

Optical fibre signal transmission

SSI



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 multi-turn 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

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

Application areas

- Process control technology and automation technology
- Interference-sensitive applications
- High voltage plant
- Plant with long transmission distances
- Potential separation
- Hazardous areas

Order code

Optical fibre transmitter

$U_B = 10 \dots 30 \text{ V DC}$

$U_B = 5 \text{ V DC}$

6.LWLS.A1

6.LWLS.A4

Optical fibre receiver

$U_B = 10 \dots 30 \text{ V DC}$

$U_B = 5 \text{ V DC}$

6.LWLE.A1

6.LWLE.A4

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

Accessories

Simplex Patch cable ST-ST – Multimode

Connector: 2xST/PC, Optical fibre: 1 x 50/125

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

Order code:

05.B09-B09-821-L XXX

①

① Length in m

ST Multimode coupling

Barrel: ceramic, slotted

Order No.:

05.LWLK.001

* Comparison of costs:

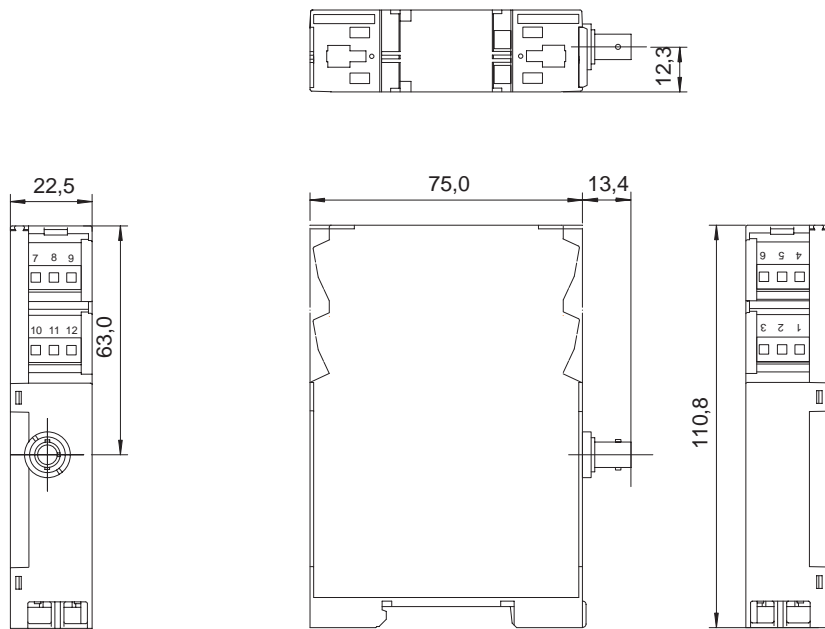
Costs per meter standard copper cable compared to costs per meter optical fibre signal cable + costs of transmitter + costs of receiver

Connection Technology

Optical fibre signal transmission SSI

Technical data			
Supply voltage	10 ... 30 V or 5 V \pm 5%	Glass fibre	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	Max. optical fibre transmission distance	max. 1500 m
Operating voltage reverse connection protection	available	Dimensions	(W x L x H) 22.5 x 110.8 x 88.4 mm
Encoder inputs	optical fibre transmitter -T, +T and -D, +D	Protection	IP 40, terminals IP 20
SSI clock rate	500 kHz fixed setting	Terminals	protected against contact, max. conductor diameter 2.5 mm ²
Optical wavelength	820 nm	Temperature range	-10 °C ... +60 °C
Optical transmission rate	120 Mbit/s	Weight	approx. 100 g
Optical fibre connection	ST connector, 13 mm, ϕ 9 mm on the bottom side of the housing	Standards	EN 55 011 Class B1 EN 61 000-6-2: 2006

Dimensions



Connecting 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

Connecting diagram Optical fibre receiver:

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