



**Model Number**

**LS670-DA-EN/F1**

Optical data coupler

**Features**

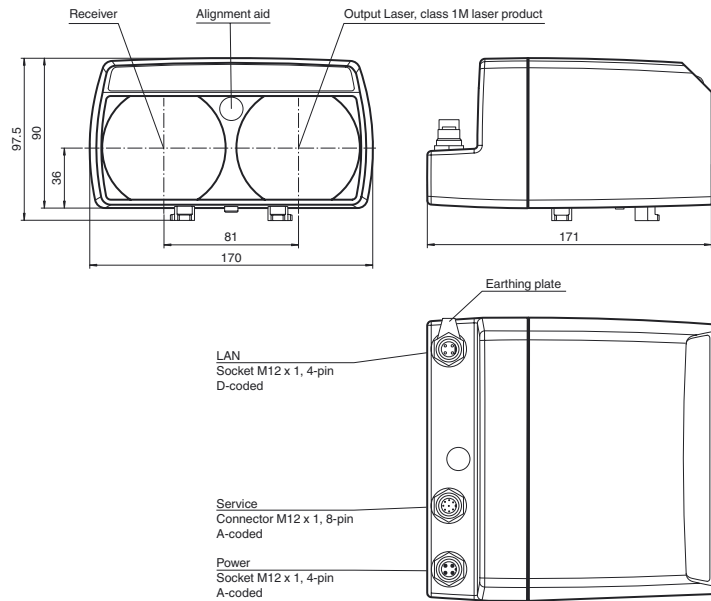
- Independent of Ethernet protocol
- Plug connection for fast mounting
- No parameterization
- Line indicator for signal strength

**Product information**

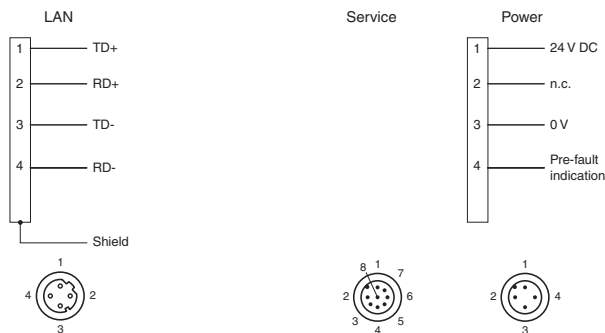
The optical data coupler connects Ethernet modules to remote modules. These can move along a line of sight toward each other. The devices are ideal for conditions in automated storage and retrieval systems.

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.

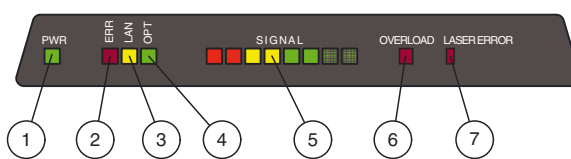
**Dimensions**



**Electrical connection**



**Indicators/operating means**



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

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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**Technical data****General specifications**

Effective detection range	0 ... 150 m
Threshold detection range	180 m
Light source	laser diode
Light type	modulated infrared light
<b>Laser nominal ratings</b>	
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
Angle of divergence	0.9 °
Ambient light limit	> 10000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	58.6 a
Mission Time (T <sub>M</sub> )	10 a
Diagnostic Coverage (DC)	0 %

**Indicators/operating means**

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 <sub>B</sub>	18 ... 30 V DC
No-load supply current	I <sub>0</sub>	200 mA
Data rate		7.5 MBit/s

**Interface**

Interface type	100 BASE-TX
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**Output**

Pre-fault indication output	1 PNP, inactive when falling short of the stability control , short-circuit protected, max. 200 mA
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**Ambient conditions**

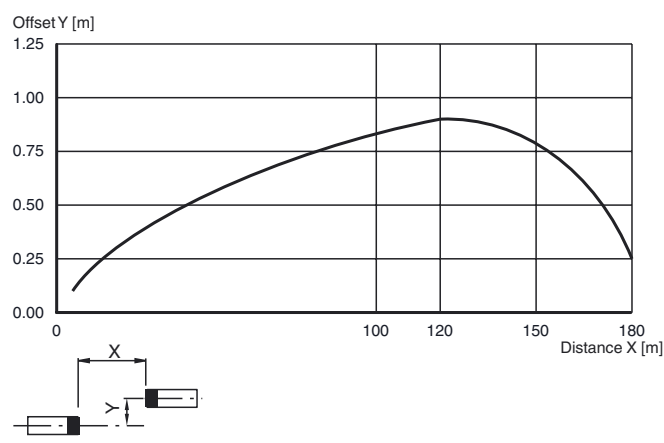
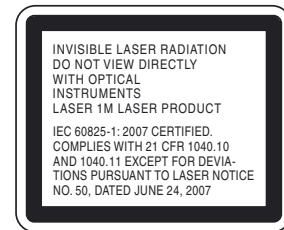
Ambient temperature	-10 ... 50 °C (14 ... 122 °F)
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)

**Mechanical specifications**

Degree of protection	IP65
Connection	4-pin, M12x1 connector, standard (supply) , 8-pin, M12x1 connector, service , 4-pin, M12x1 socket, D-coded (LAN)
<b>Material</b>	
Housing	ABS / PC
Optical face	plastic
Mass	700 g

**Compliance with standards and directives**

Directive conformity	EMC Directive 2004/108/EC
Standard conformity	
Standards	EN 61000-6-2 , EN 61000-6-4 , EN 60825-1

**Curves/Diagrams****Characteristic response curve****Laserlabel****Accessories****OMH-LS610-01**

Mounting bracket for optical data coupler

**OMH-LS610-02**

Direct mounting set consisting of 4 x M4 threaded inserts

**OMH-LS610-03**

Mounting bracket with deviation mirror for optical data coupler

**OMH-LS610-05**

Mounting bracket for optical data coupler and distance measurement devices

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

## Function

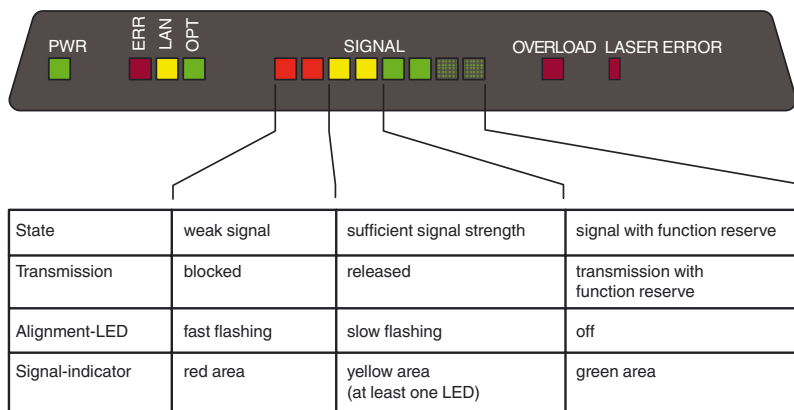
The LS670-DA-EN is a device for serial data transfer in Ethernet systems. One F1 and one F2 device is needed for each data transfer link.

### 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.



### 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 ( $\pm 90^\circ$  rotation possible) on the mounting bracket.

### Laser notice laser class 1M

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Caution: visible and invisible laser radiation, do not observe laser light with optical instruments such as magnifying glasses, microscopes, telescopes or binoculars!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.