

## 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.

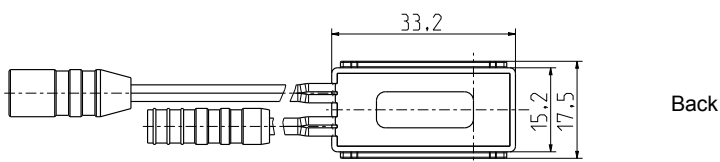
Using the sensor in conjunction with the miniature 5mm orifice bistable cartridge valve (series 050-B05-060), enables integration into applications where space is at a premium.



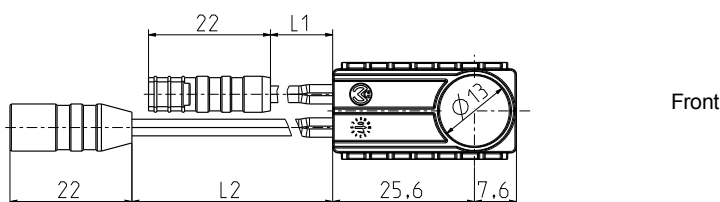
050-B05-060



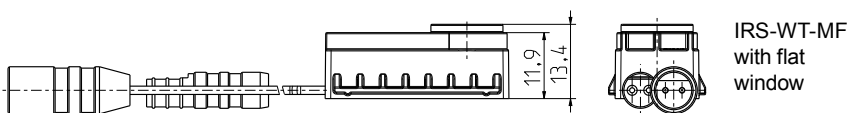
Series IRS-WT-Mx



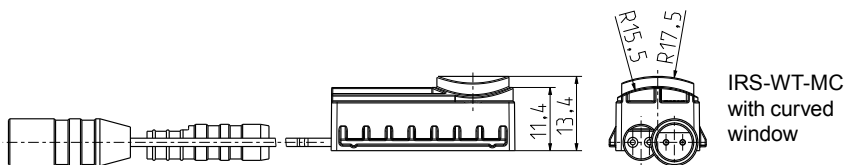
Back



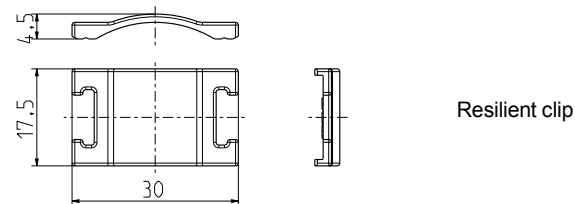
Front



IRS-WT-MF with flat window



IRS-WT-MC with curved window



Resilient clip

Materials

Enclosure with IR-window	PC
Resilient clip	PC

Technical Data

Type	Opto electronical infrared sensor	
T-Ambient	+4 to +60	°C max
Nominal voltage	6	V DC
Protection Type	IP 65 according to EN 60529	
<b>Battery operation</b>		
Operating voltage	5,0 - 6,6 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	
<b>Output operating pulse</b>		
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	
<b>Faucet functionality - default settings</b>		
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 6 s)
Max. time of flow	120	s (± 5%)
Detection angle	15	°



\* The time interval for the enforced flush is restarted after each flush pulse.

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

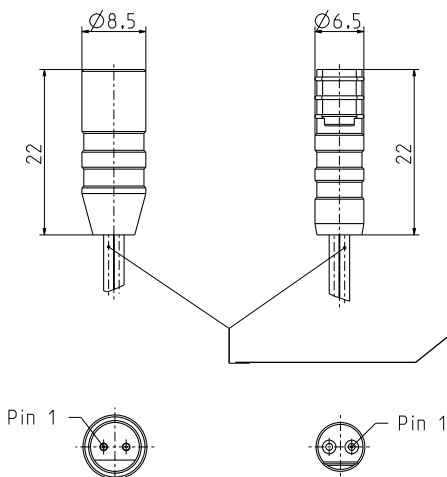


**Series IRS-WT-Mx**

Mode	Signal	Event	System status
<b>Power-On</b>	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 12 s the valve will be closed. After the forced closing the LED is continuously lit for 120 s. If the object removes from the detection area, the sensor is set to normal operation.
<b>Normal operation</b>	No Signal	After elapsed Power-On time (10 min.)	If the Power-On time is elapsed, the sensor is set to normal operation.
<b>Battery low voltage detection 1</b>	12 x double flashes	5,0 V ± 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
<b>Battery low voltage detection 2</b>	12 x double flashes	4,9 V ± 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.
<b>Battery operation system down level</b>	No Signal	4,7 V ± 2% for longer than 3 s	System down level has been reached. The valve remains closed until a new replacement battery is fitted.

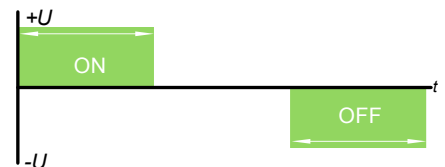
Ensure the correct polarity of the electrical connections!

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

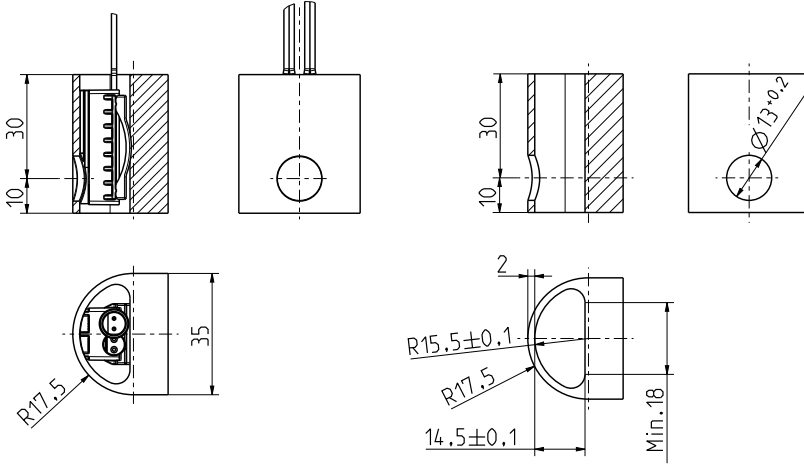


**Male connector**

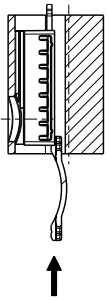
**Polarity of connector:**  
strand color **RED** Pin 1 (+) opens the valve  
strand color **BLUE** (-)



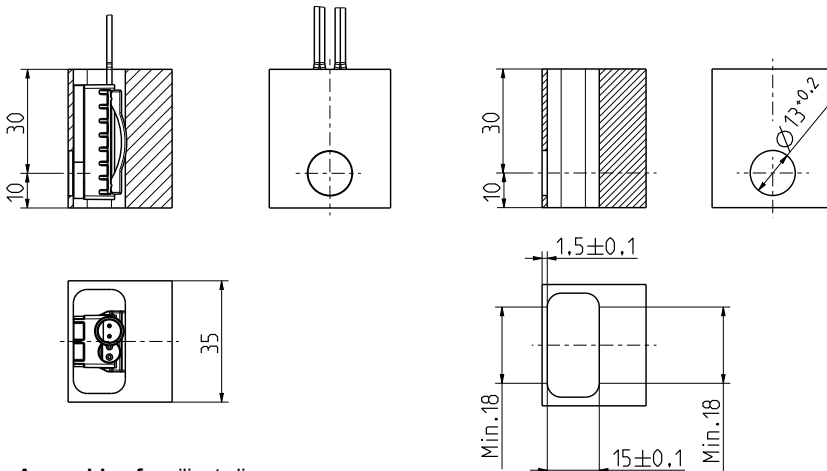
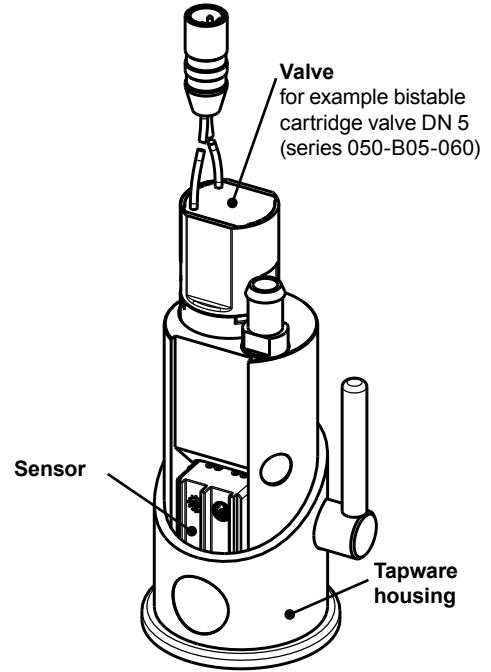
Series IRS-WT-Mx



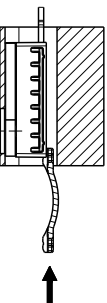
Assembly of resilient clip



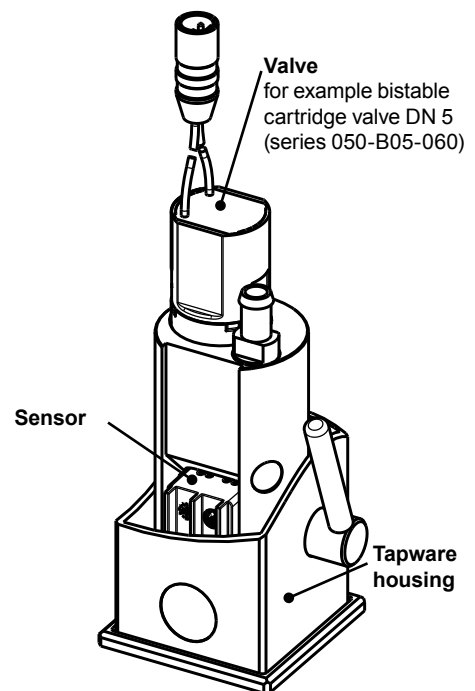
**IRS-WT-MC**  
Installation example  
for sensor with  
curved window.



Assembly of resilient clip



**IRS-WT-MF**  
Installation exam-  
ple for sensor with  
flat window





### Series IRS-WT-Mx

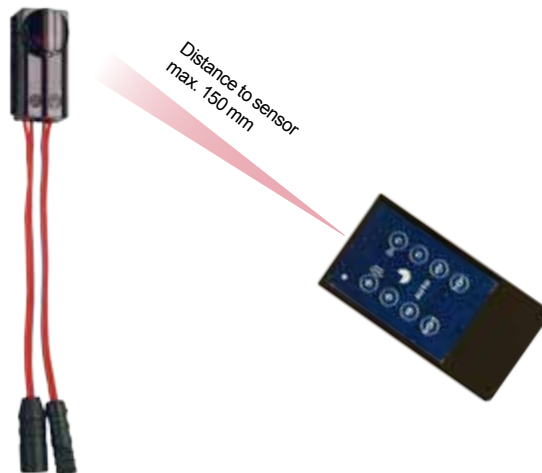
#### Optional Remote control

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



#### 1) Detection range setting



The detection range can be set between 50mm and 200mm in 24 different increments.

If the "higher" (+) or "lower" (-) button on the remote control is pressed, the sensor acknowledges the signal with a short double flash.

When the extremities of the adjustment range are reached the sensor emits a long double flash.

#### 3) Short time OFF / ON



Pressing the "OFF" button temporarily disables the sensor. After 30 s the sensor returns to normal operating mode.

Pressing the "ON" button causes the sensor to emit an opening pulse. After 120 s a closing pulse follows (opens valve for 120 s).

Any detection of objects or individuals during the "OFF" or "ON" time has no effect.

#### 4) Reset / Test mode



Pressing the 'Reset' button reverts all parameters to their default values.

Pressing the "Test" button allows the sensor and LEDs to function but without activating the valve

Pressing the "Test" button again will cause the sensor to return to normal operation mode.

#### 2) Turn off delay



The turn off delay can be set between 0.3 s and 11 s in 12 different increments.

If the "higher" (+) or "lower" (-) button on the remote control is pressed, the sensor acknowledges the signal with a short double flash.

When the extremities of the adjustment range are reached the sensor emits a long double flash.

#### Setting options

		Default settings	Adjustments
Detection ranges	Detection range	140 mm ± 5 %	50 - 200 mm (24 increments)
	Turn off delay	1 s	0,3 - 11 s (12 increments)
Times	Enforced flushing	every 24 h	every 24 h / 72 h / OFF **
	Short time "OFF"	-	Duration: 30 s*** (Triple flashing three times)
	Short time "ON"	-	Duration: 120 s*** (No LED signal)

\*\* Factory setting only.

\*\*\* Short time "OFF" and short time "ON" can be set by the remote control only. The detection of objects or individuals during the "OFF" time will show no effect.



**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 $\pm$ 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

