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ASH & ALAIN INDIA PVT LTD
S-100, F.I.E.E., Okhla Industrial Area, Phase-ii, New Delhi-110020(India)
Tel : 011-43797575 Fax : 011-43797574 E-mail : sales@ashalain.com

OMRON

Inductive Proximity Sensor

E2Q3

Square Proximity Sensor

- Terminal housing
- Integrated short circuit and reverse polarity protection
- Output function programmable by wiring
- Active face positioning: Y-axis 15°, X-axis 90° increments

Ordering Information

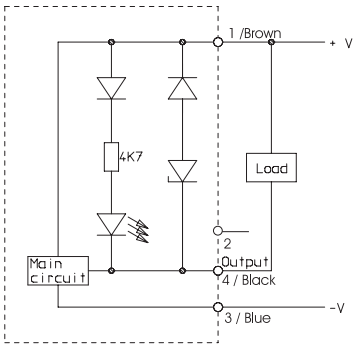
Sensing distance	Connection	Active face	Output	
				NO or NC
15 mm non shielded	Terminals	Changeable	NPN	E2Q3-N15ME4-G
			PNP	E2Q3-N15MF4-G

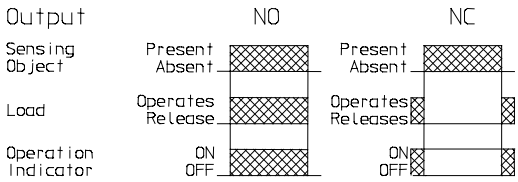
Specifications

Operating voltage		10 to 60 VDC
Current consumption		max. 14 mA
Sensing object		Ferrous metals
Sensing distance Sn (Standard target size, L x W x H , Fe 37)		15 mm ±10%, non shielded (45 x 45 x 1 mm)
Setting distance		0 to 12,15 mm
Differential travel		15 % max. of sensing distance Sn
Switching frequency		150 Hz
Control output	Type	E2Q3-N15ME4-G: NPN-NO / NC E2Q3-N15MF4-G: PNP-NO / NC
	Max-Load	200 mA
	Max on-state voltage drop	3 VDC (at 200 mA load current)
Circuit protection		Reverse polarity, output short circuit
Indicator		Operating indicator (yellow LED)
Ambient temperature		Operating: -25° to 70°C
Humidity		35 to 95 % RH
Influence of temperature		± 10 % max. of Sn at 23°C in temperature range of -25° to 70°C
Dielectric strength		1.500 VAC, 50/60 Hz for 1 min. between current carry parts and case
Electromagnetic compatibility EMC		EN 60947-5-2
Vibration resistance		10 to 55 Hz, 1 mm amplitude according to IEC 60068-2-6
Shock resistance		approx. 30 G for 11 ms according to IEC 60068-2-27
Degree of protection		IP 67 (EN 60947-1)
Connection	Terminals	Up to 2,5 mm²
Material	Case	PBT
	Sensing face	PBT
Approvals		CERTIFIED LISTED

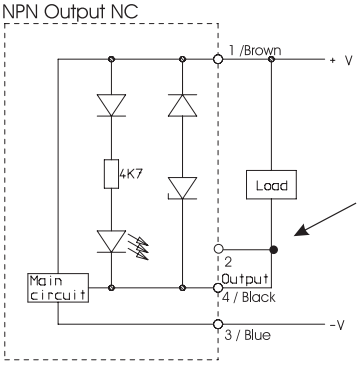
Output Circuit Diagram and Timing Chart

NPN Output NO

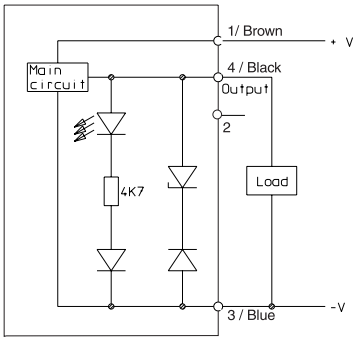




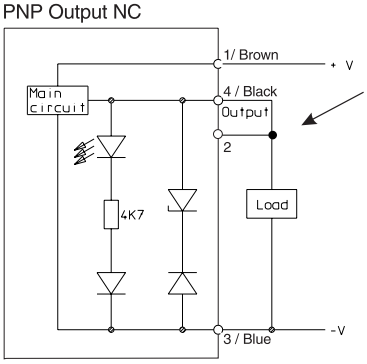
NPN Output NC

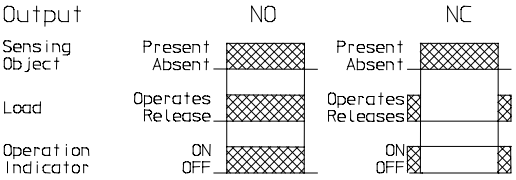


PNP Output NO

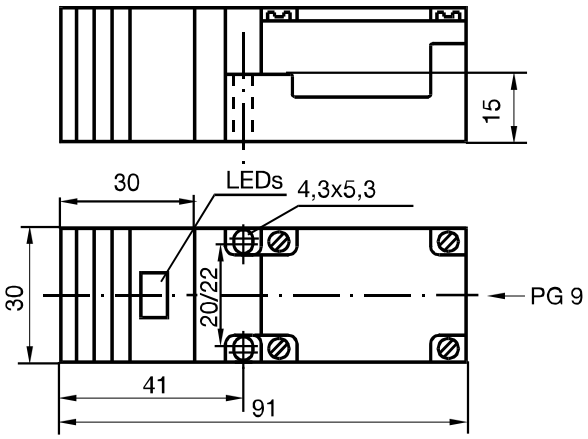


PNP Output NC

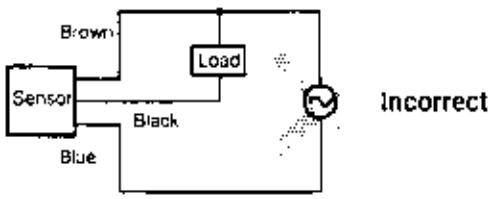




Dimensions



Caution

Item	Examples
Power Supply Do not impose an excessive voltage on the E2Q3, otherwise it may explode or burn. Do not impose AC voltage on any E2Q3 model, otherwise it may explode or burn.	

Correct Use

Installation

Power Reset Time

The Proximity Sensor is ready to operate within 300 ms after power is supplied. If power supplies are connected to the Proximity Sensor and load respectively, be sure to supply power to the Proximity Sensor before supplying power to the load.

Power OFF

The Proximity Sensor may output a pulse signal when it is turned off. Therefore, it is recommended to turn off the load before turning off the Proximity Sensor.

Power Supply Transformer

When using a DC power supply, make sure that the DC power supply has an insulated transformer. Do not use a DC power supply with an auto-transformer.

Sensing Object

Metal Coating:
The sensing distance of the Proximity Sensor vary with the metal coating on sensing objects.

Wiring

High-tension Lines

Wiring through Metal Conduit

If there is a power or high-tension line near the cable of the Proximity Sensor, wire the cable through an independent metal conduit to prevent against Proximity Sensor damage or malfunctioning.

Mounting

The Proximity Sensor must not be subjected to excessive shock with a hammer when it is installed, otherwise the Proximity Sensor may be damaged or lose the water-resistivity.

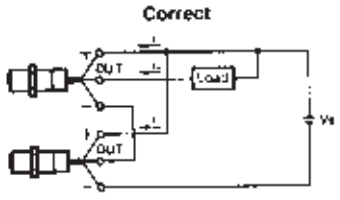
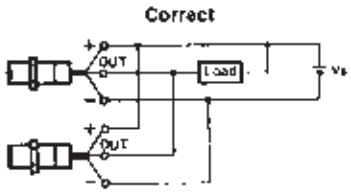
Environment

Water-resistivity

Do not use the Proximity Sensor underwater, outdoors or in the rain.

Operating Environment

Be sure to use the Proximity Sensor within operating ambient temperature range and do not use the Proximity Sensor outdoors so that its reliability and life expectancy can be maintained. Although the Proximity Sensor is water resistive, a cover to protect the Proximity Sensor from water or soluble machining oil is recommended so that its reliability and life expectancy can be maintained. Do not use the Proximity Sensor in an environment with chemical gas (e. g., strong alkaline or acid gases including nitric, chromic, and concentrated sulfuric acid gases).

Connection type	Method	Description
AND (serial connection)		The Sensors connected together must satisfy the following conditions: i_L + (N-1) x i ≤ Upper-limit of control output of each Sensor V_S - N x V_R ≥ Load operating voltage N = No. of Sensors V_R = Residual voltage of each Sensor V_S = Supply voltage i = Current consumption of the Sensor i_L = Load current If the MY Relay, which operate at 24 VDC, is used as a load for example, a maximum of two Proximity Sensors can be connected to the load.
OR (parallel connection)		A minimum of three Sensors with current outputs can be connected in parallel. The number of Sensors connected in parallel varies with the Proximity Sensor model.