PROXIMITY SWITCHES

M30 SERIES

Capacitive sensors are designed to provide flexibility and reliability and to :
- Detect metallic and non-metallic objects independent of color or texture
- “Look through” non-metallic walls or containers
- Detect very small metal parts or thin wires.

The Datalogic Automation capacitive family provides the right solution to market requirements, offering a wide range of cylindrical metal and plastic housing sensors with one or two set switching distances, available also with two, three or four wires connection models, short and standard housing and cable or connector version.
Datalogic’s capacitive sensor family can solve applications that are difficult to accomplish with traditional inductives or photoelectrics.

HIGHLIGHTS

- Wide range: suitable practically for all the industrial applications
- Plastic and metal housing : suitable for covering also applications in harsh enviroments
- 1X and 2 X operating distances: high detection reliability and precise reading
- 2, 3 or 4 wire connection: flexible connection system to meet customer applications

APPLICATIONS

Automatic warehouse

Automotive

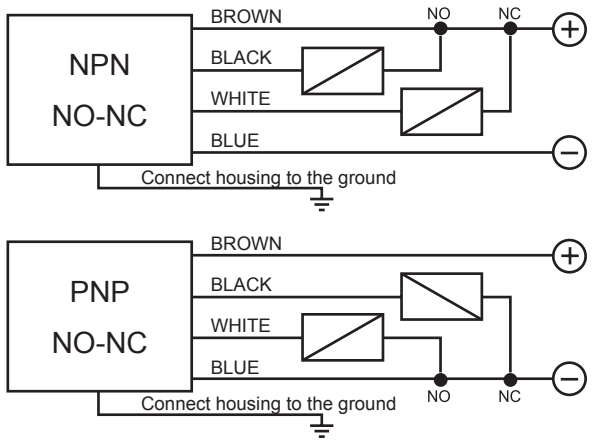
Trasportation lines

Packaging lines

12÷30 V DC - 4 WIRES NPN OR PNP OUTPUT

- Metal housing
- Adjustable range, 9-turn trimmer
- Nickel-plated brass
- High noise immunity
- High temperature stability

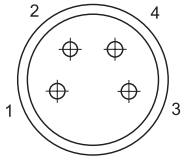
WIRING DIAGRAMS



TECHNICAL DATA

	FLUSH	NON FLUSH
NOMINAL SWITCHING DISTANCE (Sn)	1÷15 mm	1÷25 mm
NOMINAL VOLTAGE	12 ÷ 30 VDC (-15/+10%)	
RESIDUAL RIPPLE	≤ 10%	
HYSTERESIS	Depending on the sensing distance	
MAX. CURRENT OUTPUT	200 mA	
ABSORPTION AT 24 VDC	≤ 20 mA	
VOLTAGE DROP (Sensor ON)	≤ 1.8 V (I = 100 mA)	
OPERATION LED	Yellow	
SENSITIVITY ADJUSTMENT	Trimmer 9 turns	
SWITCHING FREQUENCY	10 Hz	
START UP DELAY	≤ 100 mS	
REPEATABILITY (at even temperature)	≤ 5%	
SHORT CIRCUIT PROTECTION	Present	
ELECTRIC PROTECTIONS	Against polarity reversal - inductive loads	
TEMPERATURE LIMITS	- 25 ÷ +70 °C	
PROTECTION DEGREE	IP 67	
CABLE LENGTH	2 m	
CABLE SECTION	4 x 0.25 mm2	
HOUSING MATERIAL	Nickel-plated brass	
WEIGHT - cable output -	250 g	
WEIGHT - K2 connector output -	210 g	

CONNECTION WITH CONNECTOR M8



View of quadripole male connector

CONTACTS CONFIGURATION

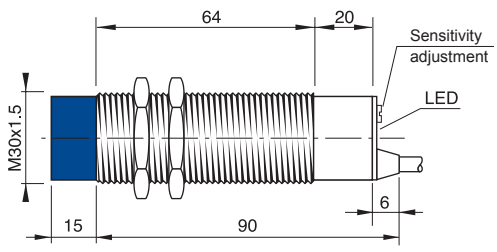
Output	Contacts numbers			
	1	2	3	4
NPN/PNP NO+NC	+	NC	–	NO

SENSITIVITY ADJUSTMENT

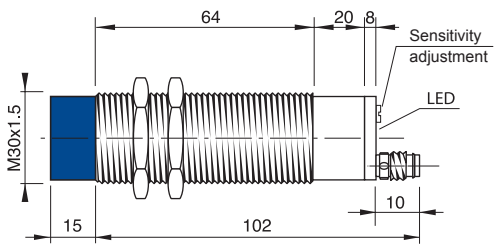
The sensitivity adjustment must be done when the sensor is installed in a definite and steady position. The regulation must be done in a position half way between minimum and maximum, because, being air dielectric, a strong humidity variation could cause, if the regulation is very light, nuisance tripping. The sensing distance of the sensor depends on the kind of material to detect and on its dimensions (see table about reduction factors). The distance could change according to temperature variations. To increase the sensitivity twist the trimmer clock-wise, to decrease do it anti clock-wise.

DIMENSIONS (mm)

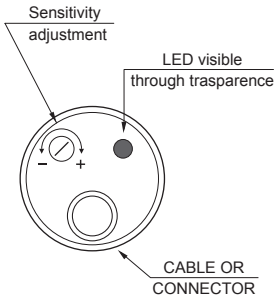
CONFIGURATION WITH CABLE



CONFIGURATION WITH CONNECTOR K



Ø 30 BACK VIEW



Note: the front part in blue refers to non flush models.

18÷230 V AC/DC WITH TIMER RELAY OUTPUT

- Metal housing
- Relay SPDT output: 3A 30VAC, 1A 220VAC
- Models with 9-turn pot
- Adjustable range
- High noise immunity
- High temperature stability

TECHNICAL DATA

	FLUSH	NON FLUSH
NOMINAL SWITCHING DISTANCE (Sn)	1÷20 mm	2÷30 mm
NOMINAL VOLTAGE	18 ÷ 230 VAC-DC (-15/+10%)	
NET FREQUENCY	50 ÷ 60 Hz	
HYSTERESIS	Depending on the sensing distance	
OUTPUT	Relay (10 x106 ops. min.)	
MAX. CURRENT OUTPUT	3A 30VAC - 1A 220VAC (90 W, 360 VA)	
ABSORPTION	2.5 VA	
OPERATION LED	Yellow	
SENSITIVITY ADJUSTMENT	Trimmer 9 turns	
START UP DELAY	≤ 300 ms	
SWITCHING FREQUENCY	10 Hz	
REPEATABILITY (at even temperature)	≤ 5%	
TEMPERATURE LIMITS	- 25 ÷ +70 °C	
PROTECTION DEGREE	IP 65	
CABLE LENGTH	2 m	
CABLE SECTION	6 x 0.30 mm²	
HOUSING MATERIAL	Nickel-plated brass	
WEIGHT (Approximately)	250 g	

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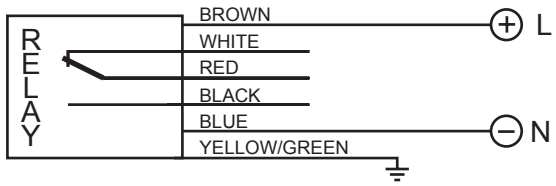
WIRING DIAGRAMS

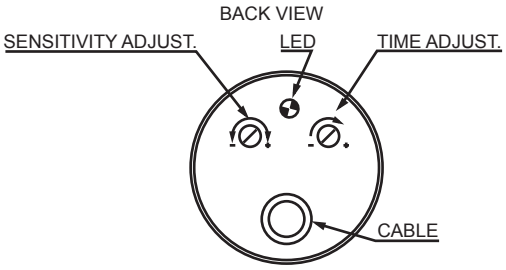


TIME DELAY

To regulate the sensitivity of these models, reset the time delay trimmer before.

The available range of delay is:

1 SEC. + 5 MIN.



SENSITIVITY ADJUSTMENT

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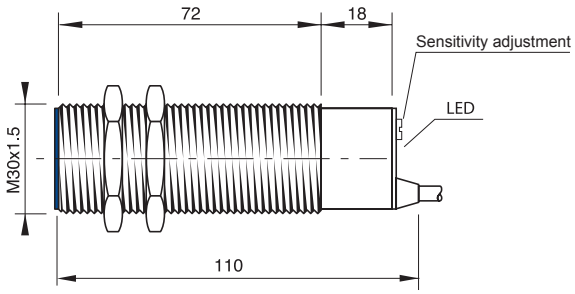
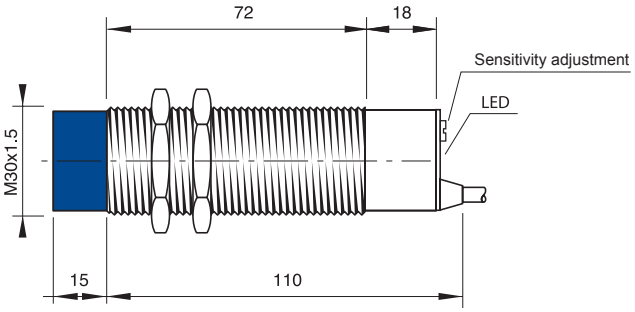
DIMENSIONS (mm)

FLUSH



NON FLUSH



20÷250 V AC - 2 WIRES

- Wide input voltage, 20-250 V AC
- Models with multi-turn pot
- Adjustable range

TECHNICAL DATA

	FLUSH	NON FLUSH
NOMINAL SWITCHING DISTANCE (Sn)	2÷20 mm	2÷30 mm
NOMINAL VOLTAGE	20 ÷ 250 VAC (-15 / +10%)	
NET FREQUENCY	50 ÷ 60 Hz	
HYSTERESIS	< 15 % (depending on the sensing distance)	
MAX. OUTPUT CURRENT	300 mA	
ABSORPTION	2.5 mA	
LEAKAGE CURRENT	< 2.5 mA	
SURGE CURRENT	5 A	
OPERATION LED	Present	
SENSITIVITY ADJUSTMENT	Trimmer multi-turns	
SWITCHING FREQUENCY	25 Hz	
REPEATABILITY (at even temperature)	≤ 5%	
TEMPERATURE LIMITS	- 25 ÷ +70 °C	
PROTECTION DEGREE	IP 67	
HOUSING MATERIAL	PBT resin	
WEIGHT (Approximately)	200 g	

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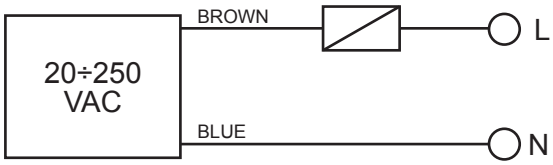
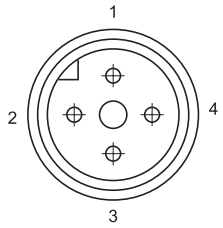
WIRING DIAGRAMS





View of quadripole male connector

CONTACTS CONFIGURATION

Available	Contacts numbers			
	1	2	3	4
NO	L		N	

SENSITIVITY ADJUSTMENT

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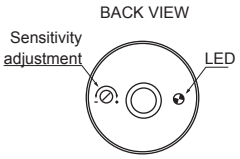
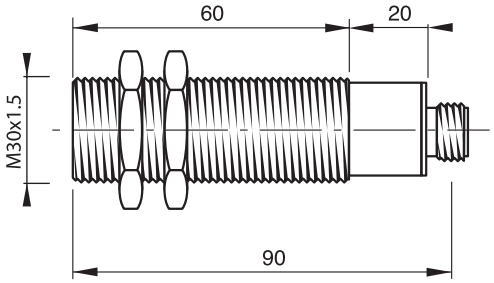
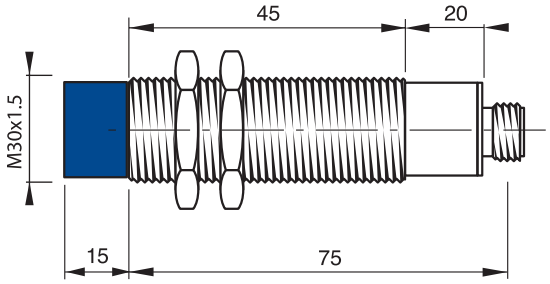


DIMENSIONS (mm)

FLUSH



NON FLUSH



MODEL SELECTION AND ORDER INFORMATION

2MT CABLE

CODE	MODEL	RANGE	HOUSING	FLUSH	WIRES	NPN/PNP/RELAY	NO/NC
958901180	CS09	15mm	METAL	•	4	NPN	NO-NC
958901060	CS10	15mm	METAL	•	4	PNP	NO-NC
958901200	CS15	25mm	METAL		4	NPN	NO-NC
958901140	CS16	25mm	METAL		4	PNP	NO-NC
958901150	CS31	20mm	METAL	•		•	
958901350	CS31TD5	20mm	METAL	•		•	
958901210	CS31TE5	20mm	METAL	•		•	
958901220	CS32	20mm	METAL			•	
958901360	CS32TD5	30mm	METAL			•	
958901370	CS32TE5	30mm	METAL			•	
958901210	CS31TE5	20mm	METAL	•		•	
958901220	CS32	20mm	METAL			•	
958901360	CS32TD5	30mm	METAL			•	
958901370	CS32TE5	30mm	METAL			•	

M8 CONNECTOR

CODE	MODEL	RANGE	HOUSING	FLUSH	WIRES	NPN/PNP/RELAY	NO/NC
958901400	CSP50K4	20mm	PLASTIC	•	2		NO
958901410	CSP51K4	30mm	PLASTIC		2		NO
958901300	CS15K2	25mm	METAL		4	NPN	NO-NC
958901330	CS16K2	25mm	METAL		4	PNP	NO-NC

M12 CONNECTOR

CODE	MODEL	RANGE	HOUSING	FLUSH	WIRES	NPN/PNP/RELAY	NO/NC
958901400	CSP50K4	20mm	PLASTIC	•	2		NO
958901410	CSP51K4	30mm	PLASTIC		2		NO

ACCESSORY SELECTION AND ORDER INFORMATION

CODE	MODEL
95ACC3350	ST1830

MODEL DESCRIPTION

CS P 07 K2

HOUSING
P= plastic

DIAMETER AND CONNECTION
07 = Ø 18 NPN NO-NC, SHIELDED 5MM
08 = Ø 18 PNP NO-NC, SHIELDED 5MM
09 = Ø 30 NPN NO-NC, SHIELDED 15MM
10 = Ø 30 PNP NO-NC, SHIELDED 15MM
13 = Ø 18 NPN NO-NC, NOT SHIELDED 10MM
14 = Ø 18 PNP NO-NC, NOT SHIELDED 10MM
15 = Ø 30 NPN NO-NC, NOT SHIELDED 25MM
16 = Ø 30 PNP NO-NC, NOT SHIELDED 25MM
31 = Ø 30 RELAY OUTPUT, SHIELDED 20MM
32 = Ø 30 RELAY OUTPUT, NOT SHIELDED 30MM
40 = Ø 18 NO, SHIELDED 8MM
41 = Ø 18 NO, NOT SHIELDED 8MM
50 = Ø 30 NO, SHIELDED 20MM
51 = Ø 30 NO, NOT SHIELDED 20MM

CONNECTION AND OUTPUT
K2 = M8 CONNECTOR 4 POLES
K4 = M12 CONNECTOR 4 POLES
TD = RELAY OUTPUT - DEACTIVATING DELAY
TE = RELAY OUTPUT - ACTIVATING DELAY WIRES NO
20 = NAMUR

Note: Not all code combinations are available. Please refer to alphabetical model index for the list of available models.