

Product Information

Multi-Function-Sensor Automatic Voltage Detection



A. u. K. Müller

Solenoid valves
Control valves
Special valves and systems

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Series IRS-WT-xb



Resilient clip

Sensor

IR-windows



Characteristics

- External IR-sensor with micro controller
- Compact design
- Voltage recognition 6V , 9V (battery) or 12V (power supply)
- Check and switch off in case of low battery voltage or mains power failure (with power supply IRS-PS-U only)
- Battery low voltage signal
- Low bias-current for elongated battery lifetime
- Easy to assemble and service
- Short response time on detection of user
- Automatic detection range adjustment to environment on Power-On
- Resin moulded electronic, protection type IP 65
- High operating safety through the use of high quality materials and 100% final testing of the products
- Default values changeable by optional remote control RC20

Applications

- Control unit for sanitary faucets
- Flushes
- Irrigation systems
- Industrial appliances

Description

Opto-electronic sensor unit available for use with bi stable or optioal mono stable cartridge valves having a nominal voltage of 6 VDC (e.g. 50.007.101, see separate data sheet) to be integrated within faucets.

Compact design for easy integration of sensor in the minimum space.

The minimised power consumption allows the use of common batteries giving long durability and safe operation.

Individual settings can be altered by an optional IR remote control (detection range, ON- OFF, mode dependent flushing times).

Easy assembly, service and check of battery.

The sensor may be equipped with an optional push-button, which starts the flow of water immediately.

Modes

IRS-WT	Faucet
IRS-WT-OF	Faucet ON/OFF Mode

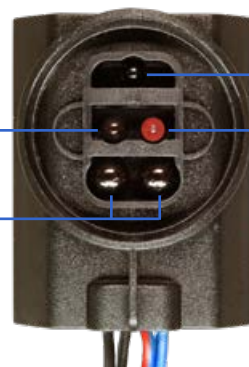
The functionality is factory set to order.

IR-Transmitter / scan near

IR-Transmitter / scan far

IR receiving diode

LED signal (red)

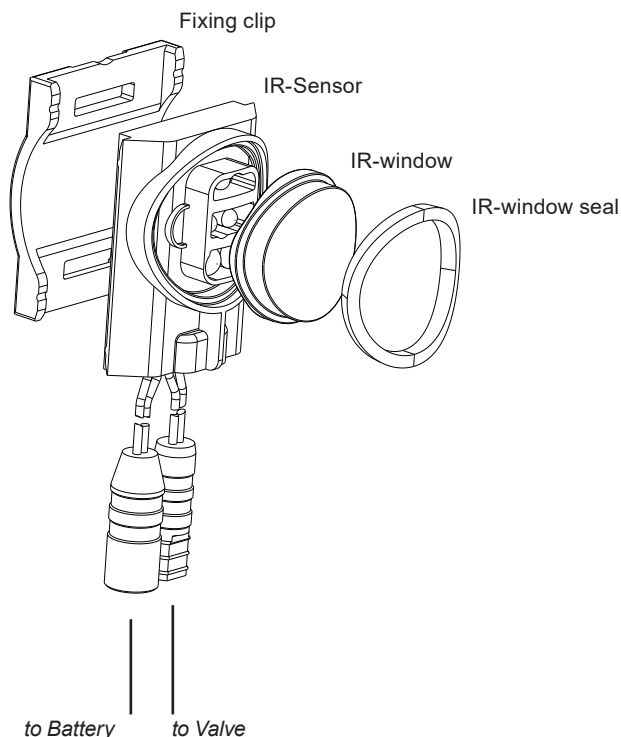


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Technical Data

Type	opto electronic IR-sensor	
T-Ambient	60	°C max
Nominal voltage * Un	6 9 12	V DC (battery) V DC (battery) V DC (power supply)
Operating voltage Un: 6 VDC Un: 9 VDC Un: 12 VDC	> 5,0 - 6,0 V DC open/close > 5,7 - 9,0 V DC open/close > 11,0 - 12,0 V DC open/close	
Signal of low voltage level Un: 6 VDC	< 5,55 V DC LED flashing < 5,45 V DC LED persistent signal, valve will be closed permanently	
Un: 9 VDC	< 5,7 V DC LED flashing < 5,4 V DC LED persistent signal, valve will be closed permanently	
Un: 12 VDC	< 11,0 V DC Valve is closed with emergency pulse	
Voltage recognition	Battery (6V or 9V): on each output pulse or every 24 h Power supply: every 0,5 sec	
Output voltage ±U	5	V DC
	for the 6 V battery the output voltage corresponds to the battery voltage	
Pulse shape/-time		
Output current max.	800	mA
Protection type	IP 65 according to EN 60529	
50.00x101 (6 V DC only, see separate data sheet) Other valves on request.		
Lifetime of valve	typical 250.000 cycles / 5 years	
Lifetime of battery	6 V Lithium (min. 1.300 mAh) approx. 4 years ... 9 V Alkaline (min. 600 mAh) approx. 2,5 years for 150 cycles / day	

* Apply only one of the mentioned voltages!

Materials

Housing	POM
IR-windows	PC
Fixing clip	PC
Window strip	EPDM cellular rubber

Options

Standard cable length

Valve	With twin strand (red/blue) and female connector	252 ⁺¹⁰ (9.92 ^{+0.4} in)	mm
Battery	With twin strand (red/black) and male connector	187 ⁺¹⁰ (7.36 ^{+0.4} in)	mm

Please contact us for a specific request.

Accessories for IR-Sensor	Thickness**		ID
Fixing clip (to fix sensor in housing)			007495
IR Window seal			007516
IR Window round	2 mm (0.08 in)		007491
IR Window square			007492
IR Window round	3 mm (0.12 in)		007493
IR Window square			007494

** IR Windows for use with different wall thicknesses of the tap ware.



Series IRS-WT-xb

Standard and customizable settings



IRS-WT Faucet	Default Settings*		Optional settings with IRS - RC20 Remote Control		Push button on request **
Response time	≤ 0,5	sec	-	-	Yes
Detection range	260 (10.24)	±15% w/o IR-window	150 - 350 (1.57 - 13.78)	mm (in)	
Turn off delay	1	sec (± 0,5 sec)	0,5 - 8,0	sec	
Max. time of flow	120	± 25 %	1 - 120	s	
Enforced flush ***	every 24	h	1 - 72	h	
Permanent - OFF	-	-	enable / disable		

- * Optional cleaning mode: covering of the sensor window for 5 s deactivates the sensor for 30 seconds.
- ** The optional push button starts the flow procedure immediately.
- *** The time interval for the enforced flush is restarted after each flush pulse. The flush period is about 30 seconds.

IRS-WT-OF Faucet ON/OFF Mode	Default Settings*		Optional settings IRS - RC20 Remote Control		Push button on request **
Response time	≤ 0,5	sec	-	-	Yes
Detection range	80 (3.15)	mm	40 - 150 (1.57- 5.90)	mm (in)	
Max. time of flow	120	sec ± 25%	10 - 310	sec	
Enforced flush ***	OFF	-	1 - 72	h	
Permanent - OFF	-	-	enable / disable		

- * Optional cleaning mode: covering of the sensor window for 5 s deactivates the sensor for 30 seconds.
- ** The optional push button starts the flow procedure immediately.
- *** The time interval for the enforced flush is restarted after each flush pulse. The flush period is about 30 seconds.

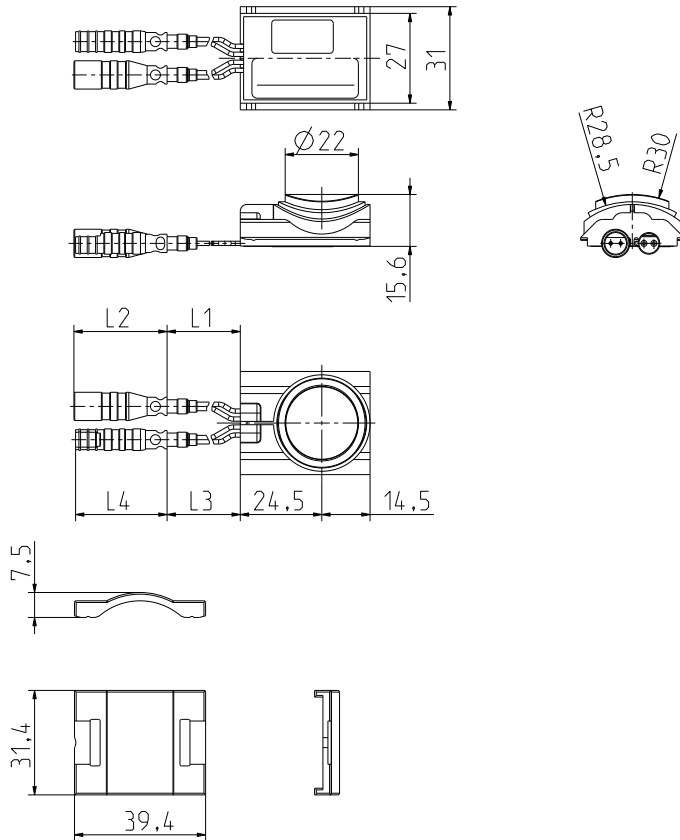
**Multi-Function-Sensor
Automatic Voltage Detection**



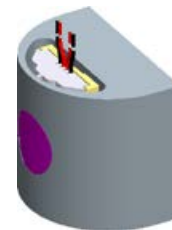
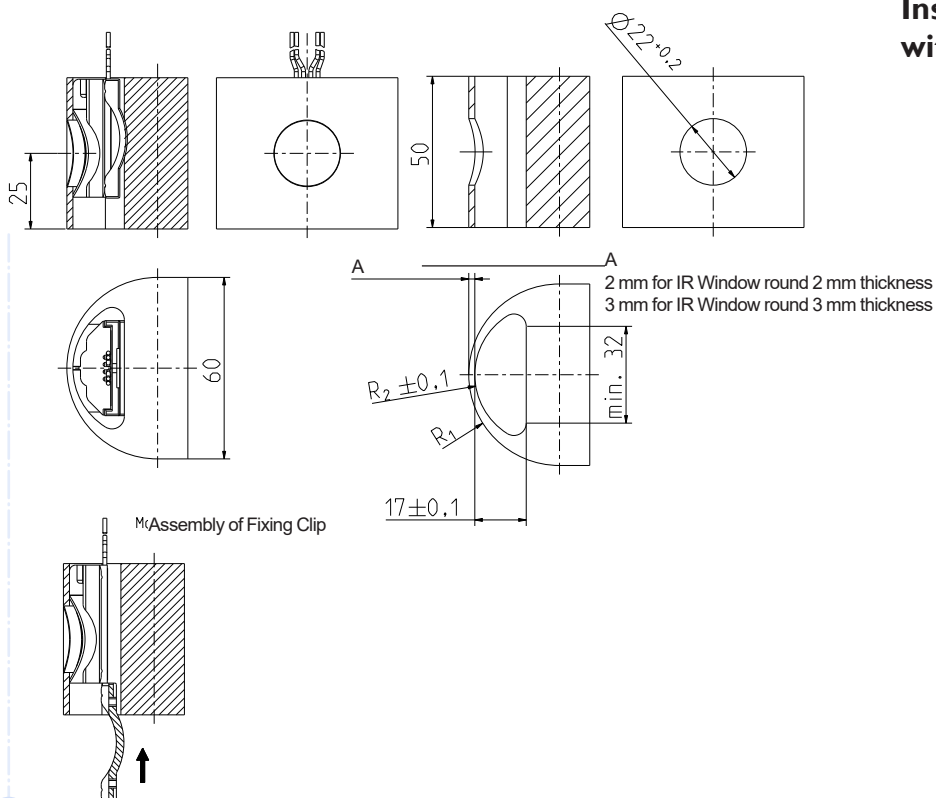
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Series IRS-WT-xb

Sensor with round window.



Installation example for sensor with round window.



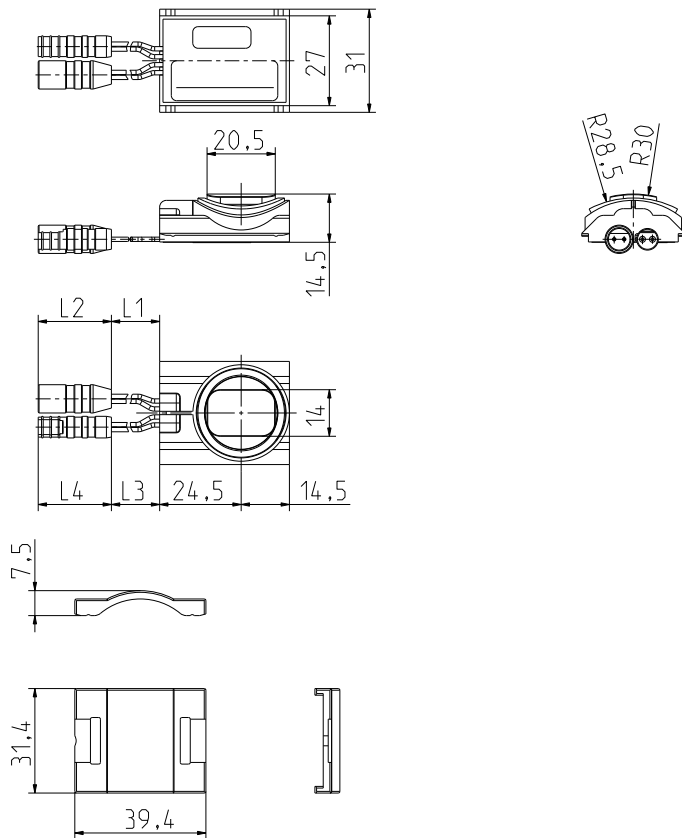
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Automatic Voltage Detection**



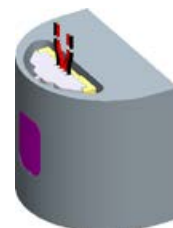
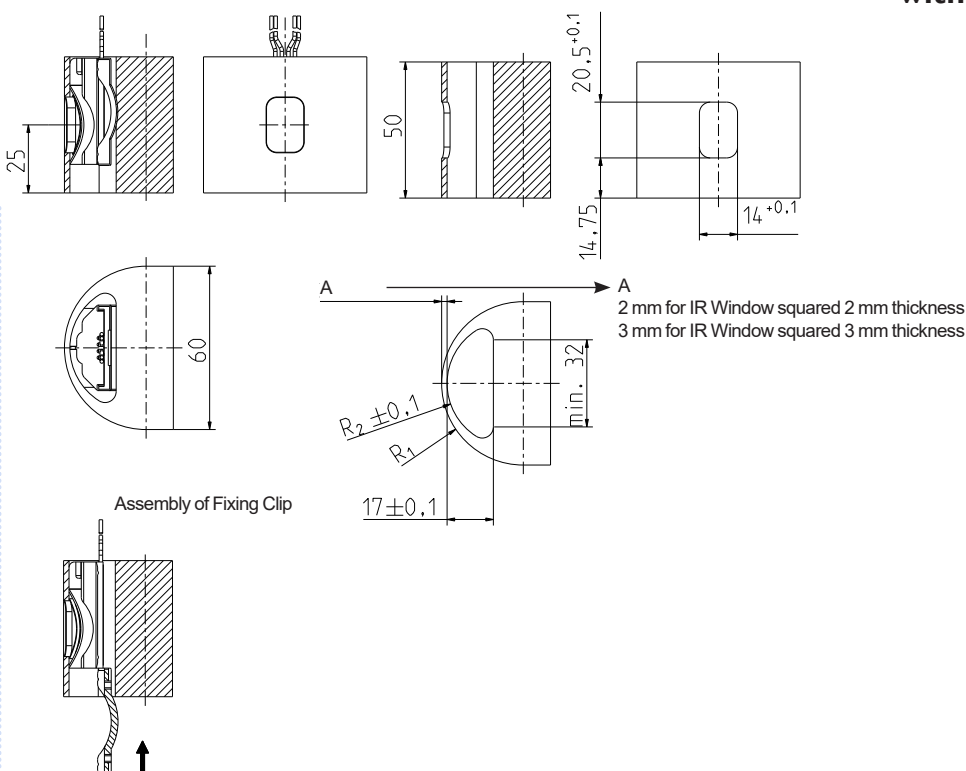
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Series IRS-WT-xb

Sensor with squared window.



Installation example for sensor with squared window.





Series IRS-WT-xb

Special features

Power Saving Mode

(For battery driven IR sensor only):

The sensor can be set to a power saving mode (sleep-mode), which can only be activated within the first 30 minutes after connection to the power supply (Power-On).

If the sensor is continuously covered by an appropriate reflecting material no more than 65mm (tolerance 30 - 80 mm) away from the sensor, the signal diode is illuminated red. The valve then closes and both the diode and the sensor are switched off.

After removing the cover from the sensor, it resumes its normal function and opens the valve for a short period. Now the power saving mode can again be activated for 30 minutes.

If the sensor is deactivated and then reactivated again by use of the remote control, the power saving mode is also accessible for 30 minutes.

If the valve, battery and sensor are already built into a faucet, for subsequent installation into a wash stand, the power saving mode will save the energy of the battery. It also prevents accidental operation of the valve during installation.

Optional Push button:

The Sensor can be equipped with a third connection for a push button.

Actuating the push button forces an immediate flow or flush independent from a IR-detection.

This cable could have free lead end or a connector to apply an external push button or an already attached push button.

Please contact us for a specific request.

Remote control

For a detailed description of how to change settings of the detection range or flush time with the Remote Control, please refer to separate data sheet IRS-RC3.



Power Supply

The plug-in power supply unit has an energy storage device for emergency shutdown in the event of a voltage drop.

Please refer to separate data sheet IRS-PS-U for available power supply.



Notes on installation

- When installing the sensor into the faucet it is to be ensured that the sensor window is not damaged.
- Take care to guide the connecting cables away from sharp-edged parts and avoid kinking of the cables.
- When placing the faucet into operation the following order should be followed:
 - a) mount faucet and connect hydraulically
 - b) open right-angle stop cock
 - c) connect power supply (in the case of sleep-mode take off foil)
 - d) Wait for initialization. During initialization no object should be exposed in the detection area. The completion of the initialization process is marked with a triple light signal.In the case of using a swivel aerator, this should be aligned as centred as possible during installation, so that the water jet can be detected at initialization in any case by the sensor.
- For the forced flushing, a functioning drainage is to be provided.

Note concerning reflective and mirror surfaces:


The detection range defined corresponds to a Gray-Card. The actual detection range depends strongly on the surface properties of the object to be detected. Problems can occur if the sensor, for example, is positioned without sufficient distance against a bright wall (reflecting tiles or mirrors). Also, an opposite IR sensor urinal could lead to interference.



Series IRS-WT-xb

IRS-WT_{Faucet} Without optional remote control	Power-On (0 ≥ t ≤ 30 minutes)	After Power-On (t > 30 minutes)							
Automatic detection range adjustment	●	-	Wait for initialization. During initialization no object should be exposed in the detection area. The completion of the initialization process is marked with a triple light signal. In the case of using a swivel aerator, this should be aligned as centred as possible during installation, so that the water jet can be detected at initialization in any case by the sensor. The detection range will basically be adjusted to the water jet from the tap. No other objects should be "in sight" of the sensor during this initialization period. Depending on the used aerator or other parts at the outlet of the tap which effects the water jet, is more or less transparent to the infrared light. Depending on the available reflection of the infrared light, the detection range will automatically be shortened. This should avoid a permanent detection condition while the water jet exists.						
Power Saving Mode (Sleep Mode - for battery driven IR sensor only)	●	-	The sensor can be set to a power saving mode, which can only be activated within the first 30 minutes after connection to the power supply (Power-On). If the sensor is continuously covered by an appropriate reflecting material no more than 65 mm (tolerance 30 - 80 mm) away from the sensor, the signal diode is illuminated red. The valve then closes and both the diode and the sensor are switched off. After removing the cover from the sensor, it resumes its normal function and opens the valve for a short period. Now the power saving mode can again be activated for 30 minutes. If the sensor is deactivated and then reactivated again by use of the remote control, the power saving mode is also accessible for 30 minutes. If the valve, battery and sensor are already built into a faucet, for subsequent installation into a wash stand, the power saving mode will save the energy of the battery. It also prevents accidental operation of the valve during installation.						
<table border="1"> <tr> <td data-bbox="148 1317 349 1350">●</td> <td data-bbox="349 1317 1517 1350">Available</td> </tr> <tr> <td data-bbox="148 1350 349 1384">○</td> <td data-bbox="349 1350 1517 1384">Limited availability</td> </tr> <tr> <td data-bbox="148 1384 349 1411">-</td> <td data-bbox="349 1384 1517 1411">Not Available</td> </tr> </table>				●	Available	○	Limited availability	-	Not Available
●	Available								
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-	Not Available								

For further setting options, see data sheet remote control RC20



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