

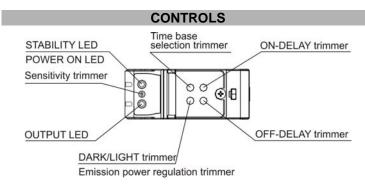


S300...F Receiver



S300...G **Emitter**

INSTRUCTION MANUAL



OUTPUT LED (yellow) (S300...F)

The vellow LED ON indicates the output status.

STABILITY LED (green) (S300...F)

The green LED ON indicates that the sensor has working with a enough safety

POWER ON LED (\$300...G)

The green LED indicates that the sensor is operating.

SENSITIVITY TRIMMER (\$300...F)

A mono-turn trimmer adjusts the sensitivity and the sensor operating distance. The operating distance increases, rotating the screws in a clockwise direction.

DARK/LIGHT TRIMMER (\$300...F)

A mono-turn trimmer to select dark/light mode.

EMISSION POWER REGULATION TRIMMER (\$300...G)

A mono-turn trimmer to select the emission power

ON-DELAY AND OFF-DELAY TRIMMER (\$300...F06)

Mono-turn trimmers to setting output activation and disactivation delay time. Please refer to "TIMING FUNCTIONS" paragraph for for procedure indications.

TIME BASE SELECTION AND ONE-SHOT TRIMMER (\$300...F06)

A mono-turn trimmer with three operation position: it allows to select two different delay time base (SHORT BASE and LONG BASE) or ONE SHOT. Please refer to "TIMING FUNCTIONS" paragraph for procedure indications.

WARNING: the maximum mechanical rotation range of the trimmer is 240°. Do not force over of the maximum and minimum positions

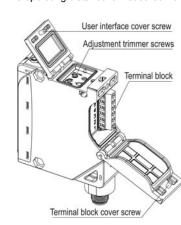
INSTALLATION

The sensor can be positioned by means of the two housing holes using two screws (M5x35 or longer, 1.2Nm maximum tightening torque).

The sensor bottom surface has been provided of two mechanical threaded insert M5x5,5. These metal insert are commercial components.

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

The operating distance is measured from the front surface of the sensor optics.



Tighten all screws surely to maintain the water-proof characteristics for IP67 (IEC/EN60529).

Excessive tightening causes damage. Tighten the screws within the tightening torque range shown in the table.

TIGHTENING TORQUE (Nm)		
Terminal screws(6pc)	0.5 max	
Covers screws	0.50.8	

The cable gland assure mechanical retention compliant with EN50262.

CABLE DIAMETER	LOAD (N)
4,58mm	30
810mm	42

TECHNICAL DATA

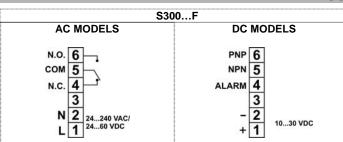
AC MODELS	S3001-G/F	DC MODELS
Power supply:	24240 VAC / 2460 VDC	Power supply:
Ripple:	10 % max	Ripple:
Current consumption (output current excluded):	< 3 VA	Current consumption (output current excluded):
Outputs:	Electromechanical SPDT: 250 VAC, 30 VDC	Outputs:
Output current:	Max 3 A (resistive load)	Output current: Output saturation voltage:
		Diagnostic functions
Response time:	20 ms	Response time:
Switching frequency:	25 Hz	Switching frequency:
Weight:	150 g	Weight:

DC MODELS	S3002/5-G/F	
Power supply:	1030 VDC Class 2 (UL508)	
Ripple:	10 % max	
Current consumption (output current excluded):	F: <25mA / G: < 20 mA	
Outputs:	PNP / NPN open collector R_pull-up/down = 47ΚΩ	
Output current:	100 mA (resistive load)	
Output saturation voltage:	2.4 V max	
Diagnostic functions	PNP ALARM output / Test+ iput	
Response time:	1 ms	
Switching frequency:	500 Hz	
Weight:	140 g	

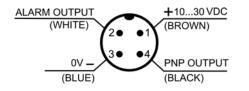
Common data

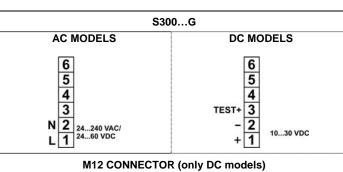
	S300G	\$300F
Emission type:	INFRARED LED (880nm)	-
Operating distance (typical value):	0.60m	
Indicators:	POWER ON LED (GREEN)	OUTPUT LED (YELLOW), STABILITY LED (GREEN)
Adjustment:	Emission power regulation trimmer	Sensitivity trimmer / DARK/LIGHT trimmer Timing versions S300F06: time base selection and one shot trimmer / ON DELAY trimmer / OFF DELAY trimmer
Time base (<i>Timing vers.</i> \$300F06):	SHORT BASE: 02 sec, LONG BASE: 010 sec	
Operating temperature:	-4055 °C	
Storage temperature:	-4070 °C	
Dielectric strength:	☐: 1500 VAC, 1 min between electronics and housing	
Insulating resistance:	> 20 M Ω , 500 VDC between electronics and housing	
Ambient light rejection:	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:	PBT 30% Glass fiber-reiforced	
Lenses:	frontal window and lens in PC	
Protection class:	IP67 (IEC / EN60529) / cable gland EN50262	
UL requirements:	60-70°C copper conductor 24-20 AWG; TYPE 1 ENCLOSURE	
Connections:	see the "CONNECTIONS" paragraph	

CONNECTIONS



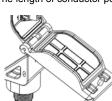
M12 CONNECTOR (only DC models)





NOT USED +10...30 VDC (WHITE) (BROWN) ٥٧. TEST+ (BLUE) (BLACK)

Use a cable of 4.5 to 10 mm in diameter to ensure water- and dust-proof characteristics. The trasversal section of the cable must be between 16 and 26AWG. The length of conductor peel must be 6mm and the cable peel must be 100mm.



To favour the cable connection it is possible remove (and then replace) the terminal block cover when it is in the maximum opening position (like showned in the figure).

Turn off the power supply before wiring. Connect correctly to prevent damage. At the end of the connections, screw the cable gland decisively to lock the cable

Close the terminal block cover with the screw.

M12 connector versions (S300...5)

Terminal block versions (\$300...1/2)

The connector wires are just connected like show in the previous figure. It is possible change the wiring and use other functionality (NPN output, TEST+ input).

SETTING

Sensitivity setting (S300...F and S300...G)

Position the sensors 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 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.

DIAGNOSTIC FUNCTIONS

S300 has the following diagnostic functions to verify the correct operation on application

TEST+ input (only \$300...2/5-G)

The TEST+ input can be used to inhibit the emitter and verify that the system is correctly operating. The TEST function is activated if the TEST+ input is connected to a voltage between 10...30V, whereas if the TEST+ input is connected to GND or it is not connected the function is disactivated.

Activating the TEST the output switches from ON to OFF (in light mode), testing the total operation

ALARM output (only \$300...2/5-F)

The alarm output switches ON whenever the received signals remains without a safety margin (greater than 30% compared to the output switching level).

The ALARM output is activated (ON) when the received signal remains without a safety margin for more than 3 seconds.

DIMENSIONS M12 CONNECTOR VERSION CABLE VERSION Ø nin 4.5 nn

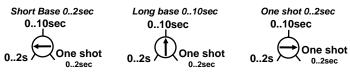
TIMING FUNCTIONS



0..10sec



The TIME BASE SELECTION trimmer allows to select the time base or the ONE SHOT function



Selecting the short base the time setting of ON delay and OFF delay trimmer is in the range 0..2sec, selecting long base is in the range 0..10sec

To allow a better setting of little delay, the variation of ON and OFF delay are not linear with mechanical regulation of the trimmer: until half rotation the regulation is thiner, whereas from half to full scale the regulation is faster.

The follow figure indicates the values of initial, middle and full scale delay of ON and OFF delay trimmer in the two different selectable time base:



The TIME BASE SELECTION trimmer has a third position to select ONE SHOT mode. The ONE SHOT duration is selectable by ON DELAY trimmer with short time base (0...2 sec). In this mode the OFF delay trimmer is disabled.

TIMING DIAGRAM (\$300...F06)

OPERATION MODE	OUTPUT
Normal (timing disable)	
ONE SHOT (only with short time base 02 sec.)	Ton I I Ton
ON/OFF delay	-Toff→ Toff→
ON delay	I_Ton_
OFF delay	- Toff-

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.

Datalogic Automation warrants its products to be free from defects

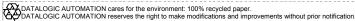
Datalogic Automation will repair or replace, free of charge, any product found to be defective during the warranty period of 36 months from the manufacturing date.

This warranty does not cover damage or liability deriving from the improper application of Datalogic Automation products.

DATALOGIC AUTOMATION sri

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