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Actuator for analog systems controlling EA103

Highlights

- Proportional signal control
- Pilot signal VDC or mADC
- Independent output signal VDC or mADC selectable



Application

Actuator EA103 is applicable for analog controlled systems with independently selectable input and output signals. It is used for TICOVAL-Ball Valves up to DN 50 and TICOFly-Butterfly Valves up to DN 65.

Controlled by regulation systems providing pilot analog signals 0...10 / 0...5 / 5...10 VDC or 0...20 / 4...20 mADC.

The Actuator has the same solid features as the proven standard Actuator EA100(R).

Function

Power supply is 24V AC. The selectable pilot signal (Y) moves the Actuator linearly in any position, for example 50% of the pilot signal level corresponding to 50% of the opening angle.

The selectable output analog signal (U) is independent from the type of pilot signal. Close to both end positions of the rotation a 24VDC 30mA signal will be output.

Direction of rotation / reverse control action can be selected by slide switch (S8).

Product range EA103 / switching time 60 sec. for 90° / supply 24V AC 50 Hz

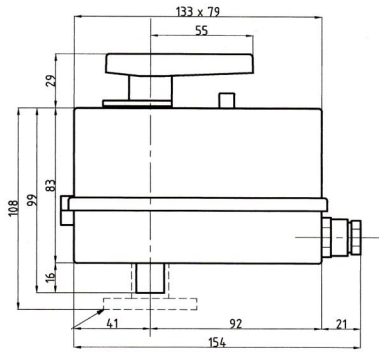
article-no.	type	use for
750.5000.108	EA103 IP 42	TICOVAL-Ball Valves and TICOFly-Butterfly-Valves
750.5000.138	EA103 IP 65	TICOVAL-Ball Valves and TICOFly-Butterfly-Valves

Information about TICOVAL-Motorized Ball Valves and TICOFly-Butterfly-Valves, refer to the data sheets of the respective products.

Technical data

Actuator EA103	
Power supply	24V AC +/-10%, 50 Hz
Power consumption	IP42: 6,5 VA max. / IP65: 10,0 VA max.
Pilot signal (Y) VDC	0...10 / 0...5 / 5...10 VDC (selectable) input resistance 200 kΩ
or Pilot signal (Y) mADC	0...20 / 4...20 mADC (selectable) input resistance 100 Ω
Output signal (U) VDC or Output signal (U) mADC	0...10 / 0...5 / 5...10 VDC (selectable) 0...20 / 4...20 mADC (selectable)
End position output signal	24VDC-30mA output signal close to the end position clockwise and anticlockwise
Torque	max. 23 Nm
Handlever	on request, included (only IP 40 protection)
Protection class	IP 42 or IP 65 (with heating resistor 3,5 VA)
Switching time	60 sec. for 90° rotation (standard) (30 sec. and / or 180° on request)
Ambient temperature	0° to +50° avoid condensation
Adapting	TICOVAL-Ball Valves: DN 15 to DN 50 TICOFly-Butterfly Valves: DN 20 to DN 65

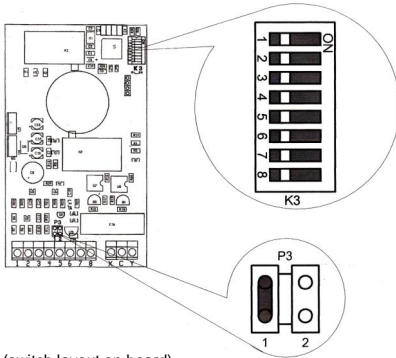
Dimensions



Materials

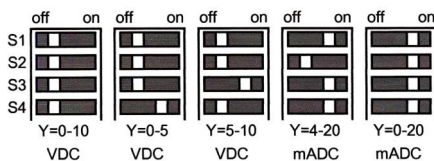
Parts	Materials
Housing bottom	plastic
Housing cover	plastic
Cable gland	Polyamid, self extinguishing
Gears	steel, thermally treated
Handler	plastic
Bearings	bronze, self-lubricating

Setting instructions

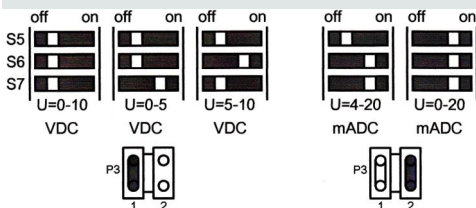


(switch layout on board)

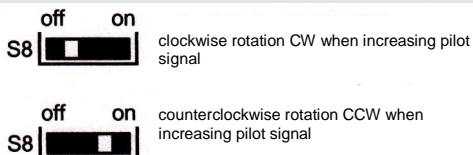
1. Select input pilot signal Y by switches S1-S4 (unit K3):



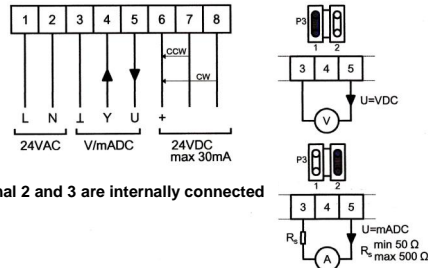
2. Select output signal U by switches S5-S7 (unit K3) and jumper P3:



3. Select running direction by switch S8 (unit K3):



Wiring diagram



Terminal 2 and 3 are internally connected

1-2	power supply 24V AC 50Hz (L = permanent / N = neutral)
3-4	pilot signal Y (do not connect clamp 3, if negative terminal of input pilot signal is the same as the neutral "N" on clamp 2)
3-5	analog output signal U
6-7	output signal 24VDC-30mA max. (close to end position counterclockwise CCW)
6-8	output signal 24VDC-30mA max. (close to end position clockwise CW)

Notes for commissioning / start up

1. Make the required settings (see 1, 2 and 3 on left side).
2. Actuator and Valve must be moved to an intermediate position before mounting. Push release button on Actuator to move (IP65 already set at factory in intermediate position).
3. Mount Actuator to Valve with 2 screws M8 (included).
4. Connect electrical wires as shown in the wiring diagram
5. Activate power supply. The actuator, regardless of settings, performs an autoregulation: it rotates counterclockwise (CCW) up to act on the microswitch which provides the reference point, then it's positioned according to the value of the pilot signal Y. **This operation occurs all times when taking off power supply and then restore it.**
6. A possible manual operation must be performed only after removing power supply.

Assembly / Safety notes

- Installation positions: upright standing to horizontal (based on stem of Valve).
- For ensuring the proper functioning, make sure that both Actuator and Valve are correctly set when assembling (direction of rotation / position of ball / direction of flow) according to the installation instructions.
- In case of power loss, gears can be disengaged by push button on Actuator for manual operation. Use fork wrench or handler. (not possible on IP65 protection).
- Mounting of Actuator to Valve with two M8 screws (included) possible in every 90° position (3-way Valves DN 40 / DN 50 only 180°).
- The installation must be carried out by authorized personnel, according to current laws and regulations.