ODATALOGIC

S3Z SERIES
INSTRUCTION MANUAL

CONTROLS

OUTPUT LED
The yellow LED indicates the output status.

STABILITY LED (S3Z…B01/C01/C11/F01)
The green LED ON indicates that the received signal has a safety margin greater than 20% compared to the output switching value.

POWER ON LED (S3Z…G00)
The green LED indicates that the sensor is operating.

TRIMMER (S3Z…B01/C01/C11/F01/T51)
The trimmer can be used to adjust sensitivity; the operating distance increases turning the trimmer clockwise.

ADJUSTMENT SCREW (S3Z…M01)
This control can be used to adjust the cutoff distance (6 turns screw); the operating distance increases turning the control clockwise.
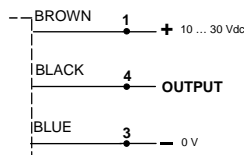
WARNING ONLY FOR TRIMMER (S3Z…B01/C01/C11/F01/T51)
MODEL: The trimmer rotation is limited to 250° by a mechanical stop.
Do not apply excessive torque when adjusting (max 0.05 Nm).
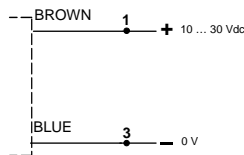
INSTALLATION

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, 0.5 Nm maximum tightening torque) with washers.
Various orientable fixing brackets to ease the sensor positioning are available (please refer to the accessories listed in the catalogue).
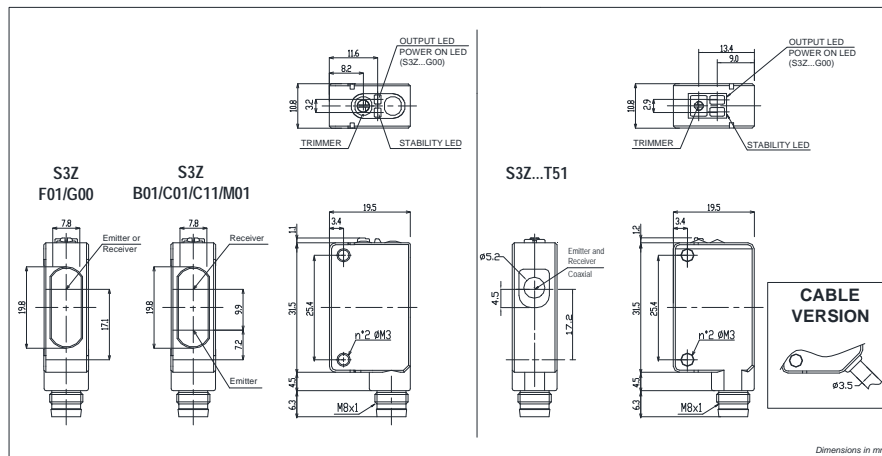
CONNECTIONS

S3Z…B01/C01/C11/F01/M01/T51

BROWN **1** + 10 … 30 Vdc
BLACK **4** OUTPUT
BLUE **3** 0 V

S3Z…G00

BROWN **1** + 10 … 30 Vdc
BLUE **3** 0 V

CONNETTORE M8

DIMENSIONS

Dimensions in mm

S3Z F01/G00
S3Z B01/C01/C11/M01
S3Z...T51
CABLE VERSION

TECHNICAL DATA

	S3Z…T51	S3Z…B01	S3Z…C01	S3Z…C11	S3Z…F01/G00	S3Z…M01
Power supply:	12 … 24 Vdc (operating limit 10…30Vdc); reverse polarity protected					
Ripple:	p-p 10% max.					
Current consumption (output current excluded):	30 mA max.					
Output:	DARK; PNP or NPN; (short-circuit protection)	LIGHT or DARK; PNP or NPN; (short-circuit protection)				LIGHT; PNP or NPN; (short-circuit protection)
Output current:	100 mA max.					
Output saturation voltage:	2 V max.					
Response time:	500us max	1 ms max.				
Switching frequency:	1KHz max.	500 Hz max.				
Indicators:	OUT LED (YELLOW) STABILITY LED (GREEN) mod. B01/C01/C11/F01 POWER ON LED (GREEN) mod. G00					
Setting:	TRIMMER (250°)					6 turns screw
Operating temperature:	-25 … +50 °C (UL)	-25 … +55 °C				
Storage temperature:	-40 … +70 °C					
Operating distance (minimum):	2m on R2 reflector	see tab.1	50…150 mm	0…70 cm	0...20 m	50…250 mm.
Difference on White 90% / Gray 18%	---					22% @ 200mm.
Emission type:	RED (650 nm)	RED (665 nm)	INFRARED (850 nm)	INFRARED (870 nm)		RED (670 nm)
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:	dependently from the model					
PNP/NPN Output	dependently from the model					
Housing:	Body PC and PBT / indicators cover PC					
Lenses:	PMMA	PC	PMMA			
Protection class:	IP67					
Connections:	2 m cable ∅ 3.5 mm / M8-4 pole connector					
Weight:	50 g. max. cable versions / 10 g. connector versions					

SETTING

Alignment S3Z…B01/T51
Position the sensor and reflector on opposite sides.
Turn the sensitivity trimmer to maximum. 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.
Optimum operation is obtained when the green LED is ON.
If necessary, reduce sensitivity using the trimmer, 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 S3Z…F01/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.
Optimum operation is obtained when the green LED is ON.

Alignment S3Z…C01/C11 (LIGHT mode)
Position the sensor and turn the sensitivity trimmer at minimum: the green LED is ON and the yellow LED is OFF.
Place the target opposite the sensor.
Turn the sensitivity trimmer clockwise until the yellow LED turns ON *(Target detected state, pos.A)*.
Remove the target, the yellow LED turns OFF. Turn the trimmer clockwise until the yellow 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.
For S3Z…C01/C11 models in DARK mode, the OUTPUT LED and the output are inverted.

Alignment S3Z…M01
Position the sensor and turn the adjustment screw to maximum.
Place the target opposite the sensor at a slightly greater distance than desired. Turn the screw counterclockwise until the sensor switches.
Verify the adjustment moving the target closer and further the sensor; tune the adjustment if necessary.
It is recommended to operate with the stability LED turned ON.

TAB.1: S3Z…B01 max. operating distance table (meters)

AVAILABLE REFLECTORS

	R1	R2	R3	R4	R5	R6
-B01	3	5	4.5	6	6	7

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/EC Directive and successive amendments.

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Datalogic Automation Recommends to dispose of the product in compliance with local laws or contact authorised waste collection centres. Datalogic Automation reserves the right to make modifications and improvements without prior notification.

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