

# Optical fibre signal transmission

RS422/HTL

Optical fibre transmitter and receiver

**eco**  
plus

Cost advantage compared to conventional wiring over 150 m length\*



The solution where signal transmission is difficult.

The system is made up of an optical fibre transmitter and an optical fibre receiver. The optical fibre transmitter converts the electrical signals of a normal incremental encoder into a light signal for transmission by means of an optical fibre.

The receiving module converts the optical signal back into electrical signals. Up to 4 channels with inverted signals may be transmitted safely.

## Innovative

- Signal transmission via just a single glass fibre
- Safe signal transmission up to 1000 m
- Input frequency up to 400 kHz
- Input level 10 ... 30 V or RS422
- Inverted input signals
- Resists extremely strong electro-magnetical fields

## Compact

- Can be installed even where space is tight
- Minimal installation depth
- Connections plug-in HD-SubD15 or terminal clamp

## Application areas

- Process control technology and automation technology
- Applications sensitive to interference
- High voltage plants
- Plants with long transmission distances
- Potential separation
- Explosive areas

## Order code

Optical fibre transmitter / receiver

6.LWL X . XX  
a b c

**a**  
**S** = Optical fibre transmitter  
**E** = Optical fibre receiver

**b** Output circuit / Power supply  
 1 = RS422 / 10 ... 30 V DC  
 2 = HTL, without inverted signals / 10 ... 30 V DC (only for optical fibre transmitter)  
 4 = RS422 / 5 V DC  
 5 = HTL / 10 ... 30 V DC, input

**c** Type of connection  
 0 = Terminal clamp  
 1 = Plug-in connector HD-Sub D15

Scope of delivery:  
 - Optical fibre module  
 - Multilingual operating manual

Optical fibre transmitter versions can be combined with any version of the optical fibre receivers.

## Accessories

**Simplex Patch cable**  
**ST-ST - Multimode**



Connector:  
 2 x ST/PC, optical fibre:  
 1 x 50/125

**05.B09-B09-821-XXXX**

XXXX = Length in m  
 Standard lengths: 2 m, 5 m, 8 m, 10 m, 15 m, 20 m, ... (in 5 m steps)

**ST Multimode coupling**



Barrel: ceramic, slotted

**05.LWLK.001**

\* Comparison of costs:  
 Costs per meter standard copper cable compared to costs per meter optical fibre signal cable + costs of transmitter + costs of receiver

# Optical fibre signal transmission

## RS422/HTL Optical fibre transmitter and receiver

Technical data	
<b>Supply voltage</b>	10 ... 30 V or 5 V ±5%
<b>Power consumption per module</b>	< 2 W
<b>Operating voltage reverse connection protection</b>	available
<b>Encoder inputs optical fibre transmitter channels</b>	A, $\bar{A}$ , B, $\bar{B}$ , 0, $\bar{0}$
<b>Max. input frequency optical fibre transmitter and output frequency optical fibre receiver</b>	400 kHz
<b>Input level optical fibre transmitter</b>	10 ... 30 V or RS 422
<b>Optical wavelength</b>	820 nm
<b>Optical transmission rate</b>	120 Mbit/s
<b>Optical fibre synchronisation display</b>	LED on the receiver
<b>Optical fibre connection</b>	ST connector, $\varnothing$ 9 mm, on the bottom side of the housing
<b>Glass fibre</b>	multimode fibre, 50/125 $\mu$ m, 62,5/125 $\mu$ m
<b>Input signals sampling rate</b>	10 MSamples/s
<b>Optical fibre transmission distance</b>	max. 1000 m
<b>Dimensions (W x L x H)</b>	Terminal clamp 22,5 x 110,8 x 88,4 mm Plug-in connector 19,0 x 110,8 x 88,4 mm
<b>Protection</b>	IP40, terminals IP20
<b>Terminals</b>	protected against contact max. conductor diameter 2,5 mm <sup>2</sup>
<b>Temperature range</b>	-10°C ... +60°C
<b>Weight</b>	approx. 95 g
<b>Standards</b>	EN 55011 Class B EN 61000-6-2: 2006

### Terminal assignment

Type of connection	Terminal clamp, optical fibre transmitter and optical fibre receiver												
0	Signal	$\bar{A}$	$\bar{B}$	$\bar{0}$ ( $\bar{C}$ )	A	B	0 (C)	$\bar{D}$	D	+U <sub>B</sub>	0 V, GND linked internally	Shield	
	Terminal	1	2	3	4	5	6	7	10	8	9, 11, 12	–	

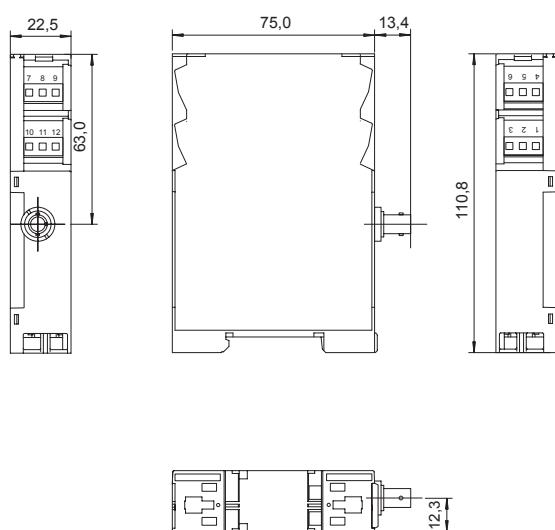
Type of connection	HD-Sub D15, optical fibre transmitter											Terminal		
1	Signal	$\bar{A}$	$\bar{B}$	$\bar{0}$ ( $\bar{C}$ )	A	B	0 (C)	$\bar{D}$	D	+U <sub>B out</sub> to encoder	0 V, GND linked internally	Shield	0 V, GND linked internally	+U <sub>B out</sub> to encoder, linked internally
	Terminal	9	6	3	8	7	4	1	2	15	11, 12	13	1	2

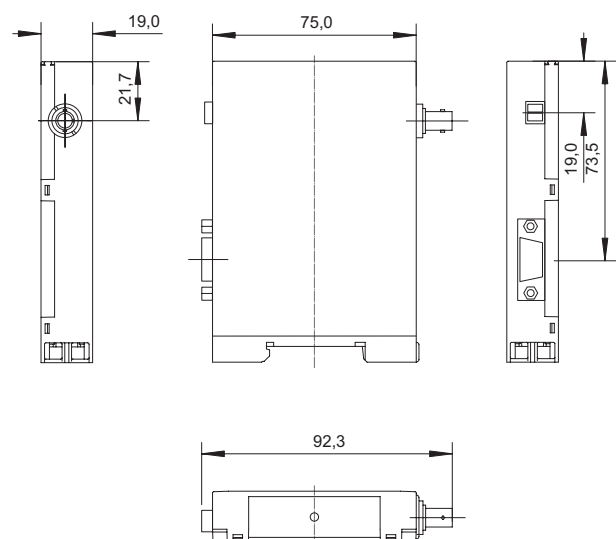
Type of connection	HD-Sub D15, optical fibre receiver											Terminal		
1	Signal	$\bar{A}$	$\bar{B}$	$\bar{0}$ ( $\bar{C}$ )	A	B	0 (C)	$\bar{D}$	D	+U <sub>B in</sub> power supply	0 V, GND linked internally	Shield	0 V, GND linked internally	+U <sub>B in</sub> power supply, linked internally
	Terminal	9	6	3	8	7	4	1	2	15	11, 12	13	1	2

### Dimensions

Terminal clamp



Plug-in connector, HD-Sub D15



Optical fibre signal transmission modules