

Multi-Function-Sensor Automatic Voltage Detection



A. u. K. Müller

Solenoid valves
Control valves
Special valves and systems

A.u.K. Müller GmbH & Co. KG
Dresdener Str. 162
D-40595 Düsseldorf/Germany

Tel.: +49(0)211-7391-0
Fax: +49(0)211-7391-281

e-mail: info@akmueller.de
Internet: www.akmueller.de

Series IRS-UWS-x



Resilient clip

Sensor

IR-windows

Test



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 quiescent 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
- Shower mode with two modes
BDM = body detection mode
HDM = hand detection mode
- High operating safety through the use of high quality materials and 100% final testing of the products
- Default values changeable by optional available remote control



Applications

- Control unit for sanitary urinals, WC's and Showers
- 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. 05-B07-060 and 50.007.100, see separate data sheets) for use for urinal, toilet (WC) or shower. None contact activation by IR proximity sensor.

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

Compact design for easy integration of sensor at minimum required space.

The minimised power consumption allows, using common batteries, a surpassing long durability and safe operation.

Individual settings may be achieved by an optional IR-remote control. (detection range, ON- OFF, follow-up-time).

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-UWS-U	Urinal (Stadium Mode included)
IRS-UWS-WC	WC
IRS-UWS-BDM	Shower (Body Detect Mode)
IRS-UWS-HDM	Shower (Hand Detect Mode)

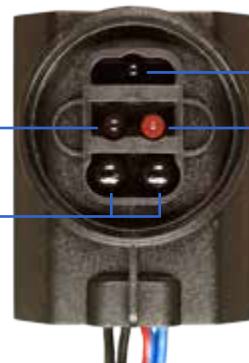
The functionality is factory set to order.

IR-Transmitter / scan near

IR-Transmitter / scan far

IR receiving diode

LED signal (red)

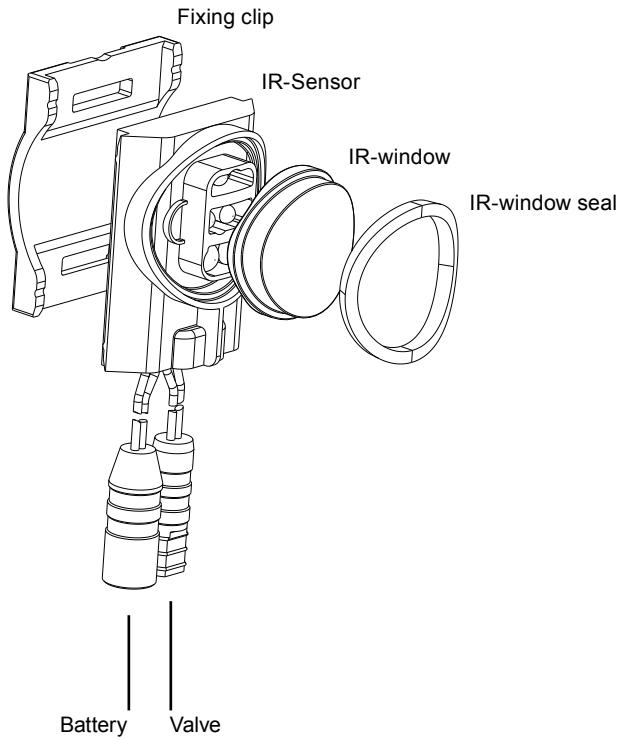


Multi-Function-Sensor Automatic Voltage Detection



A. u. K. Müller

Series IRS-UWS-x



Materials

Housing	POM
IR-windows	PC
Resilient 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.

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	< 5,0 V DC LED flashing < 4,7 V DC LED persistent signal, valve will be closed permanently	
Un: 9 VDC	< 5,7 V DC LED flashing < 4,7 V DC LED persistent signal, valve will be closed permanently	
Un: 12 VDC	< 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
Pulse shape/-time		
Output current max.	800	mA
Protection type	IP 65 according to EN 60529	
050-B07-060 or 50.007.100 (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!

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

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

Series IRS-UWS-x



Default and adjustable settings

IRS-UWS-U Urinal (Stadium Mode included)	Default Settings		Optional settings with IRS - RC3 Remote Control		Push button on request *
Response time	1	sec	-	-	Yes
Detection range	650 (25.59)	±23% w/o IR-window	200 - 800 (7.87 - 31.50)	mm (in)	
Min. length of stay	7,5	±25%	-	sec	
Flushing time	5,5	± 1 sec	0,5 - 15,5	sec	
Enforced flush **	every 24		24 / 72 / OFF	h	
Permanent - OFF	-	-	enable / disable		

* The optional push button starts the flush procedure immediately.

Stadium mode

For the urinal functionality a stadium mode is included. If more than three detections occur within 3 minutes, the Stadium mode is set active. On each detection an opening pulse is activated first and then a closing pulse after half the set flushing time has been elapsed.

If no detection occurs within 5 minutes, the stadium mode is deactivated.

** Refer to "Enforced flush" on page 6

IRS-UWS-WC WC	Default Settings		Optional settings with IRS - RC3 Remote Control		Push button on request *
Response time	1	sec	-	-	Yes
Detection range	650 (25.59)	±23% w/o IR-window	200 - 800 (7.87 - 31.50)	mm (in)	
Min. length of stay	5,0	± 25%	-	sec	
Flushing time delay	5,0	± 25%	-	sec	
Flushing time	3,0	± 1 sec	0,5 - 15,5	sec	
Permanent - OFF	-	-	enable / disable		

* The optional push button starts the flush procedure immediately.

IRS-UWS-BDM Shower (Body Detect Mode)	Default Settings		Optional settings with IRS - RC3 Remote Control		Push button on request *
Response time	1	sec	-	-	Yes
Detection range	650 (25.59)	±23% w/o IR-window	200 - 800 (7.87 - 31.50)	mm (in)	
Min. length of stay	2,0	± 25%	-	sec	
Max. time of flow	300	± 25%	-	sec	
Turn off delay	3,0	± 1 sec	0,5 - 8	sec	
Permanent - OFF	-	-	enable / disable		

* The optional push button starts the flow procedure immediately.

BDM = body detection mode

IRS-UWS-HDM Shower (Hand Detect Mode)	Default Settings		Optional settings with IRS - RC3 Remote Control		Push button on request *
Response time	0,5	sec	-	-	Yes
Detection range	80 (3.15)		40, 80, 120 or 160 (1.57, 3.15, 4.72 or 6.30)	mm (in)	
Max. time of flow	120	± 25%	10 - 310	sec	
Permanent - OFF	-	-	enable / disable		

* The optional push button starts the flow procedure immediately.

HDM = hand detection mode (on each detection the system toggles between ON and OFF)

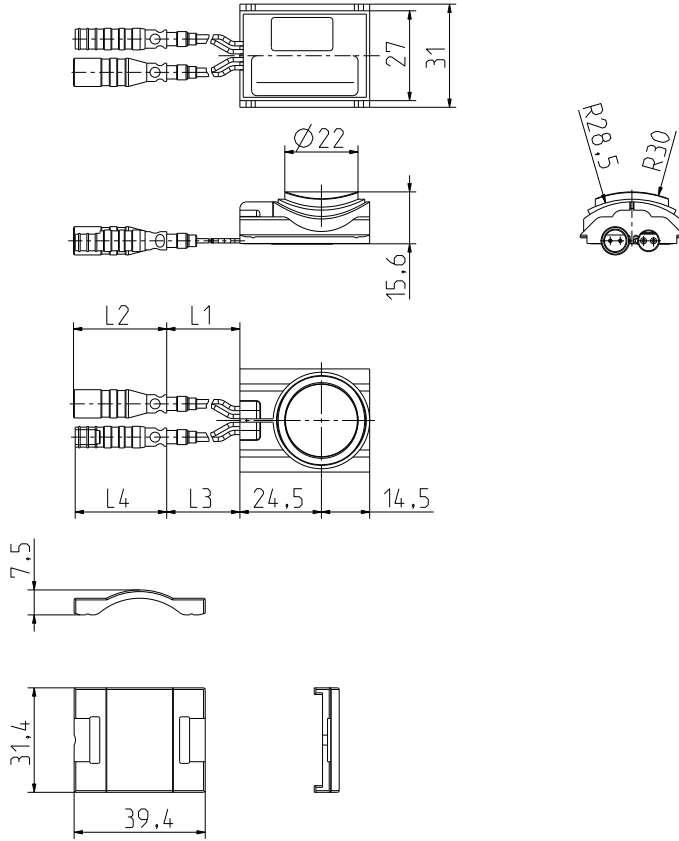
**Multi-Function-Sensor
Automatic Voltage Detection**



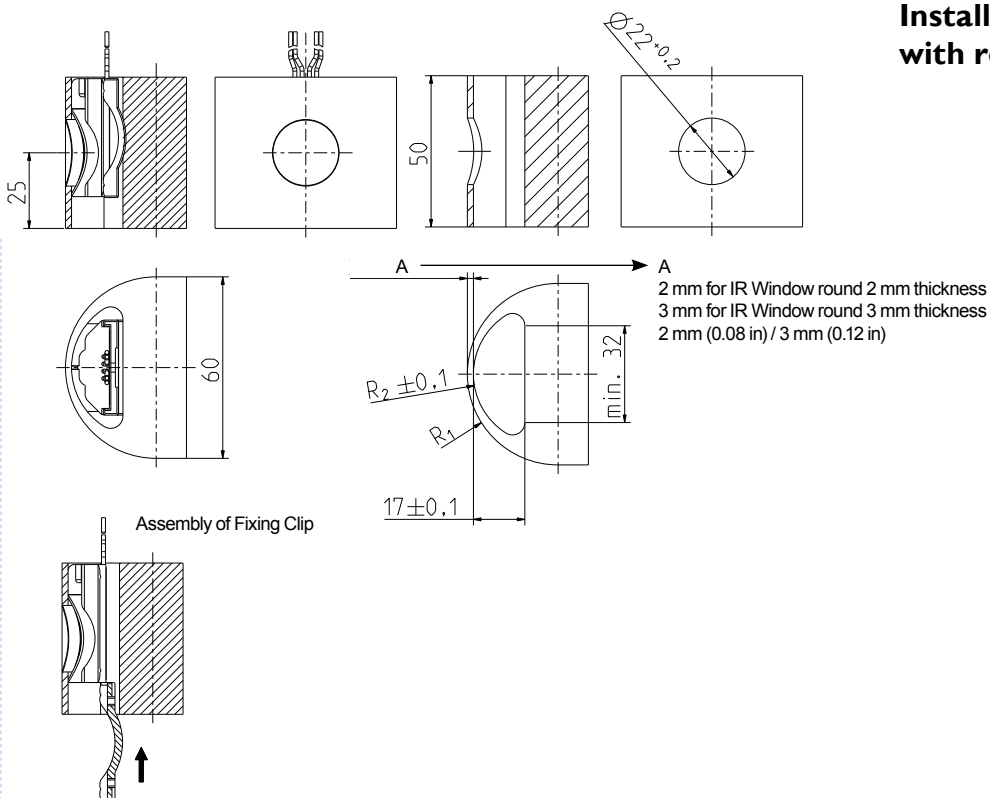
A. u. K. Müller

Series IRS-UWS-x

Sensor with round window.

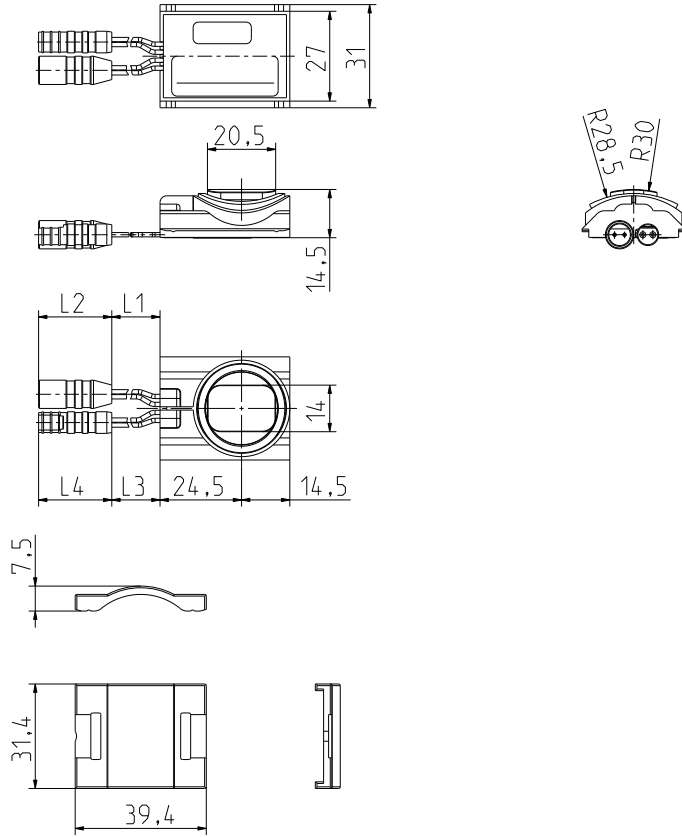


Installation example for sensor with round window.

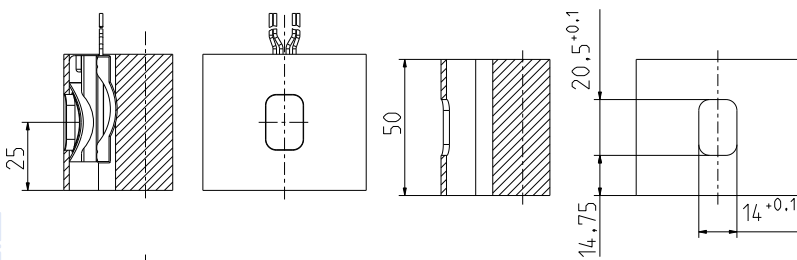




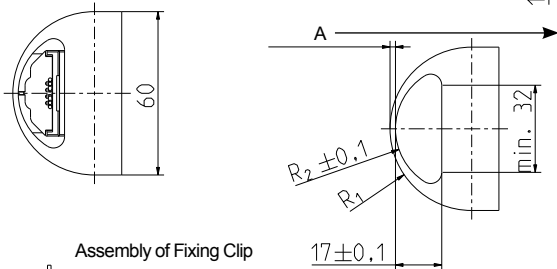
Series IRS-UWS-x



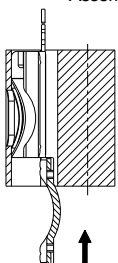
Sensor with squared window.



Installation example for sensor with squared window.



A
2 mm for IR Window round 2 mm thickness
3 mm for IR Window round 3 mm thickness
2 mm (0.08 in) / 3 mm (0.12 in)





Multi-Function-Sensor Automatic Voltage Detection

Series IRS-UWS-x

Special features

Power Saving Mode

(For battery driven IR sensor only):

For **Urinal**, **WC** and **Shower** applications 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.

If the sensor is continuously covered by an appropriate reflecting material no more than 15mm 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 urinal flushing system, for subsequent installation to a urinal, the power saving mode will save the energy of the battery. It also prevents accidental operation of the valve during installation.

Enforced flush:

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

Note:

In case of small space for installation the sensor should be carefully positioned to minimise the possibility of the user entering the 15 mm range as this may accidentally activate the power saving mode.

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 without 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.

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.

Please refer to separate data sheet IRS-PS-x for available Power Supply.

