AL1820-24-K, -230-K
AL1838-24-K, -230-K
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 Trend'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	II according to EN60730-1
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	M20 x 1.5 cable gland (with strain relief) and PG11 knockout; knockout can be enlarged to PG16
Material	
Cover	ABS
Yoke and base	Aluminum diecast
Weight	2.0 kg
Dimensions	See Fig. 1 and Fig. 2

Model Number	AL1820-24-K	AL1838-24-K	AL1820-230-K	AL1838-230-K
Supply Voltage	24 Vac (±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.

An M20 x 1.5 cable gland (with strain relief) is delivered with the unit.

accessory-type	for stroke	order no.
auxiliary switches maximum ratings: 230 Vac , 5 A (resistive load), 3 A (inductive load); package contains two SPDT switches	20 mm 38 mm	ACCA-AL18-SW

CLOSE-OFF PRESSURE RATINGS

Stroke		20 mm								38 mm		
Valve	mm	15	20	25	32	40	50	65	80	100	125	150
Size	inch	1/2	3/4	1	1 ¼	1 ½	2	2 ½	3	4	5	6
Valves		Close-Off Pressure Ratings (in kPa)										
V162N, V162X				1600	1600	1500	850					
V163N, V163X				1600	1600	1500	850					
V162F (20 mm)		1600	1600	1600	1600	1300	750	470	230			
V163F (20 mm)					1000	1000	1000	650	400			
V162F (38 mm)										230	90	90
V163F (38 mm)										230	90	90

= Use 600 N actuator

For details on the valves, see the following Data Sheets.:

V162N	TA200890
V163N	TA200891
V162F	TA200892
V163F(20 mm)	TA200893
V163F (38 mm)	TA200895
V162X, V163X	TA200897

DIMENSIONS

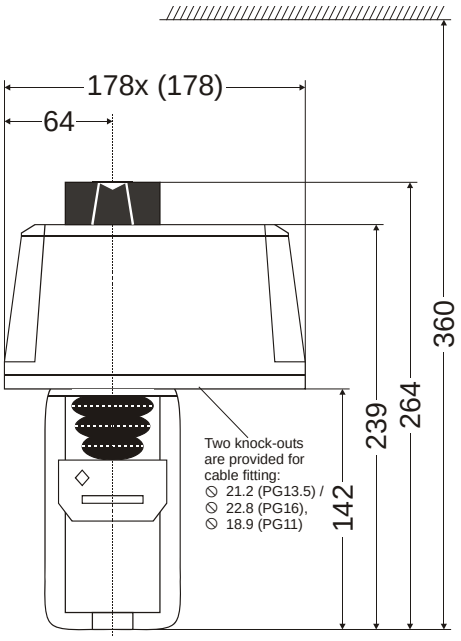


Fig. 1. AL1820 (dimensions in mm)

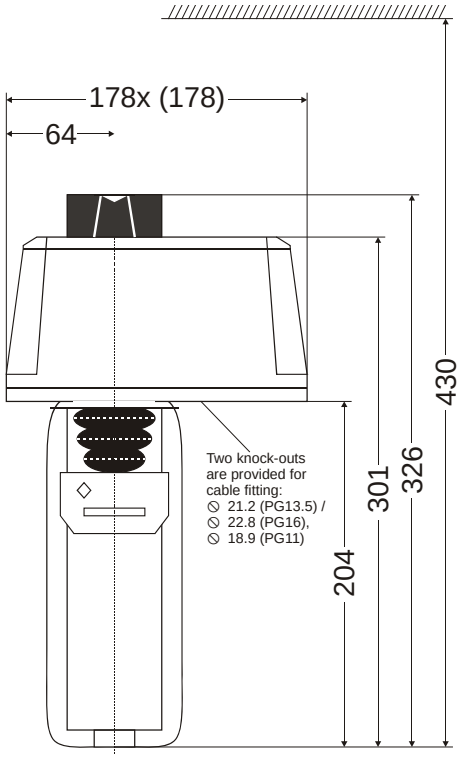
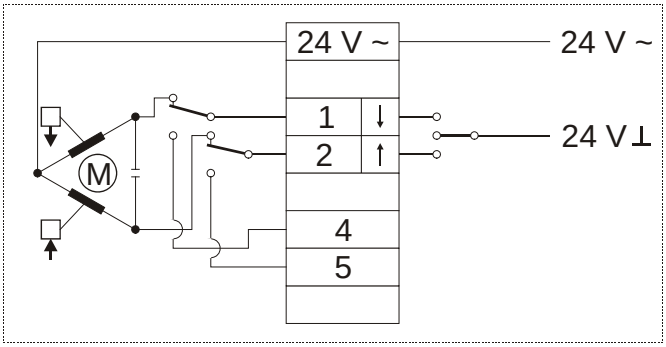
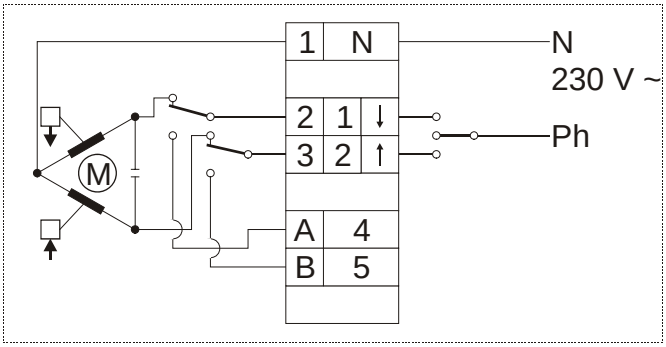


Fig. 2. AL1838 (dimensions in mm)

WIRING



24 Vac models



230 Vac models

Fig. 3. Wiring

auxiliary switches:

maximum rating
230 Vac
5 A (resistive load)
3 A (inductive load)

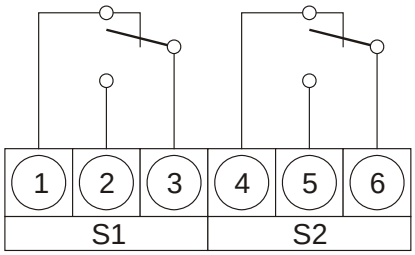


Fig. 4. Auxiliary switches

DISPOSAL

WEEE Directive:

At the end of their useful life the packaging and product should be disposed of by a suitable recycling centre.
Do not dispose of with normal household waste.
Do not burn.

Manufactured for and on behalf of the Environmental and Combustion Controls Division of Honeywell Technologies Sàrl, Ecublens, Route du Bois 37,Switzerland by its Authorized Representative.

Trend Control Systems Limited
P.O. Box 34 Horsham, West Sussex, RH12 2YF, UK. Tel: +44 (0)1403 211888, Fax: +44 (0)1403 241608, www.trend-controls.com