



# Retro Ref. Photoelectric Sensors

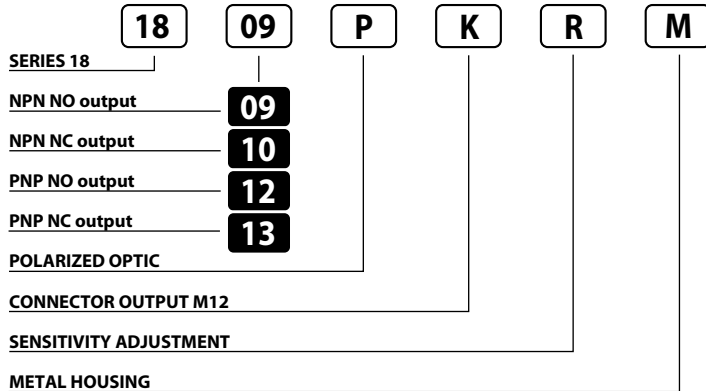
PHOTOELECTRIC SENSORS IN STANDARD PLASTIC HOUSING 12 ÷ 30 V DC NPN OR PNP OUTPUT

- **Miniature 18 mm tubular**
- **Operation LED aids installation**
- **Models w/o pots for simple installation**
- **Quick connect or integral cable**
- **9-turn pot models**

**18 Series**



## Identification code



K and R are not available in the same model

AVAILABLE	POLARIZED	STANDARAD
SWITCHING DISTANCE	<b>1 m<sup>(1)</sup></b>	<b>3 m<sup>(1)</sup></b>
HYSTERESIS	10%	
EMISSION	Red (660 nm)	Infrared (875 nm)
NOMINAL VOLTAGE	12 ÷ 30VDC (-15 /+10%)	
RESIDUAL RIPPLE	≤ 10%	
MAX. OUTPUT CURRENT	200 mA	
ABSORPTION AT 30 VDC	30 mA	
VOLTAGE DROP (Sensor ON)	≤ 1.5V (I = 200 mA)	
OPERATION LED	Yellow	
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	5000 Lux <sup>(2)</sup>	
PROTECTION DEGREE	IP 67 (IP 65 for models with sensitivity adjustment)	
CABLE LENGTH	2 m	
CABLE SECTION	3 x 0.25 mm <sup>2</sup>	
HOUSING MATERIAL	Housing: nylon loaded with fiberglass - Lenses: methacrylate	
WEIGHT - cable output - (connector output)	- 110 g - (55 g)	

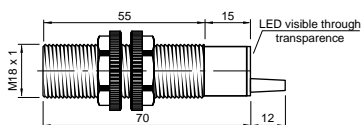
<sup>(1)</sup> Determined with CT04S reflector.

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

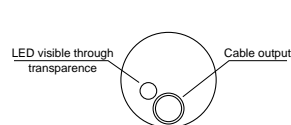
Note: for a proper use see norms at pages 6, 7 and 8.

## Dimensions (mm)

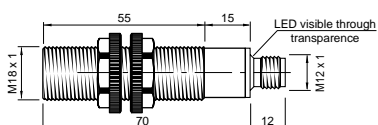
### Configuration with cable



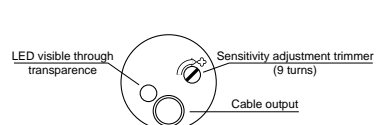
### Configuration with cable - Back view



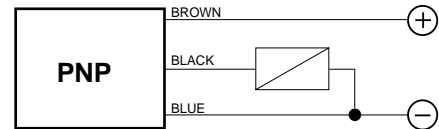
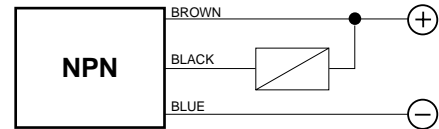
### Configuration with connector K



### Configuration with sensitivity adjustment

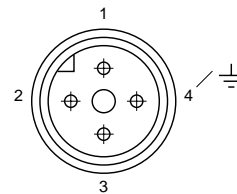


## Wiring diagrams



## Connection with connector M12 (K)

View of quadripole male connector.

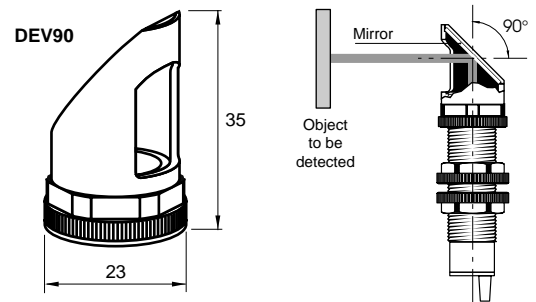


### CONTACTS CONFIGURATION

Available (NO or NC)	Contacts numbers			
	1	2	3	4
Emitter	+	-	-	NO/NC

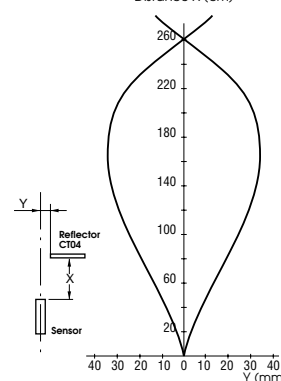
**Note:** the K plug is compatible with the following connectors: VAUDEHA, BINDER, HIRSCHMANN, LUMBERG, AMPHENOL-TUCHEL.

## Accessories

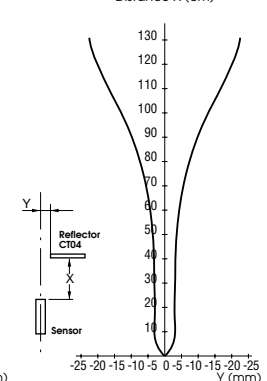


## Characteristic curves

RETRO REFLECTIVE  
Distance X (cm)



POLARIZED RETRO REFLECTIVE  
Distance X (cm)





# Retro Ref. Photoelectric Sensors

PHOTOELECTRIC SENSORS IN LONG HOUSING 24 ÷ 230 V AC TRIAC NO AND NC OUTPUT

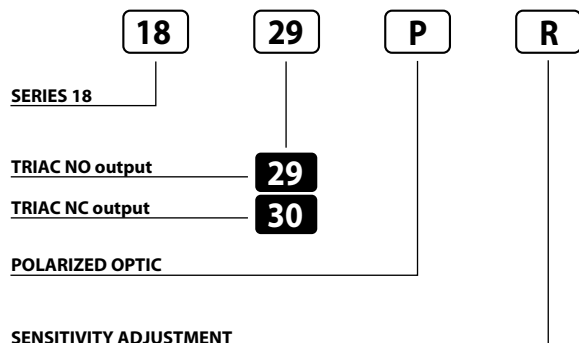
- Short AC housing, only 80 mm
- Leakage < 1.5 mA @ 220 V DC
- Models w/o pots for simple installation
- Models with 9-turn pot

18 Series

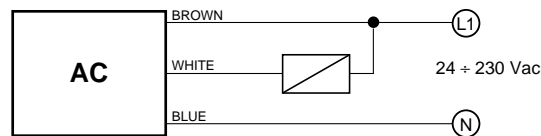
New



## Identification code



## Wiring diagrams



**WARNING:** Short circuit in the output is not possible. Wrong supply cables connections can irreparably damage the detector. Therefore sensors whose output status is short-circuited will not be substituted under warranty.

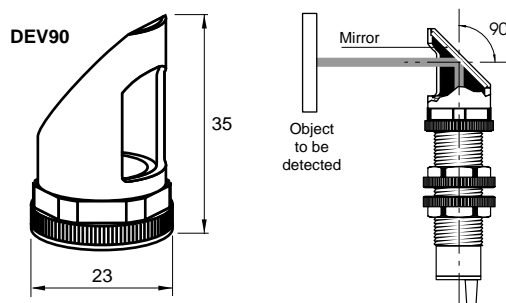
AVAILABLE	POLARIZED	STANDARD
SWITCHING DISTANCE	1 m <sup>(1)</sup>	3 m <sup>(1)</sup>
HYSTERESIS	10%	
EMISSION	Red (660 nm)	Infrared (875 nm)
NOMINAL VOLTAGE	24 ÷ 230VAC (-15 / +10%)	
MAINS FREQUENCY	50 ÷ 60 Hz	
MAX. OUTPUT CURRENT	150 mA	
LEAKAGE CURRENT	≤ 1.5mA (at 220VAC)	
ABSORPTION	1 W	
VOLTAGE DROP (Sensor ON)	< 2.5 V	
OPERATION LED	Yellow	
SWITCHING FREQUENCY	10 Hz	
RESPONSE TIME	100 mS	
START UP DELAY	300 mS	
ELECTRIC PROTECTIONS	Against inductive loads	
TEMPERATURE LIMITS	-10 ÷ +60 °C	
LIGHT IMMUNITY	5000 Lux <sup>(2)</sup>	
PROTECTION DEGREE	IP 67 (IP 65 for models with sensitivity adjustment)	
CABLE LENGTH	2 m	
CABLE SECTION	3 x 0.35 mm <sup>2</sup>	
HOUSING MATERIAL	Housing: nylon loaded with fiberglass - Lenses: methacrylate	
WEIGHT - cable output -	120 g	

## CONNECTIONS IN PARALLEL

In parallel connections with multiple outputs, the maximum leakage current (< 1,5 mA at 220 VAC) referring to the load and the supply should be taken into account when calculating the max. quantity of connectable sensors.

It is important in this connection that the sensors are connected at the same phase.

## Accessories

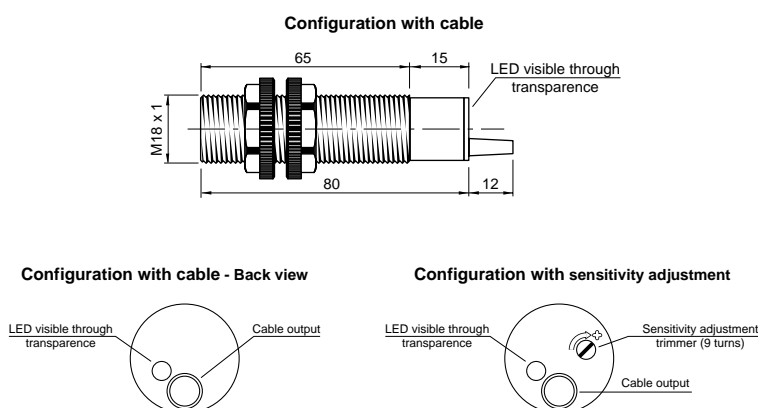


<sup>(1)</sup> Determined with CT04S reflector.

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

Note: for a proper use see norms at pages 6, 7 and 8.

## Dimensions (mm)



## Characteristic curves

