

Product Information

External mini-sensor for washbasin applications



A. u. K. Müller

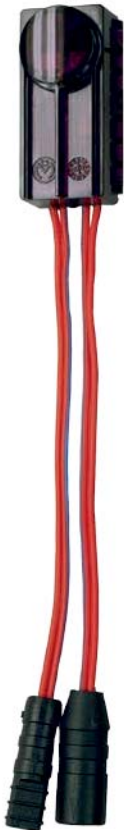
Solenoid valves
Control valves
Special valves and systems

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Series IRS-WT-Mx



IRS-WT-MC
curved
window



IRS-WT-MF
flat
window

Characteristics

- Control of bistable (latching) valves.
- Modified parameters remain applied when battery is changed.
- Automatic detection range adjustment to suit environment during Power-On.
- Dynamic detection range expansion.
- Continuous check of battery voltage.
- Forced shut down on continuous detection, thereby protecting against water damage.
- Adjustable enforced flush.
- Compact design
- Curved and flat IR-windows for different installations.

Applications

- Automatic faucets
- Irrigation systems
- Industrial equipment

Description

Optoelectronic infrared for the control of bistable valves.

Active infrared proximity sensor for use with standard 6V batteries.

The various system modes are indicated by different flashes of an LED.

Due to its compact design the sensor can be easily integrated into tapware.

The valves minimal power consumption ensures a long battery life.

Easy assembly, testing and maintenance of sensor and battery.

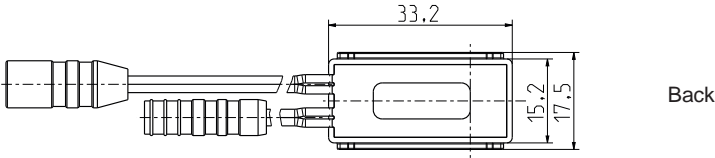
Using the sensor in conjunction with the miniature 5 mm orifice bistable cartridge valve (series 50.005.101), enables integration into applications where space is at a premium.



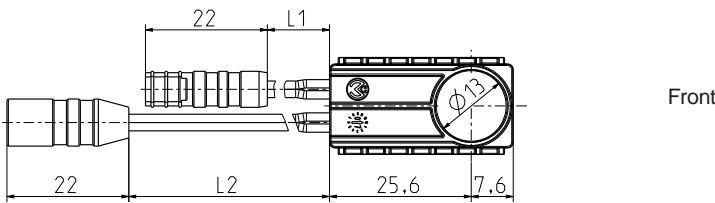
50.005.101



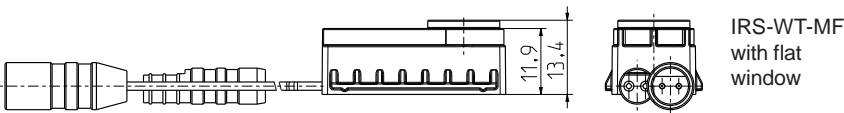
Series IRS-WT-Mx



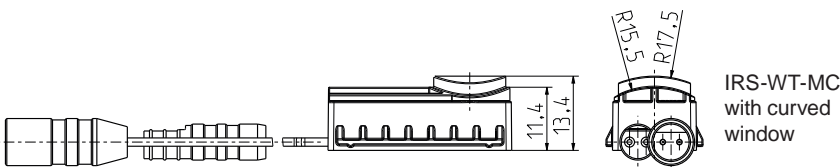
Back



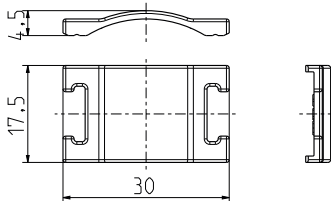
Front



IRS-WT-MF with flat window



IRS-WT-MC with curved window



Fixing clip

Materials

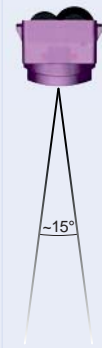
Enclosure with IR-window	PC
Fixing clip	PC

Options

Standard			L1	L2
Valve connection	Double pole female connector	with leads / connector	85 ±5	85 ±5
Battery connection	Double pole male	with leads / connector	85 ±5	85 ±5

Technical Data

Type	opto-electronic IR- sensor	
T-Ambient	4 - 60	°C max
Nominal voltage	6 6,75	V DC (battery) V DC (power supply)
Protection type	IP 65 according to EN 60529	
Battery operation		
Operating Voltage	5,0 - 6,9 V DC open/close	
Signal of low voltage level	< 5,0 V DC ± 2% LED flashing < 4,7 V DC ± 2% valve will be closed permanently	
Power-On signal	2 x short flashes	
Power-On time	10 minutes	
IR detection range	automatically adjusts to ambient light or jet of water on Power-On	
Output operating pulse		
Operating pulse to open bistable solenoid valve	Rectangular positive pulse 15 ms ± 2%	
Operating pulse to close bistable solenoid valve	Rectangular negative pulse 15 ms ± 2%	
Switching current	max. 600 mA	
Connected load Impedance (DC)	≥ 10 Ω	
Faucet functionality - default settings		
Detection range	140	mm (± 15%)
Detection range on 15° angular deviation	+5 / -30 %	
Response time	< 0,3	s
Turn off delay	1	s
Enforced flush *	every 24	h (for 30 s)
Max. time of flow	120	s (± 5 %)
Detection angle	15	°



* The time interval for the forced flushing is restarted after each purge pulse.

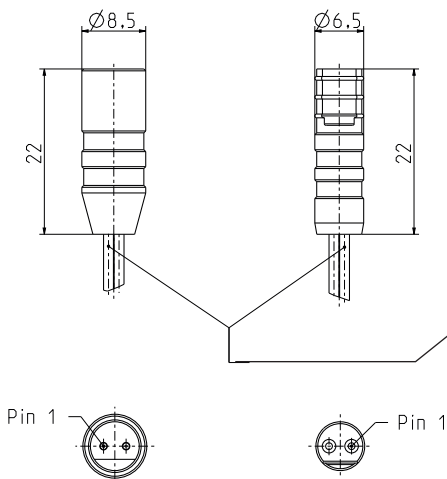


Series IRS-WT-Mx

Mode	Signal	Event	System status
Power-On	2 x short flashes		Power-On mode is active for 10 minutes. Once the valve is automatically opened and closed.
	1 x long flash	Connection of sensor to voltage	On battery operation an automatic adjustment of the detection range is set (AutoSet). The signal will only be visible if an AutoSet has really been carried out. On continuous detection of objects or the water jet of the open tap the default detection range is reduced.
	Continuous light	Detection: Object or person identified within detection range	The valve is open. During detection the LED is lit.
	120 s Continuous light	Object or person identified during Power-On mode for more than 120 s	On a detection for more than 120 s the valve will be closed. After the forced closing the LED is continuously lit for 120 s. If the object is removed from the detection area, the sensor is set to normal operation.
Normal operation	No Signal	After elapsed Power-On time (10 min.)	If the Power-On time is elapsed, the sensor is set to normal operation.
Battery low voltage detection 1	12 x double flashes	5,0 V \pm 2% for longer than 150 s	Low voltage level 1 has been reached. On detection 12 x double flashes will be visible, but the valve will continue normal operation
Battery low voltage detection 2	12 x double flashes	4,9 V \pm 2% for longer than 30 s	Low voltage level 2 has been reached. On each detection 12 x double flashes will be visible, but the valve will be closed and not opened again.
Battery operation system down level	No Signal	4,7 V \pm 2% for longer than 3 s	System down level has been reached. The valve remains closed until a new replacement battery is fitted.

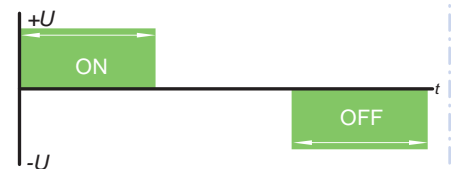
Ensure the correct polarity of the electrical connections!

The DC-impedance of a connected solenoid valve must not be less than 10 Ω !



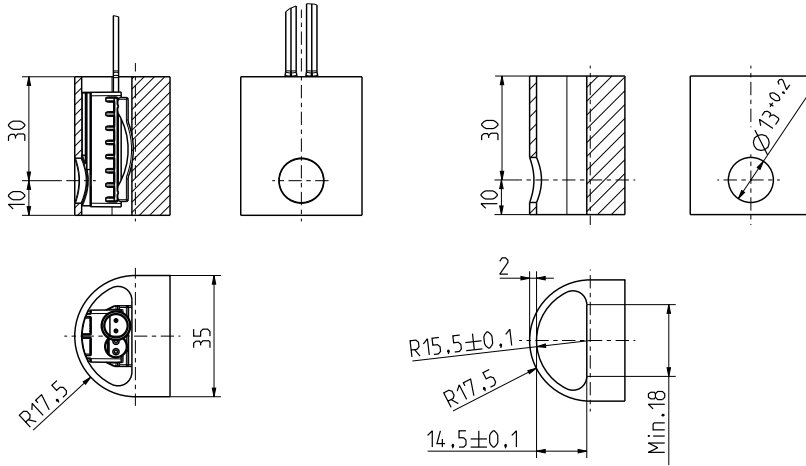
Male connector

Polarity of connector:
strand color **RED** Pin 1 (+) opens the valve
strand color **BLUE** (-)

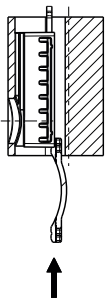




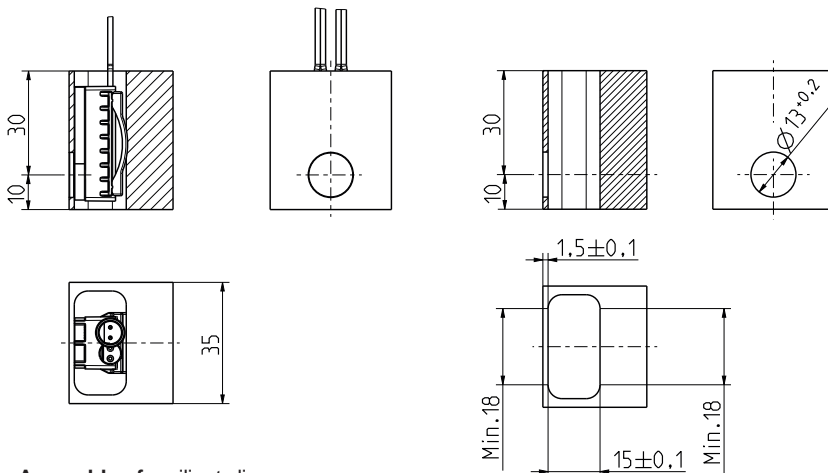
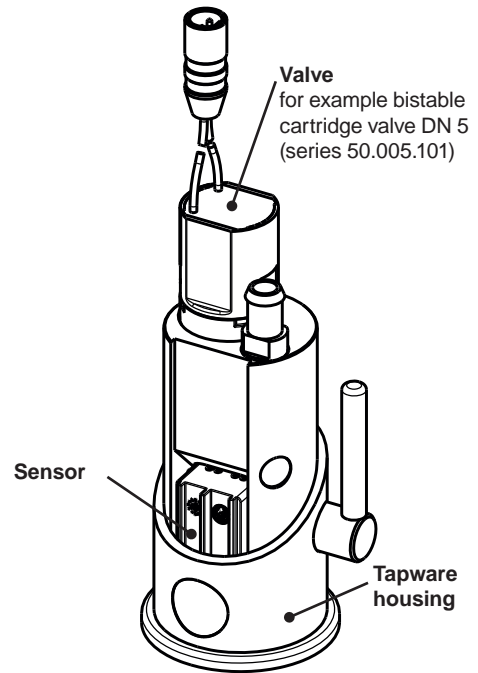
Series IRS-WT-Mx



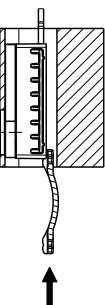
Assembly of fixing clip



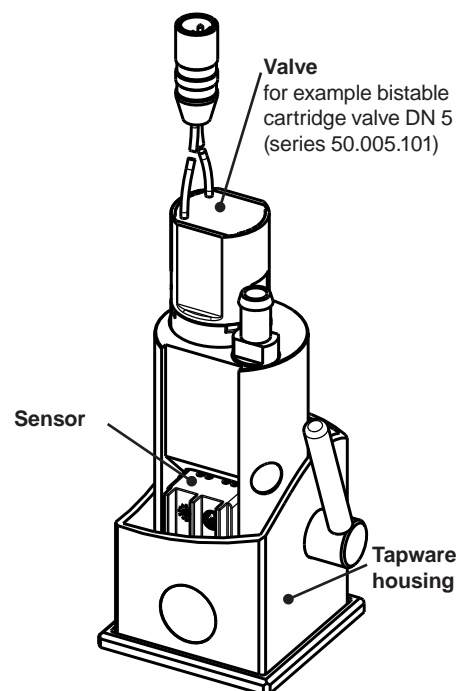
IRS-WT-MC
Installation example for sensor with curved window.



Assembly of resilient clip



IRS-WT-MF
Installation example for sensor with flat window





Series IRS-WT-Mx

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, the connection is confirmed by a blinking signal
- d) Wait for initialization. During initialization no object should be exposed in the detection area.

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.

Optional: Remote control

Infra-red remote control for setting the parameters of the mini external sensor.

The following settings can be changed:



- 1) Detection range
- 2) Turn off delay
- 3) Short time "OFF / "ON"
- 4) Reset / Test mode



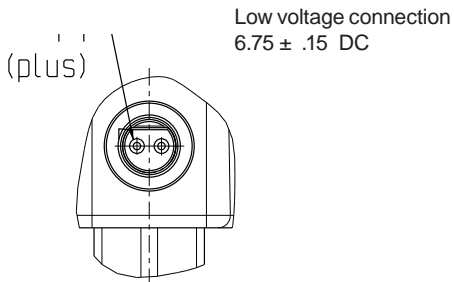
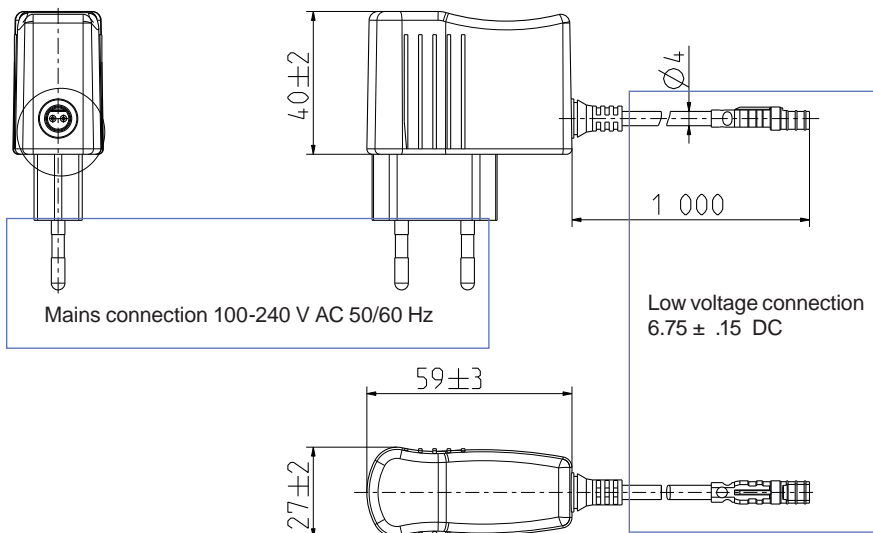
Series IRS-WT-Mx

Optional: Power supply

The power supply (IRS-PS-ME) has the special feature of an integrated emergency shutdown of the valve.

In case of a sudden power failure while the valve is still open the remaining energy will be recognized as a low voltage by the sensor and closes the attached valve.

Costs caused by persistent water flow or even expensive water damages can effectively be avoided.



Technical Data

Plug-in AC to DC power device (Class II) for IRS-WT-MF and IRS-WT-MC

Input	
Rated AC input voltage	100 - 240 V AC
Operating input voltage range	90 - 264 V AC
Rated input frequency	50/60 Hz
Operating frequency range	47 - 63 Hz
AC input current	300 mA max.
Output	
Output voltage	6,75 V DC ± 0,15 V DC
Output current	0 - 500 mA
Output power	3,45 W max.
Ripple limit	1 % of output voltage
Noise limit	2 % of output voltage
Short circuited protection	Output will be less than rated output voltage, AC input power peak will be less 5 W. Auto-Recovery function.
Over current protection	Protection level will be less than 200 % of output current. Auto-Recovery function.
Over voltage protection	Protection level will be less than 120 % of output voltage.
Environmental	
Operating temperature	0 - 40 °C
Storage temperature	-20 - 70 °C
Operating humidity	75 % RH
Storage humidity	95 % RH
Mechanical	
Case	PC + ABS
Weight	75 g

