

# Retro Ref. Photoelectric Sensors



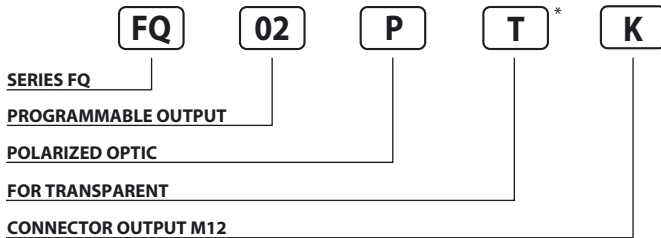
PHOTOELECTRIC SENSORS IN SQUARE HOUSING 12 ÷ 30 V DC PROGRAMMABLE OUTPUT

- Compact size, output and stability indicators
- Cost effective
- Cable or M12 quick connect models
- Fast response time: 5 mS / 200 Hz
- For transparent

## FQ Series

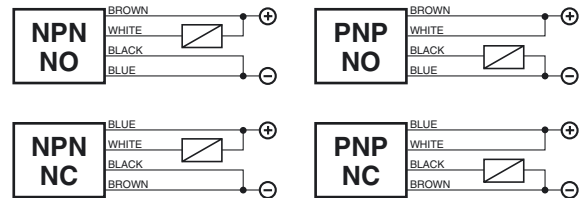


### Identification code

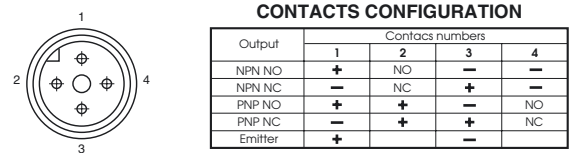


\* Available only with P option

### Wiring diagrams



### Connection with connector M12 (K)

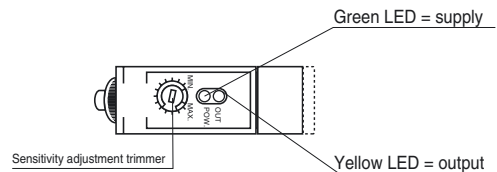


View of quadripole male connector.

**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.

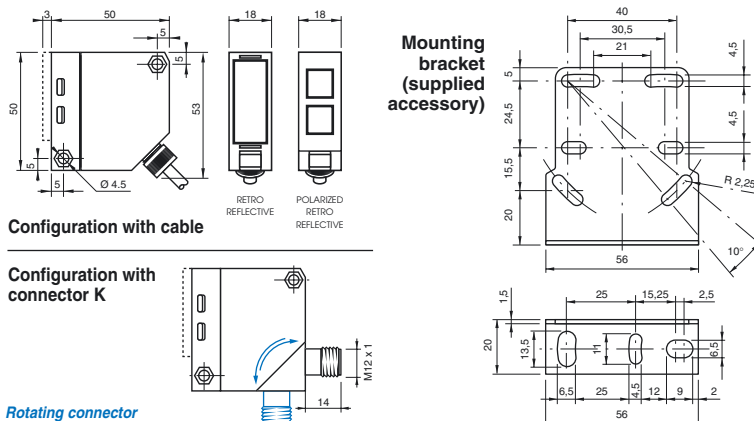
AVAILABLE	POLARIZED	POLARIZED FOR TRANSPARENT	STANDARD
NOMINAL SWITCHING DISTANCE (Sn)	6 m <sup>(1)</sup>	0,05...2m <sup>(1)</sup>	13 m <sup>(1)</sup>
TOLERANCE	+10/-10 %Sn		
HYSTERESIS	10%		
EMISSION	Red (660 nm)	Infrared (875 nm)	
NOMINAL VOLTAGE	12 ÷ 30VDC (-15 /+10%)		
RESIDUAL RIPPLE	≤ 10%		
OUTPUT	NPN or PNP (programmable)		
CONTACT	NO or NC (programmable)		
MAX. OUTPUT CURRENT	200 mA		
ABSORPTION AT 30 VDC	40 mA		
VOLTAGE DROP (Sensor ON)	≤ 1.8 V (I = 100 mA)		
YELLOW LED	Output indicator		
GREEN LED	Supply indicator		
SENSITIVITY ADJUSTEMENT	Trimmer 1 turn		
SWITCHING FREQUENCY	200 Hz		
RESPONSE TIME	5 mS		
START UP DELAY	100 mS		
SHORT CIRCUIT PROTECTION	Present (self-resetting)		
ELECTRIC PROTECTIONS	Against polarity reversal - inductive loads		
TEMPERATURE LIMITS	-10 ÷ +60 °C		
LIGHT IMMUNITY	> 10.000 Lux <sup>(2)</sup>		
PROTECTION DEGREE	IP 65		
CABLE LENGTH	2 m		
CABLE SECTION	4 x 0.25 mm <sup>2</sup>		
HOUSING MATERIAL	Housing: ABS - Lenses: methacrylate		
WEIGHT - cable output - (connector output)	- 160 g - (120 g)		

<sup>(1)</sup> Determined with CT04S reflector.

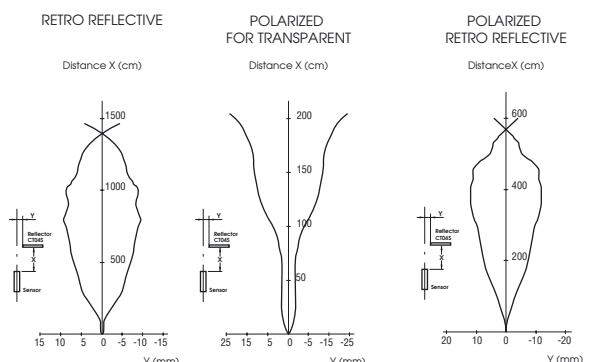
<sup>(2)</sup> Determined with halogen tungsten lamp 3000° K.

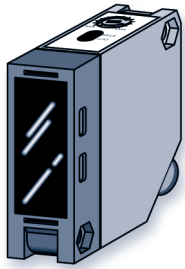
Note: for a proper use see norms at pages 14, 15, 16, 17 and 18.

### Dimensions (mm)



### Characteristic curves





# Retro Ref. Photoelectric Sensors



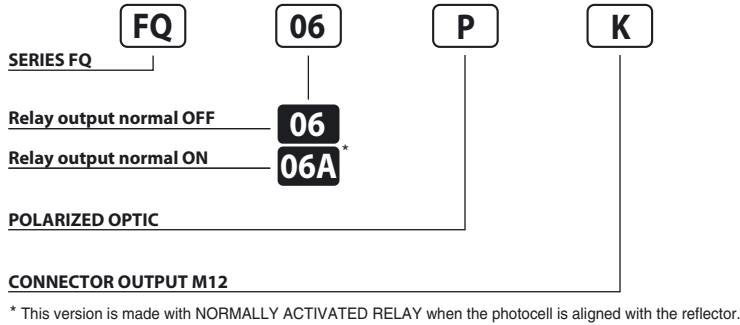
PHOTOELECTRIC SENSORS IN SQUARE HOUSING 14 ÷ 230 V AC/DC RELAY OUTPUT

- Wide input voltage
- 3A relay SPDT
- Cable or M12 quick connect models
- Output and Supply indicators

## FQ Series



### Identification code



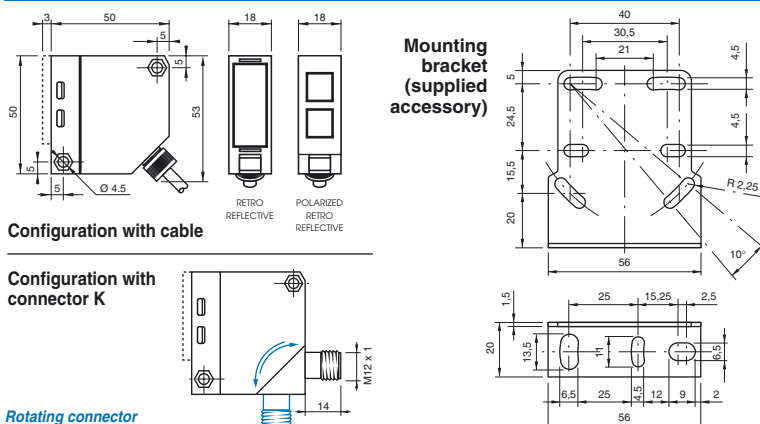
AVAILABLE	POLARIZED	STANDARD
NOMINAL SWITCHING DISTANCE (Sn)	6 m <sup>(1)</sup>	13 m <sup>(1)</sup>
TOLERANCE	+10/-10 %Sn	
HYSTERESIS	10%	
EMISSION	Red (660 nm)	Infrared (875 nm)
NOMINAL VOLTAGE	14 ÷ 230V AC - DC (-15 /+10%)	
MAINS FREQUENCY	50 ÷ 60 Hz	
OUTPUT	Relay (10 x 10 <sup>6</sup> ops. min.)	
MAX. OUTPUT CURRENT	3A 30 V AC - 1A 220 V AC (90W, 360 VA)	
ABSORPTION	2.5 VA	
YELLOW LED	Output indicator	
GREEN LED	Supply indicator	
SENSITIVITY ADJUSTMENT	Trimmer 1 turn	
SWITCHING FREQUENCY	10 Hz	
RESPONSE TIME	100 mS	
START UP DELAY	≤ 300 mS	
TEMPERATURE LIMITS	-10 ÷ +60° C	
LIGHT IMMUNITY	> 10.000 Lux <sup>(2)</sup>	
PROTECTION DEGREE	IP 65	
CABLE LENGTH	2 m	
CABLE SECTION	5 x 0.30 mm <sup>2</sup>	
HOUSING MATERIAL	Housing: ABS - Lenses: methacrylate	
WEIGHT - cable output - (connector output)	- 180 g - (125 g)	

<sup>(1)</sup> Determined with CT04S reflector.

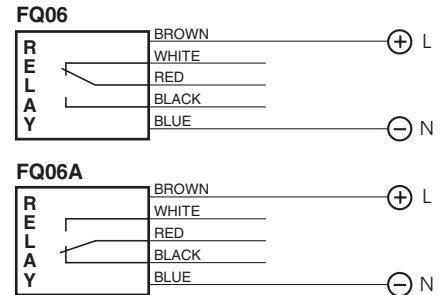
<sup>(2)</sup> Determined with halogen tungsten lamp 3000° K.

Note: for a proper use see norms at pages 14, 15, 16, 17 and 18.

### Dimensions (mm)

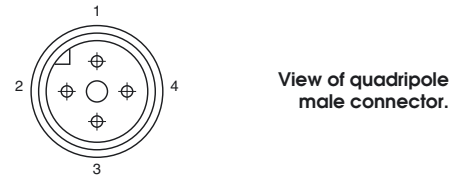


### Wiring diagrams



**Note:** in case of inductive loads it is necessary to connect one diode in antiparallel at the edges of the load.

### Connection with connector M12 (K)



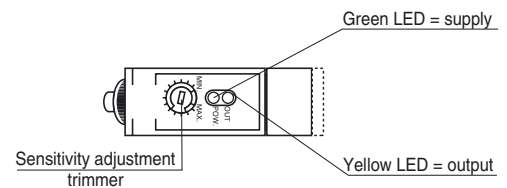
#### CONTACTS CONFIGURATION

Output	Contacts numbers			
	1	2	3	4
Relay	L	COM	N	NO
Wire colors	brown	white	blue	black

**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.

### Characteristic curves

