

Rotary actuator for 2 and 3-way (control) ball valves

- Torque 10 Nm
- Nominal voltage AC/DC 24 V
- Control: via BACnet® MS/TP



Technical data

Electrical data	Nominal voltage	AC 24 V, 50/60 Hz / DC 24 V	
	Power supply range	AC/DC 19.2 ... 28.8 V	
	Power consumption	In operation	1 W at nominal torque
		At rest	0.2 W
		For wire sizing	2 VA
	Connection	Cable 1 m, 6 x 0.75 mm ² , color: black BUS cable 1 m, 1 x 2 x 0,5 mm, color: violet	
Parallel connection	Possible, note performance data		
Functional data	Torque (nominal torque)	Min. 10 Nm at nominal voltage	
	Direction of rotation	Reversible with switch	
	System control	via BACnet® MS/TP, 2400 ... 115200 Baud	
	Input	A11 - selectable	Sensor input: (Pt1000, Ni1000 DIN, Ni1000TK5000) or digital input - measuring range see on page 2
		A12 - selectable	Sensor input: (Pt1000, Ni1000 DIN, Ni1000TK5000) or digital input - measuring range see on page 2
		A13 - selectable	Analog input 0 ... 10 V or manual control 2 ... 10 V or forced OPEN / CLOSE
	Manual override	Gearing latch disengaged with pushbutton (temporary-permanent)	
	Angle of rotation	Max. 95°↔, limited on both sides by means of adjustable, mechanical end stops	
	Running time	90 s / 90° ↔	
	Noise level	Max. 35 dB (A) (without the valve)	
	Position indication	Mechanical, add-on	
	Safety	Protection class	III Extra low voltage
Degree of protection		IP54 in any mounting position	
EMC		CE according to 2004/108/EC	
Mode of operation		Type 1 (EN 60730-1)	
Ambient temperature range		0 ... +50°C	
Non-operating temperature		-40 ... +80°C	
Ambient humidity range		95% r.H., non-condensating (to EN 60730-1)	
Maintenance		Maintenance-free	
Dimensions / Weight	Dimensions	See «Dimensions» on page 2	
	Weight	Approx. 550 g	

Safety notes



- The actuator has been designed for use in stationary heating, ventilation and air conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- It may only be installed by suitably trained personnel.
All applicable legal or institutional installation regulations must be complied with.
- The switch for changing the direction of rotation may only be operated by authorized personnel. The direction of rotation must not be reversed in a frost protection circuit.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The cable must not be removed from the device.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- For the BACnet® MS/TP connection it has to be used an appropriate specified cable.

Product features

Simple direct mounting	Straightforward direct mounting on the ball valve with only one screw. The assembly tool is integrated in the plug-on position indicator. The mounting position in relation to the ball valve can be selected in 90° steps.
Manual override	Manual operation is possible with the self-resetting pushbutton (the gearing latch remains disengaged as long as the pushbutton is pressed)
Adjustable angle of rotation	Adjustable angle of rotation with mechanical end stops.
High functional reliability	The actuator is overload-proof, requires no limit switches and automatically stops when the end stop is reached.

Accessories

	Description	Data sheet
Electrical accessories	Auxiliary switch S.A..	DS-S1A / S2A
	Feedback potentiometer P.A..	DS-P10000A

Electrical installation

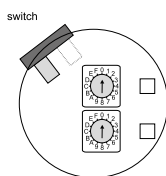
Note

- Connection via safety transformer.
- Parallel connection of further drives possible.
- Regard the power data.



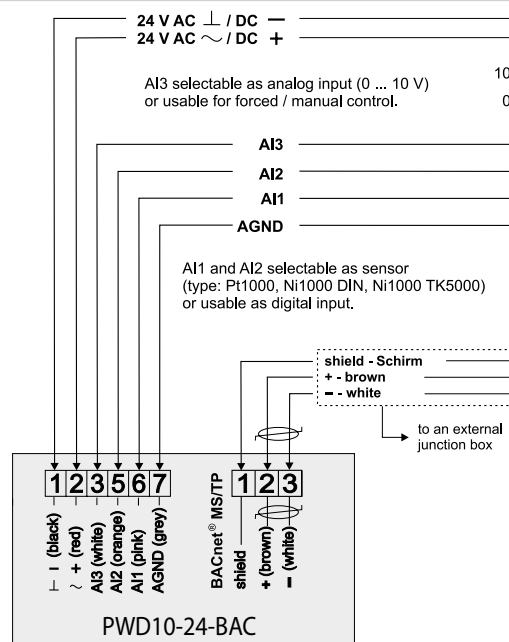
Direction of rotation

The switch for changing the direction of the drive is located under the dummy plug at the front side of the drive.



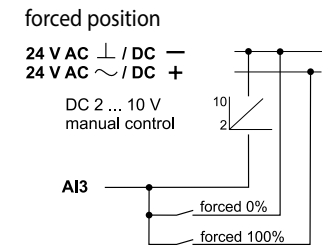
Switch Direction of rotation

	right	100 % at stop unit on the right side
	left	100 % at stop unit on the left side



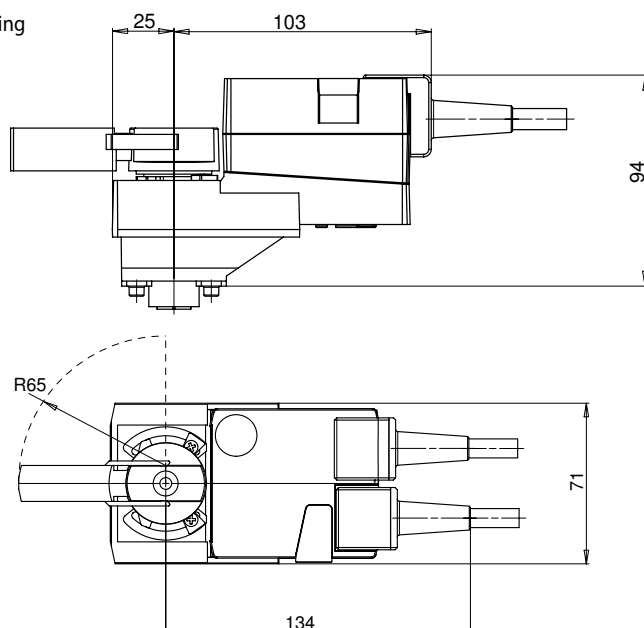
Analog Input AI3

If a sensor is not connected to the input (open input), it will be 15 V DC high-ohmic at AI3. If a sensor will be connected to the AI, the potential has to be reduced to the needed sensor value by the connected sensor. The qualification of the sensor has to be checked before connecting it.



Dimensions [mm]

Dimensional drawing



Analog inputs - measuring range

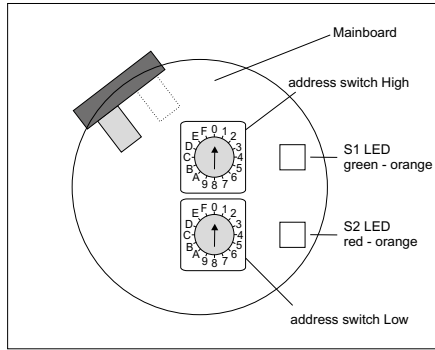
AI1 - selectable	
Sensor input Pt1000	-20 ... +120 °C
or Sensor input Ni1000 DIN	-15 ... +75 °C
or Sensor input Ni 1000 Tk5000	-15 ... +90 °C
or Digital input	
AI2 - selectable	
Sensor input Pt1000	-20 ... +120 °C
or Sensor input Ni1000 DIN	-15 ... +75 °C
or Sensor input Ni 1000 Tk5000	-15 ... +90 °C
or Digital input	
AI3 - selectable	
Analog input	0 .. 10 V
or Manual control	2 ... 10 V
or Forced	OPEN / CLOSE

Data sheet PWD10-24-BAC • EN • 30.11.2012 • Subject to changes

Addressing BACnet® MS/TP

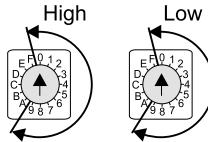
Position address switches

The address switches are located under the dummy at the front side of the drive.



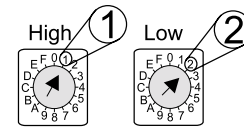
The module addresses will be set via two address switches (High and Low). The valid address range is between 01 and 99. Only decimal numbers (0...9) will be used. At one bus a maximum of 99 drives can be controlled.

Standard address range

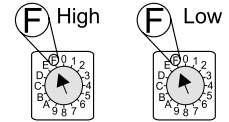


Standard address range

Standard address range: Example to set the address 12



The BACnet modules are equipped with a service mode to set the speed of the MS/TP bus. The service mode will be activated by setting the address switches to FF.



Setting of the BACnet® MS/TP bus

Notes:



- After each change of the position of the address switches the orange flash signal of the lower LED (S2) has to be controlled.
- All devices at the MS/TP bus must be set to the same speed. The communication won't work if only one device would be set to another speed!

Setting the address switches is indicated by the two LED's which light up orange. After approx. 3 seconds the LED's go off and signalise therewith the confirmation of the switch position. Afterwards the module runs a reset and starts in the service mode again. The reboot is signalised by the LED S1 which flashes green and orange by turns.

Once the module is in the service mode, the current bus speed can be indicated or a new one can be set up. For that, the address switches must be set to one of the positions as listed below in the table.

The current set resp. desired speed is indicated via the lower LED (S2) by orange flashing. An individual short flashing impuls signalises 2400 Baud, two flashing impulses signalises 4800 Baud etc.. The device supports speeds from 2400 to 115200 Baud.

Additionally exist the possibility of activating an automatic baud rate identification. On delivery status this automatic identification is activated.

Position of address switch	Bus speed	Position of the address switches	Bus speed	Signal of LED S2
		DF	current display of the speed	
D1	2400 Baud	D1	2400 Baud	
D2	4800 Baud	D2	4800 Baud	
D3	9600 Baud	D3	9600 Baud	
D4	19200 Baud
D5	38400 Baud	D9	Auto Baud	
D6	57600 Baud			
D7	76800 Baud			
D8	115200 Baud			
D9	Auto Baud			

Before setting a new speed, the switch position has to be set to the desired speed. (D1=2400bd...D8=115200bd, D9=Auto Baud).

After that, this must be confirmed by the switch position AA.

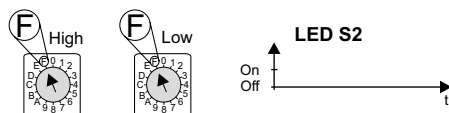
In this position the set speed is indicated again over the orange flashing sequence of the S2 LED. With this confirmation the module indicates that it accepted the requested speed.

At the end the module can be switched again directly to a valid operating address, whereby the service mode will be leaved automatically.

Example Changing of the BACnet MS/TP speed to 4800 Baud.

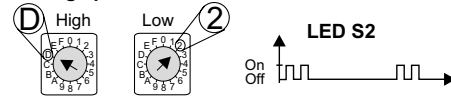
Step 1

Start service mode FF



Step 2

Setting speed D2



Step 3

Confirmation of the set speed

