FARS SERIES

Photoelectric Proximity Switch - with background suppression

INSTALLATION MANUAL

CAT8EFA1145604

Micro Detectors

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SUPPLIED MATERIAL

- Installation manual
- Safety instructions for dengerous areas*
- Declaration of Conformità CE*
- Label ATEX marked*

**Only for ATEX certified models*

Model FAR
II 3G Ex nA IIC T6 Gc
II 3D Ex tc IIIB T85°C Dc
Certificate number : 0802014X

Safety Specifications

- ▶ Read the operating instructions before starting operation.
- ▶ Connection, assembly, and settings only by competent technicians.
- ▶ Protect the device against moisture and soiling when operating.
- ▶ No safety component in accordance with EU machine guidelines.
- ▶ Always mount/disassemble contact in a de-energized state.
- ▶ Mark CE
- ▶ ATEX cerfified (only for ATEX certified models)

Proper Use

The **FARS** photoelectric proximity switch is an opto-electronic sensor and is used for optical, non-contact detection of objects, animals, and people.

Starting Operation

H: Light-switching: if light received, output (Q) switches.
D: Dark-switching: if light interrupted, output (Q) switches.

With following connectors only:
Connect and secure cable receptacle tension-free.

Only for versions with connecting cable:
Connect cables.

Use M18 mounting to mount sensor to holders.
Maintain direction in which object moves relative to sensor.
Connect photoelectric proximity switch to operating voltage (see type label).

Check application conditions such as scanning distance, size and reflectance of object to be detected as well as of background, and compare with characteristic in diagram. (x=scanning distance, y=transition range between set scanning distance and reliable background suppression in % of scanning distance, Ro=reflectance of object, Rh=reflectance of background).
Reflectance: 6%=black, 18%=gray, 90%=white (based on standard white to DIN 5033).

Adjustment of light reception:
Set scanning distance to max.
Position object. Position light spot on object. Red sender light spot visible on object. Signal strength indicator should light up. If it does not light up, readjust and/or clean photoelectric proximity switch and/or check application conditions.

Setting scanning distance:
Remove object, signal strength indicator should go out (position A=max.). If it does not go out, turn switch (Range: 270°) towards min. until it goes out (e.g. position A). Set switch to min. Position object. Turn switch towards max. until signal strength indicator lights up (e.g. position B).
If position B<position A:
select middle setting (e.g. position C). Check complete functioning. Functioning OK, setting completed. Functioning not OK, check and readjust application conditions.
If position A<=position B:
influence of background is too great. Check and readjust application conditions.

Maintenance

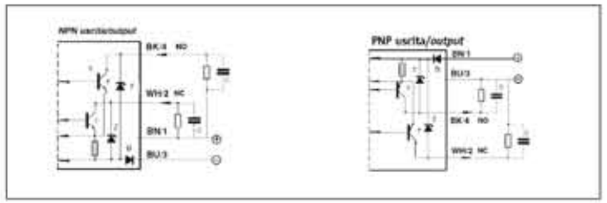
M.D. photoelectric switches do not require any maintenance. We recommend that you clean the external lens surfaces and check the screw connections and plug-in connections at regular intervals.

CODE STRUCTURE

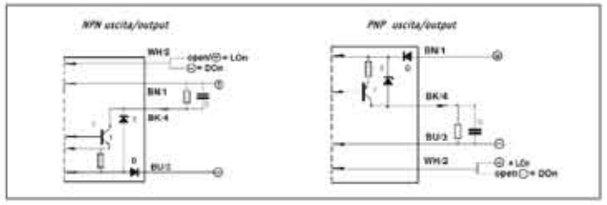
FA R S / B P - 0 A 7312 AN

M18 photoelectric sensor 4 wires, DC	FA	AN	With ATEX certified
Red LED emission	R	7312	Special model with trimmer assid Sn<90 mm, high ambient light immunity
Background suppression	S	7712	Special model with high ambient light immunity
4 wires Lon/DOn selectable	0	A	Axial cable exit
4 wires Q/Qnot output	B	E	M12 axial plastic plug cable exit
PNP output	P	0	Plastic housing axial optic
NPN output	N	1	Metal housing axial optic

Complementary Q/Qnot output



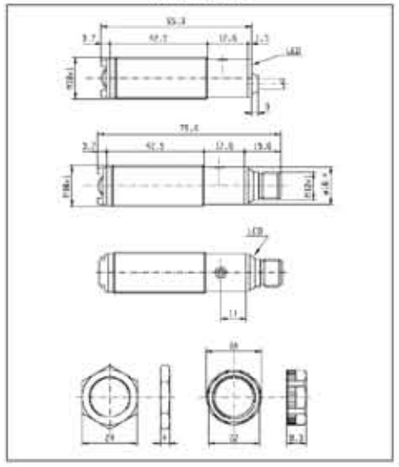
Lon/Don selectable output

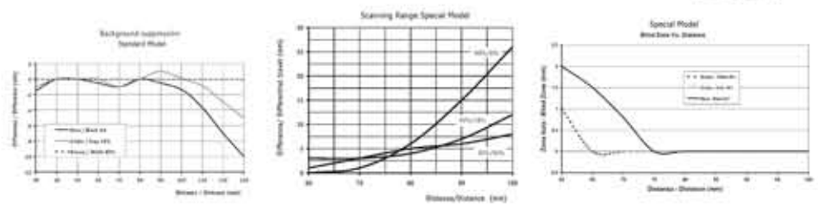


SPECIFICATIONS

Modello / Model	FARS/**-**	FARS/**-**7312	7712
Type	Background suppression		
Nominal sensing distance Sn	30 – 130 mm	90 mm	60-100 mm
Scanning range (Sd)	30 -130 mm (white paper)	90 mm	
Emission	Red (660 nm)		
Tolerance	+15/-5%		
Differential travel	≤ 10 % (white paper)		
Repeat accuracy	10 %		
Operating voltage	10 – 30 Vdc		
Ripple	≤ 10 %		
No-load current	25 mA	40 mA	
Output current	100 mA		
Leakage current	≤10 µA (VDC max)		
Output voltage drop	2 V max. (Il=100 mA)		
Output type	NPN or PNP Lon/Don selectable or Q/Qnot output		
Switching frequency	1 kHz	400 Hz	
Time delay before availability	200 ms		
Supply electrical protections	Polarity reversal, transient		
Output electrical protections	Short circuit (autoreset)		
Temperature range	-25 °C / +70 °C		
protection degree	IEC IP67 (EN60529)		
Interference to external light	5000 lux (incandescent lamp) ; 10000 lux (sunlight)		
Sens. Adjust.	Trimmer		
LED indicators	Yellow : light state ; short circuit ; internal error		
Housing material	Nichel –plated brass (metal housing), PBT (plastic housing) ; PC(cable exit)		
Optic material	PMMA		
Tightening torque	40 Nm		
Weight(approx)	200 gr/240 gr		

DIMENSIONS





WARNING These products are NOT safety sensors and are NOT suitable for use in personal safety application

For ATEX models read carefully safety instruction before installation

Declaration of conformity M.D. Micro Detectors S.p.A. con Unico Socio
Declare under our sole responsibility that these products are in conformity with the EMC directive.