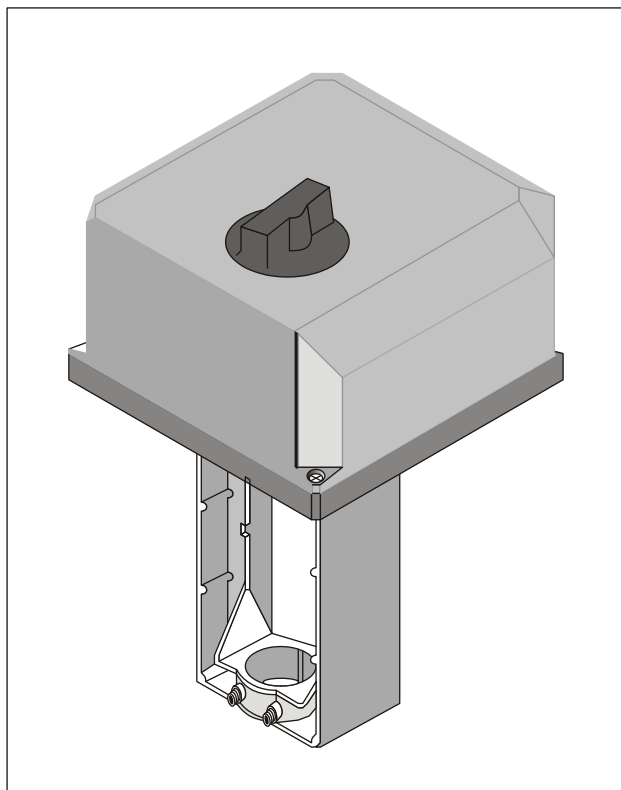


ML6421A,B

Electric Linear Valve Actuators

SPECIFICATION DATA



GENERAL

These valve actuators provide floating control and are equipped with a synchronous motor for exact positioning. They are suitable for use in conjunction with controls providing switched or floating single-pole, double-throw (SPDT) control outputs to operate Honeywell's standard valve series in heating, ventilation, and air conditioning (HVAC) applications.

FEATURES

- Quick and easy installation
- No separate linkage required
- No adjustments
- Force-limiting end switches
- Manual operator
- Models for low and line voltage
- Synchronous motor
- Corrosion-resistant design
- Maintenance-free

SPECIFICATIONS

Temperature Limits

Ambient operating limits	-10...+50 °C at 5...95%rh
Ambient storage limits	-40...+70 °C at 5...95%rh
Medium valve temperature	Max. +150 °C (+220 °C with High-Temperature Kit)

Safety

Protection class, 24V models	III according to EN60730-1
Protection class, 230V models	I according to EN60730
Protection standard	IP54 according to EN60529
Flame retardant housing	V0 according to UL94, with metal cable gland

Noise level

≤45dB(A)

Wiring

Wiring terminals	1.5 mm ²
Cable entry	M20x1.5 and PG11 (the latter with a knock-out for expansion to M20x1.5)

Material

Cover	ABS
Yoke and base	Aluminum die-cast

Weight

2.0 kg

Dimensions

See Fig. 1 and Fig. 2

EN0B-0414GE51 R0717

Table 1. Overview of models

model number	ML6421A3005	ML6421B3004	ML6421A3013	ML6421B3012
supply voltage	24 Vac ($\pm 15\%$); 50/60 Hz		230 Vac (+10%/-15%); 50/60 Hz	
power consumption	13 VA (50 Hz) / 15 VA (60 Hz)		11 VA (50 Hz) / 13 VA (60 Hz)	
signal input 1	Supply voltage between terminals 1 and 24 V~; actuator stem extended: two-way valve closed; three-way valve port A - AB open.		Supply voltage between terminals N and L 1; actuator stem extended: two-way valve closed; three-way valve port A - AB open.	
signal input 2	Supply voltage between terminals 2 and 24 V~; actuator stem retracted: two-way valve open; three-way valve port A - AB closed.		Supply voltage between terminals N and L 2; actuator stem retracted: two-way valve open; three-way valve port A - AB closed.	
stroke	20 mm	38 mm	20 mm	38 mm
run-time @ 50 Hz	1.9 min	3.5 min	1.9 min	3.5 min
nominal stem force	1800 N			

OPERATION

General

The drive of the synchronous motor is converted into linear motion of the actuator stem by using a worm gear transmission. The actuator stem is connected with the valve stem by a button keyed retainer connection.

The force sensor switches off the motor precisely when the nominal stem force is reached.

Manual Operation

The actuators are equipped with a manual operator used in case of power failure. Manual operation is only allowable after the power supply is switched off or disconnected.

To operate, push the manual operator knob down and turn counter-clockwise to move the stem downwards and clockwise to move the stem upwards. If the actuator returns to automatic control, the manual operator knob unlocks automatically.

NOTE: Manual operation allows a very high closing force capable of jamming the actuator spindle and exceeding the rating of the force switches, so that the motor cannot move.

Therefore, after a manually close-off operation, it may be necessary to release the spindle one turn by turning the manual operator knob, so that the manual operator will automatically disengage on power resumption.

Accessories

The following accessories are available upon request:

Auxiliary Switches

The actuators can be equipped on-site with an auxiliary switch unit having two switches (see Fig. 4). Their switching points are adjustable over the full length of the actuator stroke. The switches can be used to switch pumps or to provide remote indication of any stroke position.

A cable gland M20x1.5 is delivered with the unit.

Auxiliary Potentiometer

The auxiliary potentiometers (see Fig. 4) are available for mounting on site. They can be used as feedback potentiometer and/or to provide remote indication of the valve position.

A cable gland M20x1.5 is delivered with the unit.

Table 2. Auxiliary switch unit

accessory-type	stroke	order no.
auxiliary switches; 250 Vac / 5 (3) A (package contains 2 SPDT switches)	20 mm	43191680-002
	38 mm	
single auxiliary potentiometer (full range: 220 Ω ; oper. range: 135 Ω)	20 mm	43191679-001
	38 mm	43191679-002
single auxiliary potentiometer (10k Ω)	20 mm	43191679-007
	38 mm	43191679-008

High Temperature Kit

Two options for applications with medium valve temperatures of +150...+220 °C are available for the following valves:

Table 3. High-temperature kits

order number High-Temp. Kit	valve	DN
43196000-001	V5011R/V5011S	15 – 50
	V5013R/V5013E	15 – 50
	V5328A/V5329A	15 – 32
43196000-002	V5328A/V5329A	40 – 80
	V5049A	15 – 65
	V5016/V5025/V5050A	15 – 80
43196000-038	V5328A	100 – 150
	V5016A	100 – 150
	V5025A	100 – 150
	V5049A (PN25/40)	80 – 100
	V5050 (PN16)	100 – 150
	V5050 (PN25/40)	100

CLOSE-OFF PRESSURE RATINGS

stroke		20 mm								38 mm			
valve size	mm	15	20	25	32	40	50	65	80	80	100	125	150
	inch	1/2	3/4	1	1 ¼	1 ½	2	2 ½	3	3	4	5	6
valves		close-off pressure ratings (in kPa)											
V5011R				1600	1600	1500	850						
V5011S				1600	1600	1500	850						
V5013R				1600	1600	1500	850						
V5015A											150	120	80
V5025A											2500	2500	2500
V5328A		1600	1600	1600	1600	1300	750	470	230				
V5329A (PN16)						1000	1000	1000	650	400			
V5329C (PN6)						600	600	600	400				
V5049A		2500	2500	2500	2000	1300	750	500		230	230	90	90
V5050A		2500	2500	2500	2000	1300	750	500	230		230	90	90

||||| = Use 600 N actuator

For details on the valves, see the following Specification Data No.:

V5011R	EN0B-0064GE51	V5049A	EN0B-0238GE51
V5011S	EN0B-0085GE51	V5329A/5050A	EN0B-0310GE51
V5016A	EN0B-0440GE51	V5025A	EN0B-0442GE51
V5095A	EN0B-0412GE51	V5013R	EN0B-0065GE51
V5328A	EN0B-0291GE51		

DIMENSIONS

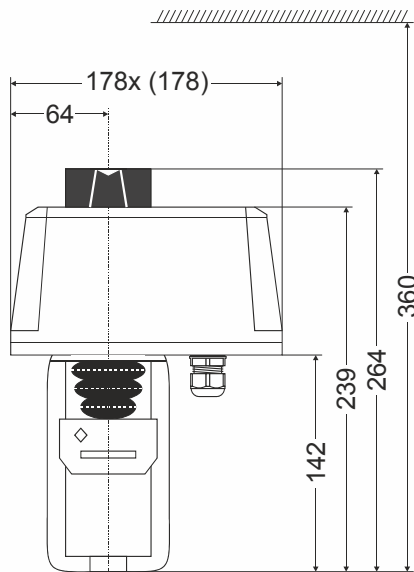


Fig. 1. ML6421A (dimensions in mm)

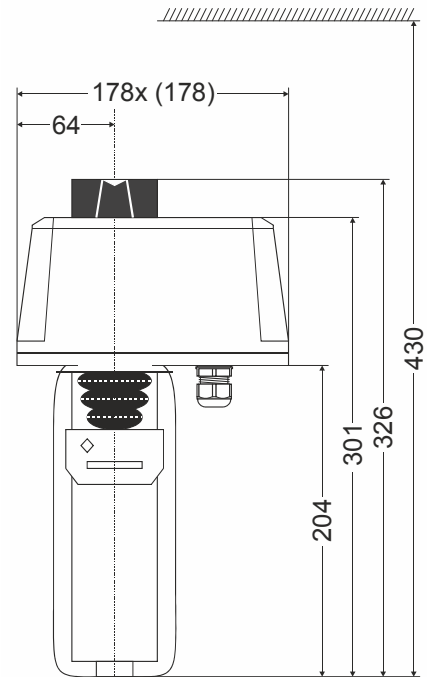


Fig. 2. ML6421B (dimensions in mm)

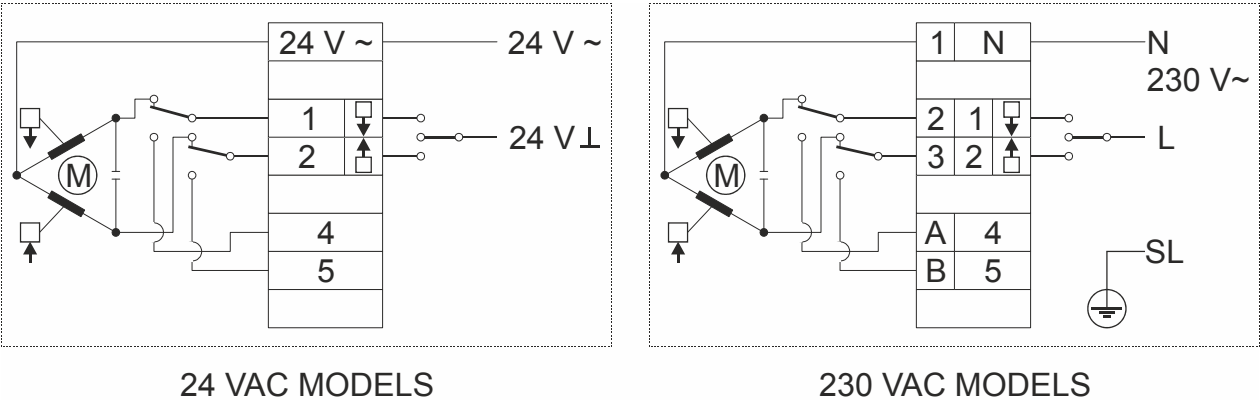


Fig. 3. Wiring

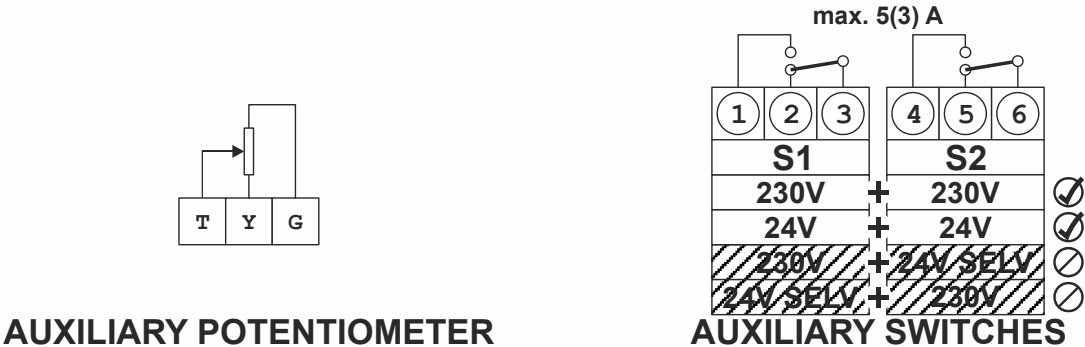


Fig. 4. Accessories

Table 4. Auxiliary potentiometers

model	auxiliary switches / nominal resistive (inductive) load	auxiliary potentiometer
ML6421A3005 (24 Vac / 20 mm)	43191680-002 / 24 Vac / 5 (3) A	43191679-001 (220 Ω), 43191679-007 (10 kΩ)
ML6421B3004 (24 Vac / 38 mm)	43191680-002 / 24 Vac / 5 (3) A	43191679-002 (220 Ω), 43191679-008 (10 kΩ)
ML6421A3013 (230 Vac / 20 mm)	43191680-002 / 250 Vac / 5 (3) A	--
ML6421B3012 (230 Vac / 38 mm)	43191680-002 / 250 Vac / 5 (3) A	--

NOTE: In order to maintain the actuator's protection class, both the actuator and any accessories must be supplied with the same voltage.