

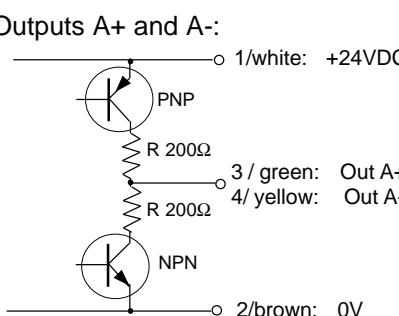
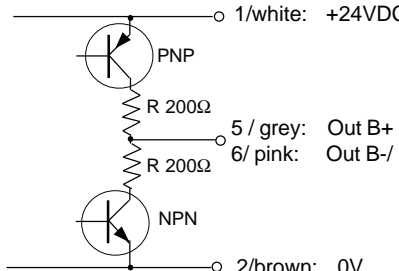
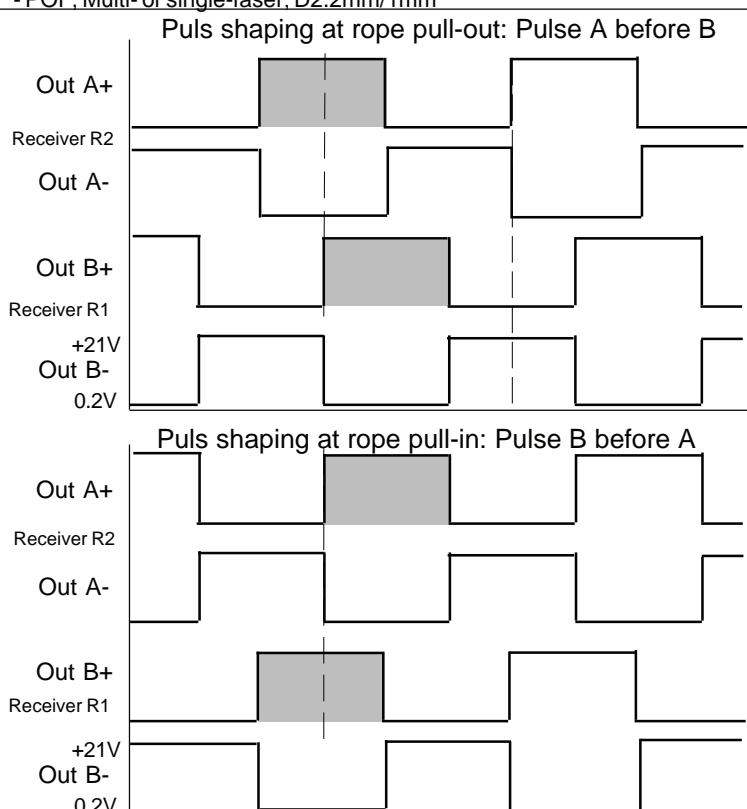
Signal converter for rope length transmitter type OLN-10-LWL

Housing M30

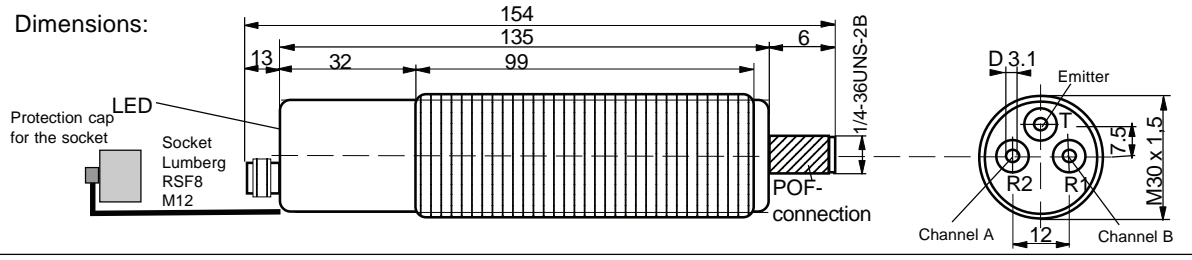

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II 3 G EEx nA IIB T4
II 3 D IP67 T140°C

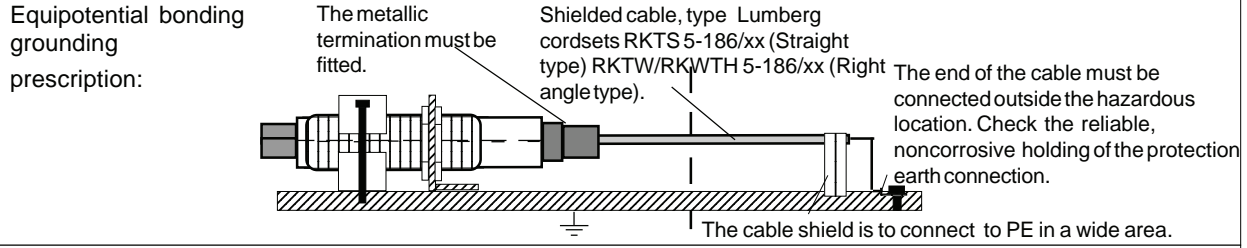
- Applicable for reciprocating pump position sensing
- Simple connection of synthetic fibre optics without special tools
- Laser emitter visible red
- Applicable in Ex zones 2 and 22
- Switching frequency 10kHz
- High reliability and EMC immunity

Technical Data	Type	OLN-10-LWL
Type of ex protection Gas, at 94/9/EG		II 3 G EEx nA IIB T4
Type of ex protection Dust, at 94/9/EG		II 3 D IP67 T140°C
Applicable in Ex zones		Zones 2 & 22
Laser class		class II, 650nm red, Po ≤ 1mW
Switching frequency		10kHz
Output rise and fall time		≤ 4us
Supply voltage		24 VDC (20 to 28VDC) / Um=30VDC
Current consumption		80mA
Maximum power dissipation		appr. 2.24W
Outputs channel A		1 x Push-Pull + 1 x Push-Pull, short circuit protected, max. 10mA
Outputs channel B		1 x Push-Pull + 1 x Push-Pull, short circuit protected, max. 10mA
Output impedance		maximum 200Ω, RL: 2000Ω to 10kΩ
Housing		M30, brass, nickel plated
Enclosure rating at EN 60529		IP 67
Ambient working temperature TA		0°C < TA < +50°C
POF connection		POF-connection for PHOENIX type Q-FSMA (Phoenix article-No.: 18 85 99 4)
Applicable for POF types		Outside diameter: 2.2mm / Core diameter: 1mm
Length of the plastic fibre optics (POF)		1m to 5m
Electrical connection		Socket M12, Lumberg type: RSF 8, 8 terminals
Accessories included		- 2x nuts M30 - 1x Safety lock device, mount at the cable connection, for locking the connection. (black synthetic device) - 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector. - 1x Protection cap for the sensor connector.
Accessories optional		- Single ended cordset, straight type: RKTS 8-186/xx or right angle type: RKWTH 8-186/xx, Lumberg M12/8P - Q-FSMA-KT POF quick connector (Phoenix) - POF, Multi- or single-faser: D2.2mm/1mm
Outputs A and B / Function: LED display: RED if supply voltage connected. Outputs A+ and A-:  Outputs B+ and B-: 		

Connection configuration:	Socket M12	1 white	+24VDC	5 grey	R1/Out B+
	Lumberg RSF 8	2 brown	0V	6 pink	R1/Out B-
		3 green	R2/Out A+	7 blue	Protection earth PE/PA
		4 yellow	R2/Out A-	8 red	NC



ATEX related designations for the type OLN:
 CE Manufacturer with address OLN-10-LWL Date of construction: Numeral 4 to 7 of the serial number
 Device type OLN-10-LWL II 3 G EEx nA IIB T4 / II 3 D IP67 T140°C
 Certification by manufacturer/File-number AN-MAT-06-EX-OLN TA: 0°C < TA < +50°C
 Electrical data according to the chart



Operating Manual / EC - Declaration of Conformity:

Mounting prescriptions

Ex Protection:
 The signal converter type OLN-10-LWL is only applicable in Ex zones 2 and 22.
 It is necessary to take into consideration the valid international and national rules and regulations (EN 60079-14). The maximum rated input voltage $U_m = 30VDC$ must not be exceeded. The local equipotential bonding have to be done. The protective earth (PE/PA) is solid connected with the housing. Do not separate the connector when the supply voltage is connected to the cable. When installing the sensor, the safety lock device must be fitted at the cable connector. The additional adhesive warning label must be fixed to the connector housing at the connection cable. Only connectors, Lumberg RKTS/RKTW 8, are allowed. In dusty locations, the protection cap for the optical connections and the protection cap for the sensor socket must be fitted, when no fibres and no connection cable are connected. To connect cables inside hazardous locations only use certificated Ex e housings. All cable terminals must be connected outside hazardous locations. The cable have to be installed and protected against damages.

General mounting prescriptions:
 Do not exceed the maximum ratings. The electrical connections must be exactly as shown in the connection diagram. The cable shield must be connected short. The cable shield should be connected to the protection earth, large-surfaced. Connection cables must not be installed parallel to high voltage cables.

Safety regulations for Laser devices class 2
 The signal converter type OLN-10-LWL must not go into operation without mounted fibre optics. By the installation, the going into operation and the application, it is necessary to take into consideration the valid rule EN 60825 (Parts 12.5.1/12.6.1). Warning! Without mounted fibre optics the optical power reach Laser Class 2. Do not stare into the beam! With mounted fibre optics no safety measures are needed.

Function
 The signal converter OLN-10-LWL generates 2 different conditioned signals, dependent of the moving direction and the speed of the reciprocating pump. The 2 signals A+/A- and B+/B- with a 90° phase quadrature from A to B, gives the possibility to detect the throw of piston, the moving direction and the speed.

Type of outputs
 The 2 channels A and B have 2 differential Outputs A+ with A- and B+ with B-. The differential outputs + and - outputs must not be short circuited. All of the 4 outputs are push-pull types with a voltage output range from 0.2VDC to supply voltage minus 3VDC. (Nominal range 0.2VDC to 21VDC at a supply voltage of +24VDC at a load current $I_{out}=10mA$).

Mounting of the plastic fibre optics (POF)
 The device OLN-10-LWL can only be driven with connected POF. The signal converter type OLN-10-LWL has 3 POF connections.
 T = Emitter (Laser)
 R2/A = Receiver A
 R1/B = Receiver B

Connect the POF of the incremental position transducer to the corresponding POF input at the signal converter. The fibre optics must be

handled careful. Do not use optical fibres longer then 5m. For cutting the fibre optics the special cutter or a professional tool is to use. After cutting the fibres, push them well set into the adaptor and fasten the knuckled nut. Specially near the sensor, the fibre optics must not be buckled or laid with a small radius. Buckled or bad laid fibre optics results to a strong decrease of performance. Avoid performance decreasing and failures caused by wear, by a functional mounting of the fibre optics.

Maintenance
 Protect the fibre optic adaptor of the sensor and the optical fibres against pollution. Please set up the protection caps if no optical fibres are connected. If the fibre optic adapter is contaminated, clean with alcohol. Do not use aggressive solvents. Plastic optical fibres can be destroyed by strong solvents. Equipment must only be repaired or serviced by the manufacturer.

Safety Informations
 The dismounting of the connector safety lock device while the supply voltage is connected is hazardous! The mounting of the signal converter in dusty locations without fixed cordset or protection cap results in a high ignition risk.

The signal converter must not be used for Accident-Prevention! In worst case the output can change to any state!
 When installing and operating with the signal converter, it is necessary to take into consideration the relevant international and other national regulations. (EN 60079-14, ATEX118a, EX-RL, ElExV, TrbF, TRD, UVV, BetrSichV, Single directive 1999/92/EC)

- Standards met:
- Ex protection: 94/9/EC (ATEX 100a)
 - Machine directive: 98/37/EC
 - Low voltage directive: 73/23/EWG, 93/68/EWG
 - EMC: 89/336/EWG, 91/263/EWG, 92/31/EWG, 93/68/EWG
 - RoHS directive 2002/95/EC
 - ATEX-File: AN-MAT-06-EX-OLN
- EN 50014, EN 50021, EN 50282-1-1, EN 61241-0, EN 60529; EN 60825-1, EN 60825-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 60950-1

General Notes
 We reserve the right to modify our equipment. Our equipment is designed such way, that it has the least possible adverse effect on the environment. It neither emit or contain any damaging or siliconized substances and use a minimum of energy and resources. No longer usable or irreparable units must be disposed of in accordance with local waste disposal regulations.

Declaration of Conformity:
 Declaration of conformity by manufacturer at 94/9/EC.
 Tech File No: AN-MAT-06-EX-OLN
 ATEX certification of quality type production of Ex devices at the directive 94/9/EC Certification No: BVS 03 ATEX ZQS / E118
 The conformity of the devices with the EC standards and directives and the EC-type examination certificate and the observation of the Quality Safety System ISO 9001:2000 with the ATEX module "Production", declares:

Hans Bracher, Matrix Elektronik AG

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