

Laser-light barrier ES03 (version 02)



Characteristics:

- One way light barrier
- Range 50 to 500mm
- Easy to align
- Identical housing for sender and receiver
- Operating voltage 24VDC
- Laser module separated from driver electronic
- One digital output
- Operational status indicator
- Active receiver surface > 20mm²
- Compact design

Short description

The one way laser light barrier ES03 uses a visible laser beam to enable easy alignment during installation. The digital output with a dynamic switching point makes the light barrier versatile for different applications.

The output „Out1“ is used to measure dynamic changes of intensity. The switching point is typically at 92% of the last measured constant input signal. When the input intensity measured is reduced by 8% within 5ms, the output signal changes.

An LED indicates the condition of the short circuit protected output. The LED also helps in adjusting the position of the components during installation.

The laser module is separated from the electronic housing and equipped with a slotted diaphragm as a standard. The low height of the housings permits use of the ES03 under restricted space conditions.

The housings of sender and receiver are identical and easily secured in position by the side flanges.

Technical data

Laser light barrier ES03	- sender	- receiver	
Operating voltage	24 ±10%	24 ±10%	VDC
Max. operating current ¹⁾	50	20 (without load)	mA
Laser class	2	-	-
Typical wavelength	650- 670	-	nm
Minimal active receiver surface (circular)	-	20	mm ²
Laser module	non modulated	-	-
Range of the laser light barrier	50 ... 500	50 ... 500	mm
Transient condition			
Maximum overshooting during start-up ²⁾	6		%
Output			
Output voltage at R _L = 1.2kΩ	-	short circuit protected	-
Output voltage at R _L = 1.2kΩ	-	min. 18	VDC
Output Out1	-	digital (0 and 24)	VDC
switching point (dynamic)		approximate 92 ³⁾	%
response time (typical)		6	µs
fall time [50%] (typical)		50	µs
at level HIGH		yellow LED	-
Dimensions			
Cable length on laser module housing	35	-	mm
Cable length for power supply and output	approximate 1500	Approximate 1500	mm
Copper cross section on cord	0.14	0.14	mm ²
Typical operating temperature	0 ... +40	-	°C

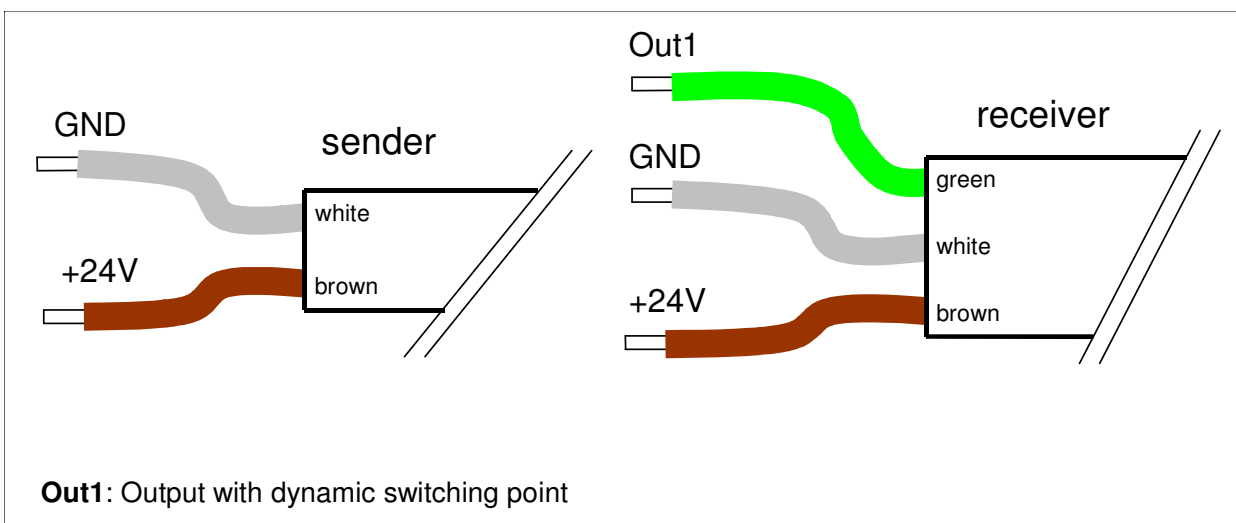
Unless indicated otherwise, the data is correct at room temperature and under normal operating conditions.

1) At 24V operating voltage

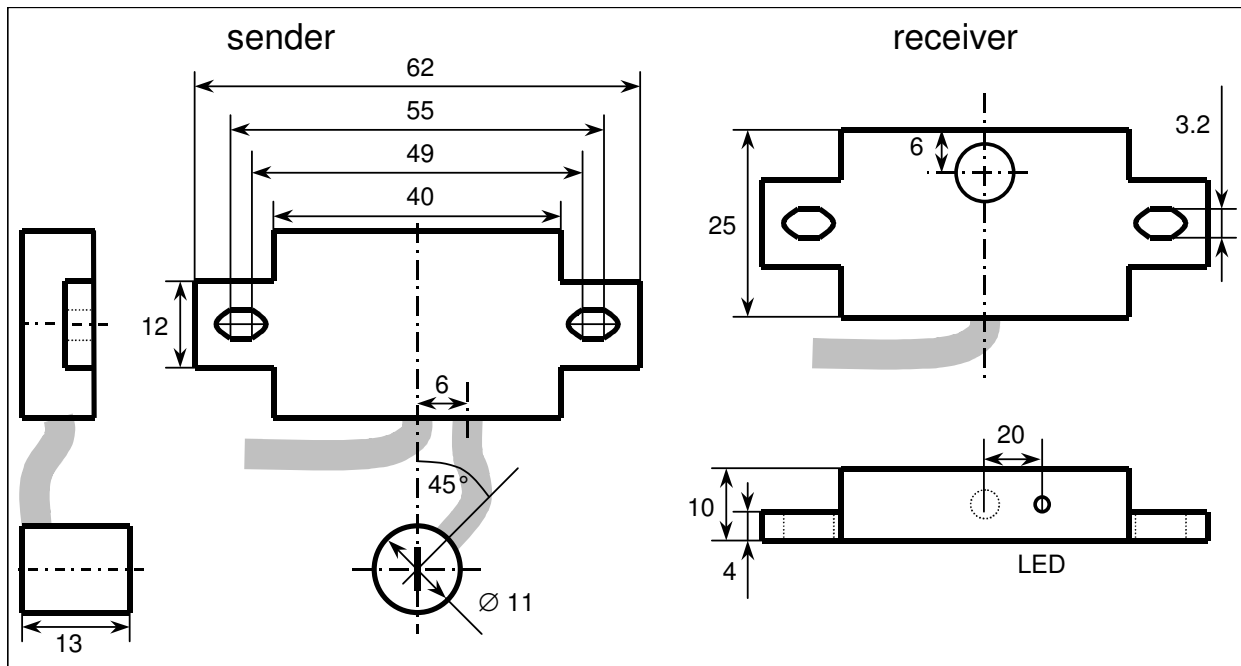
2) The written value belongs to the optical output power after transient oscillation

3) The 92% refer to the last intensity level detected at the receiver for at least 100ms.

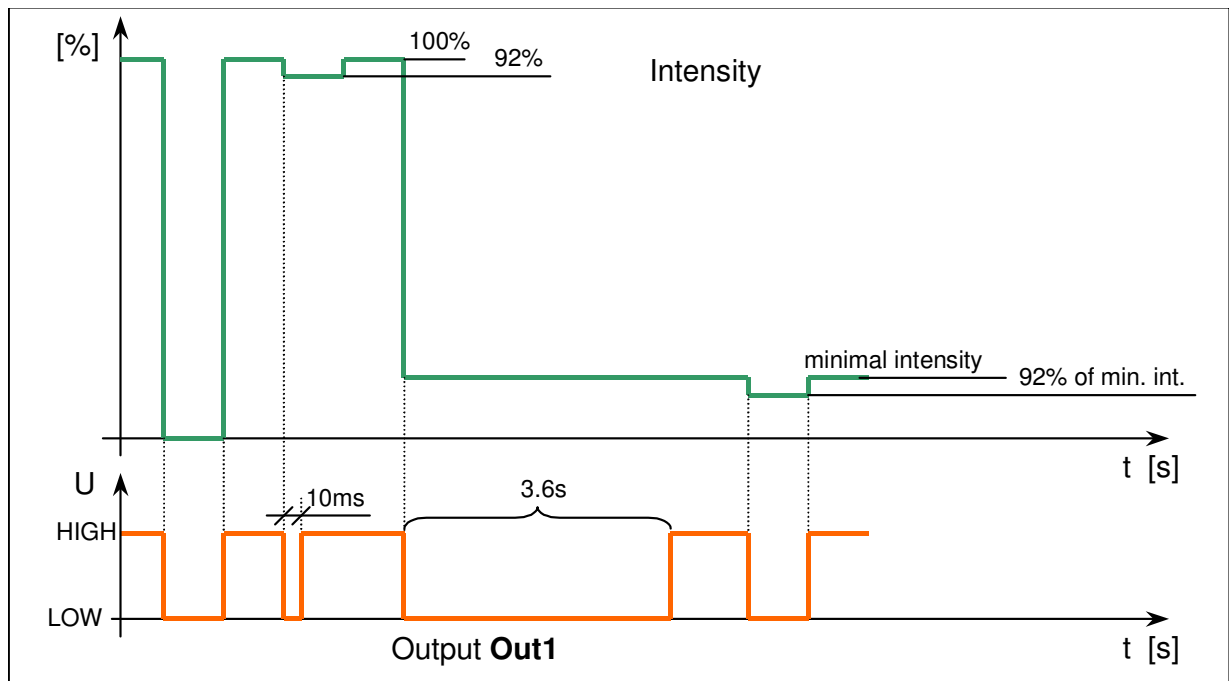
Connecting diagram



Dimensions



Switching characteristics



The output „Out1“ is switching if the intensity of the light will be reduced by more than 8% within 5ms (or faster). The time elapsed before reset is defined by the difference in intensity level and varies between 10ms and 3.6 seconds. Therefore the output changes are defined by the high to low transition (negative edge triggered).