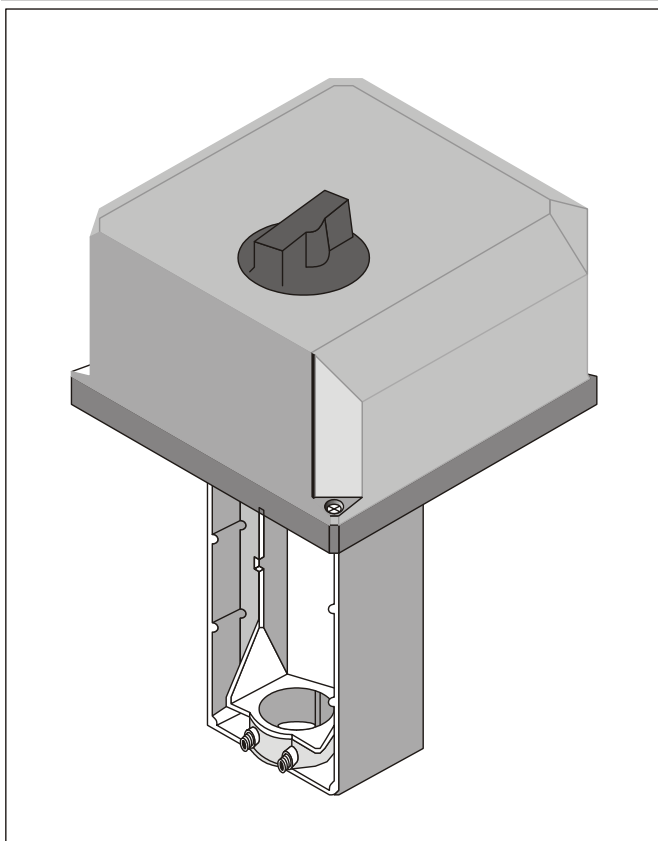


ML6421A,B

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 knock-out for PG11 |

Material

| | |
|---------------|------------------|
| Cover | ABS |
| Yoke and base | Aluminum diecast |

| | |
|--------|--------|
| Weight | 2.0 kg |
|--------|--------|

| | |
|------------|-----------------------|
| Dimensions | See Fig. 1 and Fig. 2 |
|------------|-----------------------|

| 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 Ph 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 Ph 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.

Via installed microswitches, the internal force sensor switches off the actuator 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 is 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 PG11 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 PG11 is delivered with the unit.

| accessory-type | stroke | order no. |
|--|--------|--------------|
| auxiliary switches 250 Vac / 5 (3) A (package contains two SPDT switches) | 20 mm | 43191680-002 |
| | 38 mm | |
| single auxiliary potentiometer (full range: 220 Ω ; operating 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:

| order number High-Temperature Kit | valve | DN |
|--------------------------------------|------------------|-----------|
| 43196000-001 | V5011A/V5011K | 15 – 40 |
| | V5013A/V5013G | 15 – 40 |
| | V5011R/V5013R | 15 – 50 |
| | V5328A/V5329A | 15 – 32 |
| 43196000-002 | V5011A | 50 |
| | V5013A/V5013G | 50 |
| | V5328A/V5329A | 40 – 80 |
| | V5049A | 15 – 65 |
| 43196000-038 | V5050A | 15 – 80 |
| | 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 | mm | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 80 | 100 | 125 | 150 |
| size | 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 | | | | | | |
| V5011K | | | | 1600 | 1600 | | | | | | | | |
| 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 | 5049A | EN0B-0238GE51 |
| V5011S | EN0B-0085GE51 | V5329A/5050A | EN0B-0310GE51 |
| V5016A | EN0B-0440GE51 | V5025A | EN0B-0442GE51 |
| V5095A | EN0B-0412GE51 | V5013R | EN0B-0065GE51 |
| V5328A | EN0B-0432GE02 | | |

DIMENSIONS

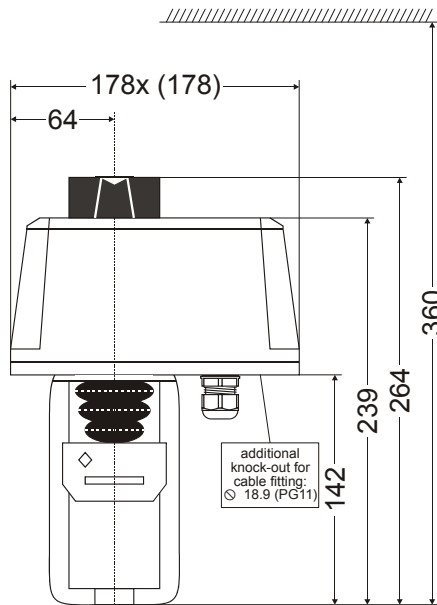


Fig. 1. ML6421A (dimensions in mm)

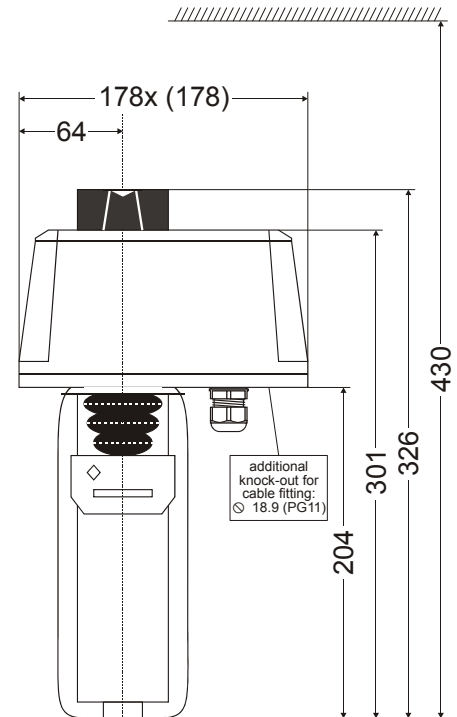
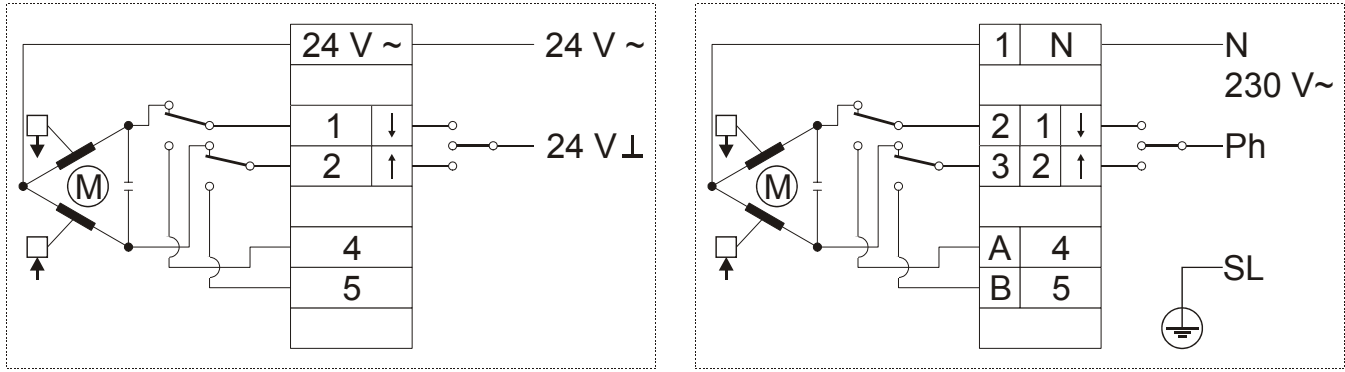


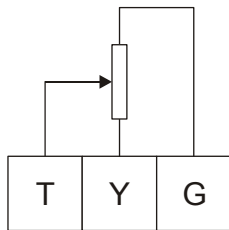
Fig. 2. ML6421B (dimensions in mm)



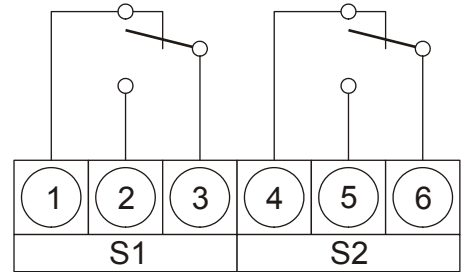
24 Vac models

230 Vac models

Fig. 3. Wiring



auxiliary potentiometer



auxiliary switches

Fig. 4. Accessories

| model | auxiliary switches / nominal resistive (inductive) load | auxiliary potentiometer |
|-------------------------------|---|--|
| ML6421A3004 (24 Vac / 20 mm) | 43191680-002 / 24 Vac / 5 (3) A | 43191679-001 (220 Ω), 43191679-007 (10 kΩ) |
| ML6421B3005 (24 Vac / 38 mm) | 43191680-002 / 24 Vac / 5 (3) A | 43191679-002 (220 Ω), 43191679-008 (10 kΩ) |
| ML6421A3012 (230 Vac / 20 mm) | 43191680-002 / 250 Vac / 5 (3) A | -- |
| ML6421B3013 (230 Vac / 38 mm) | 43191680-002 / 250 Vac / 5 (3) A | -- |

Honeywell

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