PSM-LWL-HCS-RUGGED-200/230
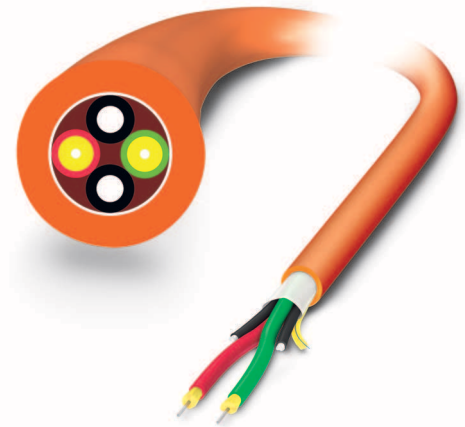
**HCS cable, duplex 200/230 µm,
for fixed indoor installation**

Data sheet
100327_en_06

1   Description

The **PSM-LWL-HCS-RUGGED-200/230** HCS cable is a universal installation cable for indoor installation.

It may also be used outdoors if you install it in protected surroundings, such as an installation pipe.

The HCS cable facilitates transmission ranges of

–   800 m with 660 nm devices
–   2800 m with 850 nm devices

1.1   Properties

–   Robust installation cable for indoor use
–   Polyurethane (PUR) outer sheath
–   Watertight lengthwise
–   2.9 mm single wires made from highly flexible FRNC material
–   Halogen-free, ozone and UV resistant
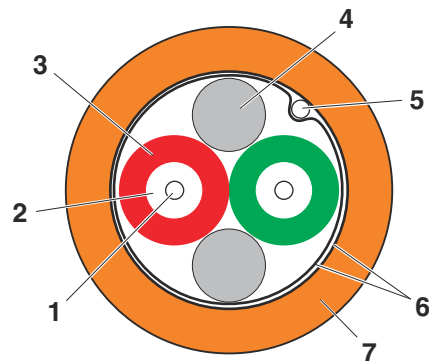–   Highly tear-resistant aramide strain relief elements

1.2   Structure

Figure 1   Cross section drawing

1   Fibers
2   Aramide yarn as strain relief
3   FRNC sheath
4   Blind element
5   Tearing wire
6   Fleece wrapping
7   PUR outer sheath

> ℹ   Make sure you always use the latest documentation.
> It can be downloaded at www.phoenixcontact.net/catalog.

> ℹ   This data sheet is valid for all products listed on the following page:

PHŒNIX CONTACT

INSPIRING INNOVATIONS

2 Ordering data

Cables

Description	Type	Order No.	Pcs. / Pkt.
HCS cable, duplex 200/230 µm, for indoor installation, by the meter without plug	PSM-LWL-HCS-RUGGED-200/230	2799885	1
HCS cable, duplex 200/230 µm, for indoor installation, assembled with plugs (IP20 heads only)	FOC-HCS-RUGGED-1014/IP20/...	2901555	1
HCS cable, duplex 200/230 µm, for indoor installation, assembled with plugs	FOC-HCS-RUGGED-1014/...	1402191	1

Accessories

Description	Type	Order No.	Pcs. / Pkt.
Fiber optic plug-in connector, F-SMA plug set, for HCS fibers, consisting of four quick mounting plugs with bend protection	PSM-SET-FSMA/4-HCS	2799487	1
Fiber optic plug-in connector, B-FOC (ST) plug set, for HCS fibers, consisting of four quick mounting plugs with bend protection	PSM-SET-B-FOC/4-HCS	2708481	1
Fiber optic plug-in connector, SCRJ plug set for HCS fibers, consisting of two duplex quick mounting plugs with bend protection	PSM-SET-SCRJ-DUP/2-HCS	2313070	1
HCS assembly kit, for SCRJ quick mounting plugs, including stripping blade, stripping pliers, aramide yarn scissors, fiber stripper, fiber, microscope, fiber cleaving tool for standard HCS and HCS GI fibers	PSM-HCS-KONFTOOL/SC-RJ	2708876	1
HCS assembly kit, for B-FOC (ST) quick mounting plugs, including stripping blade, stripping pliers, aramide yarn scissors, fiber stripper, microscope, fiber cleaving tool for standard HCS and HCS GI fibers, and documentation	PSM-HCS-KONFTOOL/B-FOC	2708465	1
HCS assembly kit, for F-SMA quick mounting plugs, including stripping blade, stripping pliers, aramide yarn scissors, fiber stripper, microscope, fiber cleaving tool for standard HCS fibers, and documentation	PSM-HCS-KONFTOOL	2799526	1
Fiber cleaving tool, for HCS fibers, pin arrangement: F-SMA for the assembly of F-SMA quick mounting plugs, supplements PSM-HCS-KONFTOOL...	PSM-HCS-CLEAVETOOL	2744995	1
Fiber cleaving tool, for HCS fibers, pin arrangement: B-FOC (ST) for the assembly of B-FOC quick mounting plugs, supplements PSM-HCS-KONFTOOL...	PSM-HCS-CLEAVETOOL/B-FOC	2708478	1
Fiber cleaving tool, for HCS fibers, pin arrangement: SCRJ or SC duplex for the assembly of SC quick mounting plugs, supplements PSM-HCS-KONFTOOL...	PSM-HCS-CLEAVETOOL/SCRJ	2313122	1
Fiber optic measuring case, consisting of an optical power meter, F-SMA and B-FOC adapters, reference fibers, and operating instructions	PSM-FO-POWERMETER	2799539	1
Fiber optic measuring case supplementary set, for devices with SCRJ interface, consisting of one-meter polymer reference fiber (SC Simplex to F-SMA plug), one-meter HCS GI reference fiber (SC Simplex to B-FOC plug), and SCRJ coupling	PSM-FO-POWERMETER SCRJ-SET	2901560	1

3 Technical data

General data	
Cable type	HCS, 200/230 µm
Cable abbreviation	I-VH11Y 2K200/230 HCS
Cable length	Free input (1.0 ... 2000.0 m)
Weight	54 kg/km
Temperature range	
Installation	-20°C ... +60°C
Operation	-40°C ... +70°C
Operation (with quick mounting plugs)	-20°C ... +70°C
Storage	-40°C ... +70°C
Altitude	5000 m

Fibers

Type	200/230 µm step index profile
Attenuation	
At 650 nm	≤ 10 dB/km
At 850 nm	≤ 8 dB/km
Bandwidth length product	
At 650 nm	≥ 17 MHz x km
At 850 nm	≥ 20 MHz x km
Numerical aperture	0.37

Single wires

Material	Copolymer (FRNC), flame resistant, halogen-free
Color	Red and green
Wire diameter	2.9 mm ±0.1 mm (for 3 mm crimping)
Strain relief elements, outer sheath	Non-metallic, aramide yarn
Stranding	Two single elements stranded with two blind elements and wrapped in fleece

Outer sheath

Material	Polyurethane (PUR)
Color	Orange
Diameter	8 mm ±0.5 mm
Imprint	PHOENIX CONTACT FIBER OPTIC CABLE and running length specification in m I-VH11Y 2K200/230 10A17+8B20 HCS RUGGED
Tearing wire	Aramide yarn beneath outer sheath

Mechanical properties according to IEC 60794-1-2

		Cables		Single wires	
Bending radius	Method E11, test type A	Temporary	At least 65 mm	Temporary	At least 30 mm
		Permanent	At least 65 mm	Permanent	At least 50 mm
Tensile strength	Method E1	Temporary	Maximum 1000 N		
		Permanent	Maximum 200 N		
Lateral strength	Method E3	Temporary	Maximum 400 N/cm		
		Permanent	Maximum 100 N/cm		
Impact strength	Method E4	At least 2 Nm, 10 impacts			
Resistance to abrasion	Method E2, test type A	At least 5000 cycles, 0.45 mm radius of the steel point, 7N			
Cold bend test	ISO 6722	Prong ∅ 39.5 mm, 5 kg load			

Material properties

Resistance to oil	IRM 902 100°C according to DIN VDE 0473-811-2-1
Paint or varnish coating	Free from substances that would ruin a paint or varnish coating according to central standard P-VW 3.10.757 65 0 of VW, Audi, Seat
Halogen-free	According to IEC 60754-2 A1
Resistance to ozone	According to DIN VDE 0472-805, test type B
UV resistance	According to DIN EN ISO 4892-2, method A
Fire load	1.72 MJ/m (0.48 kWh/m)
Behavior in fire	Flame-retardant
RoHS conformance	Cable meets EU directive 2002/95/EC