

## S5 SERIES INSTRUCTION MANUAL

### CONTROLS

#### OUTPUT LED

The red LED indicates the output status.

#### STABILITY LED (S5-5-x)

The green LED ON indicates that the received signal has a reserve greater than 30% compared to the output switching value.

#### TRIMMER (S5-x-B3/C30/C35/C60/D14/E1/F8/F12)

The trimmer can be used to adjust sensitivity; the operating distance increases turning the trimmer clockwise.

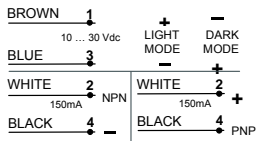
**WARNING:** The trimmer rotation is limited to 270° by a mechanical stop. Do not apply excessive torque when adjusting (max 40 Nmm).

#### POWER ON LED (S5-x-G8/G12)

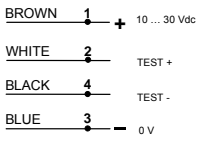
The red LED indicates that the sensor is operating.

### CONNECTIONS

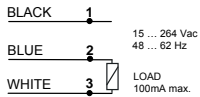
#### S5-5-x (4 wires)



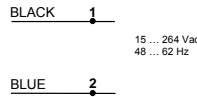
#### S5-5-G8/G12 (4 wires)



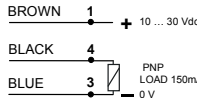
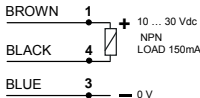
#### S5-1-x



#### S5-1-G8



#### S5-5-x (3 wires)

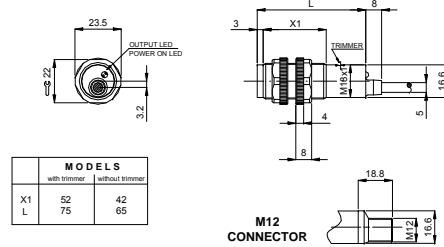


#### M12 CONNECTOR

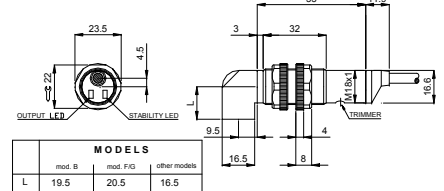


### DIMENSIONS

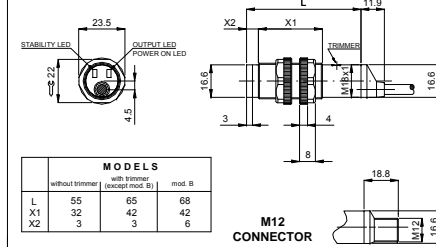
#### AC AXIAL VERSION



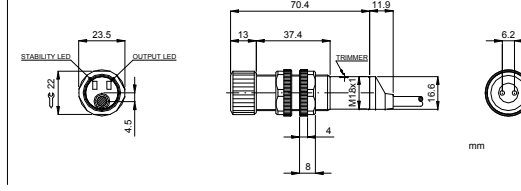
#### RADIAL VERSION



#### DC AXIAL VERSION



#### FIBRE OPTIC VERSION



### TECHNICAL DATA

	S5-5-x		S5-1-x	
	AXIAL VERSION	RADIAL VERSION	AXIAL VERSION	RADIAL VERSION
Power supply:	10 ... 30 Vdc limit values		15 ... 264 Vac (48 ... 62 Hz) limit values	
Ripple:	2 Vpp max.		-	
Current consumption (output current excluded):	30 mA max.		10 mA max.	
Output:	NPN/PNP selectable; 30 Vdc max. (short-circuit protection at 200 mA)		SCR + bridge rectifier – 264 Vac	
Output current:	150 mA max.		100 mA max.	
Output saturation voltage:	2.5 V max. / 1.2 V max. mod. L2			
Rated insulation voltage:	-		250 Vac (test 1500 Vac 1 minutes)	
Output leakage:	50µA at 30 Vdc		1mA max. at 264 Vac	
Response time:	1 ms max. 2 ms max. mod. F8/F12/G8/G12 6 ms max. mod. L2		20 ms max.	
Switching frequency:	500 Hz max. 250 Hz max. mod. F8/F12/G8/G12 175 Hz max. mod. L2		25 Hz max.	
Indicators:	OUTPUT LED (RED) / STABILITY LED (GREEN) / POWER ON LED (RED) mod. G8/G12			
Setting:	sensitivity trimmer mod. B3/C30/C35/C60/D14/E1/F8/F12			
Operating temperature:	-25 ... 55 °C			
Storage temperature:	-25 ... 70 °C			
Electric shock protection:	Class 2		Class 1	
Operating distance (minimum):	A4: 0.1 ... 4 m on R2 B3: 0.1 ... 3 m on R2 C10: 1 ... 10 cm C35: 1 ... 35 cm C60: 1 ... 60 cm D14: 10 ... 20 mm D15: 10 ... 20 mm F12/G12: 0 ... 12 m L2: 2 ... 15 mm T1: 0.1 ... 0.8 m on R2 E1 (OF-18): 22 mm E1 (OF-19): 85 mm	A4: 0.1 ... 4 m on R2 B3: 0.1 ... 3 m on R2 C10: 1 ... 10 cm C35: 1 ... 35 cm C60: 1 ... 60 cm D15: 10 ... 20 mm	A2: 0.1 ... 2 m on R2 C8: 1 ... 8 cm C30: 1 ... 30 cm D14: 10 ... 20 mm D15: 10 ... 20 mm F8/G8: 0 ... 8 m	
Emission type:	INFRARED (880 nm) / RED (660 nm) mod. B3/D14/E1			
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)			
LIGHT/DARK selection:	by inverting the power supply wires (4 wires versions)			
Housing:	ABS UL 94V-O			
Connector:	Polycarbonate		ABS UL 94V-O	
Lenses:	PMMA plastic			
Protection class:	IP67			
Connections:	2 m cable Ø 5 mm / M12 4-pole connector			
Weight:	100 g. max. cable versions / 25 g. max. connector versions			

### SETTING

The following procedures are valid for LIGHT mode operation.

#### Alignment S5-x-A2/A4/B3/T1

Position the sensor and reflector on opposite sides. Find the points where the red LED (OUT) is switched ON and OFF in both vertical and horizontal positions, and fix the sensor in the centre between these points.

**B/T models:** Turn the sensitivity trimmer to maximum; if necessary reduce sensitivity in order to detect very small or transparent targets. In order to improve alignment, repeat the procedure detailed above whilst progressively reducing the sensitivity.

#### Alignment S5-x-F8/G8/F12/G12/E1 (E/R fibres)

Position the sensors on opposite sides.

Turn the sensitivity trimmer to maximum. Find the points where the red LED (OUT) is switched ON and OFF in both vertical and horizontal positions, and fix the sensor in the centre between these points. Optimum operation is obtained when both LEDs switch ON.

If necessary, reduce sensitivity using the trimmer, in order to detect very small targets. In order to improve alignment, repeat the procedure detailed above whilst progressively reducing the sensitivity.

#### Alignment S5-x-C30/C35/C60/D14/E1 (proximity fibres)

Position the sensor and turn the sensitivity trimmer at minimum:

the green LED is ON and the red LED is OFF.

Place the target opposite the sensor. Turn the sensitivity trimmer clockwise until the red LED turns ON (Target detected state, pos.A).

Remove the target, the red LED turns OFF. Turn the trimmer clockwise until the red LED turns ON (Background detected state, pos.B). The trimmer reaches maximum if the background is not detected.

Turn the trimmer to the intermediate position C, between the two positions A and B. The green LED must be ON.



#### Alignment S5-x-C8/C10/D15/L2

The operating distance range of these sensors is factory preset: please consider this feature when positioning.

### TEST FUNCTION (S5-x-G8/G12)

The TEST+ and TEST- inputs can be used to inhibit the emitter and verify that the system is correctly operating.

The receiver output should switch when the test is activated while the beam is uninterrupted.

The inputs activating voltage range is 10 ... 30 Vdc, whilst respecting the polarity.

#### DECLARATION OF CONFORMITY

We DATALOGIC AUTOMATION declare under our sole responsibility that these products are conform to the 2004/108/CE and successive amendments.



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826000177 Rev.G

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