Product Information

Bi stable integrated cartridge valve, DN 7 urinal applications

Series 050-U07-061/-091



Patented EP 0 930 402

Description

2/2-way solenoid cartridge servo controlled valve of DN 7 in bi stable version with integrated sensor and electronics, to be used particularly in electronically controlled urinals.

The designs compact outline enables trouble free integration of the unit into the urinals.

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

Start up using default settings on power on. Plug on battery is all what is needed.

Within the first 30 minutes after power on, a sleep mode may be activated, to enable an elongated storing period of the battery equipped urinals by reducing bias current.

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

The screw in type simplifies assembly, service and check.

Applications

- automatic sanitary urinals

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

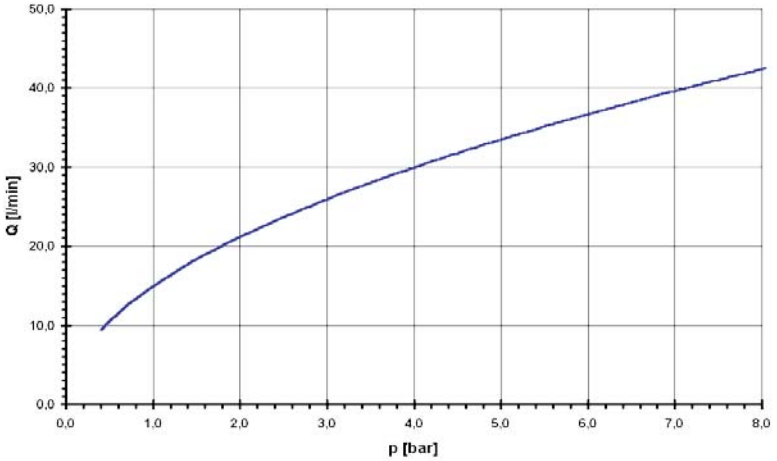
Tel.: +49(0)211-7391-0
Fax: +49(0)211-7391-281

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

Characteristics

- servo-controlled
- pre tested functional unit
- long term performance capability
- internal triple pollution protection
- compact design
- optimized Cv-value for DN 7
- optimized water hammer characteristic by low noise emission according to EN 60730
- easy to assemble and service
- standard connection
- cylindrical design
- low power consumption
- any fitting position
- suitable for spray and jet water
- high operating safety through the use of high quality materials and 100% final testing of the products
- optoelectronic IR sensor with micro controller for contactless operating of cartdirdge valve
- encapsulated electronic, protection type IP 65
- electronic completely wired to cartridge valve
- low bias current for elongated battery lifetime
- enforced flush after 24 hours without any detection
- start up with default settings on power on. Plug on battery is all what is needed

typical performance curve

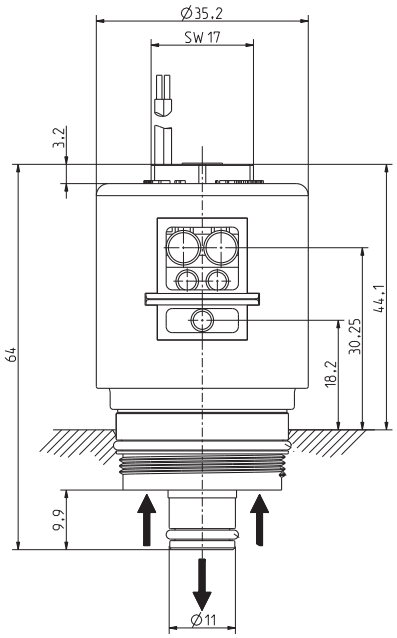


© copyright A.u.K. Müller, subject to changes without prior notice

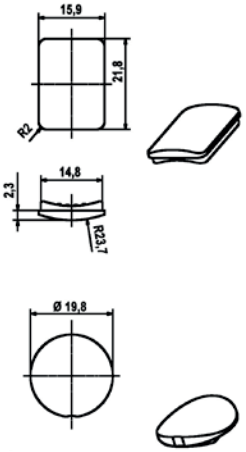
Bi stable integrated cartridge valve, DN 7 urinal applications

A. u. K. Müller

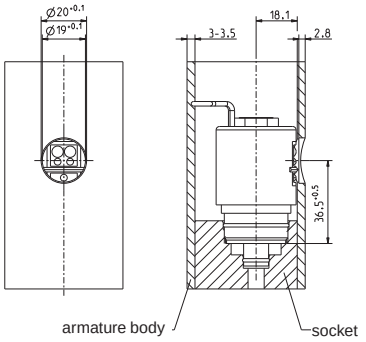
Series 050-U07-06I/-09I



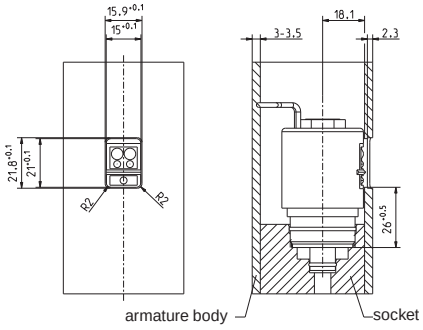
protection windows



installation within armature using a circular window



installation within armature using a squared window



Materials

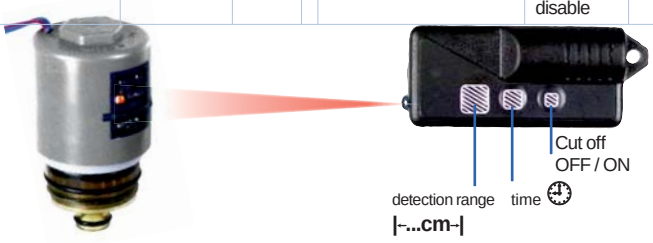
Valve body	PEI
Plunger guide	stainless steel
Plunger	stainless steel
Membrane and sealings	EPDM NBR (on request) VMQ (on request)
Coil	1.0338 "pot"-bracket
Filter	stainless steel (in inlet)
Top cover	POM

Technical Data

Type	2/2-way-cartridge valve	
Construction	screw in, servo controlled	
Function	bi stabil, pulse controlled	
Connection	thread M28 x 1	
fitting position	any	
Media	cold and heated potable water and physically and chemically similar media	
T-Medium	5 - 70	°C.
T-Ambient	5 - 60	°C
DN	7	mm
p-operating	0,5 - 8,0	bar
Cv-value	20	l/min (with Silencer Qmax 20 l/min patented EP 0 999 392)
Pressure surge	according to EN 60730	
Coil type	MS.033	
Nominal voltage	6 9	V DC V DC
	special voltages on request	
Operating voltage	5,0 - 6,0 V DC open/close 7,5 - 9,0 V DC open/close	
Signal of low voltage levels	< 5,0 V LED flashing < 4,7 V LED persistent signal, valve will be closed permanent < 7,5 V LED flashing < 7,0 V LED persistent signal, valve will be closed permanent	
Battery voltage detection	automatic	
Grade of noise	II in test housing	
Lifetime of valve	min. 280.000 cycles / 5 a	
Lifetime of battery	6 V Lithium (min. 1.300 mAh) approx. 4 years ... 9 V Alkaline (min. 600 mAh) approx. 2,7 years ... ... for 150 actuations / day	
Duty cycle	100%	
Nominal power	0,5 - 1,2 W	
Protection type	IP 65	higher IP classes on request
Insulation class	F	according to EN 60730
Protection class	III	according to EN 60730
IR detection range	automatically on Power ON	
Default settings ..		
Detection range	650	mm (± 25%) w/o IR-window
Min. length of stay	7,5	sek (± 25 sec%)
Flushing time	5,5	sec (± 1 sec)
Enforced flush	every 24	h w/o detection
Follow up time	< 2,5	sec (depends on operating pressure)

Options

standard cable lenght			**IR - remote controll IRS-RC3 available**		
with leads and connector	100	mm	**detection range**	120 - 800	mm
with leads	120	mm	**flusch time**	0,5 - 15,5	sec
connector	on request		**permanent - OFF**	enable/ disable	



E1716 © copyright A.u.K. Müller, subject to changes without prior notice

Accessory remote control IRS-RC3



Characteristics

- For external IR-sensor
- Compact design
- Easy to use
- Change of default settings
- Coverage range and timing can only be adjusted within a time period of 30 minutes after Power-On of the sensor

Applications

- Parameter adjustment for integral cartridge valve urinal
- ON/OFF application of the sensor (for maintenance or cleaning process)

Description

The default settings are effectual for a variety of applications, but can be modified by the remote control if required. Three buttons are located on the remote control to modify the coverage range, rinsing time and the switch-off function of the sensor.

The IR remote control has to be kept within a distance of approx. 20 cm (7.87 in) and a bit sidewise to the front of the IR receptor.

This remote control for IR-sensors is mostly addressed to plumbers who have to adjust parameters different to the default settings.

End users may also adjust the IR-Sensor on site to their individual needs.



LED signal of sensor to confirm settings.

= Flashing of LED

Holding the IRS-RC3 a bit sidewise outside the detection range of the sensor will avoid an unintended detection with a subsequent flush.

- Dimensions for remote control
  60 x 30 x 15 mm
  (2.36 x 1.18 x 0.59 in)
- Supply voltage
  6 V - DC
- Coverage range approx. 200 mm (7.87 in)
- Replacement alkaline battery
  E11A – 6V - Energizer



The detection range and timing can only be adjusted within 30 minutes after Power-On of the sensor. Disconnect power and reconnect after 5 s to restart the time period of 30 minutes if needed.

After the time of 30 minutes has elapsed only the OFF/ON button is active.

© copyright A.u.K. Müller, subject to changes without prior notice

General Procedure

|...cm...| – Coverage range adjustment *)



Button (press continuously) for all coverage ranges,
starting from the active adjusted level the coverage range increases immediately step by step while a flashing of the red signal-LED on the sensor confirms the setting.
By releasing the button the new adjusted coverage is fixed.
Manual adjustment of the coverage range **)
20 steps ***)
1. step = minimum... - 20. Step = maximum coverage range (80 cm)
31. step = automatic detection range adjustment

If applied with 050-U07-06I/-09I an automatic adjustment of coverage range is carried out after each adjustment and initialization (switch on / applying supply voltage).
The automatic adjustment starts after the 10th flashing of the LED.

No object should be within the coverage range of the sensor during the automatic adjustment process.

*) Especially the coverage range specifications are only suitable for orientation. According to the position of the sensor in the armature, the coverage range can differ due to the various ambient light conditions and the usage of different IR-windows. The typical adjustment ranges are indicated for times and coverages.

**) Urinal step 1 - 20: Continuous detection may lead to none function

***) In the case of 050-U07-06I/-09I step 21 - 30 are not enabled

-Time – switch-off delay of the valve

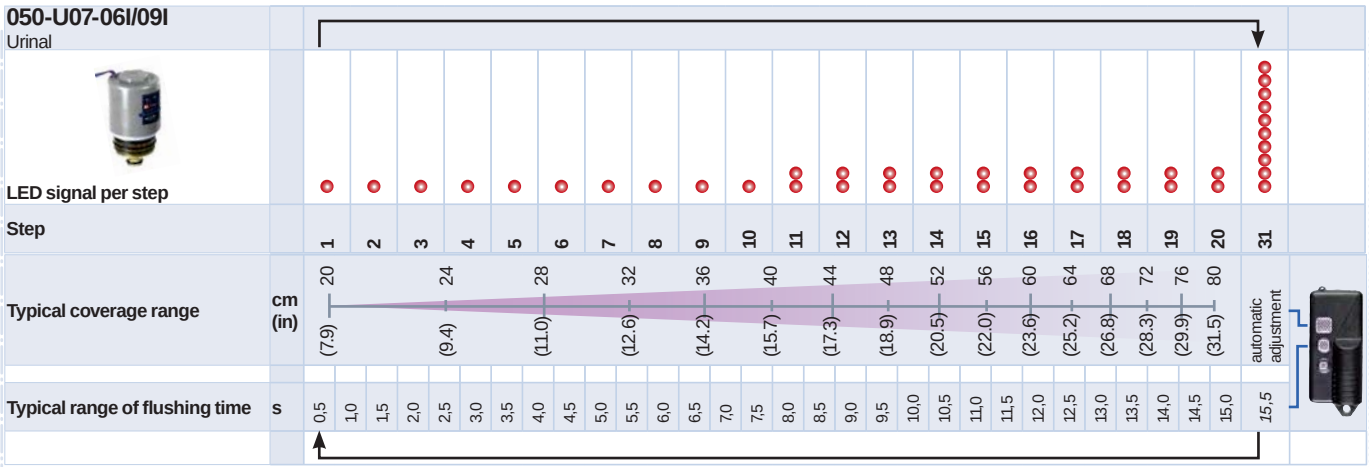


Button (press continuously) for all time adjustment,
starting with the current adjusted position the time increases gradually,
Releasing the button fixes the new adjusted time.
1. step = minimum, 31. step = maximum
(not for all functionalities)

OFF / ON – button for on/off switching of the sensor



The button is used to switch-off the sensor (e.g. for cleaning).
This status is indicated by flashing of the LED for ten times.
To restart please press the button again.
The reactivation of the sensor is again shown by flashing for ten times.
Afterwards the valve will open once with the current adjusted time.



E1716 © copyright A.u.K. Müller, subject to changes without prior notice