

Optical fibre signal transmission

SSI

Optical fibre transmitter and receiver

eco plus

Cost advantage compared to conventional wiring over 150 m length*



Optical fibre transmission system for SSI absolute encoders

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 absolute encoder with Synchronous Serial Interface (SSI) into a light signal for transmission by means of an optical fibre. The receiving module converts the optical signal back into electrical signals. Absolute signals can be transmitted safely through one glass fibre over distances of up to 1500 m.

The resolution of 13 bit for a singleturn encoder or 25 bit for a multiturn encoder can be defined by means of a DIP-switch on the front side of the module.

Reliable transmission

- Safe signal transmission up to 1500 m
- Resists extremely strong electro-magnetic fields

Application areas

- Process control technology and automation technology
- Applications sensitive to interference
- High voltage plants

Easy installation

- Signal transmission via a single glass fibre.
- Resolution of 13 bit or 25 bit can be set via DIP-switch
- LED for monitoring of power supply, clock and date
- DIN-rail mounting – requires min. installation space – only 22 mm wide

- Plants with long transmission distances
- Potential separation
- Explosive areas

Order code

Optical fibre transmitter / receiver

LWL X . AX
a b

a
S = Optical fibre transmitter
E = Optical fibre receiver

b Supply voltage
 1 = 10 ... 30 V DC
 4 = 5 V DC

Scope of delivery:

- Optical fibre module
- Operating manual, dual language, German and English

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

Connection Technology

Optical fibre signal transmission SSI Optical fibre transmitter and receiver

Technical data		Glass fibre	
Supply voltage	10 ... 30 V DC or 5 V DC \pm 5%	Max. optical fibre transmission distance	multimode fibre, 50/125 μ m, 62.5/125 μ m
Power consumption per module	U_B 10 ... 30 V DC max 1.6 W U_B 5 V DC max 0.8 W	Dimensions	(W x L x H) 22.5 x 110.8 x 88.4 mm
Operating voltage reverse connection protection	available	Protection	IP40, terminals IP20
Encoder inputs optical fibre transmitter	-T, +T and -D, +D	Terminals	protected against contact 2.5 mm ² max. conductor diameter
SSI clock rate	500 kHz fixed setting	Temperature range	-10°C ... +60°C
Optical wavelength	820 nm (infrared)	Weight	approx. 100 g
Optical transmission rate	120 Mbit/s	Standards	EN 55 011 Class B1 EN 61 000-6-2: 2006
Optical fibre connection	ST connector, 13 mm, \varnothing 9 mm, on the bottom side of the housing		

Connection diagram Optical fibre transmitter

Pin	Signal
1	0 V (GND)
2	+ U_B
3	+ T
4	- T
5	+ D
6	- D
7	0 V (GND)
8	+ U_B

Connection diagram Optical fibre receiver

Pin	Signal	
1	0 V (GND)	
2	+ U_B	from power supply
3	+ D	
4	- D	to controller
5	+ T	
6	- T	from controller
7	emitter (-)	
8	collector (+)	optocoupler output alarm output

Dimensions

