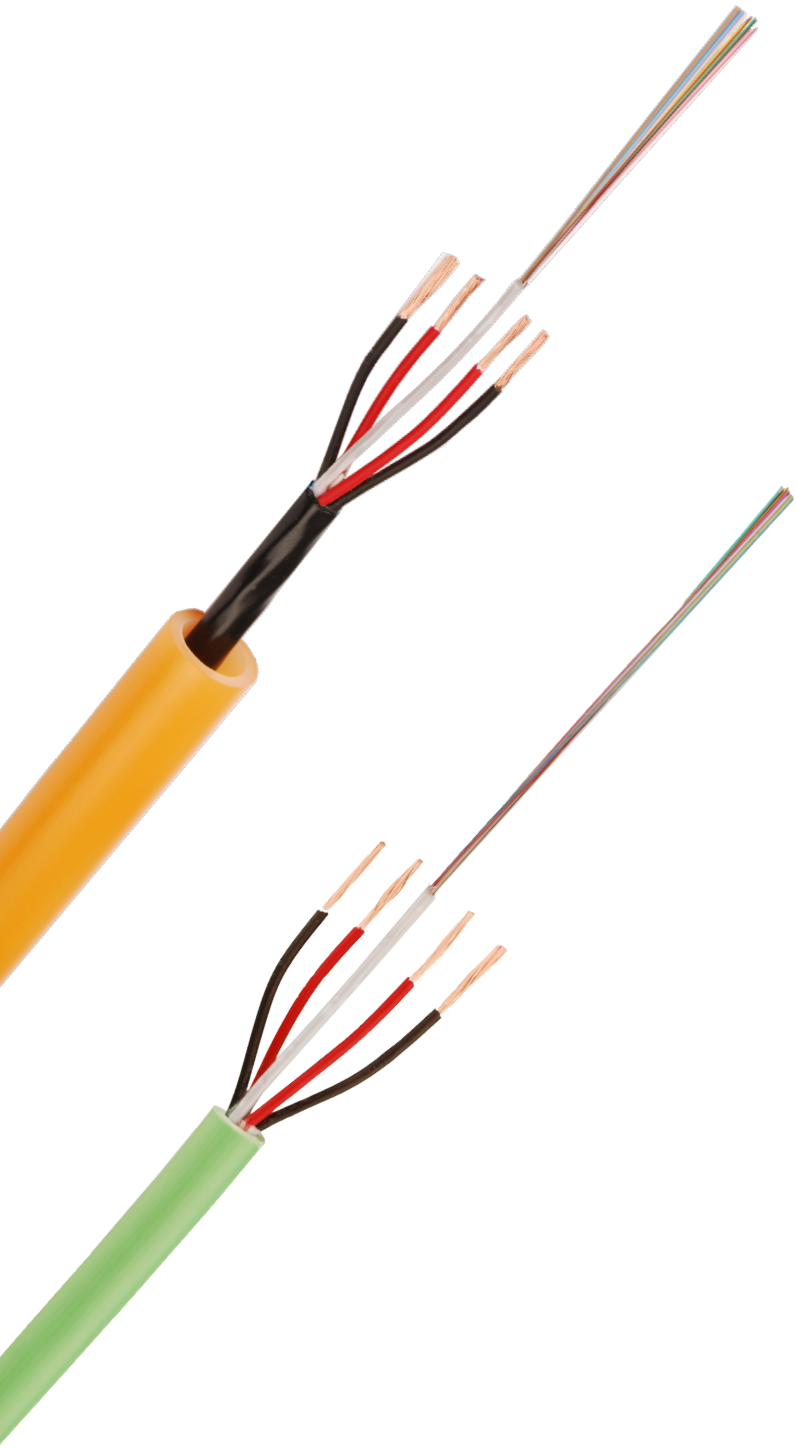
Micro Hybrid Cable - TOL40790+

Hybrid Fibers G.657.A1 + Power wires



Features

- Duct and Indoor version
- Up to 24 fibers and 4 copper wires 0.75 or 1.5 mm^2
- Super slim design for microducts down to 8 mm
- Excellent installation performance
- Unique design with robust inner tubes
- Temperature range from -45 to +70 °C
- Easy to prepare and identify fibers
- Halogen-free flame retardant EN 50575 D_{ca}-s2,d2

Application

Hexatronic Micro Hybrid Cable is a part of our Hexatronic Powered Fiber System, enabling power feeding and optical fibers in traditional micro ducts with an inner diameter down to 8 mm. Flame retardant version for in/outdoor premises network. The System is suitable for all types of metropolitan, rural access networks and backbone network with need of remote powering active devices. Media Switches for PoE devices as Surveillance cameras, WiFi Access or 4G, 5G devices powered by 48 Vdc and fiber. Hexatronic Micro Ducts provides an easy, cost-efficient roll out and maintenance, creating opportunities to increasing broadband penetration. Powered by 110Vdc to terminals with integrated DC-DC power units enable 48 Vdc 150W at 700m, 110W at 1000 m *(110Wkm).*

Design

The Micro Hybrid Cables are designed with inner protective tubes made of a unique Polyamide compound. The Polyamide gives a special strength to the product, while increasing the bending properties as well as other benefits such as extreme temperature resistance. Including 4 power wires to enable low voltage power feeding. As a result, the Cable are more durable during the installation process as they are able to withstand rough handling. The unique cable design with an extended operational temperature range of -45 to +70 °C can be used in many environments where heat and cold are often a major concern.

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Typical Data

Temperature range

Operation..... -40 to +70 °C
Storage ..... -40 to +70 °C
Handling..... -15 to +50 °C
Cable temperature,
blown installation ..... -15 to +40 °C

Power wires

Rated voltage.....max 110 Vdc *
Rated current/conductor 0.75mm^2.. max 3 A
..... 1.5mm^2.... max 6 A

Dielectric strength cond.-cond.....2000 Vdc 1 min

Bending radius

Cable bend radius, permanent
¼ turn/ single turn/ multiple turns .... ≥ 30/ 30/ 75 mm

Tensile force

During installation/ operation..... ≤ 800/ 100 N

Crush resistance ..... ≤ 2000 N/100 mm
(Δα ≤ 0.05 dB after test, no damage)

Typical installation performance duct version**

Ducts, inner diameter 10 mm 1000 m
Ducts,inner diameter 8 mm 800 m

* Duct version -Voltage rating 110 Vdc when installed in a microduct otherwise 50 V

* In/outdoor version - Voltage rating 110 Vdc

** Installation performance verified on Hexatronic test track with duct version , according to IEC 60794. Installation performance is affected by the installed path, environmental conditions, installation equipment etc and actual performance may therefore deviate from the above specified values.

The cable is length water blocking according to IEC 60794-1-2-F5B.
Mechanical and environmental test in accordance with IEC 60794-5-10
Fiber parameters and tests according to the IEC series 60793-2 and 60793-1
Power wires tested according to EN 50288-7:2005 in applicable parts
Verified by Intertek Semko AB
The cable shall not be stored in direct sun light. The sun may heat up the cable over the

permitted temperature limit

Transmission Characteristics, G.657.A1

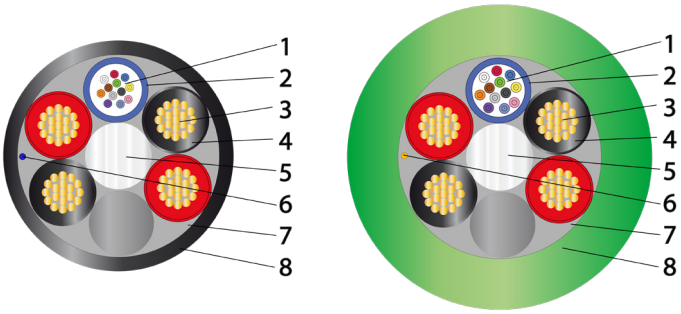
attenuation	@ 1310 nm	@ 1550 nm	@ 1625 nm
Mean value in cable	0.36 dB/km	0.22 dB/km	0.25 dB/km
Max value individual	0.38 dB/km	0.25 dB/km	0.30 dB/km

Certification & Environment

ISO - Hexatronic is certified according to
ISO 9001, ISO 14001 and OHSAS 18001

Design

1. Primary coated fiberSilica, acrylate
2. Loose tube ..... PA
3. Copper wire ..... Copper wire strand class 5
4. Insulation ..... PP mm
5. Strength member .. Glass fiber reinforced plastic
6. Slit up yarn..... Aramide yarn
7. Wrapping ..... Water blocking yarns
8. Sheath Duct type.... Polyethylene, black
   Sheath In-Outdoor.. Flame retardant PE, green



Color Coding

SDT=Fibers and tubes according to standard color code system. Fibers: 1-red, 2-blue, 3-white, 4-green, 5-yellow, 6-grey, 7-brown, 8-black, 9-orange, 10-violet, 11-pink, 12-turquoise. Tubes: 1 – red, 2 – blue

TIA-598=Fibers and tubes according to the TIA-598 (Bellcore) system. Fibers: 1-blue, 2-orange, 3-green, 4-brown, 5-grey, 6-white, 7-red, 8-black, 9-yellow, 10-violet, 11-pink, 12-turquoise

S12=Fibers and tubes according to S12 color code system. Fibers: 1-red, 2-blue, 3-white, 4-green, 5-yellow, 6-grey, 7-brown, 8-black, 9-violet, 10-orange, 11-turquoise, 12-pink. Tubes: 1 – red, 2 – blue

Power conductors 1a-red 1b-red 2a-black 2b-black

Delivery Information

Supplied lengths ..... 2, 4, 8 km

Ordering Information

Product Number	Type	Weight /km	No.of Fibers	Power wires	Diam. (mm)	Res. Ω/km	Color Code
TOL4079028/12	Duct	45	12 (1x12)	4 x 0.75 mm^2	5.7	27	STD
TOL4079029/24	Duct	80	24 (1x24)	4 x 1.5 mm^2	6.7	14	STD
TOL4079030/12	In-Outdoor	95	12 (1x12)	4 x 0.75 mm^2	8.3	27	STD
TOL4079031/24	In-Outdoor	145	24 (1x24)	4 x 1.5 mm^2	10.0	14	STD

CE D_{ca}-s2,d2
EN50575:2014

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