

Fiber optic adapter for differential transmission (G) user manual

(english)



Art.Nr. 9531-G

11.02.2021

© PI 2021

index of contents

Fiber optic adapter for differential transmission (G)

0.1 LWL ADAPTER

0.1.1 General to beam-waveguide

0.1.2 General to LWL-ADAPTER

0.1.3 Hardware connection on iBx-clamp

0.1.4 Hardware connection between two LWL-Adapter

0.1.5 Hook-up-example

0.1.6 Technical data LWL Adapter

Fiber optic adapter for differential transmission (G)

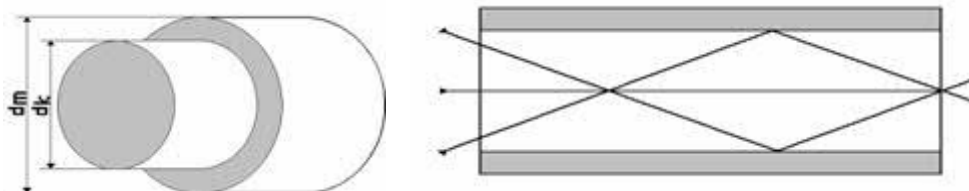
0.1 LWL ADAPTER

0.1.1 General to beam-waveguide

To the basic advantages to the LWL-technique opposite wiring with copper conductor belongs among other things:

- Interference protection
 - * beam-waveguides are insensitive also without shielding opposite electromagnetic fields
 - * No "antenna effect" of the conductor
- potential separation
 - * beam-waveguides are insulators (ca.110kV/m).
 - * No current compensations due to various earth-potentials.
- Lightning protecton
 - * beam-waveguides are insulators
- Ex-protection
 - * No spark genesis at separation or cable disruption.
- Bugging protection
 - * No crosstalk.
- Weight
 - * Low cable mesures.

fiber (without coat) has a core and an outside skin which one another refraktionindex for the light. Around the fiber is because of one possible inductive disturbance a PVC or PE coat which protects the fiber from external interferences.



glass fiber synthetic material fiber

dk = diameter core	62,5µm	980µm
dm = diameter outsideskin	125µm	1000µm

0.1.2 General to LWL-ADAPTER

There are two different models for the general application:

- LWL-Adapter für Kunststoffaser-Leitungen
(LWL-Adapter for synthetic material fiber lines)
- LWL-Adapter für Glasfaser-Leitungen
(LWL-Adapter for glass fiber lines)

The complete electronics are integrated in an industrial metal casing (which is prepared for the mounting of a switchgear cubicle or a switchboard). The device can be fastened directly to the switchboard.

Connection, mechanics, pin seizure and electrical data meet the respective iBx specification.

However, the LWL-System can individually be used by other userspecific hook-ups (RS485 4-wire interface).

0.1.3 Hardware connection on iBx-clamp

The entrance and exit represent a RS485 interface on the wired side of the LWL-Adapter. One of these interfaces of usual connection is needed therefore:

To use is a cable of the type 2 x 2 x 0.25 mm² in pairs with shield.
This cable is attached by screwterminals at the LWL-Adapter.

0.1.4 Hardware connection between two LWL-Adapter

One in this case distinguishes between LWL-Adapter for **synthetic material fiber** and LWL-Adapter für **glass fiber**:

Important at both systems:

Should the cable get canned at own is open good polished fraying respect

• LWL-Adapter for synthetic material fiber:

Cable type: Duplex Typ POF (980µm/1000µm) coat PE or PVC

Plug type: DST-MV (Duplex-plug with locking system) [HP-Typ HFBR4516]
DST-OV (Duplex-plug without locking system) [HP-Typ HFBR4506]
Two cable fibers are summarized in a plug respectively

Länge: ca.145m

Wellenlänge: 665nm

LWL-Adapter for glass fiber:

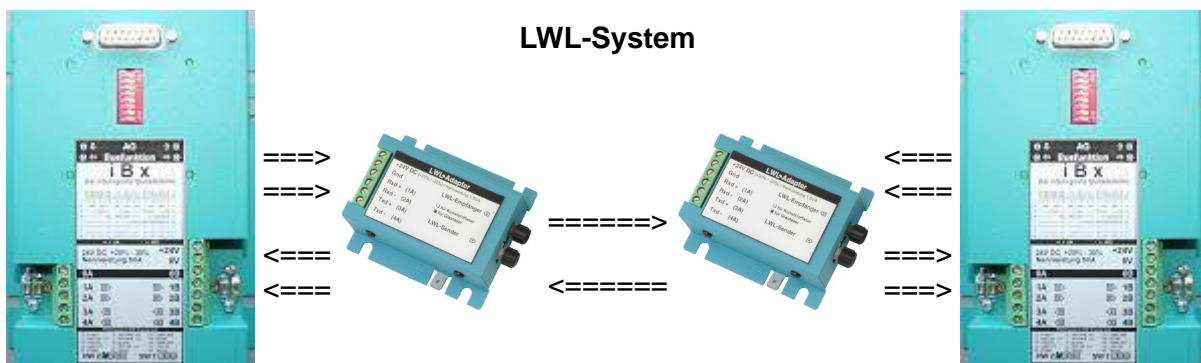
Cable type: only duplex Typ 6F 62,5 (62,5µm/125µm) coat PE or PVC (please do not use cable type GF 50, because the transmitter and receiver are designed for a fiber cross-section of 62.5 µm/125µm. A cross section of 50µm/100µm would bringing heavy loss of quality with it.)

Plug type: F-SMA terminal with screwconnectors for every cable fiber one connector

Length: ca. 2,5km

Wavelength:: 820nm

0.1.5 Hook-up-example



0.1.6 Technical data LWL Adapter

power supply:	24V/DC +/- 20%
power draw:	1,5 power power VA
interfaces:	2 x screw terminals for the voltage connection 4 x screw terminal for differential transmission (TX & RX) 2 x socket, for F-SMA LWL connector
max. Length between two adapters:	glass fiber = ca. 2,5 km thetic material fiber = ca.145 m
working temperature:	5 to 55 Grad Celsius
case:	powder coated metal case with mounting flange
dimensions:	75 x 65 x 30 mm