

# Optical fiber transmission modules

<b>Optical fiber signal transmission</b>	<b>Transmitter and receiver</b>	<b>SSI</b>
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**eco plus**  
 Cost advantage compared to conventional wiring over 150 m length\*



### Optical fiber transmission system for SSI absolute encoders

The system is made up of an optical fiber transmitter and an optical fiber receiver. The optical fiber transmitter converts the electrical signals of a normal absolute encoder with Synchronous Serial Interface (SSI) into a light signal for transmission by means of an optical fiber. The receiving module converts the optical signal back into electrical signals.

Absolute signals can be transmitted safely through one glass fiber over distances of up to 2000 m. A rotary switch on the front side of the module allows adjusting the SSI clock between 1 and 99 bits.

### Reliable transmission

- Safe signal transmission up to 2000 m.
- Resists extremely strong electro-magnetic fields.

### Easy installation

- Signal transmission via a single glass fiber.
- Clock of 1 ... 99 bit can be set via rotary switch.
- LED for monitoring of power supply and clock.
- DIN-rail mounting – requires min. installation space – only 19 mm wide.

### Application areas

- Process control technology and automation technology.
- Crane systems.
- High voltage plants.
- Heavy industry.
- Wind power plants.
- Drive technology.
- Rolling mills.

### Order code

Optical fiber transmitter / receiver

6.LWLA . XXX  
 a b c

<b>a</b> S = Optical fiber transmitter E = Optical fiber receiver	<b>b</b> Power supply 1 = 10 ... 30 V DC 4 = 5 V DC	<b>c</b> Type of connection 0 = Terminal clamp 1 = Plug-in connector Sub-D9	<i>Scope of delivery:</i> - Optical fiber transmission module - Operating manual, dual language, German and English
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Accessories	Order no.				
<b>Simplex Patch cable</b> <b>ST-ST - Multimode</b> 	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Connector:</td> <td>2 x ST/PC</td> </tr> <tr> <td>Glass fiber:</td> <td>1 x 50/125 bending radius min.: static 30 mm [1.18"] dynamic 60 mm [2.36"]</td> </tr> </table> <p style="text-align: right;"><b>05.B09-B09.821-XXXX</b></p> <p style="text-align: right; font-size: small;">XXXX = Length in m Standard lengths: 2 m, 5 m, 8 m, 10 m, 15 m, 20 m, ... (in 5 m steps)</p>	Connector:	2 x ST/PC	Glass fiber:	1 x 50/125 bending radius min.: static 30 mm [1.18"] dynamic 60 mm [2.36"]
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<b>ST Multimode coupling</b> 	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Barrel:</td> <td>ceramic, slotted</td> </tr> </table> <p style="text-align: right;"><b>05.LWLK.001</b></p>	Barrel:	ceramic, slotted		
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\* Comparison of costs:  
 Costs per meter standard copper cable compared to costs per meter optical fiber signal cable + costs of transmitter + costs of receiver

# Optical fiber transmission modules

## Optical fiber signal transmission Transmitter and receiver SSI

### Technical data

General technical data	
Power supply	10 ... 30 DC V eg. 5 V DC $\pm 5\%$
Power consumption per module	< 1 W
Operating voltage reverse connection protection	available
Electrical inputs / outputs (Optical fiber transmitter / receiver)	Clock C+ and C-, RS422 Data D+ and D-, RS422 NPN error input on transmitter Open-Drain outut on receiver
SSI clock rate	max. 1 MHz
Optical wavelength	850 nm (infrared)
Optical fiber connection	ST connector, on the bottom side of the housing
Glass fiber	multimode fiber, 50/125 $\mu\text{m}$ , 62.5/125 $\mu\text{m}$
Optical fiber transmission distance	max. 2000 m [6561']

Dimensions (W x L x H)	19.0 x 110.8 x 92.3 mm [0.75 x 4.36 x 3.63"]
Protection acc. to EN 60529	IP40, terminals IP20
Connection	terminal clamps 11-pin plug-in screw terminal, RM 3.5 Sub-D9 9-pin Sub-D female contacts (for signals) power supply 2-pin plug-in screw terminal
Temperature range	-10°C ... +70°C [+14°F ... +158°F]
Weight	appr. 70 g [2.47 oz]

EMC		
Standards	Emitted interference	EN 55011 class B1
	Immunity to interference	EN 61000-6-2

### Terminal assignment

#### Optical fiber transmitter

Type of connection	Terminal clamp											
0	Signal:	0 V	+V	C+	C-	D+	D-	input/error	-	-	-	⊥
	Pin female contact:	1	2	3	4	5	6	7	8	9	10	11

Type of connection	Plug-in connector, Sub-D9										
1	Signal:	0 V	+V	input/error	D-	D+	C-	C+	-	⊥	
	Pin female contact:	1	2	3	4	5	6	7	8	9	

#### Optical fiber receiver

Type of connection	Terminal clamp											
0	Signal:	0 V	+V	C+	C-	D+	D-	output/error	-	-	-	⊥
	Pin female contact:	1	2	3	4	5	6	7	8	9	10	11

Type of connection	Plug-in connector, Sub-D9										
1	Signal:	0 V	+V	output/error	D-	D+	C-	C+	-	⊥	
	Pin female contact:	1	2	3	4	5	6	7	8	9	

#### Power supply

Screw terminal, 2 pin	
Signal:	0 V +V
Pin female contact:	1 2

Contacts 1/2 of the 2-pin plug-in screw terminal are connected to contacts 1/2 of the 11-pin plug-in screw terminal or with contacts 1/2 of the Sub-D connector.

- +V: Power supply +V DC
- 0 V: Power supply ground GND (0 V)
- C+, C- : Clock signal
- D+, D- : Data signal
- ⊥: Shield

## Dimensions

Dimensions in mm [inch]

