

PHOTOELECTRIC SENSORS

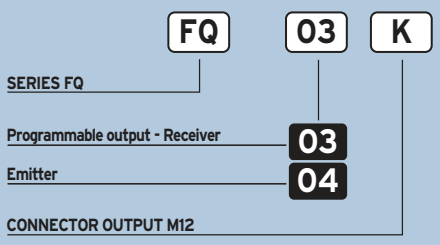
THRU BEAM

12÷30 V DC - PROGRAMMABLE OUTPUT

- Square housing
- Compact size, output and stability indicators
- Cost effective
- Cable or M12 quick connect models
- Fast response time: 2.5 ms

FQ Series

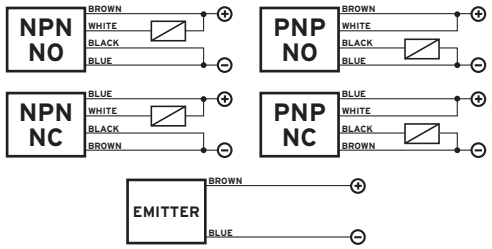
IDENTIFICATION CODE



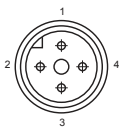
AVAILABLE	RECEIVER	EMITTER
NOMINAL SWITCHING DISTANCE (Sn)	**20 m**	
TOLERANCE	+10/-10 %Sn	
HYSTERESIS	10%	
EMISSION	-	Infrared (875 nm)
NOMINAL VOLTAGE	12 ÷ 30VDC (-15 /+10%)	
RESIDUAL RIPPLE	10%	
OUTPUT	NPN or PNP (programmable)	-
CONTACT	NO or NC (programmable)	-
MAX. OUTPUT CURRENT	200 mA	-
ABSORPTION AT 30 VDC	25 mA	
VOLTAGE DROP (Sensor ON)	1.8 V (I = 100 mA)	-
YELLOW LED	Output indicator	-
GREEN LED	Stability indicator	Supply indicator
SENSITIVITY ADJUSTEMENT	Trimmer 1 turn	-
SWITCHING FREQUENCY	200 Hz	
RESPONSE TIME	2.5 ms	
START UP DELAY	100 ms	
SHORT CIRCUIT PROTECTION	Present (self-resetting)	
ELECTRIC PROTECTIONS	Againts polarity reversal - inductive loads	
TEMPERATURE LIMITS	-10 ÷ +60 °C	
LIGHT IMMUNITY	> 10.000 Lux (1)	
PROTECTION DEGREE	IP 65	
CABLE LENGTH	2 m	
CABLE SECTION	4 x 0.25 mm²	2 x 0.25 mm²
HOUSING MATERIAL	Housing: ABS - Lenses: methacrylate	
WEIGHT - cable output - (connector output)	- 160 g - (120 g)	

(1) Determined with halogen tungsten lamp 3000 °K.
Note: for a proper use see norms at pages 18, 19, 20, 21 and 22.

WIRING DIAGRAMS



CONNECTION WITH CONNECTOR M12 (K)



CONTACTS CONFIGURATION

Output	Contacts numbers			
	1	2	3	4
NPN NO	+	NO	−	−
NPN NC	−	NC	+	−
PNP NO	+	+	−	NO
PNP NC	−	+	+	NC
Emitter	+		−	

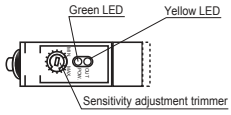
View of quadripole male connector.

Note: Photoelectric sensor not suitable for use with 90° connectors.

SENSITIVITY ADJUSTMENT

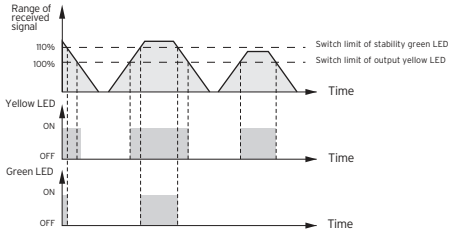
1) SENSITIVITY INCREASE
Screw the trimmer towards right towards position "+"

2) SENSITIVITY DECREASE
Screw the trimmer towards left towards position "-"



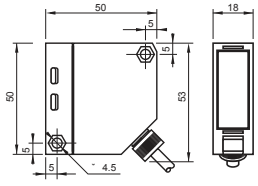
Note: the trimmer just needs one turn.

STABILITY SIGNAL LED



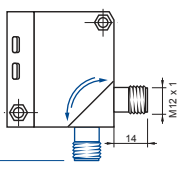
The stability signal LED shows the range of received signal and helps the photoelectric sensor to line up.
A photoelectric sensor works in "stability" condition when the received light signal range is 10% ahead the switching limit of output.

DIMENSIONS (mm)



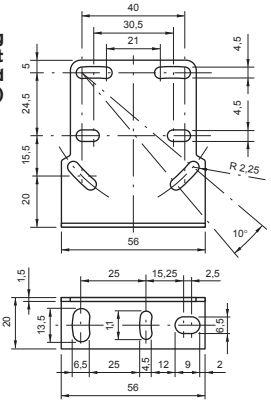
Configuration with cable

Configuration with connector K



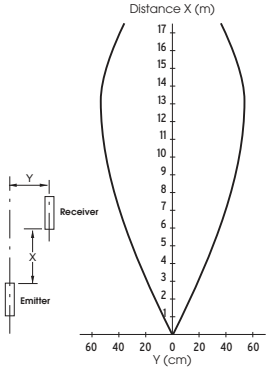
Rotating connector

Mounting bracket (supplied accessory)



CHARACTERISTIC CURVES

EMITTER RECEIVER THRU BEAM



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