DATALOGIC

S100 SERIES
INSTRUCTION MANUAL

CONTROLS

OUTPUT LED – Yellow (S100…A00/Bx0/Cx0/D00/F00/M00)
The yellow LED indicates the output status.

POWER ON LED – Green (S100…G00)
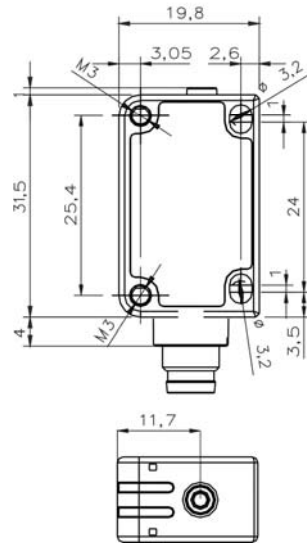The green LED indicates that the sensor is operating.

REMOTE INPUT (S100…M00)
This wire-input allows to operator to adjust the operating distance.

Please refer to the "SETTINGS" paragraph for procedure indications during acquisition or setting phases.
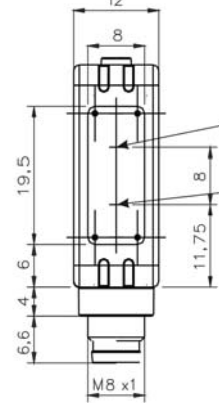
INSTALLATION

The sensor can be positioned by means of the two housing's threaded holes (M3) using two screws (M3x12 or longer or M2.5 passing screw, 0.4 Nm maximum tightening torque) with washers or by mean of the two rear holes using two M3 passing screw, 0.4Nm maximum tightening torque.

Various orientable fixing brackets to ease the sensor positioning are available (please refer to the accessories listed in the catalogue).
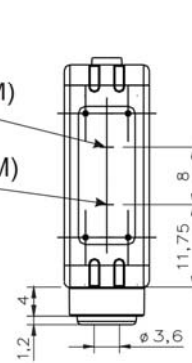
CONNECTIONS

S100-A00/Bx0/Cx0/D00/F00

Wire	Pin	Function
BROWN	1	+ 10 … 30 VDC
WHITE	2	LIGHT/DARK
BLACK	4	OUTPUT
BLUE	3	0 V

S100-G00

Wire	Pin	Function
BROWN	1	+ 10 … 30 VDC
WHITE	2	NOT USED
BLACK	4	NOT USED
BLUE	3	0 V

S100-M00

Wire	Pin	Function
BROWN	1	+ 10 … 30 VDC
WHITE	2	REMOTE
BLACK	4	OUTPUT
BLUE	3	0 V

DIMENSIONS

M8x1 CONNECTOR VERSION

CABLE VERSION

Receiver (A,B,C,D,F,M)

Emitter (A,B,C,D,G,M)

Dimensions in mm

TECHNICAL DATA

Power supply:	10 … 30 VDC (Class 2 UL508) (reverse polarity protected)
Ripple:	10% max.
Current consumption (output current excluded):	20 mA max.
Output:	PNP or NPN (with pull-down / pull-up = 33 KΩ and short-circuit protection
Output current:	100 mA
Output saturation voltage:	2 V max.
Response time:	1 ms mod.A00/Bx0/Cx0/D00/M00, 2 ms mod.F00/G00
Switching frequency:	500 Hz mod.A00/Bx0/Cx0/D00/M00, 250 Hz mod.F00/G00
Indicators:	OUTPUT LED (YELLOW) mod. A00/Bx0/Cx0/D00/F00/M00 POWER-ON LED (GREEN) mod.G00
Setting:	DARK/LIGHT input mod.A00/Bx0/Cx0/D00/F00, TEACH-IN with REMOTE mod.M00
Operating temperature:	-25 °C … +55 °C
Storage temperature:	-40 °C … +70 °C
Operating distance (minimum):	A00: 0.01…6 m (on R2 reflector Ø 48mm) B00: 0.03…2 m (on R2 reflector Ø 48mm) B10: 0.01…4.5 m (on R2 reflector Ø 48mm F00/G00: 0…12 m C00: 0…300 mm (on White 90%) C10: 0…500 mm (on White 90%)) D00: 0…70 mm (on White 90%) M00: 30…100 mm (on White 90%)
Difference on White 90% / Gray 18%	M00: < 15 % - D00: < 30 % at maximum distance
Hysteresis on White 90%	M00: < 5 mm - D00: < 10 mm at maximum distance
Emission type:	RED LED (632 nm) mod.Bx0/Cx0/D00/,M00 INFRARED LED (860 nm) mod.A00/G00
Ambient light rejection:	according to EN 60947-5-2
Vibration:	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)
Housing:	ABS body / indicators cover PMMA
Lenses:	PC lens / PMMA window
Protection class:	IP67
Connections:	2 m cable ∅ 3.5 mm / M8-4 pole connector
Weight:	50 g. max. cable versions / 10 g. connector versions

SETTINGS

LIGHT/DARK INPUT (S100...A00/Bx0/Cx0/D00/F00)
The DARK/LIGHT input allows the operator to select the DARK/LIGHT operating mode for dynamic acquisition.
The connection of the DARK/LIGHT wire to +VDC sets the LIGHT mode.
If connected to 0V set the DARK mode.
If not connected: LIGHT mode Cx0/D00, DARK mode A00/Bx0/F00

Alignment S100…A00/Bx0
Position the sensor and reflector on opposite sides.
Find the points where the yellow LED (OUT) is switched ON and OFF in both vertical and horizontal positions, and fix the sensor in the centre between these points.

Alignment S100…F00/G00
Position the sensors on opposite sides.
Find the points where the yellow LED (OUT) is switched ON and OFF in both vertical and horizontal positions, and fix the sensor in the centre between these points.

Acquisition with REMOTE (external Teach-in) S100…M00
The REMOTE input sets the background suppression distance for M00 model, Two different setting possibilities are available:

Object acquisition
1. Place the target opposite the sensor at the maximum distance required;
2. Connect the REMOTE wire to + VDC for 1 second. The OUT LED changes its status once.
3. If the object is out of range the sensor fails the acquisition and the OUT LED blinking. To return at normal operation, connect the REMOTE + VDC for 100ms.

Backgroud acquisition
1. Position the sensor in front of background.
2. Connect the REMOTE wire to +VDC for 3 seconds. The OUT LED changes its status twice.
3. If the object is out of range the sensor fails the acquisition and the OUT LED blinking. To return at normal operation, connect the REMOTE + VDC for 100ms.

DARK/LIGHT selection
To change the operating DARK/LIGHT mode connect the REMOTE wire to +VDC for 7 seconds until the LED OUT blinking.
The sensor switches the operating mode (LIGHT ➔ DARK, DARK ➔ LIGHT) and saves it in memory.

TAB.1: Bx0 and A00 models operating distance table (meters)
AVAILABLE REFLECTORs

	R1 Ø 23 mm	R2 Ø 48 mm	R3 18x54 mm	R4 47x47 mm	R5 Ø 75 mm	R6 36x55 mm	RT3970 60x40 mm
A00	0.03…3	0.01…6	0.01…3.5	0.01…5	0.01…7	0.01…6	0.05…2
B00	0.2…0.8	0.03…2	0.03…1.5	0.03…2.5	0.01…3	0.03…1.8	0.2…0.8
B10	0.02…2	0.01…4.5	0.01…3	0.01…4.5	0.01…5.5	0.01…4	0.05…1.8

The sensors are NOT safety devices, and so MUST NOT be used in the safety control of the machines where installed.

DECLARATION OF CONFORMITY
We Datalogic Automation declare under our sole responsibility that these products are conform to the 2004/108/CE and successive amendments.

CE

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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