



# Retro Ref. Photoelectric Sensors



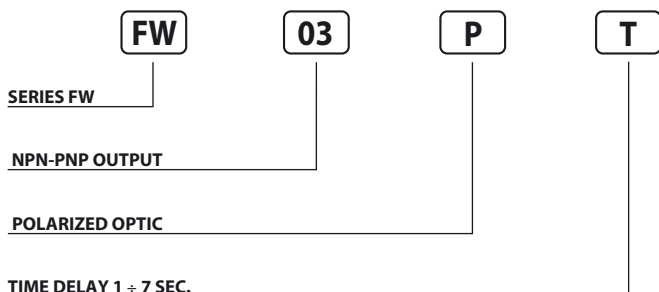
PHOTOELECTRIC SENSORS IN RECTANGULAR HOUSING 12 ÷ 30 V DC WITH TIMER PROGRAMMABLE OUTPUT

- Rectangle compact size
- Multi-function timer
- ON/OFF delay
- One shot-four functions
- NPN or PNP programmable outputs
- Conduit wiring terminal block

## FW Series



### Identification code



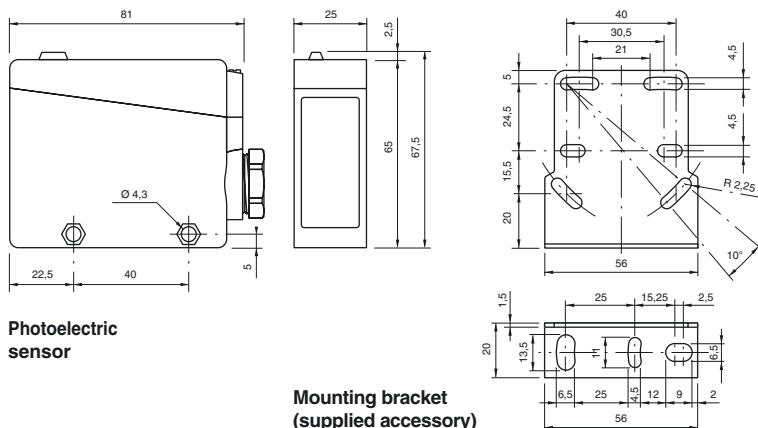
AVAILABLE	POLARIZED	STANDARD
NOMINAL SWITCHING DISTANCE (Sn)	9 m <sup>(1)</sup>	15 m <sup>(1)</sup>
TOLERANCE	+10/-10 %Sn	
HYSTERESIS	10%	
EMISSION	Red (660 nm)	Infrared (875 nm)
NOMINAL VOLTAGE	12 ÷ 30VDC (-15 /+10%)	
RESIDUAL RIPPLE	≤ 10%	
OUTPUT	NPN or PNP (programmable)	
MAX OUTPUT CURRENT	200 mA	
ABSORPTION	≤ 40 mA	
VOLTAGE DECREASE	≤ 2.5 VDC	
YELLOW LED	Light on indicator	
GREEN LED	Supply indicator	
SENSITIVITY ADJUSTMENT	Trimmer 1 turn	
TIME REGULATION	0.1 ÷ 7 s ± 2 s (only models with timer)	
SWITCHING FREQUENCY	200 Hz	
RESPONSE TIME	5 mS	
START UP DELAY	≤ 300 mS	
PROTECTION AGAINTS SHORT-CIRCUIT	Present (self-resetting)	
TEMPERATURE LIMITS	-10° ÷ +60°C	
LIGHT IMMUNITY	10.000 Lux <sup>(2)</sup>	
PROTECTION DEGREE	IP 67	
CONNECTIONS	Screw	
CABLE GUIDE	PG 13.5	
HOUSING MATERIAL	Housing: ABS - Lenses: methacrylate	
WEIGHT (Approximately)	110 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 12, 13, 14, 15 and 16.

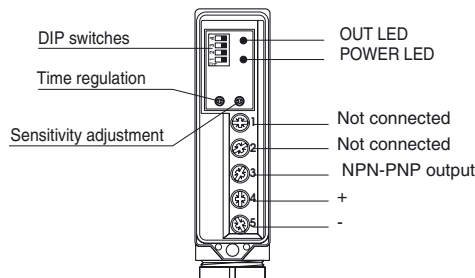
### Dimensions (mm)



Photoelectric sensor

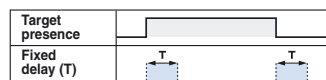
Mounting bracket (supplied accessory)

### Wiring diagrams



Note: "series" and "parallel" connections are not possible.

### Timing diagrams



#### ALL MODELS

NO.	FUNCTION	DIP SWITCHES	OUTPUT DIAGRAM												
1	Muting	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr> <tr><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr> </table>	1	2	3	4	ON	ON	ON	ON	OFF	OFF	OFF	OFF	PNP = NO
			1	2	3	4									
ON	ON	ON	ON												
OFF	OFF	OFF	OFF												
NPN = NO															

#### MODELS WITHOUT TIMER

1	Normally ON PNP	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr> <tr><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr> </table>	1	2	3	4	ON	ON	ON	ON	OFF	OFF	OFF	OFF	PNP = NC	[Timing diagram]
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2	Normally ON NPN	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr> <tr><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr> </table>	1	2	3	4	ON	ON	ON	ON	OFF	OFF	OFF	OFF	PNP = NO	[Timing diagram]
			1	2	3	4										
ON	ON	ON	ON													
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NPN = NC																

#### MODELS WITH TIMER

1	Delay on operate	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr> <tr><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr> </table>	1	2	3	4	ON	ON	ON	ON	OFF	OFF	OFF	OFF	PNP = NC	[Timing diagram]
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3	Delay on release	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr> <tr><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr> </table>	1	2	3	4	ON	ON	ON	ON	OFF	OFF	OFF	OFF	PNP = NC	[Timing diagram]
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### Characteristic curves

