

# One-way laser light barrier LS02F



Type 0072-02 with foot mount and plug

## Characteristics:

- Short response time
- Choice of response to light or dark signal
- Suppression of interfering light
- Sender can be focussed
- Long range
- Small dimensions
- Solid construction
- Watertight (IP65)
- several casing versions

## Short description

The light barrier **LS02** requires a supply voltage of 12 ... 24VDC. Due its small dimensions and solid construction it can be used practically everywhere. As light source (sender) the **LS02** uses visible laser diode. Therefore it will be simple to align the sender. The laser modulation of 455kHz substantially increases the ability to suppress interfering light. The range exceeds 50m at a transmitter power classified as laser class 2. Higher range of transmission is available upon request (higher output power).

The output is via a short circuit protected PNP output, permitting a choice of response to light or dark signal (up to 200mA). Due to the use of a laser and the very short response time, the **LS02** can be used for data transmission, time measurement, positioning etc.

The receiver has a two colour equipment-on indicator to attend visually the type of connection. The **LS02-Sender** with food mount and plugs is focusable.

## Technical data Sender

One-way laser light barrier LS02	Sender		
Operating voltage	12	-	24 ±10%
Max. operating current	70 <sup>1)</sup>		40 <sup>1)</sup>
Typical laser Enable turn-on delay	920		900
Typical. Jitter of laser Enable turn-on delay	15		12
Typical. laser Enable turn-off delay	65		77
Typical Jitter of laser Enable turn-off delay	3		2
Optical power	≤ 1 <sup>2)</sup>		mW
Laser class	2 <sup>2)</sup>		-
Wavelength	635 ... 680		nm
Typical. beam size at output	5x2		mm
Focus range	10 - infinite		mm
Typical modulation frequency	455		kHz
Weight	40		g

Unless noted, all data are valid at room temperature (21°C) and normal operating conditions

1) Laser on (Laser Enable = V<sub>cc</sub>)

2) Standard version; on request higher range of transmission available

3) For the LS02 with food mount only

## Technical data Receiver

One-way laser light barrier LS02	receiver mod. 1 <sup>5)</sup>		receiver mod. 2 <sup>5)</sup>		
Operating voltage	12	- 24 ±10%	12	- 24 ±10%	VDC
Max. operating current <sup>1)</sup>	-	20	20	20	mA
Load approx. 100mA <sup>3)</sup> :					
Typical edge steepness t <sub>rise</sub>	-	1	2	1	µs
Typical edge steepness t <sub>fall</sub>	-	10	6	10	µs
Typical response time of rising edge	-	6	11	10	µs
Typical fall time of decreasing edge	-	21	14	18	µs
Voltage drop at output	-	0.9	1.2	0.9	V
Load approx. 200mA <sup>4)</sup> :					
Typical edge steepness t <sub>rise</sub>	-	1	3	1	µs
Typical edge steepness t <sub>fall</sub>	-	6	4	6	µs
Typical response time of rising edge	-	6	11	10	µs
Typical fall time of decreasing edge	-	19	11	15	µs
Voltage drop at output		1.2	1.7	1.3	V
Typical Jitter delayed response	-	3	1	1	µs
Typical Jitter release delay	-	1	3	2	µs
Max. PNP output load <sup>2)</sup>	200				mA
Weight	37				g

Unless noted, all data are valid at room temperature (21 °C) and normal operating conditions

1) without load

2) Output is short circuit protected

3) 110Ω load at 10.8 VDC supply voltage; 250Ω load at 26.4 VDC supply voltage

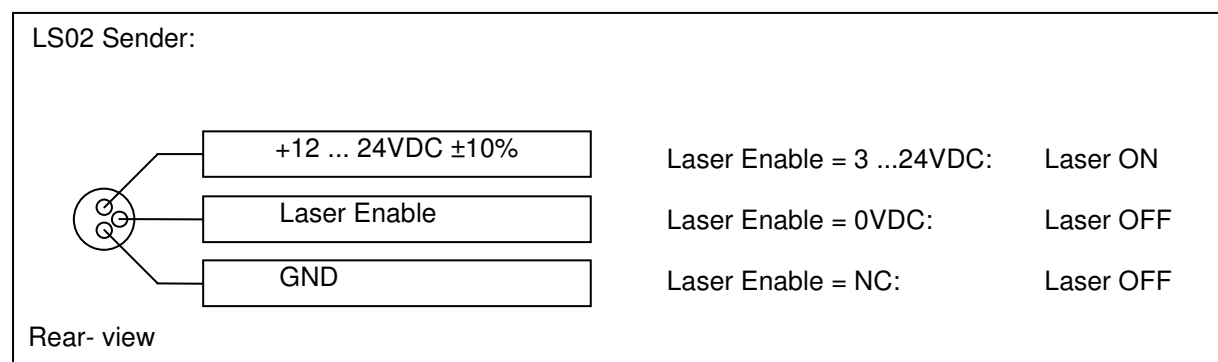
4) 54Ω load at 10.8 VDC supply voltage; 150Ω last at 26.4 VDC supply voltage

5) Mod. 1 = Detection of laser light => Output High; Mod. 2 = Detection of laser light => output Low

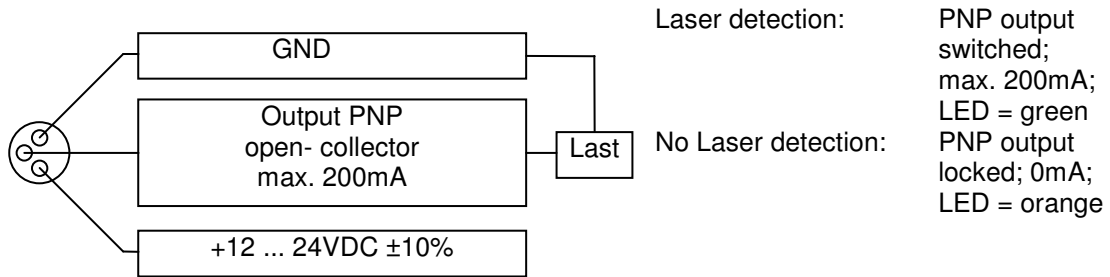
## Technical data System

One-way laser light barrier LS02		
Operating temperature	-20 ... +40	°C
Storage temperature	-40 ... +85	°C

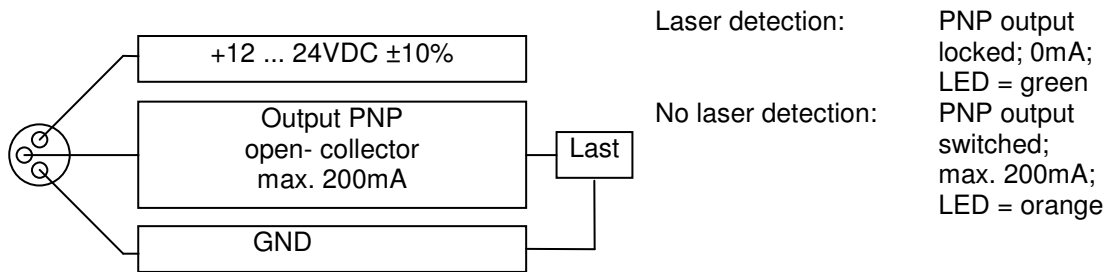
## Connection diagram with foot mount and plug



LS02 Receiver operating mode 1:



LS02 Receiver operating mode 2:



Rear -view

**Dimensions Type 0072-02**

Sender and receiver have the same dimensions:

