

Retro Ref. Photoelectric Sensors



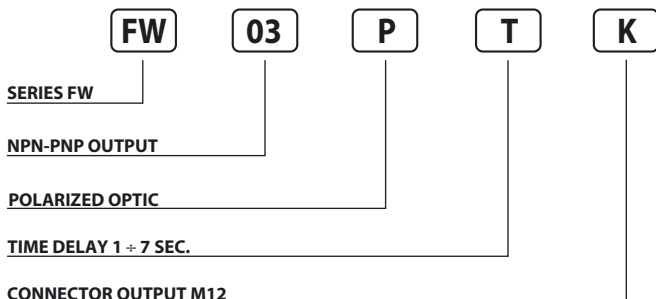
PHOTOELECTRIC SENSORS IN RECTANGULAR HOUSING 12 ÷ 30 V DC WITH TIMER PROGRAMMABLE OUTPUT

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

FW Series



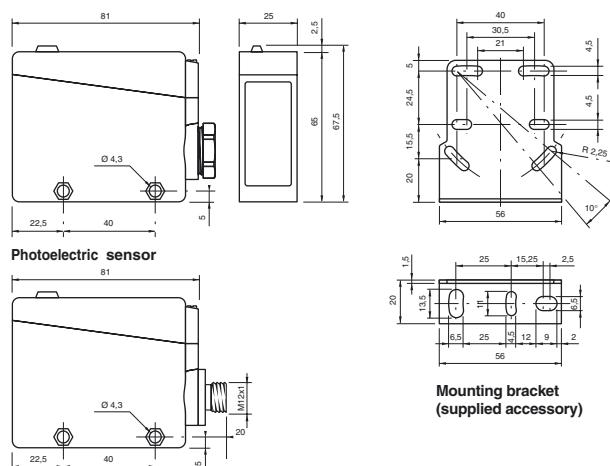
Identification code



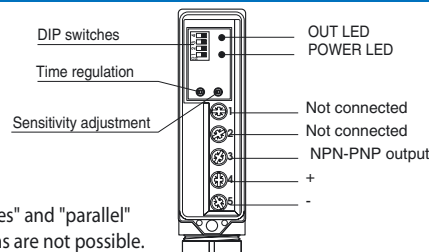
AVAILABLE	POLARIZED	STANDARD
NOMINAL SWITCHING DISTANCE (Sn)	9 m ⁽¹⁾	15 m ⁽¹⁾
TOLERANCE	+10/-10 %Sn	
HYSTERESIS	10%	
EMISSION	Red (660 nm)	Infrared (875 nm)
NOMINAL VOLTAGE	12 ÷ 30VDC (-15 /+10%)	
RESIDUAL RIPPLE	≤ 10%	
OUTPUT	NPN or PNP (programmable)	
MAX OUTPUT CURRENT	200 mA	
ABSORPTION	≤ 40 mA	
VOLTAGE DECREASE	≤ 2.5 VDC	
YELLOW LED	Light on indicator	
GREEN LED	Supply indicator	
SENSITIVITY ADJUSTEMENT	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 ⁽²⁾	
PROTECTION DEGREE	IP 67	
CONNECTIONS	Screw or M12 conn.	
CABLE GUIDE	PG 13.5	
HOUSING MATERIAL	Housing: ABS - Lenses: methacrylate	
WEIGHT (Approximately)	110 g	

⁽¹⁾ Determined with CT04S reflector.
⁽²⁾ Determined with halogen tungsten lamp 3000° K.
 Note: for a proper use see norms at pages 14, 15, 16, 17 and 18.

Dimensions (mm)

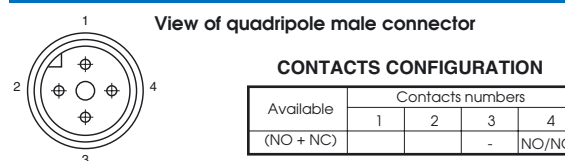


Wiring diagrams



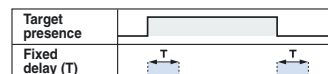
Note: "series" and "parallel" connections are not possible.

Connection with connector M12 (K)



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

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>OFF</td> <td>OFF</td> </tr> </table>	1	2	3	4	ON	ON	OFF	OFF	PNP = NO NPN = NO
1	2	3	4								
ON	ON	OFF	OFF								

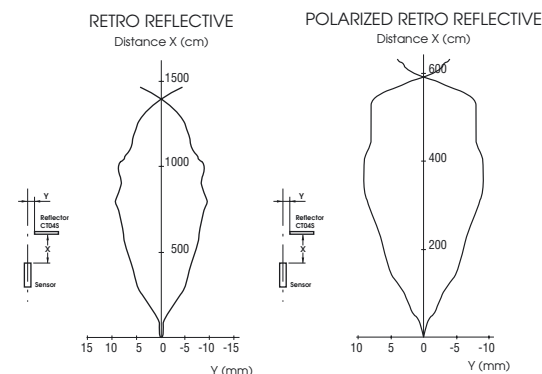
MODELS WITHOUT TIMER

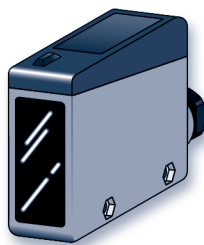
1	Normally ON PNP	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> </table>	1	2	3	4	ON	ON	OFF	OFF	PNP = NC NPN = NO
1	2	3	4								
ON	ON	OFF	OFF								
2	Normally ON NPN	<table border="1"> <tr> <td>1</td> <td>2</td>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

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>OFF</td> <td>OFF</td> </tr> </table>	1	2	3	4	ON	ON	OFF	OFF	PNP = NC NPN = NO
1		2	3	4							
ON	ON	OFF	OFF								
2	<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>OFF</td> <td>OFF</td> </tr> </table>	1	2	3	4	ON	ON	OFF	OFF	PNP = NO NPN = NC	
1	2	3	4								
ON	ON	OFF	OFF								
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>OFF</td> <td>OFF</td> </tr> </table>	1	2	3	4	ON	ON	OFF	OFF	PNP = NC NPN = NO
1		2	3	4							
ON	ON	OFF	OFF								
4	<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>OFF</td> <td>OFF</td> </tr> </table>	1	2	3	4	ON	ON	OFF	OFF	PNP = NO NPN = NC	
1	2	3	4								
ON	ON	OFF	OFF								
1	One shot leading edge	<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>OFF</td> <td>OFF</td> </tr> </table>	1	2	3	4	ON	ON	OFF	OFF	PNP = NC NPN = NO
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ON	ON	OFF	OFF								
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ON	ON	OFF	OFF								
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1	2	3	4								
ON	ON	OFF	OFF								

Characteristic curves





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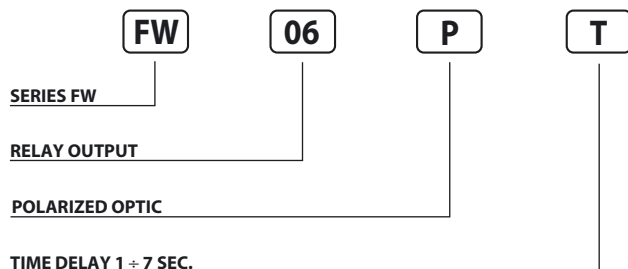
PH. SENSORS IN RECTANGULAR HOUSING 14 ÷ 230 V AC/DC WITH TIMER RELAY OUTPUT

- Wide range World Wide Power Supply
- Rectangular compact size
- Multi-function timer
- ON/OFF delay
- One shot-four functions
- Conduit wiring terminal block

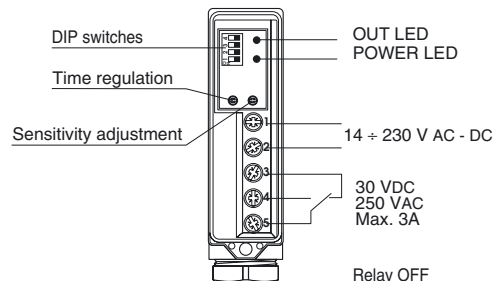
FW Series



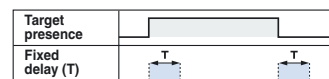
Identification code



Wiring diagrams



Timing diagrams



ALL MODELS

NO.	FUNCTION	DIP SWITCHES	ON/OFF	OUTPUT DIAGRAM
1	Muting	1 2 3 4	ON OFF	Not activated relay

MODELS WITHOUT TIMER

1	Normally ON	1 2 3 4	ON OFF	Normally activated relay
2	Normally OFF	1 2 3 4	ON OFF	Normally not activated relay

MODELS WITH TIMER

1	Delay on operate	1 2 3 4	ON OFF	Normally activated relay
2		1 2 3 4	ON OFF	Normally not activated relay
3	Delay on release	1 2 3 4	ON OFF	Normally activated relay
4		1 2 3 4	ON OFF	Normally not activated relay
1	One shot leading edge	1 2 3 4	ON OFF	Normally activated relay
2		1 2 3 4	ON OFF	Normally not activated relay
3	One shot trailing edge	1 2 3 4	ON OFF	Normally activated relay
4		1 2 3 4	ON OFF	Normally not activated relay

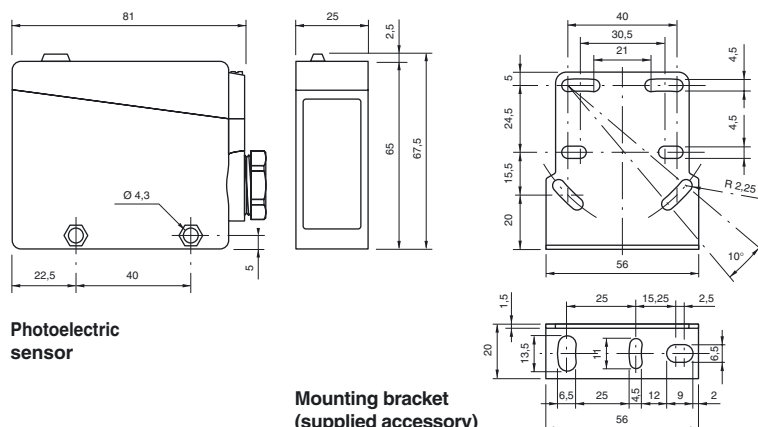
AVAILABLE	POLARIZED	STANDARD
NOMINAL SWITCHING DISTANCE (Sn)	9 m ⁽¹⁾	15 m ⁽¹⁾
TOLERANCE	+10/-10 %Sn	
HYSTERESIS	10%	
EMISSION	Red (660 nm)	Infrared (875 nm)
NOMINAL VOLTAGE	14 ÷ 230 V AC - DC (-15 /+10%)	
NET FREQUENCY	45 ÷ 60 Hz	
OUTPUT	Relay (40 x 10 ⁶ mec. op. -5 x 10 ⁶ elect. op.)	
MAX OUTPUT CURRENT	3A 250VAC - 3A 30VDC	
ABSORPTION	≤ 2W (2.5 VA)	
YELLOW LED	Light on indicator	
GREEN LED	Supply indicator	
SENSITIVITY ADJUSTEMENT	Trimmer 1 turn	
TIME REGULATION	0.1 ÷ 7 s ± 2 s (only models with timer)	
SWITCHING FREQUENCY	10 Hz	
RESPONSE TIME	100 mS	
START UP DELAY	≤ 300 mS	
TEMPERATURE LIMITS	-10° ÷ +60°C	
LIGHT IMMUNITY	> 10.000 Lux ⁽²⁾	
PROTECTION DEGREE	IP 67	
CONNECTIONS	Screw	
CABLE GUIDE	PG 13.5	
HOUSING MATERIAL	Housing: ABS - Lenses: methacrylate	
WEIGHT (Approximately)	110 g	

⁽¹⁾ Determined with CT04S reflector.

⁽²⁾ 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

