S40-PH-x-B03
INSTRUCTION MANUAL

CLASS 1 EN 60825-1 (2008)
LASER PRODUCT

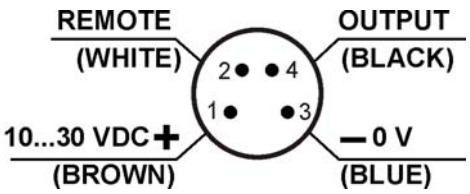
CONTROLS

OUTPUT LED
In the normal operating mode indicates the output status (the yellow LED ON indicates the output activation).
In the setting phase indicates the setting steps.
Please refer to the "SETTING" paragraph for procedure indications during detection or setting phases.

POWER ON LED
The green LED signal indicates the sensor functioning.
The LED blinks with the yellow LED if the detection is lacking.

TEACH-IN PUSH-BUTTON
A long pressure on the push-button activates the self-setting procedure.
The REMOTE input allows the external TEACH-IN control.

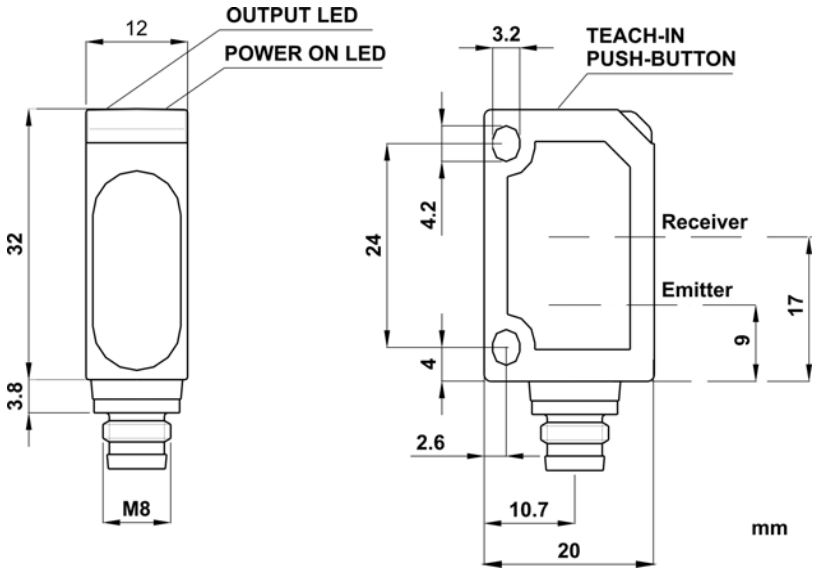
CONNECTIONS



REMOTE FUNCTION

The connection of the REMOTE wire to + Vdc is equivalent to pressing the TEACH-IN push-button.
Leave the REMOTE wire unconnected and insulated if not used. If it is connected permanently to 0V, the TEACH-IN push-button functioning is blocked.

DIMENSIONS



TECHNICAL DATA

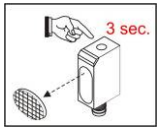
Power supply:	10 … 30 Vdc (reverse polarity protection)
Ripple:	10% max
Consumption (output current excluded):	35 mA max.
Outputs:	NPN or PNP (short-circuit protection)
Output current:	100 mA max.
Output saturation voltage:	2.4 V max.
Response time:	125µs max.
Switching frequency:	4 kHz
Data retention:	EEPROM non volatile memory
Indicators:	OUTPUT LED (YELLOW) / POWER ON LED (GREEN)
Setting:	TEACH-IN via push-button and wire
Operating temperature:	-20 … +60 °C
Storage temperature:	-20 … +80 °C
Electric strength	500 Vac / 1 minimum between electric parts and enclosure
Insulation resistance	> 20 MΩ / 500 Vdc between electric parts and enclosure
Spot dimension:	< 1 mm at a distance of 300 mm
Operating distance (min.values)*:	0.1…6 m on R2 reflector / 0.1…3 m on R7 reflector / 0.1…1.5 m on R8 reflector
Emission type:	RED LASER: Class 1 EN 60825-1 (2008) Classe II CDRH 21 CFR PART 1040.10 Avarage power ≤ 0.080 mW; Pulse = 2.2 µs; λ = 645…660nm; Frequency =20 kHz
Ambient light rejection:	According to EN 60947-5-2
Vibrations:	0.5 mm amplitude, 10 … 55 Hz frequency, for every axis (EN60068-2-6)
Shock resistance:	11 ms (30 G) 6 shock for every axis (EN60068-2-27)
DARK/LIGHT selection:	automatic with fine detection setting mode
Housing material:	ABS UL 94V-O
Lens material:	Methacrylic PMMA
Mechanical protection:	IP67
Connections:	M8 4-pole connector
Weight:	10 g. max. connector vers.

*Minimum operating distance refered on the suggested reflector, select the reflector with higher surface area to improve the application tolerance.

SETTING

EASYTOUCH™
The sensor uses the patent-covered *EASYTOUCH™* technology that allows a rapid self-setting of the product.
- *EASYTOUCH™ (with reflector):*
  sensor sets the best sensitivity mode for the detection of transparent objects.
- *EASYTOUCH™: (without reflector, default setting):*
  sensor sets the maximum sensitivity level without reflector. This condition is recommended for opaque object detection.

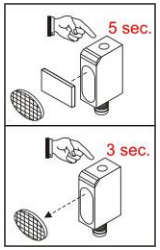
EASYTOUCH™: (with reflector):



Carefully align the sensor and the reflector. The light spot has to be inside the reflector area (see "Installation" section)
- Press the TEACH-IN push-button until the OUTPUT LED turns OFF and then release the push-button.

EASYTOUCH™ (without reflector)
Before aligning the sensor on reflector (see "Installation" section), set the sensor without reflector, pressing the TEACH-IN push-button, await the blinking of the OUTPUT LED and then release the push-button

FINE DETECTION
Recommended for critical detection conditions such as the detection of objects with shiny surfaces:
Carefully align the sensor and the reflector. The light spot has to be inside the reflector area (see "Installation" section)



- Insert object to detect between sensor and reflector.
- Press the TEACH-IN push-button and await the blinking of the OUTPUT LED, without moving the object. Release the push-button.
- Remove the object.
- Press the TEACH-IN push-button and wait until the blinking OUTPUT LED switch OFF, without moving the object.
  Release the push-button.

The sensor selects the best operating conditions according to the acquired points and adjusts itself in the DARK mode condition. The acquisition sequence has to be inverted to select the opposite operating modes.
If the OUTPUT LED and the POWER ON LED blink contemporarily the detection has failed due to insufficient contrast or setting procedure error. The procedure has to be repeated from the beginning.

WARRANTY
DATALOGIC AUTOMATION warrants its products to be free from defects.
DATALOGIC AUTOMATION will repair or replace, free of charge, any product found to be defective during the warranty period of 36 months from the manufacturing date.
This warranty does not cover damage or liability deriving from the improper application of DATALOGIC AUTOMATION products.

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Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.clrwtr.com - Email: info@clrwtr.com