

Photoelectric Detector

LG-916

Instruction Manual



WARNING

Only attach or remove sensors after checking that rotating parts have stopped. There is extreme danger that hands or clothing may become caught if an attempt is made to attach or remove sensors during rotation parts.

1. Cautions in installation

(1) Metal fittings

The detector should be fixed in a way suited to the object to be measured. Be sure to securely tighten the fitting so they will not get loose from vibration. When it is necessary to thread the fittings, thread them to M16 × 1.

(2) Installation

Be careful not to allow the end of the detector to be exposed directly to sunlight or an electric light. If there is a varying light near the detector, cover the detector or orient the detector so that it will not be affected by such light, or else the detector may malfunction.

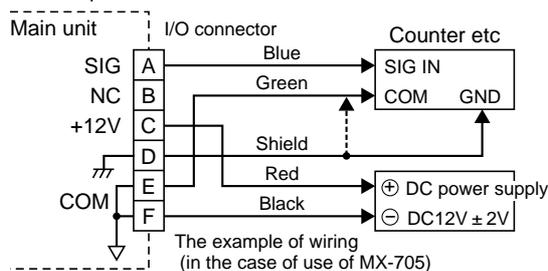
Avoid installing the detector with its end facing upward to prevent dust accumulation, which may lead to deteriorated sensitivity. It is advisable to install the detector so that its operation check indicator can be easily seen to facilitate maintenance.

2. Cautions in handling

The detector has optical fiber directly installed on its end. Take care not to scratch the end of the detector, and protect the end from dust. If the end of the detector has got dirty, carefully wipe it clean using a soft rag. Avoid using the detector at a place where it may be exposed directly to water or oil.

3. Cautions in wiring

(1) Use the exclusive cord when connecting the detector with the power supply and the measuring equipment (counter). The exclusive cord is about 4.9 meters long. If a longer cord is required, the cord may be extended up to about 100 meters using the same cord as the exclusive cord (ONO SOKKI standard D-5). In this case, terminating register or pull-up register must be provided with the received side so that the counter or other equipments should not work wrongly. Further, it is advisable to connect the detector independently of other power cords as much as possible in order to assure freedom from noise or other undesirable phenomena.



(2) Connect the cords according to the diagram, with care taken to their colors. The detector is energized by connecting the red conductor of the cord to the positive terminal of the power, supply, and the back conductor to the negative terminal to apply a voltage of 12 V dc ± 2 V. As for the signal output, use the green conductor for COM, and the blue conductor for SIG. IN.

Ripples can be minimized by avoiding connection between the signal COM conductor (green) and the negative terminal of the power supply (black). Therefore, do not externally connect the signal with the power supply COM. Both COMs are connected inside the detector.

The shield wire is connected to the detector case. Connect the shield wire to the counter case (GND) or COM. The white conductor is open, so it may be cut off if it is unnecessary.

4. Checking for proper operation

After checking the wiring, turn on the main switch, and check the detector for proper operation. When the reflection mark is brought close to the end of the detector, the operation indicator should light up. When the indicator has lit up, the output signal should change to the high level (about 5 V) . If the indicator does not light, check the polarity of the power supply and the wiring. You note, however, that the operation indicator may light up dimly

when the detector does not receive the reflective light from the reflection mark, and it is normal.

Accessories

Mounting nuts	: 2
Instruction manual	: 1
Reflection mark sheet	: 1 (12 mm square × 25 pcs.)

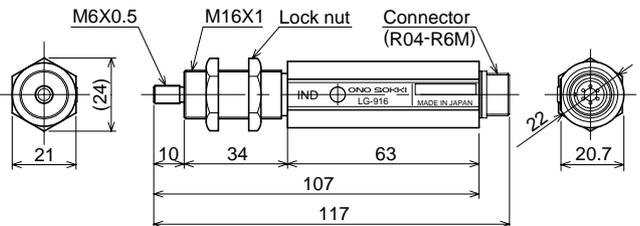
Specifications

Detecting method	: Photoelectric reflection based on optical fiber
Detectable distance	: Max. 20 mm (when the exclusive 12 mm-square reflection mark is used)
Detectable object	: Opaque materials, reflection mark
Max. response speed	: 20 m/s[when the reflection mark (12 mm × 12 mm) is used]
Response lag	: 1 ms or less
Light source	: Light emitting diode (infrared light)
Photo-receiving element	: Photo-transistor
Scattering light	: 3000 lx or less
Power supply	: DC12 V ± 2 V
Power consumption	: 50 mA or less (at 12 V)
Output voltage	: + 5 V ± 0.5 V for HI, and + 0.5 V or less for LO (When load register is 100 K Ω) The maximum absorbing current of output is 20 mA, and the maximum impressed voltage is 30 V.
Output impedance	: Approx. 1 k
Output method	: Floating earth
Protection circuit	: For power supply polarity
Operating temperature range	: - 10 to + 60
Storage temperature range	: - 20 to + 80
Vibration resistance (energized)	: 1.2 mm compound amplitude, 30 Hz frequency, for 1 hour in X and Y directions (complies with JIS C 0911-1960)

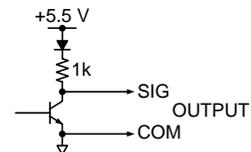
Impact resistance (de-energized)	: 490 m/s ² (50 G) 3 times each in X and Y directions (complies with JIS C 0912-1960)
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Recommended connector	: R04-PB6F
Shape and dimensions	: See the general view diagram.
Weight	: Approx. 150 g (including the two mounting nuts)

Outside Drawing



5. Output circuit



Warranty

1. This product is covered by a warranty for a period of one year from the date of purchase.
 2. This warranty covers free-of-charge repair for defects judged to be the responsibility of the manufacturer, i.e., defects occurred while the product is used under normal operating conditions according to descriptions in this manual and notices on the unit label.
 3. For free-of-charge repair, contact either your sales representative or our sales office nearby.
 4. The following failures will be handled on a fee basis even during the warranty period.
 - (a) Failures occurring through misuse, mis-operation, or modification
 - (b) Failures occurring through mishandling (dropping) or transportation
 - (c) Failures occurring through natural calamities (fires, earthquakes, flooding, and lightning), environmental disruption, or abnormal voltage.
- * For repairs after the warranty period expired, contact your sales representative or our sales office nearby.

ONO SOKKI

*Outer appearance and specifications are subject to change without prior notice.
HOME PAGE: <http://www.onosokki.co.jp/English/english.htm>

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