Optical data coupler

LS670-DA-EN/F1

- Independent of Ethernet protocol
- Plug connection for fast mounting
- No parameterization
- Line indicator for signal strength

Optical data coupler for fast Ethernet, 150 m detection range, infrared light, 7.5 Mbit/s data rate, M12 plug

Function

The optical data coupler connects Ethernet modules to remote modules. These can move along a line of sight toward each other. The devices are ideal for conditions in automated storage and retrieval systems.
The data transfer takes place with an average transfer rate of 7.5 MBit/s full duplex. The data rate remains constant regardless of distance. Data packets or telegrams are not saved but rather immediately transferred.

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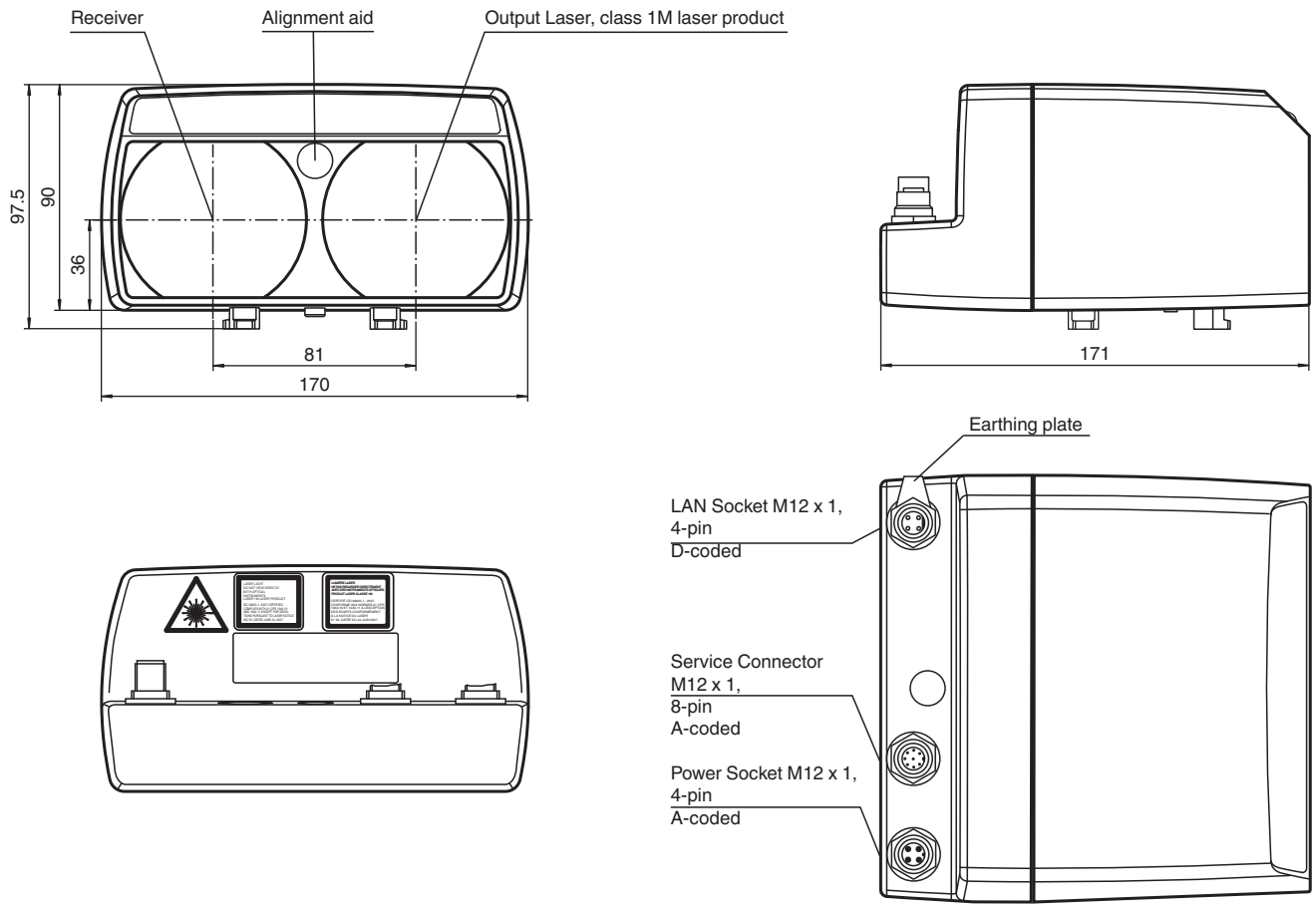
Dimensions



Technical Data

General specifications		
Effective detection range		0 ... 150 m
Threshold detection range		180 m
Light source		laser diode
Light type		modulated infrared light
Laser nominal ratings		
Note		INVISIBLE LASER RADIATION , DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
Laser class		1M
Wave length		785 nm
Pulse length		8 ns
Repetition rate		62.5 MHz
Maximum optical power output		60 mW
Diameter of the light spot		1.5 m at a distance of 100 m
Opening angle		0.9 °
Ambient light limit		> 10000 Lux
Functional safety related parameters		
$MTTF_d$		58.6 a
Mission Time (T_M)		10 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		

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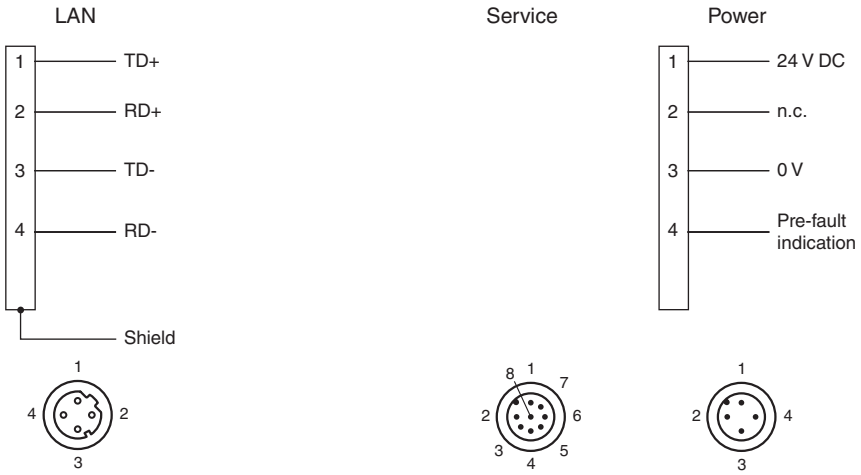
Technical Data

Data flow indicator		LED green: OPTO-Link LED yellow: LAN-Link LED red: ERROR
Diagnostics indicator		LED red: OVERLOAD
Function indicator		Signal strength (8 LED: Red, yellow, green)
Electrical specifications		
Operating voltage	U_B	18 ... 30 V DC
No-load supply current	I_0	200 mA
Data rate		7.5 MBit/s
Interface		
Interface type		100 BASE-TX
Output		
Stability alarm output		1 PNP, inactive when falling short of the stability control , short-circuit protected, max. 200 mA
Conformity		
Laser safety		EN 60825-1:2007
Approvals and certificates		
EAC conformity		TR CU 020/2011
UL approval		cULus Listed
FDA approval		IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007
Ambient conditions		
Ambient temperature		-10 ... 50 °C (14 ... 122 °F)
Storage temperature		-20 ... 70 °C (-4 ... 158 °F)
Mechanical specifications		
Housing width		170 mm
Housing height		90 mm
Degree of protection		IP65
Material		
Housing		ABS / PC
Optical face		plastic
Mass		700 g

Connection Assignment



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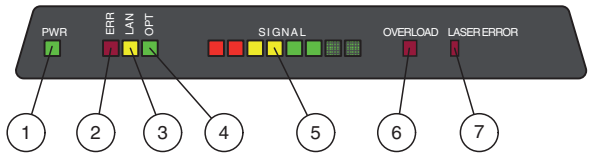
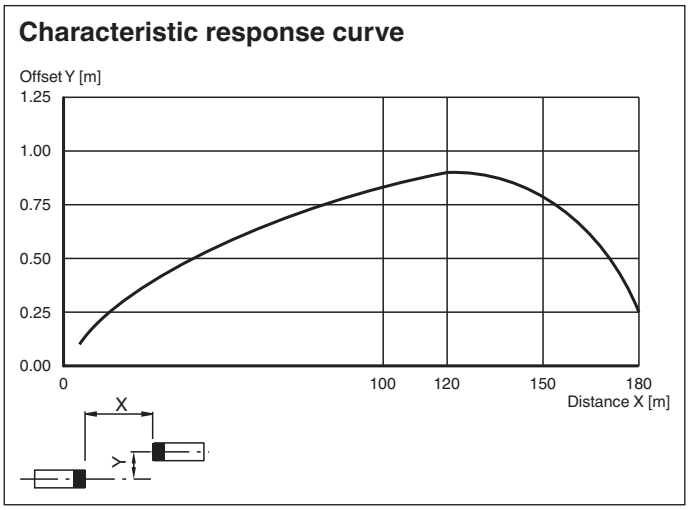
Assembly

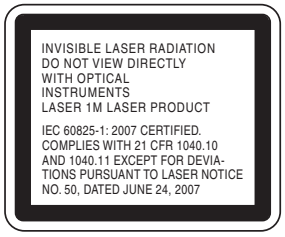


1	Operating indicator	green
2	Failure	red
3	LAN link	yellow
4	Opto link	green
5	Signal quality	
6	Overload	red
7	Error Laser	red

Characteristic Curve



Safety Information



Accessories

	**OMH-LS610-01**	Mounting bracket for optical data coupler
	**OMH-LS610-01**	Mounting bracket for optical data coupler
	**OMH-LS610-02**	Direct mounting set consisting of 4 x M4 threaded inserts

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Accessories

	**OMH-LS610-03**	Mounting bracket with deviation mirror for optical data coupler

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Additional Information

Product description

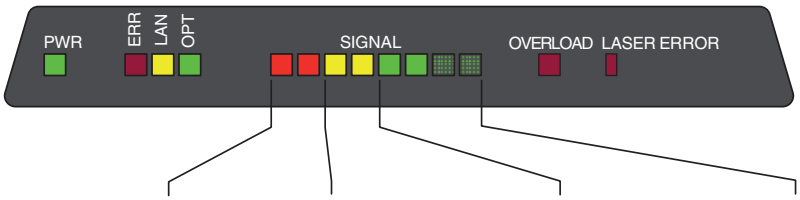
The LS670-DA-EN is a device for serial data transfer in Ethernet systems. One F1 and one F2 device is needed for each data transfer link.

Data Transfer

Data is transferred in both directions by means of modulated light. The information at the input interface is modulated on the carrier signal. The information is then demodulated and issued to the output interface within the receiver. The LS670 features a special "OVERLOAD" display. This display indicates that the transmission capacity of the 8 KB data buffer has been exceeded by the current data volume. In this case, the non-transferable Ethernet telegrams are discarded.

Function Displays/Signal Strength

A red alignment LED, which can be seen from a long way off, is located on the front of the device to serve as an alignment aid. As soon as a receiver detects the transmitted light of the device opposite it, the flashing frequency of the alignment aid decreases. If the light goes out, this indicates that the devices are optimally aligned and sufficient signal strength is available. For fine adjustment, the optical data coupler features a bar graph display (signal display) for optimum alignment.



State	weak signal	sufficient signal strength	signal with function reserve
Transmission	blocked	released	transmission with function reserve
Alignment-LED	fast flashing	slow flashing	off
Signal-indicator	red area	yellow area (at least one LED)	green area

Mounting

The device is mounted using appropriate accessories, e.g., OMH-LS610-01 for wall mounting.
The x-y adjuster is delivered preassembled. It is fixed in the required beam direction (±90° rotation possible) on the mounting bracket.

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