

# Optical fiber transmission modules

Optical fiber signal transmission	Transmitter and receiver	SSI
-----------------------------------	--------------------------	-----



## 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 - Multimode



Connector:

2 x ST/PC

Glass fiber:

1 x 50/125  
bending radius min.:  
static 30 mm [1.18"]  
dynamic 60 mm [2.36"]

**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**

# 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 $\pm 5\%$	Dimensions (W x L x H)	19.0 x 110.8 x 92.3 mm [0.75 x 4.36 x 3.63"]
Power consumption per module	< 1 W	Protection acc. to EN 60529	IP40, terminals IP20
Operating voltage reverse connection protection	available	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
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	Temperature range	-10°C ... +70°C [+14°F ... +158°F]
SSI clock rate	max. 1 MHz	Weight	appr. 70 g [2.47 oz]
Optical wavelength	850 nm (infrared)	Approvals	
Optical fiber connection	ST connector, on the bottom side of the housing	CE compliant in accordance with EMC Directive 2014/30/EU	
Glass fiber	multimode fiber, 50/125 $\mu\text{m}$ , 62.5/125 $\mu\text{m}$	UKCA compliant in accordance with EMC Regulations S.I. 2016/1091	
Optical fiber transmission distance	max. 2000 m [6561']		

## 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