Product Information

Multi-Function-Sensor
Automatic Voltage Detection

A. u. K. Müller

Solenoid valves
Control valves
Special valves and systems

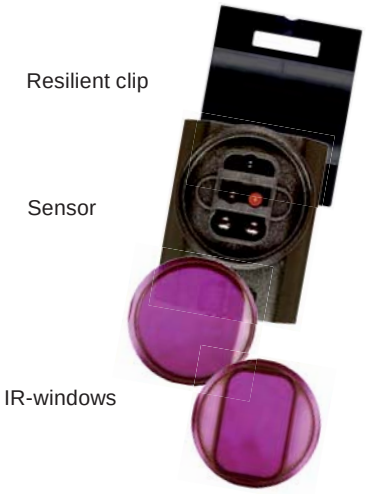
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Series IRS-WT-x





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 for 30 minutes
- 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



Applications

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

Description

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

Non contact activation by IR proximity sensor.

A LED flashes each time to signal that the detection area has been entered or left.

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.

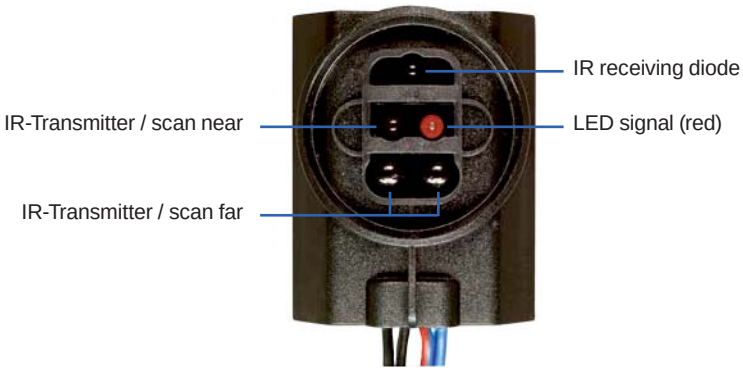
The sensor may be equipped with an optional push-button, which starts the flow of water immediately.

Modes

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

The functionality is factory set to order.

typical performance curve

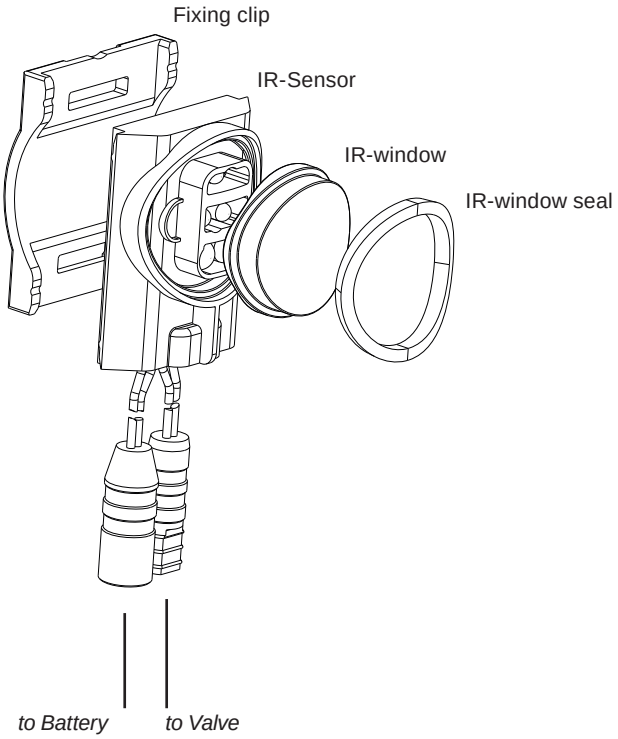


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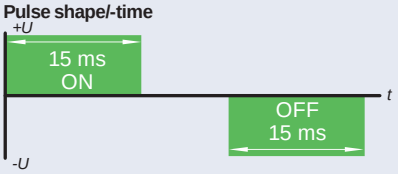
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Technical Data

Type	opto electronical 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** **Un: 9 VDC** **Un: 12 VDC**	 < 5,0 V DC LED flashing < 4,7 V DC LED persistent signal, valve will be closed permanently < 5,7 V DC LED flashing < 4,7 V DC LED persistent signal, valve will be closed permanently < 11,0 V DC LED persistent signal, valve will be closed permanently	
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	
50.00x.101 **(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	EP 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.

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Series IRS-WT-x



Standard and customizable settings

IRS-WT Faucet	Default Settings*		Optional settings with IRS - RC3 Remote Control		Push button on request **
Response time	≤ 0,5	sec	-	-	Yes
Detection range	260 (10.24)	±15% w/o IR-window	40 - 300 (1.57 - 11.81)	mm (in)	
Turn off delay	1	sec (± 0,5 sec)	0,5 - 8,0	sec	
Max. time of flow	120	± 25 %	-	-	
Enforced flush ***	every 72	h	24 / 72 / OFF	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-E Faucet Eco Mode	Default Settings*		Optional settings IRS - RC3 Remote Control		Push button on request **
Response time	≤ 0,5	sec	-	-	Yes
Detection range	260 (10.24)	± 15% w/o IR-window	40 - 300 (1.57 - 11.81)	mm (in)	
Turn off delay	1	sec (± 0,5 sec)	-	-	
Max. time of flow	3	sec (± 0,5 sec)	1 - 80	sec	
Enforced flush ***	every 72	h	24 / 72 / OFF	h	
Permanent - OFF	-	-	enable / disable		

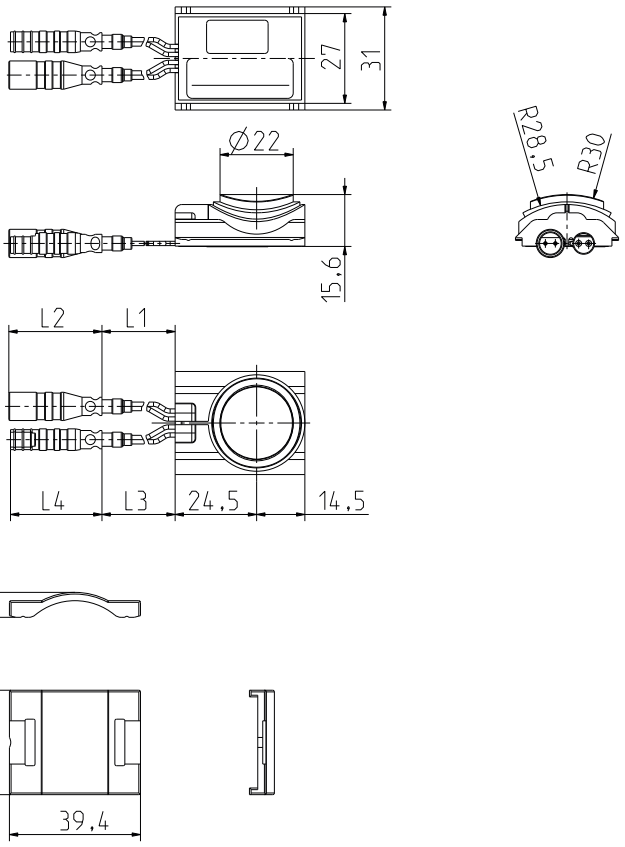
- * Optional cleaning mode: covering of the sensor window for 5 s deactivates the sensor for 30 seconds.
- ** The optional push button starts the flow procedure immediately.
- *** The time interval for the enforced flush is restarted after each flush pulse. The flush period is about 30 seconds.

IRS-WT-OF Faucet ON/OFF Mode	Default Settings*		Optional settings IRS - RC3 Remote Control		Push button on request **
Response time	≤ 0,5	sec	-	-	
Detection range	80 (3.15)	mm	40, 80, 120 or 160 (1.57, 3.15, 4.72 or 6.30)	mm (in)	Yes
Max. time of flow	120	sec ± 25%	10 - 310	sec	
Enforced flush ***	*OFF*	-	24 / 72 / OFF	*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.

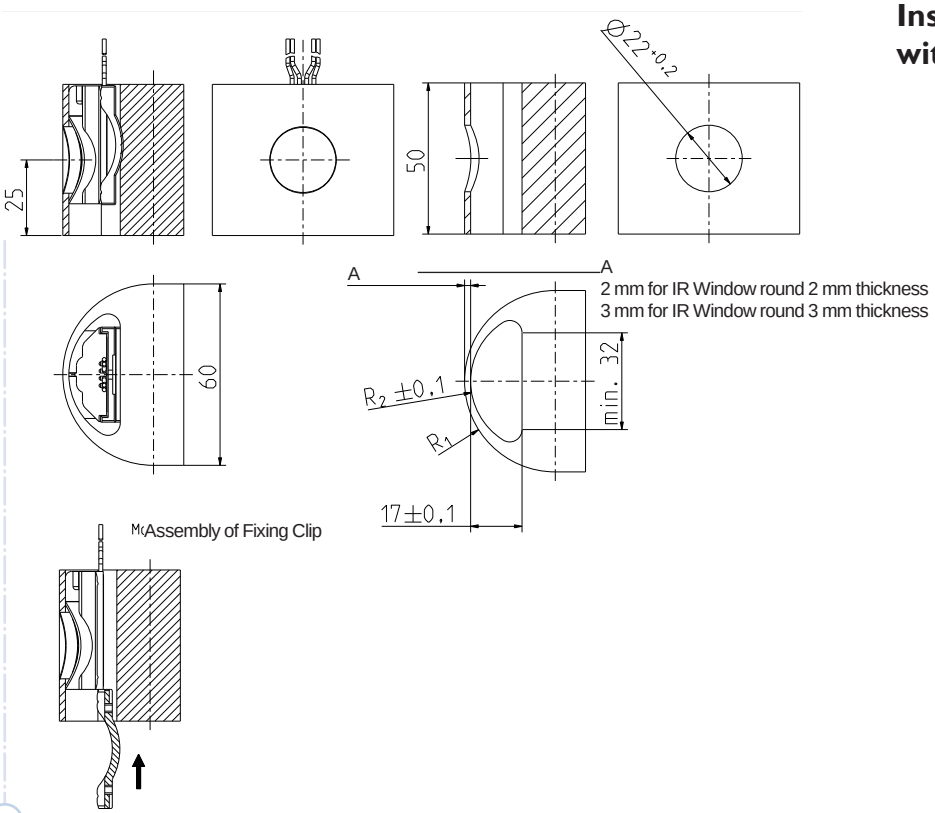
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Series IRS-WT-x

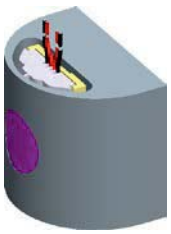


Sensor with round window.





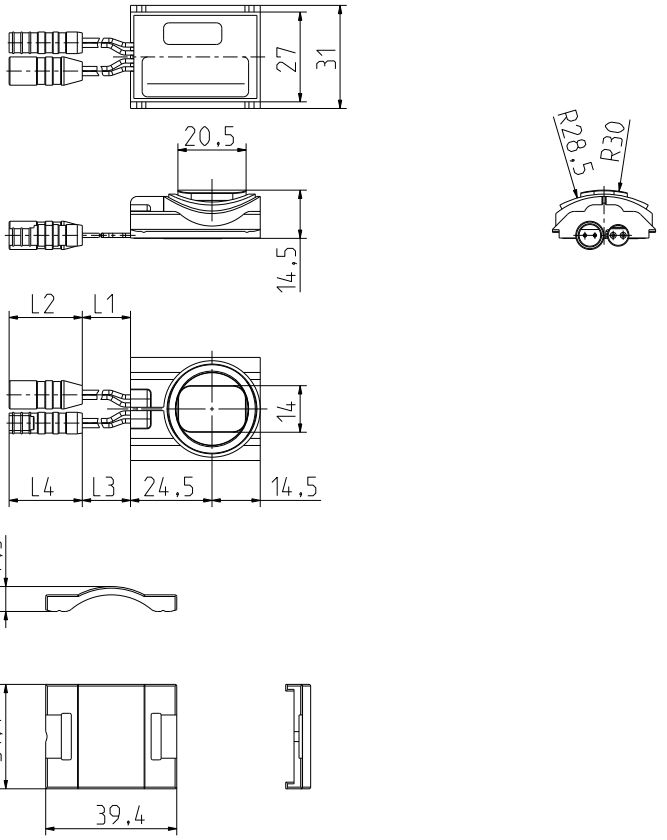
Installation example for sensor with round window.



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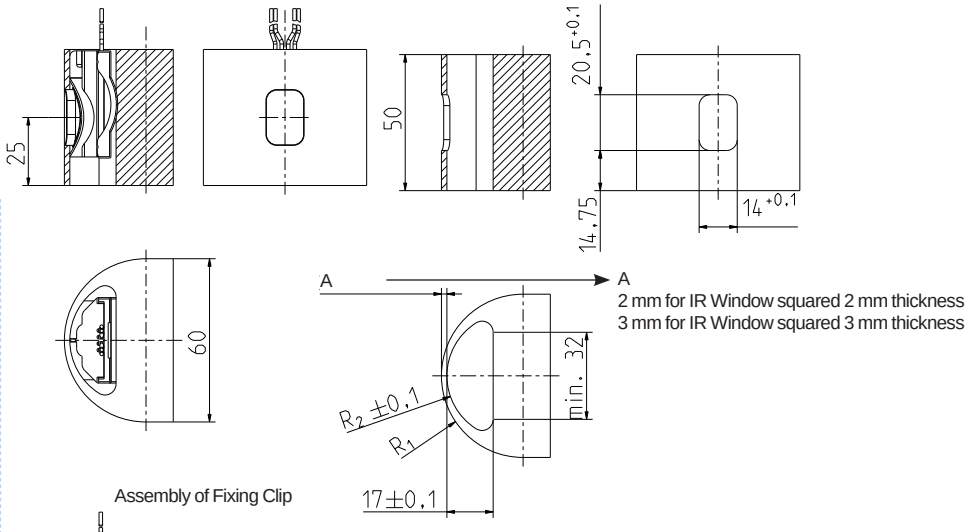
Series IRS-WT-x

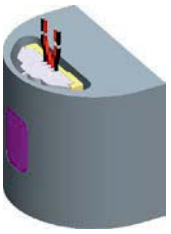
Sensor with squared window.





Installation example for sensor with squared window.





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Series IRS-WT-x

Special features

Power Saving 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 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.

Note:

If used within the first 30 minutes after connection of the supply voltage, the power saving mode can be triggered accidentally, especially on smaller wash stands.

The change of the settings with the optional Remote Control is only possible within the 30 minutes time period after Power-On.

This time period can also be restarted by disconnecting the sensor from the power supply and a following reconnection.

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.

Optional OFF/cleaning mode:

By covering the IR receiver diode for about five seconds, the sensor is disabled for a preset time (factory-set) to perform cleaning work.

After this „OFF“ time, the normal function is resumed with the stored parameters.

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

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.

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Series IRS-WT-x

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.
Optional OFF	-	○	This function is optional and has to be ordered separately By covering the IR receiver diode for about five seconds, the sensor is disabled for a preset time (factory-set and to be defined) to perform cleaning work without getting splashed. After this „OFF“ time, the normal function is resumed with the stored parameters.

IRS-WT Faucet **With optional remote control**	**Power-On (0 ≥ t ≤ 30 minutes)**	**After Power-On (t > 30 minutes)**	
Detection range	●	-	Manuel adjustment of the detection range in 30 steps Step 31 => automatic detection range adjustment
Turn off delay	●	-	Manuel adjustment of the turn off delay in 30 Steps
AN / AUS	●	●	Manuel ON / OFF function - if again set to On state, the "Power-On" Status restarted.
Enforced flush	●	-	Manually set to 24h / 72h / OFF
Duration of enforced flush	●	-	Manually duration set of enforced flush in 31 steps.

●	Available
○	Limited availability
-	Not Available

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