

Optical fiber transmission modules

Optical fiber signal transmission	Transmitter and receiver	SSI
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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

a

S = Optical fiber transmitter
E = Optical fiber receiver

b

Power supply
1 = 10 ... 30 V DC
4 = 5 V DC

c

Type of connection
0 = Terminal clamp
1 = Plug-in connector
Sub-D9

Scope of delivery:

- Optical fiber transmission module
- Operating manual, dual language, German and English

Accessories

Order no.

Simplex Patch cable

ST-ST - Singlemode / Multimode



Connector:

2 x ST/ST

Glass fiber:

G50/125 OM4
bending radius min.:
operation 50 mm [1.97"]
installation 25 mm [0.98"]

05.00.6011.1717.XXXM

XXX = Length in m
(in 5 m steps)

Standard lengths:
25 m, 50 m, 100 m, 200 m,
300 m, 500 m

ST Multimode coupling



Barrel:

ceramic, slotted

05.LWLK.001

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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 μm , 62.5/125 μm
Optical fiber transmission distance	max. 2000 m [6561']
Typ. attenuation	Multimode cable 3,5 db/km per ST connector 0,15 db per splice 0,3 db

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]

Approvals	
CE compliant in accordance with	EMC Directive 2014/30/EU

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