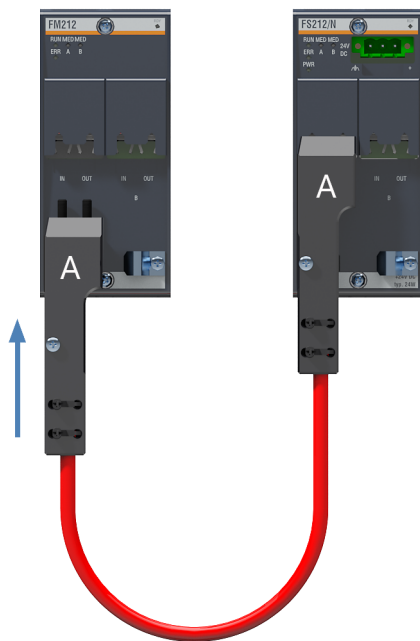


Glass Fiber Optic Cable (HCS/PCF)

The fiber optic cables are used to connect the FASTBUS modules FM211, FM212, FS211, FS211/N, FS212 and FS212/N, enabling the connection of remote SubDevices over large distances with a minimum signal delay. HCS (hard cladded silica) is also known as PCF (polymer cladded fiber).

Features

- Distances of up to 150 m with HCS cables or 180 m with special HCS cables between 2 stations
- Minimal signal delay



Order data

Part type designation	Part number	Description
K-LWLH1 2.0m AA	00010762-07	HCS cable 2.0 m duplex 200 µm HCS fiber; Fx21x Fastbus; port side AA
K-LWLH1 10.0m AA	00010762-04	HCS cable 10.0 m duplex 200 µm HCS fiber; Fx21x Fastbus; port side AA
K-LWLH1 15.0m AA	00010762-06	HCS cable 15.0 m duplex 200 µm HCS fiber; Fx21x Fastbus; port side AA
K-LWLH1 90.0m AA	00010762-01	HCS cable 90.0 m duplex 200 µm HCS fiber; Fx21x Fastbus; port side AA
K-LWLH1 95.0m AA	00010762-00	HCS cable 95.0 m duplex 200 µm HCS fiber; Fx21x Fastbus; port side AA
K-LWLH1 100.0m AA	00010762-03	HCS cable 100.0 m duplex 200 µm HCS fiber; Fx21x Fastbus; port side AA
K-LWLH1 120.0m AA	00010762-02	HCS cable 120.0 m duplex 200 µm HCS fiber; Fx21x Fastbus; port side AA

Necessary parts and tools

Part type designation	Part number	Description
LWLH connector	00010949-00	Pin for HCS cable type Simplex per piece
LWLH fiber optic cable housing ZA	00011105-00	Housing LWL-HCS for left site (metal housing with screws)
LWLH fiber optic cable housing ZB	00011622-00	Housing LWL-HCS for right site (metal housing with screws)
LWLH-WKZ-SET	00010952-00	Tool set for LWLH with cutter, skinning tool, crimp gripper, diamond cutter
LWLH/-Cap	00011188-00	Protection cap for LWL metal connector

Cable recommendations ¹⁾

Article	Order code	Manufacturer	Description
Glass fiber cable ²⁾ (HCS/PCF)	84Q02300T000ZUL00	LEONI AG	I-V(ZN)YY 2K200/230 Mini breakout cable up to 150 m long, operating and storage temp. -40 °C to 90 °C
Glass fiber cable ²⁾ (HCS/PCF)	84Q04700T	LEONI AG	AT-V(ZN)Y11Y 2K200/230 Breakout cable up to 150 m long, operating and storage temp. -40 °C to 85 °C
Glass fiber cable ²⁾ (HCS/PCF)	84Q02300W	LEONI AG	I-V(ZN)YY 2K200/230 GI-PCF Mini breakout cable up to 180 m long, operating and storage temp. -20 °C to +70 °C, storage temp. -40 °C to +70 °C
Glass fiber cable ²⁾ (HCS/PCF)	84Q04700W	LEONI AG	AT-V(ZN)Y11Y 2K200/230 Breakout cable up to 180 m long, operating temp. -20 °C to +70 °C, storage temp. -30 °C to +70 °C
Glass fiber cable ²⁾ (HCS/PCF)	801733	HELUCOM	I-V(ZN)YY 2K200/230 Mini breakout cable up to 150 m long, operating and storage temp. -30 °C to +85 °C

¹⁾ Information without guarantee, order directly from the manufacturer

²⁾ When utilizing cable from other manufacturers be aware of possibly divergent specifications, e.g. attenuation or minimum bending radius. A single conductor of fiber optic cable must have a diameter of 2.2 mm, the HCS core 200 µm. The external diameter of the a fiber optic cable, incl. jacket, must be ≤ 8 mm max in order to be able to be held by the strain relief housing.

Preparing the cable

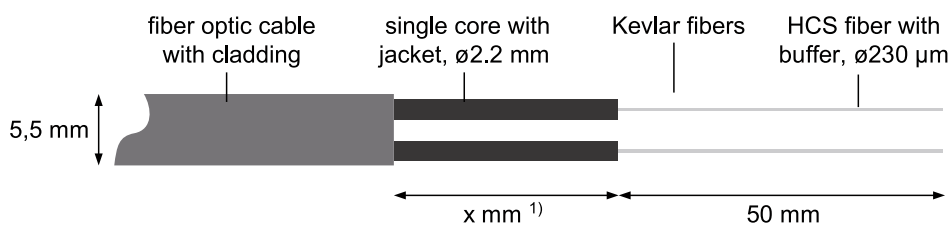
Procedure:

Note: The HCS-fiber must not be damaged when stripping, otherwise optical reflections could result, which would seriously reduce the transmission quality.

1. Strip cladding using a stripping knife.
2. Strip HCS fibers. For this purpose, stripping pliers notch 1.6 have to be used.



3. Cut off half of the Kevlar fibers (on a quantity basis) with the scissors (at the end of the protective jacket).



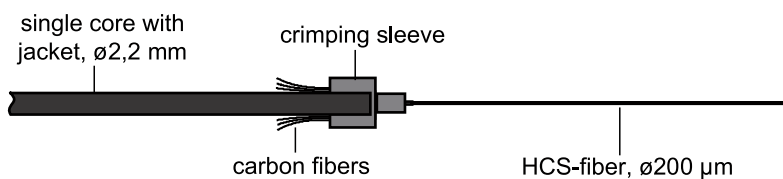
¹⁾ The length x mm is geared to the possibility of strain relief. The length is 55 mm for fiber optic cable housing ZA or ZB.

➔ Cable is prepared.

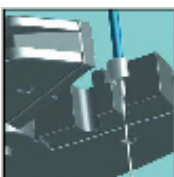
Applying crimp sleeve

Procedure:

1. Distribute the Kevlar fibers evenly backward over the jacket.
2. Slide the crimp sleeve onto the HCS fiber.
3. Screw the crimp sleeve onto the jacket until resistance can be felt.



4. Crimp the crimp sleeve onto the HCS fiber. For this purpose, the forward inset of the crimping pliers has to be used.

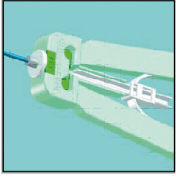


5. Cut off protruding Kevlar fibers with the scissors.
 - ➔ Crimp sleeve is assembled.

Removing buffer

Procedure:

1. Insert the HCS fibers along with the crimp sleeve into the frontal aperture of the stripping tool up to the stop.



2. Squeeze both stripping tool grips.
3. Remove the buffer carefully and straightly from the HCS fiber.
4. Check the HCS fiber for damage or dirt. If the fiber has been hurt, start again. If the fiber is dirty, wipe off, using a soft towel.

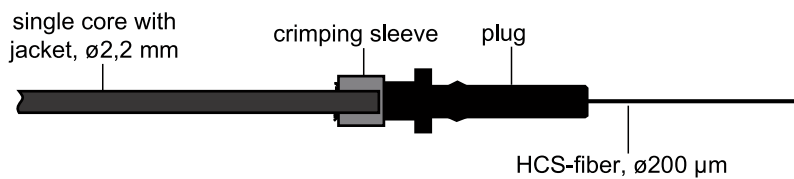
Applying plug

Prerequisites:

- The fiber has to be clean, dry and oil free in order to achieve good crimp performance.

Procedure:

1. Slide the plug over the HCS fiber and under the crimp sleeve. The plug flange has to abut the crimping pliers.



2. Crimp the crimp sleeve onto the plug. For this purpose, the rearmost inset of the crimping pliers has to be used.

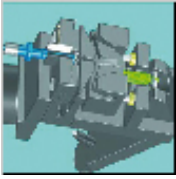


➔ Plug is assembled.

Breaking the HCS fiber

Procedure:

1. Insert the connector into the breaking tool (diamond cutter) and hold it tight on the stop.



2. Hold the breaking tool with one hand at the round handle.
3. Press the lever down slowly with your thumb.
4. Release the lever.
→ HCS fiber is broken.

Housing assembly

Depending on the application, different housings have to be used.

The example described here shows a FASTBUS cable with two type ZA housings, as needed e.g. for the connection from channel A of the FM21x to channel A of the FS21x of the first FASTBUS SubDevice.

Procedure:

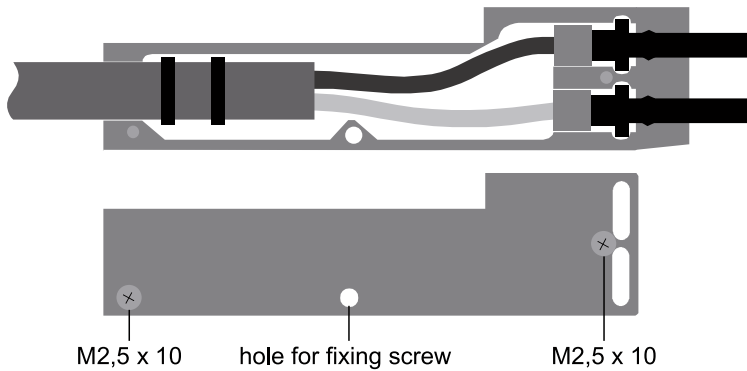
1. Insert plugs into the housing. The single conductors in the housing must not be tensed, otherwise the horizontal play of the single connector in the housing is inhibited.



2. Secure the cable with cable ties. Fasten using both countersunk screws (M2.5 × 10). The mounting screw (M3 × 20) secures the connector's pull-off guard on the module.

To ensure optimum enclosure of the cable sheath, position the cable tie so that the head of the cable tie is located outside of the connector housing.

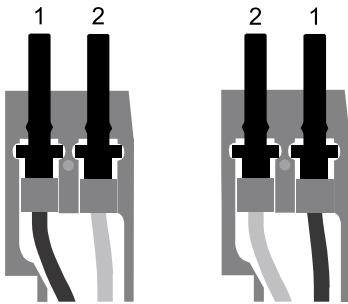


3. → Assemble cover.

→ First housing is assembled.

4. → Assemble housing.

This can usually be checked by different colors of the protective coatings.



→ Check whether the fibers are chipped.

5. → Assemble second housing. The procedure is the same as for the first housing.

- Second housing is assembled.
- The cable is fully assembled.

Mounting on the module

When attaching the housing to the module make sure that the housing is shifted upwards as far as possible. The tolerance window for the module's fiber optic cable connector is shifted as a result. If the housing is bolted tight against the lower stop and the single conductors in the housing are taut, it can happen that the individual fiber optic cable connector is easily pulled out of the module's fiber optic cable connector.