Honeywell

MVN Rotary Valve Actuators FOR CONTROL BALL VALVES VBG (DN15 TO DN32)

SPECIFICATION DATA



APPLICATION

MVN 3 Nm Control Valve Rotary Valve Actuators are used with the VBG2 2-way and the VBG3 3-way Control Ball Valves to control hot and chilled water with glycol solutions up to 50% in heating, ventilating, and air conditioning (HVAC) systems to provide two-position or modulating functions.

FEATURES

- Non-spring return
- Floating and modulating
- Space saving, click-on installation no tool required
- Extendable position indicator for easy commissioning
- Available with 1.5-m cable
- Compatible with VBG control ball valves from DN15 to DN32.
- Actuator can be mounted on the valve in any of four positions.

SPECIFICATIONS

Actuator type Control ball valve rotary actuator **Rotational stroke** 90° ± 3°. Fail-safe mode Non-spring return, Fail in place Torque 3 Nm Supply voltage 230 Vac. 50 Hz +10%/-15%: 24 Vac ±20%, 24 Vdc ±10% Environmental rating NEMA2 Mounting Click-on installation - no tool required Noise rating at 1 m 35 dB(A) max. at 1 m. Materials Plenum-rated plastic housing Operating humidity range 5 ... 95% RH, non-condensing Ambient temp. range -20 ... +55 °C Storage temp. range -40 ... +80 °C Dimensions See Fig. 1 and Fig. 2 Weight 0.3 kg Field wiring 20 to 18 AWG to Electrical connections screw terminals, located under the removable access cover Cable specification 0.8 to 1.0 mm² (20 to 18 AWG), Plenum-rated, 300 V, 10 A, 1.5 m (4.5 ft.) length from end of access cover IP40

CE

Protection rating Approvals



CLEARANCE ABOVE ACTUATOR: 19 mm (3/4")



Fig. 1. MVN dimensions, in mm

	Devues events	Control signal				er cons	sumption		Runtime	
0.5 no	Power supply					/ing	Holding	Cable		
0.0.10.	AC	DC	2-Position (SPDT)	Floating (SPDT)	Modulating 0(2) 10 V / 10 0(2) V	w	VA	w	length (m)	(sec)
MVN613A1500	24 Vac ±20%; 50 Hz	NA	Х	Х		1.5	1.5	0	1.5	108
MVN663A1500	230 Vac +10% / -15%; 50 Hz	NA	Х	Х		2	4.5	0	1.5	108
MVN713A1500	24 Vac ±20%; 50 Hz	24 Vdc ±10%			Х	2	5	0.5	1.5	90

Table 1. Actuators

Table 2. Actuator accessories and replacement parts

O.S. no.	Description
MVNAT3	Replacement screw terminal block, pluggable



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Fig. 2. MVN with 2-way ball valve (see also Table 3)

CLEARANCE ABOVE ACTUATOR: 19 mm (3/4")



Fig. 3. MVN with 3-way ball valve (see also Table 4)

Table	3. MVN dim	ensions (ir	n mm) in co	mbination	with VGB2	valves	
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DN	Α	В	С	D	G	Н	Ι	J	K	0
15	74	67	19	48	G-1"	86	71	108	89	36
20	86	77	25	53	G-1¼"	92	71	124	100	46
25	85	84	27	58	G-1½"	96	71	129	102	50
32	102	98	36	64	G-2"	114	71	149	115	65

DN	Α	В	С	D	Е	G	н	1	J	К	0
15	74	107	41	49	44	G-1"	86	71	148	90	41
20	86	110	47	49	50	G-1¼"	92	71	156	96	46
25	85	119	45	53	54	G-1½"	96	71	163	98	50
32	108	143	51	63	69	G-2"	117	71	193	114	65

Table 4. MVN dimensions (in mm) in combination with VGB3 valves

MOUNTING

For more-detailed information on mounting, see the Mounting Instructions (Product Literature No.: MU1B-0492GE51) supplied with each actuator.

Orientation of Ball in Valve

The valve and actuator are delivered in the CLOSED positions by default. See Fig. 4 and Fig. 5.



Fig. 4. Two-way closed / 3-way open



Fig. 5. Two-way open / 3-way open

Mounting Position

To achieve the desired control performance, the actuator must be mounted on the valve in one of the permitted orientations shown in Fig. 6.



Fig. 6. Permitted orientations

TYPICAL OPERATION



Fig. 7. Two-way valve operation



Fig. 8. Three-way mixing valve operation



Fig. 9. Three-way diverting valve operation

WIRING

The actuators are pre-wired with 1.5-m cable with colors corresponding to the given model.

Replacement cabling with the same technical specifications as listed in section "Specifications" on pg. 1 may be used (preferably with the same cable colors).

MVN613A				MVN613A
COMMON	L	2	BLACK	000
24 VAC, CCW	~	3	WHITE	
24 VAC, CW	~	4	BROWN	
MVN663A				MVN663A
NEUTRAL	Ν	2	BLUE	000
230 VAC, CCW	L	3	BROWN	
230 VAC, CW	L	4	BLACK	
MVN713A				MVN713A
24 V	~/+	1	RED	
COMMON	L/-	2	BLACK	
0(2) 10 V	Y⇒	3	WHITE	

Fig. 10. Accessing wiring and (MVN713A) DIP switch

Electrical Installation



Fig. 11. MVN613A floating actuator with controller



Fig. 12. MVN613A floating actuator with 2-position / floating controller

FLOATING ACTUATOR



Fig. 13. Wiring of MVN663A floating actuator with controller



Fig. 14. Wiring of MVN663A floating actuator with 2position / floating controller

PROPORTIONAL/MODULATING: 0(2)...10 VDC OR 10...(0(2) VDC CONTROLLER OUTPUT



Fig. 15. MVN713A proportional/modulating actuator with 0(2)...10 VDC controller



/3\

Power supply. Provide means for disconnecting and for overload protection, as required.

- Safety isolating transformer () is required.
- LINE VOLTAGE power supply. Provide means for disconnecting and for overload protection, as required.

ENVIRONMENTAL DATA

Environmental conditions	For use in home (residential, commercial, and light-industrial) environments				
Pollution degree	2 (MVN663A) 3 (MVN613A + MVN713A)				
Protection class	Class II (MVN663A) Class III (MVN613A + MVN713A)				
Rated impulse voltage	2.5 kV				
Mode of operation	Туре 1				

Table 5. Information as per EN 60730

DISPOSAL

WEEE: Waste Electrical and Electronic Equipment Directive				
	•	At the end of the product life, dispose of the packaging and product in an appropriate recycling center. Do not dispose of the device with the usual domestic refuse. Do not burn the device.		



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EN0B-0711GE51 R1014

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