

## ML6420A/ML6425A,B

### Electric Linear Valve Actuators

#### SPECIFICATION DATA



ML6420

ML6425

#### APPLICATION

The ML6420A / ML6425A,B actuators enable floating control, and are suitable for use in conjunction with ON/OFF or floating single-pole, double-throw (SPDT) control outputs. They can operate Honeywell's standard valves in heating, ventilation, and air conditioning (HVAC) applications.

#### FEATURES

- Quick and easy installation
- No separate linkage required
- No adjustments
- Low power consumption
- Force-limiting end switches
- Spring-return models
- Manual operator
- Models for low and line voltage
- Synchronous motor
- Corrosion-resistant design
- Maintenance-free
- Actuator-valve combinations approved according to DIN 14597 available

#### 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	see section "Models" on pg. 2; 220 °C with High-Temperature Kit (see section "Accessories" on pg. 5)

##### Protection

Protection standard	IP54 per DIN 40050
Insulation	Class II per DIN EN60730
Flame retardant as per	UL 94-V0 (with metal cable gland – not supplied)
Operating mode	Type 2B as per EN 60730-1

##### Wiring

Wiring terminals	1.5 mm <sup>2</sup>
Cable entry	M20x1.5 and two additional knock-outs M16x1.5 and M20x1.5

##### Weight

Non-spring return type	1.3 kg
Spring return type	2.4 kg

##### Material

Cover	ABS-FR
Base	glass fiber reinforced plastic
Yoke	aluminum diecast

##### Dimensions

See Fig. 1 on page 4

## MODELS

Model	ML6420 A3007	ML6420 A3023	ML6425 A3006	ML6425 A3048	ML6425 B3005	ML6425 A3014	ML6425 A3055	ML6425 B3021	ML6420 A3015	ML6420 A3031
Supply voltage	24 Vac ±15%, 50/60 Hz					230 Vac +10/-15%, 50/60 Hz				
Medium valve temperature*	150 °C	150 °C	130 / 150 °C**	150 °C	150 °C	130 / 150 °C**	150 °C	150 °C	150 °C	150 °C
Power consumption	4 VA	6 VA	11 VA	11 VA	11 VA	12 VA	12 VA	12 VA	6.5 VA	6.5 VA
Signal input 1	Supply voltage betw. terminals 1 and 24 V~; stem extended. 2-way valve: "closed", 3-way valve port A-AB: "open"					Supply voltage betw. terminals N and Ph 1; stem extended. 2-way valve: "closed", 3-way valve port A-AB: "open"				
Signal input 2	Supply voltage betw. terminals 2 and 24 V~; stem retracted. 2-way valve: "open", 3-way valve port A-AB: "closed".					Supply voltage betw. terminals N and Ph 2; stem retracted. 2-way valve: "open", 3-way valve port A-AB: "closed".				
Stroke	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm
Run time at 50 Hz	1 min	0.5 min	1.8 min	1.8 min	1.8 min	1.8 min	1.8 min	1.8 min	1 min	0.5 min
Close-off force	≥600 N	≥600 N	≥600 N	≥600 N	≥600 N	≥600 N	≥600 N	≥600 N	≥600 N	≥600 N
Spring return time	--	--	≈12 s	≈12 s	≈12 s	≈12 s	≈12 s	≈12 s	--	--
Spring return direction (at power failure)	--	--	actuator stem extends		actuator stem retracts	actuator stem extends		actuator stem retracts	--	--

\* When equipped with the High-Temp. Kit (see section "High-Temperature Kit" on pg. 5), all actuators are suitable for medium valve temperatures of up to 220 °C.

\*\*Depending upon the given combination of valves and actuators, see tables below.

### Medium temp. < 130 °C (DIN Certificate 1F139/13)

valve	dimensions	with actuators
V5016A (PN16)	15-80 mm	ML6425A3006 ML6425A3014
V5025A (PN25)		
V5328A (PN16)	15-50 mm	
V5049A (PN25/40)		

### Medium temp. < 150 °C (not DIN-certified)

valve	dimensions	with actuators
V5016A (PN16)	15-80 mm	ML6425A3006 ML6425A3014
V5025A (PN25)		
V5328A (PN16)		
V5049A (PN25/40)	15-65 mm	

## OPERATION

### General

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

An integrated spring package limits the stem force to a factory-adjusted value in either direction.

Installed microswitches switch off the actuator precisely when the specified stem force is reached.

### Manual Operation

Actuators without spring return are equipped with a manual operator used in case of power failure. Manual operation is possible only after the power supply has been switched off or disconnected.

To operate, push the manual operator knob down and turn clockwise to move the stem downward and counterclockwise to move the stem upward. If the actuator returns to automatic control, the manual operator knob unlocks automatically.

In the case of actuators with spring return, the manual operator is located under the cover.

### Spring Return

The ML6425A,B spring return actuators provide a defined safety position of the valve in case of power failure.

The spring return actuators are shipped from the factory with a shipment stop (to lock the knob) in order to allow connection of the stem button retainer to the valve stem without power supply.

### Electrical Installation

The actuators are delivered with a pre-installed cable gland M20x1.5 and two additional knock-outs for M16x1.5 and M20x1.5.

**CLOSE-OFF PRESSURE RATINGS in kPa**

Stem Force		600 N							
Stroke		20 mm							
Valve	mm	15	20	25	32	40	50	65	80
Size	inch	½	¾	1	1 ¼	1 ½	2	2 ½	3
Valves		Close-Off Pressure Ratings							
V5011R,S	1600	1600	1000	700	460	260			
V5328A	1600/1000	1000	1000	600	350	200	120	50	
V5095A		1600	1600	1600	1600	1600	1600	1600	1600
V5016A	1600	1600	1600	1600	1600	1600	1600	1600	1600
V5025A	2500	2500	2500	2500	2500	2500	2500	2500	2500
V5049A	1600/1000	1000	1000	600	350	200	120		
V5013R,E	1600	1600	1000	700	460	260			
V5329C (PN6)	600	600	600	600	480	260	160	100	
V5329A (PN16)	1000	1000	1000	790	480	260	160	100	
V5050A	1000	1000	1000	600	350	200	120	50	

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

V5011R	EN0B-0064GE51	5049A	EN0B-0238GE51
V5011S	EN0B-0085GE51	V5329A/5050A	EN0B-0310GE51
V5016A	EN0B-0440GE51	V5025A	EN0B-0442GE51
V5328A	EN0B-0291GE51	V5013R	EN0B-0065GE51
		V5013E	EN0B-0446GE51

## DIMENSIONS

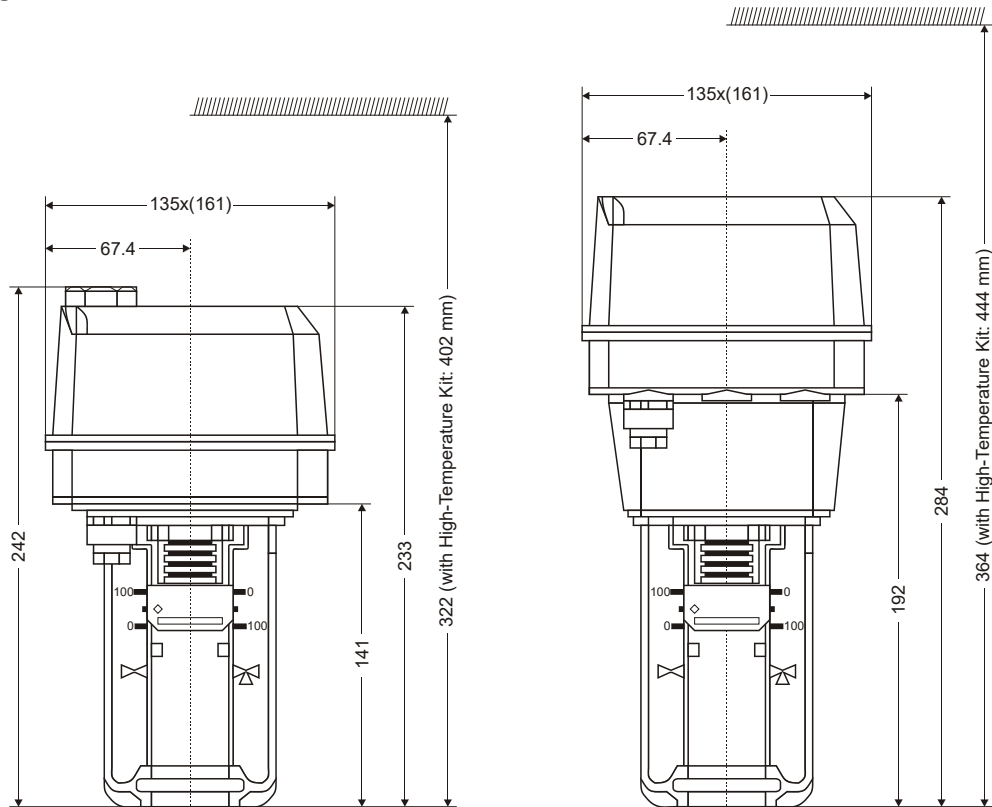


Fig. 1. Dimensions in mm

## WIRING

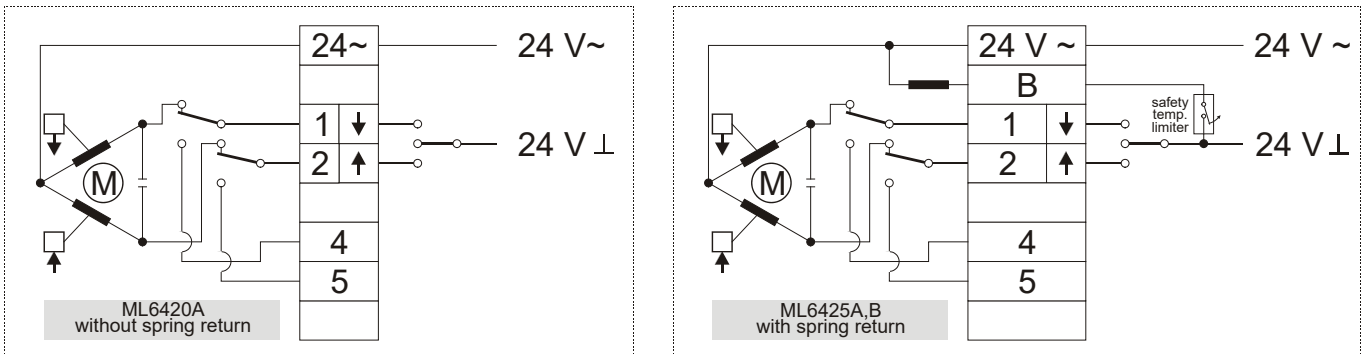


Fig. 2. Wiring 24 V~ models

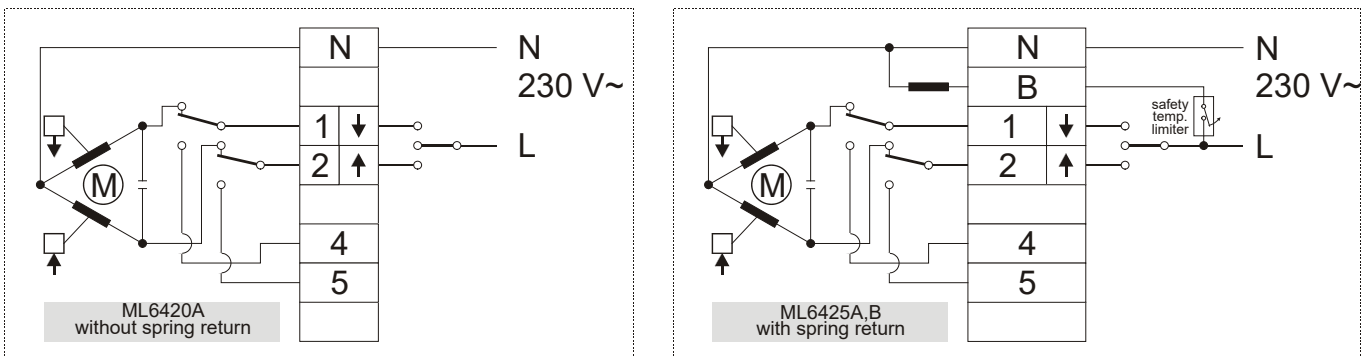


Fig. 3. Wiring 230 V~ models

## ACCESSORIES

### Auxiliary Switches

The actuators can be equipped on site with an auxiliary switch unit consisting of two switches. Their switching points are adjustable over the full length of the actuator stroke. The switches can be used to switch pumps or provide remote indication of any stroke position. A cable gland M20x1.5 is delivered with the unit.

Part number: 43191680 – 005.

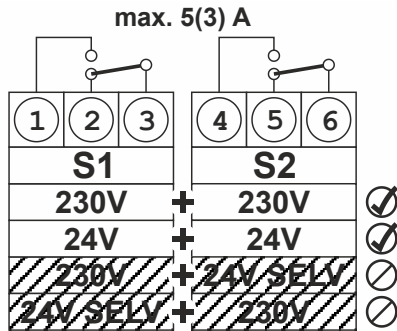


Fig. 4. Auxiliary switches

### Auxiliary Potentiometers

Auxiliary potentiometers 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.

Part number: 43191679 - 011 (10 kΩ)

Part number: 43191679 - 012 (220 Ω)

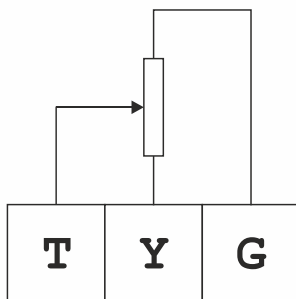


Fig. 5. Auxiliary potentiometer

### High-Temperature Kit

(for applications >150 °C and < 220 °C medium temperature)

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