

LMX-300

DIFFUSE LASER SENSOR



OPERATING INSTRUCTIONS

MATERIALS SUPPLIED

- Operating Instructions
- LMX-300 sensor
- M18 jam nut (2)

GENERAL DESCRIPTION

The LMX-300 is a diffuse reflection laser sensor housed in an M18 cylindrical package. A single button teach-in is provided allowing easy set-up in a wide range of applications. Complementary PNP outputs are provided (N.O. and N.C.). The LMX-300 features a durable, nickel-plated brass housing and a 4 pin M12 connector.

TEACH-IN

Select the lighter of the two conditions, the target object or the background. Place the lighter of the two at the required sensing distance, checking that the optical axis is perpendicular to the surface of the object. Highly reflective objects may require a 15-20° angle from perpendicular. Press the teach button until the yellow signal LED switches back on constantly.

The sensor threshold is set to 50% of the detected signal. Remove the lighter condition and verify that the yellow LED has switched off. If the yellow LED remains on, then a finer sensitivity adjustment is required.

To adjust the fine sensitivity, press and hold the teach-in button for > 8 seconds until the yellow LED starts flashing. The threshold is set below the detected signal of the hysteresis amplitude. Remove the lighter condition and verify that the yellow LED has switched off.

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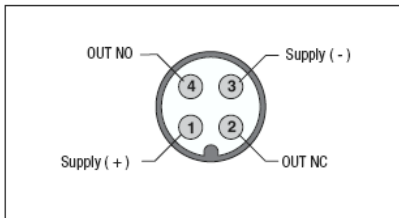
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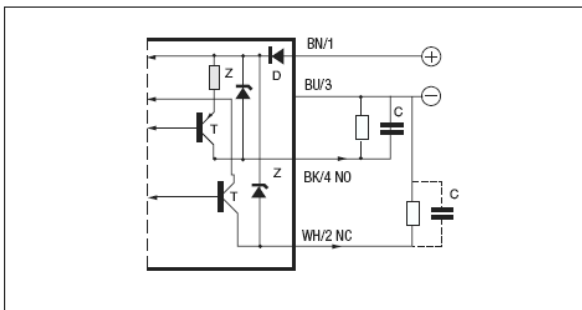
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Rev 1.2
9.14.23

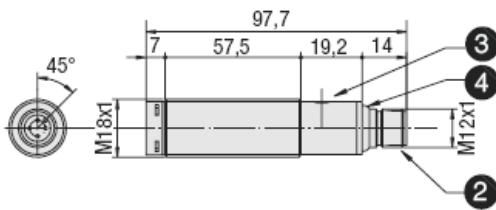
M12 CONNECTIONS



OUTPUT DIAGRAM



DIMENSIONS



- 2 – M12 connector
- 3 - Teach button
- 4 - Status LED

SPECIFICATIONS

Type	Diffuse reflection
Sensing Distance	up to 300mm
Emission	Visible red Class 1 Laser (650nm); see Caution note
Minimum Detectable Object	0.1mm
Differential Travel	≤10%
Repeat Accuracy	5%
Operating Voltage	10-30VDC
Ripple	≤ 10%
No-load Supply Current	≤ 25mA
Load Current	≤100mA
Leakage Current	≤10μA (at VDC max.)
Voltage Drop	2V max at 100mA
Output Type	PNP - Complementary NO/NC
Switching Frequency	800Hz
Time Delay Before Availability	200ms
Input Voltage Transient Protection	Yes
Input Power Polarity Reversal Protection	Yes
Output Power Short-Circuit Protection	Yes, switch auto resets after load is removed
Temperature Range	-10/+55°C (14° to 131° F)
Temperature Drift	10% Sr
Interference to External Light	3000 lux (incandescent lamp), 10000 lux (sunlight)
Protection Degree (DIN 40050)	IEC IP67
LED Indicators	Yellow ON (output energized, light state) Yellow OFF (output de-energized, dark state) Green (power ON)
Housing Material	Nickel-plated brass
Lens Material	Glass
Tightening Torque	40 N-m (29 lb-ft.)
Weight	200g (7.05 oz)

CAUTION

Class 1 Laser Product
Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice Number 50, dated July 26, 2001.

Note: This sensor is equipped with a visible red light laser diode and is classified as a **CLASS 1 LASER DEVICE**. According to the CEIEN60825-1 norms, class 1 laser devices are safe in operating conditions that can be reasonably foreseen. This sensor emits visible laser light impulses with a maximum peak power of 0.4 milliwatt. The laser output maximum power level is checked through a circuit that is always working, so it can detect any single failure. The Class 1 laser always emits a beam of intense and very concentrated light. The intentional and prolonged observation of this light can cause eye problems. As a result, it is advisable, where possible, to install the laser sensors so the beam cannot exceed the operating area. Avoid laser beam contact with eyes.