank-Module for covering the unused MS-openings	light grey	10 pieces

Patch Panel MS 24/8

19''/1HE for 24 Modules MS 1/8 and MU 1/8
shielded and unshielded

Dätwyler Cables

Product information

unilan® patch panel MS 24/8

Application

Screened patch panel to be used with up to 24 RJ45-Modules shielded and/or unshielded

Description

Aluminium silver anodised, plastic light grey, similar to RAL 7035
The snap in modules are easily fitted into the patch panel.
The patch panel is supplied with integrated screening facilities and dust shutters.
The dust shutters can be individually replaced. All ports are supplied with labelling strips.
Patch panel delivered without modules

Suitable for the following unilan Modules:

- unilan RJ45 Module MS 1/8 Cat. 6/E_A shielded
- unilan RJ45 Module MU 1/8 Cat. 6 unshielded
- Feed-Trough coupler RJ45-RJ45 Cat.6 shielded 180 degree
- other Modules with MS adapter

Dimensions

Width	19''
Height	1 U

Accessories

Dust shutter
in various colours

Article No.	Description	Colour (similar)	PU
185 680	unilan® patch panel MS 24/8 Cat 6; 19" 1U; for 24 x MS 1/8 Cat 6 (without modules)	light grey RAL 7035	1 piece

Article No.	Accessories/Description	Colour	PU
185 711	Dust shutter for Patch Panel MS 24/8	yellow	10 pieces
185 712	Dust shutter for Patch Panel MS 24/8	blue	10 pieces
185 713	Dust shutter for Patch Panel MS 24/8	green	10 pieces
185 714	Dust shutter for Patch Panel MS 24/8	red	10 pieces
190 984	Dust shutter for Patch Panel MS 24/8	orange	10 pieces
190 985	Dust shutter for Patch Panel MS 24/8	black	10 pieces
190 986	Dust shutter for Patch Panel MS 24/8	violet	10 pieces
185 700	unilan® RJ45 Module MS 1/8 Cat.6/E_A, shielded colour code T568-A	metall	10 pieces
185 750	unilan® RJ45 Module MU 1/8 Cat.6/E_A, unshielded colour code T568-A	metall	10 pieces
185 717	Labeling sheets A4 for patch panel MS 24/8	white	10 sheets
185 731	Fastening kit (8 of each: screws, washers and captive nuts)		

Sub-Rack 19''/ 3U
Sub-Rack 10''/ 3U
for unilan® Inserts 3U, 7TE
for max. 6 RJ45-Modules

Fig. 1:
unilan® Sub-Rack
19'' 3U or. 10'' 3U

Fig. 2:
unilan® Insert for
6 Modules MS 1/8

Fig. 3:
unilan® Insert for
6 Modules MS-K 1/8

Fig. 4:
unilan® Insert for
6 x RJ45 Cat3

Fig. 5:
Blind Cover
Plate
3U, 7TE

Product information

Application

unilan® Sub-Rack, 19'' 3U (see Fig.1)
For the integration of max. 12 inserts 3U, 7TE
Without fastening kit, delivered unloaded.

unilan® Sub-Rack, 10'' 3U (similar to Fig.1)
For the integration of max. 5 inserts 3U, 7TE
Without fastening kit, delivered unloaded.

unilan® Insert for 6 RJ45 Modules (requestet type see below)

unilan® Insert for 6 x RJ45 Cat3 (Telephony) (see Fig.3)
with LSA-plus IDC method of termination

Accessories

Blind Cover Plate (see Fig.4)
For covering the remaining part of the Sub-Rack, if not fully equipped.

Article No.	Abb.	Description	Colour	PU
185 682	1	Sub-rack 19" 3U	Aluminum silver	1 unit / box
185 683	-	Sub-rack 10" 3U	Aluminum silver	1 unit / box
185 681	2	unilan® insert for 6 RJ45 Modules MS 1/8 (unloaded)	Aluminum silver	1 unit / box
on request	3	unilan® insert for 6 RJ45 Modules MS-K 1/8 (unloaded))	Aluminum silver	1 unit / box
185 724	4	unilan® insert 6x RJ45 Cat3 (Telephony), 3U, 7TE	Aluminum silver	1 unit / box
185 718	5	Blind cover plate 3U, 7TE	Aluminum silver	1 unit / box
185 700	-	unilan® RJ45 Module MS 1/8 Cat.6a, screened TIA-A	metallic	10 pieces
1414 227	-	unilan® RJ45 Module MS 1/8 Cat.6a, screened TIA-B	metallic	10 pieces
440 001	-	unilan® RJ45 Module MS-K 1/8 Cat.6a, screened TIA-A	metallic	10 pieces
185 716	-	Labelling sheets A4 for insert for 6x MS1/8	white	10 sheets
185 731	-	Fastening kit (8 each screws, washers and captive nuts)		

Distribution Box MS 6x

installation on wall
for one unilan® insert

Dätwyler Cables

unilan® AP Distribution Box MS 6x
(figur: with Insert and Modules,
delivered unloaded)

unilan® Insert
for 6 Modules MS 1/8 shielded

unilan® Insert
with 6 RJ45-Jacks Cat.3
(for Telephone)

Product information

unilan® Distribution Box for one unilan® Insert - surface mounted

Application

AP casing for surface mounting, when integrating an insert for 6x MS 1/8,
or for equipment with an insert 6x RJ45 Cat. 3.
Delivered without modules.

Description

AP casing for surface mounting, with labeling strip applied.
The casing can be equipped alternatively with a telephony insert Cat. 3
or with 6x MS1/8 Cat. 6 modules.

When adding equipment to the MS1/8 modules, the sheet metal insert
for 6x MS1/8 is required.

Colour grey, similar to RAL 7035

Dimensions

W x H x D 122 x 41 x 120 mm

Article no.	Description	Colour (similar)	PU
185 685	unilan® Distribution Box for one unilan® Insert (without insert)	light grey RAL 7035	1 unit / box
185 727	unilan® Insert for 6 Modules MS 1/8 Cat.6/E_A (without modules)	metallic	1 pc.
185 729	unilan® Insert with 6 RJ45-Jacks Cat.3 for Telephone	metallic	1 pc.

Article no.	Accessories/Description	Colour (similar)	PU
185 700	unilan® RJ45-Module MS1/8 Cat. 6/E_A shielded T568-A	metallic	10 units / box
190 977	Blank Module for covering the unused MS-openings	grey	10 pc.

Swiss standard

Faceplate 2x (round)

flush duct mounted

for 2 Modules MS 1/8 oder PS-TERA
round outlet, design Feller

Faceplate MPS 2x
(flush mounted)

Faceplate MPS 2x
(duct mounted)

Blind-Modul MS

Product information

unilan® faceplate system round outlet

Description

Modular-designed data faceplates for concealed installation
for the integration of up to PS-TERA or MS 1/8 modules.
Consisting of: faceplate, cover frame and mounting plate, without modules.

Application

Design Feller standard for:

Flush mounted	with cover frame 86 x 86 mm
Duct mounted	without coverframe, with mounting plate 70 x 70 mm

Suitable for the following unilan Modules:

- RJ45 Module MS 1/8 Cat.6/E_A shielded
- RJ45 Module MU 1/8 Cat.6 unshielded
- Module PS-TERA 4P Cat.7A shielded
- Blind Module MS for covering the unused openings

Article No.	Description	Colour
185 764	Flush faceplate Feller for up to 2x PS 1/8 Cat. 7 / 2x MS 1/8 Cat.6, with cover frame	white
185 765	Flush faceplate Feller for up to 2x PS 1/8 Cat. 7 / 2x MS Cat.6, without cover frame	white

Article No.	Accessories/Description	Colour	PU
1408 502	unilan® module PS1/8 Cat.7, screened	black	1 piece
185 700	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-A	metallic	10 pieces
1414 227	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-B	metallic	10 pieces
190 977	Blank Module for covering the unused MS-openings	light grey	10 pieces

Faceplate 2x (Edizio due)

flush or surface mounted /duct mounted
for 2 Modules MS 1/8 or PS-TERA,
with angled outlet design Feller

Dätwyler Cables

Duct mounted (UP-K)
without cover frame
with mounting plate 70 x 70 mm

Flush mounted (UP)
With cover frame
88 x 88 mm

Surface mounted (AP)
with box
88 x 88 x 67 mm

Blank Modul MS

Product information

unilan® faceplates System Edizio Feller - angeled

Description

Modular-designed data faceplates for concealed installation
for the integration of up to 2 modules MS 1/8 or PS-TERA.
Consisting of: faceplate Edizio with connection module holder, cover frame, mounting plate, without modules.

Application

Design Edizio for concealed installation with cover frame 88 x 88 mm.
Design Edizio without cover frame for installation in Thealit ducts with blind technology

Design for wall mounted installation consisting of: Mounting frame, cover, faceplate Edizio with connection module holder for PS modules.

Suitable for the following unilan Modules:

- RJ45 Module MS 1/8 Cat.6/E_A shielded
- RJ45 Module MU 1/8 Cat.6 unshielded
- Module PS-TERA 4P Cat.7A shielded
- Blank Module MS for covering the unused openings

Article No.		Description	Colour (similar)
185 763	UP	Faceplate Edizio due, angled outlet for PS/MS modules, wih cover frame, without modules	RAL 9010
185 761	UP-K	Faceplate Edizio due, angled outlet for PS/MS modules, wihout cover frame, without modules	RAL 9010
185 762	AP	Wall mounted outlet Edizio 56 mm for PS/MS modules, without modules	RAL 9010

Article No.	Accessories/Description	Colour	PU
1408 502	unilan® Module PS-TERA 4P Cat.7A	black	1 piece
185 700	unilan® RJ45-Module MS 1/8 Cat.6/E_A geschirmt T568-A	metall	10 pieces
1414 227	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-B	metallic	10 pieces
190 977	Blank Module for covering the unused MS-openings	light grey	10 pieces

Swiss standard

Faceplate 2x (Edizio flat)

flush or surface mounted/duct mounted

for 2 Modules, with flat outlet, design Feller

flat outlet-cover
Feller Edizio due
Concealed installation

flat outlet-cover
Feller Edizio due
Surface installation

cross section Feller Edizio
flat outlet-cover

Product information

Feller Edizio flat outlet-cover

Description

Feller Edizio due flat outlet-cover for 2 Modules MS 1/8, PS-TERA or PS-GG45.
The Feller flat outlet-cover enables a handling connection of the outlets and keeping the bending radii of the data cables.
The flat outlet-cover is a original Feller product and suits into the Feller modular system.

a) Suitable for the following unilan Modules:
- RJ45 Module MS 1/8 Cat.6/E_A shielded
- Module PS-TERA 4P Cat.7A shielded
- Blank Module MS for covering the unused openings

b) Suitable for the following unilan Modules:
- Module PS-GG45 7A 1000 MHz 4P shielded

Dimensions

Concealed installation	
Mounting plate:	70x70mm
cut-out flat outlet-cover:	60x60mm
flat-outlet-cover depth:	37mm
Cover frame:	88x88mm
Surface installation	
Mounting plate:	70x70mm
cut-out long-cover:	60x60mm
flat-outlet-cover:	WxHxD 74x74x 54 /84mm

Article No.	Description	Colour (similar)
185 747	flat outlet-cover for concealed installation Feller Edizio due for 2 Modules PS-TERA and MS , with cover frame (without modules)	RAL 9016
185 749	flat outlet-cover for concealed installation Feller Edizio due for 2 Modules PS-TERA and MS , without cover frame (without modules)	RAL 9016
185 748	flat outlet-cover for surface installation Feller Edizio due for 2 Modules PS-TERA and MS (without modules)	RAL 9016
190 958	flat outlet-cover for surface installation Feller Edizio due for 2 Modules PS-GG45 , with cover frame (without modules)	RAL 9016
190 965	flat outlet-cover for surface installation Feller Edizio due for 2 Modules PS-GG45 (without modules)	RAL 9016

Article No.	Accessories/Description	Colour	PU
1408 502	unilan® Module PS-TERA 4P Cat.7A	black	1 piece
400 102	unilan® Module PS-GG45 7A 1000 MHz 4P shielded	metallic	1 piece
185 700	unilan® RJ45-Moduel MS 1/8 Cat.6/E_A shielded T568-A	metallic	10 pieces
1414 227	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-B	metallic	10 pieces

Technical changes reserved.

FLF Faceplate 2x, 3x
for assembly in doorframes / profiles

Dätwyler Cables

FLF Faceplate 2x
for 2 Modules MS/MU
or PS-TERA

FLF Faceplate 2x
for 2 Modules MS/MU
with metal clip

FLF Faceplate 3x
for 3 Modules MS/MU
white or black

Product information

unilan® FLF faceplate 2x for 2 Modules MS 1/8, MU 1/8 or PS-TERA

Description

FLF-Faceplate Standard for the integration of up to 2 modules.
Easy mounting in frames, profiles, ducts, control panels etc. through screw-less fastening, using a catch spring. Equipped with dust protection covers, which also serve as covers for unused ports. Delivered unloaded.

Variante with metal clip for stable mounting only for the modules MS 1/8 and MU 1/8.

Suitable for the following unilan Modules:
- RJ45 Module MS 1/8 Cat.6/E_A shielded
- RJ45 Module MU 1/8 Cat.6 unshielded
- Modul PS-TERA 4P Cat.7A shielded
- Blank Module MS for covering the unused openings

Dimensions

W x H x D 37,5 x 62,5 x 40mm

unilan® FLF faceplate 3x for 3 Modules MS 1/8 or MU 1/8

Description

FLF-Faceplate Standard for the integration of up to 3 modules, with integrated labeling strip.
Easy mounting in frames, profiles, ducts, control panels etc. through screw-less fastening, using a catch spring.
Equipped with dust protection covers, which also serve as covers for unused ports.
Delivered unloaded.

Suitable for the following unilan Modules:
- RJ45 Module MS 1/8 Cat.6/E_A shielded
- RJ45 Module MU 1/8 Cat.6 unshielded

Article No.	Description	Colour (similar)
190 916	FLF Faceplate, for 2 Modules MS/MU oder PS-TERA (without modules)	white RAL 9010
190 905	FLF Faceplate, for 2 Modules MS/MU with metal clip (without modules)	white RAL 9010
185 693	FLF Faceplate, for 3 Modules MS/MU (without modules)	white RAL 9010
190 915	FLF Faceplate, for 3 Modules MS/MU 1/8 (without modules)	black RAL 9005

Article No.	Accessories/Description	Colour	PU
1408 502	unilan® Module PS-TERA 4P Cat.7A	black	1 piece
400 102	unilan® Module PS-GG45 7A 1000 MHz 4P shielded	metallic	1 piece
185 700	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-A	metallic	10 pieces
1414 227	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-B	metallic	10 pieces
190 937	Dust cover for MS 3x (FLF)	yellow	10 pieces
190 938	Dust cover for MS 3x (FLF)	blue	10 pieces
190 939	Dust cover for MS 3x (FLF)	green	10 pieces
190 940	Dust cover for MS 3x (FLF)	red	10 pieces

Technical changes reserved.

Swiss standard

Faceplate 2x, 3x

for flush duct mounting

for 2 or 3 RJ45 Modules MS 1/8
Edizio compatible

Fig. 1
unilan® Faceplate 2x
for 2 Modules MS 1/8
(with add-on frame 60x60 mm
without cover frame)

Fig. 2
unilan® Faceplate 3x
for 3 Modules MS 1/8
(with add-on frame 60x60 mm
without cover frame)

Fig. 3
Cover frame Edizio due
88x88 mm

Fig. 4
Dust covers MS

Product information

unilan® faceplate 2x, 3x, Edizio compatible
for 2 or 3 Module MS 1/8 or MU 1/8

Description

Modular-designed data faceplates for concealed installation
for the integration of up to 2 MS 1/8 Cat 6 or up to 3 MS 1/8 Cat 6 modules.
Edizio compatible.
MS 1/8 modules can be snapped in with ease.
Equipped with dust protection covers, which also serve as covers for unused ports.
Delivered unloaded.

Suitable for the following unilan Modules:

- RJ45 Module MS 1/8 Cat.6/E_A shielded
- RJ45 Module MU 1/8 Cat.6 unshielded

Dimensions

unilan® faceplates (Fig. 1 and 2):

Mounting plate	70 x 70mm
Central cap	60 x 60mm

Accessories

Cover frame Edizio due

Cover frames fitting the unilan® faceplates

Dimensions	88 x 88mm

Article No.	Fig.	Description	Colour (similar)
185 688	1	Flush faceplate Edizio compatible, for 2 Modules MS/MU 1/8 (without modules and cover frame)	white RAL 9016
185 691	1	Flush faceplate Edizio compatible, for 3 Modules MS/MU 1/8 (without modules and cover frame)	white RAL 9016

Article No.	Fig.	Accessories/Description	Colour (similar)	PU
185 732	3	Cover frame Edizio due	white RAL 9016	
185 715	-	Labeling sheets A4 for unilan® faceplates	white	
185 700	-	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-A	metallic	10 pieces
1414 227	-	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-B	metallic	10 pieces
190 937	4	Dust cover MS	yellow	10 pieces
190 938	4	Dust cover MS	blue	10 pieces
190 939	4	Dust cover MS	green	10 pieces
190 940	4	Dust cover MS	red	10 pieces

Faceplate 2x, 3x

for flush duct mounting

for 2 or 3 RJ45 Modules MS 1/8

Dätwyler Cables

Fig.1
unilan® Faceplate 2x
for 2 Modules MS 1/8
(without cover frame)

Fig.2
unilan® Faceplate 3x
for 3 Modules MS 1/8
(without cover frame)

Fig.3
unilan® Cover frame
80x80 mm

Product information

unilan® faceplate 2x, 3x, angeled
for 2 or 3 Module MS 1/8 or MU 1/8

Description

German standards faceplates for flush duct mounting or installation in floor boxes. The modular design of the faceplates allows the user to combine the faceplates with many faceplate design families.
The snap in modules are easily fitted into the faceplates.
All faceplates are fitted with integrated shutters. The faceplates are supplied with labelling strips.
The faceplates are delivered without MS 1/8 Modules.

Suitable for the following unilan Modules:
- RJ45 Module MS 1/8 Cat.6/E_A shielded
- RJ45 Module MU 1/8 Cat.6 unshielded

Dimensions

unilan® faceplates:

Mounting Plate	70 x 70mm
Central Cap	50 x 50mm
Cover frame	80 x 80mm
Surface mounting box	85 x 85 x 43mm (L x W xH)

Article No.	Fig.	Description	Colour (similar)
1411 748	1	Flush faceplate, for 2 Modules MS/MU 1/8 (without modules and cover frame)	pure white RAL 9016
1411 747	-	Flush faceplate, for 2 Modules MS/MU 1/8 (without modules and cover frame)	oyster white RAL 1013
1411 750	2	Flush faceplate, for 3 Modules MS/MU 1/8 (without modules and cover frame)	pure white RAL 9016
1411 749	-	Flush faceplate, for 3 Modules MS/MU 1/8 (without modules and cover frame)	oyster white RAL 1013

Article No.	Fig.	Accessories/Description	Colour (similar)
185 700	-	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-A	metallic
1414 227	-	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-B	metallic
1400 830	3	Cover frame 1-port 80x80 mm	pure white RAL 9010
1401 630	-	Cover frame 1-port 80x80 mm	oyster white RAL 1013
1403 924	-	Cover frame 2-port 150x80 mm	pure white RAL 9010
1403 700	-	Cover frame 2-port 150x80 mm	oyster white RAL 1013

unilan® Faceplate 2x
for 2 Modules MS 1/8
with surface mount box 80x80x40 mm

Product information

unilan® faceplate for 2x RJ45 Modules

Description

Data faceplate with modular design for surface installation for the integration of up to 2 MS 1/8 Cat 6 modules.
MS 1/8 modules can be snapped in with ease.
Equipped with dust protection covers, which also serve as covers for unused ports.
Delivered unloaded.

Suitable for the following unilan Modules:
- RJ45 Module MS 1/8 Cat.6/E_A shielded
- RJ45 Module MU 1/8 Cat.6 unshielded

Dimensions

W x H x D 85 x 85 x 40mm

Article No.	Description	Colour (similar)
185 694	Faceplate, for 2 Modules MS/MU 1/8 (without modules)	RAL 9016

Artikelnr.	Zubehör/Beschreibung	Colour (similar)
185 700	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-A	metallic
1414 227	unilan® RJ45-Module MS 1/8 Cat.6/E_A shielded T568-B	metallic

Data outlet CSD 2/8-K

flush duct mounted

with 2 RJ45-Jacks Cat.6/E_A shielded

Dätwyler Cables

Fig.1:
unilan® data outlet
CSD 2/8-K Cat.6/E_A
(incl. central plate)

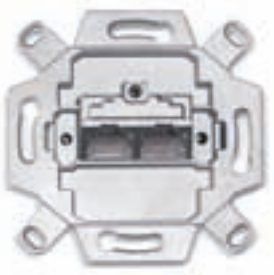


Fig.2:
unilan® data outlet
CSD 2/8-K Cat.6/E_A

Fig.3:
unilan® central plate
50 x 50 mm

Fig.4:
unilan® cover frame
80 x 80 mm

Product information

unilan® data outlet CSD 2/8-K Cat.6/E_A shielded, angled

Application

For the transmission of digital and analogue voice-, video- and data signals. The outlet is specified up to 500 MHz. In connection with data cables Cat.7 or 7_A all applications of class D, E and EA can be supported, that is including 10 Gigabit Ethernet in compliance with IEEE 802.3an.
The data outlet ist primary intended for flush channel mounted. The construction is compatible with all named design-faceplate supplier.

Construction

Housing:	Solid metal, die cast zinc, mounting clip optional detachable
Dimensions:	70 x 70 x 47 mm (incl. central plate)
Boards:	Base board with two LSA plus connector blocks Outlet module fitted with one or two RJ45 sockets
Screen tap:	360° via metal wedge
Strain relief:	4-way cable entry via metal wedge Cable entry from 4 directions with two cables possible

Connection System

Cable — LSA-plus punch down contacts, AWG 26-22

Applicable standards

ISO/IEC 60603-7-5
ISO/IEC 11801:2002 / Amd.1:2008 (class E_A)
EN 50173:2007
TIA/EIA 568-B.2-10:2008
EN 55022

General properties

EMC	Shielded
Cat/Class	Cat 6, Class E_A

Article No.	Fig.	Description	Colour (similar)	PU
417 960	1	unilan® data outlet CSD 2/8-K Cat.6/E_A (incl. central plate)	pure white RAL 9010	1
417 961	1	unilan® data outlet CSD 2/8-K Cat.6/E_A (incl. central plate)	oyster white RAL 1013	1
417 962	2	unilan® data outlet CSD 2/8-K Cat.6/E_A		1
417 975	3	unilan® data outlet CSD 2/8 central plate 50x50mm	pure white RAL 9010	10
417 976	3	unilan® data outlet CSD 2/8 central plate 50x50mm	oyster white RAL 1013	10
417 977	3	unilan® data outlet CSD 2/8 central plate 50x50mm	black RAL 9005	10
1400 830	4	unilan® data outlet CSD 2/8 cover frame 80x80mm	pure white RAL 9010	10
1401 630	4	unilan® data outlet CSD 2/8 cover frame 80x80mm	oyster white RAL 1013	10

Accessories

Article No.	Description
1401 609	LSA-plus termination tool for LSA punch down contacts
	Assembly holders for mounting of outlets in the cable ducts

Additional assembly tools / accessories can be found under System Accessories.

Data outlet CSD 2/8-U

for universal flush mounted installations
with 2 RJ45-Jacks Cat.6/E_A shielded

Fig.1:
unilan® data outlet
CSD 2/8-U Cat. 6/E_A
(incl. central plate)

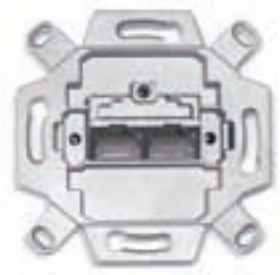


Fig.2:
unilan® data outlet
CSD 2/8-U Cat. 6/E_A

Fig.3:
unilan® central plate
50 x 50 mm

Fig.4:
unilan® cover frame
80 x 80 mm

Product information

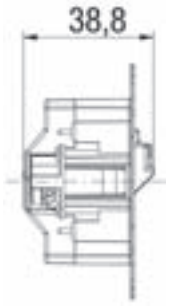
unilan® data outlet CSD 2/8-U Cat. 6/E_A, shielded with angled outlet

Application

For the transmission of digital and analogue voice-, video- and data signals. The outlet is specified up to 500 MHz. In connection with data cables Cat.7 or 7$_A$ all applications of class D, E and EA can be supported, that is including 10 Gigabit Ethernet in compliance with IEEE 802.3an.
The data outlet is based on the compact construction intended for the universal floor tank solutions and flush channel installations with small space. The construction is compatible with all named design-faceplate supplier.

Construction

Housing:	Solid metal, die cast zinc, mounting clip optional detachable
Dimensions:	70 x 70 x 41 mm (incl. central plate)
Boards:	Base board with two LSA plus connector blocks Outlet module fitted with two RJ45 sockets
Screen tap:	360° via metal wedge
Strain relief:	via metal wedge Cable entry from the left and right for one cable each.



Connection System

Cable — LSA-plus punch down contacts, AWG 26-22

Applicable standards

ISO/IEC 60603-7-5
ISO/IEC 11801:2002 / Amd.1:2008 (class E_A)
EN 50173:2007
TIA/EIA 568-B.2-10:2008
EN 55022

General properties

EMC	Shielded
Cat/Class	Cat 6, Class E_A

Article No.	Fig.	Description	Colour (similar)	PU
417 964	1	unilan® data outlet CSD 2/8-U Cat. 6/E_A (incl. central plate)	pure white RAL 9010	1
417 965	1	unilan® data outlet CSD 2/8-U Cat. 6/E_A (incl. central plate)	oyster white RAL 1013	1
417 966	1	unilan® data outlet CSD 2/8-U Cat. 6/E_A (incl. central plate)	black RAL 9005	1
417 963	2	unilan® data outlet CSD 2/8-U Cat. 6/E_A		1
417 975	3	unilan® data outlet CSD 2/8 central plate 50x50mm	pure white RAL 9010	10
417 976	3	unilan® data outlet CSD 2/8 central plate 50x50mm	oyster white RAL 1013	10
417 977	3	unilan® data outlet CSD 2/8 central plate 50x50mm	black RAL 9005	10
1400 830	4	unilan® data outlet CSD 2/8 cover frame 80x80mm	pure white RAL 9010	10
1401 630	4	unilan® data outlet CSD 2/8 cover frame 80x80mm	oyster white RAL 1013	10

Accessories

Article No.	Description
1401 609	LSA-plus termination tool for LSA punch down contacts
	Assembly holders for mounting of outlets in the cable ducts

Additional assembly tools / accessories can be found under System Accessories.

Technical changes reserved.

Patch Panel CSA 24/8 Cat.6/E_A

with 24 RJ45-Jacks shielded

useable for 10GBase-T

Dätwyler Cables

unilan® Patch Panel CSA 24/8 Cat.6/E_A

Product information

unilan® Patch Panel CSA 24/8 Cat.6/E_A shielded (10 GBase-T)

Application

For transmission of digital and analogues voice-, pictures and data signals.
Connected with data cables Cat.7 or 7_A it is suitable for all applications till Class E_A up to 500 MHz, that is including 10 Gigabit Ethernet. At the construction of the Patch Panel was considered, that the influence of the adjacent data cables be less as possible and the requested Allien Crosstalk limit values are fulfilled.

Construction

Housing:	Solid metal, grey, similar to RAL 7035; shielding cover attachment and shielding contact using two screws
Boards:	four base boards each with 6 LSA plus terminal blocks and 6 x RJ45 sockets
Screen tap:	360° screen pickup via screened cable clip
Strain relief:	With cable clip and a tie wrap

Connection System

Cable:	LSA-plus punch down contacts for wires with AWG 22 to 26
Socket:	Shielded RJ45 connector (measured till 500 MHz)

Applicable standards

ISO/IEC 60603-7-5 (and -51 draft), 250 MHz (500 MHz)
ISO/IEC 11801:2002 / Amd.1:2008 (class E_A)
EN 50173: 2007
TIA/EIA 568-B.2-10: 2008
EN 55022

Termination

Wire termination according to T568A or T568B

General properties

EMC	Shielded
Cat/Class	Cat 6, Class E Cat.6a, Klasse E_A - in connection with data cables Cat.7

Article No.	Description	Colour (similar)	Cat.
417 980	unilan Patch Panel CSA 24/8 with 24 pcs RJ45-Jacks	RAL 7035	Cat.6a
417 985	Dustcover for retrofit, 1 Set with 24 pcs	grey	

Accessories

Article No.	Description
1401 624	patch panel wiring aid, 2 piece set
1401 609	LSA-plus termination tool for LSA punch down contacts

Additional assembly tools / accessories can be found under System Accessories.

unilan® Patch Panel CS 24/8 Cat.6 de-embedded shielded

Product information

unilan® patch panel CS 24/8 Cat 6 de-embedded, shielded

Application

For transmission of digital and analogue voice and data signals.
Especially suited to all Class E applications in accordance with EN 50173-1 and ISO/IEC 11801.
An assembly tool is available as an optional accessory. This consists of 2 angle mounts that are easily fixed to the frame or cabinet and ensure that the termination of cables is comfortable and efficient.

Construction

Housing:	Solid metal, grey, similar to RAL 7035; shielding cover attachment and shielding contact using three screws
Boards:	Three base boards each with 8 LSA plus terminal blocks and 8 x RJ45 sockets
Screen tap:	360° via flexible screen tap bar
Strain relief:	Via cable tie

Connection System

Cable:	LSA-plus punch down contacts
Socket:	Shielded RJ45 connector (EN 60603-7)

Applicable standards

ISO/IEC 60603-7-5, (250 MHz)
ISO/IEC 11801:2002
EN 50173:2007
TIA/EIA 568-B.2-1:2002
EN 55022

General properties

EMC	Shielded
Cat/Class	Cat 6, Class E

Article No.	Description	Colour (similar)	Cat.
1415 020	unilan® patch panel CS 24/8 with 24 RJ45-Jacks shielded	RAL 7035	6 de-embedded

Accessories

Article No.	Description
1401 624	patch panel wiring aid, 2 piece set
1401 609	LSA-plus termination tool for LSA punch down contacts

Additional assembly tools / accessories can be found under System Accessories.

GG45™ Connecting-System

unilan® Module PS-GG45 7A 1000 MHz

"Two-in-One" Connector
backwards compatible to RJ45

Dätwyler Cables

Keystone Clip

unilan® Module PS-GG45 7A
1000 MHz shielded

Termination Tool for PS-GG45

Product information

unilan® Module PS-GG45 7A 1000 MHz 4P shielded

Application

The unilan® Module PS-GG45 7A is a shielded RJ45-compatible Module, which is specified up to 1000 MHz. It is specially developed for applications behind 10 Gigabit Ethernet with high band with. In connection with data cables and patch cords Cat.7_A all requirements are full filled for the 4-connector Channel Class F_A according to ISO/IEC 11801 Amendment 1:2008.
The „Two-in-One" Module has 12 contacts, which work in 2 different transmission modes:
Standard = RJ45 and High-Speed = GG45

Description

- stable connector housing made of zink die casting
- with keystone clip for easy installation in Keystone Patch Panels and Faceplates
- quick and reliable wire-connection with the termination tool GG45
- according to the used plug (RJ45 or GG45) there are always 8 out of 12 contacts enabled
- with RJ45 Plug the 8 contacts on the top-level are used
- with GG45 Plug the 8 contacts in the upper and lower corners are used
- The 360° braid-connection supplies best Coupling Attenuation and secures with it immunity against Alien Crosstalk or other external influences.

Mechanical properties

Wire range – solid:	0,51 mm (AWG 24) – 0,65 mm (AWG 22)
Wire sheath range:	0,7 mm - 1,4 mm (1,6 mm)
Wire range – flex	AWG 24 up to AWG 27
Stranded wire	7 wires Cu-blank

The module PS-GG45 7A is useable in all unilan® Patch Panels and faceplates with Keystone openings.

Applicable standards

IEC 60603-7-7:2002 (Cat.7)
IEC 60603-7-71:2007 (Cat.7_A, draft)
ISO/IEC 11801:2002 / Amd.1: 2008 (Channel Class F_A, E_A)
EN 50173:2007

General properties

Termination	Pair configuration according to T568- A or T568-B clearly marked with a color code
Mounting	suitable for Keystonem openings according to ISO/IEC 60603-7 Ed draft 2006

Article No.	Description	Colour	PU
400 102	unilan® Module PS-GG45 7A 1000 MHz 4P Two-in-One shielded	metal	10 pcs
400 103	unilan® Module PS-GG45 7A 1000 MHz 4P Two-in-One shielded, for stranded wires	metall	10 pcs
400 105	Termination Tool for PS-GG45	red	

GG45™ Connecting-System

Measurement-/ Patch Cord GG45 7A 1000 MHz 4P shielded
Adapter Patch Cord GG45 7A / RJ45 4P shielded

Measurement-/Patch Cord 1000 MHz 4P
GG45 7A/GG45 7A

Adapter Patch Cord 4P
GG45 7A/RJ45

Product information

Measurement- / Patch Cord GG45 7A 1000 MHz 4P shielded

Adapter Patch Cord GG45 7A / RJ45 4P shielded

Application

Patch Cords with GG45 7A plugs allows the cabling installation with class F_A up to 1000 MHz resp. F up to 600 MHz. The GG45 7A plug used only the pairs the corresponding corners on top and at the bottom of the Module PS-GG45 7A, wereby best NEXT- und RL-values could be reached. The unused RJ45-contacts will be connected throug a switch to ground.

The Measurement Cords GG45 7A 1000 MHz 4P are primarily needed for acceptance measurements.

The GG45 7A plugs are not backward compatible with RJ45-Jacks. Only with Adapter-Patch Cords could be the RJ45-Jacks, useable in active devices, connected with the High-Performance cabling. In this case is at one side of the flex cable a GG45 7A plug and of the other side a RJ45-plug connected.

Future guaranty
GG45 cablings, which are used with standard patch cords RJ45/RJ45, offers for 10 Gigabit Ethernet applications (10GBase-T) enough electrical reserves!

By using of adapter patch cords with one RJ45- and one GG45-Plug you can achieve even more than 1000x better system values for the Channel.

This system reserve at the Class E_A (500 MHz) bids enough potential also for future applications by Channel Class F_A up to 1000 MHz (e.g. 40 Gigabit Ethernet).

Applicable standards

ISO/IEC 11801 Ed.2 Amd.1:2008 for Channel Class F / F_A
ISO/IEC 61076-3-110 (GG45)
ISO/IEC 60603-7 (RJ45)
EN 50173: 2007

Article No.	Length	Patch cord	plug 1 / plug 2	Cable	Colour	Wiring
400 120	2 m	Measurement- / Patch Cord 4P 1000 MHz	GG45 7A / GG45 7A	FRNC/LSOH	orange	1:1
400 121	1 m	Adapter Patch Cord 4P	GG45 7A / RJ45	FRNC/LSOH	orange	1:1
400 122	2 m	Adapter Patch Cord 4P	GG45 7A / RJ45	FRNC/LSOH	orange	1:1
400 123	3 m	Adapter Patch Cord 4P	GG45 7A / RJ45	FRNC/LSOH	orange	1:1
400 125	5 m	Adapter Patch Cord 4P	GG45 7A / RJ45	FRNC/LSOH	orange	1:1

TERA™ Connecting-System

unilan® Module PS-TERA 4P Cat.7A/F_A shielded
unilan® Plug PS-TERA 4P, 2P, 1P shielded
und 1P unshielded

Dätwyler Cables

unilan® Modul PS-TERA 4P Cat.7/F_A

unilan® Plug PS-TERA 4P, 2P, 1P shielded
unilan® Plug PS-TERA 1P unshielded

PS-TERA tool
For easy cable preparation

Parallel pliers
for easy termination

Product information

unilan® Module PS-TERA 4P Cat.7A/F_A 1000 MHz shielded

Features

The module PS-TERA is a shielded data outlet (jack), which fullfilled the highest electrical requirements according to ISO/IEC 11801:2008 Class F_A up to 1000 MHz .
The module is intended for screened data cable with Cat.7 or 7A and is useable optional with 1, 2 or 4-pair plugs. Thereby more applications over one data cable at the same time are possible – that is Plug(Cable)-Sharing. The plugged in plugs are interlocked. For differentiation coloured cable boots are deliverable.
Unused modules are protected with hinged door against dust and other contaminats.
The module is compatible with cable wires AWG 22 - 23.

Applicable standards

ISO/IEC 61076-3-104:2005 (Cat.7_A)
ISO/IEC 11801:2002 / Amd.1:2008 for Class F_A
EN 50173:2007

Information

The PS-TERA modules could be fitted in all unilan® faceplates, patch panels or floor box solutions with MPS-openings.

Article No.	Description	Colour	PU/1 Set
1408 502	unilan® Module PS-TERA 4P Cat.7A/F_A 1000 MHz	black	1 piece
1408 503	unilan® Plug PS-TERA 4P Cat.7A/F_A 1000 MHz	black	50 pieces
1408 504	unilan® Plug PS-TERA 2P	black	100 pieces
1411 985	unilan® Plug PS-TERA 1P	black	10 pieces
1409 554	unilan® Plug PS-TERA 1P unshielded (for telephone applications)	black	10 pieces
more packaging units on request			

Accessories

Article No.	Description	PU
1409 210	PS-TERA tool for easy preparing the cable	1 piece
1412 330	Parallel pliers for termination of Modules	1 piece

German Standard

Faceplate PS-TERA 2x

flush duct mounted, with angled outlet
for 2 Modules PS-TERA 4P

Fig.1:
unilan® Faceplate
for 2 Modules PS-TERA, angled

Fig.2:
Exemple for unilan® Faceplate
for 2 Modules PS-TERA, angled

Product information

unilan® Faceplate PS-TERA 2x angled

Description

Modular constructed Faceplate for flush duct mounting (UPK)
useable for fitting 2 modules PS-TERA with angled outlet.
The modules can be easily fitted into the faceplate.
Inscription field with paper shield and transparent cover.
Delivery without modules.

Application

With the standard Modules PS-TERA 4P a cable system for Multimedia up to class FA can be installed. At each module all connected 4 Pairs could be single patched for transmission of TV, Video, Data or Telefon.

That is using all 4 pairs in a data cable for different applications in the same time.

Information

Additionally to this faceplate all unilan faceplates, patch panels or floor box solutions with MPS-openings are compatible for modules PS-TERA.

Article No.	Fig.		Description	Colour (simillar)	PU
1408 505	1	UP-K	unilan® Faceplate for 2 modules PS-TERA (without coverframe and modules)	RAL 9010	1 piece
1400 830	-		unilan® Cover frame 80x80 mm	RAL 9010	1 piece

Article No.	Accessories/Description	Colour	PU
1408 502	unilan® Module PS-TERA Cat.7/F_A, shielded	black	1 piece

Patch cords PS-TERA/RJ45

Patch cords and connecting cables

Dätwyler Cables

Product information

Patch cord PS-TERA/RJ45 with flex cable uninet® 7702 flex

Description

Multimedia cabling with tried and tested copper components and innovative connection technique for class F_A, according to EN 50173 and ISO/IEC 11801.
The PS cabling guarantees the highest flexibility. Each of the 4 pairs on each port can be patched separately, offering the simultaneous transmission of TV, video, data and voice.

Applicable standards: ISO/IEC 11801:2002 / Amd.1:2008
EN 50173: 2007

Features

Flexcable: uninet® 7702 flex 4P FRNC/LSOH (Pimf), up to 1000 MHz, screened, cable sheath in grey.
The patch cords PS-TERA are available in need based types for adaption to the RJ45-standard.
For adaption one end of the patchcord is wired up with a PS-TERA Plug for 4, 2 or 1 pair and the second end is wired up with a RJ45-Plug or a RJ11-Plug (phone).

General Characteristics

Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
EMC	screened
Cat./Class	Cat.7/Class F_A with plugs PS-TERA 4P on both ends Cat.6/Class E_A with a plug PS-TERA 4P and a plug RJ45 4P Cat.5e/Class D with a plug PS-TERA 2P and a plug RJ45 2P Cat.3 /phone with a plug PS-TERA 1P and a plug RJ11 1 P

Article No.	Length	Colour boot		Adaptation	Description	Cable	Cable colour	Pin connection
		PS	RJ45					
654 058	1,0m	black	black	Patch cord	PS-TERA 4P to RJ45	uninet 7702 flex 4P FRNC/LSOH	grey	1:1
654 060	2,0m	black	black	Patch cord	PS-TERA PS 4P to RJ45	uninet 7702 flex 4P FRNC/LSOH	grey	1:1
654 062	3,0m	black	black	Patch cord	PS-TERA PS 4P to RJ45	uninet 7702 flex 4P FRNC/LSOH	grey	1:1
654 066	5,0m	black	black	Patch cord	PS-TERA PS 4P to RJ45	uninet 7702 flex 4P FRNC/LSOH	grey	1:1
654 158	1,0m	yellow	yellow	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	100BT (A)
654 160	2,0m	yellow	yellow	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	100BT (A)
654 162	3,0m	yellow	yellow	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	100BT (A)
654 166	5,0m	yellow	yellow	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	100BT (A)
654 258	1,0m	blue	grey	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	TR
654 260	2,0m	blue	grey	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	TR
654 262	3,0m	blue	grey	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	TR
654 266	5,0m	blue	grey	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	TR
654 208	1,0m	red	red	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	100BT (B)uplink
654 210	2,0m	red	red	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	100BT (B)uplink
654 212	3,0m	red	red	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	100BT (B)uplink
654 216	5,0m	red	red	Patch cord	PS-TERA PS 2P to RJ45	uninet flex 2P Multimedia FRNC/LSOH	grey	100BT (B)uplink

Note: customised patch cords (eg. length, type) on request.

Patch Cord RJ45 Cat.6/E_A 500 MHz
screened, wiring 1:1

Product information

unilan® Patch Cord RJ45 Cat.6/E_A screened, wiring 1:1

Description

The unilan® patch cord and connection cable uninet® 7702 flex 4P are terminated on both ends with a screened RJ45 plug and a moulded bend limiting boot.
The uninet® 7702 flex 4P cable has an excellent Next and Impedance performance thanks to the individually foil screened pairs (PiMF).
Thanks to the overall copper braid, it has an excellent screen performance and is highly flexible.
This cable is optimized for the transmission of CATV-Signals upt to 862 MHz.

In connection with screened data cables Cat.7 and connecting hardware Cat.6/E_A all patch cords are suitabel for 10GBase-T transmission (channel class E_A)

- Standard assortment from 0.5 m until 20 m
- Customized adjustments (bend limiting boot, termination, label) are available at short notice

Applicable standards

ISO/IEC 11801:2002 / Amd.1:2008 (Channel Klasse E_A)
EN 50173: 2007

General Characteristics

Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
EMC	screened
Cat/Class	Cat 6, Class E_A for 10GBase-T and 1GBase-T CATV 862 MHz

Length/Meter	unilan® Patch Cord RJ45 Cat.6/E_A screened, wiring 1:1 (mit uninet® 7702 flex 4P FRNC/LSOH Cat.7)					
	grey	green	yellow	red	blue	orange
0,5	653 503	653 553	653 603	653 653	653 703	(653 753)*
1,0	653 508	653 558	653 608	653 658	653 708	653 758
1,5	653 509	653 559	653 609	653 659	653 709	(653 759)*
2,0	653 510	653 560	653 610	653 660	653 710	653 760
2,5	653 511	653 561	653 611	653 661	653 711	(653 761)*
3,0	653 512	653 562	653 612	653 662	653 712	653 762
4,0	653 514	653 564	653 614	653 664	653 714	(653 764)*
5,0	653 516	653 566	653 616	653 666	653 716	653 766
6,0	653 518	653 568	653 618	653 668	653 718	(653 768)*
7,0	653 520	653 570	653 620	653 670	653 720	653 770
8,0	653 522	653 572	653 622	653 672	653 722	(653 772)*
9,0	653 524	653 574	653 624	653 674	653 724	(653 774)*
10,0	653 526	653 576	653 626	653 676	653 726	(653 776)*
12,5	653 527	653 577	653 627	653 677	653 727	(653 777)*
15,0	653 528	653 578	653 628	653 678	653 728	(653 778)*
20,0	653 530	653 580	653 630	653 680	653 730	(653 780)*

Note: Products which are marked with ()* are not on stock but can be delivered at short notice. Please do not hesitate to contact us.

Technical changes reserved.

Patch Cord RJ45 Cat.5/5e 100 MHz
screened, wiring 1:1

Dätwyler Cables

Product information

unilan® Patch Cord RJ45 Cat.5/5e screened, wiring 1:1

Description

The unilan® patch cord and connection cable uninet® 5502 flex 4P are terminated on both ends with a screened RJ45 plug and a moulded bend limiting boot.
The uninet® 5502 flex 4P cable has an excellent screen performance thanks to the overall copper braid and is highly flexible.

- Standard assortment from 0.5 m until 20 m
- Customized adjustments (bend limiting boot, termination, label) are available at short notice
  kurzfristig lieferbar

Applicable standards

ISO/IEC 11801:2002 (Channel Klasse D)
EN 50173: 2007

General Characteristics

Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
EMC	screened
Cat./Class	Cat.5/5e / Class D for 100Base-T and 1GBase-T

Länge/Meter	FR/PVC	FR/PVC	FR/PVC	FR/PVC	FR/PVC	FRNC/LSOH
	grey	green	yellow	red	blue	orange
0,5	652 003	652 053	652 103	652 153	652 203	(652 753)*
1,0	652 008	652 058	652 108	652 158	652 208	652 758
1,5	652 009	652 059	652 109	652 159	652 209	(652 759)*
2,0	652 010	652 060	652 110	652 160	652 210	652 760
2,5	652 011	652 061	652 111	652 161	652 211	(652 761)*
3,0	652 012	652 062	652 112	652 162	652 212	652 762
4,0	652 014	652 064	652 114	652 164	652 214	(652 764)*
5,0	652 016	652 066	652 116	652 166	652 216	652 766
6,0	652 018	652 068	652 118	652 168	652 218	(652 768)*
7,0	652 020	652 070	652 120	652 170	652 220	(652 770)*
8,0	652 022	652 072	652 122	652 172	652 222	652 772
9,0	652 024	652 074	652 124	652 174	652 224	(652 774)*
10,0	652 026	652 076	652 126	652 176	652 226	(652 776)*
12,5	652 027	652 077	652 127	652 177	652 227	(652 777)*
15,0	652 028	652 078	652 128	652 178	652 228	(652 778)*
20,0	652 030	652 080	652 130	652 180	652 230	(652 780)*

Note: Products which are marked with ()* are not on stock but can be delivered at short notice. Please do not hesitate to contact us.

Measurement cable RJ45 Cat.6/E_A 500 MHz

screened, set with 2 pcs
with series number for documentation

Product information

RJ45 Measurement cable Cat.6/E_A screened (set with 2 pieces) with series number for documentation

Application

For Channel-Link approval measurements for the cabling classes D, E und E_A.
In case of using fieldtester with dual measurement also Permanent-Link measurements could be done.

Packing:	in resealable plastic bag
Cable sheath:	orange, halogen free
Bend limiting boot:	moulded, grey, length: 2.00m
Serial number imprint:	date (week/year) + batch no. (for identification and traceability of the cable) incl. measurement report (colour printing) (Cable batch no. on the test report) (Report for each measurement cable with parameter: NEXT, Insertion loss, RL)
Identification:	Side A and B with laminated label

Applicable standards

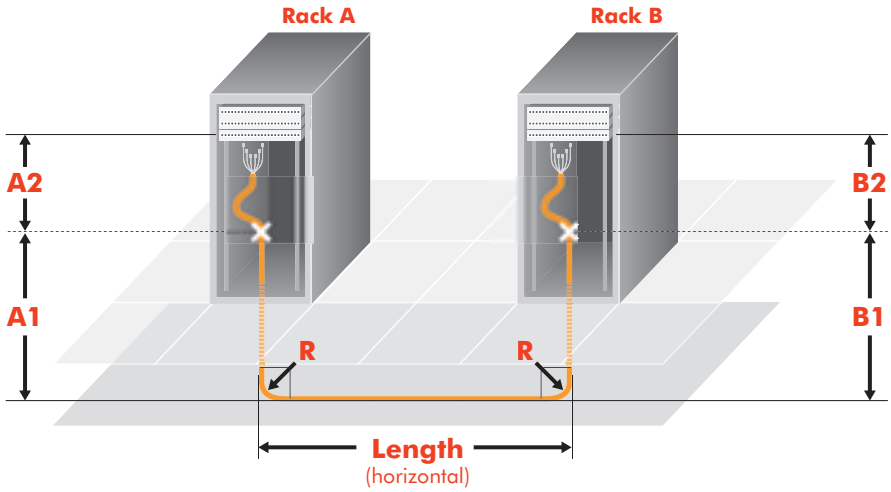
ISO/IEC 11801:2002 / Amd.1:2008 (Channel class E_A for 10GBase-T)
EN 50173:2007

Article No.	Description	PU
1411 063	Measurement cable RJ45 2,00m ORH gr/gr	1 Set

Copper-Trunks

factory terminated copper data cables
for easy installation in cable ducts
or in false floors of server rooms or datacentres

Dätwyler Cables



Concept

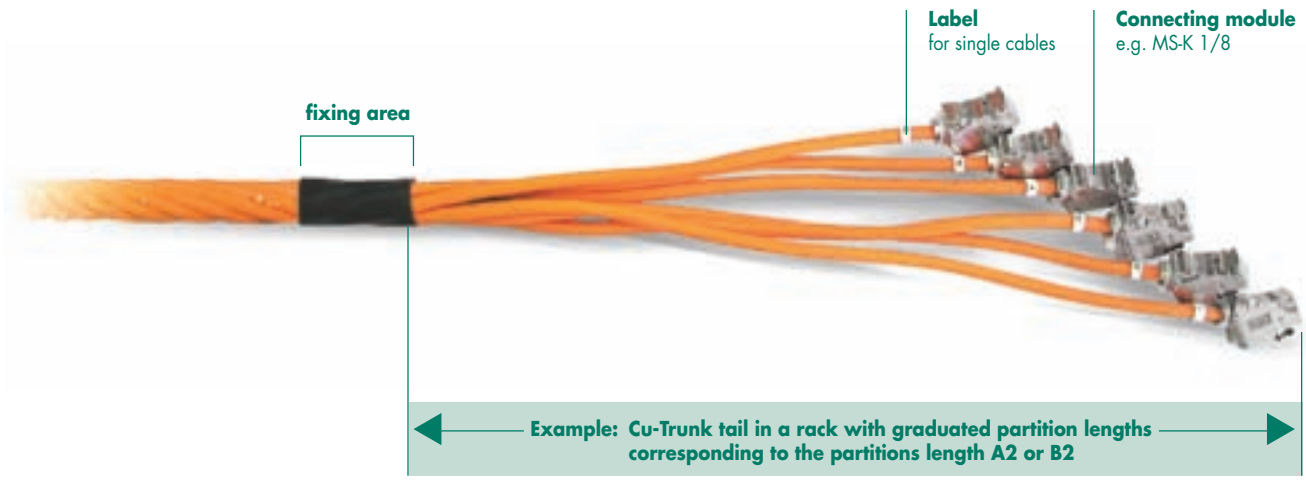
The highest protection aim for datacentres is to get the maximum possible failure safety.
Datacentres must be able to re-adjust the future increased requirements and accomodate to the following terms:
Flexibility – Scalability – Safeness – Room management.
The main reason are primarily: moves – adds – changes (MAC)

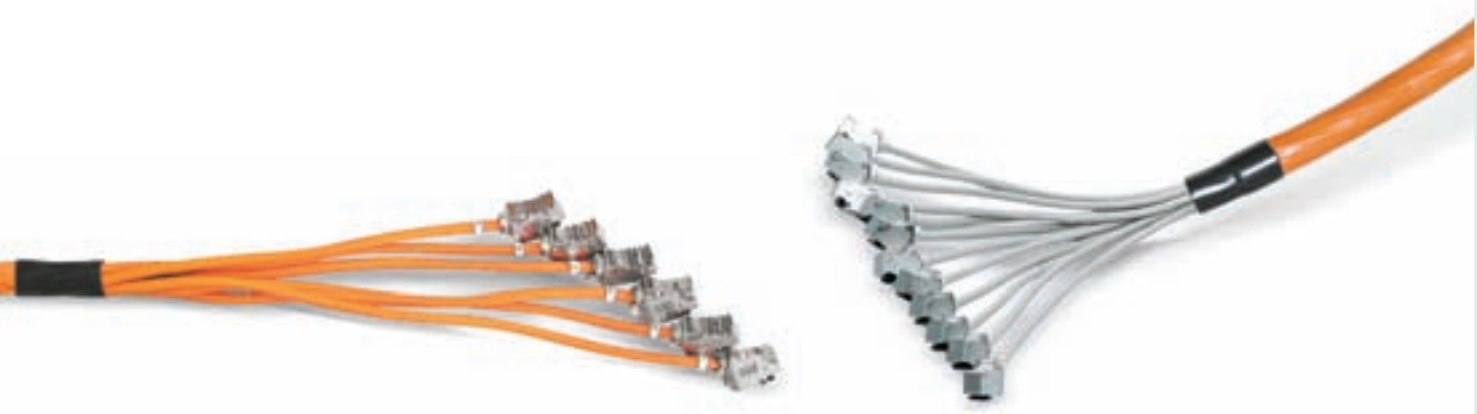
Factory Cu-Trunks consists of a number screened single cables below a combined cable jacket. They are intended for the use in server rooms and datacentres. They are a fast and safe cabling solution (because they are pre-tested) for connecting the Server, Router or Storage systems. The Cu-Trunks are terminated to the respective local conditions according to the customer request and connected with the connecting modules or plugs in the wanted category.

The following criterias are basically properly for the Cu-Trunk length definition:

Length horizontal	Horizontal distance between the racks
A1	Vertical distance up to the fixing point inside the data rack A
B1	Vertical distance up to the fixing point inside the data rack B
A2 (customer specified)	Terminated cable tail in rack A with the connected modules
B2 (customer specified)	Terminated cable tail in rack B with the connected modules
R	Tolerated bending radius for the Cu-Trunk in case of insertion into the rack from bottom or top

The total length of a Cu-Trunk is a summary of the partition length: **Length** horizontal **+ (A1+A2) + (B1+B2)**





Product information

Single components enables individually Cu-Trunks terminations . . .

Application

- in wanted lengths
- with customized imprint on single cables
- with terminated customized connecting modules
- with 100% factory pre-testing of all Cu-Trunks

Cables

1 part data cable	uninet® 7120	4P	Cat.7_A screened	suitable for 10GBase-T
6-parts data cable	uninet® 7002	6x4P	Cat.7 screened	suitable for 10GBase-T
12-parts data cable	uninet® S/FTP	12x4P	Cat.7 screened	suitable for 10GBase-T
25-parts data cable	uninet® S/UTP	25x4P	Cat.5e screened	suitable for 1000Base-T
x-parts flex cable	uninet® 7702 flex	4P	Cat.7 screened	suitable for 10GBase-T
flex cables	in different data cable jacket colours			

Connecting Modules

RJ45 Module KS-T 1/8	Cat.6/E_A	shielded	suitable for 10GBase-T
RJ45 Module MS-K 1/8	Cat.6/E_A	shielded	suitable for 10GBase-T
RJ45 Moduel MS 1/8	Cat.6/E_A	shielded	suitable for 10GBase-T
PS-GG45 4P	Cat.7/6	shielded	suitable for 10GBase-T
PS–TERA 4P	Cat.7_A	shielded	suitable for 10GBase-T
RJ45-Plug	Cat.6/E_A	shielded (for flex cables)	suitable for 10GBase-T

KS-T 1/8 Cat.6/E_A
shielded

MS-K 1/8 Cat.6/E_A
shielded

MS 1/8 Cat.6/E_A
shielded

PS-GG45 7A 4P
shielded

PS–TERA 7A 4P
shielded

RJ45-Stecker Cat.6/E_A
shielded
(for flex cables)

Panels

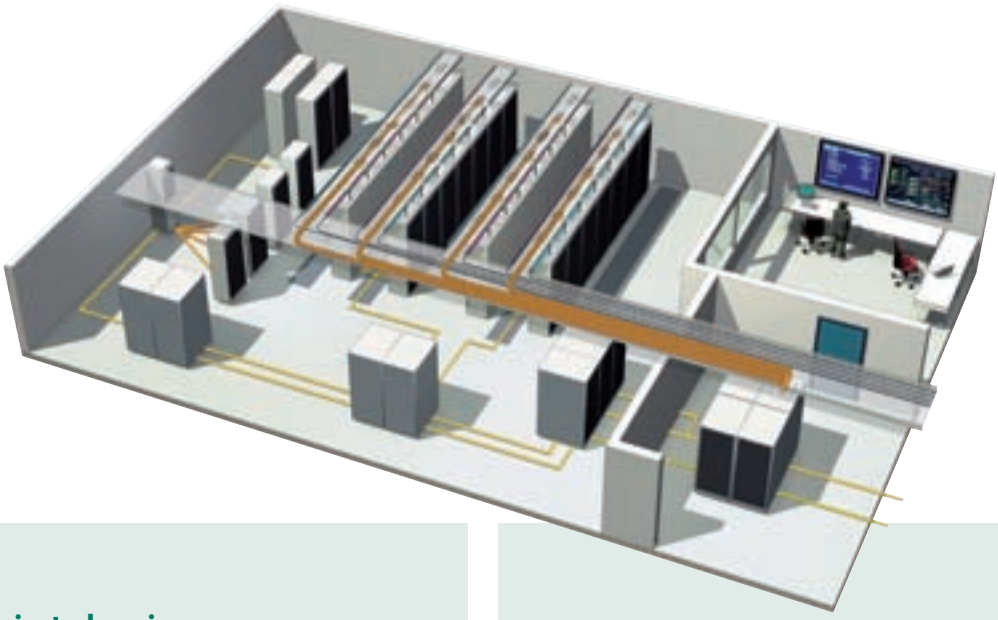
The modules can be installed very fast and easy into the patch panels 19"/1 U.
For each module typ a coressponding Patch Panel type is available.
The patch panels can also used as consolidation points. The CP-chassis are mainly installed in a false floor or on the wall.
For cable management suitable Trunk-deposition panels are available in combination with a cable-management panel 19"/1U.

Applicable standards

Depending on the chosen components the resultant Channel-Class based on the following standards:
ISO/IEC 11801:2002 / Amd.1:2008 (Class E_A)
EN 50173:1 and 5 : 2007
TIA/EIA 568-B.2-10: 2008

Copper-Trunks
factory terminated copper data cables

Dätwyler Cables



Project planning for a Copper-Trunk

For which application is the Cu-Trunk needed - today or in future?

10Gbase-T (500 MHz) or
1Gbase-T (100 MHz) or .....

Please choose the qualified data cable typ!

Flex cables are extremely flexible with lower packing density but with higher attenuation, it means the max. acceptable lengths are a little bit shorter!

Choose the number of needed single cables in a bundle out of our supply list.

Please choose the wanted connecting modules or plugs compliant with your planned application!

For Class F, E_A or D?

Please choose corresponding to the modules the compliant type of patch panel.

How long shall be the Cu-Trunk?

Where do you want to install them? On top above the racks or below in a false floor? Please note and consider the diameter and the tolerated bending radius of the Trunk's! Please note the weight!

In which kind shall be installed the trunks inside the rack up to the pach panels?

- sidewards from right?
- sidewards from left?
- from behind centrical?
- or? . .. - or?

Depending on the kind of fixing the trunk inside the rack, the single cables can be shorted in different lengths.

Usually all cables are shorted in the same length with enough reserve up to the farthermost connecting point.
For cable management suitable trunk de-position-panels are available in combination with a cable-management panel (Deposition Panel 19"/1HE behind a Management Panel)

On request is a customer specified imprint / labelling on the trunks possible.

Please budget ahead enough time for the pre termination in the factory!

You need consulting service?
No Problem – please call us!
We' re happy to help you

You will find the Dätwyler-Cables phone numbers on the last catalog page.
For actual informations please see inside our Homepage:
www.daetwyler-cables.com

RJ45 plug IP20 Cat.5e
screened
field assembly

Product information

RJ45 plug IP20 Cat.5e screened -field assembly

Description

8-wire field assembly RJ45 plug with quick connection.

The Data cables with the following properties could be connected:

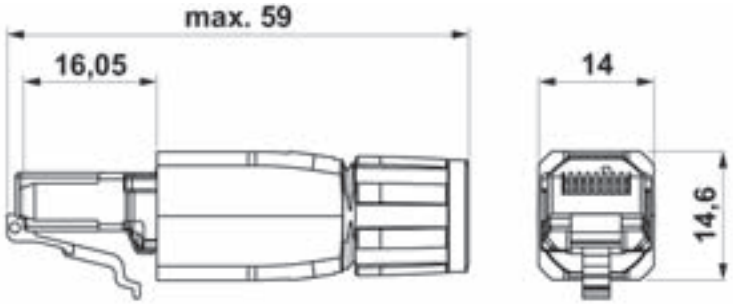
Solid copper wire diameter	0,40 - 0,64 mm , AWG 24/1 up to AWG 22/1
Strand copper wire diameter	0,48 - 0,67 mm , AWG 26/7 up to AWG 22/7
Cable sheath diameter	5,0 mm up to 8,5 mm
Degree of protection	IP 20

The plug is pre-assambled and therefore also easy to finish at the building site without special tools.

Applicable standards

ISO/IEC 11801:2002
EN 50173: 2007
Cat. 5/5e für Fast-Ethernet (100Base-T)

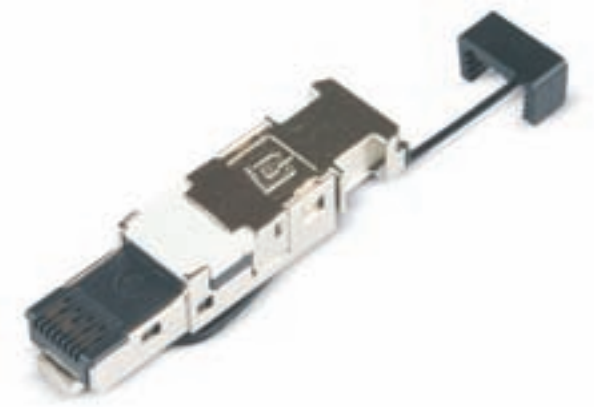
Dimensions



Articel No.	Description	Colour (similar)	PU
417 521	RJ45 plug IP20 Cat.5/5e screened -field assembly	grey	1 piece

RJ45 plug IP20 Cat.6
screened
field assembly

Dätwyler Cables



Product information

RJ45 plug IP20 Cat.6 screened -field assembly

Description

8-wire field assembly RJ45 plug with quick connection.

The Data cables with the following properties could be connected:

Solid copper wire diameter	0,40 - 0,64 mm , AWG 24/1 up to AWG 22/1
Strand copper wire diameter	0,48 - 0,67 mm , AWG 26/7 up to AWG 22/7
Cable sheath diameter	5,5 mm up to 8,5 mm
Degree of protection	IP 20

Body consists of solid zinc die-cast. Easy assmbling without special tools.
With strain relief - could be installed afterwards for colour coding.

Applicable standards

ISO/IEC 11801: 2002 (Channel Class E)
EN 50173: 2007
Cat. 6 suitable for 10GBase-T according to IEEE 802.3an

Articel No.	Description	Colour (similar)	PU
417 522	RJ45 plug IP20 Cat.6 screened -field assembly	black	1 piece

RJ45 plug body IP67 Cat.5e
screened
field assembly

Product information

RJ45 plug body IP67 Cat.5e screened -field assembly

Description

8-wire field assembly RJ45 plug with quick connection.

The Data cables with the following properties could be connected:

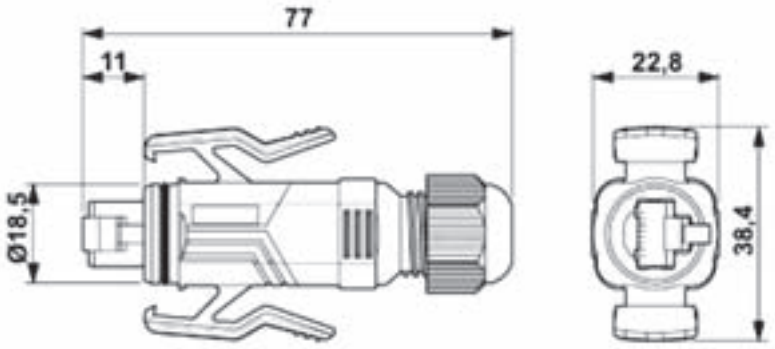
Solid copper wire diameter	0,40 - 0,64 mm , AWG 24/1 up to AWG 22/1
Strand copper wire diameter	0,48 - 0,67 mm , AWG 26/7 up to AWG 22/7
Cable sheath diameter	5,0 mm up to 8,5 mm
Degree of protection	IP67

The plug is pre-assambled and therefore also easy to finish at the building site without special tools. The easy to handle push-pull-interlock protects the connection against shock and vibration and ensure that a safety data transmission also in raughen industrial enviroments.

Applicable standards

ISO/IEC 11801: 2002
EN 50173: 2007 (Cat.5)
TIA/EIA 568 568-B:2002 Cat.5e

Dimensions



Articel No.	Description	Colour (similar)	PU
417 520	RJ45 plug IP67 Cat.5/5e screened -field assembly	grey	1 piece

Data outlets IP67
for 1 RJ45 Modul MS 1/8 or MU 1/8

Dätwyler Cables

Fig.1:
Data outlet IP67
(surface mounting)

Fig.2:
Connector socket IP67

Fig.3:
Mounting flange IP67

Fig.4:
RJ45-Plug body IP67
(assembly without special tools)

Product information

Data outlets IP67 for 1 RJ45 Modul MS 1/8 shielded or MU 1/8 unshielded

Application

The use of Ethernet protocols is increasingly transferred to harsh, industrial environments exposed to pollution.
For the use in this industrial environment many different products with degree of protection IP67 are available:

1) Data outlet IP67 for 1 module MS 1/8 shielded or MU 1/8 unshielded - surface mounting
2) Connector socket IP67 for 1 module MS 1/8 shielded or MU 1/8 unshielded
3) Mounting flange IP67 for installation in devices für 1 module MS 1/8 shieöded or MU 1/8 unshielded
4) RJ45-plug body IP67 for local assembling of patch cords with IP67-protection

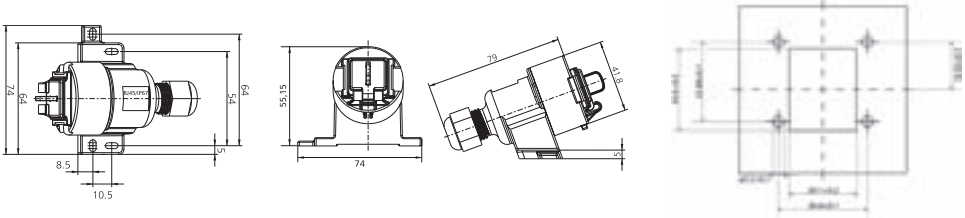
The components are utilized in the area of structured cabling within the harsh industrial sector (protection class IP67) according to EN 50173-2 (design). (Environment classes M_3 I_3 C_3 E_3).
In order to ensure a secure data transmission, the modular inserts aligned with each other offer a large surface 360° contact of the cable screen, which has excellent EMV properties.

The cover permanently attached to the casing of the connector box serves to close the opening of the jack when unmated, and prevents dust, dirt and water from entering.
Useable in connection with IP67-protected or standard RJ45-Patchcords in different lenghts.

Description

- When connected to an IP67 plug, it fulfills the protection category IP67.
- Connection with commercially available RJ45 plugs possible (no IP protection)
- Plug surface in accordance with IEC 61076-3-106 (Option 6)
- Environment class M_3 I_3 C_3 E_3 in accordance with EN50173-2
- IP67 closing cover permanently attached
- Large surface 360° screen contact
- Add-on surface mounting possible
- Modules easy to open, reusable
- Add-on unit with an 8-contact RJ45 jack
- Easy, time-saving installation
- Completely screened modules

Dimensions



Articl No.	Fig.	Desription	Colour (similar)	PU
185 719	1	Data outlet IP67 for 1 RJ45 modul MS 1/8 (without module)	grey RAL 7035	1 piece
185 725	2	Connector socket IP67 for 1 modul MS 1/8 (without module)	grey RAL 7035	1 piece
185 726	3	Mounting flange IP67 for 1 modul MS 1/8 (without module)	grey RAL 7035	1 piece
417 520	4	Field assambly RJ45-plug IP67 incl. 1 RJ45 plug	grey RAL 7035	1 piece
185 700		RJ45-module MS 1/8 Cat.6/E_A shielded, colour code T568-A	metallic	10 pieces
1 414 227		RJ45-module MS 1/8 Cat.6/E_A shielded, colour code T568-B	metallic	10 pieces
185 750		RJ45-module MU 1/8 Cat.6/E_A unshielded, colour code T568-A	white	10 pieces
185 751		RJ45-module MU 1/8 Cat.6/E_A unshielded, colour code T568-B	white	10 pieces

Technical changes reserved.

RJ45 Patch cord IP67

Patch cord and connecting cables Cat.6

Product information

Patch cord PiMF Cat. 6, IP67 RJ45/RJ45 1:1

Description

unilan® connection cables IP67 Cat.6 are appropriate to the harsh, industrial environment. The IP67 RJ45 connector is compatible with the unilan® Modular Solution IP67 components.

The type of cable uninet® 7702 flex 4P used here FRNC/LSOH Cat.7 convinces with outstanding electrical and mechanical characteristics. The pair screening (PiMF) and strong covering of copper braid for total screening with secure outstanding NEXT and impedance values.

The increasing requirements in the the harsh, industrial environment like oil resistance and robustness can be covered with the uninet® 7702 flex 4P industrial PUR cable.

The standard version is equipped on one side with a IP67 RJ45 plug and on the other side with a RJ45 plug with a moulded bend limiting boot.

Except the standard version the cable can be manufactured naturally in each desired length and with different plug combinations. Please do not hesitate to contact us.

General properties

Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)	
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2	
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)	
EMC	screened	
Cat/Class	Cat 6, Class E	
Patch cord:	plug A	IP67 RJ45 plug grey
	plug B	RJ45 plug, bend limiting boot grey or orange

The patch cord plugs IP67 are compatible to the RJ45 connector boxes with IP67 interface: 185 719, 185 725, 185 726, 417 530

Length/Metre	uninet® 7702 flex 4P Industrial PUR	uninet® 7702 flex 4P Industrial FRNC/LSOH
	plug B bend limiting boot grey	plug B bend limiting boot grey
1,0	on request	664 008
2,0	on request	664 010
3,0	on request	664 012
5,0	on request	664 016
7,0	on request	664 020
10,0	on request	664 026

RJ45 Connector Box IP67

surface mount housing
for 2 modules

Dätwyler Cables

RJ45 Connector Box IP67 for 2 modules

MS-K 1/8 Cat.6/E_A shielded

KS-T 1/8 Cat.6/E_A shielded
KS-T 1/8 Cat.5e shielded

PS-GG45 4P Cat.7/6

For assembly with 2 shielded unilan modules (see above)

Product information

RJ45 Connector Box IP67 for two RJ45-Modules shielded

Application

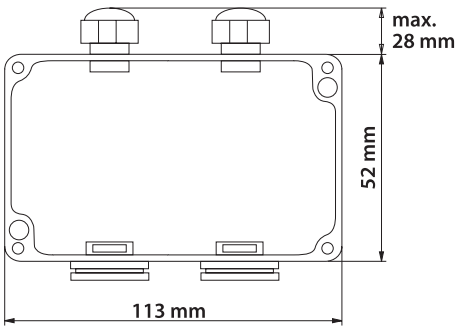
Ethernet protocols are increasingly used in an environment exposed to pollution.
With this in mind, Dätwyler is offering the AP Connector Box Industrial IP67.
The box makes the installation of two RJ45-Modules.
For information on the properties of the module, refer to the data sheet of the requested module.
This system is utilized in the area of structured cabling of buildings in the industrial sector, where longevity and uptime of the systems are of great importance.

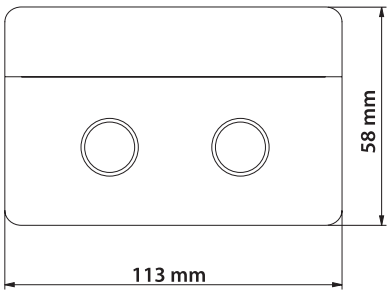
Description

RJ45 Connector Box IP67 for 2 modules (requester typ see below)
Degree of protection IP67 - with connected RJ45 Patchcords IP67
Degree of protection IP20 - with connected Standard RJ45 Patchcords
Gasket for the incoming data cables with PG-gland
Stable chassis made of aluminium with surface colour in grey, similar RAL 7035
Wall-/floor mounting by inlying screw openings

Dimensions wide x height x deep = 113 x 52 x 58 mm

Dimensions





Article No.	Description	Colour (similar)	PU
417 530	Connector Box IP67 for 2 Modules (unloaded)	grey RAL 7035	1 piece

Connector Box IP44
surface mount housing
for 2 modules

Connector Box IP44 for 2 modules
surface mounted

MS 1/8 Cat.6/E_A shielded
MU 1/8 Cat.6 unshielded

MS-K 1/8 Cat.6/E_A shielded

KS-T 1/8 Cat.6/E_A shielded
KS-T 1/8 Cat.5/5e shielded
KU-T 1/8 Cat.6 unshielded
KU-T 1/8 Cat.5/5e unshielded

PS-GG45 4P Cat.7 / 6 shielded

same
outlet insert

Product information

AP Connector Box Industrial IP44 for max. two RJ45-Modules

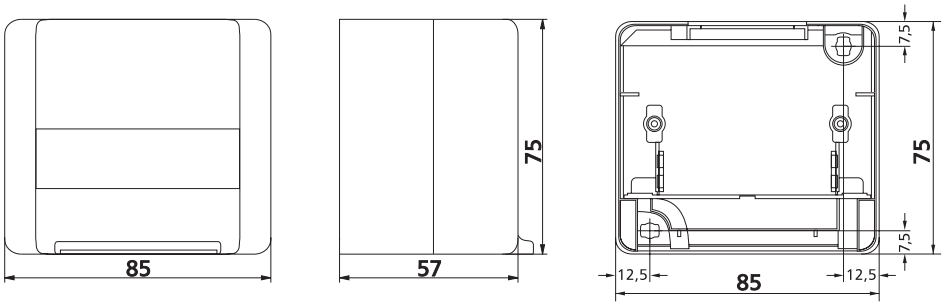
Application

Ethernet protocols are increasingly used in an environment exposed to pollution.
With this in mind, Dätwyler is offering the AP Connector Box Industrial IP44.
The box makes the installation of max. two RJ45-Modules.
For information on the properties of the module, refer to the data sheet of the requested typ.
This system is utilized in the area of structured cabling of buildings in the industrial sector, where longevity and uptime of the systems are of great importance.

Description

- IP44 surface casing for 2 pcs RJ45-Modules (requested typ see below)
- Cable feeding for one or two cables from the top
- shatter-proof
- Colour grey, similar to RAL 7035
- IP44 only in closed condition - without patchcords

Dimensions



Article No.		Description	Colour (similar)	PU
185 728	AP	Connector Box IP44 for 2 Modules MS 1/8 or MU 1/8, unloaded	grey RAL 7035	1piece
417 510	AP	Connector Box IP44 for 2 Modules MS-K 1/8, unloaded	grey RAL 7035	1 piece
417 510	AP	Connector Box IP44 for 2 Modules KS-T 1/8 or KU-T 1/8, unloaded	grey RAL 7035	1 piece
417 510	AP	Connector Box IP44 for 2 Modules PS-GG45, unloaded	grey RAL 7035	1 piece

Technical changes reserved.

Wall Outlet IP44

flush or surface mount housing
for 2 Modules MS 1/8
with closing

Dätwyler Cables

Surface mount housing (AP)

Flush duct mount housing (UPK)

Product information

AP/UPK Connector Box Industrial IP44 for 2 MS 1/8 modules - lockable

Application

Ethernet protocols are increasingly used in an environment exposed to pollution.
With this in mind, Dätwyler is offering the AP Connector Box Industrial IP44.
The box makes the installation of 2 MS1/8 Cat 6 modules possible.
For information on the properties of the module, refer to the data sheet of the MS1/8 modules Cat 6, screened.
This system is utilized in the area of structured cabling of buildings in the industrial sector, where longevity and uptime of the systems are of great importance.

Description

- lockable wall outlet with degree of protection IP44
- Cover is also lockable with connected patch cords
- a surface mount and flush mount version is available for 2 RJ45 Modules MS 1/8 Cat.6/E_A
- Cable feeding for one or two cables from the top
- shatter-proof
- Colour grey, similar to RAL 7035

Dimensions

Surface mount housing	with x height x deep = ca. 90 x 93 x 90 mm
Flush duct mount housing	with x height x deep = ca. 90 x 93 x 32 mm

Article No.		Description	Colour (similar)	PU
417 500	UPK	Wall outlet IP44 flush duct mounted for 2 Modules MS 1/8 without modules	grey RAL 7035	1piece
417 501	AP	Wall outlet IP44 surface mounted for 2 Modules MS 1/8 without modules	grey RAL 7035	1piece

REG-Adapter MS IP20

for assembly on DIN rail
for 1 RJ45 Module MS 1/8

unilan® DIN-Rail (REG)-Adapter for 1 Module MS 1/8

Product information

unilan® DIN-Rail (REG)-Adapter for 1 RJ45 Module MS 1/8 Cat.6/E_A

Application

The DIN-Rail REG-Adapter up a MS1/8 RJ45 module (MS1/8 module is not part of the delivery) and enables the mounting of a RJ45 socket on a DIN rail TH35. The MS 1/8 module is protected by a cover against direct contact.

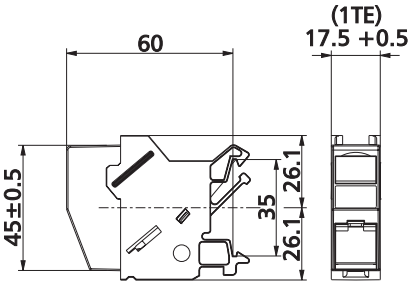
The width of 1TE makes the installation of up to 12 modules in standard electrical distributors possible.
With installation as equipment of the protection class system I, the earthing is made directly by means of an integrated earthing spring by the DIN rail. The DIN rail has to be attached in this case over appropriate contacting clamps at the earthing of the building .

Suitable for the following unilan® Modules:
- RJ45 Modules MS 1/8 Cat.6/EA shielded
- RJ45 Modules MU 1/8 Cat.6 unshielded

Description

- Mounting on DIN rail TH35 (in accordance with DIN EN60715)
- 1TE (< 18mm) width (DIN 43880)
- Integrated earthing spring (removable)
- Colour light grey (similar to RAL 7035)
- Protection class I or II, depending on mode of installation
- Protection class IP20
- Protective window for labeling strips
- Integrated dust protection cover

Dimensions



Article No.	Description	Colour (similar)	PU
185 721	unilan® REG Adapter for 1 RJ45 Modul MS, without module	light grey RAL 7035	1 unit
185 700	unilan® RJ45-Module MS 1/8 Cat.6/EA shielded colour coec T568-A	metallic	10 pieces
1414 227	unilan® RJ45-Module MS 1/8 Cat.6/EA shielded colour code T568-B	metallic	10 pieces

Technical changes reserved.

REG-Adapter MS-K IP20

for assembly on DIN rail
for 1 RJ45 Module MS-K 1/8

Dätwyler Cables

unilan® DIN-Rail
(REG)-Adapter MS-K

Product information

unilan® DIN-Rail (REG)-Adapter MS-K

Application

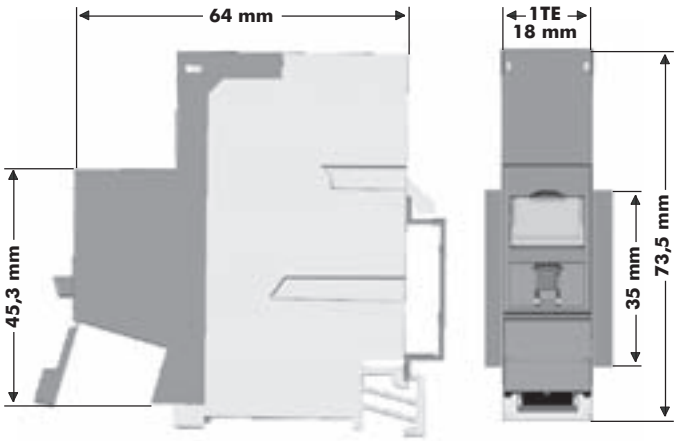
The REG-Adapter is useable for mounting on a DIN-rail TH 35
It can be fit with a RJ45-Modul MS-K 1/8 (not included in the delivery)
The Module is protected against directly physical contact.
Keeping the protection class II by mounting without grounding connection
Keeping the protection class I by connecting possibility for a ground wire.

Suitable for the following unilan Module:
- RJ45 Modules MS-K 1/8 Cat.6/EA shielded

Description

- Mounting on DIN rail TH35 (in accordance with DIN EN60715)
- 1TE (< 18mm) width (DIN 43880)
- Colour light grey (similar to RAL 7035)
- Protection class I or II, depending on mode of installation
- Protection class IP20
- Protective window for labeling strips
- Integrated dust protection cover

Dimensions



Article No.	Description	Colour (similar)	PU
440 018	unilan® REG-Adapter for 1x RJ45-Module MS-K (without Modul)	light grey RAL 7035	1 piece
440 001	unilan® RJ45-Module MS-K 1/8 Cat.6a shielded, TIA-A	metall	10 pieces

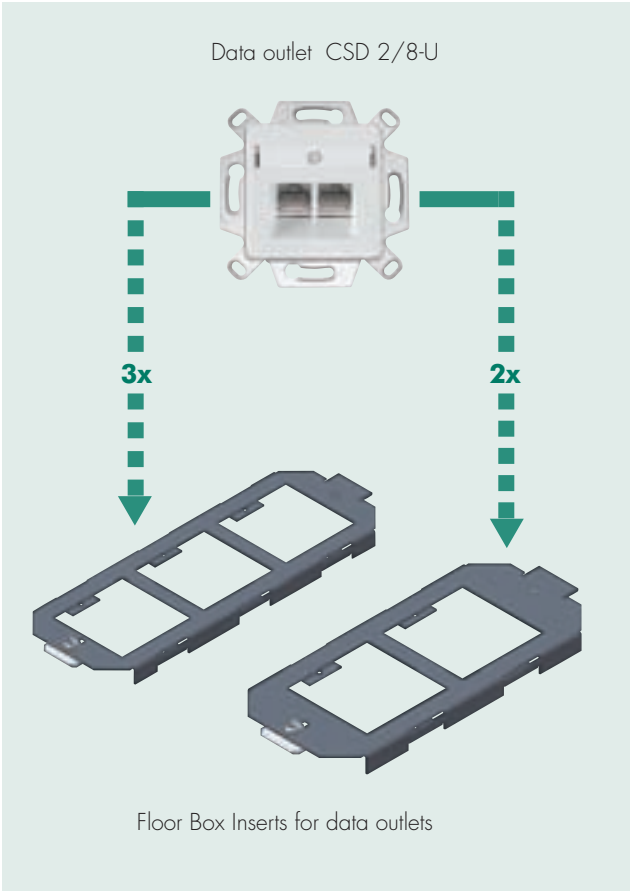
Floor boxes are underfloor cases in different shapes and sizes. Primary provider in Germany is OBO / Bettermann.

As a rule the following unit inserts will be used:
Rectangularly = GES 9 resp GES 6
Round = GESR 9 resp GESR 6

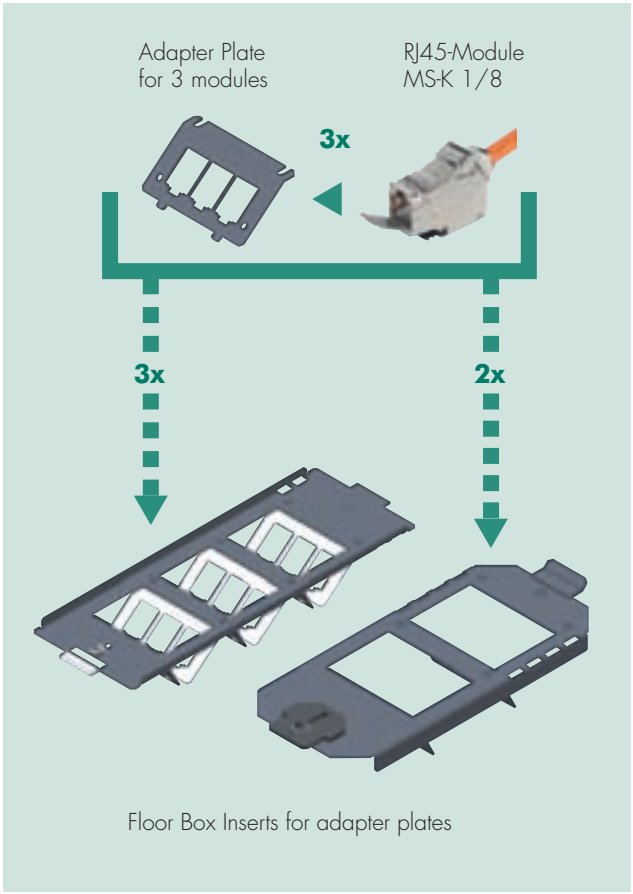
The capacity is fo:
GES 6 / GESR 6 = max. 3 floor box inserts 2-ports
GES 9 / GESR 9 = max. 3 floor box inserts 3-ports

GES 6 / GES 9

GESR 6 / GESR 9



Floor Box Inserts for data outlets



Floor Box Inserts for adapter plates

Advantages of the Floor Box Inserts and Floor Box Adapter Plates

The Floor Box Inserts can be installed directly (without a device cup) in the corresponding floor box (third party manufactor). In this inserts can be installed either unilan® data outlets or adapter plates for always 3 unilan® modules. Corresponding adapter plates for the different kinds of unilan® module assemblings are available.

By omission the device cup there are no problems with space in the underfloor cases whereby optimal assembly ratios for copper and fiber cables arise as a result. Unsused opening can be closed with blind plates.

Examples

Floor Box Inserts
for unilan® data outlets

Dätwyler Cables

Floor Box Inserts for data outlets

Accessorie: Blind plate

Product information

unilan® Floor Box Solutions

Fig.	Article No.	Description	PU
	417 400	unilan® Floor Box Insert for Ackermann GES 9 / for integration of 3 unilan® Data outlets CSD	1 Piece
	417 401	unilan® Floor Box Insert for Ackermann GES 6 / for integration of 2 unilan® Data outlets CSD	1 Piece
	417 404	unilan® Floor Box Insert for PUK / for integration of 3 unilan® Data outlets UP	1 Piece
	417 402	Blindabdeckung for unilan® Floor Box Inserts Article No.: 417 400, 417 401	1 Piece
	417 410	unilan® Floor Box Insert for Ackermann System 55 GESR 9 / for integration of 3 adapter plates	1 Piece

Floor Box Inserts
for unilan® modules

Floor Box Inserts for adapter plates

Accessories

PS-TERA

MS 1/8

MS-K 1/8
KS-T 1/8
PS GG45

SC-D

Bracket

Blind plate

Strain relief

Product information

unilan® Floor Box Solutions

Fig.	Article No.	Description	PU
	417 410	unilan® Floor Box Insert for Ackermann System 55 GESR 9 / for integration of 3 adapter plates	1 Piece
	417 411	Adapter plate for unilan® Floor Box Insert System 55 / Version for 2 Module Types: MS 1/8, MS-N 1/8, PS-TERA (Insert with Bracket 417 440)	1 Piece
	417 412	Adapter plate for unilan® Floor Box Insert System 55 / Version for 3 Module Types: MS 1/8, MS-N 1/8, PS-TERA (Insert with Bracket 417 440)	1 Piece
	417 421	unilan® Floor Box Insert for Ackermann GES 9 / for integration of 3 Adapter plates	1 Piece
	417 420	unilan® Floor Box Insert for Ackermann GES 6 / for integration of 2 Adapter plates	1 Piece
	417 422	unilan® Floor Box Insert for OBO-Bettermann GEE 9-12 / for integration of 3 Adapter plates	1 Piece
	417 423	unilan® Floor Box Insert for Elektraplan GB 3 / for integration of 3 Adapter plates	1 Piece
	417 424	unilan® Floor Box Insert for Van-Geel IK-1 / for integration of 3 Adapter plates	1 Piece
	417 432	Adapter plate for unilan® Floor Box Insert / Version for blind plate	1 Piece
	417 433	Adapter plate for unilan® Floor Box Insert / with description frame and 2 assembley nuts / Version for 3 Module Types: MS 1/8, MS-N 1/8	1 Piece
	417 434	Adapter plate for unilan® Floor Box Insert / with Bracket, description frame and 2 assembley nuts / Version for 3 Module Types: PS-GG45, KS-T 1/8, KS 1/8 (Insert with Bracket, included in delivery!), PS-TERA (Insert with Bracket Article No.:417 440!)	1 Piece
	417 440	Bracket PS-TERA, for Adapter plate 417 434	1 Piece
	417 435	Adapter plate for unilan® Floor Box Insert / with description frame and 2 assembley nuts / Version for 3 Module Types: MS-K 1/8, PS-GG45, KS-T 1/8	1 Piece
	417 441	Strain relief 45 mm for Floor Box Insert, steel 1203; RAL 9005 deep black	1 Piece
	417 442	Strain relief 64,5 mm for Floor Box Insert , steel 1203; RAL 9005 deep black	1 Piece
	417 431	Adapter plate for unilan® Floor Box Insert / Version for 2 SC-D, horizontal with assembly material , steel 1203; RAL 9005 eep black	1 Piece

Floor Box Units
for unilan® Modules MS 1/8 and MU 1/8

Dätwyler Cables

Floor Box Unit (GB 2)
with insert for 3 modules MS 1/8, MU1/8
upgrade with one additional insert

Floor Box Unit (GB 3)
with insert for 3 modules MS 1/8, MU1/8
upgrade with two additional inserts

Product information

Floor Box Unit for Installation in flush floor boxes

Features

The Floor Box Units could be installed in usual in trade flush floor box systems, for example OBO, Ackermann, Niedax).

There are two sizes corresponding to the device cup 2 and 3 available.

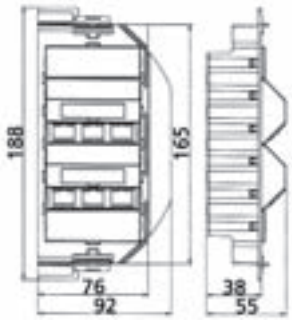
The device cup 2 is preinstalled with one insert for 3 modules MS 1/8 oder MU 1/8 and could be upgrated with one Upgrate-Set to max. 6 modules

The device cup 3 is preinstalled with one insert for 3 modules MS 1/8 oder MU 1/8 and could be upgrated with two Upgrate-Sets to max. 9 modules

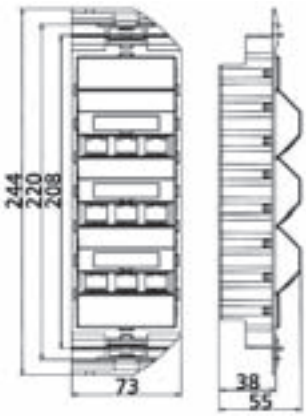
The modules could be installed very easy and profitable in the inserts with observation the bending radius for copper and fiber cables.

Delivery without modules!

GB 2



GB 3



Article No.	Description	Colour (similar)	PU
1411 751	Floor Box Unit (GB 2) for 3 Modules MS 1/8 or MU 1/8 (celivery without modules)	RAL 1013	1 piece
1412 365	Floor Box Unit (GB 3) for 3 Modules MS 1/8 or MU 1/8 (celivery without modules)	RAL 1013	1 piece
1411 753	Upgrade-Set (for GB 2, 3) for 3 Modules MS 1/8 or MU 1/8 (celivery without modules)	RAL 1013	1 piece
185 700	RJ45-Module MS 1/8 Cat.6/E_A shielded - colour code T568-A	metallic	10 pieces
185 750	RJ45-Module MU 1/8 Cat.6 unshielded - colour code T568-A	white	10 pieces

(further module configuration on enquiry)

Consolidation-Point Chassis
for unilan® Patch Panels 19"/1HE, 10"/1HE

Consolidation-point 19" 1U
(delivery without Patch Panel)

Consolidation-point 10" 1U
(delivery without Patch Panel)

Product information

unilan® Consolidation-Point Chassis
for integration of 19" /10" Patch Panels

Application

Suitable for Consolidations Point installations in communication cablings.
The chassis is useable for Patch Panels with 19"/1HE or 10"/1HE fixing dimensions.
All Patch Panels for the different unilan® connectors could be installed.

Construction

Cover	Solid metal, die cast zinc, colour similar RAL 9005
Mounting plate	with two drillings for wall or ceiling installation
Dust-cover upper part	Mounting with two screws on mounting plate
Aperture angle flap	ca. 100 degree

Dimensions:

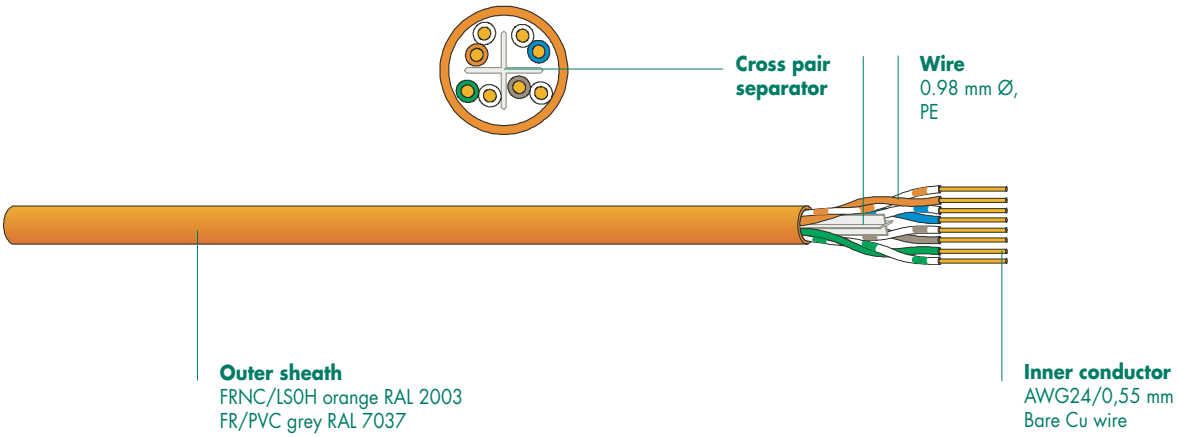
19" (WxDxH)	495 x 305 x 60mm
10" (WxDxH)	270 x 305 x 60mm

Article No.	Description	Colour (similar)	PU
416 999	Consolidation-point 19" 1U, without Patch Panel	RAL 9005	1
417 443	Consolidation-point 10" 1U, without Patch Panel	RAL 9005	1

Data cable U/UTP Cat.6 AWG24

uninet® 662 4P

Dätwyler Cables



Product information

Features

High-quality Cat 6 data cable satisfying the highest demands!
Very good Next reserve thanks a cable construction with cross (pair separator).
Compliant with all current connection hardware according to: EN 50173 and ISO/IEC 11801.
Guaranteed limit values according to Cat.6: ISO/IEC 11801, EN 50173, EN 50288-6-1 and TIA/EIA 568-B-2.

Applications

Data cable for building structured premesis cabling. For the transmission of digital and analogue signals, voice, video and data applications.
Especially suitable for all class E applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, token ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Sheath colour	FRNC/LSOH	orange RAL 2003
	FR/PVC	grey RAL 7037

Versions

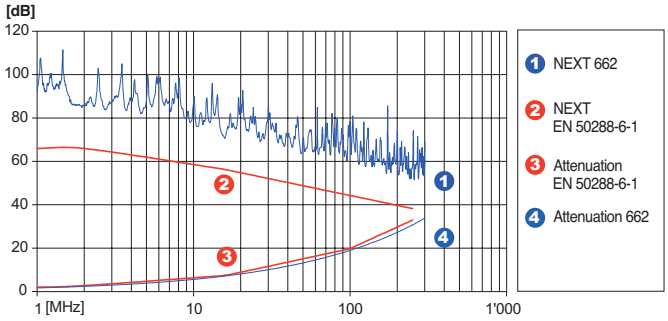
Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	CU weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
185 586	4 x 2 x 0.55(AWG24)	HF-4329-U	FR/PVC [2]	6.0	39.8	19.4	0.20	0.72	1000m Drum
185 596	4 x 2 x 0.55 (AWG24)	HF-4333-U	FRNC/LSOH [1]	6.0	41.3	19.4	0.17	0.60	1000m Drum

[1] FR/PVC = Flame Retardant/Polyvinylchloride;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable U/UTP Cat.6 AWG24
uninet® 662 4P

Electrical Characteristics

Loop resistance at 20°C:	155	Ω/km
Mutual capacitance:	50	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Delay Skew:	20	ns/100m
NVP:	67	%



Category				5e	6	
Frequency [MHz]	1	4	10	100	250	300
Attenuation [dB/100m]	1,8	3,6	5,6	18,1	29,1	31,5
NEXT [dB]	85	80	73	59	52	50
PS NEXT [dB]	82	77	70	56	49	47
ACR [dB]	83	76	67	41	23	18
PS ACR [dB]	80	73	64	38	20	15
ELFEXT [dB]	86	78	67	47	37	33
PS ELFEXT [dB]	83	75	64	45	34	30
Return loss [dB]	27	32	32	30	25	25

These performance data are typical measured values.

Mechanical Characteristics

Bending radius	- during draw-in	≥ 45 mm
	- permanently installed	≥ 22,5 mm
Tensile strength		≤ 91 N
Crush resistance		≥ 1000 N/10 cm
Impact		≥ 10 Impacts
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen	FRNC/LSOH-Variant according to IEC 60754-2
Smoke density	FRNC/LSOH-Variant according to IEC 61034
Burning characteristics	according to IEC 60332-1

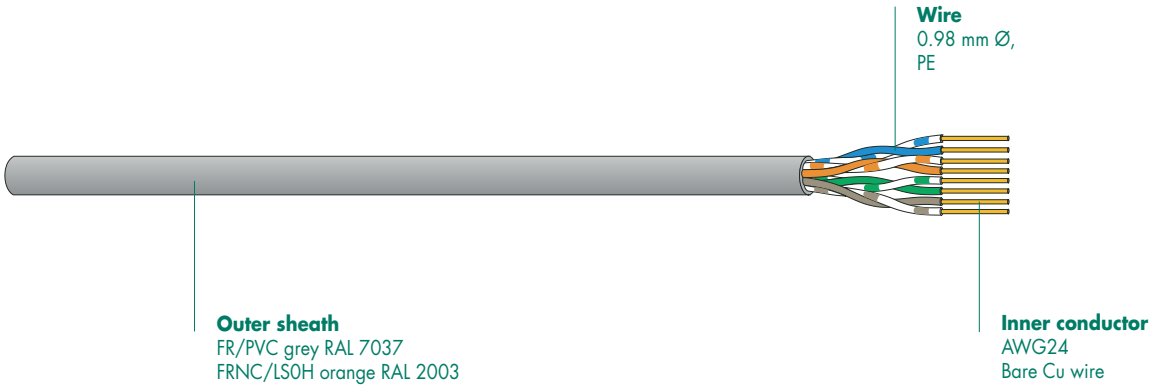
General Characteristics

Wire colour code	white - blue/blue white - orange/orange white - green/green white-brown/brown (ring marked) according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 662 4P UTP CAT6 AWG 24 FR/PVC resp. DAETWYLER UNINET 662 4P UTP CAT6 AWG 24 FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
Cat./Class	better than Cat.6, Class E

Data cable U/UTP Cat.6 (Channel) AWG24

uninet® 602 4P

Dätwyler Cables



Product information

Features

High-quality data cable with very small outer diameter and minimal fire load thanks to construction without cross profile/pair separator.
Compatible with all current connecting hardware to EN 50173, ISO/IEC 11801.
Typical limit values according to Cat.6: EN 50173, ISO/IEC 11801
and TIA/EIA 568-B-2.

Applications

Data cable for building structured cabling; for the transmission of digital and analogue signals, voice, video and data applications.
Especially suitable for all class E applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, token ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Sheath colour	FRNC/LSOH	orange RAL 2003
	FR/PVC	grey RAL 7037

Versions

Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	CU weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
181 234	4 x 2 x 0,55 (AWG24)	HF-4275-U	FR/PVC [1]	5,4	35,4	18,4	0,15	0,54	305m Box
on request	4 x 2 x 0,55 (AWG24)	HF-4275-U	FR/PVC [1]	5,4	35,4	18,4	0,15	0,54	1000m Drum
181 235	4 x 2 x 0,55 (AWG24)	HF-4276-U	FRNC/LSOH [2]	5,4	35,6	18,4	0,12	0,43	305m Box
on request	4 x 2 x 0,55 (AWG24)	HF-4276-U	FRNC/LSOH [2]	5,4	35,6	18,4	0,12	0,43	1000m Drum

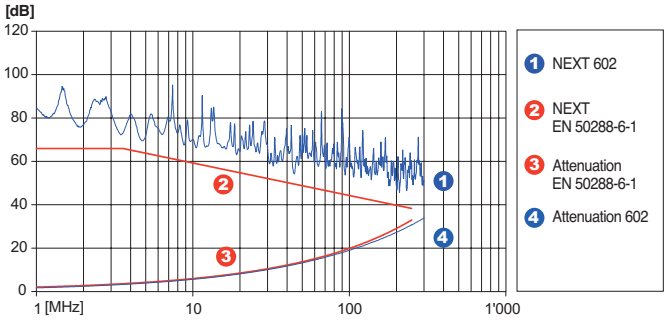
[1] FR/PVC = Flame Retardant/Polyvinylchloride;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable U/UTP Cat.6 (Channel) AWG24

uninet® 602 4P

Electrical Characteristics

Loop resistance at 20°C:	155	Ω/km
Mutual capacitance:	50	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Delay Skew:	20	ns/100m
NVP:	67	%



Category				5e	6	
Frequency [MHz]	1	4	10	100	250	300
Attenuation [dB/100m]	1,8	3,6	5,6	18,1	29,1	31,5
NEXT [dB]	80	73	67	48	42	40
PS NEXT [dB]	77	70	64	45	39	37
ACR [dB]	78	69	61	30	13	9
PS ACR [dB]	75	66	58	27	10	6
ELFEXT [dB]	86	78	67	40	32	30
PS ELFEXT [dB]	83	75	64	37	29	27
Return loss [dB]	27	32	32	30	25	25

These performance data are typical measured values.

Mechanical Characteristics

Bending radius	- during draw-in	≥ 45 mm
	- permanently installed	≥ 22,5 mm
Tensile strength		≤ 91 N
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen	FRNC/LSOH-Variant according to IEC 60754-2
Smoke density	FRNC/LSOH-Variant according to IEC 61034
Burning characteristics	according to IEC 60332-1

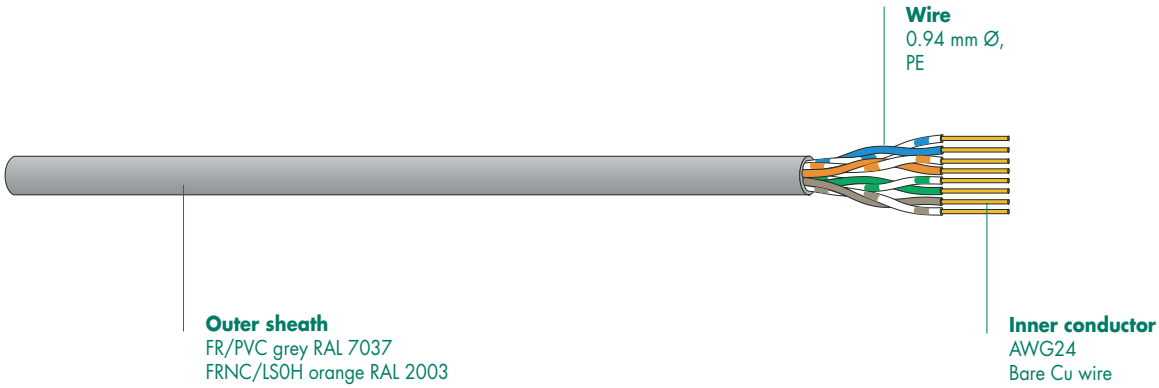
General Characteristics

Wire colour code	white - blue/blue white - orange/orange white - green/green white - brown/brown (ring marked) according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 602 4P UTP CAT6 FR/PVC resp. DAETWYLER UNINET 602 4P UTP CAT6 FRNC/LSOH (+Batch number+meter marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
Cat./Class	better than Class E

Data cable U/UTP Cat.6 AWG24

uninet® 502 4P

Dätwyler Cables



Product information

Features

Electrically and mechanically high-quality Cat 5e cable satisfying the highest demands!
Compatible with all current connecting hardware to EN 50173, ISO/IEC 11801.
Guaranteed limit values according to Cat.5: EN 50173, ISO/IEC 11801, EN 50288-3-1 and Cat.5e: TIA/EIA 568-B.2.

Applications

Data cable for building structured premises cabling.
For the transmission of digital and analogue signals, voice, video and data applications.
Especially suitable for all class D applications and Cat.5e.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, token ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s.

Sheath colour	FRNC/LSOH	orange RAL 2003
	FR/PVC	grey RAL 7037

Versions

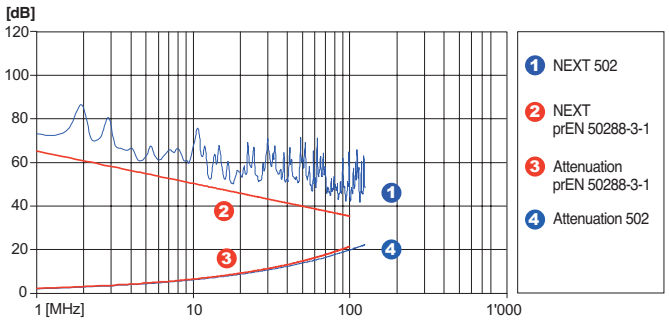
Article No.	Dimension	Type	Sheath	Sheath Ø	Weight	CU weight	Fire load		PU
	n x n x mm (AWG)			mm	kg/km	kg/km	kWh/m	MJ/m	
382 980	4 x 2 x 0,51 (AWG24)	HF-4226-U	FR/PVC [1]	5,5	33,6	18,1	0,14	0,49	305m Box
182 980	4 x 2 x 0,51 (AWG24)	HF-4226-U	FR/PVC [1]	5,5	33,6	18,1	0,14	0,49	1000m Drum
382 981	4 x 2 x 0,51 (AWG24)	HF-4226-U	LSOH[2]	5,5	33,8	18,1	0,12	0,43	305m Box
182 981	4 x 2 x 0,51 (AWG24)	HF-4226-U	LSOH[2]	5,5	33,8	18,1	0,12	0,43	1000m Drum

[1] FR/PVC = Flame Retardant/Polyvinylchloride;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Data cable U/UTP Cat.6 AWG24
uninet® 502 4P

Electrical Characteristics

Loop resistance at 20°C:	170	Ω/km
Mutual capacitance:	50	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
NVP:	66	%



Category			5e		
Frequency [MHz]	1	4	10	100	125
Attenuation [dB/100m]	1,9	3,7	6,0	19,8	22,3
NEXT [dB]	71	61	55	40	39
PS NEXT [dB]	68	58	52	37	36
ACR [dB]	69	57	49	20	17
PS ACR [dB]	66	54	46	17	14
ELFEXT [dB]	76	68	57	34	32
PS ELFEXT [dB]	73	65	54	31	29
Return loss [dB]	26	29	30	27	26

These performance data are typical measured values.

Mechanical Characteristics

Bending radius	- during draw-in	≥ 44 mm
	- permanently installed	≥ 22 mm
Tensile strength		≤ 87 N
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Smoke density Burning characteristics	FRNC/LSOH - Variant according to IEC 61034 according to IEC 60332-1

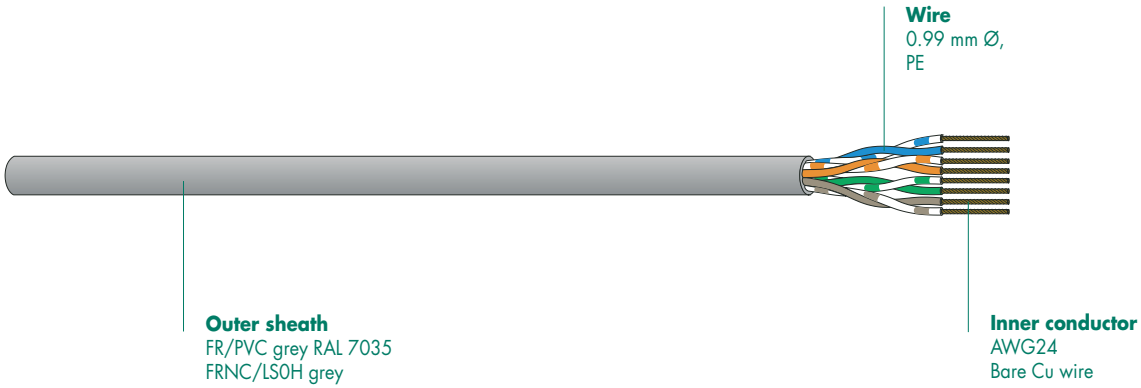
General Characteristics

Wire colour code	white - blue/blue white - orange/orange white - green/green white - brown/brown (ring marked) according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 502 4P UTP CAT 5e FR/PVC (+Date, Batch number and Metre marks)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Cat./Class	better than Cat.5e, Class D

Flexible data cable U/UTP Cat.6 AWG24

uninet® 602 flex 4P

Dätwyler Cables



Product information

Features

High-quality Cat 6 flex cable satisfying the highest demands!
Compact design, compatible with all current connecting hardware to EN 50173-1 and ISO/IEC 11801. Optimised for RJ45 and D Sub systems.
Guaranteed limit values according to Cat.6: EN 50173-1, ISO/IEC 11801:2002 and EN 50288-6-2

Applications

Assembly of patch and equipment cables.
For the transmission of digital and analogue signals, voice, video and data applications.
Especially suitable for all class E applications.
ISDN, Ethernet 10 Base-T, Fast Ethernet 100 Base-T, Gigabit Ethernet 1000 Base-T, token ring 4/16 Mbit/s, TP-PMD/TP-DDI 125 Mbit/s, ATM 155 Mbit/s.

Versions

Article No.	colour	Dimension	Type	Sheath	Sheath Ø	Weight	Cu weight	Fire load		PU
	n x n x mm² (AWG)				mm	kg/km	kg/km	kWh/m	MJ/m	
182 771	4 x 2 x 0,22 (AWG24)	HF-4283-F	FR/PVC [1]	grey	5,1	28,1	17,5	0,14	0,49	1000m Drum
182 772	4 x 2 x 0,22 (AWG24)	HF-4284-F	FRNC/LSOH [2]	grey	5,1	27,9	17,5	0,11	0,40	1000m Drum
187 667	4 x 2 x 0,22 (AWG24)	HF-4284-F	FRNC/LSOH [2]	black	5,1	27,9	17,5	0,11	0,40	1000m Drum
187 665	4 x 2 x 0,22 (AWG24)	HF-4284-F	FRNC/LSOH [2]	withe	5,1	27,9	17,5	0,11	0,40	1000m Drum
187 666	4 x 2 x 0,22 (AWG24)	HF-4284-F	FRNC/LSOH [2]	yelleow	5,1	27,9	17,5	0,11	0,40	1000m Drum
182 845	4 x 2 x 0,22 (AWG24)	HF-4284-F	FRNC/LSOH [2]	blue	5,1	27,9	17,5	0,11	0,40	1000m Drum
187 630	4 x 2 x 0,22 (AWG24)	HF-4284-F	FRNC/LSOH [2]	red	5,1	27,9	17,5	0,11	0,40	1000m Drum

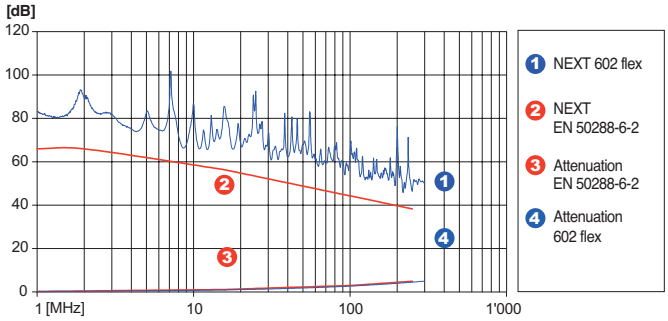
[1] FR/PVC = Flame Retardant/Polyvinylchloride;
[2] FRNC/LSOH = Flame Retardant Non Corrosive/Low Smoke Zero Halogen

Flexible data cable U/UTP Cat.6 AWG24

uninet® 602 flex 4P

Electrical Characteristics

Loop resistance at 20°C:	180	Ω/km
Mutual capacitance:	52	pF/m
Impedance at 100MHz:	100	Ω ±5 Ω
Delay skew:	18	ns/100m
NVP:	67	%



Category				5e	6	
Frequency [MHz]	1	4	10	100	250	300
Attenuation [dB/10m]	0,3	0,6	0,9	3,0	5,0	5,5
NEXT [dB]	69	68	62	47	41	40
PS NEXT [dB]	66	65	59	44	38	37
ACR [dB/10m]	68	67	61	44	36	34
PS ACR [dB/10m]	65	64	58	41	33	31
ELFEXT [dB/10m]	75	69	67	54	48	48
PS ELFEXT [dB/10m]	72	66	64	51	45	45
Return loss [dB]	24	30	30	28	23	23

These performance data are typical measured values.

Mechanical Characteristics

Bending radius		≥ 20 mm
repeated bending		≥ 1000 cycles
Tensile strength		≤ 72 N
Temperature range	- during installation	0°C to + 50°C
	- in operation	-20°C to + 60°C

Environmental conditions

Zero halogen	FRNC/LSOH-Variant according to IEC 60754-2
Smoke density	FRNC/LSOH-Variante according to IEC 61034
Burning characteristics	according to IEC 60332-1

General Characteristics

Wire colour code	white - blue/blue white - orange/orange white - green/green white - brown/brown (ring marked) according to IEC 189 and IEC 708
Printing	DAETWYLER UNINET 602 flex 4P UTP CAT 6 FR/PVC resp. DAETWYLER UNINET 602 flex 4P UTP CAT 6 FRNC/LSOH (+Batch number and Metre marks)
Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2 (acc. to FRNC/LSOH)
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2) (acc. to FRNC/LSOH)
Cat./Class	better than Cat.6, Class E

RJ45 Module unshielded Cat.6/Cat.5e

unilan® Module KU-T 1/8 Tool-less
Cat.6 and Cat.5e

Dätwyler Cables




unilan® RJ45 Module KU-T 1/8 Tool-less unshielded
Cat.6 or Cat.5e, in white or black

Product information

unilan® RJ45 Module KU-T 1/8 Tool-less Cat.6 or Cat.5e unshielded

Application

For the transmission of digital and analogue voice, video and data signals.
Suitable for all Class D applications respectively Class E channels according to ISO/IEC 11801:2002, EN 50173-1: 2002 and EIA/TIA 568-B.2-1.

Description

Housing made of high-impact, flame-retardant compound, UL94V-0 rated, rated with Snap-In mounting.
Spring wire with phosphor bronze alloy plated with gold.
IDC made of phosphor bronze alloy.

Information:
All faceplates ans surface mount boxes as for shielded Keystone Modules (KS-T) are suitable!

Mechanical properties

Wire Diameter	0.40mm (AWG 26) to 0.65mm (AWG 22) for solid wires AWG26/7 bare stranded copper wire with 7 stranded wires Re-usable for AWG 22, AWG 23 and AWG 24 when using a wire with the same or bigger cross section.
Diameter over insulation	0.70mm to 1.40mm (1.60mm)
Temperature range	Storage: -40°C to +70°C Installation: -10°C to +60°C Operation: -20°C to +60°C

Standards

ISO/IEC 11801:2002
TIA/EIA 568 B.2-1 (2002)
IEC 60603-7-4 (250 MHz, unshielded)
IEC 60603-7-2 (100 MHz, unshielded)
EMC according to EN 50022

General Characteristics

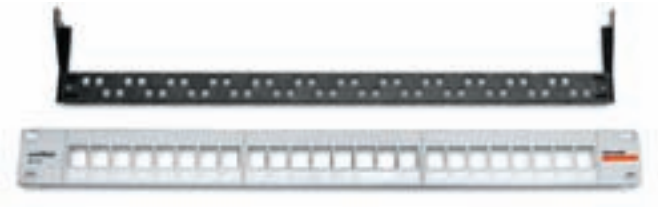
Colour code for wire termination according to T568-A (usual) and T568-B is clearly marked on cable manager.

Cat/Class	Cat 5e / Class D
Cat/Class	Cat 6 / Class E

Article No.	Description	Colour	PU
418 070	unilan® RJ45 Module KU-T 1/8 Cat.6, unshielded Tool-less	white	10 pieces
418 071	unilan® RJ45 Module KU-T 1/8 Cat.6, unshielded Tool-less	black	10 pieces
418 072	unilan® RJ45 Module KU-T 1/8 Cat.5e, unshielded Tool-less	white	10 pieces
418 073	unilan® RJ45 Module KU-T 1/8 Cat.5e, unshielded Tool-less	black	10 pieces

Patch Panel KU 24x
for 24 Modules KU-T 1/8
unshielded

Blank cover in black and white, for Keystone opening in Patch Panels



unilan® Patch Panel KU 24x - unshielded

Product information

unilan® Patch Panel KU 24x (unshielded)

Application

Unscreened patch panel for up to 24 x KU 1/8 RJ45 Keystone Modules according Cat.6 or Cat.5e (UTP)

The snap in modules are easily fitted into the patch panel.
Unused ports may be covered with blanking elements.

Description

Patch Panel made of flame retardant compound, UL94V-0 rated
Frontview in grey, similar to RAL 7035 or in black, similar to RAL 9005
Strain relief with cable ties.
Modules are not part of the delivery

Suitable for the following unilan® Modules:
- RJ45 Modul KU-T 1/8 Tool-Less unshielded

Dimensions

Width	482 mm (19'')
Depth	80 mm (including cable strain relief)
Height	44 mm (1U)

Article No.	Description	Colour (similar)	PU
418 021	unilan® Patch Panel KU 24x, 19'' 1U , for 24x RJ45-Keystone Modules, UTP (delivered without modules)	grey RAL 7035	1 piece
418 022	unilan® Patch Panel KU 24x, 19'' 1U , for 24x RJ45-Keystone Modules, UTP (delivered without modules)	black RAL 9005	1 piece

Article No.	Accessories/Description	Colour (similar)	PU
418 010	Blanking elements for Keystone Patch Panels	white	10 pieces
418 011	Blank cover for Keystone Patch Panels	black	10 pieces

RJ45 Module unshielded Cat.6

unilan® Module MU 1/8 Cat.6

Dätwyler Cables

unilan® RJ45 Module MU 1/8 Cat.6 unshielded

Parallel pliers for easy termination

Product information

unilan® RJ45 Module MU 1/8 Cat.6 unshielded

Application

For the transmission of digital and analogue voice, video and data signals.
Especially suitable for all Class E applications according to ISO/IEC 11801:2002, EN 50173-1: 2002 and EIA/TIA 568-B.2-1.

Description

Easy termination PCB with IDC terminations
modules with integrated strain relief (cable tie, not included)
High component density possible owing to the very small module dimension

Information:
All faceplates and surface mount boxes as for shielded MS-Modules are suitable!

Mechanical properties

Diameter wire solid	0.40 mm (AWG 26) to 0.65 mm (AWG 22)
Diameter wire stranded	AWG26/7 bare stranded copper wire with 7 strands
Reusable	for AWG 22, AWG 23 and AWG 24 when using a wire with the same or bigger cross section.
Diameter over insulation	0.70 mm to 1.40 mm (1.60 mm)
Temperature range	Storage: -40°C to +70°C
	Installation: -10°C to +60°C
	In use: -10°C to +60°C

Standards

IEC 60603-7-4 (250 MHz unshielded)
ISO/IEC 11801:2002
TIA/EIA 568 B.2-1

General Characteristics

Colour code for wire termination according to T568-A (usual) and T568-B is clearly marked on cable manager.

Cat./Class	Cat 6, Class E

Article No.	Description	Colour	PU
185 750	unilan® RJ45 Module MU 1/8 Cat.6, unshielded, colour code T568-A	white	10 pieces
185 751	unilan® RJ45 Module MU 1/8 Cat.6, unshielded, colour code T568-B	white	10 pieces

Patch Panel MU 24x
for 24 Modules MU 1/8
unshielded

unilan® patch panel MU 24x

Product information

unilan® patch panel MU 24x

Application

Unshielded patch panel to be used with max. 24 RJ45 Modules MU 1/8 unshielded.

The snap in modules are easily fitted into the patch panel.

Description

Patch panel in light grey, similar to RAL 7035
Patch panel delivered without modules

Suitable for the following unilan® Modules:
- RJ45 Module MU 1/8 unshielded

Dimensions

Width	19" and 10"
Height	1 U

Article No.	Description	Colour (similar)	PU
185 842	unilan® Patch Panel MU 24x; 19" 1U; for 24 x RJ45 Modules MU 1/8 unshielded (delivered without modules)	light grey RAL 7035	1 piece

Article No.	Accessories/Description	Colour	PU
185 750	unilan® RJ45 Module MU 1/8 Cat.6, unshielded, colour code T568-A	white	10 pieces
185 751	unilan® RJ45 Module MU 1/8 Cat.6, unshielded, colour code T568-B	white	10 pieces
185 731	Fastening kit (8 of each: screws, washers and captive nuts)		
1409 558	unilan® blanking plate	white	10 pieces
1409 559	unilan® blanking plate	black	10 pieces

Patch Panel ECU 24/8 Cat.6
with 24 RJ45 Jacks unshielded

Dätwyler Cables

unilan® patch panel ECU 24/8 Cat 6 (unshielded)

Product information

unilan® Patch Panel ECU 24/8 - Cat.6 unshielded

Application

For transmission of digital and analogue voice, image and data signals.
Especially suited to all Class E applications in accordance with EN 50173-1 and ISO/IEC 11801.

Construction

Housing:	Solid metal, black, similar to RAL 9011
Boards:	Three base boards each with LSA plus terminal blocks and 8 x RJ45 sockets unshielded
Strain relief:	Via cable tie

Connection system

Cable:	LSA-plus punch down contacts
Socket:	Shielded RJ45 connector (EN 60603-7)

Applicable standards

ISO/IEC 11801, EN 50173-1

Performance

250 MHz on all pairs 1-2, 4-5, 3-6, 7-8

General properties

Cat./Class	Cat 6, Class E

Article No.	Description	Colour (similar)	Cat.
1414 725	unilan® Patch Panel ECU 24/8 with 24 x RJ45 unshielded	RAL 9011	6

Article No.	Accessories/Description
1401 624	Patch Panel wiring aid, 2 piece set
1401 609	LSA-plus termination tool for LSA punch down contacts

Additional assembly tools / accessories can be found under System Accessories.

Phone Panel CU 25/4 Cat.3
Phone Panel CU 50/4 Cat.3
with 25 or 50 RJ45 Jacks

unilan® Phone Panel CU 25/4 Cat.3

unilan® Phone Panel CU 50/4 Cat.3

Product information

unilan® Phone Panel CU 25/4 and CU 50/4 Cat.3

Application

For the transmission of digital (ISDN) and analogue voice signals.
Especially suitable for all applications of class C according to EN 50173-1 and ISO/IEC 11801.
The patch panel supports cables up to 100 pairs or 50 pairs (telephone cable).

A maximum of 4 wires may be connected to a RJ45 socket.

Wiring tool is available as an accessory. It consists of 2 angled metal brackets that can be simply fastened to the 19" rack or cabinet, thus making terminations quicker and easier.

Construction

Chassis:	Painted metal to RAL 7035, grey
Width:	482 mm (19")
Height :	44 mm (1U)
Depth:	129 mm

Connection system

Cable:	IDC-termination
Socket:	Unscreened RJ45 socket (EN 60603-7)

Applicable standards

ISO/IEC 11801, EN 50173

Performance

2-pairs according to PIN 3-6, 4-5

Accessories

Cable duct
for easy handling of the cable pairs (slotted)

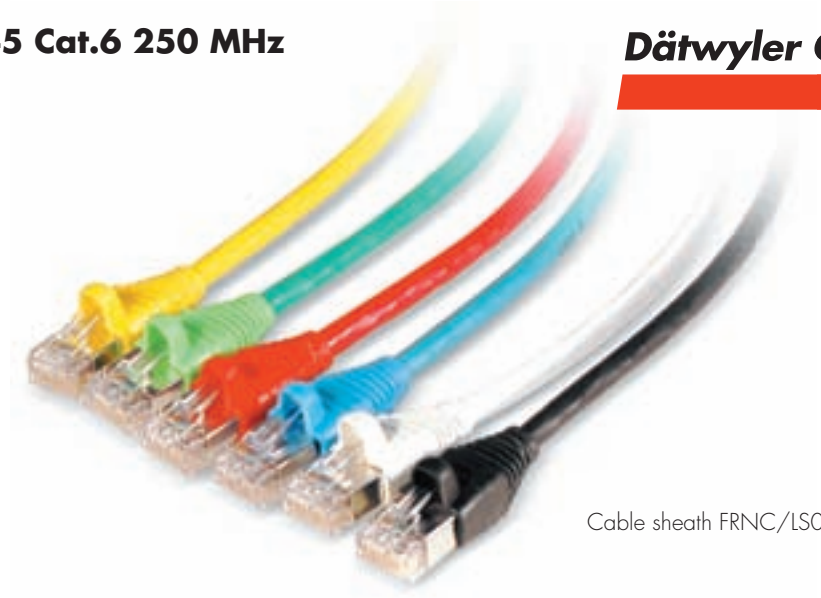
Article No.	Description	Colour (similar)	PU
418 000	unilan® Phone Panel CU 25/4 with 25 x RJ45 Jacks, Cat.3, metal chassis	grey, RAL 7035	1 piece
418 001	unilan® Phone Panel CU 50/4 with 50 x RJ45 Jacks, Cat.3, metal chassis	grey, RAL 7035	1 piece
418 002	unilan® Phone Panel CU 25/4 with 25 x RJ45 Jacks, Cat.3, metal chassis	black, RAL 9005	1 piece
418 003	unilan® Phone Panel CU 25/4 with 50 x RJ45 Jacks, Cat.3, metal chassis	black, RAL 9005	1 piece

Article No.	Accessories/Description	PU
1401 624	Patch panel wiring tool	1 set
1401 609	IDC termination tool	1 piece
185 896	unilan® Punch Down Tool 110	1 piece
418 012	Cable duct (slotted) for easy handling of the cable pairs	1 piece

UTP Patch Cord RJ45 Cat.6 250 MHz

unscreened, 4P wiring 1:1

Dätwyler Cables



Cable sheath FRNC/LSOH

Product information

unilan® Patch cord RJ45 Cat.6 unscreened, 4P wiring 1:1
uninet® 602 flex 4P, 250 MHz, with coloured bend limiting boot

Description

The unilan® patch cord and connection cable uninet® 602 flex 4P are terminated on both ends with a RJ45 plug and a moulded bend limiting boot.
The uninet® 602 flex 4P cable is suitable for transmission rates up to 250 MHz.
Assembled with shielded RJ45 plug Cat.6 for better performance.

General Characteristics

Zero halogen non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268)-1/-2)
Cat./Class	better than Cat.6, Class E

Length/Meter	602 flex 4P FRNC/LSOH Cat.6, coloured bend limiting boot						
	grey	green	yellow	red	blue	white	black
0,5	651 553	651 853	651 703	651 803	651 753	651 653	651 603
1,0	651 558	651 858	651 708	651 808	651 758	651 658	651 608
1,5	651 559	651 859	651 709	651 809	651 759	651 659	651 609
2,0	651 560	651 860	651 710	651 810	651 760	651 660	651 610
2,5	651 561	651 861	651 711	651 811	651 761	651 661	651 611
3,0	651 562	651 862	651 712	651 812	651 762	651 662	651 612
4,0	651 564	651 864	651 714	651 814	651 764	651 664	651 614
5,0	651 566	651 868	651 716	651 816	651 766	651 666	651 616
6,0	651 568	651 870	651 718	651 818	651 768	651 668	651 618
7,0	651 570	651 872	651 720	651 820	651 770	651 670	651 620
7,5	651 571	651 874	651 721	651 821	651 771	651 671	651 621
8,0	651 572	651 876	651 722	651 822	651 772	651 672	651 622
10,0	651 576	651 877	651 726	651 826	651 776	651 676	651 626
15,0	651 578	651 878	651 728	651 828	651 778	651 678	651 628
20,0	651 580	651 880	651 730	651 830	651 780	651 680	651 630

UTP Patch Cord RJ45 Cat.6 250 MHz
unscreened, 4P wiring 1:1

Cable sheath FR/PVC

Product information

unilan® Patch cord RJ45 Cat.6 unscreened, 4P wiring 1:1 with moulded and bend limiting boots

Cable type
Unscreened flex cable U/UTP Cat.6 / 250 MHz / 4P
Cable sheath made of FR/PVC1)

Properties
Flame retardant according IEC 60332-1, RoHS compliant

Plug type
RJ45 (8/8) Cat.6 according to IEC 60603-7-4

Wiring
1 : 1

Test Standard
IEC 61935-2 , TIA/EIA 568-B.2-1 Category 6,
Commercial Building Telecommunications Cabling Standard
Part 2: Balanced Twisted-Pair Cabling Components, June 2002

Applications
Applicable for all applications until class E (250 MHz)
For excample:
Gigabit Ethernet 1000Base-T
Fast Ethernet 100Base-T
ISDN
PoE according to IEEE 802.3af

Packing unit
One Patch Cord bundled as a ring in a plastic bag

Length/Meter [2]	unilan® Patch Cord U/UTP Cat.6, wiring 1:1, with FR/PVC sheath in grey
	Article No. grey
1,0	309 021
1,5	309 022
2,0	309 023
3,0	309 025
4,0	309 026
5,0	309 027
7,0	309 029
10,0	309 031

[1] FR/PVC = Flame Retardant/Polyvinylclorid
[2] other length on request , min order quantity = 100 pieces

UTP Patch Cord RJ45 Cat.5e 100 MHz
unscreened, 4P wiring 1:1

Dätwyler Cables

Cable sheath FR/PVC

Product information

unilan® Patch cord RJ45 Cat.5e unscreened, 4P wiring 1:1 with moulded and bend limiting boots

Cable type
Unscreened flex cable U/UTP Cat.5e / 100 MHz / 4P
Cable sheath made of FR/PVC[1)]

Properties
Flame retardant according IEC 60332-1, RoHS compliant

Plug type
RJ45 (8/8) Cat.6 according to IEC 60603-7-2

Wiring
1 : 1

Test Standard
IEC 61935-2 , TIA/EIA 568-B.2-1 Category 5e,
Commercial Building Telecommunications Cabling Standard
Part 2: Balanced Twisted-Pair Cabling Components, June 2002

Applications
Applicable for all applications until class D (100 MHz)
For excample:
Gigabit Ethernet 1000Base-T
Fast Ethernet 100Base-T
ISDN
PoE according to IEEE 802.3af

Packing unit
One Patch Cord bundled as a ring in a plastic bag

Length/Meter [2)]	unilan® Patch Cord U/UTP Cat.5e, wiring 1:1, with FR/PVC sheath in grey
	Article No. grey
1,0	309 001
1,5	309 002
2,0	309 003
3,0	309 005
4,0	309 006
5,0	309 007
7,0	309 009
10,0	309 011

[1)] FR/PVC = Flame Retardant/Polyvinylclorid
[2)] other length on request , min order quantity = 100 pieces

Telephone patch cord and
connection cable RJ45/RJ45

Telephone patch cord and
connection cable RJ45/RJ11

Product information

Telephone patch cord and connection cable RJ45/RJ45 and RJ45/RJ11

Description

For a safe connection of analogue, digital and ISDN telephones (not adequate for Voice over IP). With plugs (RJ45/RJ11), cable Cat. 3 PVC round, black, the economically priced solution for telephone connections.

unilan® Telephone patch cord	terminated on both ends with a RJ45 plug and a moulded bend limiting boot. For safe patching of Telephone connections.
unilan® Telephone connection cable	side A with RJ45 (with a moulded bend limiting boot) side B with RJ11 plug

Length/Meter	Telephone patch cordl RJ45/RJ45	Telephone connection cable RJ45/RJ11
	Moulded bend limiting boot on both sides, black	Moulded bend limiting boot on RJ45, black, RJ11 without Moulded bend limiting boot
1,0	650 001	650 051
2,0	650 003	650 053
3,0	650 005	650 055
4,0	650 007	650 057
5,0	650 009	650 059
6,0	650 011	650 061
7,0	650 013	650 063
8,0	650 015	650 065
9,0	650 017	650 067
10,0	650 019	650 069

optofil® Product Overview

Innovative partner for comprehensive cabling solutions in information and communication networks

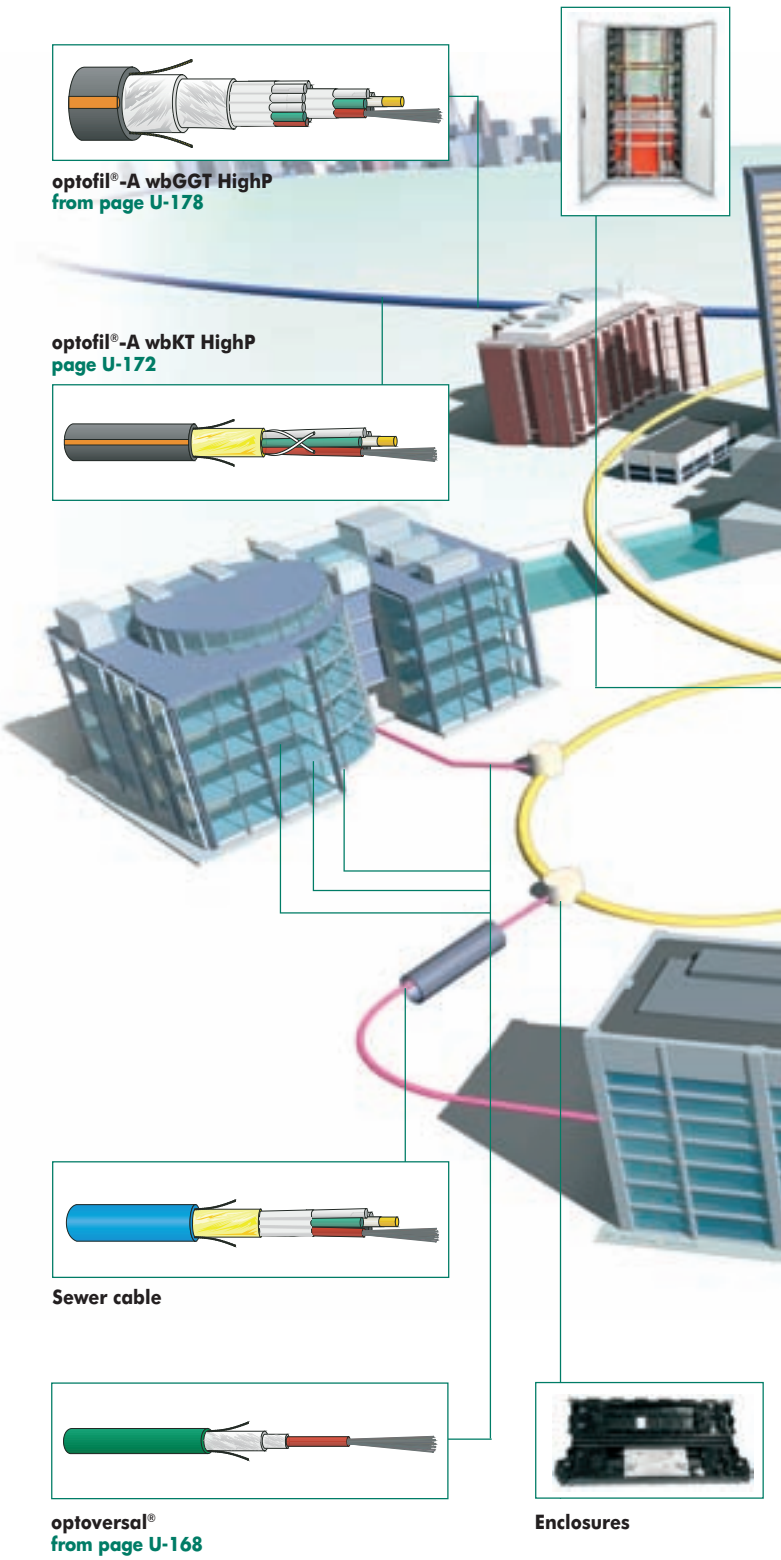
More than just Products

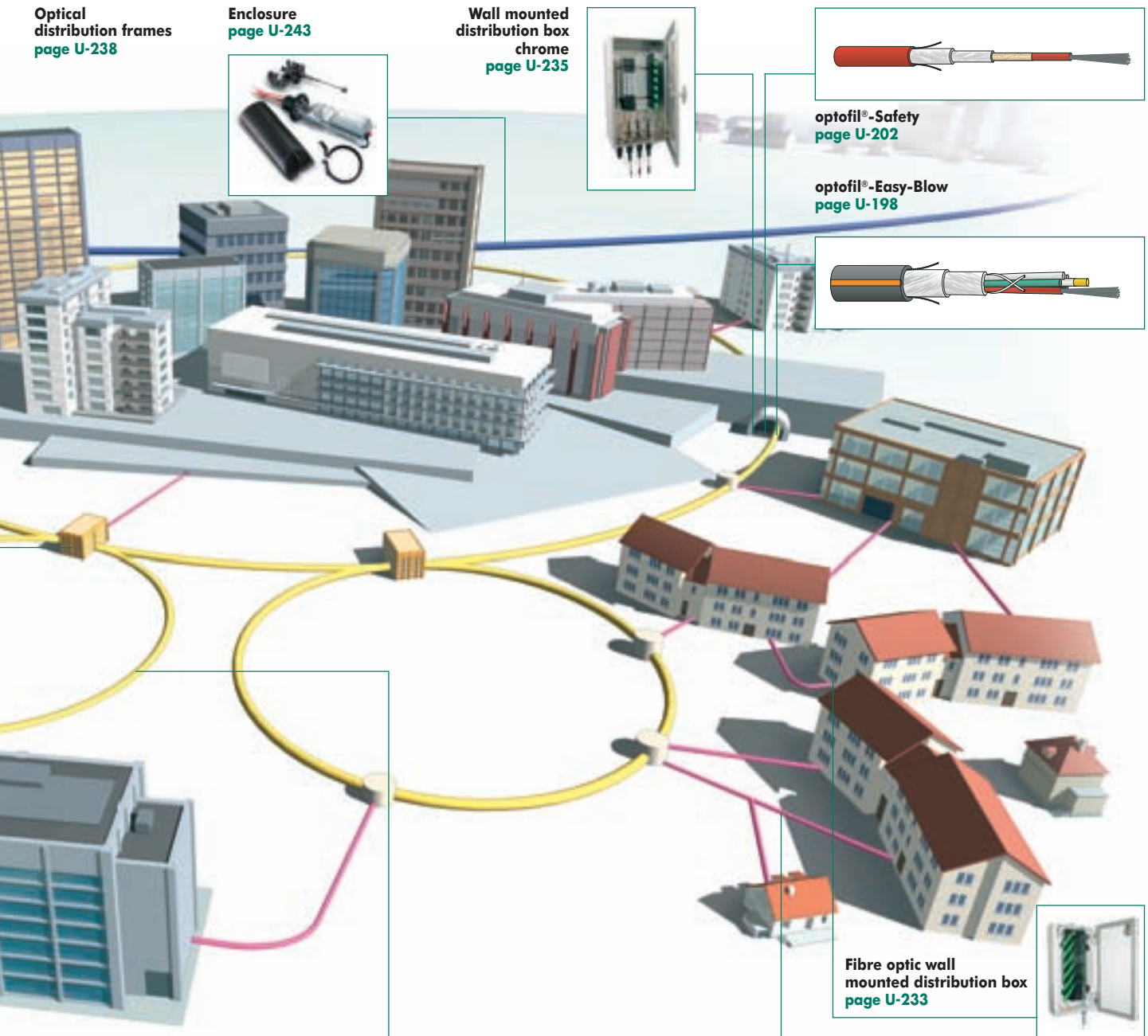
In addition to its business of supplying complete cabling solutions, Dätwyler, as a competent, innovative cable manufacturer, also offers customers support in the areas of planning, development, training, documentation and installation.

Dätwyler has a comprehensive offering of fibre optic technologies for the entire range of applications in long distance (WAN) metropolitan (MAN) and access networks, as well as structured premises cabling (LAN). We offer engineering and consultation in the design of fibre optic networks.

Our solutions are designed, overall and in detail, to fully meet the demands of the future.

They are adapted to meet customer`s needs and ensure a network infrastructure that will support future applications for a long time to come.





Optical distribution frames
page U-238

Enclosure
page U-243

Wall mounted distribution box chrome
page U-235

optofil®-Safety
page U-202

optofil®-Easy-Blow
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Fibre optic wall mounted distribution box
page U-233

optofil®-A wbGGT HighP
page U-176

optofil®-A ZGGT 2500 HighP
page U-174

Application spaces for Singlemode fibres

Long Haul / Intercontinental Backbones

Singlemode fibre
G.655.D (on request)
G.652.D for national
Backbones < 300-400 km

City-, Access- and FTTx Network

Singlemode fibre
G.652.D

Bend optimised Singlemode fibre
G.657.A-C

Specifying of Singlemode fibres

Singlemode fibre will be the transmission medium of the future. The convergence of telecommunications is a reality and the demand on the network transmission capacity will rise.

Dätwyler is specifying their singlemode products with focus on product design for City- and Access network and for future Fibre-to-the-Home applications.

Convincing arguments:
- Very tight optical and mechanical parameters
- Very small polarisation mode dispersion coefficient
- Small micro- and marcobending sensitivity
- Highest guarantee of delivery to the customer
- Independence
- Bend optimised products for FTTx-Network

Application spaces for Singlemode fibres

Tree categories of single-mode optical fibre cable which are suitable for use in the access and FTTH networks:

ITU-T G.657 A
- Prioritizes backward compatibility
- ITU Recommendation G.652.D compliant
- IImproved bend loss and dimensional requirements
- Specified to radii as low as 10 mm

ITU-T G.657 B
- Prioritizes bend enhancement
- Not required to meet ITU Recommendation G.652.D
- Increased bend tolerance
- Specified to radii as low as 7.5 mm

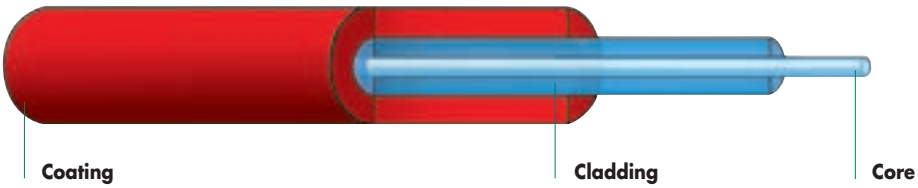
New table proposed –Category C (or possibly Table B.2 –a new column within G.657.B)
- Prioritizes superior bend performance
- Specified to radii as low as 5 mm; like G.657.B, does not need to be G.652 compliant

Eecommendation ITU G.657 developed

Bend radius	Turns	G.652.D (1625nm)	G.657.A (1550nm)	G.657.B (1550nm)	G.657.C *) Corning® Clear Curve™ (1550nm)
30 mm	100	≤ 0.1 dB	No. Spec.	No. Spec.	No. Spec.
10 mm	1	No. Spec.	≤ 0.75 dB	≤ 0.1 dB	≤ 0.03 dB
7,5 mm	1	No. Spec.	No. Spec.	≤ 0,5 dB	≤ 0,05 dB
5,0 mm	1	No. Spec.	No. Spec.	No. Spec.	≤ 0.1 dB
G.652.D Compliance			Required	Not Required	Not Required

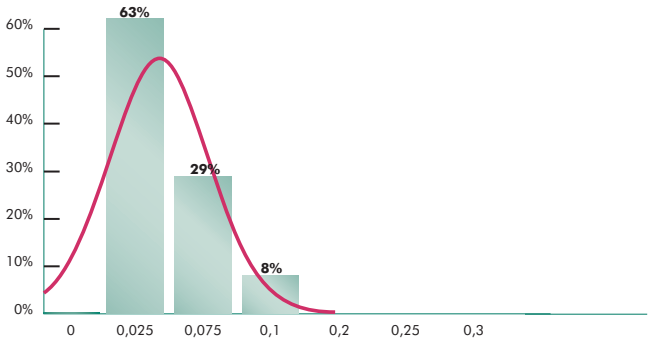
Singlemode fibre
according to G.652.D

Dätwyler Cables



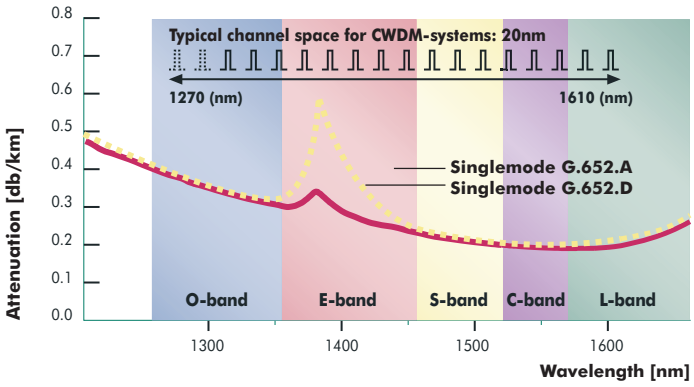
PMD frequency scale of fibre G.652.D

Fibre optic systems with very high bit rates and very low chromatic dispersion must use a single mode fibre with very low PMD (Polarization Mode Dispersion). Singlemode fibre G.652.D used from Dätwyler have a very low PMD value which is much lower than the standard request.



Spectral attenuation according to ITU-T G.652

The singlemode fibre G.652.D is optimised for highest data rate transmission at 1310nm up to 1625 nm.
The zero water peak at the E-Band (1383-1480nm) allows to use CWDM technology over the full range of wavelength.
The geometrical, optical and mechanical performance corresponds to the relevant international standards.



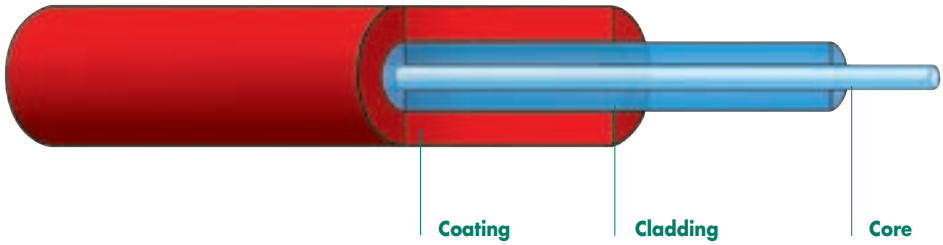
Fibre standards according to ITU-T G.652

ITU-T G.652 standard is specifying the singlemode fibre into 4 categories.

	ITU-T G.652.A	ITU-T G.652.B	ITU-T G.652.C	ITU-T G.652.D	Dätwyler G.652.D
Attenuation 1310 nm	≤ 0,5 dB/km	≤ 0,4 dB/km	≤ 0,4 dB/km	≤ 0,4 v	typ. 0,34 dB/km max. 0,36 dB/km
Attenuation 1383 nm			≤ 0,4 dB/km	≤ 0,4 dB/km	typ. 0,34 dB/km max. 0,36 dB/km
Attenuation 1550 nm	≤ 0,4 dB/km	≤ 0,35 dB/km	≤ 0,3 dB/km	≤ 0,3 dB/km	typ. 0,22 dB/km max. 0,24 dB/km
Attenuation 1625 nm		≤ 0,4 dB/km	≤ 0,4 dB/km	≤ 0,4 dB/km	typ. 0,24 dB/km max. 0,25 dB/km
PMD	≤ 0,5 ps/√km	≤ 0,2 ps/√km	≤ 0,5 ps/√km	≤ 0,2 ps/√km	typ. 0,05 dB/√km max. 0,20 dB/√km

Bend Optimized Singlemode fiber (SMF)

SMF-28e®XB - Optical Fiber
E9/125/250 acc. to ITU-T Rec. G. 652.D and G.657.A



Product information

Main areas of application

Bend optimized single-mode fiber with improved macrobend characteristics for the home connection and cabling in buildings in FTTH –access networks (Fiber-to-the-home)
Full-spectrum single-mode fiber with attenuation specified at all FTTx networks operating wavelengths
In compliance with and exceeding the requirements of the ITU-T G.652.D und G.657. A standards
For applications with functional bends in the range of 15 to 10 mm radius

Transmission characteristics

Wavelength	[nm]	1310	1383	1550	1625
Max. Attenuation (cabled)	[dB/km]	0.36	0.36*	0.23	0.27
* post –hydrogen aging performance					
Max. Chromatic Dispersion	[ps/(nm x km]			18	22
Zero Dispersion Wavelength λ_0	[nm]	1304 ≤ λ_0 ≤ 1324			
Max. Zero Dispersion Slope So	[ps/(nm^2 x km]	0.089			
Mode-Field Diameter	[µm]	8.6+/- 0.4		9.8+/- 0.5	
Max. Cable Cutoff Wavelength λ_{ccf}	[nm]	1260			
Max. Polarization Mode Dispersion	[ps/√km]	0.2		0.2	

Geometry and mechanical characteristics

Cladding Diameter	[µm]	125 +/- 0.7
Max. Core / Cladding Concentricity Error	[µm]	0.5
Max. Cladding Non-Circularity	[%]	0.7
Coating Diameter	[µm]	242 +/- 5
Max. Cladding/Coating Concentricity Error	[µm]	12
Min. Fiber Curl Radius	[m]	4.0
Operating Temperature Range	[°C]	-60 up to +85
Proof Test	[kpsi]	100

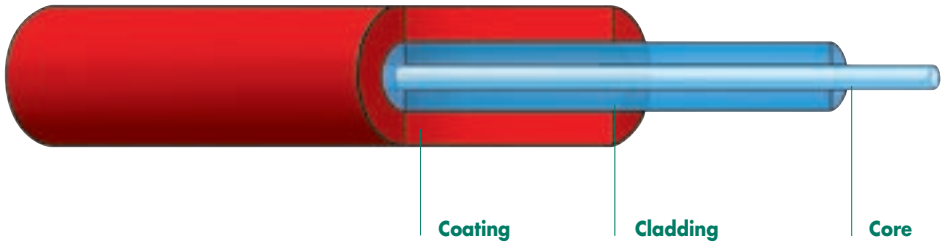
Macrobend characteristics

Number of Turns and Bend Radius					Wavelengths (nm)	Max. induced Attenuation (dB)
1	Turn	x	10 mm	Radius	1550	≤ 0.50 dB
1	Turn	x	10 mm	Radius	1625	≤ 1.5 dB
10	Turns	x	15 mm	Radius	1550	≤ 0.05 dB
10	Turns	x	15 mm	Radius	1625	≤ 0.3 dB
100	Turns	x	30 mm	Radius	1625	≤ 0.01 dB

Singlemode fibre (SMF) Enhanced

E9/125/250 according to ITU-T Rec. G.652.D / IEC 60793-2-50 Typ B1.3

Dätwyler Cables



Product information

Main areas of application

Remote connections over long transmission distances and high transmission rates at the 1310nm wavelength.
Low waterpeak enables transmission over the E-Band (1383-1480nm) with CWDM.
Geometrical and mechanical performance corresponds to the relevant international standards.

Transmission characteristics

Wavelength	[nm]	1310	1383	1550	1625
typ. Attenuation (cabled)	[dB/km]	0.34	0.34	0.22	0.24
max. Attenuation (cabled)	[dB/km]	0.36	0.36	0.24	0.25
max. Chromatic Dispersion	[ps/nm x km]	3.5		18	
nom. Zero Dispersion Wavelength	[nm]	1313			
Mode Field (Petermann II)	[µm]	9.2 +/- 0.4		10.4 +/- 1.0	
max. Cable Cut off Wavelength λ_{ccf}	[nm]	1260		1260	
max. Polarisation modes Dispersion Coefficient	[ps/√km]	0.2	0.2	0.2	0.2
max. Attenuation nonlinearity	[dB]	0.05	0.05	0.05	
Refractive Index		1.467		1.468	

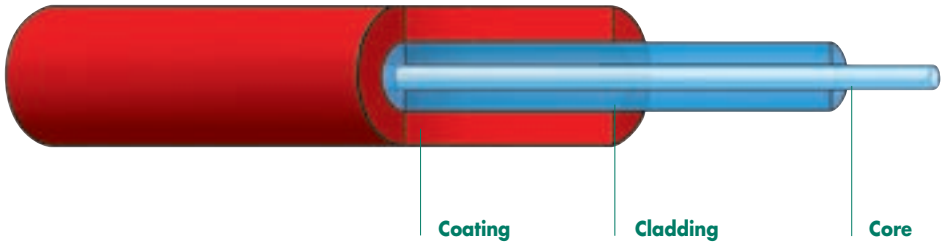
Geometry and mechanical characteristics

Numerical Aperture		0.14	0.14
Core Ø	[µm]	8.2	8.2
Cladding Ø	[µm]	125 +/- 0.7	125 +/- 0.7
max. Core/Cladding Concentricity Error	[µm]	0.5	0.5
max. Coating Non-Circularity	[%]	1.0	1.0
Coating Ø	[µm]	245 +/- 5.0	245 +/- 5.0
max. Cladding/Coating Concentricity Error	[µm]	12	12
max. Coating Non-Circularity	[%]	6	6
min. Fibre Bending Radius	[m]	4.0	4.0
nom. Operating Temperature Range	[°C]	-60 to +85	-60 to +85
Proof test	[kpsi]	100	100

Singlemode fibre (SMF)

Full-Spectrum SMF-28e+™ Optical Fiber

E9/125/250 according ITU-T Rec. G. 652.D / IEC 60793-2-50 Type B1.3



Product information

Main areas of application

Full-spectrum single-mode fibre according to ITU-T G.652.D with attributes optimised for convergent networks.
Attenuation specified at all FTTx network operating wavelengths.
Tightened dispersion tolerance to support low-cost upstream transmitters.
Superior bending specification for ease of installation.
Higher SBS threshold enabling double power capability to increase distance and margin for video applications and to support future service flexibility.
Backward compatible with installed base of G.652 fibre.
Enable more cost effective FTTx deployment: provide extra distance and margin, reduce field equipment and field maintenance costs.

Transmission characteristics

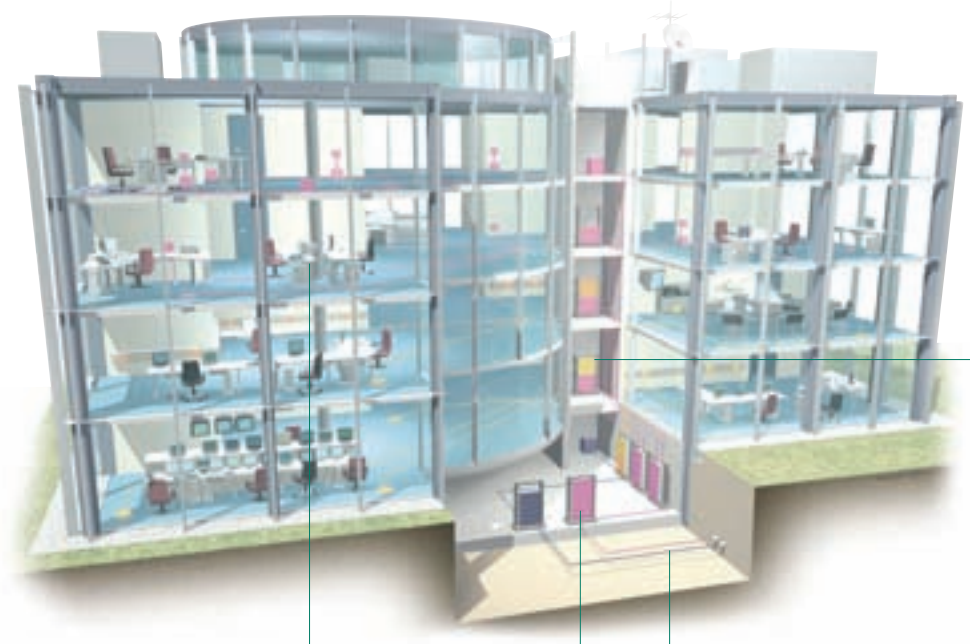
Wavelength	[nm]	1310	1383	1550	1625
max. Attenuation (cabled)	[dB/km]	0.36	0.36*	0.23	0.27
*post –hydrogen aging performance					
max. Chromatic Dispersion	[ps/(nm x km]			18	23
Zero Dispersion Wavelength λo	[nm]	1310 ≤ λo ≤ 1324			
max. Zero Dispersion Slope So	[ps/(nm²x km]	0.092			
Mode-Filed Diameter	[mm]	9.2 +/- 0.4		10.4 +/- 0.5	
max. Cable Cut off Wavelength lccf	[nm]	1260			
Polarisation mode dispersion (PMD)					
max. PMDq Link Design Value (cabled)	[ps/√km]	0.20			
Stimulated Brillouin Scattering (SBS) Threshold	[dBm]	20 typical (3dB improvement over standard SMF)			

Geometry and mechanical characteristics

Cladding Diameter	[mm]	125.0 +/- 0.7
max. Core / Cladding Concentricity Error	[mm]	0.5
max. Cladding Non-Circularity	[%]	0.7
Coating Diameter	[mm]	245 +/-5
max. Cladding/Coating Concentricity Error	[mm]	12
min. Fibre Curl Radius	[m]	4.0
Operating Temperature Range	[°C]	-60 to +85
Proof test	[kpsi]	100

Above specifications refer to the Corning® SMF-28e+™ Optical Fiber
SMF-28e+ is a trademark of Corning Incorporated

Specifying Optical Fibre



Riser

Multimode fibre
G50/125 OM3
10GbE up to 300m

Singlemode fibre
E9/125 G.652.D

Horizontal

Fibre to the Desk FTTD
Fibre to the Office FTTO

Multimode fibre
G50/125 OM2+
1GbE up to 750m
10GbE up to 150m

Data Center

Multimode fibre
G50/125 OM3
10GbE up to 300m

Singlemode fibre
E9/125 G.652.D

Campus/Backbone

Multimode fibre
G50/125 OM3
10GbE up to 300m

Singlemode fibre
E9/125 G.652.D

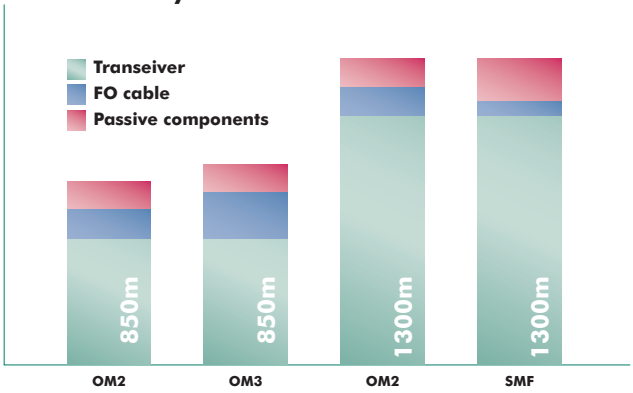
Component and System Costs

Network design is often driven as much by system cost as it is by system performance. Fiber choise is increasingly more important as component costs continue to drop and system performance requirements increase. In other words, low-cost, high-performance electronics will require greater bandwidth and operating performance from the installed cabling systems. Thus, it is strongly recommended that fiber be chosen carefully so that it economically meets all current and future needs.

The relative system costs of a 1GbE trnasmission shoews, that a SX-solution at 850nm does have half of the system costs compare to a more expensive LX-solution at 1300nm. This is a conclusion that Multimode fibre transmission is running mostly on SX at 850nm

Ready for 10GbE with a additional invest of 5% into OM3 fibres

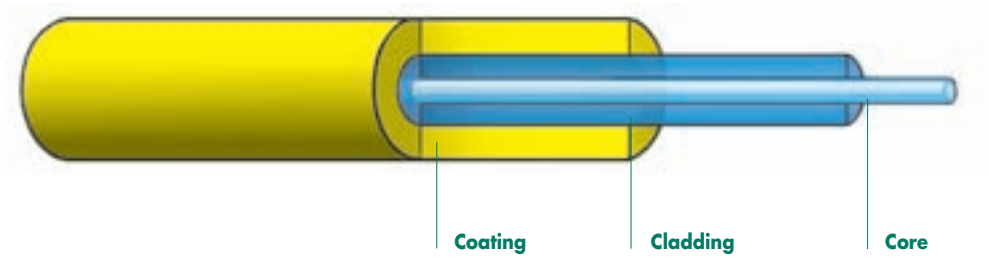
Relative system costs 1GbE for 300m



Example relative system costs
Dätwyler Fibre optic cable Optoversal 24 Fibres
2x OV-AT patch panel with 12xSCD
24x1GbE SFP Transeiver

Multimode fibre (MMF) G62,5/125/250 OM1

IEC 60793-2-10 Type A1b/ISO/IEC 11801:2002 OM1/EN 50173:2002 OM1



Product information

Main areas of application

Applications for Premises- (FTTD Fibre to the Desk), LAN- and Backbone-Infrastructure for short transmission distances and at medium transmission rates at the 850nm and 1300nm wavelengths (typically up to 1 GbE).
Geometrical and mechanical performance corresponds to the relevant international standards.

Transmission characteristics

Wavelength	[nm]	850	1300
Attenuation typ. (cabled)	[dB/km]	2.8	0.6
Attenuation max. (cabled)	[dB/km]	3.0	0.7
OFL-Bandwidth per TIA/EIA 455-204 and IEC 60793-1-41	[MHz x km]	200	600
RML-Bandwidth per TIA/EIA 455-204 and IEC 60793-1-41	[MHz x km]	220	
Refractive index		1.496	1.491

Geometry and mechanical characteristics

Numerical aperture		0.275 +/- 0.015
Core Ø	[µm]	62,5 +/- 2.5
max. Core non-circularity	[%]	5
Cladding Ø	[µm]	125 +/- 2
max. Cladding non-circularity	[%]	1.0
max. Cladding/Core concentricity error	[µm]	1.5
max. Coating concentricity error	[µm]	12
Coating Ø	[µm]	245 +/- 5
Proof test	[kpsi]	100

Application Gigabit Ethernet

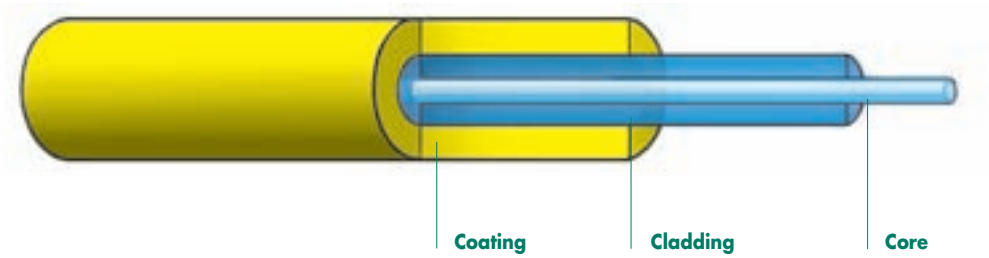
IEEE 802.3 Series	Wavelength	Link length [m]	Description
1000 Base-SX IEEE 802.3z	850	275 / * 300	Laser-bandwidth RML (Restricted Mode Launch) measurement is used to characterise indermediate performance laser (typically up to 1 GbE) at 850nm.
1000 Base-LX IEEE 802.3z	1300	550	
10GBase-SR/SW	850	33	
10GBase-LX4	1300	300	Link length is achieved via 1300nm „Wide" WDM using 4 channels (lanes) at 2,25 GbE Lane 0 = 1269,0 – 1282,4 nm, Lane 1 = 1293,5 – 1306,9 nm Lane 2 = 1318,0 – 1331,4 nm, Lane 3 = 1342,5 – 1355,9 nm

* Additional Link length of 300m on request.

Multimode fibre (MMF) G50/125/250 OM2

IEC 60793-2-10 Type A1a.1/ISO/IEC 11801:2002 OM2/EN 50173:2002 OM2

Dätwyler Cables



Product information

Main areas of application

Applications for Premises- (FTTD Fibre to the Desk), LAN- and Backbone-Infrastructure for medium transmission distances and at medium transmission rates at the 850 nm and 1300 nm wavelengths (typically up to 1 GbE).
Geometrical and mechanical performance corresponds to the relevant international standards.

Transmission characteristics

Wavelength	[nm]	850	1300
Attenuation typ. (cabled)	[dB/km]	2.5	0.5
Attenuation max. (cabled)	[dB/km]	2.7	0.7
OFL-Bandwidth per TIA/EIA 455-204 and IEC 60793-1-41	[MHz x km]	500	500
RML-Bandwidth per TIA/EIA 455-204 and IEC 60793-1-41	[MHz x km]	585	
Refractive index		1.481	1.476

Geometry and mechanical characteristics

Numerical aperture		0.200 +/- 0.015
Core Ø	[µm]	50 +/- 2.5
max. Core non-circularity	[%]	5
Cladding Ø	[µm]	125 +/- 2
max. Cladding non-circularity	[%]	1.0
max. Cladding/Core concentricity error	[µm]	1.5
max. Coating concentricity error	[µm]	12
Coating Ø	[µm]	245 +/- 5
Proof test	[kpsi]	100

Application Gigabit Ethernet

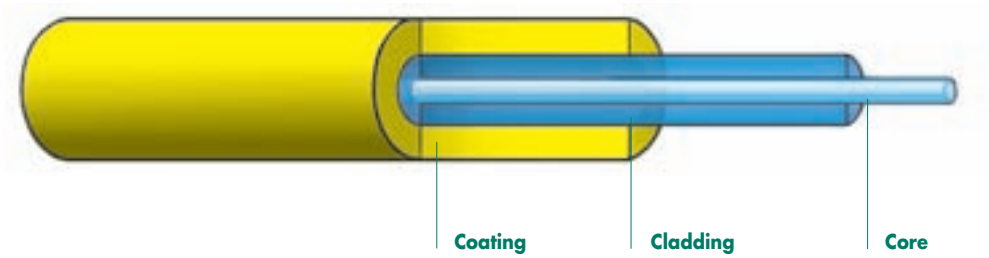
IEEE 802.3 Series	Wavelength	Link length [m]	Description
1000 Base-SX IEEE 802.3z	850	550 / *600	Link lengths are characterised in IEEE 802.3z (Gigabit Ethernet) Laser-bandwidth RML (Restricted Mode Launch) measurement is used to characterise intermediate performance laser (typically up to 1 GbE) at 850nm.
1000 Base-LX IEEE 802.3z	1300	550	
10GBase-SR/SW	850	82	
10GBase-LX4	1300	300	Link length is achieved via 1300nm „Wide" WDM using 4 channels (lanes) at 2,25 GbE Lane 0 = 1269,0 – 1282,4 nm, Lane 1 = 1293,5 – 1306,9 nm, Lane 2 = 1318,0 – 1331,4 nm, Lane 3 = 1342,5 – 1355,9 nm

* Additional Link length of 300m on request.

Dätwyler Cables

Laser-Optimized InfiniCor® SX+ Optical Fibre Multimode fibre (MMF) G50/125/250 10GbE OM3

IEC 60793-2-10 Type A1a.2/ISO/IEC 11801:2002
OM3/EN 50173:2002 OM3



Product information

Main areas of application

Applications for Datacentre-, Storage- and LAN- Backbone for High Data rates up to 10 GbE at 850 nm.
Reccommended for new builds.
Full compatibility with the broad range of laser-based and legacy protocols and applications.
Geometrical and mechanical performance corresponds to the relevant international standards.

Transmission characteristics

Wavelength	[nm]	850	1300
Attenuation typ. (cabled)	[dB/km]	2.5	0.5
Attenuation max. (cabled)	[dB/km]	2.7	0.7
OFL Bandbreite per TIA/EIA 455-204 and IEC 60793-1-41	[MHz x km]	1500	500
High Performance EMB, minEMBc, per TIA/EIA 455-220A and IEC 60793-1-49	[MHz x km]	2000*	
Refractive index		1.482	1.477

(*higher EMB such as OM3+ with 4700 Mhz.km available upon request)

Geometry and mechanical characteristics

Numerical aperture		0.200 +/- 0.015
Core Ø	[µm]	50 +/- 2.5
max. Core non-circularity	[%]	5
Cladding Ø	[µm]	125 +/- 2
max. Cladding non-circularity	[%]	1.0
max. Cladding/Core concentricity error	[µm]	1.5
max. Coating concentricity error	[µm]	12
Coating Ø	[µm]	245 +/- 5
Proof test	[kpsi]	100

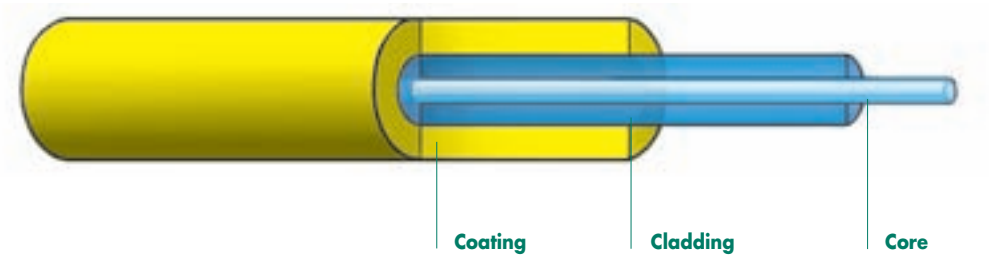
Application Gigabit Ethernet

IEEE 802.3 Series	Wavelength	Link length [m]	Description
1000 Base-SX IEEE 802.3z	850	1000*	Laser-bandwidth mEMBc (min. calculated Effective Modal Bandwidth) measurement is used to characterise high performance laser-based systems (up to 10 GbE) at 850 nm. The mEMBc is a DMD based method to characterise laser-bandwidth over the range of standard compliant high performance 850 nm VCSEL lasers. (*additional link lengths, such as 550m at 10GbE, and 1100 m at 1GbE available upon request)
10GBase-SR/SW IEEE 802.3ae	850	300*	

Multimode fibre (MMF) G50/125/250 10GbE OM3+

ITU-T Rec. G. 651/ IEC 60793-2-10 Typ A1a.2 /ISO/IEC 11801:2002 OM3/
EN 50173:2002 OM3 TIA/EIA 492AAAC-A

Dätwyler Cables



Product information

Main areas of application

Applications for Datacentre-, Storage- and LAN- Backbone for High Data rates up to 10 GbE at 850 nm.
Reccommended for new builds.
Full compatibility with the broad range of laser-based and legacy protocols and applications.
Geometrical and mechanical performance corresponds to the relevant international standards.

Transmission characteristics

Wavelength	[nm]	850	1300
Attenuation typ. (cabled)	[dB/km]	2.5	0.5
Attenuation max. (cabled)	[dB/km]	2.7	0.7
OFL Bandbreite per TIA/EIA 455-204 and IEC 60793-1-41	[MHz x km]	1500	500
High Performance EMB, minEMBc, per TIA/EIA 455-220A and IEC 60793-1-49	[MHz x km]	4700	
Refractive index		1.482	1.477

(*higher EMB such as OM3+ with 4700 Mhz.km available upon request)

Geometry and mechanical characteristics

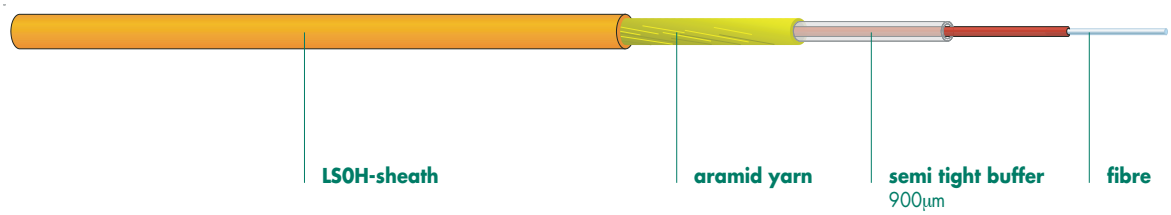
Numerical aperture		0.200 +/- 0.015
Core Ø	[µm]	50 +/- 2.5
max. Core non-circularity	[%]	5
Cladding Ø	[µm]	125 +/- 2
max. Cladding non-circularity	[%]	1.0
max. Cladding/Core concentricity error	[µm]	1.5
max. Coating concentricity error	[µm]	12
Coating Ø	[µm]	245 +/- 5
Proof test	[kpsi]	100

Application Gigabit Ethernet

IEEE 802.3 Series	Wavelength	Link length [m]	Description
1000 Base-SX IEEE 802.3z	850	1100	Laser-bandwidth mEMBc (min. calculated Effective Modal Bandwidth) measurement is used to characterise high performance laser-based systems (up to 10 GbE) at 850 nm. The mEMBc is a DMD based method to characterise laser-bandwidth over the range of standard compliant high performance 850 nm VCSEL lasers.
10GBase-SR/SW IEEE 802.3ae	850	550	

optofil® Indoor cable / I-V(ZN)H

2.0 mm/2.8 mm, LS0H
semi buffer tube design,
flame retardant according to IEC 60332.1



Product information

Features

Thin, flexible fibre optic Simplex cable with semi loose tube 0.9mm.
Easy handling and simple to strip off.
Low Fire load due to the halogen free LSOH sheath.

Application

Patch cable between terminal distributors and/or end devices.
Direct connector installation.
Can be spliced in cable terminal distributors.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	operation	-20 / +60°C IEC 60794-2-10
tensile performance		IEC 60794-1-2 E1 A
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11 A

General characteristics

sheath colour	E9/125	yellow/green
	G50/125	orange
	G50/125 OM3	turquoise
	G62.5/125	grey
Printing	DÄTWYLER OPTOFIL 1E9 G.652D LS0H C-no. 10880 2050 m	
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2	
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2	
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)	

description I-V(ZN)H	cable Ø mm	weight kg/km	bending radius mm	tensile load N	crush resistance short term N/cm	Fire load kWh/km	Fire load MJ/km
EF 2.0, Simplex	2.0	4.1	50	100	50	31	111
EF 2.8, Simplex	2.8	7.1	73	100	50	35	124

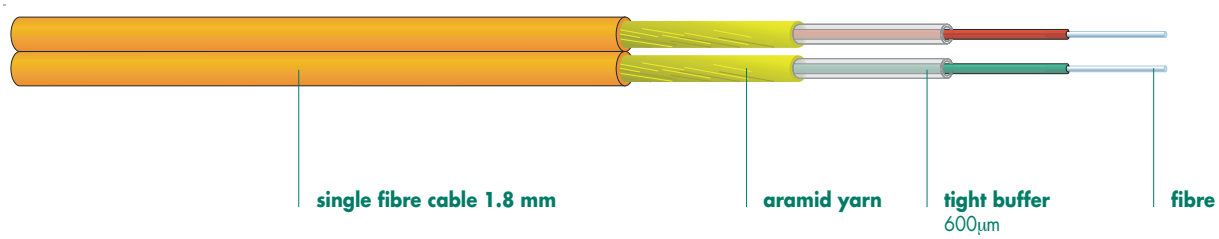
Versions

I-V(ZN)H description	fibre number	Article No. E9/125 G.652.D sheath colour green	Article No. E9/125 G.652.D sheath colour yellow	Article No. G50/125 OM2	Article No. G50/125 OM3	Article No. G62.5/125 OM1
EF 2.0, Simplex	1	191 319	191 320	191 321	on request	191 322
EF 2.8, Simplex	1	191 323	on request	191 324	on request	191 325

optofil®-Indoor cable / I-V(ZN)H

Mini Zip-Cord 1.8 mm, LS0H
tight buffer tube design,
flame retardant according to IEC 60332.1

Dätwyler Cables



Product information

Features

Flexible, Mini Zip-Cord with small outer diameter. The cable is very easy to separate.
Tight-buffer tube design 0.6mm.
LS0H cable sheath with very low fire load.

Application

Connection cable between terminal distributors and/or end devices.
Direct assembling on Simplex, Duplex or MT-RJ connectors.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	operation	-20 / +60°C IEC 60794-2-10
tensile performance		IEC 60794-1-2 E1 A
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11 A

General characteristics

sheath colour	E9/125	yellow/green
	G50/125	orange
	G50/125 OM3	turquoise
	G62.5/125	grey
Printing example	DÄTWYLER OPTOFIL 1G50 10GBE OM3 LSOH	
	C-no. 10888 1980m	

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

description I-V(ZN)H	cable Ø mm	weight kg/km	bending radius mm	tensile load N	crush resistance short term N/cm	Fire load kWh/km	Fire load MJ/km
Mini Zip-Cord 1.8	3.7 x 1.8	4.8	50	150	80	52	187

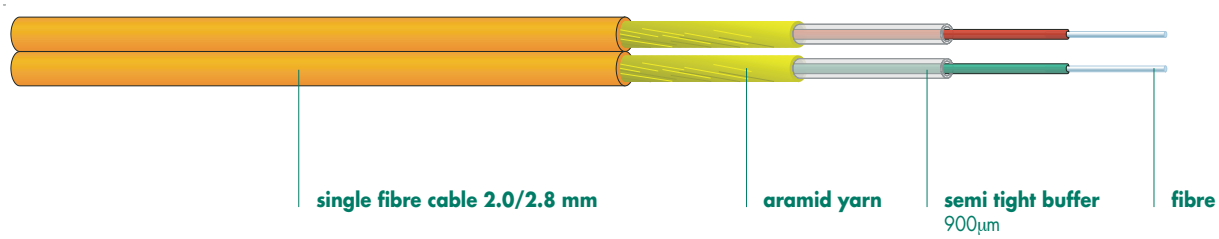
Versions

I-V(ZN)H description	fibre number	Article No. E9/125 G.652.D sheath colour green	Article No. E9/125 G.652.D sheath colour yellow	Article No. G50/125 OM2	Article No. G50/125 OM3	Article No. G62.5/125 OM1
Mini Zip-Cord 1.8	2	190 247	190 306	186 367	186 038	186 368

optofil®-Indoor cable / I-V(ZN)H

Zip-Cord 2.0/2.8 mm, LS0H

semi tight buffer tube design,
flame retardant according to IEC 60332.1



Product information

Features

Flexible, Zip-Cord with small outer diameter. The cable is very easy to separate.
Semi tight buffer tube design 0.9 mm.
LS0H cable sheath with very low fire load.

Application

Connection cable between terminal distributors and/or end devices.
Direct assembling on Simplex and Duplex connectors.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	operation	-20 / +60°C IEC 60794-2-10
tensile performance	IEC 60794-1-2 E1 A	
crush resistance	IEC 60794-1-2 E3	
impact	IEC 60794-1-2 E4	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11 A	

General characteristics

sheath colour	E9/125	yellow/green
	G50/125	orange
	G50/125 OM3	turquoise
	G62.5/125	grey
Printing example	DÄTWYLER OPTOFIL 1G50 10GBE OM3 LSOH C-no. 10888 1980m	

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

description I-V(ZN)H	cable Ø mm	weight kg/km	bending radius mm	tensile load N	crush resistance short term N/cm	Fire load kWh/km	Fire load MJ/km
Zip-Cord 2.0	4.0 x 2.0	8.0	50	200	100	62	225
Zip-Cord 2.8	5.6 x 2.8	11.0	70	200	100	82	295

Versions

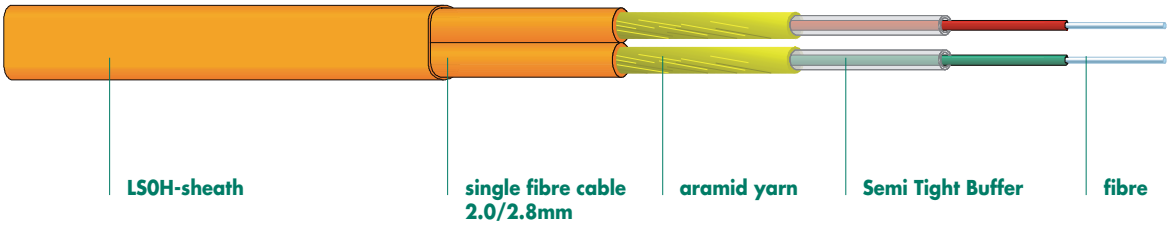
I-V(ZN)H	fibre	Article No.	Article No.	Article No.	Article No.	Article No.
description	number	E9/125 G.652.D sheath colour green	E9/125 G.652.D sheath colour yellow	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
Zip-Cord 2.0	2	191 797	191 294	191 798	191 293	191799
Zip-Cord 2.8	2	on request	on request	on request	on request	on request

optofil®-Indoor cable / I-V(ZN)HH

Duplex 2.0mm / 2.8mm, LSOH

semi tight buffer design,
flame retardant according to IEC 60332.1

Dätwyler Cables



Product information

Features

Robust, flexible fibre optic Duplex cable with a combined sheath based on 2 single fibre cables 2.0/2.8mm with semi tight buffer 0.9mm. Easy handling and simple to strip off.
Low Fire load due to the halogen free LSOH sheath.

Application

Patch cable between terminal distributors and/or end devices
Direct connector installation
Can be spliced in cable terminal distributors.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	operation	-20 / +60°C IEC 60794-2-10
tensile performance		IEC 60794-1-2 E1 A
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11 A

General characteristics

sheath colour	E9/125	yellow/green
	G50/125	orange
	G50/125 OM3	turquoise
	G62.5/125	grey
Printing example	DÄTWYLER OPTOFIL 2G50 1GBE OM2 C-no. 10888 1980m	
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2	
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2	
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)	

optofil®-Indoor cable / I-V(ZN)HH

Duplex 2.0mm / 2.8mm, LSOH

semi tight buffer design,
flame retardant according to IEC 60332.1

description I-V(ZN)HH	cable Ø mm	weight kg/km	bending radius mm	tensile load N	crush resistance short term N/cm	Fire load kWh/km	 MJ/km
Duplex	4.8 x 3.2	21	50	200	300	100	360
Duplex	6.6 x 4.0	25	50	200	300	120	432

Versions

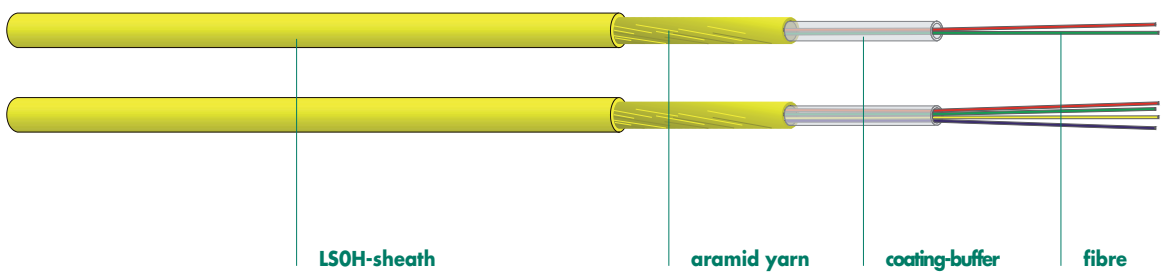
I-V(ZN)HH		fibre	Article No.	Article No.	Article No.	Article No.	Article No.
description		number	E97125 G.652.D	E97125 G.652.D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
			sheath colour green	sheath colour yellow			
Duplex I-V(ZN)HH	2x1(2.0)	2	191 326	191 327	191 328	191 329	191 330
Duplex I-V(ZN)HH	2x1(2.8)	2	on request	on request	on request	on request	on request

optofil®-Indoor cable / I-V(ZN)H

FTTH-Cable 2.2 mm, LS0H

Coating buffer design,
flame retardant according to IEC 60332.1
In accordance to IEC 60794-2-20

Dätwyler Cables



Product information

Features

Easy handling fibre optic indoor cable
Very small outer diameter of 2.2mm in case of innovative coating-buffer
Flame retardant FR/LSOH cable construction with very low fire load
Robust coat for introduction in tubing plants with existing cables

Application

Inhouse cabling solutions for Fibre to the Home (FTTH) applications
Inhouse cabling solutions for integrated data network and building automation
Connection cable between building entrance facilities and fibre optic data outlet
Can be laid in cable trays, ducts and vertical shafts
Can be spliced in wall mounted distribution box and in fibre optic data outlet

Optical characteristics

The cables are available with the following types of fibre ITU G.657 A

Mechanical characteristics

temperature range	operation	-20 / +60°C IEC 60794-1-2 F1
tensile performance	IEC 60794-1-2 E1	
crush resistance	IEC 60794-1-2 E3	
impact	IEC 60794-1-2 E4	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11	

General characteristics

sheath colour	yellow RAL 1021
Printing example	DÄTWYLER OPTOFIL INDOOR FTTH 1X4FS/SM G.657A C-no. 10880 2050 m
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

description I-V(ZN)H		cable Ø mm	weight kg/km	bending radius mm	tensile load N	crush resistance short term N/cm	Fire load kWh/km
Optofil-I 2.2, LS0H	1 x 2	2.2	4.0	25	400	500	23
Optofil-I 2.2, LS0H	1 x 4	2.2	4.0	25	400	500	23

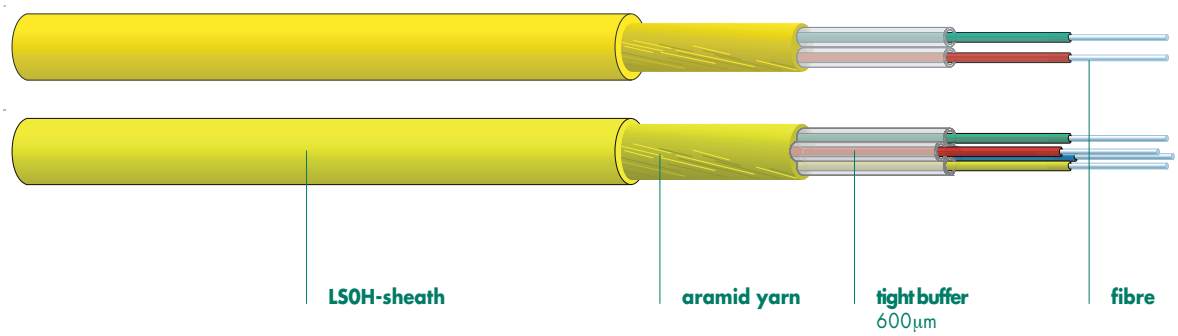
Versions

I-V(ZN)H		fibre	Article No.
description		number	ITU G.657 A
Optofil-I 2.2, LS0H	1 x 2	2	191 801
Optofil-I 2.2, LS0H	1 x 4	4	191 800

Technical changes reserved.

optofil®-Indoor cable / I-V(ZN)H

FTTH-Cable 2.8 mm, LS0H
Tight buffer design,
flame retardant according to IEC 60332.1
In accordance to IEC 60794-2-20



Product information

Features

Easy handling fibre optic indoor cable
Small outer diameter in tight buffer construction with 0.6mm tight buffer
Flame retardant FR/LSOH cable construction with very low fire load
Robust coat for introduction in tubing plants with existing cables.

Application

Inhouse cabling solutions for Fibre to the Home (FTTH) applications
Inhouse cabling solutions for integrated data network and building automation
Connection cable between building entrance facilities and fibre optic data outlet
Can be laid in cable trays, ducts and vertical shafts
Direct connector installation
Can be spliced in wall mounted distribution box and in fibre optic data outlet

Optical characteristics

The cables are available with the following types of fibre ITU G.657 A

Mechanical characteristics

temperature range	operation	-20 / +60°C IEC 60794-1-2 F1
tensile performance	IEC 60794-1-2 E1	
crush resistance	IEC 60794-1-2 E3	
impact	IEC 60794-1-2 E4	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11	

General characteristics

sheath colour	yellow RAL 1021
Printing example	DÄTWYLER OPTOFIL INDOOR FTTH 4X1 FS SM G.657A C-no. 10880 2050 m
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

description I-V(ZN)H		cable Ø mm	weight kg/km	bending radius mm	tensile load N	crush resistance short term N/cm	Fire load kWh/km
Optofil-12.8, LS0H	2 x 1	2.8	7.5	25	400	500	41
Optofil-12.8, LS0H	4 x 1	2.8	8.0	25	400	500	43

Versions

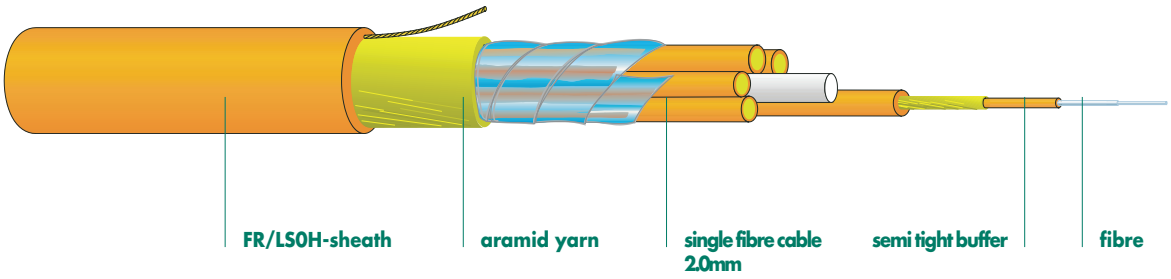
I-V(ZN)H		fibre	Article No.
description		number	ITU G.657 A
Optofil-12.8, LS0H	2 x 1	2	191 803
Optofil-12.8, LS0H	4 x 1	4	191 802

optofil®-Indoor cable / I-V(ZN)HH

Breakout 2.0mm, FR/LSOH

semi tight buffer tube design, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

Dätwyler Cables



Product information

Features

Robust, flexible fibre optic breakout cable based on 2 up to 12 single fibre cables with semi tight buffer tube 0.9 mm.
Easy handling and simple to strip off.
FR/LSOH Design for very low fire load and flame retardancy.

Application

LAN backbone
connection cable between main and terminal distributors
Can be laid on cable platforms, cable trays and vertical cable shafts.
direct connector installation
can be spliced in cable terminal distributors

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	operation	-20 / +60°C IEC 60794-2-20
tensile performance	IEC 60794-1-2 E1 A	
crush resistance	IEC 60794-1-2 E3	
impact	IEC 60794-1-2 E4	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11 A	

General characteristics

sheath colour	E9/125	yellow/green
	G50/125	orange
	G50/125 OM3	turquoise
	G62.5/125	grey
Printing example	DÄTWYLER OPTOFIL 2G50 1GBE OM2 FR/LSOH	
	C-no. 10888 ~ ~ 1850 m ~ ~	
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2	
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2	
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C	
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)	

optofil®-Indoor cable / I-V(ZN)HH

Breakout 2.0mm, FR/LS0H

semi tight buffer tube design, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

description		cable Ø	weight	bending radius	tensile load	crush resistance		Fire load	
I-V(ZN)HH		mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
Breakout	2x1	7.2	43	95	1000	100	300	247	889
Breakout	4x1	7.2	48	95	1000	100	300	259	932
Breakout	6x1	8.6	65	120	1000	100	300	365	1314
Breakout	8x1	9.7	83	145	1000	100	300	481	1732
Breakout	12x1	10.6	102	165	1000	100	300	563	2027

Versions

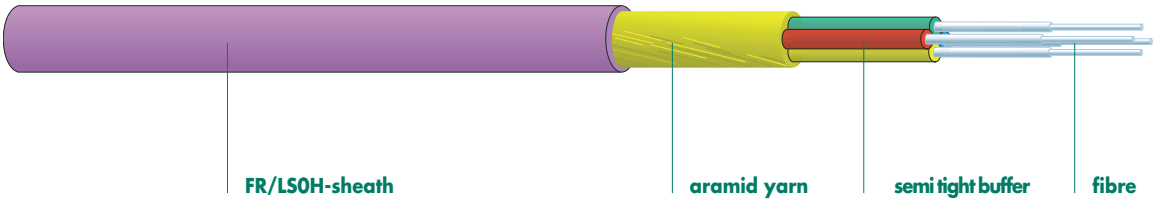
I-V(ZN)HH		fibre	Article No.	Article No.	Article No.	Article No.
description		number	E9/125 G.652.D sheath colour green	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
Breakout	2 x 1	2	191 711	191 716	191 721	191 726
Breakout	4 x 1	4	191 712	191 717	191 722	191 727
Breakout	6 x 1	6	191 713	191 718	191 723	191 728
Breakout	8 x 1	8	191 714	191 719	191 724	191 729
Breakout	12 x 1	12	191 715	191 720	191 725	191 730

optodesk®-Indoor cable/ I-V(ZN)H

FR/LSOH

semi tight buffer tube design, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

Dätwyler Cables



Product information

Features

Easy handling fibre optic indoor cable. Small overall diameter in semi tight buffer tube design with 0.9mm. Flame retardant FR/LSOH cable construction with very low fire load.

Application

Fibre To The Desk (FTTD) applications
Inhouse cabling solutions for Fibre to the Home applications
Connection cable between main and termial distributors
Can be laid in cable trays and vertical shafts
Direct connector installation
Can be spliced in cable terminal distributors

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	operation	-20 / +60°C IEC 60794-2-20
tensile performance	IEC 60794-1-2 E1	
crush resistance	IEC 60794-1-2 E3	
impact	IEC 60794-1-2 E4	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11	

General characteristics

Printing example: DÄTWYLER OPTODESK 4G50 1GBE OM2 LSOH
C-no. 10915 ~ ~ 1875 m ~ ~

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

optodesk®-Indoor cable / I-V(ZN)H

FR/LSOH

semi tight buffer tube design, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

description		cable Ø	weight	bending radius	tensile load	crush resistance		Fire load	
I-V(ZN)H		mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
Optodesk/I	4x1	3.7	13	55	300	50	200	87	313

Versions

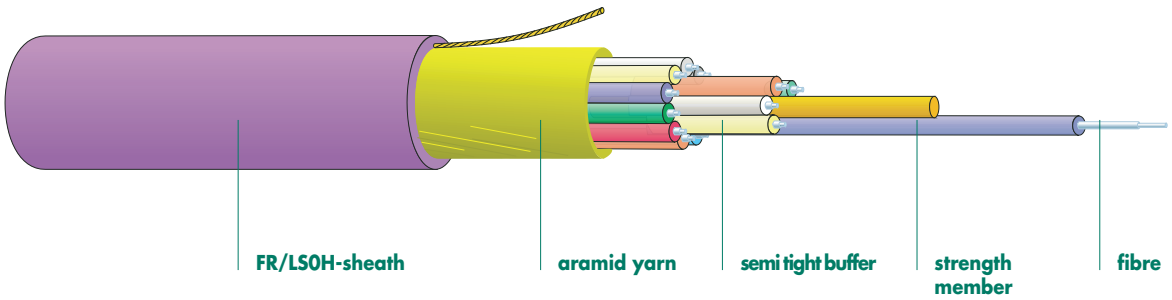
I-V(ZN)H		fibre	Article No.	Article No.	Article No.
description		Anzahl	E9/125 G.652D	G50/125 OM2	G62.5/125 OM1
Optodesk/I	4 x 1	4	191 749	191 750	191 751

optomod®-Indoor cable / I-V(ZN)H

FR/LSOH

semi tight buffer tube design, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

Dätwyler Cables



Product information

Features

Robust,easy handling fibre optic indoor cable with non metallic strength member.
Small overall diameter, stranded semi tight buffer tube design with 0.9mm.
Flame retardant FR/LSOH cable design with low fire load.

Application

Fibre To The Desk (FTTD) applications
Inhouse cabling solutions for Fibre to the Home applications
Connection cable between main and terminal distributors
Can be laid in ducts, cable platforms, cable trays and vertical shafts
Direct connector installation
Can be spliced in cable terminal distributors

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	operation	-20 / +60°C IEC 60794-2-20
tensile performance	IEC 60794-1-2 E1	
crush resistance	IEC 60794-1-2 E3	
impact	IEC 60794-1-2 E4	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11	

General characteristics

Printing example: DÄTWYLER OPTOMOD 12G50 1GBE OM2 FR/LSOH
C-no. 10917 ~ ~ 1650 m ~ ~

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

optomod®-Indoor cable / I-V(ZN)H

FR/LSOH

semi-loose buffer tube design, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

description		cable Ø	weight	bending radius	tensile load	crush resistance		Fire load	
I-V(ZN)H		mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
Optomod/I	2x1	5.9	35	75	700	50	200	207	745
Optomod/I	4x1	5.9	35	75	700	50	200	204	734
Optomod/I	6x1	5.9	35	75	700	50	200	201	724
Optomod/I	8x1	5.9	35	75	700	50	200	199	716
Optomod/I	12x1	7.1	50	85	700	50	200	299	1076
Optomod/I	24x1	9.0	72	100	700	50	200	464	1670

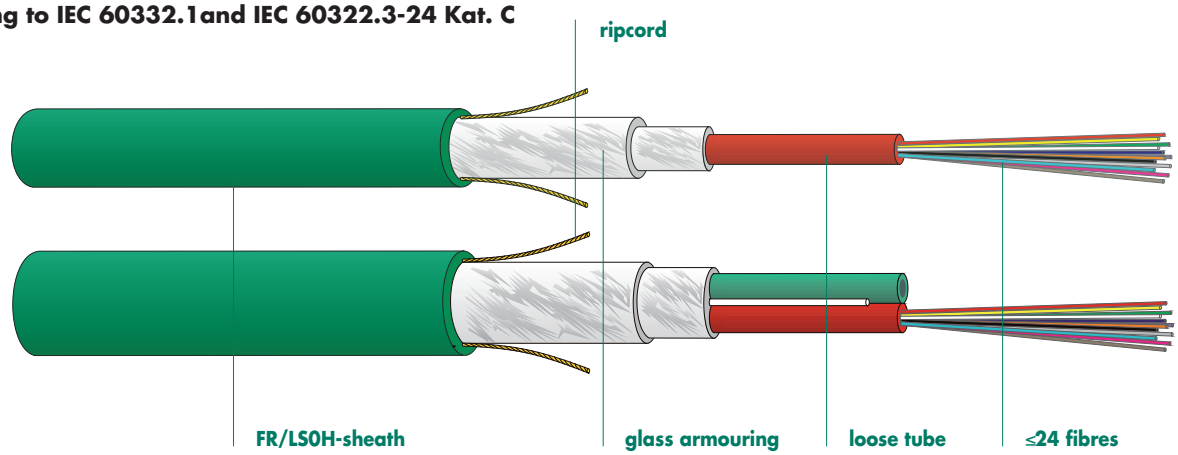
Versions

I-V(ZN)H		fibre	Article No.	Article No.	Article No.
description		number	E9/125 G.652.D	G50/125 OM2	G62.5/125 OM1
Optomod/I	2 x 1	2	191 731	191 737	191 743
Optomod/I	4 x 1	4	191 732	191 738	191 744
Optomod/I	6 x 1	6	191 733	191 739	191 745
Optomod/I	8 x 1	8	191 734	191 740	191 746
Optomod/I	12 x 1	12	191 735	191 741	191 747
Optomod/I	24 x 1	24	191 736	191 742	191 748

optoversal® / U-DQ(ZN)BH

for indoor and outdoor use
non metallic, dry interstices
rodent protected, flame redardant
according to IEC 60332.1and IEC 60322.3-24 Kat. C

Dätwyler Cables



Product information

Features

Robust, non metallic fibre optic Outdoor- and Indoor cable with central tube design.
High crush resistance for high transmission reliability.
Easy handling cable construction by using dry interstices.
Non metallic rodent protection.
The 2 coloured ripcords are easy to identify for safe opening of the cable sheath.
Flame retardant, halogen free FR/LSOH sheath.

Application

LAN Backbone / Access and Riser
connection cable between main and terminal distributors
can be laid in ducts, on cable platforms, cable trays and vertical shafts.
can be spliced in cable terminal distributors.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-25 / +70°C EN 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-25 / +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example: DÄTWYLER OPTOVERSAL 12E9 G.652D
C-no. 10865 ~ ~ 4880 m ~ ~

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

optoversal® / U-DQ(ZN)BH

for indoor and outdoor use
non metallic, dry interstices
rodent protected, flame redardant
according to IEC 60332.1and IEC 60322.3-24 Kat. C

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
U-DQ(ZN)BH nxm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
Optoversal	1x12	12	1	7.6	68	115	1000	200	500	275	990
Optoversal	2x12	24	2	9.5	96	140	1000	200	500	430	1548
Optoversal	1x24	24	1	8.2	79	125	1000	200	500	336	1210

Versions

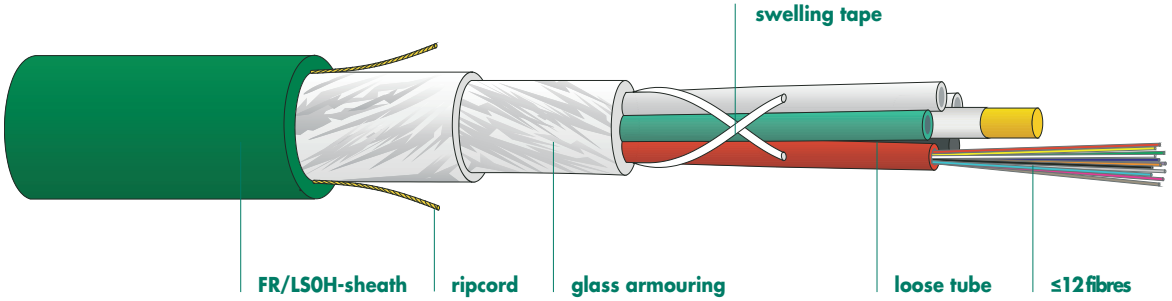
U-DQ(ZN)BH nxm		fibre	Article No.	Article No.	Article No.	Article No.
description		number	E9/125 G.652.D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
Optoversal	1 x 4	4	190 203	185 938	185 989	185 590
Optoversal	1 x 6	6	190 204	186 459	190 112	186 355
Optoversal	1 x 8	8	190 205	186 300	185 959	185 934
Optoversal	1 x 12	12	190 077	185 935	186 350	186 005
Optoversal	2 x 12	24	190 071	186 356	186 432	186 487
Optoversal	1 x 24	24	187 354	186 595	on request	on request
Optoversal-Hybrid*	1 x 12 E9+1 x 12 G50	24	186 496	190 378	190 137	–

** 12 fibres E9 in the red loose tube
12 fibres G50 in the green loose tube

optoversal® / U-DQ(ZN)BH

for indoor and outdoor use
non metallic, dry interstices
rodent protected, flame redardant
according to IEC 60332.1and IEC 60322.3-24 Kat. C

Dätwyler Cables



Product information

Features

Robust, non metallic fibre optic Outdoor- and Indoor cable with stranded loose tube.
High crush resistance for high transmission reliability.
Easy handling cable construction by using dry interstices.
Non metallic rodent protection.
The 2 coloured ripcords are easy to identify for safe opening of the cable sheath.
Flame retardant, halogen free FR/LSOH sheath.

Application

LAN Backbone / Access and Riser
connection cable between main and terminal distributors
can be laid in ducts, on cable platforms, cable trays and vertical shafts.
can be spliced in cable terminal distributors.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-25 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-25 / +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example: DÄTWYLER OPTOVERSAL 96E9 G.652D
C-no. 10870 ~ ~ 4660 m ~ ~

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

optoversal® / U-DQ(ZN)BH

for indoor and outdoor use
non metallic, dry interstices
rodent protected, flame redardant
according to IEC 60332.1and IEC 60322.3-24 Kat. C

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
U-DQ(ZN)BH nxm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
Optoversal	5x12	60	5	11.4	148	175	6000	300	500	616	2218
Optoversal	6x12	72	6	12.2	164	185	6000	300	500	681	2452
Optoversal	8x12	96	8	13.5	198	205	6000	300	500	808	3200
Optoversal	10x12	120	10	14.8	230	225	6000	300	500	936	2909
Optoversal	12x12	144	12	16.3	272	245	6000	300	500	1075	3870

Versions

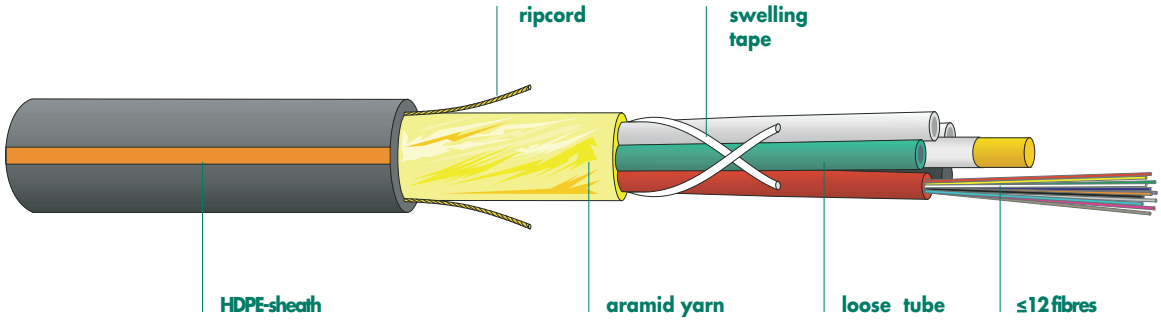
U-DQ(ZN)BH nxm		fibre	Article No.	Article No.	Article No.	Article No.
description		number	E9/125 G.652.D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
Optoversal	3 x 12	36	190 207	186 434	auf Anfrage	186 488
Optoversal	4 x 12	48	190 208	187 291	186 486	187 292
Optoversal	5 x 12	60	190 209	190 618	186 642	on request
Optoversal	6 x 12	72	190 210	187 344	186 539	on request
Optoversal	8 x 12	96	186 747	on request	186 540	on request
Optoversal	10 x 12	120	190 211	on request	186 536	on request
Optoversal	12 x 12	144	190 212	186 616	on request	on request

optofil®-Outdoor Cable / A-DQ(ZN)2Y

wbKT HighP

non metallic, dry interstices,
non armoured, water resistant

Dätwyler Cables



Product information

Features

Compact, non metallic fibre optic outdoor cable with stranded loose tubes.
Prevents water penetration by using water blocking elements.
Lightweight, easy handling cable construction.
The 2 coloured ripcords are easy to identify for safe opening of the cable sheath.
HDPE- cable sheath easy to lay

Application

pulling in or blowing through thermoplastic ducts
laying on cable platforms and cable trays
direct burial

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-40 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-40 / +60°C
tensile performance	IEC 60794-1-2 E1	
crush resistance	IEC 60794-1-2 E3	
impact	IEC 60794-1-2 E4	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11	
water penetration	IEC 60794-1-2 F5	

General characteristics

Printing example	DÄTWYLER OPTOFIL 96E9 G.652D WBKT HIGHP C-no. 10858 ~ ~ 4125 m ~ ~
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

optofil®-Outdoor Cable / A-DQ(ZN)2Y

wbKT HighP

non metallic, dry interstices,
non armoured, water resistant

description	no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)2Y nxm	max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
wbKT5 HighP	60	5	10.2	74	155	3000	100	300	748	2693
wbKT6 HighP	72	6	11.0	91	165	3000	100	300	843	3035
wbKT8 HighP	96	8	12.5	121	190	3000	100	300	1010	3859
wbKT10 HighP	120	10	14.0	150	210	3000	100	300	1185	3636
wbKT12 HighP	144	12	15.6	187	235	3000	100	300	1390	5004

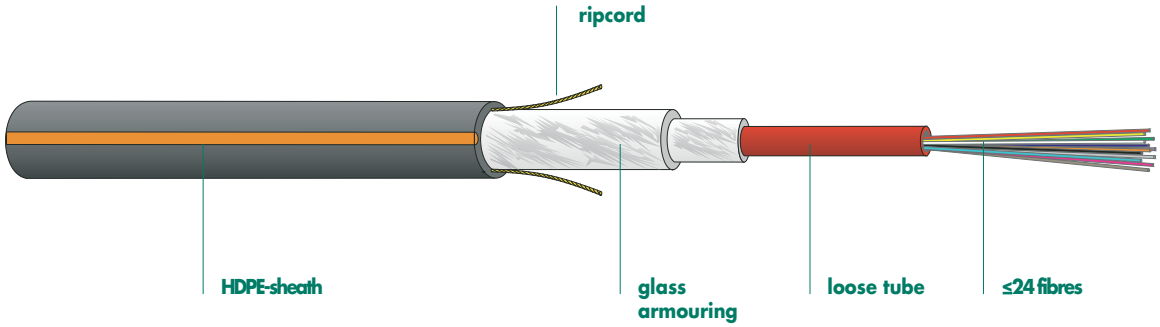
Versions

A-DQ(ZN)2Y nxm		fibre	Article No.
description		number	E9/125 G.652.D
wbKT5 HighP	1 x 12	12	190 661
wbKT5 HighP	2 x 12	24	190 662
wbKT5 HighP	4 x 12	48	190 160
wbKT5 HighP	5 x 12	60	190 161
wbKT6 HighP	6 x 12	72	190 162
wbKT8 HighP	8 x 12	96	190 163
wbKT12 HighP	10 x 12	120	190 164
wbKT12 HighP	12 x 12	144	190 165

optofil®-Outdoor cable / A-DQ(ZN)B2Y ZGGT 2500 HighP

central tube design, nonmetallic,
water resistant, rodent protected

Dätwyler Cables



Product information

Features

Robust, non metallic fibre optic outdoor cable with central tube design for up to 24 fibres.
High tensile strength and high radial load strength for the highest transmission security.
Installation friendly cable design. Rodent protection thanks to glass fibre armouring.
Suitable for use in complex cable routes.

Application

pulling or blowing through plastic ducts
laying on cable platforms and cable trays
direct burial
complex cable trays

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-40 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-40 / +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example	DÄTWYLER OPTOFIL 12E9 G.652D ZGGT2500 HIGHP C-no. 10858 ~ ☎ ~ 5125 m ~ ☎ ~
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

optofil®-Outdoor cable / A-DQ(ZN)B2Y ZGGT 2500 HighP

central tube design, nonmetallic,
water resistant, rodent protected

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)B2Y 1xm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
ZGGT 2500 HighP	1x12	12	1	8.5	65	130	2500	600	1000	558	2009
ZGGT 2500 HighP	1x24	24	1	9.0	70	135	2500	600	1000	589	2120

Versions

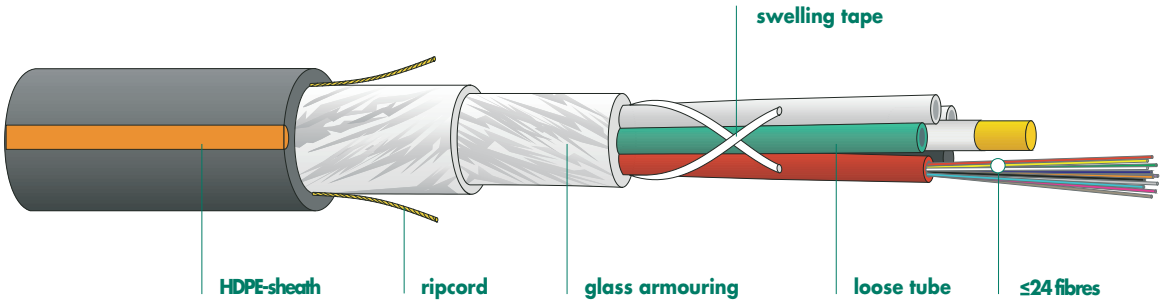
A-DQ(ZN)B2Y 1xm		fibre	Article No.	Article No.	Article No.	Article No.
description		number	E9/125 G.652.D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
ZGGT 2500 HighP	1 x 4	4	190 166	186 320	on request	186 379
ZGGT 2500 HighP	1 x 6	6	190 167	186 481	on request	186 483
ZGGT 2500 HighP	1 x 8	8	190 168	186 480	on request	186 484
ZGGT 2500 HighP	1 x 12	12	190 169	185 937	186 361	185 945
ZGGT 2500 HighP	1 x 24	24	190 149	186 660	on request	on request

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

wbGGT HighP

nonmetallic, dry interstices,
water resistant, rodent protected

Dätwyler Cables



Product information

Features

Robust, non metallic fibre optic outdoor cable with stranded loose tube in one layer.
High crush resistance for high transmission reliability.
Easy handling cable construction by using dry interstices.
Non metallic rodent protection.
The 2 coloured ripcords are easy to identify for safe opening of the cable sheath.
HDPE- sheath easy to lay

Application

pulling in or blowing through thermoplastic ducts
laying on cable platforms and cable trays
direct burial
complex cable trays

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-40 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-40 / +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example: DÄTWYLER OPTOFIL 96E9 G.652D WBGGT HIGHP
C-no. 10858 ~ ~ 3630 m ~ ~

Zero halogen, non corrosive gases: IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

wbGGT HighP

nonmetallic, dry interstices,
water resistant, rodent protected

description	no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)B2Y nxm	max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
wbGGT5 HighP	60	5	12.0	126	180	9000	300	800	1040	3744
wbGGT6 HighP	72	6	12.8	146	195	9000	300	800	1137	4093
wbGGT8 HighP	96	8	14.0	170	210	9000	300	800	1305	5033
wbGGT10 HighP	120	10	15.4	200	230	9000	300	800	1491	4698
wbGGT12 HighP	144	12	16.9	237	255	9000	300	800	1707	6145
wbGGT6 HighP	144	6	13.8	167	205	9000	300	800	1291	4655
wbGGT8 HighP	192	8	15.0	199	225	9000	300	800	1570	4655
wbGGT10 HighP	216	10	17.0	250	255	9000	300	800	1962	7175
wbGGT12 HighP	288	12	18.8	292	285	9000	300	800	2422	8719

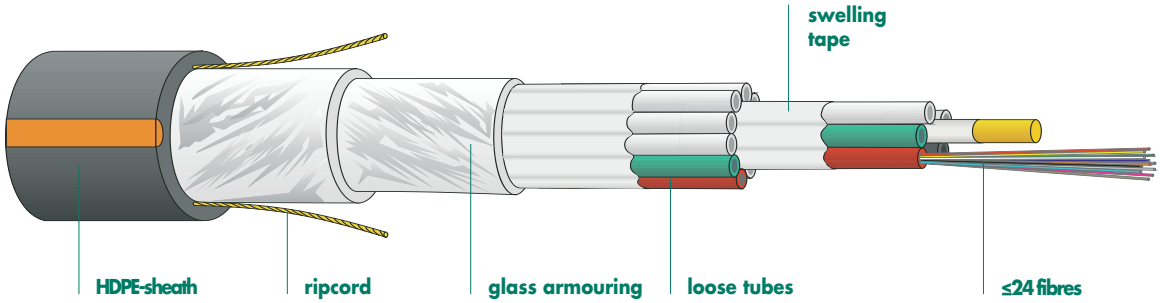
Versions

A-DQ(ZN)B2Y nxm		**fibre**	**Article No.**	**Article No.**	**Article No.**	**Article No.**
description		number	E9/125 G.652.D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
wbGGT5 HighP	1 x 12	12	190 059	186 627	190 631	186 455
wbGGT5 HighP	2 x 12	24	186 748	186 437	190 368	186 399
wbGGT5 HighP	3 x 12	36	190 058	186 438	on request	186 457
wbGGT5 HighP	4 x 12	48	187 385	186 439	190 369	186 458
wbGGT5 HighP	5 x 12	60	190 171	on request	on request	on request
wbGGT6 HighP	6 x 12	72	190 172	on request	on request	on request
wbGGT8 HighP	8 x 12	96	186 760	190 372	on request	on request
wbGGT10 HighP	10 x 12	120	190 175	on request	on request	on request
wbGGT12 HighP	12 x 12	144	187 394	on request	on request	on request
wbGGT6 HighP	6 x 24	144	190 764	on request	on request	on request
wbGGT8 HighP	8 x 24	192	191 270	on request	on request	on request
wbGGT10 HighP	9 x 24	216	190 696	on request	on request	on request
wbGGT12 HighP	12 x 24	288	190 325	on request	on request	on request

optofil®-Outdoor Cable / A-DQ(ZN)B2Y wbGGT HighP (City Compact)

nonmetallic, dry interstices,
water resistant, rodent protected

Dätwyler Cables



Product information

Features

Compact, fibre optic outdoor cable ≤ 576 fibres for city and access network applications.
Easy handling cable construction by using dry interstices.
Non metallic rodent protection.
The 2 couloured ripcords are easy to indentify for safe opening of the cable sheath.
HDPE-sheath easy to lay.

Application

Optimised for injection into compact thermoplastic ducts K28/D32 (design 18x12) and K44/D40 (design 18x24, 24x12).

Optical characteristics

The cables are avaiable with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-40 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-40 / +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bending		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example: DÄTWYLER OPTOFIL 216E9 G.652D WBGGT HIGHP
C-no. 10859 ~ ☎ ~ 2550 m ~ ☎ ~

Zero halogen, non corrosive gases: IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

optofil®-Outdoor Cable / A-DQ(ZN)B2Y wbGGT HighP (City Compact)

nonmetallic, dry interstices,
water resistant, rodent protected

description	no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)B2Y nxm	max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
wbGGT18 HighP	180	18	18.5	285	470	9000	300	500	2492	7967
wbGGT18 HighP	192	18	18.5	285	470	9000	300	500	2492	7967
wbGGT18 HighP	216	18	18.5	285	470	9000	300	500	2492	7967
woGGT24 HighP	240	24	22.0	373	550	9000	300	500	2568	9245
woGGT24 HighP	288	24	22.0	375	550	9000	300	500	2568	9245
wbGGT18 HighP	432	18	20.6	335	515	9000	300	500	3115	11214
woGGT24 HighP	576	24	22.0	643	705	9000	300	500	4786	15123

Versions

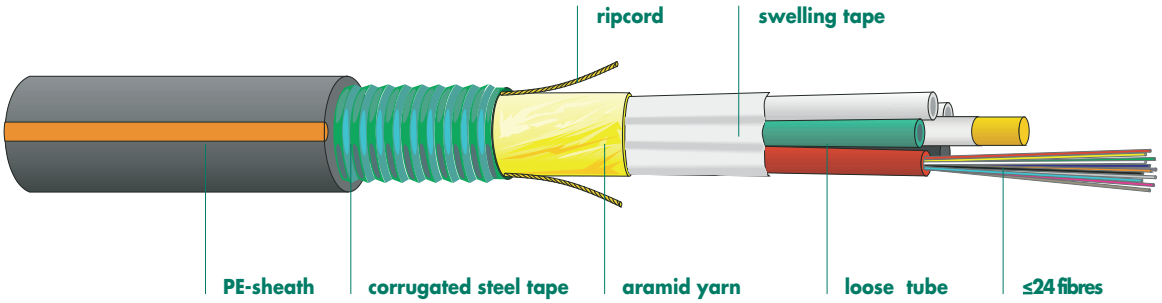
A-DQ(ZN)B2Y nxm		fibre	Article No.
description		number	E9/125 G.652.D
wbGGT18 HighP	15 x 12	180	190 709
wbGGT18 HighP	16 x 12	192	190 699
wbGGT18 HighP	18 x 12	216	190 176
wbGGT24 HighP	20 x 12	240	191 693
wbGGT24 HighP	24 x 12	288	190 399
wbGGT18 HighP	18 x 24	432	190 178
wbGGT24 HighP	24 x 24	576	190 700

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

wbKWT HighP

dry interstices, water resistant,
corrugated steel tape, rodent proof

Dätwyler Cables



Product information

Features

Robust fibre optic outdoor cable with multiple tubes, installation friendly dry design, and optimal rodent protection thanks to corrugated steel tape. Stable laying characteristics and high tensile strength, optimiszed for laying and blowing in to ducts.

Application

pulling through ducts
laying on cable platforms and complex cable trays
extreme rodent resistance
direct burial

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-40 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-40 / +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example	DÄTWYLER OPTOFIL 48E9 G.652D WBKWT HIGHP C-no. 10858 ~ ~ 2445 m ~ ~
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

wbKWT HighP

dry interstices, water resistant,
corrugated steel tape, rodent proof

description	no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)B2Y nxm	max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
wbKWT5 HighP	60	5	13.4	150	200	2500	150	400	1019	3668
wbKWT6 HighP	144	6	13.6	171	205	2500	150	400	1094	3852

Versions

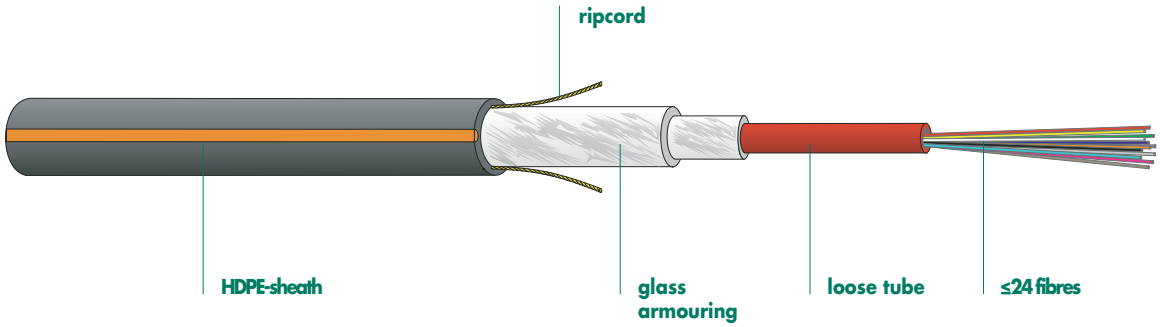
A-DQ(ZN)B2Y nxm		fibre	Article No.	Article No.	Article No.	Article No.
description		number	E9/125 G.652D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
wbKWT5 HighP	2x12	24	190 184	180 761	on request	180 172
wbKWT5 HighP	4x12	48	190 185	on request	on request	181 794
wbKWT5 HighP	5x12	60	186 590	on request	on request	on request
wbKWT6 HighP	4x24	96	191 698	on request	on request	on request
wbKWT6 HighP	6x24	144	191 197	on request	on request	on request

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

ZGGT 1000 BasicLine

central tube design, nonmetallic,
water resistant, rodent protected

Dätwyler Cables



Product information

Features

Non metallic fibre optic outdoor cable with central tube construction for up to 24 fibres.
Construction for use in ducts and applications with low mechanical demands.

Application

pulling or blowing through thermoplastic ducts
laying on cable platforms and cable trays

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-25 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-25 / +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example	DÄTWYLER OPTOFIL 48E9 G.652D WBKWT HIGHP C-no. 10858 ~ ☎ ~ 5125 m ~ ☎ ~
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

ZGGT 1000 BasicLine

central tube design, nonmetallic,
water resistant, rodent protected

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)B2Y 1xm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
ZGGT 1000 BasicLine	1x12	12	1	7.3	48	110	1000	200	500	418	1505
ZGGT 1000 BasicLine	1x24	24	1	8.0	55	120	1000	200	500	491	1768

Versions

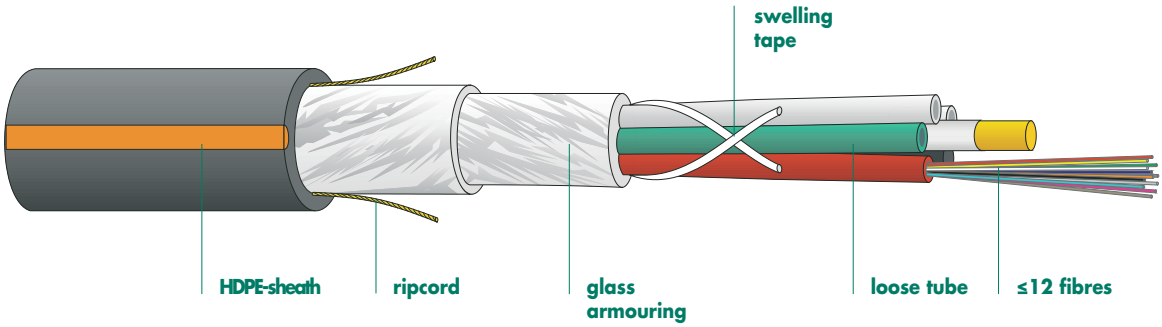
A-DQ(ZN)B2Y 1xm		**fibre**	**Article No.**	**Article No.**	**Article No.**	**Article No.**
description		number	E9/125 G.652.D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
ZGGT 1000 BasicLine	1x4	4	191 292	185 557	on request	187 364
ZGGT 1000 BasicLine	1x6	6	191 256	191 259	191 188	186 497
ZGGT 1000 BasicLine	1x8	8	186 500	185 558	191 189	186 498
ZGGT 1000 BasicLine	1x12	12	190 192	186 499	191 190	187 350
ZGGT 1000 BasicLine	1x24	24	190 193	186 365	on request	186 643

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

wbGGT BasicLine

non metallic, dry interstices, water resistant

Dätwyler Cables



Product information

Features

Robust, non metallic fibre optic outdoor cable with multiple tubes for up to 60 fibres. Construction optimised for use in thermoplastic ducts and for simple, protected cable routes with low mechanical demands.

Application

pulling or blowing through plastic ducts
laying on cable platforms and cable trays with low mechanical stress
simple, protected cable trays

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-25 / +60°C IEC 60794-1-2 F1
	pulling in	-10 / +40°C
	operation	-25 / +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example	DÄTWYLER OPTOFIL 60E9 G.652D WBGGT BASICLINE C-no. 10858 ~ ~ 3630 m ~ ~
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

wbGGT BasicLine

non metallic, dry interstices, water resistant

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)B2Y 1xm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
wbGGT5 BasicLine	5x12	60	5	9.4	68	141	3000	150	250	606	2182

Versions

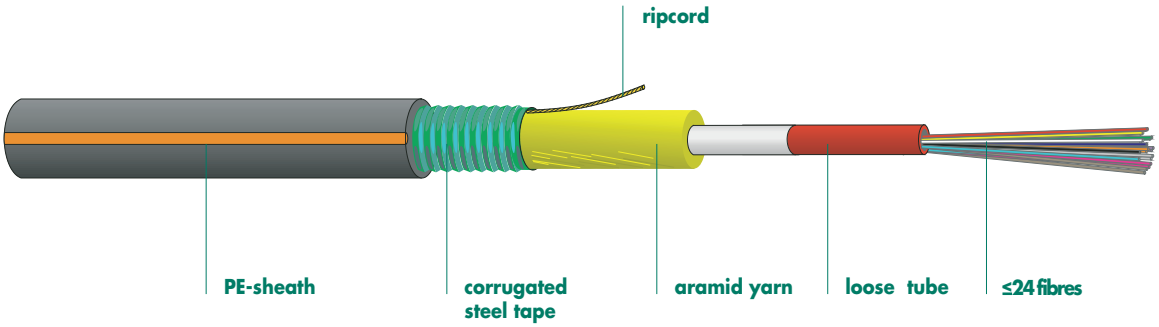
A-DQ(ZN)B2Y 1xm		fibre	Article No.
description		number	E9/125 G.652.D
wbGGT5 BasicLine	1 x 12	12	186 591
wbGGT5 BasicLine	2 x 12	24	190 092
wbGGT5 BasicLine	3 x 12	36	190 752
wbGGT5 BasicLine	4 x 12	48	190 194
wbGGT5 BasicLine	5 x 12	60	190 195

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

ZwbKWT BasicLine

central tube design, water resistant,
corrugated steel tape, rodent resistant

Dätwyler Cables



Product information

Features

Corrugated steel tape fibre optic outdoor cable for optimal rodent protection. Central tube construction for up to 24 fibres. Dry construction with stable laying characteristics for easy installation in ducts.

Application

pulling through ducts
laying on cable platforms
complex cable trays
extreme rodent resistance

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-40 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-40 / +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example: Dätwyler Optofil 24 E9 G. 652 D ZwbKWT BasicLine
C-no. 10860 ~ ☎ ~ 2880 m ~ ☎ ~

Zero halogen, non corrosive gases: IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

optofil®-Outdoor Cable / A-DQ(ZN)B2Y

ZwbKWT BasicLine

central tube design, water resistant,
corrugated steel tape, rodent resistant

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)B2Y		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
ZwbKWT BasicLine	1x12	12	1	8.2	69	120	1000	150	400	03	2171
ZwbKWT BasicLine	1x24	24	1	8.2	85	120	1000	150	400	29	2264

Versions

A-DQ(ZN)B2Y 1xm		fibre	Article No.	Article No.	Article No.	Article No.
description		number	E9/125 G.652.D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
ZwbKWT	1 x 4	4	190 200	180 171	on request	178 872
ZwbKWT	1 x 6	4	187 377	184 200	187 389	178 873
ZwbKWT	1 x 8	8	190 201	178 732	190 072	178 773
ZwbKWT	1 x 12	12	190 202	181 114	on request	176 522
ZwbKWT	1 x 24	24	190 355	186 630	on request	186 623

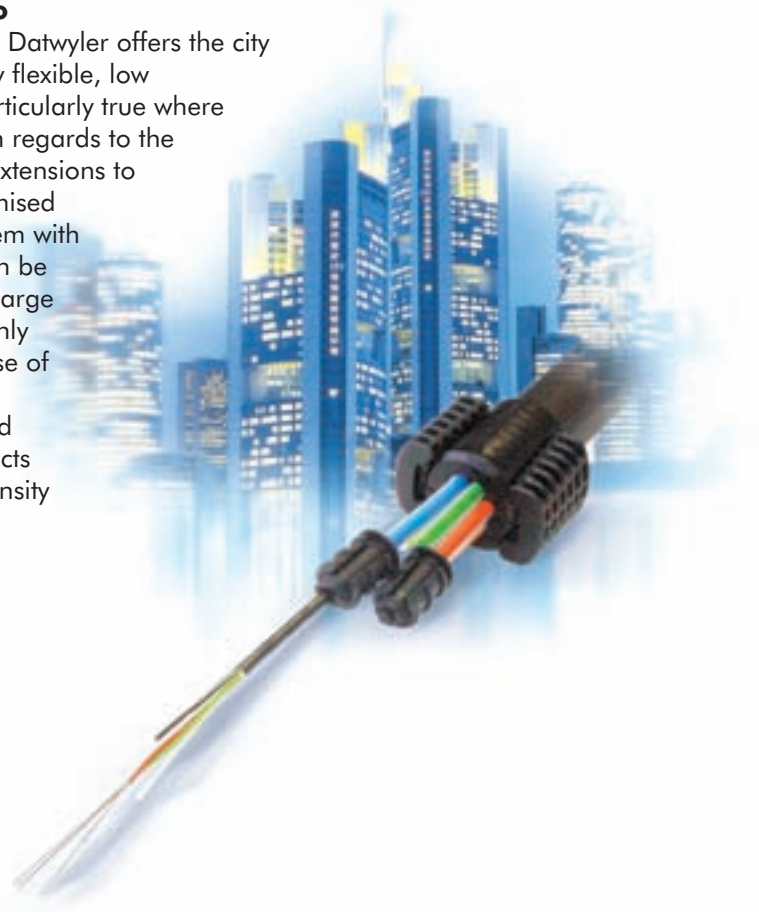
optofil®-Micro

The ideal cabling system for flexible development of the Access network

The opportunity:
connecting the last mile with fibre-optics
An increasing number of applications re-quires ever greater bandwidths. The demand on existing networks is increasing all the time. The future belongs to networks with fibre-optic cables – both in the commercial sector as well as for private households. Connecting the last mile in urban areas with fibre-optics offers great potential for broadband networks.

The challenge:
flexible network structure with low preliminary investment
A specific connection density is required for the economic success of broadband networks. This can be difficult to achieve immediately following the installation of the network. Therefore, the preliminary investment must be kept as low as possible. The greatest challenges are the cost of installation, the time needed to provide basic services and the approval procedures which increase with the growth of the customer base.

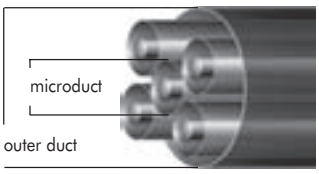
The solution: Optofil-Micro
With Optofil-Micro technology Datwyler offers the city network operator an extremely flexible, low investment solution. This is particularly true where there is a high uncertainty with regards to the placement and timescale for extensions to the network. Benefits are optimised through the use of a duct system with micro ducts. Costs of joints can be reduced through the use of a large number of branches or, in highly occupied ducts, through the use of simple branches. The Optofil-Micro cable has been designed specifically for use in micro ducts so that the maximum fibre density can be achieved.

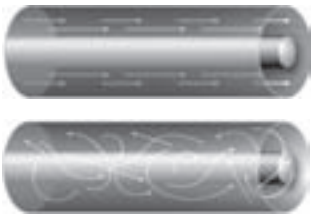


The right combination of duct and cable is crucial

The right duct

outer duct	microduct 10mm	microduct 7mm
D 50 / K 44	7 pices	14 pices
D 40 / K 34	5 pices	10 pices
D 32 / K 28	3 pices	5 Spices



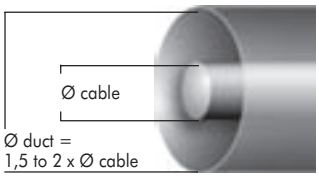


Good - channelled microduct with laminar air flow
Channelling of the duct in the same direction causes the air to flow through the duct with high energy. The friction between cable and duct is low.

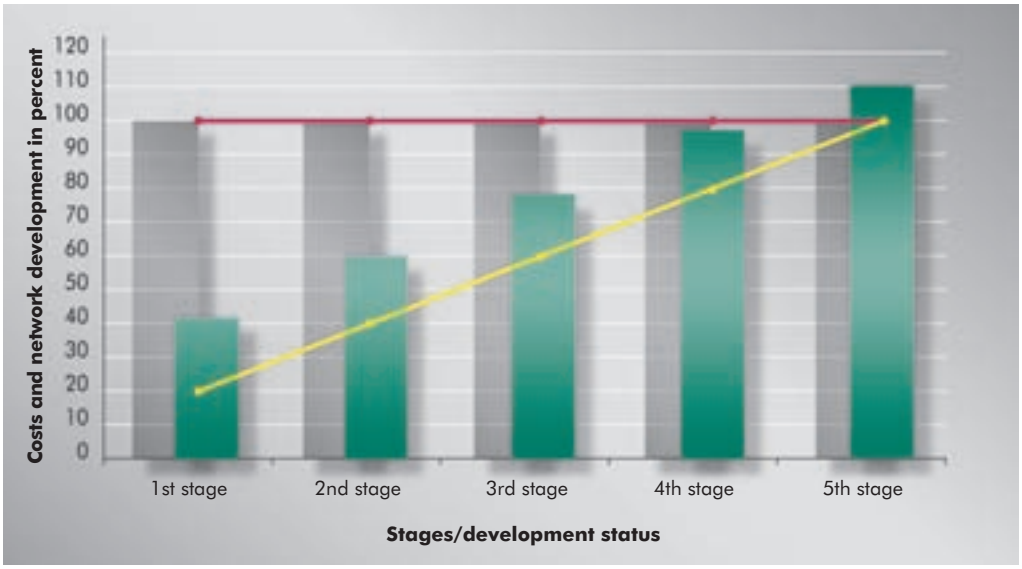
Bad – smooth microduct with turbulent air flow
Vortices and return flows retard the air flow and therefore reduce the energy in a smooth duct. Friction in the duct is high.

The right cable

The optimum internal diameter of the microducts should be one-and-a-half to two times the cable diameter of the Optofil-Micro. Exhaustive tests have shown that the Optofil-Micro cables have optimal cable diameters.



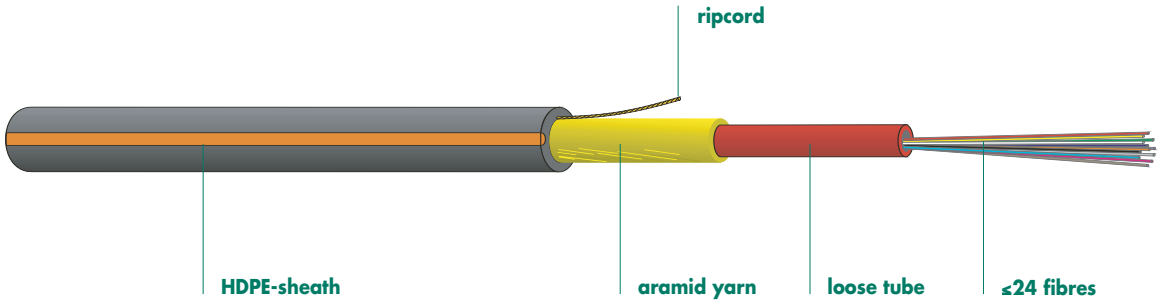
Cost comparison between conventional solution and Optofil-Micro



optofil®-Outdoor Cable / A-DQ(ZN)2Y ZKT Micro (up to 24Fibres)

nonmetallic, non-armoured,
dry interstices, water tightness

Dätwyler Cables



Product information

Features

Very thin, metal-free, fiber optic outdoor cable containing up to 24 fibres in a central tube design. Easily cut-back, installation friendly cable construction.

Application

Optimised for injection in to microducts of 7mm and 10mm diameter.
Fibre to the Home.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-40 / +70°C	IEC 60794-1-2 F1
	pulling in	-15 / +40°C	
	operation	-40 / +70°C	
tensile performance	IEC 60794-1-2 E1		
crush resistance	IEC 60794-1-2 E3		
repeated bending	IEC 60794-1-2 E6		
torsion	IEC 60794-1-2 E7		
bend	IEC 60794-1-2 E11		
water penetration	IEC 60794-1-2 F5		

General characteristics

Printing example	DÄTWYLER OPTOFIL 24E9 G.652D ZKT MICRO C-no. 10857 3750 m
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

Accessories

Please find appropriate accessories in the chapter FO components, consider the special accessories optofil

Dätwyler is

optofil®-Outdoor Cable / A-DQ(ZN)2Y ZKT Micro (up to 24Fibres)

nonmetallic, non-armoured,
dry interstices, water tightness

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)2Y nxm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
Micro ZKT	1x24	24	1	4.0	19	100	500	60	160	165	594

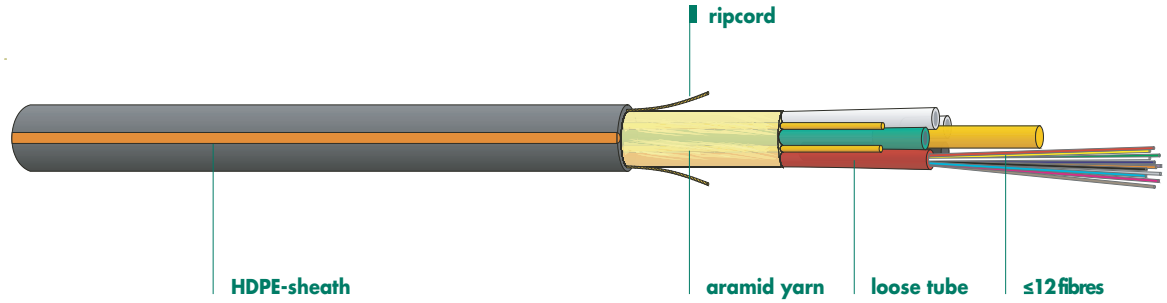
Versions

A-DQ(ZN)2Y nxm		fibre	Article No.	Article No.
description		number	E9/125 G.652.D	E9/125 G.657.A
Micro ZKT	1 x 12	12	190 227	191 349
Micro ZKT	1 x 24	24	191 235	191 350

optofil®-Outdoor Cable / A-DQ(ZN)2Y wbKT Micro (up to 72 Fibres)

nonmetallic, non-armoured,
dry interstices, water tightness

Dätwyler Cables



Product information

Features

Highly compact, metal-free, fiber optic outdoor cable containing up to 72 fibres with dry interstices and stranded loose tubes. Easily cut-back, installation-friendly cable construction.

Application

Optimised for injection in to microducts of 7mm and 10mm diameter.
Fibre to the Home.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-40 / +70°C	IEC 60794-1-2 F1
	pulling in	-15 / +40°C	
	operation	-40 / +70°C	
tensile performance	IEC 60794-1-2 E1		
crush resistance	IEC 60794-1-2 E3		
repeated bending	IEC 60794-1-2 E6		
torsion	IEC 60794-1-2 E7		
bend	IEC 60794-1-2 E11		
water penetration	IEC 60794-1-2 F5		

General characteristics

Printing example	DÄTWYLER OPTOFIL 72E9 G.652D WBKT MICRO C-no. 10857 3750 m
Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/2-2, VDE 0482-267-2-1/-2-2

Accessories:

Please find appropriate accessories in the chapter FO components, consider the special accessories optofil

Dätwyler is

optofil®-Outdoor Cable / A-DQ(ZN)2Y wbKT Micro (up to 72 Fibres)

nonmetallic, non-armoured,
dry interstices, water tightness

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
A-DQ(ZN)2Y nxm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
Micro wbKT	5x12	60	5	6.6	30	150	1000	60	160	247	889
Micro wbKT	6x12	72	6	6.5	30	150	1000	60	160	243	875

Versions

A-DQ(ZN)2Y nxm		fibre	Article No.	Article No.
description		number	E9/125 G.652.D	E9/125 G.657.A
Micro wbKT	1 x 12	12	191 706	on request
Micro wbKT	2 x 12	24	190 080	on request
Micro wbKT	3 x 12	36	190 229	on request
Micro wbKT	4 x 12	48	190 230	on request
Micro wbKT	5 x 12	60	190 231	on request
Micro wbKT	6 x 12	72	190 232	on request

optofil®-Easy-Blow

Fire resistant fibre optic cable for simplified installation into ducts

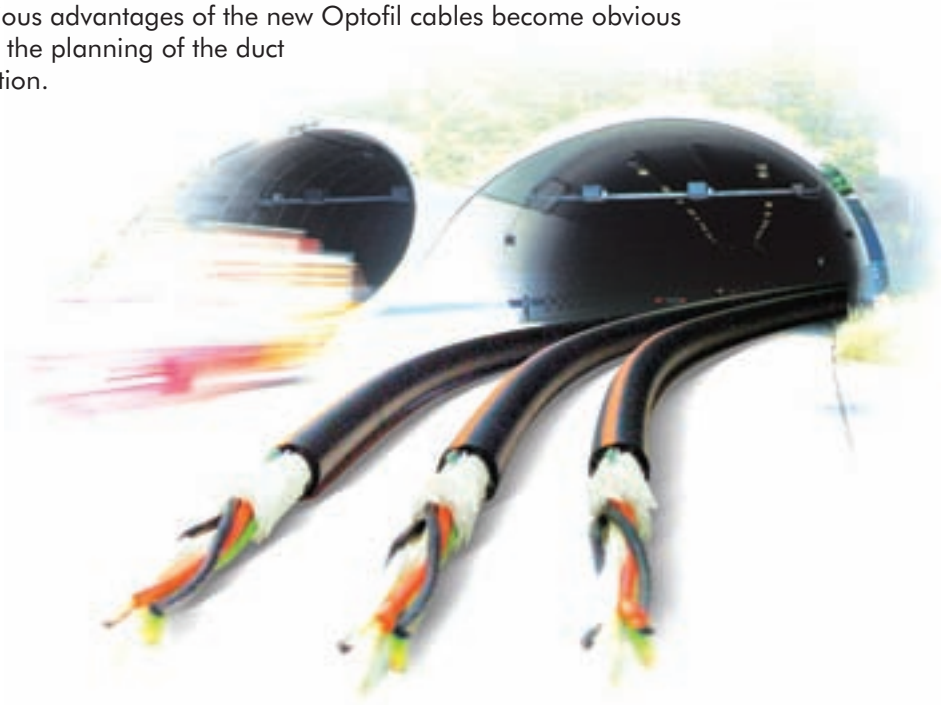
Accidents in tunnels over the last few years have shown the importance of lower fire loads in tunnel cabling applications.

Cables with lower fire loads, that use conventional fire resistant sheath materials, have the disadvantage that they can not be easily blown in to ducts and can not be blown more than 500m without intermediate blowing points.

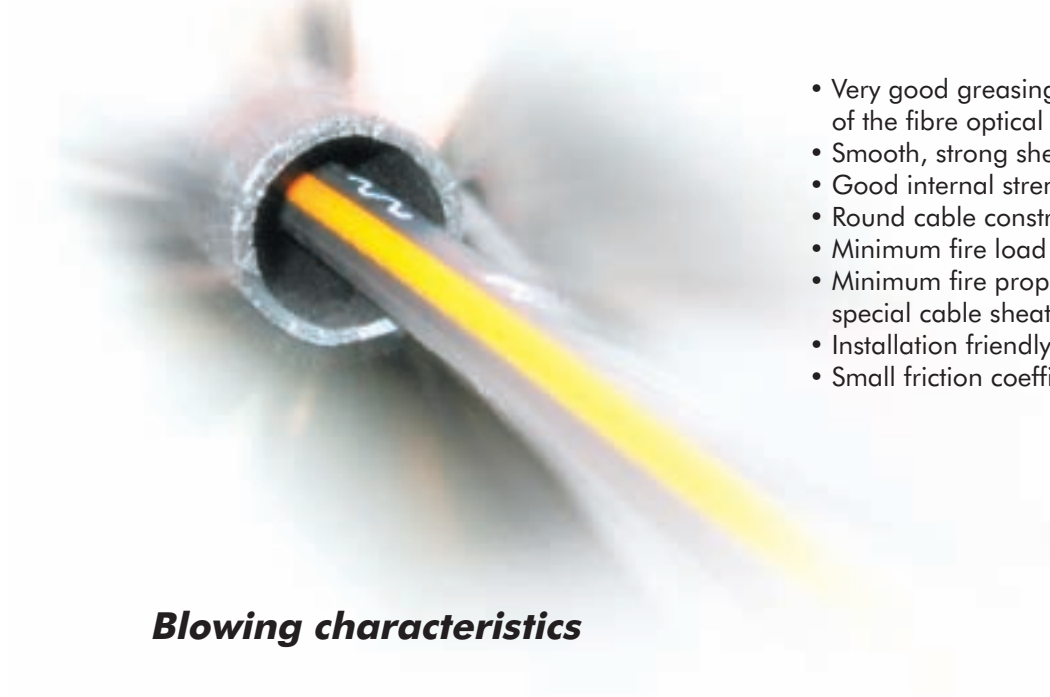
Dätwyler has created a mile stone with its innovative Optofil-Easy-Blow cables with fire resistant sheath materials for use in tunnel applications.

The new sheath material fulfils the highest requirements with regard to minimum smoke, zero halogen, minimum fire propagation and self-extinguishing.

The maximum blown cable distance is up to 2000 meters, three to four times further than with conventional cable constructions. Hence, the various advantages of the new Optofil cables become obvious even at the planning of the duct installation.



Advantages of the new blown cable



- Very good greasing characteristics of the fibre optical cable
- Smooth, strong sheath surface
- Good internal strength
- Round cable construction
- Minimum fire load and minimum smoke
- Minimum fire propagation due to the special cable sheath
- Installation friendly construction
- Small friction coefficient

Blowing characteristics

Conventional fire resistant fibre optic cables

The weak FR/Standard sheath material causes the cable to 'snake' during blowing in to the duct, thus substantially increasing the friction.
Therefore the blowing lengths is limited to 500m.

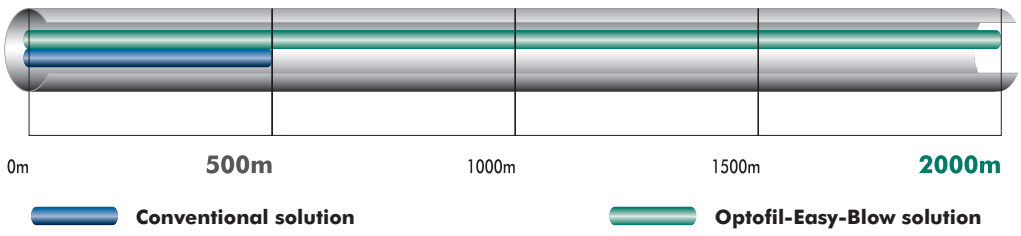
Recommended areas of application: Premises Cabling, LAN

Dätwyler Optofil-Easy-Blow fire resistant cables

The Optofil fire resistant blown cables remain straight as they are blown in to the ducts, offering substantially reduced friction.
Therefore a blowing lengths of 2000m is possible.

Recommended areas of application: Tunnels, campus and access

Comparison of blown cable lengths without intermediate blowing points

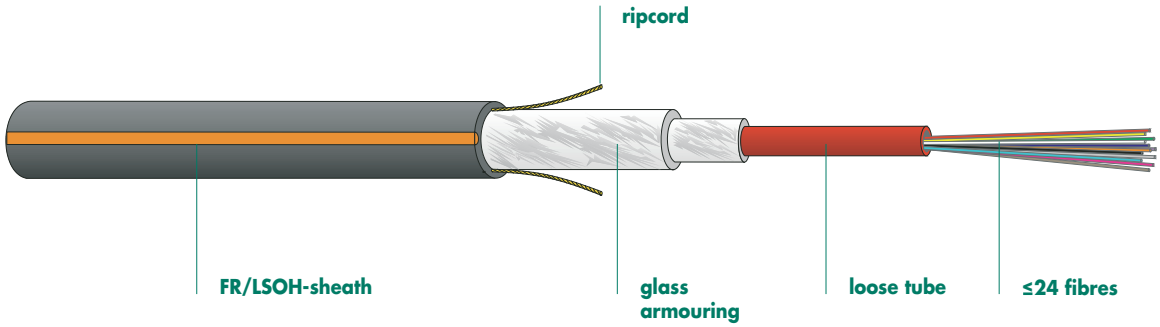


optofil®-ZGGFR-Easy-Blow / U-DQ(ZN)BH

for indoor and outdoor use

non metallic, rodent protected, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

Dätwyler Cables



Product information

Features

Robust, non metallic fibre optic outdoor and indoor cable in central tube design.
High crush resistance for high transmission reliability.
Easy handling cable construction with very good greasing characteristics.
Non metallic rodent protection.
The 2 coloured ripcords are easy to identify for safe opening of the cable sheath.
FR/LSOH cable sheath with very low burning load.

Application

Blowing through thermoplastic ducts.
Blowing distances up to 2000m possible without intermediate blowing.
Tunnel, Motorway Infrastructure.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-25 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-25 / +60°C
tensile performance	IEC 60794-1-2 E1	
crush resistance	IEC 60794-1-2 E3	
impact	IEC 60794-1-2 E4	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11	
water penetration	IEC 60794-1-2 F5	

General characteristics

Printing example: DÄTWYLER OPTOFIL 24E9 G.652D ZGGFR EASY BLOW
C-no. 10858 ~ ~ 3630 m ~ ~

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

optofil®-ZGGFR-Easy-Blow / U-DQ(ZN)BH

for indoor and outdoor use

non metallic, rodent protected, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
U-DQ(ZN)BH nxm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
ZGGFR Easy-Blow	1x12	12	1	8.5	84	140	2500	200	300	356	1280
ZGGFR Easy-Blow	1x24	24	1	9.0	95	145	2500	200	300	400	1435

Versions

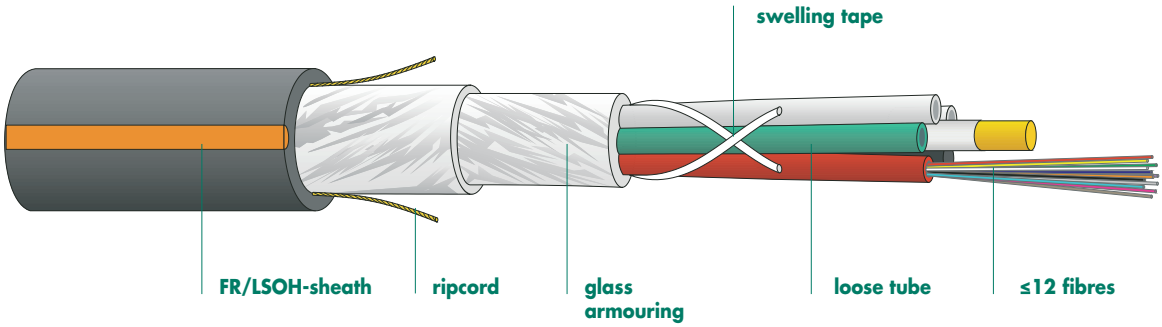
U-DQ(ZN)BH nxm		fibre	Article No.	Article No.	Article No.
description		number	E9/125 G.652.D	G50/125 OM2	G62.5/125 OM1
ZGGFR Easy-Blow	1 x 4	4	190 617	191 277	190 754
ZGGFR Easy-Blow	1 x 6	6	190 363	on request	on request
ZGGFR Easy-Blow	1 x 8	8	190 700	on request	on request
ZGGFR Easy-Blow	1 x 12	12	190 213	on request	on request
ZGGFR Easy-Blow	1 x 24	24	190 214	on request	on request

optofil®-wbGGFR-Easy-Blow / U-DQ(ZN)BH

for indoor and outdoor use

nonmetallic, dry interstices, rodent protected,
flame retardant to IEC 60332.1 and IEC 60332.3-24 Kat.C

Dätwyler Cables



Product information

Features

Robust, non metallic fibre optic outdoor and indoor cable with stranded loose tubes.
High crush resistance for high transmission reliability.
Easy handling cable construction with very good greasing characteristics.
Non metallic rodent protection.
The 2 coloured ripcords are easy to identify for safe opening of the cable sheath.
FR/LSOH cable sheath with very low fire load.

Application

Blowing through thermoplastic ducts.
Blowing distances up to 2000m possible without intermediate blowing.
Tunnel, Motorway Infrastructure.

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-25 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-25 / +60°C
tensile performance	IEC 60794-1-2 E1	
crush resistance	IEC 60794-1-2 E3	
impact	IEC 60794-1-2 E4	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11	
water penetration	IEC 60794-1-2 F5	

General characteristics

Printing example: DÄTWYLER OPTOFIL 24E9 G.652D WBGGFR EASY BLOW
C-no. 10858 ~ ~ 3630 m ~ ~

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

optofil®-wbGGFR-Easy-Blow / U-DQ(ZN)BH

for indoor and outdoor use

nonmetallic, dry interstices, rodent protected,
flame retardant to IEC 60332.1 and IEC 60332.3-24 Kat.C

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
U-DQ(ZN)BH nxm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
wbGGFR5 Easy-Blow	5x12	60	5	12.0	154	180	9000	300	500	627	2257
wbGGFR6 Easy-Blow	6x12	72	6	12.8	175	195	9000	300	500	698	2513
wbGGFR8 Easy-Blow	8x12	96	8	14.0	208	210	9000	300	500	925	3330
wbGGFR10 Easy-Blow	10x12	120	10	15.4	243	230	9000	300	500	1151	4144
wbGGFR12 Easy-Blow	12x12	144	12	16.9	286	255	9000	300	500	1367	4921
wbGGFR12 Easy-Blow	12x24	288	12	18.8	356	285	9000	300	500	1435	5165

Versions

U-DQ(ZN)BH nxm		**fibre**	**Article No.**	**Article No.**	**Article No.**
description		number	E9/125 G.652.D	G50/125 OM2	G62.5/125 OM1
wbGGFR5 Easy-Blow	1 x 12	12	190 602	on request	186 756
wbGGFR5 Easy-Blow	2 x 12	24	190 215	186 645	186 561
wbGGFR5 Easy-Blow	3 x 12	36	190 692	187 319	on request
wbGGFR5 Easy-Blow	4 x 12	48	190 216	on request	186 757
wbGGFR5 Easy-Blow	5 x 12	60	190 217	on request	on request
wbGGFR6 Easy-Blow	6 x 12	72	190 218	on request	190 753
wbGGFR8 Easy-Blow	8 x 12	96	190 219	on request	186 758
wbGGFR10 Easy-Blow	10 x 12	120	190 220	on request	on request
wbGGFR12 Easy-Blow	12 x 12	144	190 221	on request	on request
wbGGFR12 Easy-Blow	12 x 24	288	on request	on request	on request

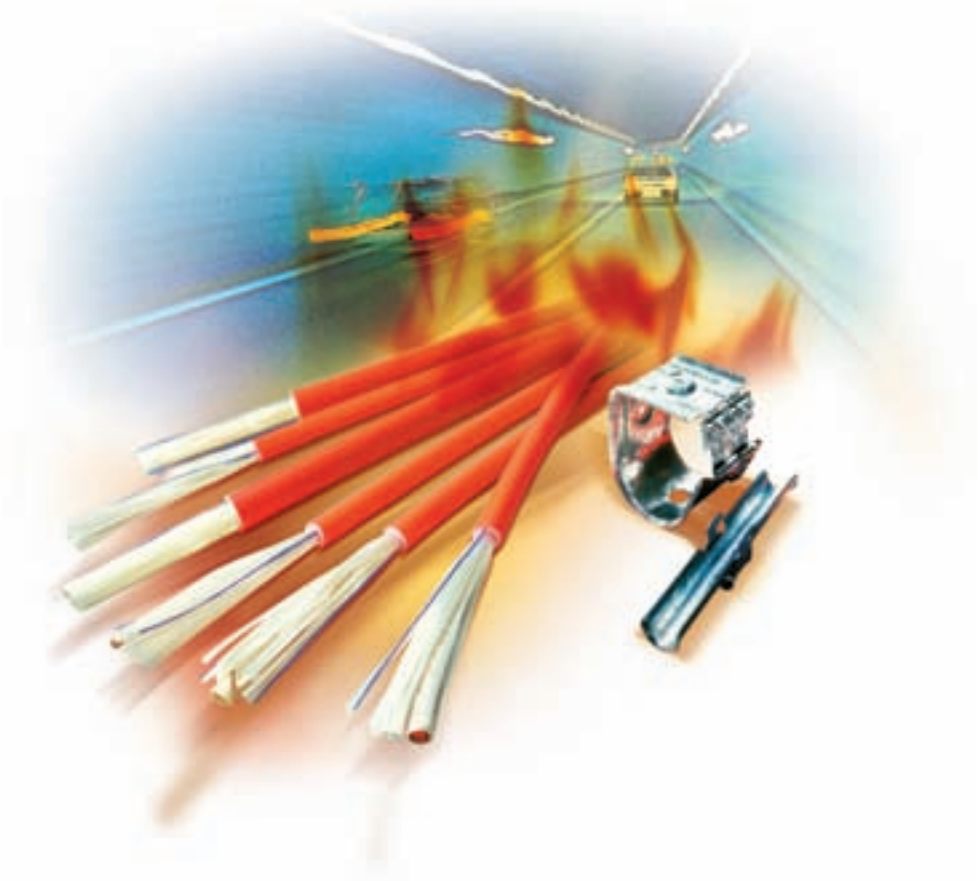
optofil®-Safety

The metal-free fibre-optic system solution with 30 minutes functional integrity (E30)

Various accidents in tunnels, some of which with catastrophic fire damage, have recently demonstrated the importance of reliably operating safety devices.

With the optofil®-Safety fibre-optic system Dätwyler has succeeded in ensuring functional integrity in accordance with DIN 4102-12 for 30 minutes (E30). This guarantees the unrestricted availability of essential services of communication for a specific period of time in the event of fire.

optofil®-Safety not only provides crucial services in tunnels, but also in office buildings. Together with the tried and proven safety cables and safety system components, Dätwyler can fully comply with the requirements of the business and public administration sectors for the reliable transmission of power and data in the event of fire.



Increases safety in tunnels

- **INFRASTRUCTURE**

Increases the safety of tunnel equipment such as:
Ventilation systems
Video monitors
Fire-alarm systems

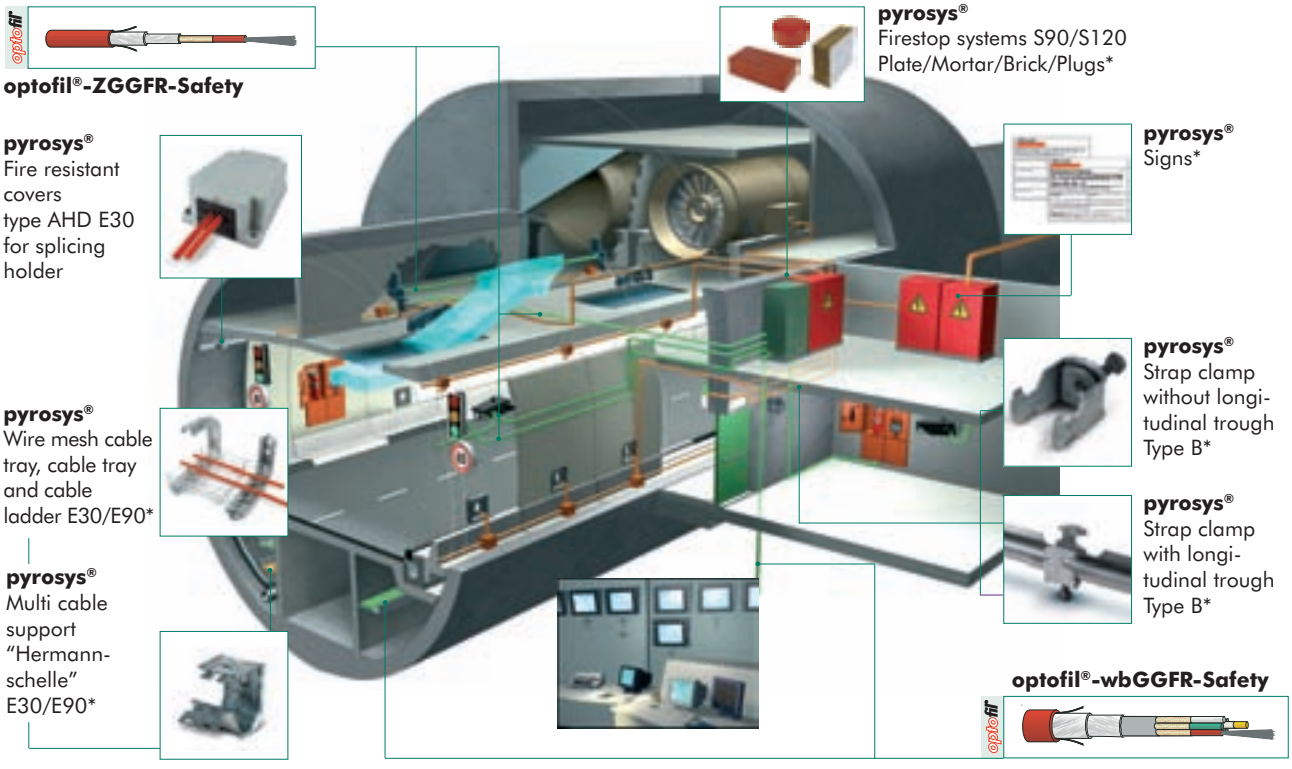
- **ROAD USER**

Assured flow of information in the event of fire by:
Sonic wave devices
Emergency telephones
Indication of escape routes

- **VEHICLES**

Reliable control of traffic flow by:
Traffic routing systems
Signalling systems

Das passende Systemzubehör

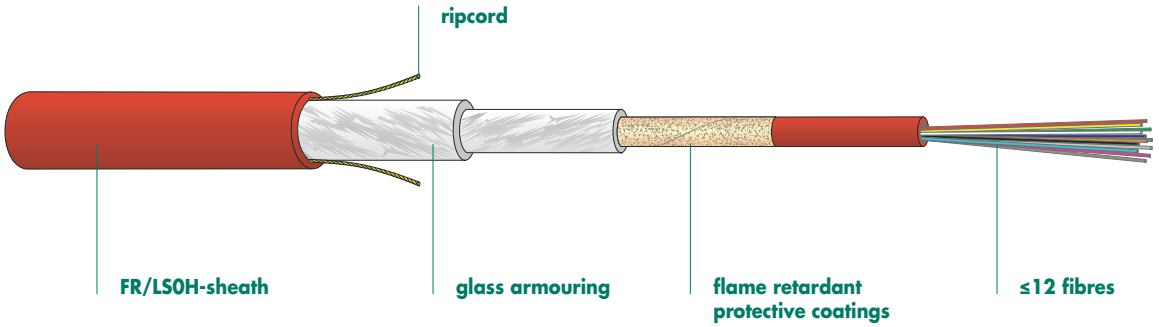


* Systemaccessories find from page P-86

optofil®-ZGGFR-Safety / U-DQ(ZN)BH

Life safety cable for indoor and outdoor use
nonmetallic, water resistant, rodent protected,
flame redardant to IEC 60332.1 and IEC 60332.3-24 Kat. C
functional integrity according to DIN 4102-12 30Min. (E30)

Dätwyler Cables



Product information

Features

Fibre-optic safety cable in metal-free central tube design with up to twelve fibres.
The optimum matching of fibre coating and flame-inhibiting stabilizing elements ensures functional integrity for 30 minutes.

Application

Safety application in tunnels, underground railways,
banks, insurance companies, large scale industry
LAN Backbone
Indoor and outdoor use can be laid on cable platforms,
parapet ducts and vertical shafts
can be spliced in cable terminal distributors

Optical characteristics

The cables are available with different types of Optofil-Safety fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-25 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-25 / +60°C
tensile performance	IEC 60794-1-2 E1	
crush resistance	IEC 60794-1-2 E3	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11	
water penetration	IEC 60794-1-2 F5	

General characteristics

Printing example: DÄTWYLER OPTOFIL SAFETY 12E9 G.652D FR/LSOH
C-no. 10865 ~ ~ 2480 m ~ ~

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)
Circuit integrity (FE180)	IEC 60331, VDE 0472 part 814, EN 50200, EN 50362, VDE 0482-200, VDE 0482-362
System Circuit integrity E30*	according to DIN 4102 part 12

*Circuit integrity is dependent on installation method.

Dätwyler Cables

optofil®-ZGGFR-Safety / U-DQ(ZN)BH

Life safety cable for indoor and outdoor use
nonmetallic, water resistant, rodent protected,
flame redardant to IEC 60332.1 and IEC 60332.3-24 Kat. C
functional integrity according to DIN 4102-12 30Min. (E30)

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
U-DQ(ZN)BH 1xm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
ZGGFR-Safety	1x12	12	1	7.8	72	120	1000	200	500	301	1084

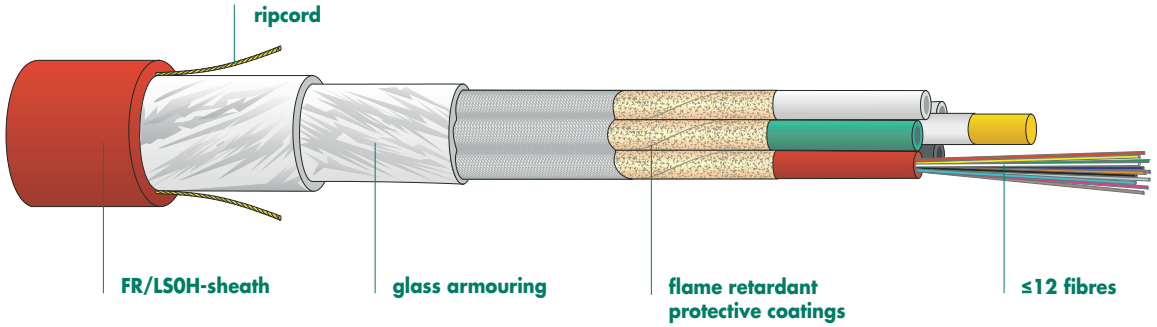
Versions

U-DQ(ZN)BH 1xm		fibre	Article No.	Article No.	Article No.	Article No.
description		number	E9/125 G.652.D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
ZGGFR-Safety	1x4	4	187 288	186 363	190 604	186 638
ZGGFR-Safety	1x6	6	on request	186 639	on request	190 792
ZGGFR-Safety	1x8	8	on request	190 621	on request	on request
ZGGFR-Safety	1x12	12	190 719	187 293	on request	187 305

optofil®-wbGGFR-Safety / U-DQ(ZN)BH

Life safety cable for indoor and outdoor use
nonmetallic, water resistant, rodent protected,
flame redardant to IEC 60332.1 and IEC 60332.3-24 Kat. C
functional integrity according to DIN 4102-12 30Min. (E30)

Dätwyler Cables



Product information

Features

Fibre-optic safety cable in metal-free central tube design with up to twelve fibres.
The optimum matching of fibre coating and flame-inhibiting stabilizing elements
ensures functional integrity for 30 minutes.

Application

Safety application in tunnels, underground railways,
banks, insurance companies, large scale industry
LAN Backbone
Indoor and outdoor use can be laid on cable platforms,
parapet ducts and vertical shafts
can be spliced in cable terminal distributors

Optical characteristics

The cables are available with different types of Optofil-Safety fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-25 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-25 / +60°C
tensile performance	IEC 60794-1-2 E1	
crush resistance	IEC 60794-1-2 E3	
repeated bending	IEC 60794-1-2 E6	
torsion	IEC 60794-1-2 E7	
bend	IEC 60794-1-2 E11	
water penetration	IEC 60794-1-2 F5	

General characteristics

Printing example: DÄTWYLER OPTOFIL SAFETY 60E9 G.652D FR/LSOH
C-no. 10865 ~ ~ 2480 m ~ ~

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)
Circuit integrity (FE180)	IEC 60331, VDE 0472 part 814, EN 50200, EN 50362, VDE 0482-200, VDE 0482-362
System Circuit integrity E30*	according to DIN 4102 part 12

*Circuit integrity is dependent on installation method.

optofil®-wbGGFR-Safety / U-DQ(ZN)BH

Life safety cable for indoor and outdoor use
nonmetallic, water resistant, rodent protected,
flame redardant to IEC 60332.1 and IEC 60332.3-24 Kat. C
functional integrity according to DIN 4102-12 30Min. (E30)

description		no. of fibres	loose tube	cableØ	weight	bending radius	tensile load	crush resistance		Fire load	
U-DQ(ZN)BH nxm		max.	max.	mm	kg/km	mm	N	continuous N/cm	short term N/cm	kWh/km	MJ/km
optofil ®-wbGGFR-Safety	2x12	24	2	12.5	166	190	6000	300	500	733	2639
optofil ®-wbGGFR-Safety	3x12	36	3	12.5	168	190	6000	300	500	733	2639
optofil ®-wbGGFR-Safety	4x12	48	4	12.5	170	190	6000	300	500	733	2639
optofil ®-wbGGFR-Safety	5x12	60	5	12.5	166	190	6000	300	500	733	2639

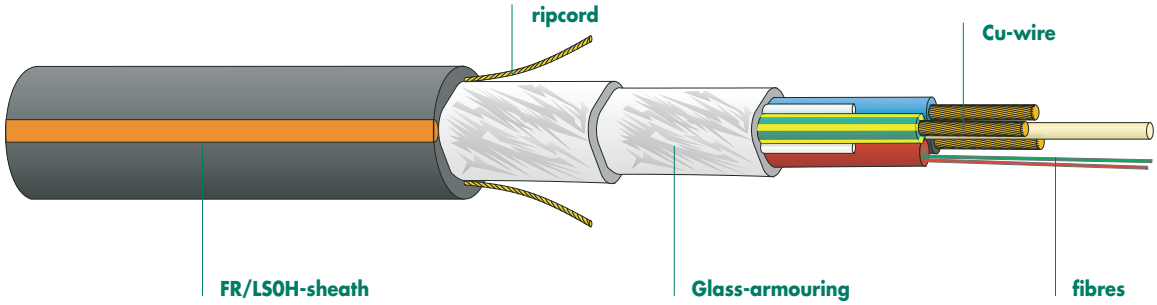
Versions

U-DQ(ZN)BH nxm		**fibre**	**Article No.**	**Article No.**	**Article No.**	**Article No.**
description		number	E9/125 G.652.D	G50/125 OM2	G50/125 OM3	G62.5/125 OM1
optofil ®-wbGGFR-Safety	2 x 12	24	190 223	187 294	187 360	on request
optofil ®-wbGGFR-Safety	3 x 12	36	190 224	on request	on request	on request
optofil ®-wbGGFR-Safety	4 x 12	48	190 225	on request	191 191	on request
optofil ®-wbGGFR-Safety	5 x 12	60	190 226	on request	190 605	on request

optofil®-A combi cable / A-DQ(ZN)BH

with loose tube
dry interstices,
rodent protected, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

Dätwyler Cables



Product information

Features

Non metallic combined glass armouring and strain relief, easy to lay,
2 ripcords for safe opening of the cable sheath.
Dry interstices, longitudinal water resistance
Flame retardant, easy to lay
LSOH cable sheath

Application

Camera combi cable in tunnels, underground railroads, large scale industry
Pulling or blowing through thermoplastic ducts
Laying on cable platforms and cable trays, direct burial

Optical characteristics

The cables are available with different types of fibre (see fibre data sheets)

Mechanical characteristics

temperature range	storage	-25 / +70°C IEC 60794-1-2 F1
	pulling in	-10 / +50°C
	operation	-25/ +60°C
tensile performance		IEC 60794-1-2 E1
crush resistance		IEC 60794-1-2 E3
impact		IEC 60794-1-2 E4
repeated bending		IEC 60794-1-2 E6
torsion		IEC 60794-1-2 E7
bend		IEC 60794-1-2 E11
water penetration		IEC 60794-1-2 F5

General characteristics

Printing example: DÄTWYLER OPTOFIL 2E9 G.652D + 3 X 2.5 MM WBGGFR/LSOH
C-no. 10858 ~ ~ 5125 m ~ ~

Zero halogen, non corrosive gases	IEC 60754-1/-2, EN 50267-2-1/-2-2, VDE 0482-267-2-1/-2-2
Flame retardant	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Fire resistant (no flame propagation)	IEC 60332-3-24 Cat.C, EN 50266-2-3 Cat.C, VDE 0482-266-2-3 Cat.C
Minimum smoke emission	IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2), VDE 0482-1034-1/-2 (VDE 0482-268-1/-2)

Dätwyler Cables

optofil®-A combi cable / A-DQ(ZN)BH

with loose tube
dry interstices,
rodent protected, flame retardant
according to IEC 60332.1 and IEC 60332.3-24 Kat.C

description	no. of fibres	cableØ mm	weight kg/km	bending radius mm	tensile load N	crush resistance short term N/cm
Combi cable 1x2 + 3x2.5 mm [2]	2	13.0	233	200	3000	300

Versions

U-DQ(ZN)BH 1xm	fibre	Article No.	Article No.	Article No.
description	number	E9/125 G.652.D	G50/125 OM2	G62.5/125 OM1
Combicable 1x2 + 3x2.5 mm [2]	2	186 358	187 348	186 366

Fibre optic adapters
Fibre optic coupler

Dätwyler Cables


SC-Duplex


SC-Simplex


Shutter for SC-Duplex


ST


LSH


LC-Duplex

Product information

Fibre optic adapters

FOadapter side 1	FO adapter side 2	Fibre type	Sleeve	Cover material	Colour	Article No.
ST	ST	MM	PB	metal		1414 885
ST	ST	SM	ceramics	metal		1414 886
SC	SC	MM	PB	polymer	beige	1412 754
SC	SC	SM	ceramics	polymer	blue	1412 752
SC/APC	SC/APC	SM	ceramics	polymer	green	1412 753
SCD	SCD	MM	PB	Polymer	turqouis	1421 645
SCD	SCD	MM	PB	polymer	beige	1414 608
SCD	ST	MM	PB	polymer	beige	1414 610
SCD	SCD	SM	ceramics	polymer	blue	1414 890
SCD/APC	SCD/APC	SM	ceramics	polymer	green	1414 892
SCD	SCD	MM	PB	metal		1414 401
SCD	SCD	SM	ceramics	metal		1414 403
SCD	ST	MM	PB	metal		1414 405
SCD	ST	SM	ceramics	metal		1414 407
LCD	LCD	MM	PB	polymer	beige	1414 415
LCD	LCD	SM	ceramics	polymer	blue	1414 417
FC/PC	FC/PC	MM	PB	metal		1412 761
FC/PC	FC/PC	SM	ceramics	metal		1412 762
LSH/APC-M	LSH/APC-M	SM	ceramics	polymer	green	417 856
LSH	LSH	SM	ceramics	polymer	blue	1414 450
LSH	LSH	MM	ceramics	polymer	black	1412 965

other adapter on request

Description		Fibre type	Cover material	Colour	Article No.
Shutter for SCD POL BG		MM	polymer	beige	1414 889
Shutter for SCD POL BL		SM	polymer	blue	1414 887
Shutter for SCD POL GN		SM	polymer	green	1414 888
dummy plug SC/LSH/LCD	1 piece				1414 223
dummy plug SCD	1 piece				1414 224
dummy plug ST/FC	1 piece				1414 225

LSH ST FC/PC SC

Product information

Fibre optic termination

Features

Dätwyler offer a broad range of fibre optic connectors for individual customer needs.
Fibre optic termination are available with following connector types SC, LC, ST, LSH, FC/PC, MU, MT-RJ, MPO and other, as simplex as well as duplex varaition.
Most types are available as APC/HRL variant.
We are able to deliver terminations with higher requirements on the optical performance.

Ferrule material:	zyrconia, MT-RJ and MPO polymer
Life time:	1000 connections at the same attenuation
Testing condition IL:	IEC 61300-3-4
Testing condition RL:	IEC 61300-3-6
Testing condition reproducibility Of the IL value:	on the whole durability max. +/- 0.1dB
Operating time:	-10°C up to +60°C

Note: The values mentioned below are for the optomod® PLUS-system as well.

Connectors	IL [dB] typical	IL [dB] maximum	RL [dB]typical	RL [dB] at least
MM	0.2	0.5	25	20
SM	0.2	0.5	40	35
SM/APC	0.2	0.5	65	60
MT-RJ	0.5	0.75		20
MPO/MM	0,3	0,45	25	20
MPO/SM	0,3	0,45	55	50

All connectors are tested with our cables Optofil Simplex, Duplex and Mini-Zip-Cord.

Fibre Optic pre-assembling

unilan-FO-Trunk

Factory made pre-assembling of fibre optic cables
ferrule assembling with couplers

Dätwyler Cables

optomod®PLUS 1

optomod®PLUS 2

optodeskPLUS

Product information

Application

For the transmission of digital and analogue voice, video and data signals.
The cable is prepared to lay by using a special cover.
The assemblies are made to customer specifications.
Cost saving and simple installation without expensive fibre optic equipement.

Features

Note: For attenuation and Return Loss values see page U-209.

optomod®PLUS 1

optomod® - Indoor cable
optomod® - Indoor cable (semi loose tube) I-V(ZN)H see page U-153
Ferrule assembling on semi loose buffer tubes.
Couplers for all current fibre optic connecting systems will be screwed on the assembled ferrule.
The cable is prepared to lay by using a special cover.
Maximum fibre count 24 fibres, length of the free semi loose buffer tube is 2m (stepped).
Assembly includes attenuation test report.

optomod®PLUS 2

optoversal® fibre optic cable U-DQ(ZN)BH see page U-168 and U-170
A-DQ(ZN)B2Y see page U-172, U-174 and U-176.
or other loose tube cables from the optofil® product range.
Couplers for all current fibre optic connecting systems will be screwed on the assembled ferrule.
The cable is prepared to lay by using a special cover.
For fibre number higher of 48 the distribution head is cascaded.
Possibillity for assembling up to 144 fibres. Max. length of the free loose tube is 2m (stepped).
Assembly includes attenuation test report.

optodeskPLUS

optodesk® indoor cable - semi loose tube
I-VZN)H see page U-153
for 2- and 4-fibres (predominantly used in horizontal cabling like FTTD applications).
Ferrule assembling on semi loose buffer tubes.
Couplers like optomod®PLUS 1 and optomod®PLUS 2 for all current fibre optic connecting systems.
The cable is prepared to lay by using a special cover.
Assembly includes attenuation test report.

Attention:
Please look for your order that the length of the trunk cable is including the length of the single fiber cables. Means the total length of the trunk is the length of the cable between the split plus on both side the single fibre length. The length of the single fibre elements you can find in the instruction manual.

Fibre Optic pre-assembling

unilan-FO-Trunk

Factory made pre-assembling of fibre optic cables ferrule assembling with couplers

Product information

optomod®PLUS 1	connector type	assembly	fibre type Multimode	fibre type Singlemode
		ferrules on each cable end	Article No.	Article No.
	see couplers below	2 x ferrule	416 800	416 805
	see couplers below	4 x ferrule	416 801	416 806
	see couplers below	8 x ferrule	416 802	416 807
	see couplers below	12 x ferrule	416 803	416 808
	see couplers below	24 x ferrule	416 804	416 809

optomod®PLUS 2	connector type	assembly	fibre type Multimode	fibre type Singlemode
		ferrules on each cable end	Article No.	Article No.
	see couplers below	4 x ferrule	416 810	416 815
	see couplers below	8 x ferrule	416 811	416 816
	see couplers below	12 x ferrule	416 812	416 817
	see couplers below	24 x ferrule	416 813	416 818
	see couplers below	48 x ferrule	416 814	416 819

optodeskPLUS	connector type	assembly	fibre type Multimode	fibre type Singlemode
		ferrules on each cable end	Article No.	Article No.
	see couplers below	2 x ferrule	416 820	on request
	see couplers below	4 x ferrule	416 821	on request

Each part number includes cable preparation, ferrule assembly and test report for each end.

Coupler to optomodPLUS	connector type	fibre type Multimode	fibre type Singlemode
		Article No.	Article No.
	coupler ST	416 750	416 754
	coupler SC	416 751	416 755
	coupler SC Duplex	416 752	416 756
	coupler FC/PC	416 753	416 757
	bushing coupler	416 758	–
	box nut slitted	416 759	416 759

The couplers must be connected with the pre-assembled ferrules for optomod®PLUS 1, optomod®PLUS 2 and optodeskPLUS

Attention:
Please look for your order that the length of the trunk cable is including the length of the single fiber cables. Means the total length of the trunk is the length of the cable between the split plus on both side the single fibre length.
The length of the single fibre elements you can find in the instruction manual.

Fibre Optic pre-assembling

unilan-FO-Trunk

Factory made pre-assembling
of fibre optic cables

Dätwyler Cables

Trunk termination

Product information

Application

For the transmission of digital and analogue voice, video and data signals.
The cable is prepared to lay by using a special cover.
The assembly is made to customer specifications.
Cost saving and simple installation without expensive fibre optic equipement.

Features

Trunk termination

optoversal® or other loose tube Fibre Optic Cables from the optofil® product range
(see pages U-168, U-170, U-172, U-174, U-176)
Connector assembly with a coupler (screwable)
for all current fibre optic connecting systems.
The cable is prepared to lay by using a special cover.
Possibillity for assembling up to 144 fibres.
For fibre number higher of 48 the distribution head is cascaded.
Max. length of the free cable is 2m (stepped).
Assembly includes attenuation test report.

A more strength protection tube is available.

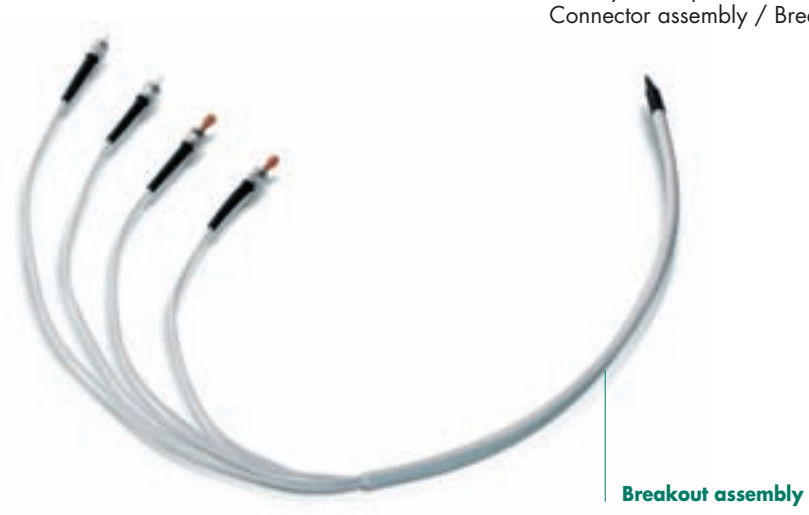
Breakout Assembly	connector type	assembly	fibre type Multimode	fibre type Singlemode
			Article No.	Article No.
	4 x ST	on each cable end	1406 098	—
	8 x ST	on each cable end	1406 758	1405 818
	12 x ST	on each cable end	1406 403	1407 720
	24 x ST	on each cable end	1406 780	1408 529
	48 x ST	on each cable end	1406 091	1408 723
	4 x SC	on each cable end	1406 421	1407 244
	8 x SC	on each cable end	1407 777	1410 923
	12 x SC	on each cable end	1406 794	1407 035
	24 x SC	on each cable end	1408 597	1406 242
	48 x SC	on each cable end	1408 725	1406 768
	Other connectors on request			

Attention:
Please look for your order that the length of the trunk cable is including the length of the single fiber cables. Means the total length of the trunk is the length of the cable between the split plus on both side the single fibre length.
The length of the single fibre elements you can find in the instruction manual.

Fibre Optic pre-assembling

unilan-FO-Trunk

Factory made pre-assembling of fibre optic cables
Connector assembly / Breakout assembly



Product information

Application

For the transmission of digital and analogue voice, video and data signals.
The assembly is made to customer specifications.
Cost saving and simple installation without expensive fibre optic equipement.

Features

Breakout assembly
Breakout single fibre cable assembly (see page U-160).
Assemblies for all current fibre optic connecting systems.
The cable is prepared to lay by using a special cover.
Single semi loose tube, stepped.
Assembly includes attenuation test report.

Breakout assembly	connector type	assembly	fibre type Multimode	fibre type Singlemode
			Article No.	Article No.
	2 x ST	on each cable end	1410 591	on request
	4 x ST	on each cable end	1410 592	on request
	8 x ST	on each cable end	1410 593	on request
	12 x ST	on each cable end	1410 594	on request
	2 x SC	on each cable end	1410 595	on request
	4 x SC	on each cable end	1410 596	on request
	8 x SC	on each cable end	1410 597	on request
	12 x SC	on each cable end	1410 598	on request

Attention:
Please look for your order that the length of the trunk cable is including the length of the single fiber cables. Means the total length of the trunk is the length of the cable between the split plus on both side the single fibre length.
The length of the single fibre elements you can find in the instruction manual.

Product information

Fibre optic pigtails

Connectortype	Fibretype	Fibre pigtail 2m	12er Set FP 2 m
SC	E09/OS2	421 121	421 122
SC	G50/OM3	421 141	421 142
SC	G50/OM2	421 161	421 162
SC	G62,5/OM1	421 181	421 182
ST	E09/OS2	422 221	422 222
ST	G50/OM3	422 241	422 242
ST	G50/OM2	422 261	422 262
ST	G62,5/OM1	422 281	422 282
LC	E09/OS2	423 321	423 322
LC	G50/OM3	423 341	423 342
LC	G50/OM2	423 361	423 362
LC	G62,5/OM1	423 381	423 382
LSH	E09/OS2	424 421	424 422
LSH	G50/OM3	424 441	424 442
LSH	G50/OM2	424 461	424 462
LSH	G62,5/OM1	424 481	424 482
FC/PC	E09/OS2	425 521	425 522
FC/PC	G50/OM3	425 541	425 542
FC/PC	G50/OM2	425 561	425 562
FC/PC	G62,5/OM1	425 581	425 582
MT-RJ	E09/OS2	426 621	426 622
MT-RJ	G50/OM3	426 641	426 642
MT-RJ	G50/OM2	426 661	426 662
MT-RJ	G62,5/OM1	426 681	426 682
SC/APC	E09/OS2	427 721	427 722
LSH/APC	E09/OS2	428 821	428 822

* Set has 12 fibre pigtails in 12 colours (according IEC 60304).
Parameters of all FO terminations see page U-209.

FO patch- and adapter cable
SCD - ST

FO patch- and adapter cable
SCD - LCD

FO patch- and adapter cable
SCD - LSH

Product information

Fibre optic patch- and adapter cable SCD

Connectortype		Fibretyp	Length in m									
Side A	Side B		1	2	3	4	5	6	7	8	9	10
SCD	SCD	E09/OS2	421 111	421 112	421 113	421 114	421 115	421 116	421 117	421 118	421 119	421 120
SCD	SCD	G50/OM3	421 131	421 132	421 133	421 134	421 135	421 136	421 137	421 138	421 139	421 140
SCD	SCD	G50/OM2	421 151	421 152	421 153	421 154	421 155	421 156	421 157	421 158	421 159	421 160
SCD	SCD	G62,5/OM1	421 171	421 172	421 173	421 174	421 175	421 176	421 177	421 178	421 179	421 180
SCD	ST	E09/OS2	421 211	421 212	421 213	421 214	421 215	421 216	421 217	421 218	421 219	421 220
SCD	ST	G50/OM3	421 231	421 232	421 233	421 234	421 235	421 236	421 237	421 238	421 239	421 240
SCD	ST	G50/OM2	421 251	421 252	421 253	421 254	421 255	421 256	421 257	421 258	421 259	421 260
SCD	ST	G62,5/OM1	421 271	421 272	421 273	421 274	421 275	421 276	421 277	421 278	421 279	421 280
SCD	LCD	E09/OS2	421 311	421 312	421 313	421 314	421 315	421 316	421 317	421 318	421 319	421 320
SCD	LCD	G50/OM3	421 331	421 332	421 333	421 334	421 335	421 336	421 337	421 338	421 339	421 340
SCD	LCD	G50/OM2	421 351	421 352	421 353	421 354	421 355	421 356	421 357	421 358	421 359	421 360
SCD	LCD	G62,5/OM1	421 371	421 372	421 373	421 374	421 375	421 376	421 377	421 378	421 379	421 380
SCD	LSH	E09/OS2	421 411	421 412	421 413	421 414	421 415	421 416	421 417	421 418	421 419	421 420
SCD	LSH	G50/OM3	421 431	421 432	421 433	421 434	421 435	421 436	421 437	421 438	421 439	421 440
SCD	LSH	G50/OM2	421 451	421 452	421 453	421 454	421 455	421 456	421 457	421 458	421 459	421 460
SCD	LSH	G62,5/OM1	421 471	421 472	421 473	421 474	421 475	421 476	421 477	421 478	421 479	421 480
SCD	FC/PC	E09/OS2	421 511	421 512	421 513	421 514	421 515	421 516	421 517	421 518	421 519	421 520
SCD	FC/PC	G50/OM3	421 531	421 532	421 533	421 534	421 535	421 536	421 537	421 538	421 539	421 540
SCD	FC/PC	G50/OM2	421 551	421 552	421 553	421 554	421 555	421 556	421 557	421 558	421 559	421 560
SCD	FC/PC	G62,5/OM1	421 571	421 572	421 573	421 574	421 575	421 576	421 577	421 578	421 579	421 580
SCD	MT-RJ	E09/OS2	421 611	421 612	421 613	421 614	421 615	421 616	421 617	421 618	421 619	421 620
SCD	MT-RJ	G50/OM3	421 631	421 632	421 633	421 634	421 635	421 636	421 637	421 638	421 639	421 640
SCD	MT-RJ	G50/OM2	421 651	421 652	421 653	421 654	421 655	421 656	421 657	421 658	421 659	421 660
SCD	MT-RJ	G62,5/OM1	421 671	421 672	421 673	421 674	421 675	421 676	421 677	421 678	421 679	421 680
SCD	SC/APC	E09/OS2	421 711	421 712	421 713	421 714	421 715	421 716	421 717	421 718	421 719	421 720
SCD	LSH/APC	E09/OS2	421 811	421 812	421 813	421 814	421 815	421 816	421 817	421 818	421 819	421 820

Parameters of all FO terminations see page U-209.

Patch cords where both side a duplex connector is termeinated, one of the duplex clip isn't mounted and is in the bag.

Fibre optic patch- and adapter cable
ST

Dätwyler Cables

FO patch- and adapter cable
SCD - ST

FO patch- and adapter cable
FC/PC - ST

FO patch- and adapter cable
MT-RJ - ST

Product information

Fibre optic patch- and adapter cable ST

Connectortype		Fibretyp	Length in m									
Side A	Side B		1	2	3	4	5	6	7	8	9	10
SCD	ST	E09/OS2	421211	421212	421213	421214	421215	421216	421217	421218	421219	421220
SCD	ST	G50/OM3	421231	421232	421233	421234	421235	421236	421237	421238	421239	421240
SCD	ST	G50/OM2	421251	421252	421253	421254	421255	421256	421257	421258	421259	421260
SCD	ST	G62,5/OM1	421271	421272	421273	421274	421275	421276	421277	421278	421279	421280
ST	ST	E09/OS2	422 211	422 212	422 213	422 214	422 215	422 216	422 217	422 218	422 219	422 220
ST	ST	G50/OM3	422 231	422 232	422 233	422 234	422 235	422 236	422 237	422 238	422 239	422 240
ST	ST	G50/OM2	422 251	422 252	422 253	422 254	422 255	422 256	422 257	422 258	422 259	422 260
ST	ST	G62,5/OM1	422 271	422 272	422 273	422 274	422 275	422 276	422 277	422 278	422 279	422 280
ST	LCD	E09/OS2	422 311	422 312	422 313	422 314	422 315	422 316	422 317	422 318	422 319	422 320
ST	LCD	G50/OM3	422 331	422 332	422 333	422 334	422 335	422 336	422 337	422 338	422 339	422 340
ST	LCD	G50/OM2	422 351	422 352	422 353	422 354	422 355	422 356	422 357	422 358	422 359	422 360
ST	LCD	G62,5/OM1	422 371	422 372	422 373	422 374	422 375	422 376	422 377	422 378	422 379	422 380
LSH	ST	E09/OS2	422 411	422 412	422 413	422 414	422 415	422 416	422 417	422 418	422 419	422 420
LSH	ST	G50/OM3	422 431	422 432	422 433	422 434	422 435	422 436	422 437	422 438	422 439	422 440
LSH	ST	G50/OM2	422 451	422 452	422 453	422 454	422 455	422 456	422 457	422 458	422 459	422 460
LSH	ST	G62,5/OM1	422 471	422 472	422 473	422 474	422 475	422 476	422 477	422 478	422 479	422 480
FC/PC	ST	E09/OS2	422 511	422 512	422 513	422 514	422 515	422 516	422 517	422 518	422 519	422 520
FC/PC	ST	G50/OM3	422 531	422 532	422 533	422 534	422 535	422 536	422 537	422 538	422 539	422 540
FC/PC	ST	G50/OM2	422 551	422 552	422 553	422 554	422 555	422 556	422 557	422 558	422 559	422 560
FC/PC	ST	G62,5/OM1	422 571	422 572	422 573	422 574	422 575	422 576	422 577	422 578	422 579	422 580
MT-RJ	ST	E09/OS2	422 611	422 612	422 613	422 614	422 615	422 616	422 617	422 618	422 619	422 620
MT-RJ	ST	G50/OM3	422 631	422 632	422 633	422 634	422 635	422 636	422 637	422 638	422 639	422 640
MT-RJ	ST	G50/OM2	422 651	422 652	422 653	422 654	422 655	422 656	422 657	422 658	422 659	422 660
MT-RJ	ST	G62,5/OM1	422 671	422 672	422 673	422 674	422 675	422 676	422 677	422 678	422 679	422 680
SC/APC	ST	E09/OS2	422 711	422 712	422 713	422 714	422 715	422 716	422 717	422 718	422 719	422 720
LSH/APC	ST	E09/OS2	422 811	422 812	422 813	422 814	422 815	422 816	422 817	422 818	422 819	422 820

Parameters of all FO terminations see page U-209.

FO patch- and adapter cable
LCD - LCD

FO patch- and adapter cable
LSH/APC - LC

FO patch- and adapter cable
SC/APC - LC

Product information

Fibre optic patch- and adapter cable LCD

Connectortype		Fibretyp	Length in m									
Side A	Side B		1	2	3	4	5	6	7	8	9	10
SCD	LCD	E09/OS2	421 311	421 312	421 313	421 314	421 315	421 316	421 317	421 318	421 319	421 320
SCD	LCD	G50/OM3	421 331	421 332	421 333	421 334	421 335	421 336	421 337	421 338	421 339	421 340
SCD	LCD	G50/OM2	421 351	421 352	421 353	421 354	421 355	421 356	421 357	421 358	421 359	421 360
SCD	LCD	G62,5/OM1	421 371	421 372	421 373	421 374	421 375	421 376	421 377	421 378	421 379	421 380
ST	LCD	E09/OS2	422 311	422 312	422 313	422 314	422 315	422 316	422 317	422 318	422 319	422 320
ST	LCD	G50/OM3	422 331	422 332	422 333	422 334	422 335	422 336	422 337	422 338	422 339	422 340
ST	LCD	G50/OM2	422 351	422 352	422 353	422 354	422 355	422 356	422 357	422 358	422 359	422 360
ST	LCD	G62,5/OM1	422 371	422 372	422 373	422 374	422 375	422 376	422 377	422 378	422 379	422 380
LCD	LCD	E09/OS2	423 311	423 312	423 313	423 314	423 315	423 316	423 317	423 318	423 319	423 320
LCD	LCD	G50/OM3	423 331	423 332	423 333	423 334	423 335	423 336	423 337	423 338	423 339	423 340
LCD	LCD	G50/OM2	423 351	423 352	423 353	423 354	423 355	423 356	423 357	423 358	423 359	423 360
LCD	LCD	G62,5/OM1	423 371	423 372	423 373	423 374	423 375	423 376	423 377	423 378	423 379	423 380
LCD	LSH	E09/OS2	423 411	423 412	423 413	423 414	423 415	423 416	423 417	423 418	423 419	423 420
LCD	LSH	G50/OM3	423 431	423 432	423 433	423 434	423 435	423 436	423 437	423 438	423 439	423 440
LCD	LSH	G50/OM2	423 451	423 452	423 453	423 454	423 455	423 456	423 457	423 458	423 459	423 460
LCD	LSH	G62,5/OM1	423 471	423 472	423 473	423 474	423 475	423 476	423 477	423 478	423 479	423 480
LCD	FC/PC	E09/OS2	423 511	423 512	423 513	423 514	423 515	423 516	423 517	423 518	423 519	423 520
LCD	FC/PC	G50/OM3	423 531	423 532	423 533	423 534	423 535	423 536	423 537	423 538	423 539	423 540
LCD	FC/PC	G50/OM2	423 551	423 552	423 553	423 554	423 555	423 556	423 557	423 558	423 559	423 560
LCD	FC/PC	G62,5/OM1	423 571	423 572	423 573	423 574	423 575	423 576	423 577	423 578	423 579	423 580
LCD	MT-RJ	E09/OS2	423 611	423 612	423 613	423 614	423 615	423 616	423 617	423 618	423 619	423 620
LCD	MT-RJ	G50/OM3	423 631	423 632	423 633	423 634	423 635	423 636	423 637	423 638	423 639	423 640
LCD	MT-RJ	G50/OM2	423 651	423 652	423 653	423 654	423 655	423 656	423 657	423 658	423 659	423 660
LCD	MT-RJ	G62,5/OM1	423 671	423 672	423 673	423 674	423 675	423 676	423 677	423 678	423 679	423 680
LCD	SC/APC	E09/OS2	423 711	423 712	423 713	423 714	423 715	423 716	423 717	423 718	423 719	423 720
LCD	LSH/APC	E09/OS2	423 811	423 812	423 813	423 814	423 815	423 816	423 817	423 818	423 819	423 820

Parameters of all FO terminations see page U-209.

Patch cords where both side a duplex connector is termeinated, one of the duplex clip isn't mounted and is in the bag.

Fibre optic patch- and adapter cable
LSH

Dätwyler Cables

FO patch- and adapter cable
SCD - LSH

FO patch- and adapter cable
SC/APC - LSH

FO patch- and adapter cable
SC/APC - LSH

Product information

Fibre optic patch- and adapter cable LSH

Connectortype		Fibretyp	Length in m									
Side A	Side B		1	2	3	4	5	6	7	8	9	10
SCD	LSH	E09/OS2	421 411	421 412	421 413	421 414	421 415	421 416	421 417	421 418	421 419	421 420
SCD	LSH	G50/OM3	421 431	421 432	421 433	421 434	421 435	421 436	421 437	421 438	421 439	421 440
SCD	LSH	G50/OM2	421 451	421 452	421 453	421 454	421 455	421 456	421 457	421 458	421 459	421 460
SCD	LSH	G62,5/OM1	421 471	421 472	421 473	421 474	421 475	421 476	421 477	421 478	421 479	421 480
ST	LSH	E09/OS2	422 411	422 412	422 413	422 414	422 415	422 416	422 417	422 418	422 419	422 420
ST	LSH	G50/OM3	422 431	422 432	422 433	422 434	422 435	422 436	422 437	422 438	422 439	422 440
ST	LSH	G50/OM2	422 451	422 452	422 453	422 454	422 455	422 456	422 457	422 458	422 459	422 460
ST	LSH	G62,5/OM1	422 471	422 472	422 473	422 474	422 475	422 476	422 477	422 478	422 479	422 480
LCD	LSH	E09/OS2	423 411	423 412	423 413	423 414	423 415	423 416	423 417	423 418	423 419	423 420
LCD	LSH	G50/OM3	423 431	423 432	423 433	423 434	423 435	423 436	423 437	423 438	423 439	423 440
LCD	LSH	G50/OM2	423 451	423 452	423 453	423 454	423 455	423 456	423 457	423 458	423 459	423 460
LCD	LSH	G62,5/OM1	423 471	423 472	423 473	423 474	423 475	423 476	423 477	423 478	423 479	423 480
LSH	LSH	E09/OS2	424 411	424 412	424 413	424 414	424 415	424 416	424 417	424 418	424 419	424 420
LSH	LSH	G50/OM3	424 431	424 432	424 433	424 434	424 435	424 436	424 437	424 438	424 439	424 440
LSH	LSH	G50/OM2	424 451	424 452	424 453	424 454	424 455	424 456	424 457	424 458	424 459	424 460
LSH	LSH	G62,5/OM1	424 471	424 472	424 473	424 474	424 475	424 476	424 477	424 478	424 479	424 480
LSH	FC/PC	E09/OS2	424 511	424 512	424 513	424 514	424 515	424 516	424 517	424 518	424 519	424 520
LSH	FC/PC	G50/OM3	424 531	424 532	424 533	424 534	424 535	424 536	424 537	424 538	424 539	424 540
LSH	FC/PC	G50/OM2	424 551	424 552	424 553	424 554	424 555	424 556	424 557	424 558	424 559	424 560
LSH	FC/PC	G62,5/OM1	424 571	424 572	424 573	424 574	424 575	424 576	424 577	424 578	424 579	424 580
LSH	MT-RJ	E09/OS2	424 511	424 512	424 513	424 514	424 515	424 516	424 517	424 518	424 519	424 520
LSH	MT-RJ	G50/OM3	424 531	424 532	424 533	424 534	424 535	424 536	424 537	424 538	424 539	424 540
LSH	MT-RJ	G50/OM2	424 551	424 552	424 553	424 554	424 555	424 556	424 557	424 558	424 559	424 560
LSH	MT-RJ	G62,5/OM1	424 571	424 572	424 573	424 574	424 575	424 576	424 577	424 578	424 579	424 580
LSH	SC/APC	E09/OS2	414 711	414 712	414 713	414 714	414 715	414 716	414 717	414 718	414 719	414 720
LSH	LSH/APC	E09/OS2	424 811	424 812	424 813	424 814	424 815	424 816	424 817	424 818	424 819	424 820

Parameters of all FO terminations see page U-209.

FO patch- and adapter cable
FC/PC - FC/PC

FO patch- and adapter cable
FC/PC - LSH/APC

FO patch- and adapter cable
FC/PC - SC/APC

Product information

Fibre optic patch- and adapter cable FC/PC

Connectortype		Fibretyp	Length in m									
Side A	Side B		1	2	3	4	5	6	7	8	9	10
SCD	FC/PC	E09/OS2	421 511	421 512	421 513	421 514	421 515	421 516	421 517	421 518	421 519	421 520
SCD	FC/PC	G50/OM3	421 531	421 532	421 533	421 534	421 535	421 536	421 537	421 538	421 539	421 540
SCD	FC/PC	G50/OM2	421 551	421 552	421 553	421 554	421 555	421 556	421 557	421 558	421 559	421 560
SCD	FC/PC	G62,5/OM1	421 571	421 572	421 573	421 574	421 575	421 576	421 577	421 578	421 579	421 580
ST	FC/PC	E09/OS2	422 511	422 512	422 513	422 514	422 515	422 516	422 517	422 518	422 519	422 520
ST	FC/PC	G50/OM3	422 531	422 532	422 533	422 534	422 535	422 536	422 537	422 538	422 539	422 540
ST	FC/PC	G50/OM2	422 551	422 552	422 553	422 554	422 555	422 556	422 557	422 558	422 559	422 560
ST	FC/PC	G62,5/OM1	422 571	422 572	422 573	422 574	422 575	422 576	422 577	422 578	422 579	422 580
LCD	FC/PC	E09/OS2	423511	423512	423513	423514	423515	423516	423517	423518	423519	423520
LCD	FC/PC	G50/OM3	423531	423532	423533	423534	423535	423536	423537	423538	423539	423540
LCD	FC/PC	G50/OM2	423551	423552	423553	423554	423555	423556	423557	423558	423559	423560
LCD	FC/PC	G62,5/OM1	423571	423572	423573	423574	423575	423576	423577	423578	423579	423580
LSH	FC/PC	E09/OS2	424 511	424 512	424 513	424 514	424 515	424 516	424 517	424 518	424 519	424 520
LSH	FC/PC	G50/OM3	424 531	424 532	424 533	424 534	424 535	424 536	424 537	424 538	424 539	424 540
LSH	FC/PC	G50/OM2	424 551	424 552	424 553	424 554	424 555	424 556	424 557	424 558	424 559	424 560
LSH	FC/PC	G62,5/OM1	424 571	424 572	424 573	424 574	424 575	424 576	424 577	424 578	424 579	424 580
FC/PC	FC/PC	E09/OS2	425 511	425 512	425 513	425 514	425 515	425 516	425 517	425 518	425 519	425 520
FC/PC	FC/PC	G50/OM3	425 531	425 532	425 533	425 534	425 535	425 536	425 537	425 538	425 539	425 540
FC/PC	FC/PC	G50/OM2	425 551	425 552	425 553	425 554	425 555	425 556	425 557	425 558	425 559	425 560
FC/PC	FC/PC	G62,5/OM1	425 571	425 572	425 573	425 574	425 575	425 576	425 577	425 578	425 579	425 580
FC/PC	MT-RJ	E09/OS2	425 611	425 612	425 613	425 614	425 615	425 616	425 617	425 618	425 619	425 620
FC/PC	MT-RJ	G50/OM3	425 631	425 632	425 633	425 634	425 635	425 636	425 637	425 638	425 639	425 640
FC/PC	MT-RJ	G50/OM2	425 651	425 652	425 653	425 654	425 655	425 656	425 657	425 658	425 659	425 660
FC/PC	MT-RJ	G62,5/OM1	425 671	425 672	425 673	425 674	425 675	425 676	425 677	425 678	425 679	425 680
FC/PC	SC/APC	E09/OS2	425 711	425 712	425 713	425 714	425 715	425 716	425 717	425 718	425 719	425 720
FC/PC	LSH/APC	E09/OS2	425 811	425 812	425 813	425 814	425 815	425 816	425 817	425 818	425 819	425 820

Parameters of all FO terminations see page U-209.

Fibre optic patch- and adapter cable
MT-RJ

Dätwyler Cables

FO patch- and adapter cable
MT-RJ - ST

FO patch- and adapter cable
MT-RJ - LCD

FO patch- and adapter cable
MT-RJ - MT-RJ

Product information

Fibre optic patch- and adapter cable MT-RJ

Connectortype		Fibretyp	Length in m									
Side A	Side B		1	2	3	4	5	6	7	8	9	10
SCD	MT-RJ	E09/OS2	421 611	421 612	421 613	421 614	421 615	421 616	421 617	421 618	421 619	421 620
SCD	MT-RJ	G50/OM3	421 631	421 632	421 633	421 634	421 635	421 636	421 637	421 638	421 639	421 640
SCD	MT-RJ	G50/OM2	421 651	421 652	421 653	421 654	421 655	421 656	421 657	421 658	421 659	421 660
SCD	MT-RJ	G62,5/OM1	421 671	421 672	421 673	421 674	421 675	421 676	421 677	421 678	421 679	421 680
ST	MT-RJ	E09/OS2	422 611	422 612	422 613	422 614	422 615	422 616	422 617	422 618	422 619	422 620
ST	MT-RJ	G50/OM3	422 631	422 632	422 633	422 634	422 635	422 636	422 637	422 638	422 639	422 640
ST	MT-RJ	G50/OM2	422 651	422 652	422 653	422 654	422 655	422 656	422 657	422 658	422 659	422 660
ST	MT-RJ	G62,5/OM1	422 671	422 672	422 673	422 674	422 675	422 676	422 677	422 678	422 679	422 680
LCD	MT-RJ	E09/OS2	423 611	423 612	423 613	423 614	423 615	423 616	423 617	423 618	423 619	423 620
LCD	MT-RJ	G50/OM3	423 631	423 632	423 633	423 634	423 635	423 636	423 637	423 638	423 639	423 640
LCD	MT-RJ	G50/OM2	423 651	423 652	423 653	423 654	423 655	423 656	423 657	423 658	423 659	423 660
LCD	MT-RJ	G62,5/OM1	423 671	423 672	423 673	423 674	423 675	423 676	423 677	423 678	423 679	423 680
LSH	MT-RJ	E09/OS2	424 511	424 512	424 513	424 514	424 515	424 516	424 517	424 518	424 519	424 520
LSH	MT-RJ	G50/OM3	424 531	424 532	424 533	424 534	424 535	424 536	424 537	424 538	424 539	424 540
LSH	MT-RJ	G50/OM2	424 551	424 552	424 553	424 554	424 555	424 556	424 557	424 558	424 559	424 560
LSH	MT-RJ	G62,5/OM1	424 571	424 572	424 573	424 574	424 575	424 576	424 577	424 578	424 579	424 580
FC/PC	MT-RJ	E09/OS2	425 611	425 612	425 613	425 614	425 615	425 616	425 617	425 618	425 619	425 620
FC/PC	MT-RJ	G50/OM3	425 631	425 632	425 633	425 634	425 635	425 636	425 637	425 638	425 639	425 640
FC/PC	MT-RJ	G50/OM2	425 651	425 652	425 653	425 654	425 655	425 656	425 657	425 658	425 659	425 660
FC/PC	MT-RJ	G62,5/OM1	425 671	425 672	425 673	425 674	425 675	425 676	425 677	425 678	425 679	425 680
MT-RJ	MT-RJ	E09/OS2	426 611	426 612	426 613	426 614	426 615	426 616	426 617	426 618	426 619	426 620
MT-RJ	MT-RJ	G50/OM3	426 631	426 632	426 633	426 634	426 635	426 636	426 637	426 638	426 639	426 640
MT-RJ	MT-RJ	G50/OM2	426 651	426 652	426 653	426 654	426 655	426 656	426 657	426 658	426 659	426 660
MT-RJ	MT-RJ	G62,5/OM1	426 671	426 672	426 673	426 674	426 675	426 676	426 677	426 678	426 679	426 680

Parameters of all FO terminations see page U-209.
Patch cords where both side a duplex connector is termeinated, one of the duplex clip isn't mounted and is in the bag.
Patch cords with both side MT-RJ are crossed.

FO patch- and adapter cable
SC/APC - FC/PC

FO patch- and adapter cable
SC/APC - LC

FO patch- and adapter cable
SC/APC - SC/APC

Product information

Fibre optic patch- and adapter cable SC/APC

Connectortype		Fibretyp	Length in m									
Side A	Side B		1	2	3	4	5	6	7	8	9	10
SCD	SC/APC	E09/OS2	421 711	421 712	421 713	421 714	421 715	421 716	421 717	421 718	421 719	421 720
ST	SC/APC	E09/OS2	422 711	422 712	422 713	422 714	422 715	422 716	422 717	422 718	422 719	422 720
LCD	SC/APC	E09/OS2	423 711	423 712	423 713	423 714	423 715	423 716	423 717	423 718	423 719	423 720
LSH	SC/APC	E09/OS2	414 711	414 712	414 713	414 714	414 715	414 716	414 717	414 718	414 719	414 720
FC/PC	SC/APC	E09/OS2	425711	425712	425713	425714	425715	425716	425717	425718	425719	425720
SC/APC	SC/APC	E09/OS2	427 711	427 712	427 713	427 714	427 715	427 716	427 717	427 718	427 719	427 720
SC/APC	LSH/APC	E09/OS2	427 811	427 812	427 813	427 814	427 815	427 816	427 817	427 818	427 819	427 820

Parameters of all FO terminations see page U-209.

Fibre optic patch- and adapter cable
LSH/APC

Dätwyler Cables

FO patch- and adapter cable
LSH/APC - FC/PC

FO patch- and adapter cable
LSH/APCJ - LC

FO patch- and adapter cable
LSH/APC - SC/APC

Product information

Fibre optic patch- and adapter cable LSH/APC

Connectortype		Fibretyp	Length in m									
Side A	Side B		1	2	3	4	5	6	7	8	9	10
SCD	LSH/APC	E09/OS2	421 811	421 812	421 813	421 814	421 815	421 816	421 817	421 818	421 819	421 820
ST	LSH/APC	E09/OS2	422 811	422 812	422 813	422 814	422 815	422 816	422 817	422 818	422 819	422 820
LCD	LSH/APC	E09/OS2	423 811	423 812	423 813	423 814	423 815	423 816	423 817	423 818	423 819	423 820
LSH	LSH/APC	E09/OS2	424 811	424 812	424 813	424 814	424 815	424 816	424 817	424 818	424 819	424 820
FC/PC	LSH/APC	E09/OS2	425 811	425 812	425 813	425 814	425 815	425 816	425 817	425 818	425 819	425 820
SC/APC	LSH/APC	E09/OS2	427 811	427 812	427 813	427 814	427 815	427 816	427 817	427 818	427 819	427 820
LSH/APC	LSH/APC	E09/OS2	428 811	428 812	428 813	428 814	428 815	428 816	428 817	428 818	428 819	428 820

Parameters of all FO terminations see page U-209.

Fibre optic patch panel 19" 1 U, swappable,
one piece front plate, adjustable or telescopic

Product information

Application

For every application with optical fibres (Fibre Optic). Distribution of fibre optic cables (breakout, loose tube) with a cable distributor or a splice box.
The front plate in standardised version has got holes for fixing SC, SCD and ST couplers.

Construction

Cover:	metallic cover, adjustable, panel with locking device, can be extended to OV-AT, or with telescopic OV-AT possibility to mount the front plate on an other level (5 steps max. 50mm)
Colour:	similar RAL 7035 also similar
Imprint:	number as a screen print
Size for:	up to 48 fibres
Strain relief:	with cable tie and screwed cable gland or cable distributor
Cable entry point:	real left and right
Size:	19" 1U, depth 310mm

Connection System

Coupler: ST, FC, SCD, SC, LSH, LCD

Delivery

Box for pre-assembled solutions, strain relief with M20 (1U) cable gland and splice tray holder.

Article No.	Description	
416 950	OV-A adjustable 1U 7035	without frontplate
416 964	OV-AT telescopic 1U 7035	without frontplate
417 376	OV-A adjustable 1U 9005	without frontplate
416 994	straight cable entry	for M20 + M25 1U
417 559	angled cable entry	for M20 1U
417 550	angled cable entry	for M25 1U
417 857	strain relief	for cable gland M20 1U
417 858	strain relief	for cable gland M25 1 U
416 951	front plate	for 12xSCD 1U
416 952	front plate	for 24xSCD 1U
416 953	front plate	for 24xSC/LSH/LCD 1U
416 954	front plate	for 24xST/FC 1U
416 955	front plate	for part front plate 3U/7HP
417 279	front plate	for 24xLCD 1HE offset design
417 376	front plate 1HE 9005	for 12 SCD
417 379	front plate 1HE 9005	for 24 SCD
417 377	front plate 1HE 9005	for 24 ST
417 374	front plate 1HE 9005	for 24 SCD/LSH/LCD
416 957	part front plate 7035 3U/7HP	for 416 955
416 956	part front plate 7035 3U/7HP	for 416 955
416 968	part front plate 7035 3U/7HP	for 416 955
416 967	part front plate 7035 3U/7HP	for 416 955
416 958	part front plate 7035 3U/7HP	for 416 955
416 959	telescop rail	for extension from OV-A to OV-AT
418 098	legend bar	for OV-A and OV-AT in Alu length 420mm

Technical changes reserved.

Fibre optic patch panel 19'' 2 U

Patch panel OV-A and OV-AT

swappable, one piece front plate,
adjustable or telescopic

Dätwyler Cables

Fibre optic patch panel 19'' 2 U swappable,
one piece front plate, adjustable or telescopic

Product information

Application

For every application with optical fibres (Fibre Optic). Distribution of fibre optic cables (breakout, loose tube) with a cable distributor or a splice box.
The front plate in standardised version has got holes for fixing SC, SCD and ST couplers.

Construction

Cover:	metallic cover, adjustable, panel with locking device, can be extended to OV-AT, or with telescopic OV-AT possibility to mount the front plate on an other level (5 steps max. 50mm)
Colour:	RAL 7035
Imprint:	number as a screen print
Size for:	up to 96 fibres
Strain relief:	with cable tie and screwed cable gland or cable distributor
Cable entry point:	real left and right
Size:	19" 2U, depth 310mm

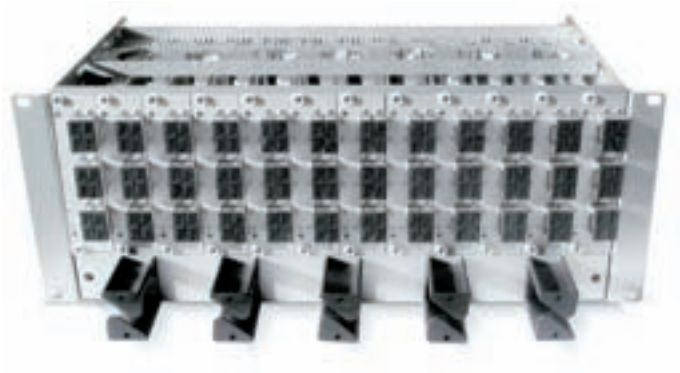
Connection System

Coupler: ST, FC, SCD, SC, LSH, LCD

Delivery

Box for pre-assembled solutions, strain relief with M25 (2U) cable gland and splice tray holder.

Article No.	Description	
416 960	OV-A adjustable 2U 7035	
416 965	OV-AT telescopic 2U 7035	
441 561	straight cable entry	for 2U M20 + M25
417 858	strain relief	for cable gland M25 2 U
417 562	angled cable entry	for 2U M20
417 560	straight cable entry	for 2U M25
417 295	reduction	M25/M20
416 955	front plate	for part front plate 3U/7HP
416 961	front plate	for 24xSCD 2U
417 882	front plate	for 48xSCD 2 U
416 966	front plate	for part front plate 3U/7HP
416 962	front plate	for 48xSC/LSH/LCD 2U
416 963	front plate	for 48xST/FC 2U
417 299	front plate	for 48 xLCD 2U offset design
416 957	part front plate 3U/7HP	for 416 966
416 956	part front plate 3U/7HP	for 416 966
416 968	part front plate 3U/7HP	for 416 966
416 967	part front plate 3U/7HP	for 416 966
416 958	part front plate 3U/7HP	for 416 966
416 959	telescop rail	for extension from OV-A to OV-AT
418 098	legend bar	for OV-A and OV-AT in Alu length 420mm



FO-Subrack OV-BG 4 U

Product information

Application

The subrack OV-BG is to devide a lose tube cable.

Construction

Cover:	19" 4 U aluminium profil with side wall 19" integrated fixing Subrack 3 U, 84 HP, Depth 270mm without panel for excess length of cable Mounted with bracks for 10 modules 8 HP
panel for excess length of cable:	1U, depth 380 mm

Connection System

ST, SCD, SC, LSH — Assembled Module insert with prepared pigtails

Article No.	Description	Dimensions
416 980	Subrack	3U/84HP185mm deep
416 907	Subrack	4U/84HP
416 908	Module insert for 6xSCD	3U/7HP
416 909	Module insert for 12xSC, LSH or LCD	3U/7HP
416 981	blanking front plate	3U/7HP for 416 907

Article No.	Description	
417 350	Module insert	with 12 LCD-adapter (beige) and 24 LC-pigtails G50/125 OM2
417 351	Module insert	with 6 LCD-adapter (beige) and 12 LC-pigtails G50/125 OM2
417 352	Module insert	with 6 LCD-adapter (blue) and 12 LC-pigtails E09/125 OS2
417 353	Module insert	with 12 LCD-adapter (turqouise) and 24 LC-pigtails G50/125 OM3
417 354	Module insert	with 12 LCD-Adapter (blue) and 24 LC-pigtails E09/125 OS2
417 355	Module insert	with 6 LCD-Adapter (turqouise) and 12 LC-Faserpigtails G50/125 OM3
417 356	Module insert	with 6 SCD-Adapter (beige) and 12 SC-Faserpigtails G50/125 OM2
417 357	Module insert	with 6 SCD-Adapter (turqouise) and 12 SC-pigtails G50/125 OM3
417 358	Module insert	with 6 SCD-Adapter (blue) and 12 SC-pigtails E09/125 OS2

Assembling Module insert with Splice holder and Splice protection. Pigtails are for splicing prepared.
Please ask for further assembling inserts!

Fibre optic patch panel 19“ 1 U

Patch panel OV-A

Splice Box pre-assembled with
adapters and pigtails

Dätwyler Cables

Fibre splice box panel 19“ 1 U adjustable
sample with 24 singlemode SCD adapters and 48 pigtails

Product information

Application

Adjustable Fibre optic patch panel, for every application with optical fibres (Fibre Optic).
Pre-assembled with 12 resp. 24 SCD adapters and 24 resp. 48 SC pigtails 2m coloured, inserted in a box, prepared for splicing, incl. splice trays, splice holders and splice protection in crimp technology, with straight cable entry cable gland M20

Construction

Cover:	metallic cover, adjustable, panel with locking device, can be extended to OV-AT,
Colour:	RAL 7035
Imprint:	number as a screen print
Size for:	up to 48 fibres
Strain relief:	with cable tie and screwed cable gland
Cable entry point:	real left and right
Size:	19“ 1U, depth 310mm

Connection System

Coupler:	SCD, LCD, LSH, ST etc.

Product information

Article No.	Description	
190 968	Splicebox, OV-A, adjustable 1 unit	6 LCD adapter blue polymer housing with ceramic sleeve and 12 LC pigtails 2m E09/125µm OS2
190 969	Splicebox, OV-A, adjustable 1 unit	6 LCD adapter beiges polymer housing with PB sleeve and 12 LC pigtails 2m G50/125µm OM2
190 884	Splicebox, OV-A, adjustable 1 unit	6 LCD adapter turqouise polymer housing with PB sleeve and 12 LC pigtails 2m G50/125µm OM3
190 975	Splicebox, OV-A, adjustable 1 unit	12 LCD adapter blue polymer housing with ceramic sleeve and 24 LC pigtails 2m E09/125µm OS2
190 988	Splicebox, OV-A, adjustable 1 unit	12 LCD adapter beiges polymer housing with PB sleeve and 24 LC pigtails 2m G50/125µm OM2
190 885	Splicebox, OV-A, adjustable 1 unit	12 LCD adapter turqouise polymer housing with PB sleeve and 24 LC pigtails 2m G50/125µm OM3
191 761	Splicebox, OV-A, adjustable 1 unit	24 LCD adapter blue polymer housing with ceramic sleeve and 24 LC pigtails 2m E09/125µm OS2
191 762	Splicebox, OV-A, adjustable 1 unit	24 LCD adapter beiges polymer housing with PB sleeve and 24 LC pigtails 2m G50/125µm OM2
191 763	Splicebox, OV-A, adjustable 1 unit	24 LCD adapter turqouise polymer housing with PB sleeve and 24 LC pigtails 2m G50/125µm OM3
190 989	Splicebox, OV-A, adjustable 1 unit	6 LSH/APC adapter green polymer housing with ceramic sleeve and 6 LSH/APC pigtails 2m E09/125µm OS2
190 990	Splicebox, OV-A, adjustable 1 unit	6 LSH adapter black polymer housing with ceramic sleeve and 6 LSH pigtails 2m G50/125µm OM3
190 893	Splicebox, OV-A, adjustable 1 unit	12 LSH/APC adapter green polymer housing with ceramic sleeve and 12 LSH/APC pigtails 2m E09/125µm OS2
190 886	Splicebox, OV-A, adjustable 1 unit	12 LSH adapter black polymer housing with ceramic sleeve and 12 LSH pigtails 2m G50/125µm OM3
190 894	Splicebox, OV-A, adjustable 1 unit	24 LSH/APC adapter green polymer housing with ceramic sleeve and 24 LSH/APC pigtails 2m E09/245µm OS2
190 887	Splicebox, OV-A, adjustable 1 unit	24 LSH adapter black polymer housing with ceramic sleeve and 24 LSH pigtails 2m G50/245µm OM3
190 888	Splicebox, OV-A, adjustable 1 unit	6 SCD adapter blue polymer housing with ceramic sleeve and 12 SC pigtails 2m E09/125µm OS2
190 974	Splicebox, OV-A, adjustable 1 unit	6 SCD adapter beiges polymer housing with PB sleeve and 12 SC pigtails 2m G50/125µm OM2
190 882	Splicebox, OV-A, adjustable 1 unit	6 SCD adapter turqouise polymer housing with PB sleeve and 12 SC pigtails 2m G50/125µm OM3
190 889	Splicebox, OV-A, adjustable 1 unit	12 SCD adapter blue polymer housing with ceramic sleeve and 24 SC pigtails 2m E09/125µm OS2
190 955	Splicebox, OV-A, adjustable 1 unit	12 SCD adapter beiges polymer housing with PB sleeve and 24 SC pigtails 2m G50/125µm OM2
190 883	Splicebox, OV-A, adjustable 1 unit	12 SCD adapter turqouise polymer housing with PB sleeve and 24 SC pigtails 2m G50/125µm OM3
190 973	Splicebox, OV-A, adjustable 1 unit	24 SCD adapter blue polymer housing with ceramic sleeve and 48 SC pigtails 2m E09/245µm OS2
190 972	Splicebox, OV-A, adjustable 1 unit	24 SCD adapter beiges polymer housing with PB sleeve and 48 SC pigtails 2m G50/245µm OM2
190 991	Splicebox, OV-A, adjustable 1 unit	24 SCD adapter turqouise polymer housing with PB sleeve and 48 SC pigtails 2m G50/245µm OM3
190 971	Splicebox, OV-A, adjustable 1 unit	6 ST adapter metal housing with ceramic sleeve and 6 ST pigtails 2m E09/125µm OS2
191 757	Splicebox, OV-A, adjustable 1 unit	6 ST adapter metal housing with PB sleeve and 6 ST pigtails 2m G50/125µm OM2
191 758	Splicebox, OV-A, adjustable 1 unit	6 ST adapter metal housing with PB sleeve and 6 ST pigtails 2m G50/125µm OM3
191 759	Splicebox, OV-A, adjustable 1 unit	12 ST adapter metal housing with ceramic sleeve and 12 ST pigtails 2m E09/125µm OS2
191 760	Splicebox, OV-A, adjustable 1 unit	12 ST adapter metal housing with PB sleeve and 12 ST pigtails 2m G50/125µm OM2
190 880	Splicebox, OV-A, adjustable 1 unit	12 ST adapter metal housing with PB sleeve and 12 ST pigtails 2m G50/125µm OM3
190 999	Splicebox, OV-A, adjustable 1 unit	24 ST adapter metal housing with ceramic sleeve and 24 ST pigtails 2m E09/245µm OS2
191 764	Splicebox, OV-A, adjustable 1 unit	24 ST adapter metal housing with PB sleeve and 24 ST pigtails 2m G50/245µm OM2
190 881	Splicebox, OV-A, adjustable 1 unit	24 ST adapter metal housing with PB sleeve and 24 ST pigtails 2m G50/245µm OM3

Fibre optic patch panel 19“ 1 U

Patch panel OV-A

Breakoutbox

Dätwyler Cables

Fibre optic patch panel 19“ 1 U adjustable
sample with 6 SC Duplex adapter

Product information

Application

Adjustable Fibre optic patch panel, for every application with optical fibres (Fibre Optic).
Pre-assembled with adapters

Construction

Cover:	metallic cover, adjustable, panel with locking device, can be extended to OV-AT,
Colour:	RAL 7035
Imprint:	number as a screen print
Size for:	up to 48 fibres
Strain relief:	with cable tie and screwed cable gland
Cable entry point:	real left and right
Size:	19“ 1U, depth 310mm

Connection System

Coupler:	ST, SCD, LCD, LSH

Product information

Article No.	Description	
191 765	Breakoutbox, OV-A, adjustable 1 unit	6 LCD SM adapter blue polymer housing with ceramic sleeve
190 871	Breakoutbox, OV-A, adjustable 1 unit	6 LCD MM adapter beige polymer housing with PB sleeve
191 766	Breakoutbox, OV-A, adjustable 1 unit	6 LCD MM adapter turqouise polymer housing with PB sleeve
191 767	Breakoutbox, OV-A, adjustable 1 unit	12 LCD SM adapter blue polymer housing with ceramic sleeve
190 872	Breakoutbox, OV-A, adjustable 1 unit	12 LCD MM adapter beige polymer housing with PB sleeve
191 768	Breakoutbox, OV-A, adjustable 1 unit	12 LCD MM adapter turqouise polymer housing with PB sleeve
191 769	Breakoutbox, OV-A, adjustable 1 unit	24 LCD SM adapter blue polymer housing with ceramic sleeve
190 873	Breakoutbox, OV-A, adjustable 1 unit	24 LCD MMadapter beige polymer housing with PB sleeve
191 770	Breakoutbox, OV-A, adjustable 1 unit	24 LCD MM adapter turqouise polymer housing with PB sleeve
191 771	Breakoutbox, OV-A, adjustable 1 unit	6 LSH/APC SM adapter green polymer housing with ceramic sleeve
191 772	Breakoutbox, OV-A, adjustable 1 unit	6 LSH MM adapter black polymer housing with ceramic sleeve
190 878	Breakoutbox, OV-A, adjustable 1 unit	12 LSH/APC SM adapter green polymer housing with ceramic sleeve
190 874	Breakoutbox, OV-A, adjustable 1 unit	12 LSH MM adapter black polymer housing with ceramic sleeve
190 879	Breakoutbox, OV-A, adjustable 1 unit	24 LSH/APC SM adapter green polymer housing with ceramic sleeve
190 875	Breakoutbox, OV-A, adjustable 1 unit	24 LSH MM adapter black polymer housing with ceramic sleeve
190 876	Breakoutbox, OV-A, adjustable 1 unit	6 SCD SM adapter blue polymer housing with ceramic sleeve
190 869	Breakoutbox, OV-A, adjustable 1 unit	6 SCD MM adapter beige polymer housing with PB sleeve
191 773	Breakoutbox, OV-A, adjustable 1 unit	6 SCD MM adapter turqouise polymer housing with PB sleeve
190 877	Breakoutbox, OV-A, adjustable 1 unit	12 SCD SM adapter blue polymer housing with ceramic sleeve
190 870	Breakoutbox, OV-A, adjustable 1 unit	12 SCD MM adapter beige polymer housing with PB sleeve
191 774	Breakoutbox, OV-A, adjustable 1 unit	12 SCD MM adapter turqouise polymer housing with PB sleeve
191 775	Breakoutbox, OV-A, adjustable 1 unit	24 SCD SM adapter blue polymer housing with ceramic sleeve
191 776	Breakoutbox, OV-A, adjustable 1 unit	24 SCD MM adapter beige polymer housing with PB sleeve
191 777	Breakoutbox, OV-A, adjustable 1 unit	24 SCD MM adapter turqouise polymer housing with PB sleeve
191 778	Breakoutbox, OV-A, adjustable 1 unit	6 ST SM adapter metal housing with ceramic sleeve
191 779	Breakoutbox, OV-A, adjustable 1 unit	6 ST MM adapter metal housing with PB sleeve
191 780	Breakoutbox, OV-A, adjustable 1 unit	12 ST SM adapter metal housing with ceramic sleeve
190 867	Breakoutbox, OV-A, adjustable 1 unit	12 ST MM adapter metal housing with PB sleeve
191 781	Breakoutbox, OV-A, adjustable 1 unit	24 ST SM adapter metal housing with ceramic sleeve
190 868	Breakoutbox, OV-A, adjustable 1 unit	24 ST MM adapter metal housing with PB sleeve

Fibre optic data outlets

Dätwyler Cables

Fig 1:
Fibre optic data outlet
2 x SC-Duplex with single frame

Fig 2:
Fibre optic data outlet
SC-Duplex

Fig 3:
Surface mounting box
for unilan® data outlet

Fig 4:
Distance frame for
data outlet cover

Product information

Application

For the transmission of digital and analogue voice, video and data signals over Fibre Optic Cables. Can be installed wall mounted or inside the raceway. Especially suited to all high speed applications in accordance with the EN 50173 fibre optic transmission class.

Connection System

Fibre optic data outlet SC-Duplex

Space	for 2 x SC-Duplex coupler
Outlet attachement	90° or 180°

Article No.	Description	Colour (similar)	Fig.
1406 935	Fibre optic data outlet SC-Duplex 2 x SCD (without cover)	RAL 1013 (oyster white)	1
1406 936	Fibre optic data outlet SC-Duplex 2 x SCD (without cover)	RAL 9010 (pure white)	1
1407 120	Fibre optic data outlet SC-Duplex (single) (without cover) 1 x SCD (without frame)	RAL 9010 (pure white)	1
1400 830	single cover	RAL 9010 (pure white)	
1401 630	single cover	RAL 1013 (oyster white)	

Article No.	Description	Colour (similar)	Fig.
1407 837	Fibre optic outlet (without insert and frame)	RAL 9010 (pure white)	2
1407 611	Insert for Fibre optic outlet for 2 SC-Duplex, 2 x SCD for 1407 837		2

Accessories

Surface mounting box for unilan® fibre optic data outlets

The surface mounting box for fibre optic outlet 80 x 80mm consist of a cover and a masking frame (H= 40mm)

With help of the distance frame the assembly height can be adjusted from 40mm with 10mm up to 50mm

Article No.	Description	Colour (similar)	PU	Fig.
1406 274	Surface mounting box 40mm incl. cover frame	RAL 1013 (oyster white)	1 piece	3
1406 276	Spacer frame 10mm for surface mounting box	RAL 1013 (oyster white)	1 piece	4
1406 273	Surface mounting box 40mm incl. cover frame	RAL 9010 (pure white)	1 piece	3
1406 275	Spacer frame 10mm for surface mounting box	RAL 9010 (pure white)	1 piece	4

Fibre optic wall mounted distribution box OV-W

Fibre optic wall mounted distribution box OV-W

Product information

Application

Fibre Optic wall mounted distribution box for distribution
of the backbone cabling with the horizontal cabling.
The connection be be done with splices or with a removable solution
e.g. optomod®PLUS.

Construction

Cover:	steel plate housing 1.5mm, removable front doors and side covers, can be extended
Colour:	RAL 7035
Patch Panel:	for SCD, SC, ST and optomod®PLUS alternatives on request
Strain relief:	cable tie, screwed cable gland or snap in
Cable entries:	4

Connection System

optomod®PLUS
ST/FC
SCD
SC/LSH/LCD

Article No.	Description		
416 900	wall mounted distribution box (600x425x220mm)		assembly with 2x2 U panels
416 901	angled kit for cable strain relief	for 416 900	2 pieces
417 396	Cable entry set PG16/PG21	for 416 900	2 pieces
416 902	strip kit	for 416 900	2 pieces
416 903	patch panel 2U for 24 x SC-D	for 416 900	
416 982	patch panel 2U for 48 optomod®PLUS f	or 416 900	
418 983	patch panel 2U for 48 ST	for 416 900	
416 997	Splice tray holder for 12 splice trays	for 416 900	
416 904	Wall mounted distribution box (300x300x85mm)		can be assembled with 1 patch panel
416 905	Cable entry point 2 plates and 2 stripes	for 416 904	
416 906	patch panel 12 x SC-D	for 416 904	
416 979	patch panel 48 x SC	for 416 904	
416 983	patch panel for 24 optomod®PLUS	for 416 904	
416 989	patch panel for 48 x ST	for 416 904	
416 988	take up for splice tray	for 416900 and 416904	4 pieces

Fibre optic Patch Panel for highest requirements WAN

fibre optic Patch Panel 19" 1U

telescopic

Dätwyler Cables

Fibre optic patch panel 19" 1U WAN

Product information

Application

The Fibre optic patch panel is adjustable without additional equipment.
It is telescopic, due to a telescopic bar.
The cable mounting plate is already fitted in the case.
The front plate will be delivered with a numbering and labelling strip.
Simple handling during installation, that means very short installation time (cost saving)

Construction

Cover:	Aluminium with a telescopic rails
Labelling:	1-24 on labelling tape
Mounting:	prepared for two splice trays possibility for max. 24 fibres
Dimensions:	19" 1U
Size standard:	44 x 483 x 280 mm
Size ETSI:	44 x 483 x 220 mm
Connecting system:	LSH Simplex, Duplex, Compact, each with angular outlet FC-PC and ST

Article No.	Description	Size
		HxWxD [mm]
184 839	Fibre optic patch panel 19" 1U standard	44x483x280mm
182 577	Fibre optic patch panel 19" 2U standard	88x483x280mm
182 578	Fibre optic patch panel 19" 3U standard	132x483x280mm
on request	Fibre optic patch panel 19" 1U ETSI	44x483x220mm
on request	Fibre optic patch panel 19" 2U ETSI	88x483x220mm
on request	Fibre optic patch panel 19" 3U ETSI	132x483x220mm

Dätwyler Cables

Swiss Standard

Mini-wall mounted distribution box AP (on wall mounted)

for 2-24 optical connections with LSH

Product information

Application

Premises or private connection

Features

Optical access for 2 up to 24 connections, modular connectable or
48 fibres to splice.
24 connectors LSH with fusion technology or 12xLSH pigtails good to install.
Mini-connecting devices for 6x and 12xLSH as well as splice trays ONT are possible to plug, also capable for LSH fusion.
Professional fibre optic handling in a compact box.
Small installation depth.
Lockable with a Kaba-locking tool or 4-square bolt.
Solid and well protected construction.

Construction

Size: 390x200x100mm (HxWxD)

- Mini-wall mounted distribution box with AP 390x200x100mm, colour: white RAL 9010 SFS, material: steel (possibility for 4x Mini-connector plates and/or splice trays ONT)
- 1x4-square bolt 6mm inklusive key
- Door latch zu KABA-lock
- Document bracket for A5 inside the front door
- Clamp composed of: 3x woodscrew 6x50mm, 3x nylon dowel 8mm and 3x M6 U-shim
- 1x bar L=170mm on the bottom of the box mounted for cable fixing
- 2x bar L=40mm sidewise of the box mounted for cable fixing
- 4x holes for PG 16 screwed cable gland with locknut PG 16, covered

Article No.	Description	Size	Colour
		HxWxD [mm]	
184 849	Mini-wall mounted distribution box AP	390 x 200 x 100	RAL 9010 SFS

Fibre optic wall mounted distribution box

Dätwyler Cables

Fibre optic wall mounted distribution box

Accessories from left to right:
strip, metric insertion, divisible cable gland insertion

Product information

Fibre optic wall mounted distribution box

Application

Doorways, customer connections, hub in City- and Access networks

Features

The wall mounted distribution box can be used as a fibre optic customer demarcation point or as a wall mounted distribution box in optical access networks.
The small installation depth as well as the possibility to lock it with a KABA-lock enables a big range of locations such as stairsways, passages, garages and so on.

Various possibilities for cable insertion below and above
Standard metric insertion
Optional divisible cable gland insertion, strip.
The box is modular removable and can be put in a row with splice trays (1 unit) and connector plates(2 units).
Very short installation time (cost saving).

Size

500 x 210 x 190 mm, for 12 units, admission for max.144 fibres,
500 x 350 x 190 mm, for 20 units, admission for max.240 fibres,
500 x 500 x 190 mm, for 28 units, admission for max.336 fibres,

Construction

Colour: RAL white 9010 SFS
Material: steel
2 pairs clamp composed for 4 units
Document bracket for A5 inside the door
1x4 square bolt 6mm inclusive key
Dlamp composed of: 3x woodscrew 6x50mm, 3x nylon dowel, and 3x M6 U-shim
Pivoting frame
Splice trays (1 unit)
Connector plates 12-fold (LSH, SC, FC-PC) (2 units)

Article No.	Description	Size (HxWxD)	Colour	Units
184 846	fibre optic wall mounted distribution box	500 x 210 x 190mm	RAL 9010 SFS	12
on request	fibre optic wall mounted distribution box	500 x 350 x 190 mm	RAL 9010 SFS	20
184 847	fibre optic wall mounted distribution box	500 x 500 x 190 mm	RAL 9010 SFS	28

Dätwyler Cables

Swiss Standard

Chrome wall mounted distribution box IP65

600x320x200mm

for 12xsplice trays

Product information

Application

Connection from Fibre optic OPGW cables to buried cables
Outdoor applications
Area of application according specification IP65

Features

Splice- or connecting box according specification IP65
Very solid and well protected construction with big advantages for connecting fibre optic OPGW cables to buried cables.
Easy, fibre optic connecting solution for up to 120 fibres in a chrome wall mounted distribution box.
All inserts are designed for DWDM transmission with 10Gb.
The well established supporting tool for the ONT splice trays fits optimally.
The chrome wall mounted distribution box can be delivered with a KABA - or Keso locking system, e.g. 6 splice trays 72fibres and 24 connectors LSH- for carrier access.
On request with heat shrink tubing or screwed cable gland.

Construction

Size: 600x320x200mm (HxWxD)

- Chrome wall mounted distribution box 600x320x200mm for 12 splice trays ONT (1 connector plate amount the space of 2 splice trays)
- 2 pairs of fastener for 4 splice trays ONT at Pos.1 and 2 mounted
- Document bracket for A4 inside the front door fixed
- Clamp composed of: 3x woodscrew 6x50mm, 3x nylon dowel 8mm and 3x M6 U-shim

Article No.	Description	Size
		HxWxD [mm]
184 848	Chrome wall mounted distribution box IP65	600 x 320 x 200

Accessories for Fibre optic wall mounted distribution boxes Splice tray

for mounting in wall mounted distribution boxes

Dätwyler Cables

splice tray ONT

splice tray holder ONT

Product information

Application

Possibility for jointing of 16 fibres
Easy and safe fibre handling.
very flexible in use of fibre distribution or connecting.
Splices are protected
labelling possible

Size

280x95x15mm (HxWxD)

Delivery

1 x splice tray ONT, material: plastic black
1 x plexiglass cover
1 x Splice cam BTAG
1 x Self tapping screw for splice trays
5 x cable tie black 2.4x92mm
1 x protecting tube transparent 14/12x60mm
1 x protecting tube transparent 07/05x60mm
1 x labelling tape mounted

Article No.	Description	Size	Colour
		HxWxD [mm]	
184 851	splice tray ONT	280 x 95 x 15	RAL 9010 SFS
184 852	splice tray holder ONT		

Swiss Standard

Mini-connector plate ONT 12xLSH

Connectors

For installation in fibre optic wall mounted distribution box

Product information

Application

Flexible installation in fibre optic wall mounted distribution box
ready for further development as required
mountable on the place of installation
easy access in case of maintenance or splice work
Very short installation time (cost saving)

Construction

Size:	285x110x25mm (HxWxD)
Connector plate:	for 12xLSH connectors
Colour:	black RAL 9005
Material:	plastic
Pigtail handling:	mounted

Article No.	Description	Size	Colour
		HxWxD [mm]	
184 854	Mini-connector plate ONT for 12xLSH	285 x 110 x 25	black RAL 9005

Fibre main distribution frame ETSI
"Opto-Tower"

Dätwyler Cables

Fibre main distribution frame ETSI "Opto-Tower"

Product information

Fiber main distribution frame ETSI "Opto-Tower"

Application

Central Point of Administration
Fibre Optic junction

Features

The FMDF-distributor is a system for routing and connecting fibre optic cables. This innovative fibre optic distribution system is able to distribute 1000 optical patch cord accesses correctly. Connections between transmitter and receiver equipment are also possible to make with pre-assembled Breakout cables.

The fibre optic distribution system can be extended for a bigger fibre count side by side or back to back with a second rack.
The Patch cord is routed for all connections with a minimum bending radius of 35mm for 10Gigabit Ethernet (IEEE 803.2ae) solutions.

We attach particular importance to easy patch cord handling.
In case of maintenance or control work, the case can easily be extended without transferring patchcords or removing optical connectors.

The optical fibres will never be distrubed, because of the intelligent "storage for patching" system. A special side mounted store for patch cables guarantees the optimum on flexibility.

Cable strain relief and protection is provided by the 19" case.

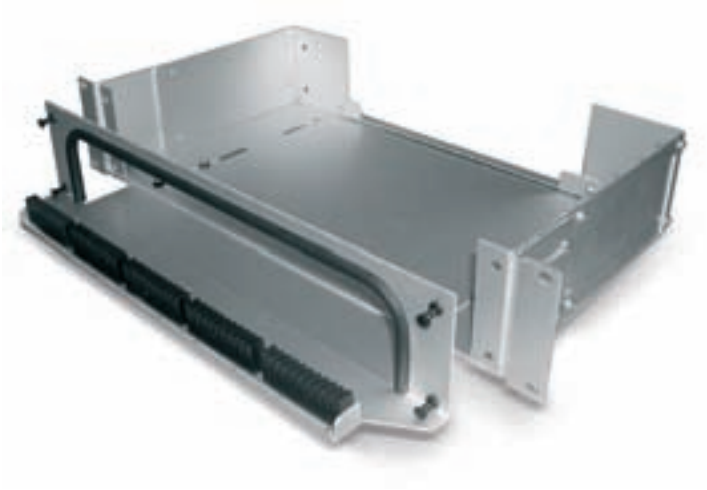
The optical fibres will never be disturbed, because of the intelligent "storage for patching" system.

Construction

ETSI:	1200 x 2200 x 300 mm (BxHxT)
Standard:	1200 x 2200 x 800 mm (BxHxT)

Article No.	Description	Size (HxWxD)
on request	Fiber main distribution frame "Opto-Tower" ETSI	1200 x 2200 x 300 mm
184 845	Fiber main distribution frame "Opto-Tower" Standard	1200 x 2200 x 800 mm

19“ 2U Patch cord storrage



Product information

Application

Patch cord feed through in 19“ distribution system.
Hide for spare patch cord lenghts

Features

Patch cord feed through for 19" technology.
telescopic and adjustable backwards.
delivered inclusive clamp.
compliance with bending radius for high speed fibre optic networks.

Construction

Size: 88 x 483 x 230 mm

Article No.	Description	Size
		HxWxD [mm]
on request	19" 2U Patch cord feed through	88 x 483 x 230

Management panels 1U

Dätwyler Cables

Management panels 19'', 1U, stainless steel blank

Management panels 19'', 1U, black

Management panels 19'', 1U, light grey

Product information

Management panel 1U

Application

For an optimized guiding of the copper cables and fibre optic cables in 19'' racks.
Panel, 19", 1U, the management panels are unloaded, it is order the clamps separately

General properties

Dimensions (H x W) 47mm x 50mm

Article No.	Description	colour/material	PU
1411 480	Management clamps 30mm, 5 pcs.for a management panel	plastic, black	1 Piece
1411 481	Management clamps 75mm, 5 pcs.for a management panel	metallic	1 Piece
1411 482	Management clamps 110mm, 5 pcs.for a management panel	metallic	1 Piece
1411 604	Management panel 19'', 1U, without management clamps	RAL 7035	1 Piece
1407 689	Management panel 19'', 1U, without management clamps	RAL 9005	1 Piece
418 200	Management panel 19'', 1U, without management clamps	stainless steel blank	1 Piece

Splice tray

Splice holder

Splice protection

Cable gland PG16/PG21

Product information

Accessories

Article No.	Description	PU
1411 150	splice tray without cover	1 piece
1411 151	splice tray cover	1 piece
1411 152	splice holder for up to 12 splices (crimp technology)	1 piece
1411 153	splice holder for up to 6splices (heat shrink technology)	1 piece
1401 560	splice protection crimp technology	1 piece
1401 581	splice protection shrink technology	100 pieces
1405 167	cable gland PG16	1 piece
1405 168	locknut for PG16	1 piece
1401 580	cable gland PG21	1 piece
1401 579	locknut for PG21	1 piece
416 996	splice-kit incl. 2 splice protection crimp technology and splice tray cover	1 piece

Fibre optic accessories
launch cable for measurement

Dätwyler Cables

launch cable for measurement

Product information

Launch cable for measurement

Application

Launch cable are necessary for evaluation of the optical performance of the FO Link's

Construction

Cover:	PVC hard-top case (275x225x80)mm with reserve tray for adapter and other accessories
Assembly	Alternatively with 3 different fibre types or with 12 fibres of the same type

The fibres are wound up stress free and ca. 2.5m lead trough the case in a tube.

Connection System

ST, SC, LSH, LC, FC/PC and others as well as HRL variants (to be defined)

Article No.	Description	Information
416 890	launch cable 100m G50+G62 + 1000m E09	connector to be defined
416 891	launch cable 1000m E09	connector to be defined
416 892	launch cable 100m G50	connector to be defined
416 893	launch cable 100m G62	connector to be defined
416 894	launch cable 12x100m G50	connector to be defined
416 895	launch cable 12x100m G62	connector to be defined

Fibre Optic Splice Closure GCOG2

Fibre Optic Splice Closure GCOG2

Product information

Fibre Optic Splice Closure GCOG2

Application

The splice closure GCOG2 have a single-ended desgin and is compatible with most common cable types. The closures can be used as:

- splicing closure and branch tee
- coupling closure as an underground connection point
- distribution closure
- the FO-gel closure is suitable for storage in cable pits, in soil as well as attachment at masts, walls or racks.

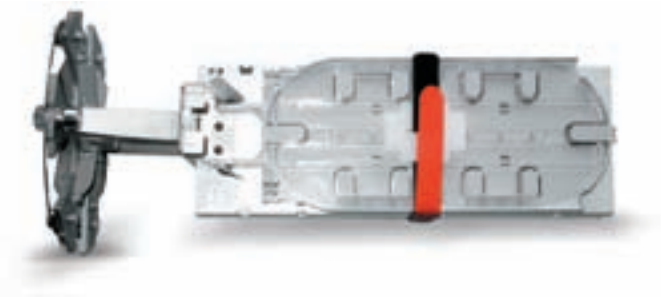
Features

6 round cable ports are provided in a wrap-around block with pre-installed gel profile for cable sealing. Compatible with most common cable types: e.g. loose tube, central core and minibundle. Uncut fibres can be stored as single circuits in trays/or as cable elements in the storage space between the profiles. Storage baskets are available for mass storage of fibres of central core and minibundle cable constructions.

	GCOG2-BC6	GCOG2-BD6	GCOG2-BE6
Dimensions (in mm)			
Length excl. trigger	543	621	750
diameter	247	247	247
diameter with clamp	291	291	291
Splice capacity			
single circuit	80 Fibres / 40 Trays	144 Fibres / 72 Trays	208 Fibres / 104 Trays
single element	240 Fibres / 20 Trays	432 Fibres / 36 Trays	624 Fibres / 52 Trays
Cable ports			
number of cable ports	6	6	6
cable ø range	9-25mm	9-25mm	9-25mm
Cable type			
loose tube cable design	x	x	x
central core cable design	x	x	x
minibundle cable design	x	x	x
Article No.	on request	on request	on request

Fibre Optic Splice Closure FOSC

Dätwyler Cables



Fibre Optic Splice Closure FOSC

Product information

Fibre Optic Splice Closure FOSC

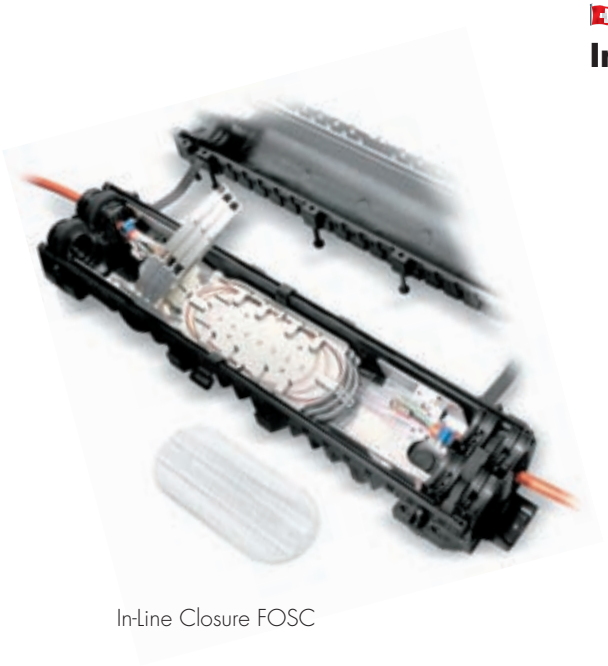
Application

All sizes are designed for use with any cable construction (loose buffer tube; central core - or minibundle cable), in any environment (aerial, pedestal, buried, handhole, manhole) and for numerous splice applications (wcpressed, tap-off, branch and repair).

Features

Base-to-dome seals on FOSC are mechanical for ease of installation and re-entry.
Cable seals feature a new heatshrink sleeve and hot melt adhesive system that is installed with a hot-air-gun.
The large oval port enabled to receive main disttibution cable with a high number of fibres.

	FOSC 400 A4	FOSC 400 B2, B4	FOSC 400 D5
Dimensions (in mm)			
Length	420	540	710
diameter	180	180	260
Splice capacity (n fibre)			
number of splicing trays	2	4	8
number of splices with ANT	12	12	36
number of splices with SMOUV	24	24	72
Cable ports			
number of cable ports	4 x round	2 (4x) x round	5 x round
cable ø range	5-19mm	5-32mm (5-19mm)	5-32mm
number of cable ports	1 x oval	1 x oval	1 x oval
cable ø range	10-25 mm	10-25mm	10-25mm
Cable type			
loose tube cable design	x	x	x
central core cable design	x	x	x
minibundle cable design	x	x	x
Article No.	on request	on request	on request



In-Line Closure FOSC

Product information

In-Line Closure FOSC

Application

The in-line closure FOSC is the environmentally sealed enclosure for fibre managment in the outside plant network for aerial, underground or direct buried applications. It is a cold applied re-usable closure housing one mass splicing tray and cable attachment units. They fit perfectly well as a customer drop, tap-off or in-line splice closure in the low fibre count part of the network.

Features

round cable ports are provided in a wrap-around block with pre-installed gel profile for cable sealing. Compatible with most existing cable constructions: e.g. loose tube, central core and minibundle.

- easy re-entry and re-closure mechanism with hinge and latches
- cold applied cable sealing based on gel technology
- integrated cable jacket gripping devices

	FOSC 500AA	FOSC 500B	FOSC 600C	FOSC 600D
Dimensions (in mm)				
Length (without mounting parts)	422	636	828	828
Length (with mounting parts)	472	648		
Height	65	140	152	25.4
Width	125	160	274	274
Splice capacity (n fibres)				
Number of splices	24	144	216	504
Number of splicing trays	1	6	3	7
Number of splices per trays	24	24	72	72
with ANT splice protection	x	x	x	x
with SMOUV splice protection	x	x	x	x
Cable ports				
number of cable ports	2+2	2+4	max. 16	max. 16
cable ø range	5-15mm	7-40mm	10-28 (28-35)mm	10-28 (28-35)mm
Cable type				
loose tube cable design	x	x	x	x
central core cable design	x	x	x	x
minibundle cable design	x	x	x	x
Article No.	on request	on request	on request	on request

Fibre Optic Sewage Closure SCO2

Dätwyler Cables

Fibre Optic Sewage Closure SCO2

Product information

Fibre Optic Sewage Closure SCO2

Application

This slim metal closure is specially designed to fit in small sewage canal systems and is therefore resistant to very aggressive environments.

Features

- Heat-shrinkable cable seals with 6 or 10 round entry/exit ports for drop cables and 1 oval port for looped(uncut) cable
- Uncut fibres can be stored as single circuits in SC trays, as single element in SE trays or as loose buffer tubes at the back side of the UMS profile.
- The FIST-SCO2 with 10 ports specifically developed for loose tube cable, whereas the FIST-SCO2 with 6 ports is compatible with most common cable types: e.g. loose tube, central core, minibundle.

	SCO2-BE06	SCO2-BE10
Dimensions (in mm)		
Length including caps on cable ports	750	750
Width at base	285	285
Width at the top of dome	259	259
Depth at the base	147	147
Depth at the dome handle	142	142
Splice capacity (n fibres)		
Single Circuit, primary coated	96 Fibres / 48 Fibres	96 Fibres / 48 Fibres
Single Element, primary coated	288 Fibres / 24 Fibres	288 Fibres / 24 Fibres
Cable ports		
Number of cable ports	6 round	10 round
Cable ø range	5-25mm	5-15mm
Number of cable ports	1 oval	1 oval
Cable ø range	12-25mm	12-25mm
Cable type		
Loose tube cable design	x	x
Central core cable design	x	
Minibundle cable design	x	
Article No.	on request	on request

Microduct

Product information

Microduct

Features

Microduct of HD-PE, internally channelled, 2500m on reel
(dia. 1200mm, width 380mm) suitable for injection of fibre-optic cables over long distances.
Available in versions of 10mm and 7mm diameter. The minimum bending radius of this 10mm dia. microduct is R = 60mm with supported bending and R = 100mm with free bending.
Also available in FR/LSOH (on request).

Article No.	Description	Packaging
on request	Microduct Speed Pipe 7mm red	Drum à 2500m
on request	Microduct Speed Pipe 7mm green	Drum à 2500m
on request	Microduct Speed Pipe 7mm blue	Drum à 2500m
on request	Microduct Speed Pipe 7mm yellow	Drum à 2500m
on request	Microduct Speed Pipe 7mm white	Drum à 2500m
on request	Microduct Speed Pipe 7mm grey	Drum à 2500m
on request	Microduct Speed Pipe 7mm orange	Drum à 2500m
on request	Microduct Speed Pipe 10mm red	Drum à 2500m
on request	Microduct Speed Pipe 10mm green	Drum à 2500m
on request	Microduct Speed Pipe 10mm blue	Drum à 2500m
on request	Microduct Speed Pipe 10mm yellow	Drum à 2500m
on request	Microduct Speed Pipe 10mm white	Drum à 2500m
on request	Microduct Speed Pipe 10mm grey	Drum à 2500m
on request	Microduct Speed Pipe 10mm orange	Drum à 2500m

Double plug-in joints and Single draw seal

Dätwyler Cables

Double plug-in joints

Single draw seal

Product information

Double plug-in joints

Features

Double plug-in joints for connecting microducts, pressure-tight up to 10 bar, tension-proof, releasable.

Article No.	Description	Packaging
on request	Double plug-in joints 7mm	PU=12 pieces
on request	Double plug-in joints 10mm	PU=12 pieces

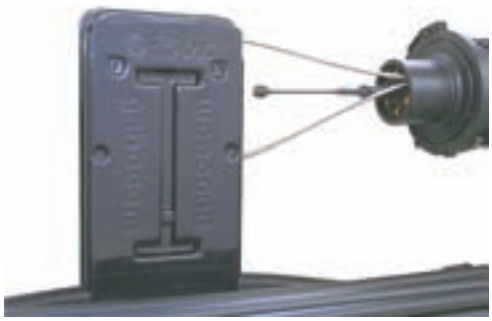
Single draw seal

Features

Re-usable single draw seal, divisible, for sealing occupied and unoccupied microducts, gas and watertight up to 0.5 bar.

Article No.	Description	Packaging
on request	Single draw seal separated of EZA-t 32/3x10 Single draw seal separated of KR DM32 to 3 Microducts Speed Pipe	PU=12 pieces
on request	Single draw seal separated ofEZA-t 40/5x10 Single draw seal separated of KR DM40 to 5 Microducts Speed Pipe	PU=12 pieces
on request	Single draw seal separated of EZA-t 50/7x10 Single draw seal separated of KR DM50 to 7 Microducts Speed Pipe	PU=12 pieces
on request	Single draw seal separated of EZA-t 50/14x7 Single draw seal separated of KR DM50 to 14 Microducts Speed Pipe	PU=12 pieces
on request	Single draw seal DM 7mm EZA-t7	PU=12 pieces
on request	Single draw seal DM 10mm EZA-t10	PU=12 pieces

Semi-duct joint branch



Cable-Box

Product information

Semi-duct joint branch

Features

Gas and watertight up to 0.5 bar, also for later branching of a cable from an occupied duct under 30°, comprising branch with 4 connecting clips and pre-assembled sealing mat.

Article No.	Description	Packaging
on request	Semi-duct joint branch (Y-piece) HRMA 50/32-30 Y-piece with sealing, 4 flap valve, cable conduit DM 50 to DM 32	PU=6 pieces
on request	Semi duct joint branch (Y-piece) HRMA 110/50-30 Y-piece with sealing, 4 flap valve, cable conduit DM 110 to DM 50	PU=6 pieces

Cable Box

Features

Cable Box for approx. 20m excess length of Optofil-Micro cable, with lockable cover, to protect cable against rodents.

Article No.	Description	Packaging
on request	Cable-Box (C-Box) material ABS black, sealing cap, storage for approx. 20m Optofil-Micro cable	PU=1 piece

unilan® Network Rack
19'' / 42U

Dätwyler Cables

unilan® Network Rack

Product information

unilan® 19'' Network Rack

Application

Professional network solution with:
- 2 point locking
- Two 19" levels (bothe in front and behind)
- Installation height 42 rack units
- Protection category IP20
- Load 700 kg

Dimensions

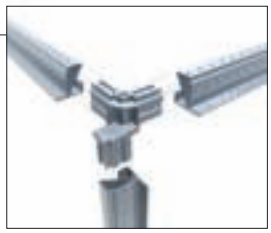
19''/42 U, H x W x D: 2100 x 800 x 800 mm
19''/42 U, H x W x D: 2100 x 600 x 800 mm
19''/42 U, H x W x D: 2100 x 600 x 600 mm

Delivery

Pre-assembled including adjustable foot
(bolts / cage nut / washers (50 pcs.) and earthing set included)

Description

- Basic frame of steel section / can be disassembled
- Socket, height 100 mm, RAL 7035
- Flat top of sheet steel with pre-cut perforations for brushes (included) and up to 6 fans
- Glass front door, sheet-steel rear door with 180° hinge
- Both doors fitted with swivel handle, hinge on right side
- Side panels made of sheet steel, can be removed
- Two 19'' levels



Article No.	Description	Height	Width	Depth	Colour
190 822	unilan® Network Rack 19'', 42 U	2100	800	800	RAL 7035
190 823	unilan® Network Rack 19'', 42 U	2100	600	800	RAL 7035
190 824	unilan® Network Rack 19'', 42 U	2100	600	600	RAL 7035
190 835	unilan® Network Rack 19'', 42 U, Basic frame	2100	800	800	RAL 7035

unilan® Server Rack

Product information

unilan® 19'' Server Rack

Application

The safe alternative for any server
- 2 point locking
- Two 19" levels (bothe in front and behind)
- Effective height 42U or 24U
- Protection category IP20
- Load 700 kg

Dimensions

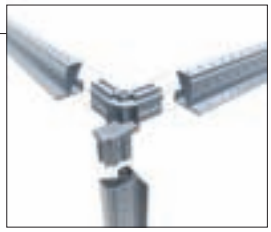
19''/42 U, H x W x D: 2100 x 800 x 1000 mm
19''/42 U, H x W x D: 2100 x 600 x 1000 mm
19''/42 U, H x W x D: 1300 x 600 x 1000 mm

Delivery

Pre-assembled including adjustable foot
(bolts / cage nut / washers (50 pcs.) and earthing set included)

Description

- Basic frame of steel section / can be disassembled
- Socket, height 100 mm, RAL 9005
- Flat top of sheet steel with pre-cut perforations for brushes (included) and up to 6 fans
- Glass front door, sheet-steel rear door with 180° hinge
- Both doors fitted with swivel handle, hinge on right side
- Side panels made of sheet steel, can be removed
- Two 19'' levels



Article No.	Description	Height	Width	Depth	Colour
190 825	unilan® Server Rack 19'', 42 U	2100	800	1000	RAL 9005
190 826	unilan® Server Rack 19'', 42 U	2100	600	1000	RAL 9005
190 827	unilan® Server Rack 19'', 24 U	1300	600	1000	RAL 9005

unilan® wall chassis
19"/9U, 12U, 15U
unilan® Minirack
19"/18U

Dätwyler Cables

unilan® wall chassis

unilan® Minirack
including adjustable feet

Product information

unilan® wall chassis 19" and unilan® Minirack 19"

Application

- Removable side panels
- Protection category IP20
- Load 3 kg per rack height unit

Dimensions

Wall chassis
19"/9 U, H x W x D: 570 x 400 x 475 mm
19"/9 U, H x W x D: 570 x 500 x 475 mm
19"/12 U, H x W x D: 570 x 400 x 600 mm
19"/12 U, H x W x D: 570 x 500 x 600 mm
19"/15 U, H x W x D: 570 x 400 x 750 mm
19"/15 U, H x W x D: 570 x 500 x 750 mm

Minirack
19"/18 U, H x W x D: 570 x 600 x 910 mm

Delivery

Pre-assembled (earthing set included)

Description

- Basic frame with break-out zones for cable inlets/outlets on top and bottom; two brushes included
- Glass door
- 1 cable tray

Article No.	Description	Height	Width	Depth	Colour
190 828	unilan® Wall chassis 19", 9 U	570	400	475	RAL 7035
190 829	unilan® Wall chassis 19", 9 U	570	500	475	RAL 7035
190 830	unilan® Wall chassis 19", 12 U	570	400	600	RAL 7035
190 831	unilan® Wall chassis 19", 12 U	570	500	600	RAL 7035
190 832	unilan® Wall chassis 19", 15 U	570	400	750	RAL 7035
190 833	unilan® Wall chassis 19", 15 U	570	500	750	RAL 7035
190 834	unilan® Minirack 19", 18 U	570	600	910	RAL 7035

Mangement Panel 19“/ 1U

for inserting 5 support brackets in different dimensions

Management panels 19'', 1U, stainless steel blank

Management panels 19'', 1U, black

Management panels 19'', 1U, light grey

Product information

unilan® Management Panel 19“/ 1U

Application

For organized management of copper patchcords and LWL Patchcords in data racks or cabinets with 19“ attachments.

The management basis plates 19“/1U are deliverable in three types: a) stainless steel, b) black or c) grey

This basis plates are without support brackets.
They could be fitted with 5 support brackets in wanted dimensions.
Please order the support brackets separately!

Article No.	Description	Colour/Material	PU
1411 480	Support bracket 30mm	plastic, black	1 Piece
1411 481	Support bracket 75mm	metallic	1 Piece
1411 482	Support bracket 110mm	metallic	1 Piece
1411 604	Management panel 19'', 1U, for 5 brackets	RAL 7035	1 Piece
1407 689	Management panel 19'', 1U, for 5 brackets	RAL 9005	1 Piece
418 200	Management panel 19'', 1U, for 5 brackets	stainless steel blank	1 Piece
401 240	Blind plate 19'', 1U	RAL 7035	1 Piece
401 241	Blind plate 19'', 1U	RAL 9005	1 Piece
401 242	Blind plate 19'', 1U	stainless steel blank	1 Piece
401 243	Blind plate 19'', 2U	RAL 7035	1 Piece
401 244	Blind plate 19'', 2U	RAL 9005	1 Piece
401 245	Blind plate 19'', 2U	stainless steel blank	1 Piece
400 300	Cable shelf 19'', 1U, please note: only mountable with a management panel		1 Piece

Accessories
for unilan® network and server racks

Dätwyler Cables

Assembly kit for wall installation

Fan set

Product information

Accessories
for unilan® network and server racks

Article No.	Accessories / Description	
401 200	Swivel handle	
401 201	Drawer bases for equipment with size 19'' x 600 mm (perforated, solid, steel, 1.5 mm), RAL 7035	Load 120 kg
401 202	Drawer bases for equipment with size 19'' x 600 mm (perforated, extractable, steel, 1.5 mm), RAL 7035	Load 50 kg
401 203	Replacement sliding rail 19'' x 712 mm for server rack	Load 40 kg
401 211	Fan set, 2 pcs. incl. protective screen and fastening material	
401 212	Thermostat	
401 213	Power cable for fan set, 2 m Germany/Austria	
401 214	Power cable for fan set, 2 m Switzerland	
401 215	Power cable for fan set, 2 m UK	
401 220	Power strip Germany/Austria; 5; EU	
401 221	Power strip Switzerland	
401 222	Power strip Germany/Austria; 9	
401 230	Assembly kit for wall installation	
401 231	Assembly kit 19'' bolt/cage nut	
401 232	Touch-up stick RAL 7035	
401 233	Touch-up stick RAL 9005	
401 234	Adhesive strip with sizing for perforated bracket	
401 235	Mounting plate for network rack	
401 236	19'' perforated bracket support	Load 1,000 kg
401 237	C-rail 600	
401 238	C-rail 800	
401 239	C-rail 1000	

MHD – Modular High Density distributor system
for use in data centres

A data centre must be set up in a way that ensures the level of data security required by the operator. This applies to the building (e.g., access control and air conditioning), the electric power supply (UPS), any active devices and, of course, the cabling system. Since data centres are constantly growing and changing, cabling systems must accommodate changes, moves and add-ons, often during running operation, in the shortest time possible without the need for on-site work and using in-house staff whenever possible.

To meet these demands, a modular cabling system was developed which allows both preassembled copper connections and FO connections to be contained in an enclosure system featuring an extremely high packing density. In this system, 48 FO or copper ports can be terminated in a single rack unit, for example.

As a further highlight, the modular high-density distribution system also allows mixed assembly.

The distribution system is composed of two different enclosure models in one or three rack units where the distributor cartridges are mounted. All components are available in stainless steel or black finish.

MHD-Housing 19''/3 U
for max. 17 Cartridges 3 U

MHD-Housing 19''/1 U
for max. 2x4 Cartridges 0,5 U

Copper data cabling Variant 1

consists of the 6x breakout twisted pair (TP) cable (uninet® 7002 4P) which is connected on both sides with a cartridge. This cartridge contains a printed circuit board with LSA plus contacts. This solution supports a transfer rate of up to 10 Gbit/s with a maximum permanent link length of 90 m.

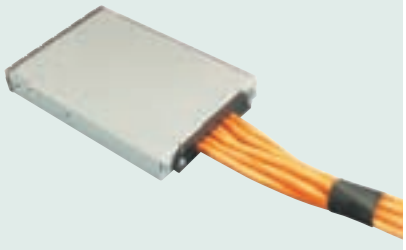
Copper data cabling Variant 2

consists of zero-halogen and screen Cu trunk cables pre-assembled with the 50-pin screen telco socket with is very slim in design and flexible for a wide range of applications. The maximum link length for a transmission speed of 1 Gbit/s is 60 m.

Fibre optic cabling

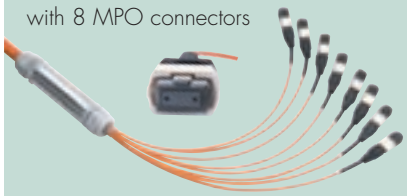
is based on the standard MPO plug connector system for 12 fibres. The optoversal® cable (single-mode, multi-mode) is used as an FO trunk cable that is assembled on both sides with the corresponding number of MPO plugs via a splitter. The ready-to-use, pre-assembled FO cartridges feature an MPO coupler on the back which serves as an input and is connected internally via FO fibres with the 6 standard FO couplers (e.g., LCD) mounted on the front.

MHD Cu-Trunks
with Cu-Cartridge 6 x RJ45



MHD Cu-Trunks
with Telco jack

MHD FO-Trunks
with 8 MPO connectors



MHD Copper Distributor Cartridge
3 U 0,5 U

MHD FO Distributor Cartridge
3 U 0,5 U

When ordering pre-assembled cables, note that the length of the supplied trunk cable is always based on the longest cable assembly.
For MHD FO trunks, this means that the length of the pre-assembled cable between the ferrules must be indicated as the longest lashes.

Technical changes reserved.

MHD-Housing
for distributor cartridges in computer centres

Dätwyler Cables

MHD distributor housing 19''/1U for incorporation of 8 MHD cassettes 0.5U

MHD blind front plate 0.5U

MHD distributor housing 19''/3U for incorporation of 17 MHD cassettes 3U

MHD blind front plate 3U

Product information

MHD – Modular High Density distributor system

Application

Suitable for all applications requiring the connection of pre-assembled fibre-optic and copper cables, especially suitable for computer centres. Distributor cartridges can be installed in this rack. Any mixture of FO and copper distributor cartridges can be installed in the same rack. This solution provides computing centres with the flexibility to perform 'changes', 'moves' and 'adds' very quickly without the need for costly on-site work. You can also achieve very high packing densities such as 48 FO (duplex) or copper ports in a 1U rack.

Configuration of 1U system

Rack	solid metal
Front plate colour	stainless steel or black similar to RAL 9005
Labelling	screen-printed numbers
Space for	up to 8 MHD distributor cartridges, i.e., up to 48 RJ45 ports or 96 fibres, different cartridge types can be mixed
Strain relief	options include screw fastener, cable splitter or cable clip
Cable inlet	via up to four cable inlet plates, straight or diagonal
Earth	19", 1U, depth of 24 cm w/o diagonal cable inlet installed on outside or breakout fixing

Configuration of 3U system

Rack	solid metal, rack
Colour	stainless steel or black similar to RAL 9005
Labelling	using printed strips
Space for	up to 17 MHD cartridges 3U, i.e., up to 102 RJ45 ports or 204 fibres, mixtures of the above are possible
Strain relief	using cable clips on central crossbeam
Earth	19", 3U, depth 24 cm

Contents

Rack w/o accessories

Description	Article No. Stainless steel	Article No. black
MHD Distributor rack 1U	470 011	470 012
MHD Blank front plate for 1U	470 020	470 021
MHD Distributor rack 3U	470 031	470 032
MHD Blank front plate 5 rack units depth/3U	470 022	470 023

Accessories for MHD 1U / Description	Article No.
MHD Breakout cable inlet/outlet	470 013
MHD Straight cable inlet for PG13.5/PG16, screw fastener	470 014
MHD Diagonal cable inlet for PG13.5/PG16, screw fastener	470 015
MHD Straight cable inlet for cable splitter M20/M25	470 016
MHD Diagonal cable inlet for cable splitter M20/M25	470 017
MHD Blank plate instead of cable inlet	470 018

MHD Copper Distributor Cartridges
For using in the MHD distribution housing

MHD Cu distributor cartridge 0.5U
Entry in the back: Telco connector
Output on the front: 6 x RJ45 shielded

MHD Cu distributor cartridge 3U
Entry in the back: Telco connector
Output on the front: 6 x RJ45 shielded

Product information

MHD – Modular High Density distributor system

Application

Suitable for all applications with speeds of up to 1 Gbit/s requiring the connection of pre-assembled telco trunk cables, especially suitable for computer centres. Distributor cartridges can be installed in the modular high density distributor system (available in 0.5U and 3U versions). The distributor cartridge is equipped with a 50-pin screen telco connector on the rear side for quick connection to pre-assembled copper trunk cables. The cartridges have been fully tested and, together with the pre-assembled telco cables, are able to perform at a transmission speed of 1 Gbit/s over a maximum length of 60 m.
This solution provides computing centres with the flexibility to perform 'changes', 'moves' and 'adds' very quickly without the need for costly on-site work.
You can also achieve very high packing densities such as 48 copper ports in a 1U rack.

Configuration of 1U system

Chassis	solid metal
Front plate colour	stainless steel or black similar to RAL 9005
Input	50-pin telco connector with screw locking
Output	6 RJ45 ports shielded
Strain relief	via chassis

Configuration of 3U system

Chassis	solid metal, 3U
Front plate colour	stainless steel or black similar to RAL 9005
Labelling	using printed strips
Input	50-pin telco connector with screw locking
Output	6 RJ45 ports shielded
Strain relief	via chassis

Contents

Cartridge with 6 RJ45 sockets with internal wiring
All cartridges are 100% tested in the manufacturing.

Description	Article No. Stainless steel	Article No. Black
MHD Cu distributor cartridge 0,5 U with 1x Telco on 6x RJ45	470 320	
MHD Cu distributor cartridge 3 U with 1x Telco on 6x RJ45	470 322	470 323

MHD Cu distributor cartridge

MHD FO Distributor Cartridges

For using in the MHD distribution housing

Dätwyler Cables

MHD FO distributor cartridge 0.5U
Entry on the back side: MPO adapter
Output on the front side: e.g. LSH adapter

MHD FO distributor cartridge 3U
Entry on the back side: MPO adapter
Output on the front side: e.g. LSH/APC adapter

MHD FO distributor cartridge 3U
View on the back side with the MPO adapter

Product information

MHD – Modular High Density distributor system

Application

Suitable for all applications with speeds of up to 10 Gbit/s requiring the connection of pre-assembled fibre-optic and copper cables, especially suitable for computer centres. Distributor cartridges can be installed in the modular high density distributor system (available in 1U and 3U versions). The cartridges are fitted with an MPO adapter (male) on the rear panel and the fibre-optic lines lead to the front plate with six LCD, SCD or LSH-C adapters. The fibre-optic modules utilise twisted pairs of fibre-optic cables internally together with the system-specific MPO trunk cables.
This solution provides computing centres with the flexibility to perform 'changes', 'moves' and 'adds' very quickly without the need for costly on-site work.
You can also achieve very high packing densities such as 48 FO (duplex) in a 1U rack.

Configuration of 1U system

Chassis	solid metal
Front plate colour	stainless steel or black similar to RAL 9005
Input	1 x MPO
Output	6 fibre-optic ports (LCD, LSH-C, SCD)
Strain relief	via chassis
Earth	(130x107x20.5) mm

Configuration of 3U system

Chassis	solid metal, 5 standard rack depth units
Front plate colour	stainless steel or black similar to RAL 9005
Labelling	using printed strips
Input	1 x MPO
Output	6 fibre-optic ports (LCD, LSH-C, SCD)
Strain relief	via chassis
Earth	(130x129x25) mm

Optical transmission properties

Fibre type	IL (dB) typ.	IL(dB) max.	RL (dB) typ.	RL(dB) min.
MM	0,70	1,00	25	20
SM	0,70	1,00	40	35

Contents

Cartridge with couplers and fibres wired internally.
All cartridges are 100% tested in the manufacturing.

MHD FO distributor cartridges 0.5U with...

Name	OM2	OM3	OS2
MPO on 6 x LCD	470 100	470 103	470 106
MPO on 6 x LSH-C	470 101	470 104	470 107
MPO on 6 x SCD	470 102	470 105	470 108

MHD FO distributor cartridges 3U with...

Name	OM2		OM3		OS2	
	Stainless steel	Black	Stainless steel	Black	Stainless steel	Black
MPO on 6 x LCD	470 120	470 123	470 126	470 129	470 132	470 135
MPO on 6 x LSH-C	470 121	470 124	470 127	470 130	470 133	470 136
MPO on 6 x SCD	470 122	470 125	470 128	470 131	470 134	470 137

Other configurations such as LC APC are available on request!

MHD Cu-Trunks with Telco Interface

For the connection of the MHD Cu-distributor cartridges suitable for 1000Base-T

MHD Cu-Trunk, both side terminated with Telco jack for the connection of the MHD Cu-distributor cartridges

MHD Cu-distributor cartridge 0.5U front view with 6 x RJ45 shielded

MHD Cu-distributor cartridge 0.5U rear side with Telco connector

Product information

MHD – Modular High Density distributor system

Application

Pre-assembled screened copper trunk cable for all applications up to 1 Gbit/s, especially suitable for computer centres. The pre-assembled copper trunk cable can be connected quickly to the distributor cartridge of the modular distributor MD (available in 1U and 3U versions) via the telco connectors on the rear of the chassis.
This solution provides computing centres with the flexibility to perform 'changes', 'moves' and 'adds' very quickly without the need for costly on-site work.
You can also achieve very high packing densities such as 48 copper ports in a 1U rack.

Features

The 50-pin screen telco socket with pre-assembled zero-halogen and screen Cu trunk cables is very slim in design and flexible for a wide range of applications. The maximum link length for a transmission speed of 1 Gbit/s is 60 m.
The MHD Cu-trunks can provide you with telco trunks in any lengths that you require.
A measurement report is included with the copper trunks.

MHD Cu-Trunks with Telco connector

Length	Article No.
m	Telco-Telco
5	470 300
10	470 301
15	470 302
20	470 303
25	470 304
30	470 305
35	470 306
40	470 307
45	470 308
50	470 309
55	470 310
60	470 311
other lengths*	470 312

* other lengths available on request

The specified lengths are measured between the telco sockets.

MHD Cu-trunks with Distributor Cartridge (shielded)

For using in the MHD distributor housing 19"/3U or 19"/1U for 10GBase-T

Dätwyler Cables

MHD Cu-trunk with distributor cartridge
both side terminated (screened)

Product information

MHD – Modular High Density distributor system

Application

Pre-assembled copper trunk cable for all applications up to 10 Gbit/s, especially suitable for computer centres.
The six-fold TP connector cable (6 x uninet 7002 4P) is directly connected via LSA plus contacts to the distributor cartridge of the modular high-density distributor (available in 1U or 3U versions).
This solution provides computing centres with the flexibility to perform 'changes', 'moves' and 'adds' very quickly without the need for costly on-site work.
You can also achieve very high packing densities such as 48 copper ports in a 1U rack.

Features

The six-fold TP connector cable mounted onto the LSA plus strips of the distributor cartridge allows data transfer rates of up to 10 Gbit/s.
The MHD Cu-trunks can provide in any length that you require.
A measurement report is included with the pre-assembled copper trunks.

Design

Chassis	solid metal
Front plate colour	stainless steel or black similar to RAL 9005
Input	6-fold TP cable, screened, zero halogen
Output	6 RJ45 ports screened
Strain relief	via chassis

Contents

Cartridge with 6 RJ45 sockets with internal wiring.
All cartridges are 100% tested in the manufacturing.

MHD Cu-trunks with distributor cartridge

Length of trunk	Front plate stainless steel	Front plate stainless steel	Front plate black
m	for 1U	for 3U	for 3U
5	470 400	470 420	470 430
10	470 401	470 421	470 431
15	470 402	470 422	470 432
20	470 403	470 423	470 433
25	470 404	470 424	470 434
30	470 405	470 425	470 435
35	470 406	470 426	470 436
40	470 407	470 427	470 437
45	470 408	470 428	470 438
50	470 409	470 429	470 439
55	470 410	470 430	470 440
60	470 411	470 431	470 441
65	470 412	470 432	470 442
70	470 413	470 433	470 443
75	470 414	470 434	470 444
80	470 415	470 435	470 445
85	470 416	470 436	470 446
90	470 417	470 437	470 447
Other lengths *	470 418	470 438	470 448

* other lengths available on request

The lengths specified above are measured between the front panels (RJ45 output) of the installed distributor cartridges.

Technical changes reserved.

MHD FO-trunk with MPO Interface

For the connection with the MHD FO cartridges

MPO patch cables
(with 12 fibres)

MPO trunk with 8 connectors
(with 8x12 fibres = 96 fibres)

Product information

MHD – Modular High Density distributor system

Application

Suitable for all applications with speeds of up to 10 Gbit/s requiring the connection of pre-assembled fibre-optic cables, especially suitable for computer centres. The zero-halogen optoversal® is pre-assembled with MPO connectors on both sides (female) and are inserted into the distributor cartridges (MPO adapters with male plug on rear panel) of the 1U or 3U modular distributor rack systems. This solution provides computing centres with the flexibility to perform 'changes', 'moves' and 'adds' very quickly without the need for costly on-site work.
You can also achieve very high packing densities such as 48 FO or copper ports in a 1U rack.

Features

The fibre-optic cables are pre-assembled with MPO connectors (female) and are available in fibre qualities OM2, OM3 and OS2. An optoversal® cable is used as the trunk cable.
The cable is split into hollow pipes using a special splitter (for MPO connectors).
The very thin MPO patch cable is used to bridge the short distances between the cartridges.
MPO cables with protective tubing are available in all lengths.
An optical attenuation measurement report is included with the pre-assembled fibre-optic cables.

Optical transmission properties

Fibre type	IL (dB) typ.	IL(dB) max.	RL (dB) typ.	RL(dB) min.
MM	0,3	0,45	25	20
SM	0,3	0,45	55	50

MHD FO-trunk with both side terminated with the MPO connector (with every 12 fibres)

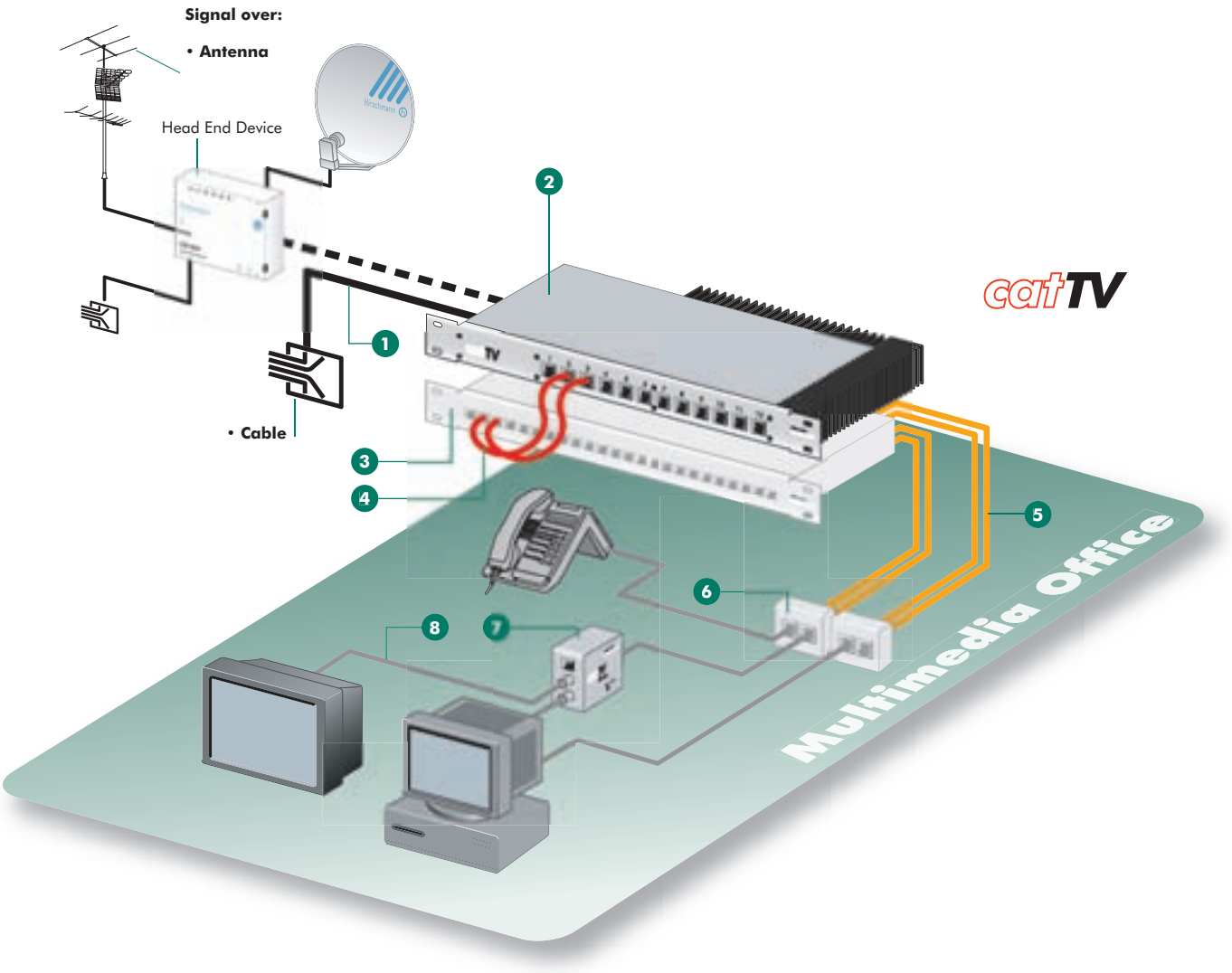
Name	No. fibres	OM2	OM3	OS2
MPO patch cables	12	470 221	470 231	470 211
MPO trunk	12	470 222	470 232	470 212
MPO trunk	24	470 223	470 233	470 213
MPO trunk	48	470 224	470 234	470 214
MPO trunk	72	470 225	470 235	470 215
MPO trunk	96	470 226	470 236	470 216
MPO trunk	144	470 227	470 237	470 217

Specify the length of the cable when ordering. The specified lengths are for the longest pre-assembled MPO connectors.

catTV-Panel / catTV-Balun

Active distributor field up to 862 MHz for the distribution of CATV-Signals

Dätwyler Cables



unilan® Multimedia Office

1. *Input: Unbalanced 75 Ohm*
   a) directly from broadband network
   b) after signal preparation via head end device
2. *catTV-Panel*
3. *Patch Panel 100 Ohm,*
   e.g. unilan Patch Panel
4. *Patchcord with RJ45-plug shielded*
5. *Data cable Cat.7 or 7_A screened with loss attunation, e.g.:*
   uninet® 7150 Multimedia or 7702 (AWG 22)
6. *Data outlet with shielded jacks*
7. *catTV-Balun*

catTV-Panel

Active distributor field up to 862 MHz for the distribution of CATV-Signals

catTV-Panel

Transformer for catTV-Panel

Product information

catTV - Panel

Application

Active distributor field for the distribution of CATV-signals over structured cabling system.
The catTV-panel changes the CATV-signals (coaxial/75 Ohm) into a balanced signal (sym./100 Ohm) for transmission over the structured cabling system. The catTV-Balun is connected at the outlet and converts the signal back to coaxial, 75 Ohm. It is possible to simultaneously distribute telephone services over the same cable.

Digital video broadcast programms over cable (DVB-C) can be also transmit without problems. For receiving is a DVB-C receiver neccessary, which is integrated in the end-user-device or a set top box must be pre connected. Some SAT Programms can be transmitted if they were transformed into a frequency channel of the CATV frequency range.

Technical specification

Transmission of CATV signals over shielded Class E and F cabling.
Connections on the rear of the panel:

Frequency range	45 (85) - 862 MHz		
Frequency range	variant 1:	variant 2:	variant 3:
	Without up stream	5 - 30 MHz	5 - 65 MHz
Input signal level	70-83dBµV, maximal equalization 12dB		
Integrated impedance transducer	75/100 Ohm		
Link length	10m-90m adjustable for LAN; depends on the data cable type		
Input 1	F-type connector 75 Ohm (Socket on rear of device)		
Input 2	Interfaceinput, 15 pin D-type		
Measurement connection	1x F-type connector 75 Ohm for Data / up stream		
Output	12 x RJ45 / 100 Ohm		
Casing	Metal, 19", 1U		
Power supply	From an external power supply (transformer included)		
EMC	according to EN 50083-8 and EN 55022 Part B		

Article No.	Name		
1411 770	catTV-Panel Set 12 Ports	without up stream	incl. transformer
417 824	Transformer for catTV-Panel		
closed	Passive Diplex module for retro-fitting	for up stream 5-30 MHz	
1411 764	Passive Diplex module for retro-fitting	for up stream 5-65 MHz	

Note: A separate catTV-Balun is required for each link where a device is to be connected.

catTV-Balun

Active Balun field up to 862 MHz
for the distribution of CATV-Signals

Dätwyler Cables

catTV-Balun

Product information

catTV - Balun

Application

The catTV-Balun converts the balanced signal (100 Ohm), transmitted from the catTV-Panel over the structured cabling system, into an unbalanced (75 Ohm) coaxial output for connection of the end device (e.g. television or radio). A 3 position switch provides adjustment for cable length, attenuation and equalization.

Technical specification

Frequency range down stream	45 (85) - 862 MHz		
requency range up stream	variant 1:	variant 2:	variant 3:
	Without up stream	5 - 30 MHz	5 - 65 MHz
Input signal level	75/100 Ohm		
Input	1 x RJ45 / 100 Ohm		
HF-Output 1	1 x IEC-plug / 75 Ohm for TV/Radio		
HF-Output 2	For variant 1:	1 x IEC-socket 75 Ohm for radio	
	For variant 2+3:	1x F-type connector 75 Ohm for Data/up stream	
Output signal level	60-77 dBµV		

Test jack (type F) to adjust, on the back of the panel

Article No.	Name	
1411 767	catTV - Balun	without up stream
closed	catTV - Balun	with up stream 5-30 MHz
1411 769	catTV - Balun	with up stream 5-65 MHz

Note: A separate catTV-Balun is required for each link where a device is to be connected.

Mangement Panel 19“/ 1U

for inserting 5 support brackets in different dimensions

Management panels 19'', 1U, stainless steel blank

Management panels 19'', 1U, black

Management panels 19'', 1U, light grey

Product information

unilan® Management Panel 19“/ 1U

Application

For organized management of copper patchcords and LWL Patchcords in data racks or cabinets with 19“ attachments.

The management basis plates 19“/1U are deliverable in three types:
a) stainless steel, b) black or c) grey

This basis plates are without support brackets.
They could be fitted with 5 support brackets in wanted dimensions.
Please order the support brackets separately!

Article No.	Description	Colour/Material	PU
1411 480	Support bracket 30mm	plastic, black	1 Piece
1411 481	Support bracket 75mm	metallic	1 Piece
1411 482	Support bracket 110mm	metallic	1 Piece
1411 604	Management panel 19'', 1U, for 5 brackets	RAL 7035	1 Piece
1407 689	Management panel 19'', 1U, for 5 brackets	RAL 9005	1 Piece
418 200	Management panel 19'', 1U, for 5 brackets	stainless steel blank	1 Piece
401 240	Blind plate 19'', 1U	RAL 7035	1 Piece
401 241	Blind plate 19'', 1U	RAL 9005	1 Piece
401 242	Blind plate 19'', 1U	stainless steel blank	1 Piece
401 243	Blind plate 19'', 2U	RAL 7035	1 Piece
401 244	Blind plate 19'', 2U	RAL 9005	1 Piece
401 245	Blind plate 19'', 2U	stainless steel blank	1 Piece
400 300	Cable shelf 19'', 1U, please note: only mountable with a management panel		1 Piece

Management Panel 19“/ 1U und 2U

Assembled with 4 support brackets

Dätwyler Cables

unilan® Management Panels 19“/ 1U and 2U

Product information

unilan® Management Panel 19“/ 1U and 2U

Application

For organized management of copper patchcords and LWL Patchcords in data racks or cabinets with 19“ attachments.

The Management Panels are assembled with 4 support brackets.

Article No.	Description	colour/material	PU
185 735	Management panel 19“/1U with 4 metal brackets	metall / RAL7035	1 Piece
185 736	Management panel 19“/2U with 4 metal brackets	metall / RAL7035	1 Piece

Cover frames and surface mounted box
for unilan® data outlets

Cover frame 1- port
80 x 80 mm

Cover frame 2 port
150 x 80 mm

Surface mounted box
for data outlet
Hight = 40 mm

Spacer frame for
surface mounted box
Hight = 10 mm

Product information

Cover frame

Application

The dimensions of the cover frames correspond to the german standard, that is outside 80x80 mm / inside 50x50 mm .

They are useable for the following faceplates:
unilan® data outlet CSD 2/8-U 2/8 und CSD 2/8-K
unilan® faceplate MS for 2 or 3 Modules
unilan® faceplate MS-K for 2 or 3 Modules
unilan® faceplate PS-TERA für 2 Module

Surface mounted box for unilan®data outlet

Application

For the surface mounting of unilan® data outlets (copper and fibre optic).
The surface mounting box (80x80mm) comprises a frame and cover plate (H=40mm).

The spacer frame can be used to increase the overall height from 40 to 50mm.

Article No.	Description	Colour (similar)	PU
1401 630	cover frame 1-port 80x80x5mm	RAL 1013	1 piece
1400 830	cover frame 1-port 80x80x5mm	RAL 9010	1 piece
1403 700	cover frame 2-port	RAL 1013	1 piece
1403 924	cover frame 2-port	RAL 9010	1 piece
1406 274	Surface mounting box 40mm including cover plate	RAL 1013	1 Piece
1406 276	Spacer frame 10mm for surface mounting box	RAL 1013	1 Piece
1406 273	Surface mounting box 40mm including cover plate	RAL 9010	1 Piece
1406 275	Spacer frame 10mm for surface mounting box	RAL 9010	1 Piece

Mounting support for cable ducts
for unilan® faceplates

Dätwyler Cables

Fig.1
Mounting support for horizontal installation without separator

Fig.2
Mounting support for vertical installation without separator

Product information

Mounting support for unilan® Faceplates

Description

Mounting support for easy and space-saving integration of faceplates into trunking, in order to safeguard the appropriate bending radius, as required for copper and FO data cables.

Due to this extensive program, one can find a mounting support that fits almost every duct system.
Fixing dimension for the faceplates = 60 mm (horizontal)

They are useable for the following faceplates:
unilan® data outlet CSD 2/8-U 2/8 and CSD 2/8-K
unilan® faceplate MS for 2 or 3 Modules
unilan® faceplate MS-K for 2 or 3 Modules
unilan® faceplate KS for 1, 2, or 3 Modules
unilan® faceplate PS-TERA for 2 Modules

Application

The mounting support can be used for three different types of installation:

T-Nut fastening	horizontal and vertical, suitable for Thealit and Ackermann-k ducts
DIN rail mounting	(width 35mm) 52mm (overall height) suitable for Niedax, Nowa Plast, Rhönmetall, Rehnau (Signo series) ducts
DIN rail mounting	(Width 35mm) 50 and 55mm (overall height) suitable for ducts of GGK, Licatec, Stago, Thorsmann Serie Inka with adapter TTI-N70 or N215

In order to isolate the parts which are connected to the power supply, the supports can also be delivered with snap-on separators.

Article no.	Fig.	Description	PU
185 695	1	Mounting support for Faceplate T-Nut 50mm; w/o separator tray	1 unit/box
185 696	-	Mounting support for Faceplate T-Nut 50mm; with separator tray	1 unit/box
185 697	-	Mounting support for Faceplate T-Nut 55mm; w/o separator tray	1 unit/box
185 698	-	Mounting support for Faceplate T-Nut 55mm; with separator tray	1 unit/box
185 699	2	Mounting support for Faceplate T-Nut 50mm vertical; w/o tray	1 unit/box
185 701	-	Mounting support for Faceplate T-Nut 50mm vertical; with tray	1 unit/box
185 702	-	Mounting support for Faceplate T-Nut 55mm vertical; w/o tray	1 unit/box
185 703	-	Mounting support for Faceplate T-Nut 55mm vertical; with tray	1 unit/box
185 704	-	Mounting support for Faceplate DIN rail 50mm; w/o separator tray	1 unit/box
185 705	-	Mounting support for Faceplate DIN rail 50mm; m separator tray	1 unit/box
185 706	-	Mounting support for Faceplate DIN rail 52mm; w/o separator tray	1 unit/box
185 707	-	Mounting support for Faceplate DIN rail 52mm; m separator tray	1 unit/box
185 708	-	Mounting support for Faceplate DIN rail 55mm; with separator tray	1 unit/box
185 709	-	Mounting support for Faceplate DIN rail 55mm; w/o separator tray	1 unit/box

LSA+ Insertion Tool

Installation aid for
RJ45-Keystone modules

Product information

Insertion tool for LAS plus respectively IDC - insulation displacement technique

Application

The insulation of a data cable with solid conductors can be pushed, connected and cut to length in the clamps with the Insertion Tool for LSA PLUS respectively IDC insulation displacement technique.

Installation aid for RJ45 Keystone modules

Application

The installation aid (hand puck) facilitates the connecting of a RJ45 Keystone module with the cable conductors and enables optimimum protection against injuries.

Article No.	Description	PU
1401 609	LSA plus/IDC Insertion Tool	1 Piece
185 896	Insertion Tool 110 (recommended for RJ45 Keystone modules)	1 Piece
185 898	unilan® Keystone Hand Puck, installation aid for RJ45 Keystone modules, red	1 Piece

Tools and installation aids
for unilan® Modules and Patch Panel

Dätwyler Cables

Termination Tool for PS-GG45

Assembly pliers
for RJ45 connectors

Wiring aid for
unilan® patch panel
in 19" racks

Product information

Termination Tool for assembly the Module PS-GG45

Application

For assembly the PS-GG45 module with connecting the wires in the same time

Assembly pliers RJ45

Application

For a standardised assembly of the RJ45 connectors for the connector covers IP 67 (article 185720)

Wiring aid for unilan® patch panel

Application

The two angled brackets are fixed to the 19" uprights of the rack or cabinet so that the patch panel is presented at an angle of 45 degrees.
Termination of cables is made much easier and more comfortable with the panel held in this position.

Article No.	Description	PU
400 105	Termination Tool for assembly the Module PS-GG45	1 Piece
185 723	Assembly pliers RJ45	1 Piece
1401 624	Wiring aid for unilan® patch panels	1 Set = 2 Pieces

PS/MS tool
for easy cable preparation

Parallel pliers
for easy termination of modules

stripping tool Abi 34/62

Product information

PS/MS - tool for cable preparation

Application

To remove the data cable sheath and the foil over the twin cables when terminating PS components. With adjustable block to ensure correct wire lengths for trouble-free terminations.

Crimping Pliers for MS1/8 and PS1/8 Modules

Application

Pliers for easy termination of MS1/8 modules.
Serves as press-down tool for MS1/8 modules until they snap into place.

Stripping tool Abi 34

Application

The intermediate sheaths (stability) can be removed quickly and safely over the star-quad of the Dätwyler cable uninet® 3004 and 6704 with this tool.

Stripping tool Abi 62

The outer sheath and the stability element as well as the screen foil of the Dätwyler cable uninet® 6702 4P can be removed quickly and safely with this tool.

Article No.	Description		PU
1412 330	Crimping Pliers for MS1/8 and PS1/8 modules		1 Piece
1409 210	PS/MS-tool for cable preparation		1 Piece
176 053	stripping tool Abi 34	for uninet® 3004 4P / 6704 4P	1 Piece
185 640	stripping tool Abi 62	for uninet® 6702 4P	1 Piece

Testing and measuring procedures of unilan® copper data cables

Dätwyler Cables

This overview indicates to what degree and with what consequence all Dätwyler copper data cables are tested with respect to quality.

Testing of all manufactured cables	**Testing content**
DC-resistance of copper wire	wire resistance, loop resistance, resistance difference
Voltage Indication	Wire to Wire and Wire to Screen
Capacitance	Mutual capacitances, capacitive couplings, capacitive earth unbalance
	Each length will be tested

Point by point testing (per Production unit)	**Testing content**
Transmission characteristics	Impedance, Return Loss, Attenuation, Near End Cross Talk (NEXT)
Material features	Break stretching of the copper wire, tensile strength of the insulation, Stretching of the insulation, tensile strength of the sheath, Stretching of the sheath
	These values/features will be tested with samples.

Type specific testing and measuring	**Testing content**
Transmission characteristics	All electrical parameters demanded in the appropriate sandards. Link and channel measurements.
Mechanical and physical product features	Shrinking of the insulation, wrapping of the insulation after alteration, cold restiance of the insulation, tensile strength and break stretching of the cable jacket after alteration, pressure sensitivity at high tempeartures, cold bending test of the cable, heat resistance, atmospheric humidity test for cables, temperature requirements and UV test.
Tests to avoid damage during installation	cable crushing, wire crushing, shock resistance of the cable, repeated cable bending and tensile strength test
Environmental qualities	Acid emission, smoke emission, burning test for individual cable (fire behavior) and burning test for bundle cable (Vertical burn test)
Resistance for the insulation Screen performance	Resistance between each wire and between wire and cable screen Transmission impedance of the cable
	Type testings will be carried out during the development stage and in case of changing the cable construction

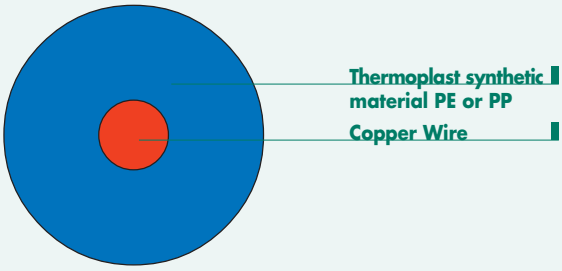
Quality Control	**Content**
Imprint	It is ensured by an identification of each cable (Production batch number), that the measured values can be recovered at any time. e.g. uninet® 7002 4P FRNC/LSOH 887149

Technical changes reserved.

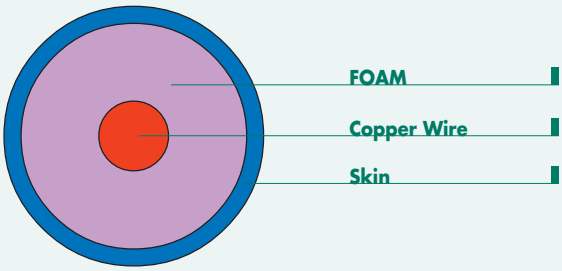
Copper wire design, Twisting Procedures and patented inter coat

Copper Wire Design

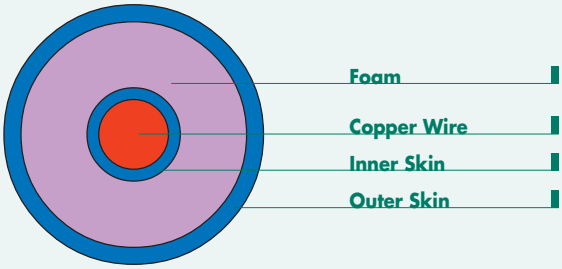
Full PE Wire



Wire with PE Cellular insulation and Skin



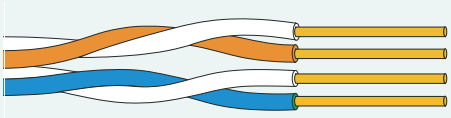
Wire with Cellular PE Insulation and Full Skin



Twisting procedures of uninet®-Data Cables

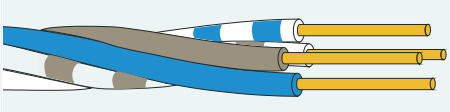
Twisted Pair

TP (Twisted Pair)



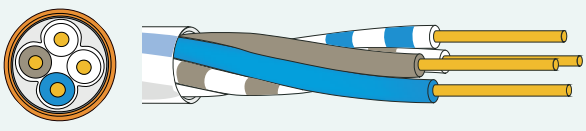
Star Quad Twisting

Star quad



Patented inter coat

A very important aspect of the high performance uninet data cables is the stable mechnical design. The mechnical stress during the installation can't be underestimated and can have negative consequences regarding the transmission characteristics.



Dätwyler maximises the electrical performance of its high-quality data cables with an intercoat. This special construction is Dätwyler AG protected in having european patent 0567757 B1!

Wire Colour Code for Twisted Pair uninet® data cables (according to IEC 60189)

uninet® 5602 4P, 6002 4P, 7060 4P, 7080 4P, 7002 4P, 7120 4P

Twisted Pair	Wire a	Wire b
Pair 1		
Pair 2		
Pair 3		
Pair 4		

uninet® 7150 4P, 7702 4P (Longitudinal marks)

Twisted Pair	Wire a	Wire b
Pair 1		
Pair 2		
Pair 3		
Pair 4		

uninet® 502 4P, 602 4P, 662 4P, 5002 4P, 5502 4P, 6702 4P (Radial marks)

Twisted Pair	Wire a	Wire b
Pair 1		
Pair 2		
Pair 3		
Pair 4		

Wire Colour Code for twisted Pair uninet® data cables (Flexible cables)

uninet® 5502 flex 4P, 7702 flex 4P 1200 MHz

Twisted Pair	Wire a	Wire b
Pair 1		
Pair 2		
Pair 3		
Pair 4		

AWG = American Wire Gauge
This is derived from the number of drawing dies, which are needed, in order to manufacture a certain cross section. The larger the AWG number, the smaller the wire size.

AWG	Diameter of solid conductor	Cross-sectional area of stranded conductor
	Min. [mm]	Min. [mm²]
	(acc. to UL 444 from 11.07.2008)	(acc. to UL 444 from 11.07.2008)
18	1.013	0.807
19	0.866*	0.641
20	0.772*	0.509
21	0.688*	0.404
22	0.610*	0.318
23	0.546*	0.254
24	0.485*	0.201
25	0.432*	0.159
26	0.384*	0.126
27	0.358	0.100
28	0.318	0.079

*) Minimum acceptable diameter (0.95 x nominal) of a solid conductor of this size

AWG-number for typical copper cable constructions		
AWG	Category/Cable	
AWG 26	Cat.7 Flexible cable screened	(S/FTP, stranded wire)
AWG 24	Cat.6 Flexible cable unscreened	(UTP, stranded wire)
AWG 24	Cat.6 Data cable unscreened	(UTP)
AWG 23	Cat.7 Data cable screened	(S/FTP)
AWG 22	Cat.7 Data cable screened	(S/FTP)
	due to the low attenuation especially suited for: - 10 Gigabit Ethernet with big reserves to the limit values - CATV-transmission up to 862 MHz - Power or Ethernet (PoE)	

Technical terms used in data cable technology

Dätwyler Cables

ACR (Attenuation to crosstalk ratio)

A factor, important to the transmission characteristic is the distance between the wanted signal and the interfering signal, called ACR.
To ensure a faultless transmission, the interfering signal caused by the crosstalk attenuation must be smaller by a certain factor. This corresponds to the difference between the near end crosstalk attenuation (NEXT) and the attenuation of the LINK.
ACR [dB] = NEXT [dB] - a [dB]; (a = Attenuation)

Alien Crosstalk

Alien crosstalk (AXT) is electromagnetic noise that can occur in a cable that runs alongside one or more other signal-carrying cables. The term "alien" arises from the fact that this form of crosstalk occurs between different cables in a group or bundle, rather than between individual wires or circuits within a single cable.

Attenuation (signal attenuation, conductor attenuation)

The attenuation depends on the conductor resistance R' and the mutual capacitance C' and rises roughly to 50 MHz with the root of the frequency on, increases linearly with the length.

Conductor resistance (resistance per unit length R')

The resistance per unit length R' includes the losses in the metallic conductors. The conductor dimensions, the conductor material and the temperature determine the DC resistance Ro.
Due to the skin effect the conductor resistance increases with frequency.
It behaves linearly with cable length.

Decibel [dB]

Decibel indicates the relation between received Signal (U_2) and transmitted Signal (U_1). The result is a factor[dB].

In expression:
U_2/U_1 [dB] = 20 $\log_{10}$ (U_2/U_1)

U_2/U_1 [dB]	Received Signal [%]	U_2/U_1 [dB]	Received Signal [%]
0.0	100 ,0	4.0	63
0.1	98,8	20.0	10
0.2	97,7	40.0	1
0.9	90,1	60.0	0,1
1.0	89,3	80.0	0,01
2.0	79,4	100.0	0,001

De-embedded

The De-Embedded Testing method for connecting hardware and components provides combinations with all defined quality classes for the RJ45 connectors. The integrated parts are real category 6 which provides the possibility to create open "mix & match" cabling systems without compatibilitiy or test restrictions for the used patchcords, test adapters or active networking devices.

Dielectrical constant (DK)

The Dielectrical constant is a material constant of the dielectric. The relative permittivity says how much bigger the capacity of the condenser becomes, if instead of air the insulant is used as a dielectric. If the dielectrical constant is multiplied by the DK of the empty room, then the result is the DK of the dielectric.

Distributed Inductance L'

The distributed inductance consists of several parts. The outer inductance is determined by line geometry and the magnetic material qualities. It is frequency-independent. Since mainly non-ferromagnetic metals are used as conductor, it is also independent of the current intensity.
The inner inductance can be explained by the current flow and the magnetic fields connected with that in the conductor.
Due to the current superseding, L' disappears at high frequencies. For shielded, symmetrical cables the frequency dependent cover inductance as well as the inductance produced by proximity effect must be taken into account.

Distributed Leakage G'

It describes the insulation losses, the dielectric losses as well as the Corona losses between the wires. Instead of the often strongly frequency dependent parameter G's the factor Q (Q=theta) indicates the loss factor. The value of the loss factor depends on the insulant, the insulation design, the frequency and the temperature. Q should be as small as possible and generally constant.

DMD

DMD-Measureme4nt (*differentialmode delay*). With DMD, a single laser light pulse excites a few modes equally within an MMF cable. These modes, or light pathways, then follow two or more different paths. These paths may be of different lengths and have different transmission delays as the light travels through the cable. With DMD, a distinct pulse propagating down the cable no longer remains a distinct pulse or, in extreme cases, can become two independent pulses. Strings of pulses tend to interfere with each other, making it difficult to recover data in a reliable fashion.

Lasers function at the baud rates and longer distances required for Gigabit Ethernet. The IEEE 802.3z Gigabit Ethernet Task Force has identified the DMD condition that occurs in certain circumstances with particular combinations of lasers and MMF cable. The resulting characteristics create an additional element of "jitter" that limits the reach of Gigabit Ethernet over MMF cable

Earth unbalance

The measurement of the difference in the electrical performance of the individual wires of a pair to earth and to the screen. It corresponds to the difference between the capacitance of wire A to the screen and the capacitance of wire B to the screen.
It influences the transmission characteristics of the cable.

ELFEXT

Equal Level FEXT
A calculation that normalizes the results of a FEXT measurement, because it takes attenuation into account. It is derived by subtracting the attenuation of the interfering pair from the far end crosstalk (FEXT) that it has caused in the interfered pair.

EMC (Electro Magnetic Compatibility)

The ability for an electrical device to not influence other devices with its electromagnetic field and also to work satisfactorily within the electromagnetic fields of other devices.

FRNC, FR/LS0H or FRNC/LS0H

FR = Flame Retardent
NC =Non Corrosive means no corrosive effect in the event of a fire
LS =Low Smoke means low Smoke emission in the event of a fire
0H, ØH or ZH=No Halogen, Zero Halogen

Halogen free coating material

(Halogen = salt creator). Chlorine, bromine, fluorine and Astat are in the periodic table of elements. PVC jacketed cables can be made flame-retardant with additives like chlorine and fluorine.
Halogen-free sheath materials don't contain any halogens!
Therefore no corrosive gasses are emitted from the cable in the event of a fire, the smoke emission is reduced to a minimum and fire propagation is avoided.

Impedance Z_o (wave Impedance, characteristic Impedance)

The impedance of a line represents the ratio of the voltage wave progressing in a direction to the current wave. Common values are 100, 120 and 150 ohm. For higher frequencies the impedance is the root over the ratio between the distributed Inductance L' and the mutual capacitance C'. It is important that the impedance of the cable corresponds with the input-/ output impedance of the attached terminals.

minEMBc

The minEMBc-Bandwidth (Minimum Calculated Effective Modal Bandwidth) for determining the minimum laser bandwidth (high data rate capability of a fibre) differs from the methods used by most other multimode manufacturers that rely upon normalized DMD-masks. Both the minEMBc and the DMD-mask measurement techniques were developed as part of the IEEE 802.3ae standard. The minEMBc metric, however, is the only scaleable measurement technique recognized by international standards (In accordance with TIA 455-220 and IEC 60793-1-49) that available transceivers that are compliant with industry standards. Just as over-filled launch (OFL) bandwidth testing has demonstrated conformance for legacy applications and specifications, laser bandwidth test data provided by Dätwyler MMF suppliers can be used to certify the requirements demanded by bandwidth hungry applications used today and in the future.

Mutual capacitance (Distributed capacitance C')

This is the function of the line geometry (line ÷ line ÷ Screen) and the dielectric constant (DK) of the insulation. As long as the DK of the insulation is constant with frequency, the distributed capacitance is almost frequency-independent. The mutual capacitance increases linearly with the cable length.

Network Theory

Every homogeneous line is defined by four parameters which refer to a unit length and are generally frequency dependant. These are the resistance per unit length R' (conductor resistance) in ohm, the distributed inductance L' in Henry, the distributed capacitance C' (mutual capacitance) in Farad and the distributed leakage G' in Siemens.

NEXT, FEXT crosstalk attenuation

An interfering signal is induced by the field produced by a transmitted signal in one twisted pair on to a neighbouring twisted pair. The crosstalk is length independent and becomes bigger with an increasing frequency.
The difference between the desired signal and the induced signal on the neighbouring twisted pair is described as crosstalk attenuation and is indicated in dB. We distinguish between NEXT / Near End Cross Talk and FEXT / Far End Cross Talk.

NVP (nominal phase velocity of propagation)

Corresponds to the reciprocal value of the speed of transmission a sinusoidal wave relative to the speed of light. It is indicated in %c (c = speed of light). It is mainly determined by the relative dielectric constant of the dielectric. NVP is an approximate average value for the cable.

OFL (Overfield Launch Bandwidth)

Overfilled launch bandwidth (OFL BW) is a familiar metric that is now understood to correlate only with LED-based multimode applications. (Typical up to 100 Mbit/s) It is important to understand that OFL BW is never suitable for predicting laser performance.

PE

Polyethylene (PE) is a halogen-free synthetic material, which burns easily. By addition of additives, PE can be made flame-retardant and smokeless.

PiMF

(pair in metal foil) Description for a STP cable. Each pair is shielded with a metal foil.

PoE

The Ethernet interface is a cable bus which runs over copper or fibre. However only the copper interfaces which use differential twisted pairs, use Power Over Ethernet [POE]. This page describes the POE interface. The 'normal' Ethernet network is defined by IEEE 802.3. POE uses the spare wires not used by the Ethernet interface to deliver a DC voltage over the cable.

PSELFEXT

As with all crosstalk measurements (including ACR) there is also a PowerSum ELFEXT (PSELFEXT). These are calculated values expected for multi-pair simultaneous full duplex transmissions

PVC

Polyvinylchloride (PVC) is a synthetic material containing halogen unlike Polyethylene. Halogens (salt creators) are chlorine, bromine, fluorine, iodine and Astat. By using additives like chlorine and fluorine PVC can be made flame-retardant and more resistant against outer influences.
PVC jacketed cables are flame-retardant. Synthetic materials containing halogen, form highly-poisonous gasses during their burning. When mixed with water these gasses form harmful, corrosive acids.

Technical terms used in data cable technology

Dätwyler Cables

Return Loss (RL)

The transmission performance of a data cable has tolerances caused by different dielectric constants for the insulation, with unavoidable production differences along the cable's length. Therefore, values differ along the length of the cable.
Although they are so small this discontinuity in the line construction causes reflections of voltage waves and current waves. Results of these reflections are:

Reflection coefficient	=	Relation between transmitted (regular) and received (reflected) Voltage- or current wave at the discontinuity points.
Reflow factor	=	Sum of all reflections having an effect on the line beginning (transmitted wave). This factor indicates the usefulness of lines.
Return Loss (RL)	=	Logarithm of the reciprocal value of the reflow factor

A high Return Loss only can be reached by the highest production precision and by extremely little production tolerances (high homogeneity) and therefore is a quality characteristic.

RML (Restricted Mode Launch Bandwidth (RML BW)

RML Bandwidth test procedure is standardizied in both TIA/EIA 455-204 (FPTP 204) and IEC 60793-1-41. RML BW restricts an overfilled launch through a 23,5 micron Patchcord, which in turn measures the bandwidth capability of a fiber's low and intermediate mode groups. The resulting bandwidth measurement predicts laser performance for intermediate- bandwidth systems (up to 850 MHz.km) in the same way – and with the same level of accuracy – as OFL BW predicts LED performance in legacy-bandwidth systems.

Skin effect

The higher the signal frequency, the closer the current flows to the outside of the cable.
At high frequencies the current flows through the very outer molecules of the wire.

Transfer Impedance (Coupling resistance)

The Transfer Impedance is the main parameter for the quality of the screen and is frequency dependant.
The relation is between the voltage drop along the screen on the disturbed lengthways side (outer) to the interfering current on the other side (inside) of the screen. The coupling resistance is determined by the construction of the screen, the skin effect and the capacitive coupling.

Quality assurance on the construction site

- Please check the following points:
  - Was the right cable delivered?
  - Does the product show damage in transit?
  - Is a temporary store organised for the cables on the construction site?
  - Does the category of cable and connection components match?
  - Are screened connection components also available for the screened cable?

Storage

- Where Uninet or other data cables not installed immediately after delivery they should be stored in a place protected from mechanical and temperature influences.
- The store should be dry and protected from environmental influences.
- Stored cables should be kept in their original packaging until they are to be installed.

Regulations, Standards and Guidelines

- In general, always follow the regulations and guidelines specific to the country in which the materials are being installed. Always follow the manufacturer's guidelines for the cables and connecting hardware.

Open installation, wall openings, cable trays

- Uninet and other data cables should be installed in separate containment from other installed cables.
- Where this is the case then cables can be laid in open trays in all areas (pathways, risers, communications rooms, etc.).
- The cables can be held in place using cable ties or similar equipment, but cables should not be crushed when using these devices. Please look up 'Pressure on data cables'
- Before installation the edges of wall apertures should be smooth and rounded off. This will prevent the need to remove and replace cables with a damaged sheath at a later date.
- The bending radius of the cables may not to fall below the value stipulated by the manufacturer.
- The radius of the cable channels must correspond to the specified bending radius of the cables.

Lubricants for cable moving

- Never use milking grease or other oil and fatty substance
- For cable pulling the following lubricants may be used:
  - Yellow lubricant (Wire-Pulling, Lubricant of Klein tools; 51000)
  - Talcum, washing-up liquid, detergent, soft soap

Pulling force of Data cables

- You can find the permitted pulling force per cable on the Dätwyler uninet data sheets.

Guidelines for the installation of unilan® products

Dätwyler Cables

Cable pulling

- Always pull cables directly from the drum or box. When using reels always use suitable equipment that will ensure free rotation of the reel.
- Never pull the cables over the flange of the reel (risk of twisting).
- Rewind unused cable and fix the end firmly.
- Use all wires for retracting.
  Open wires tied up with insulating tape between moving equipment and cable sheath (Doesn't apply to FO cables)

Bending radius

- According to EN50173. Bending radius during installation should always be bigger than 8x the overall diameter of the cable (unless otherwise specified by the cable manufacturer).
- Always check the data sheets for exact specifications.
  If two different bending radii are listed, i.e.:
  - bend radius with the higher value during installation
  - bend radius with the lower value after installation

Pressure on data cables

- Avoid any pressure on data cables! Crushing that effects the wires can have a negative effect on the transmission characteristics of the cable.
  The most frequent reasons of crushing are improperly fixed cables, crossing of cables and mechanical stress on cables.

Heat influence

- Foamed wires are sensitive to direct heat influence.
  Never expose Uninet data cables to direct heat sources.
  Never use a hot air gun or gas burner, e.g. when using heat shrinking tubing.

Cable laying

- Lay data cables in separate channels from power cable and always cross at 90° using a bridge.
  That avoids possible EMC influence.
  Therefore please look up «regulations, standards and guidelines».

Terminating at the patch panel

- Always follow the connecting hardware manuals.
- Avoid storing 'reserve loops' at the patch panel.
- For cables with pairs in metal foil (S/FTP, PiMF) the foil screen should be maintained as close as possible to the point of termination.
- For cables with an intermediate sheath the intermediate sheath and associated foil screen should be maintained as close as possible to the point of termination.

Scope of the Standards

Cabling standardisation come from two main organisations. ISO/IEC writes standards that are applicable world wide. In Europe an additional organisation, called CENELEC, also writes specifications which support safety guidelines with respect to the EU and EFTA. This means that the European Norm (EN) is the principal reference standard in most European countries.

The system standards are defined in the standards SO/IEC 11801 und 50173-1. Therefore the basic requirements on data cables are formulated. Due to these requirements the different cable specifications were worked out and defined in the following documents.

International Standards

ISO/IEC 11801
is valid worldwide!

International Standards for symmetric data cables
In Europe. International Standards are for information only.

ISO/IEC 11801	Information technology and application-independent wiring systems
IEC 61156	Multiconductor and symmetrical pair-/star quad twisted cable for the digital communication transmission
	IEC 61156-1: Subject basic specification
	IEC 61156-2: Frame specification for floor cable
	IEC 61156-3: Frame specification for equipment connection cable
	IEC 61156-4: Frame specification for distribution cables
	IEC 61156-5: Frame specification for data cables up to 1000 MHz (Draft)
	IEC 61156-6: Frame specification for equipment connection cable up to 1000 MHz
	IEC 61156-7: Frame specification for Backbone cable up to 1200 MHz

These international documents specify the data cables of the category 3, 5, 6, 6_A and 7, 7_A for connecting- and interconneting cables, for installation cables and backbone.

European Standards

The **EN 50173**
is the European Norm

50173 -Series 2007	Information technology: Generic cabling Part 1 General requirements — Part 4 Homes Part 2 Office premises — Part 5 Data centers Part 3 Industrial premises (Draft)
50174 - Series	Information technology: Cabling installation Part 1 Specification and quality assurance Part 2 Installation planning and practices inside buildings Part 3 Installation planning and practices outside buildings
EN 50310	Application of equipotential bonding and earthing in buildings with information technology equipment
EN 50288	Multiconductor metallic data and control cables for an analogoue and digital transmission
EN 50288-1	Subject basic specifications
EN 50288-2-1	Frame specification for shielded cables for the horizontal-and backbone area up to 100 MHz (Cat.5)
EN 50288-2-2	Frame specification for shielded equipment- and connecting cables up to 100 MHz (Cat.5)
EN 50288-3-1	Frame specification for unshielded cables for horizontal- and backbone area up to 100 MHz (Cat.5)
EN 50288-3-2	Frame specification for unshielded equipment- and connecting cables up to 100 MHz (Cat.5)
EN 50288-4-1	Frame specification for shielded cables for horizontal- and backbone area up to 600 MHz (Cat.7)
EN 50288-4-2	Frame specification for shielded equipment- and connecting cables up to 600 MHz (Cat.7)
EN 50288-5-1	Frame specification for shielded cables for horizontal- and backbone area up to 250 MHz (Cat.6)
EN 50288-5-2	Frame specification for shielded equipment- and connecting cables up to 250 MHz (Cat.6)
EN 50288-6-1	Frame specification for unshielded cables for horizontal- and backbone area up to 250 MHz (Cat.6)
EN 50288-6-2	Frame specification for unshielded equipment- and connecting cables up to 250 MHz (Cat.6)
EN 55022	EMC-Standards for office surroundings

*Categories 6_A and 7_A are in draft status (2008)

All the documents are part of the standards, valid for symmetrical- and multicore cables.

Requirements of the application classes of a channel

Comparison of electrical requirements with different frequencies and transmission classes according to ISO/IEC

Dätwyler Cables

Frequency [MHz]		Class D	Class E	Class E_A*)	Class F	Class F_A*)
1	Attenuation	4,0	4,0	4,0	4,0	4,0
	NEXT	63,3	65,0	65,0	65,0	65,0
	ACR	59,3	61,0	61,0	61,0	61,0
	Return loss	17,0	19,0	19,0	19,0	19,0
	PS-AELFEXT (average)	x	x	67,0	67,0	67,0
16	Attenuation	9,1	8,3	8,1	8,1	8,0
	NEXT	43,6	53,2	53,2	65,0	65,0
	ACR	34,5	44,9	45,1	56,9	57,0
	Return loss	17,0	18,0	18,0	18,0	18,0
	PS-AELFEXT (average)	x	x			
100	Attenuation	24,0	21,7	20,8	20,8	20,3
	NEXT	30,1	39,9	39,9	62,9	65,0
	ACR	6,1	18,2	19,2	42,1	46,1
	Return loss	10,0	12,0	12,0	12,0	12,0
	PS-AELFEXT (average)	x	x	60,0	60,0	67,0
250	Attenuation	x	35,9	33,8	33,8	32,5
	NEXT	x	33,1	33,1	56,9	59,1
	ACR	x	-2,8	-0,7	23,1	26,6
	Return loss	x	8,0	8,0	8,0	8,0
	PS-AELFEXT (average)	x	x	54,0	54,0	67,0
500	Attenuation	x	x	49,3	49,3	46,7
	NEXT	x	x	27,9	52,4	53,6
	ACR	x	x	-21,4	3,1	6,9
	Return loss	x	x	8,0	8,0	8,0
	PS-AELFEXT (average)	x	x	49,5	49,5	64,5
600	Attenuation	x	x	x	54,6	51,4
	NEXT	x	x	x	51,2	51,1
	ACR	x	x	x	-3,4	-0,7
	Return loss	x	x	x	8,0	8,0
	PS-AELFEXT (average)	x	x	x	x	x
1.000	Attenuation	x	x	x	x	67,6
	NEXT	x	x	x	x	47,9
	ACR	x	x	x	x	-19,7
	Return loss	x	x	x	x	8,0
	PS-AELFEXT (average)	x	x	x	x	60,0

*) according to ISO/IEC 11801:2002 / Amendment 1:2008 generic cabling for customer permises

AXT = Alien Crosstalk / PS ANEXT = Power Sum Alien NEXT
This value refers to the influence from the outside by electromagnetic spurious signals of parallel-led other copper cables!
All category 7 cables fulfills per design the standard AXT parameter requirements.
In the wiring standard EN 50173-1:2007 three different grades for the electromagnetic compatibility E1, E2 and E3 are defined!
The best grade E3 can be achieved only with screened cables. (MICE)

Dätwyler has recommended for many years the use of screened data cables of the category 7 (PiMF) and thereby offers long-term investment protection with rising requirements!

New Cable design description

X X / X X X

balanced element	**TP**	= twisted pair or star quad
screen element	**U**	= unscreened
	F	= foil screened
overall screen	**F**	= foil screened
	S	= braid screen
	SF	= braid and foil screen

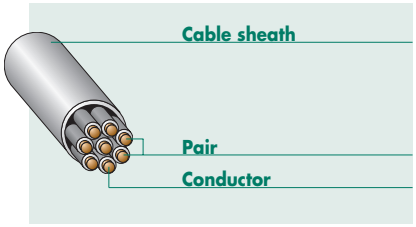
Example

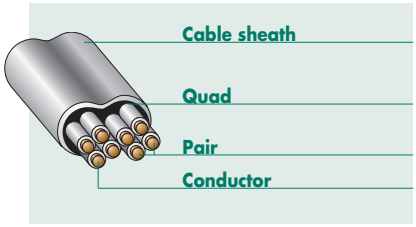
SF/UTP = overall braid and foil screened cable with unscreened balanced elements

S/FTP = overall braid screened cable with foil screened balanced elements

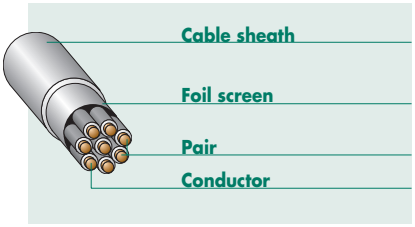
PiMF = Pairs in metal foil (XX/FTP)

U/UTP

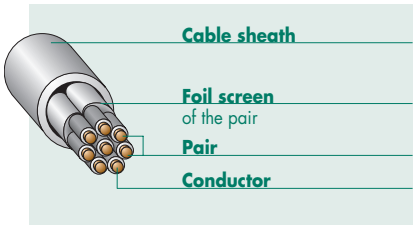


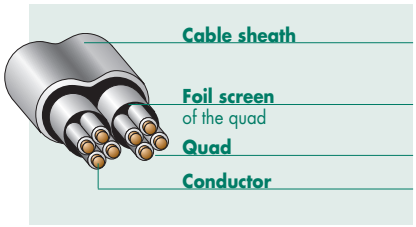


F/UTP

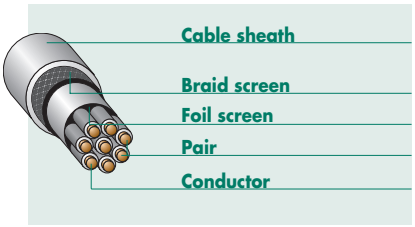


U/FTP

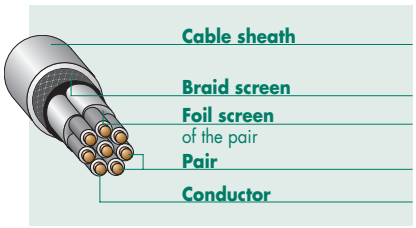


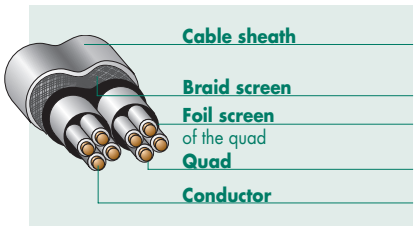


SF/UTP



S/FTP (PiMF with overall braid screen = best screening performance)





Advantages of high performance data cables

Dätwyler Cables

Limited Attenuation

For a data connection (LINK), consisting of Patch panel, data cable and outlet, the data cable has a decisive influence regarding attenuation.

Data cables with a low attenuation permit cable lengths in excess of 90m, in accordance with the requirements of the chosen application.

On the other hand the low attenuation offers additional safety regarding future applications.

Minimised transfer impedance thanks to foil and braid screen

A low transfer impedance and a small HF coupling resistance, results from the right combination of foil and braid screen. Therefore the interfering signals are led away better over a wider frequency range.

As a side-effect an increased mechanical stabilisation of the cable construction can be achived.

Constant balance with intermediate sheath at uninet® 6702 4P

The intermediate sheath provides additional stabilisation for twisted pair and star quad twisted cables. Therefore the mechanical stability and a much better crush resistance allows smaller bending radii.

This has the advantage, besides greater stress resistance during installation, of providing easier compliance with electrical values at the point of termination.

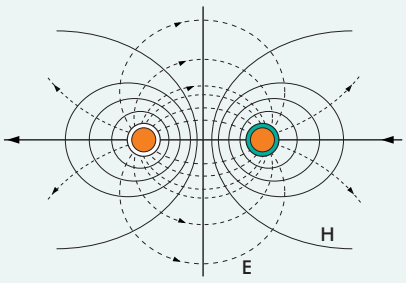
Sensitivity to external electrical and magnetic influences

The electromagnetic field of an unshielded data cable is not limited to the immediate area between the wires.
Wire environment of an installed data cable (figure 1).

The electrical and magnetic fields close to an installed data cable are rarely uniform or constant. For an unshielded cable these fields directly effect the electrical transmission characteristics of the twisted pairs. (figure 3).

With a shielded data cable (foil and braid screen of high quality, i.e. Uninet) the electromagnetic field is contained within the overall shield. Therefore, major external influences have minimal effect on the transmission performance of the cable (figure 2). The impedance path is not influenced by the surroundings. Stable transmission characteristics (figure 4), usually indicated by excellent Return Loss R_L in installed conditions, are the result.

Twisted Pair unshielded



E = Electric field
H = Magnetic field

Figure 1

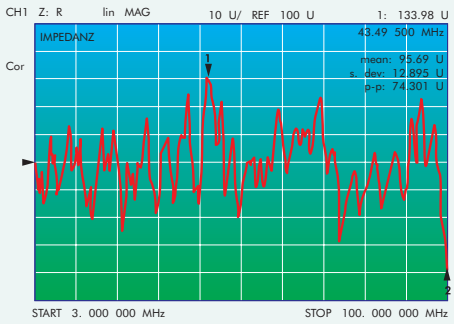
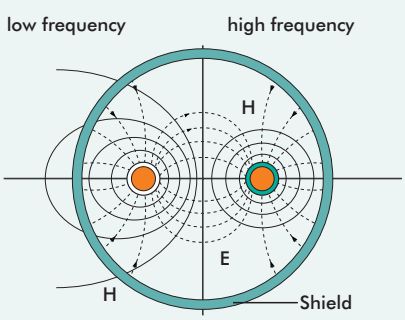


Figure 3

Twisted Pair shielded



E = Electric field
H = Magnetic field

Figure 2

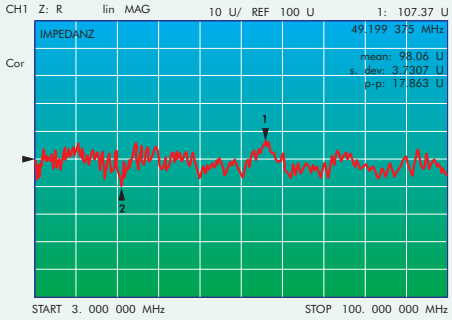


Figure 4

Product Overview and Selection Guide for uninet® Data Cables (Copper)

Dätwyler Cables

Evaluation Criteria:

The uninet product portfolio consists of several different cable types.

The following overview lists some of the more important criteria, which will help in the selection of a cable to meet your specific requirements.

Cable type	page	Category 5 (up to 100 MHz, suitable for Class D data cabling)	Category 6 (up to 250 MHz, suitable for Class D, E data cabling)	Category 6 (up to 500 MHz, suitable for Class D, E, E_A data cabling)	Category 7 (up to 600 MHz, suitable for Class D, E, E_A*, F data cabling)	Category 7_A* (up to 1200 MHz, suitable for Class F_A* data cabling)	Telephone, ISDN	Videosignals (RGB): symmetrical transmission	Ethernet 10 BaseT/100 BaseT	Gigabit-Ethernet 1000 BaseT	10 Gigabit-Ethernet	Cable Sharing	used for horizontal cabling	used for backbone cabling	Equipment - and connecting cable	Screen: Overall foil (F/UTP / U/FTP)	Overall foil/foil and overall copper braid (SF/UTP)	Star quad in foil and overall copper braid (S/FTP or VIMF)	Pair in foil and overall copper braid (S/FTP or PIMF)	Overall copper braid (S/UTP)	bundle cable	Intermediate sheath, special mechanical stabilization	PVC cable sheath (FR/PVC)	Halogen free cable sheath (FRNC/LSOH)	Multimedia according to EN 50083-8	Stabilising element (Cross)
uninet® screened																									
uninet® 7150 4P Multimedia	U-12	●	●	●	●	●	●	●	●	●	●	●	●	●					●					●	●	
uninet® 7702 4P / 2x4P F8	U-14	●	●	●	●	●	●	●	●	●	●	●	●	●					●					●	●	
uninet® 7120 4P	U-16	●	●	●	●	●	●	●	●	●	●	●	●	●					●					●	●	
uninet® 7002 4P / 2x4P F8	U-18	●	●	●	●		●	●	●	●	●	●	●	●					●					●	●	
uninet® 7002 nx4P Breakout Light	U-20	●	●	●	●		●	●	●	●	●	●	●	●					●					●	●	
uninet® 7002 4P Industrial PUR	U-22	●	●	●	●		●	●	●	●	●	●	●	●					●					●	●	
uninet® 7080 4P / 2x4P F8	U-24	●	●	●	●		●	●	●	●	●	●	●	●					●					●	●	
uninet® 7060 4P	U-26	●	●	○			●	●	●	●		●	●	●					●					●		
uninet® 6702 4P	U-28	●	●				●	●	●	●			●	●			●					●		●		
uninet® 6702 4P GG-PE	U-30	●	●				●	●	●	●			●	●			●					●		●		
uninet® 6002 4P	U-32	●	●				●	●	●	●		●	●	●		●								●		
uninet® 5602 4P/2P	U-34	●					●	●	●	●			●	●			●							●		
uninet® 5502 4P / 2x4P BD	U-36	●					●	●	●	●			●	●			●						●	●		
uninet® 5002 4P / 2x4P BD	U-38	●					●	●	●	●			●	●		●							●	●		
uninet® 7150 flex 4P	U-40	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●					●	●	
uninet® 7702 flex 4P	U-42	●	●	●	●		●	●	●	●	●	●	●	●	●				●					●	●	
uninet® 7702 flex 4P Industrial PUR	U-44	●	●	●	●		●	●	●	●	●	●	●	●	●				●					●	●	
uninet® flex 1P/2P Multimedia	U-46	●	●	●	●		●	●	●						●				●					●	●	
uninet® 5502 flex 4P	U-48	●					●	●	●	●					●					●			●	●		
uninet® unscreened																										
uninet® 662 4P	U-124	●	●				●	●	●	●			●	●									●	●		●
uninet® 602 4P	U-126	●	●	○			●	●	●	●			●	●									●	●		
uninet® 502 4P	U-128	●					●	●	●	●			●	●									●	●		
uninet® 602 flex 4P	U-130	●	●				●		●	●					●								●	●		

*) Link requirements of class E_A, F_A and category 7_A are in standardisation procedure.

mechanical requirements for Fibre Optic Cables with Singlemode-fibres

Test type	Test method	Test criterion
tensile performance	IEC 60794-1-2-E1	fibre elongation <= 0.33[%], reversible
crush resistance	IEC 60794-1-2-E3	fibre attenuation <= 0.05 [dB], reversible
impact	IEC 60794-1-2-E4	no damage to the sheath and the cable elements
repeated bending	IEC 60794-1-2-E6	no fibre break
bend	IEC 60794-1-2-E11	fibre attenuation<= 0.05 [dB], reversible
torsion	IEC 60794-1-2-E7	fibre attenuation<= 0.1 [dB], reversible
water penetration	IEC 60794-1-2-F5	water penetration < 3 [m] / 24 [h]
temperature cycling	IEC 60794-1-2-F1	fibre attenuation<= 0.05 [dB], reversible

mechanical requirements for Fibre Optic Cables with Multimode-fibres

Test type	Test method	Test criterion
tensile performance	IEC 60794-1-2-E1	fibre elongation <= 0.33[%], reversible
crush resistance	IEC 60794-1-2-E3	fibre attenuation <= 0.20 [dB], reversible
impact	IEC 60794-1-2-E4	no damage to the sheath and the cable elements
repeated bending	IEC 60794-1-2-E6	no fibre break
bend	IEC 60794-1-2-E11	fibre attenuation<= 0.5 [dB], reversible
torsion	IEC 60794-1-2-E7	fibre attenuation<= 0.1 [dB], reversible
water penetration	IEC 60794-1-2-F5	water penetration < 3 [m] / 24 [Std]
temperature cycling	IEC 60794-1-2-F1	fibre attenuation<= 0.20 [dB], reversible

Identification code for Fibre Optic Cables according to DIN/VDE

Dätwyler Cables

1	2	3	4	5	6	7	8	9	10	11	12	13	14

14 – Design
LG stranding in layers

13 – bandwidth in MHz for 1km (Multimode fibres)
dispersion in ps/nm x km (Singlemode fibres)

12 – wavelength
B 850nm (Multimode fibres)
F 1300nm (Multimode fibres)
F 1310nm (Singlemode fibres)
H 1550nm (Singlemode fibres)

11 – attenuation coefficient in dB/km

10 – overall diameter in µm (125µm)

9 – mode field diameter in µm for Singlemode fibres (9µm)
core diameter in µm for Multimode fibres (50/62.5µm)

8 – fibre type
E Singlemode fibre
G Multimode fibre

7 – number of fibres
number of loose tube x number of fibres per loose tube

6 – 2. sheath
B armouring
BY armouring with PVK-oversheath
B2Y armouring with PE-oversheath

5 – 1. sheath
H LSOH sheath
Y PVC sheath
2Y PE sheath
(ZN)2Y PE sheath with non metallic strain relief elements
(ZN)(L)2Y PE- composite layer sheath with non metallic strain relief elements
(ZN)(SR)2Y corrugated steel- composite layer sheath with non metallic strain reliefs elements

4
F filling compound to fill the interstices in the cable core
Q water blocking elements

3
S metal stranding element

2 – secondary coating
V tight buffer
D loose tube, filled
W loose tube, filled
H loose tube, unfilled
M mini bundle (not VDE)
K semi loose tube (not VDE)

1 – cabletype
A Outdoor cable
I/J Indoor cable
A/I, U Universal according to VDE, e.g. Optoversal

Technical changes reserved.

Type designation for Dätwyler Fibre Optic Cables

A • **60** • **E9** • **wb** • **GG** • **T** • **5** • **HighP**

Area of application:
- **A** Outdoor cable
- **I** Indoor cable

Number of fibres

fibre type:
- **E** singlemode (SMF E9/125)
- **G** multimode / graded index (MMF G50/125 or G62.5/125)

cable design:
- **K** aramid yarn
- **T** thermoplastic sheath
- **Z** central tube construction
- **wb** waterblocking (swelling yarns or swelling tapes)

armouring:
- **K** aramid yarn
- **W** corrugated steel armouring
- **GG** glass strands armouring

cable sheath:
- **T** thermoplastic (PE)
- **FR/LS0H** flame retardant according to IEC 60332
- **LS0H** low smoke halogen free
- **PVK** Polyvinylchloride

max. no. of loose tube

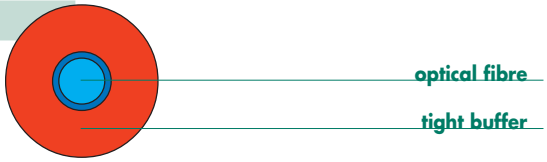
High Performance

All fibres have secondary protection added before stranding.

There are different fibre optic cable tubes:
- tight buffer
- semi tight buffer
- mini bundle
- loose tube

tight buffer

The fibre is tightly jacketed with a thermoplastic over sheath.



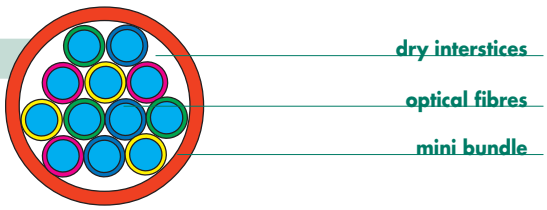
semi tight buffer

The fibre is semi loosely jacketed in a tube of a polymer material.
The spare room between fibre and loose tube is only a few hundreths of a millimeter. The overall diameter of the semi tight buffer is identical with the diameter of the tight buffer.

The advantages of the semi tight buffering compared with the tight buffering are:
- The tube can be easily stripped
- Minimal effect of microbending

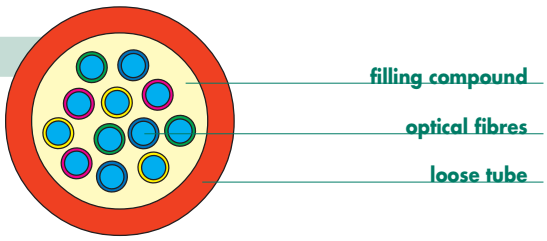
mini bundle

4 to 12 optical fibres are loosely encapsulated.
The secondary protection consist of one layer of termoplastic material.
The interstices are dry.
The overall diameter is approxiately 0,95 - 1,4mm.



loose tube

2 to 12 primary coated optical fibres are loosely encapsulated.
The tube consist of one or two layers of the same or different materials.
The interstices inside the tube are filled with gel.
The overall diameter is 1,8 - 3,5mm / depending on fibre counts



In order to differentiate between the cores in the cables and the optical fibres in a loose tube, the cores and fibres are given different colours.

Fibre colour code according to IEC 60304 (up to 12 fibres)

Fibre no.	colour
1	red
2	green
3	blue
4	yellow
5	white
6	grey
7	brown
8	violet
9	turquoise
10	black
11	orange
12	pink

Fibre colour code Dätwyler with ring signature (up to 24 fibres)

Fibre no.	colour
13	red/black
14	green/black
15	blue/black
16	yellow/black
17	white/black
18	grey/black
19	brown/black
20	violet/black
21	turquoise/black
22	transparent/black
23	orange/black
24	pink/black

Tube colour code

Tube type	Colour	RAL No.	Fibre type
1. tube	red	3020	all types
2. tube	green	6018	all types
add. tubes	white	9016	E9/125
	light green	6019	G50/125
	blue	5015	G62/125
dummy elements	black	9005	

Sheat colours

Cable type	Colour
optofil®-A	black with orange longitudinal stripes
optoversal®	A/I green
optofil®-I	Singlemode G.652+652.D yellow (green)
	Singlemode G.655 red
	Multimode G50 (OM2) orange
	Multimode G50 (OM3) turquoise
	Multimode G62.5 grey
optomod®/optodesk	violet

Instruction manual
opening of the cable sheath
by fibre optic cables

Dätwyler Cables

Instruction manual
opening of the cable sheat by fibre optic cables

1.

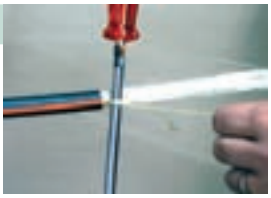
Attach a radial cut, with a cable stripping knife, approx. 15cm from one cable end.

Remove the short end by attaching a longitudinal cut.

2.

Lay open the ripcords.

3.



Mount the ripcord with a knot (8 loop) on a screw-driver.

4.

Open the cable sheath by means of the ripcords (vertical to the cable) as long as you need.

5.

Remove the cable sheath carefully.
Cut back the sheath, glass armouring, ripcords and the strenght members.

Instruction manual
opening of the cable sheat by Type ZwbKWT

1.

Cut the cable sheath radially approximately 15 cm from one end and the mark of the required length (scratch the corrugated steel tape!) Break the steel tape at those points with care.

2.

Heat the cable-end with a gas burner or with an industrie-dryer.
Remove the worm cable-end.

3.

Lay open the ripcord. Heat the cable sheath wich you will remove. Grip the ripcord with a screwdriver.

4.

Grip the ripcord and pull them to the required length.

5.

Remove the cable sheath and the strain-bearing elements.

Selection criteria

The standard product range includes numerous types of fibres.

The following summary should serve as an selection aid for the most important criteria when choosing a suitable fibre type.

ria Transmissi

n Applicatio

Fibre type	Standard	max. attenuation dB/km 850nm (cabled)	max. attenuation dB/km 1300nm/1310nm (cabled)	max. attenuation dB/km 1383nm (cabled)	max. attenuation dB/km 1550nm (cabled)	max. attenuation dB/km 1625nm (cabled)	max. PMD ps/√km (cabled)	LED 850/1300nm (typ. 100 Mbit/s)	VCSEL 850nm (1GbE-10GbE)	Laser 1310-1625nm)	CWDM Systems	1 GbE link length 1000Base-SX IEEE 802.3z	1 GbE link length 1000Base-LX IEEE 802.3z	10GbE link length 10GBase-SR/SW IEEE 802.3ae	Fibre-to-the-Desk typ. 1GbE	Campus / Backbone / Data Centre (typ. 10GbE)	national Backbone	City-/Accessnetwork	Fibre-to-the-Home
Singlemode fibre E9/125																			
SMF E9/125	G.652.A		0,36		0,25		0,5			●									
SMF E9/125 Enhanced	G.652.D		0,36	0,36	0,24	0,25	0,2			●	●						●	●	●
Full-Spectrum SMF-28e+™	G.652.D		0,36	0,36	0,23	0,27	0,2			●	●						●	●	●
SMF 28e XB Optical Fiber	G.657.A		0,36	0,36	0,23	0,27	0,2			●	●						●	●	●
Multimode fibre G50/125																			
MMF G50/125	OM2	2,70	0,70					●	●			550	550	82	●				
MMF G50/125 InfiniCor® Sx+	OM3	2,70	0,70						●			1000	550	300		●			
MMF G50/125 InfiniCor® eSx+	OM3+	2,70	0,70						●			1100		550		●			
Multimode fibre G62,5/125																			
MMF G62,5/125	OM1	3,00	0,70					●	●			275	550	33	●				

Link Lengths with Dätwyler used Multimode fibres

Dätwyler Cables

		Dätwyler fibre link length (m)			
	Core size		50 µm		62.5 µm
	Wavelength		850 nm		850 nm
	Dätwyler fibre type	OM3	OM2+	OM2	OM1
	EMB (MHz.km):	2000 (*)			
Applikation Standard	**Nominal speed (Mb/s)**				
IEEE 802.3 series Ethernet					
1000BASE-SX	1'000	1000	750	600	275
10GBASE-SR	10'000	300	150	100	33
ANSI - INCITS Fibre Channel					
100-M5/6-SN-I	1'000	1000	750	600	300
200-M5/6-SN-I	2'000	526	428	320	170
400-M5/6-SN-I	4'000	291	228	162	80
1200-M5/6E-SNS	10'000	300	150	100	3
ITU/T - Asynchronous Transfer Mode (ATM)					
1'000	1000	750	600	300	
ITU/T - SONET/SDH OIF VSR					
OC-192 VSR4-01	10'000	1000	750	650	300
OC-192 VSR4-03	10'000	620	375	306	-
OC-192 VSR4-04	10'000	300	150	100	33
OC-768 VSR5-01	40'000	300	150	100	-
InfiniBand TA - VSR					
IB-1x-SDR-SX	2'500	500	250	250	125
IB-4x-SDR-SX	10'000	200	125	125	75
IB-8x-SDR-SX	20'000	200	125	125	75
IB-12x-SDR-SX	30'000	200	125	125	75
IB-1x-DDR-SX	5'000	200	125	125	65
IB-4x-DDR-SX	20'000	150	75	75	50
IB-8x-DDR-SX	40'000	150	75	75	50
IB-12x-DDR-SX	60'000	150	75	75	50
IB-1x-QDR-SX	10'000	300	150	100	33

(*) As predicted by minEMBc, per TIA/EIA 455-220 and IEC 60793-1-49 Ed. 2.0.
For high-performance laser-based systems (≥ 850 MHz.km)

Application Link Length for standardized fibre types

			Fiber Type	Multimode 50 µm			Multimode 62.5 µm			Singlemode (a)
			Wavelength	850 nm		1300 nm	850 nm		1300 nm	1310 nm
			Modal Bandwidth (MHz.km)	500 (b)	2000 (c)	500 (b)	160 (b)	200 (b)	500 (b)	-
Application Standard	**Nominal Speed (Mb/sec)**	**Baud Rate (Mb/sec)**	**Light Source (nm)**							
IEEE 802.3 series Ethernet (d)										
10BASE-F	10	10	850 LED	1250 (g,h)	1250 (h)	-	2000	2000 (i)	-	-
100BASE-S (e)	100	125	850 LED	300 (h)	300 (h)	-	300 (h)	300 (h)	-	-
100BASE-F (f)	100	125	1300 LED	-	-	2000 (g)	-	-	2000	2000 (a)
1000BASE-SX	1.000	1250	850 VCSEL (k)	550	860	-	220	275	-	-
1000BASE-LX	1.000	1250	1310 FP	-	-	550	-	-	550	5000
10GBASE-SR	10.000	10312,5	850 VCSEL (l)	82	300	-	26	33	-	-
10GBASE-LX4	10.000	4 x 3125	1310 DFB	-	-	300 (j)	-	-	300 (j)	10000 (j)
ANSI FDDI	125	125	1300 LED	-	-	2000 (g)	-	-	2000	-
Token Ring	16	16	850 LED	1000 (g,h)	1000 (h)	-	2000	2000	-	-
ANSI - INCITS Fibre Channel										
100-M5/6-SN-I	1.000	1062,5	850 VCSEL (k)	500	860	-	250	300	-	-
200-M5/6-SN-I	2.000	2125	850 VCSEL (k)	300	500	-	120	150	-	-
400-M5/6-SN-I	4.000	4250	850 VCSEL (k)	150	270	-	55	70	-	-
1200-M5/6E-SN-S	10.000	10500	850 VCSEL (l)	82	300	-	26	33	-	-
1200-M5/6-SN-4S	10.000	4 x 3125	850 VCSEL (l)	290 (m)	550 (m)	-	-	118 (m)	-	-
1200-M5/6-LC-4S	10.000	4 x 3125	1300 DFB	-	-	290 (j)	-	-	290 (j)	10000 (j)
ITU/T - Asynchronous Transfer Mode (ATM)										
	155	155,5	780 CD Laser	1000 (n)	1000 (n)	-	1000 (n)	1000 (n)	-	-
	155	155,5	1300 LED	-	-	2000 (o)	-	-	2000 (o)	-
	622	622,1	780 CD Laser	300 (n)	300 (n)	-	300 (n)	300 (n)	-	-
	622	622,1	1300 LED	-	-	330 (o)	-	-	500 (o)	-
	1.000	1250	850 VCSEL (k)	550 (p)	850 (p)	-	220 (p)	275 (p)	-	-
	1.000 (q)	1250	1310 FP/DFB	-	-	550 (p)	-	-	550 (p)	5000 (p)
ITU/T - SONET/SDH OIF VSR (r)										
OC-192 VSR4-01	10.000	12 x 1250	850 VCSEL (k)	550	850	-	220	275	-	-
OC-192 VSR4-02	10.000	1 x 9953	1310 FP/DFB	-	-	-	-	-	-	600
OC-192 VSR4-03	10.000	4 x 2488	850 VCSEL (k)	300	620	-	-	-	-	-
OC-192 VSR4-04	10.000	1 x 9953	850 VCSEL (l)	85	300	-	25	33 (s)	-	-
OC-768 VSR5-01	40.000	12 x 3318	850 VCSEL (l)	100	300	-	-	-	-	-
InfiniBand TA VSR (t)										
IB-1x-SDR-SX	2.500	1 x 2500	850 VCSEL (k)	250	500	-	-	125	-	-
IB-4x-SDR-SX	10.000	4 x 2500	850 VCSEL (k)	125	200	-	-	75	-	-
IB-8x-SDR-SX	20.000	8 x 2500	850 VCSEL (k)	125	200	-	-	75	-	-
IB-12x-SDR-SX	30.000	12 x 2500	850 VCSEL (k)	125	200	-	-	75	-	-
IB-1x-DDR-SX	5.000	1 x 5000	850 VCSEL (k)	125	200	-	-	65	-	-
IB-4x-DDR-SX	20.000	4 x 5000	850 VCSEL (k)	75	150	-	-	50	-	-
IB-8x-DDR-SX	40.000	8 x 5000	850 VCSEL (k)	75	150	-	-	50	-	-
IB-12x-DDR-SX	60.000	12 x 5000	850 VCSEL (k)	75	150	-	-	50	-	-
IB-1x-QDR-SX	10.000	1 x 10000	850 VCSEL (l)	82	300	-	-	33	-	-

Application Link Length for standardized fibre types

Notes

Dätwyler Cables

Notes

a. Key MMF standards are presented in this table. Singlemode link lengths are shown where capability exists as part of the MMF interface, or where the singlemode standard is targeted for a Premises application. Note that all singlemode solutions use edge-emitting lasers, even for data rates < 1 Gb/s

b. Overfilled Launch Bandwidth (OFL BW), in accordance with TIA/EIA 455-204 (FOTP 204) and IEC 60793-1-41

c. Effective Modal Bandwidth (EMB), in accordance with TIA/EIA 455-220 (FOTP 220) and IEC 60793-1-49 Ed. 2.0

d. The Ethernet standards are commonly referred to as „Ethernet" (10 Mb/s), „Fast Ethernet" (100 Mb/s), „Gigabit Ethernet" (1000 Mb/s), and „10 Gigabit Ethernet" (10000 Mb/s)

e. 100BASE-S (850 nm) physical layer used the TIA/EIA 785 standard

f. 100BASE-F (1300 nm) physical layer used the FDDI standard

g. Addressed in an informative annex of the standard

h. System is margin limited at this link length. Modal bandwidth is not a limiting factor. 2000 MHz.km fiber was not standardized at the time of standard publication, so link lengths for 500 MHz.km fiber is shown

i. The 10 Mb/s Ethernet standard did not address 200 OFL, although the system is likely margin limited to 2000 m

j. Link length is achieved via 1300 nm „Wide" WDM using 4 channels (lanes) at 2.25 Gb/s:
Lane 0 = 1269.0 - 1282.4 nm
Lane 1 = 1293.5 - 1306.9 nm
Lane 2 = 1318.0 - 1331.4 nm
Lane 3 = 1342.5 - 1355.9 nm

k. First generation 850 nm VCSEL (ca. 1998), typically used in data rates of 1 Gb/s, although variants will support up to 5 Gb/s (see InfiniBand DDR)

l. Second generation 850 nm VCSEL (ca. 2002), supporting data rates up to 10 Gb/s

m. Link length is achieved via 850 nm „Coarse" WDM using 4 channels at 3.125 Gb/s from 800 to 900 nm

n. ATM 622 Mb/s short-wave interface used 780 nm CD lasers on minimum 160 MHz.km OFL BW at 850 nm (both 50 and 62.5 micron)
Higher bandwidth values are not specified in the standard, so the link lengths addressed for 160 MHz.km fiber are shown
The link lengths shown are limited by chromatic dispersion, so technically an improved modal dispersion will not likely improve link length performance

o. ATM 155 and 622 Mb/s long-wave interfaces use 1300 nm LEDs, which support the link lengths shown with 500 MHz.km OFL BW at 1300 nm
400 MHz.km 50 micron fibers are not addressed in the standards

p. ATM 1000 Mb/s references IEEE 802.3 (Gigabit Ethernet) for the media dependent sublayer. 1000BASE-X link lengths are shown here

q. ATM 2 Gb/s standard is a single-mode-only physical media solution, and is not shown here

r. Optical Internetworking Forum (OIF) Very Short Reach (VSR) solutions are as follows:

Solution	PMD	Fiber Type	fibers for half duplex	
VSR4-01	Parallel	MMF	12	(half duplex ribbon)
VSR4-02	Serial	SMF	1	(full duplex per 2 fibers)
VSR4-03	Parallel	MMF	4	(full duplex ribbon)
VSR4-04	Serial	MMF	1	(full duplex per 2 fibers)
VSR5-01	Parallel	MMF	12	(half duplex ribbon)

s. 400 and 200 MHz.km OFL fibers are not described in the VSR4-04 interface. 10GbE link lengths shown for these fibers

t. InfiniBand Trade Association architectures specify single- and parallel-optic interfaces at multiples of 1, 4, 8 and 12 lanes. Ribbons may be used
Full duplex transmission is achieved by installing two physical media paths - i.e. 8x solutions will use 8 transmit and 8 receive for a total of 16 fibers

Source: Corning White Paper 1160

Product Overview and Selection Guide for Fibre Optic (FO) cables

Indoor cable

Selection criteria

The standard product range includes numerous types of cables.

The following summary should serve as an selection aid for the most important criteria when choosing a suitable cable type.

Cable name	Dätwyler type designation	DIN/VDE	Maximum no. of fibres	Rodent resistant	Non metallic (non potential differences)	Longitudinal water resistant	Halogen free sheath	Flame retardant sheath	Circuit integrity 30Min.	Loose tube	Mini - bundle	Semi Tight Buffer 0.9mm	Tight-buffer tube design 0.9mm	Tight-buffer tube design 0.6mm	Blowing trough thermoplastic ducts	Laying in risers	Laying in trays and on cable platforms	Applications in tunnels / safety area	Applications in campus / Access area	LAN Backbone area	LAN FTTD area	LAN Patch area
Cable characteristics																	**Laying**			**Application**		
optofil®-Indoor cable																						
optofil® - I	EF-Kabel 2.0mm STB	I-V(ZN)H	1		●		●	●				●										●
optofil® - I	Mini Zip-Cord 1.8mm FA	I-V(ZN)H	2		●		●	●						●								●
optofil® - I	Duplex FA (2xEF 2.0mm)	I-V(ZN)HH	2		●		●	●				●					●				●	●
optofil® - I	FTTH FA (4x)	I-V(ZN)H	4		●		●	●						●		●	●				●	
optofil® - I	FTTH Coatingader (4x)	I-V(ZN)H	4		●		●	●				●				●	●				●	
optofil® - I	Breakout nx2.0mm STB	I-VH(ZN)H	12		●		●	●				●				●	●			●	●	●
optodesk® / optomod®																						
optodesk® - I	Semi Tight Buffer 0.9mm	I-V(ZN)H	4		●		●	●				●					●				●	
optomod® - I	Semi Tight Buffer 0.9mm	I-V(ZN)H	24		●		●	●				●				●	●			●	●	
Out-/Indoor cable																						
optoversal®	Optoversal Z	U-DQ(ZN)BH	24	●	●	●	●	●		●					●	●	●		●	●		
optoversal®	Optoversal	U-DQ(ZN)BH	144	●	●	●	●	●		●					●	●	●		●	●		
optofil®-Safety System																						
optofil®-A/I	ZGGFR-Safety	U-DQ(ZN)BH	12	●	●	●	●	●	●	●						●	●	●		●		
optofil®-A/I	wbGGFR-Safety	U-DQ(ZN)BH	60	●	●	●	●	●	●	●						●	●	●		●		

Product Overview and Selection Guide for Fibre Optic (FO) cables

Outdoor cable

Dätwyler Cables

Selection criteria

The standard product range includes numerous types of cables.

The following summary should serve as an selection aid for the most important criteria when choosing a suitable cable type.

Cable name	Dätwyler type designation	DIN/VDE	Maximum no. of fibres	Robust cable Design	Smart construction	Rodent resistant	Rodent security	Non metallic (non potential differences)	Dry interstices	Longitudinal water resistant	Halogen free sheath	Flame retardant sheath	Circuit integrity 30Min.	Loose tube	Mini - bundle	Installation with cable-winches	Blowing trough thermoplastic ducts	Laying in cable trays	Applications in WAN / City area	Applications in Campus / Access area	Applications in tunnels/safety area	Applications in LAN area
Cable characteristics																**Laying**			**Application**			
optofil®-HighP																						
optofil®-A	wbKT High-P	A-DQ(ZN) 2Y	144	●				●	●	●	●			●		●	●	●	●	●		
optofil®-A	ZGGT 2500 High-P	A-DQ(ZN)B2Y	24	●		●		●	●	●	●			●		●	●	●	●	●		
optofil®-A	wbGGT High-P	A-DQ(ZN)B2Y	288	●		●		●	●	●	●			●		●	●	●	●	●		
optofil®-A	wbGGT HighP 2Lagen	A-DQ(ZN)B2Y	576	●		●		●	●	●	●			●		●	●	●	●	●		
optofil®-A	wbGGT HighP City Compact	A-DQ(ZN)B2Y	576	●		●		●	●	●	●			●		●	●	●	●	●		
optofil®-A	wbKWT High-P	A-DQ(ZN)B2Y	60	●			●		●	●	●			●		●		●	●	●		
optofil®-BasicLine																						
optofil®-A	ZGGT 1000 BasicLine	A-DQ(ZN)B2Y	24		●	●		●	●	●	●			●			●			●		
optofil®-A	wbGGT BasicLine	A-DQ(ZN)B2Y	60		●	●		●	●	●	●			●			●		●			
optofil®-A	ZwbKWT BasicLine	A-DQ(ZN)B2Y	24		●		●		●	●	●			●			●	●		●		
optofil®-Micro System																						
optofil®-A	ZKT Micro	A-DQ(ZN) 2Y	24		●			●	●	●	●			●			●		●	●		
optofil®-A	wbKT Micro	A-DQ(ZN) 2Y	60		●			●	●	●	●			●			●		●	●		
optofil®-A	wbKT Micro	A-DQ(ZN) 2Y	72		●			●	●	●	●			●			●		●	●		
optofil®-Easy-Blow System																						
optofil®-A/I	Easy-Blow Z	U-DQ(ZN)BH	24	●		●		●	●	●	●	●		●		●	●	●		●	●	
optofil®-A/I	Easy-Blow	U-DQ(ZN)BH	144	●		●		●	●	●	●	●		●		●	●	●		●	●	
optofil®-Safety System																						
optofil®-A/I	ZGGFR-Safety	U-DQ(ZN)BH	12	●		●		●	●	●	●	●	●	●				●			●	●
optofil®-A/I	WBGGFR-Safety	U-DQ(ZN)BH	60	●		●		●	●	●	●	●	●	●				●			●	●
optofil®-Special cable																						
optofil®-A/I	Camera combi cable BA	U-DQ(ZN)BH	2	●		●		●	●	●	●	●		●			●	●		●	●	

Technical changes reserved.