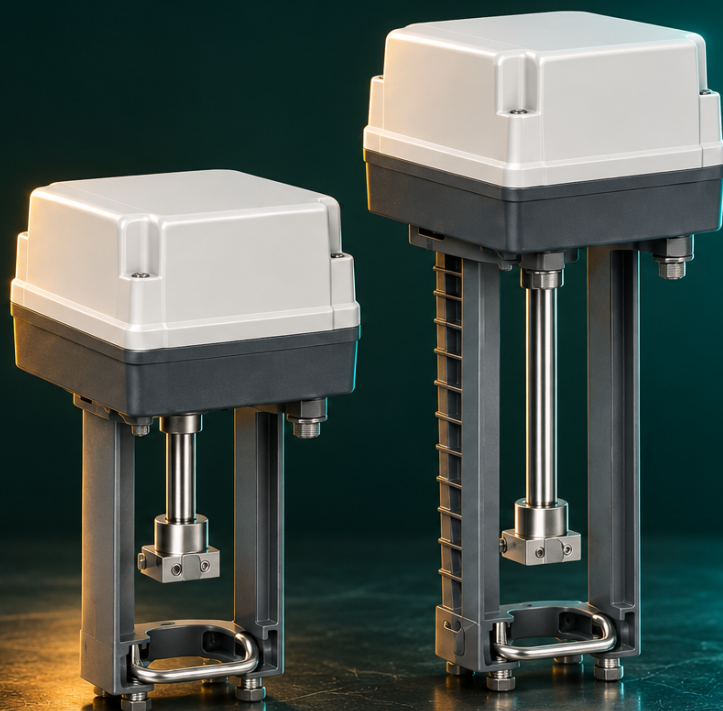


BRQ-ACT-104

Install. Connect. Configure. Commission.



1000 / 2000 N

FORCE OPTIONS

20 / 40 mm

NOMINAL STROKE

24 / 230 V

SUPPLY OPTIONS

3-position and modulating versions. With or without safety return. IP54 and IP67 enclosure options.

01 / DESIGN

Power. Travel. Control.

Electric linear actuators for regulating valves, with selectable supply, control mode and safety-return configuration. Two force and stroke options support application-specific selection.

Configurable control

Modulating or 3-position control.

Safety-return options

NR without return; FR with return on power loss.

Commissioning

Self-learning calibration for modulating versions.

02 / TECHNICAL PROFILE

Specification at a glance

Motor

Brushless DC (BLDC)

Running speed

2 or 6 s/mm

Operating temperature

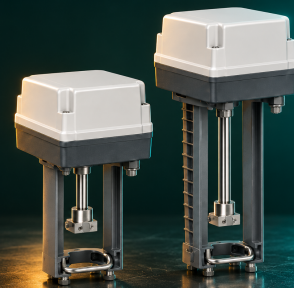
0 to +55°C

Supply tolerance

24 V / 230 V, ±10%

Enclosure

IP54 / IP67



Model identification

Select the control, supply, force and enclosure configuration

BRQ-ACT-104-M-24-10-FR-IP67

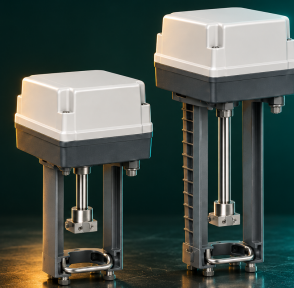
MODEL CODE EXAMPLE

Code	Meaning
BRQ-ACT-104	BARIQ actuator family
M / T	Modulating / 3-position control
24 / 230	Supply voltage option (V)
10	1000 N force / 20 mm nominal stroke
20	2000 N force / 40 mm nominal stroke
NR / FR	Without / with safety-return function
IP54 / IP67	Enclosure protection option

MATCH THE COMPLETE MODEL CODE

Use the complete model code to select the matching wiring and configuration. Mounting bracket options are specified separately.

FR versions return on power loss. Return direction is selected using the applicable settings.



Model selection

Eight base models · Four suffixes · 32 configurations

01 SELECT THE BASE MODEL

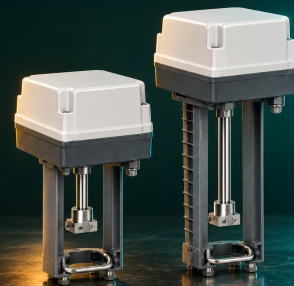
Base model	Control	Supply	Force / stroke
BRQ-ACT-104-M-24-10	Modulating	24 V	1000 N / 20 mm
BRQ-ACT-104-M-24-20	Modulating	24 V	2000 N / 40 mm
BRQ-ACT-104-M-230-10	Modulating	230 V	1000 N / 20 mm
BRQ-ACT-104-M-230-20	Modulating	230 V	2000 N / 40 mm
BRQ-ACT-104-T-24-10	3-position	24 V	1000 N / 20 mm
BRQ-ACT-104-T-24-20	3-position	24 V	2000 N / 40 mm
BRQ-ACT-104-T-230-10	3-position	230 V	1000 N / 20 mm
BRQ-ACT-104-T-230-20	3-position	230 V	2000 N / 40 mm

02 ADD THE VERSION SUFFIX

Suffix	Safety return	Protection
-NR-IP54	Without	IP54
-NR-IP67	Without	IP67
-FR-IP54	With	IP54
-FR-IP67	With	IP67

Example: BRQ-ACT-104-T-230-20-FR-IP67
3-position · 230 V · 2000 N / 40 mm · Safety return · IP67

Specify the mounting bracket separately to suit the valve interface.



Technical specifications

Electrical, mechanical and environmental performance

01 PERFORMANCE BY VERSION

Parameter	1000 N NR	1000 N FR	2000 N NR	2000 N FR
Nominal stroke	20 mm	20 mm	40 mm	40 mm
Maximum power	7 VA	24 VA	14 VA	24 VA
Weight	2.10 kg	2.15 kg	2.30 kg	2.35 kg

NR: without safety return. FR: with safety return.

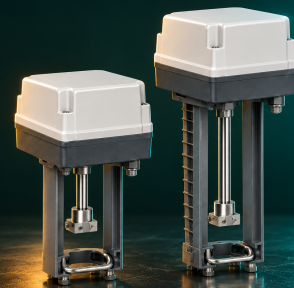
02 GENERAL SPECIFICATIONS

Parameter	Specification
Motor / running speed	Brushless DC (BLDC) / 2 or 6 s/mm
Supply / operating temperature	24 V / 230 V, $\pm 10\%$ / 0 to $+55^{\circ}\text{C}$
Storage / transport temperature	-15 to $+55^{\circ}\text{C}$ / -30 to $+60^{\circ}\text{C}$
Humidity / wiring	$<95\%$, non-condensing / maximum 1.5 mm^2
Enclosure / accessories	IP54 or IP67 / manual wrench and instructions

03 MODULATING SIGNALS

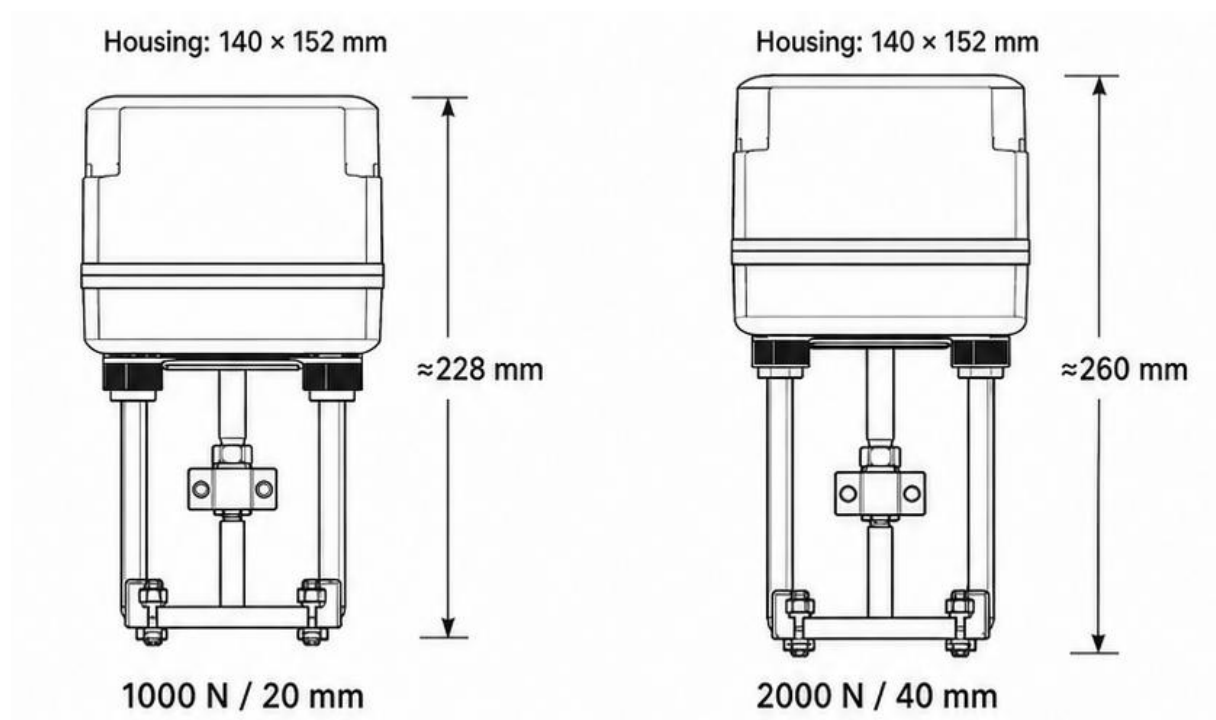
Signal	Range	Electrical requirement
Input	0-10 / 2-10 VDC	Input impedance $30\text{ k}\Omega$
Input	4-20 mA	Input impedance $250\ \Omega$
Feedback	0-10 / 2-10 VDC	Load impedance $\geq 10\text{ k}\Omega$
Feedback	4-20 mA	Load impedance $\leq 500\ \Omega$

3-position versions: active point feedback. Use the supply voltage stated on the actuator nameplate.

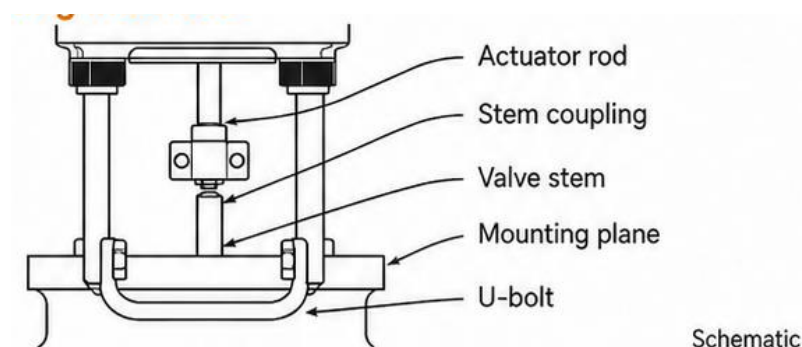


Dimensions & interface

Product envelope and mechanical connection



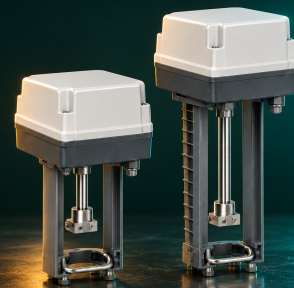
Version	Nominal stroke	Housing	Approx. height
1000 N	20 mm	140 × 152 mm	228 mm
2000 N	40 mm	140 × 152 mm	260 mm



Mounting interface
Select the bracket to suit the valve. Leave space to remove the protective cover and access the actuator.

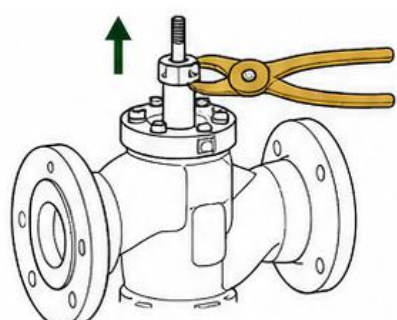
Dimensions in mm. Product outlines and connection arrangement are schematic.

For the complete datasheet and technical information, please visit bariigroup.com.



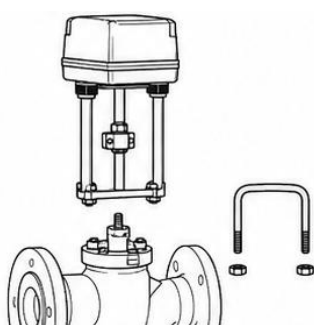
Mechanical installation

Prepare, align and secure the actuator



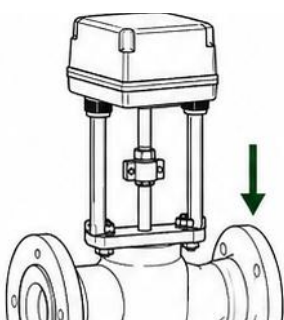
01 Prepare the valve stem

Carefully pull the valve stem to its top position using pliers or a wrench. Protect the stem surface from damage.



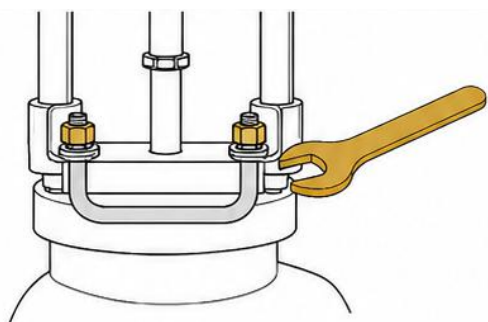
02 Prepare & align the actuator

Remove the U-bolt and loosen the stem clamp. Position the actuator rod and valve stem at the top of their travel.



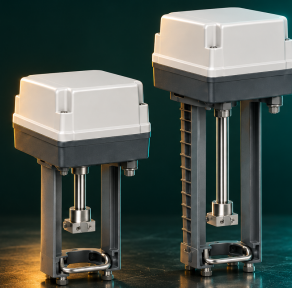
03 Seat the mounting bracket

Press down until the actuator base seats on the valve mounting plane. Align the support plane parallel to the valve axis.



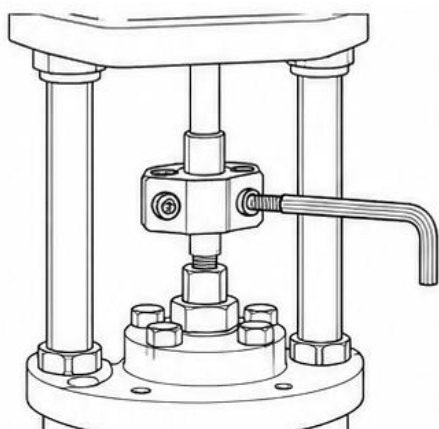
04 Secure the U-bolt

Insert the U-bolt through the mounting holes. Tighten the two M8 nuts using a 13 mm spanner. Maximum torque: 16 N·m, for the U-bolt nuts.



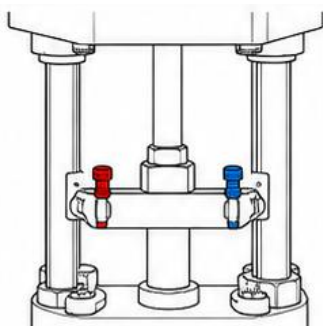
Stem connection & mounting

Connect the stems and set the position indicators



05 / CONNECT THE STEMS

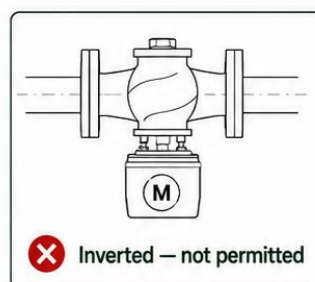
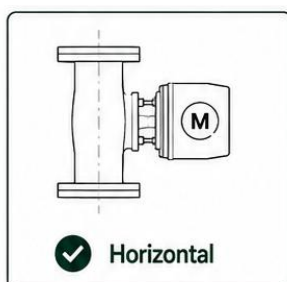
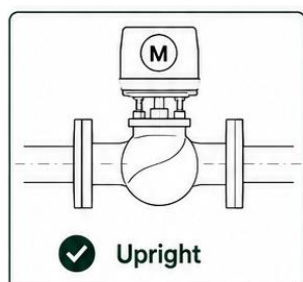
Centre the stem clamp over the valve stem connection. Align the raised section inside the clamp with the groove in the actuator rod. Tighten both clamp screws using a 5 mm hex key.



06 / SET THE INDICATORS

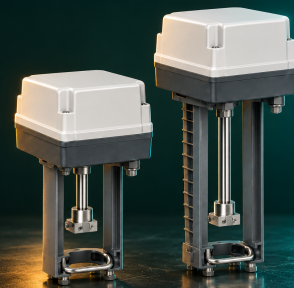
After assembly, secure the red and blue pointer rings on the actuator bracket at the pointer position.

07 PERMITTED MOUNTING POSITIONS



Install upright or up to 90° to either side. Do not install the actuator upside down.

Install upright or up to 90° to either side; never upside down. For outdoor use, provide a ventilated protective cover. Prevent water ingress and internal frost. Refit the cover before operation.



3-position connections

BRQ-ACT-104-T versions

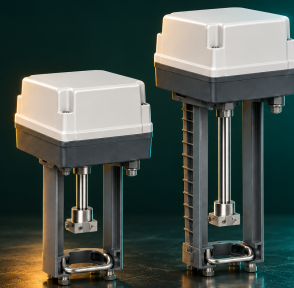
Isolate power before opening the cover. Match supply voltage to the actuator nameplate. Remove the four screws, lift off the upper cover and connect at the terminal block.

SP	1	2	3	14	15
----	---	---	---	----	----

Terminal	Function
1	Supply common (SN / 0 V)
2	DOWN command
3	UP command
SP	Separate supply connection in 4-wire arrangements
14 / 15	Relay outputs (2 A RL, as marked)

Arrangement	Connection
NR · 3-wire	Terminal 1 to common. Controller switches supply to 2 (DOWN) or 3 (UP). SP is not connected.
NR · 4-wire	Terminal 1 to common. Separate supply to SP; controller commands terminals 2 and 3.
FR · 4-wire	Terminal 1 to common. Supply to SP through the ST contact; controller commands terminals 2 and 3.

S1 DIP	Selection
1	FAST: 2 s/mm / SLOW: 6 s/mm
2 · FR only	SD: stem extends down / SU: stem retracts up



24 V modulating connections

BRQ-ACT-104-M-24 versions · DIP 6 = OFF

24 VAC/DC $\pm 10\%$ only. Isolate the supply before wiring.

B	O	O	E	Y
Supply	Common	Signal common	Input	Feedback

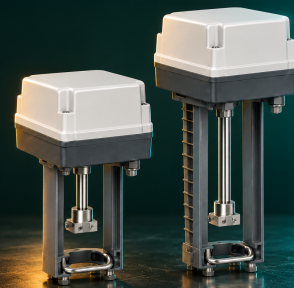
Terminal	Connection
B	24 V supply (AC ~ / DC +)
O - first	Supply common (AC ~ / DC -)
O - second	Signal common (-)
E	Positioning input (+)
Y	Position feedback (+)

Input → E: 0-10 V or 2-10 V: 30 k Ω ; 4-20 mA: 250 Ω .

Feedback → Y: 0-10 V or 2-10 V: load ≥ 10 k Ω ; 4-20 mA: load ≤ 500 Ω .

Switch	OFF	ON
DIP 1 · Feedback	Voltage	4-20 mA
DIP 2 · Input	Voltage	4-20 mA
DIP 7 · Voltage range	0-10 V	2-10 V

DIP 7 does not change the current-signal range. The connections apply to both NR and FR versions. Maximum conductor cross-section: 1.5 mm². Refit the protective cover before operation.



230 V modulating connections

BRQ-ACT-104-M-230 versions · DIP 6 = OFF

Confirm supply voltage on the actuator nameplate. Isolate the supply before wiring.

L	N	O	E	Y
AC line	AC neutral	Signal common	Input	Feedback

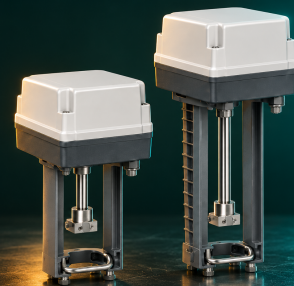
Terminal	Connection
L	AC supply line
N	AC supply neutral
O	Signal common (-)
E	Positioning input (+)
Y	Position feedback (+)

Input → E: 0-10 V or 2-10 V: 30 kΩ; 4-20 mA: 250 Ω.

Feedback → Y: 0-10 V or 2-10 V: load ≥10 kΩ; 4-20 mA: load ≤500 Ω.

Switch	OFF	ON
DIP 1 · Feedback	Voltage	4-20 mA
DIP 2 · Input	Voltage	4-20 mA
DIP 7 · Voltage range	0-10 V	2-10 V

DIP 7 does not change the current-signal range. The connections apply to both NR and FR versions. Maximum conductor cross-section: 1.5 mm². Refit the protective cover before operation.



DIP switch settings

Eight-switch controller · Modulating versions

DIP	Function	OFF	ON
1	Feedback type	Voltage	4-20 mA
2	Input type	Voltage	4-20 mA
3	Increasing input	Rod moves UP	Rod moves DOWN
4	Return direction	DOWN / lower limit	UP / upper limit
5	Signal loss	Move to limit set by DIP 4	Hold current position
6	Control mode	Modulating	3-position
7	Voltage range	0-10 V	2-10 V
8	Running speed	2 s/mm · FAST	6 s/mm · SLOW

01 SIGNAL TYPE · DIP 1, 2 & 7

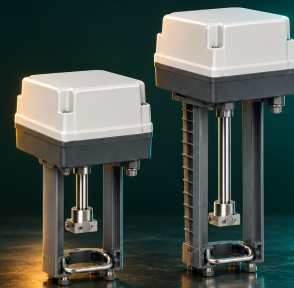
Voltage input and feedback use the range selected by DIP 7. DIP 7 has no effect on 4-20 mA signals.

02 SIGNAL LOSS · DIP 4 & 5

DIP 5 OFF: DIP 4 selects the travel limit. DIP 5 ON: hold position regardless of DIP 4. Standard response applies to 2-10 V and 4-20 mA; 0-10 V requires the custom option.

03 POWER-LOSS RETURN · FR ONLY

DIP 4 OFF returns down to the lower limit; ON returns up to the upper limit. Rod direction is relative to the actuator; match it to the valve assembly.



Signal configuration

Modulating control · DIP 6 = OFF

01 MATCHING INPUT & FEEDBACK

Input	Feedback	DIP 1	DIP 2	DIP 7
0-10 V	0-10 V	OFF	OFF	OFF
2-10 V	2-10 V	OFF	OFF	ON
4-20 mA	4-20 mA	ON	ON	-

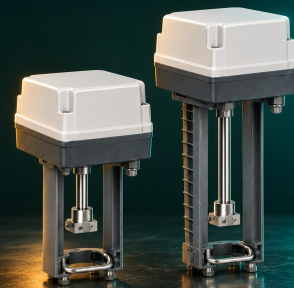
02 MIXED INPUT & FEEDBACK

Input	Feedback	DIP 1	DIP 2	DIP 7
4-20 mA	0-10 V	OFF	ON	OFF
4-20 mA	2-10 V	OFF	ON	ON
0-10 V	4-20 mA	ON	OFF	OFF
2-10 V	4-20 mA	ON	OFF	ON

“-” means no effect when both signals are 4-20 mA. DIP 1 sets feedback type; DIP 2 sets input type. OFF selects voltage; ON selects 4-20 mA. DIP 7 selects 0-10 V (OFF) or 2-10 V (ON).

COMPLETE THE APPLICATION SETTINGS

Set DIP 3 for rod direction, DIP 4 and 5 for return or signal-loss response, and DIP 8 for speed. These tables specify signal settings only.



Signal loss & safety return

Separate control-signal response from power-loss return

01 CONTROL SIGNAL LOST

DIP 5	DIP 4	Rod response
OFF	OFF	Moves DOWN to lower limit
OFF	ON	Moves UP to upper limit
ON	Either	Holds current position

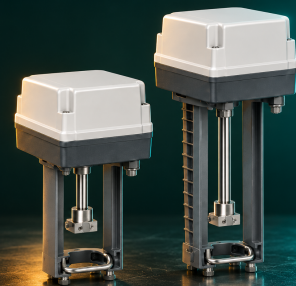
SIGNAL-LOSS RANGE

Standard response: 2-10 V and 4-20 mA. The 0-10 V response requires the custom option.

02 POWER SUPPLY LOST · FR VERSIONS ONLY

DIP 4	Return on power loss
OFF	DOWN to lower limit
ON	UP to upper limit

UP and DOWN describe actuator rod movement. Confirm the resulting valve position for the installed assembly. FR = safety return; NR = no safety return.



Commissioning & calibration

Modulating controller · Self-learning sequence

Complete the actuator-to-valve assembly. Confirm supply voltage against the nameplate and connect the wiring for the supplied version.

01 START SELF-LEARNING

Press and hold the SET button on the controller for more than 5 seconds.

02 CALIBRATION IN PROGRESS

The indicator starts flashing when self-learning begins.

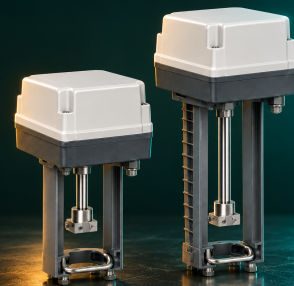
03 CALIBRATION COMPLETE

Self-learning is complete when the indicator goes out.

TYPICAL SELF-LEARNING DURATION

120-180 seconds

After assembly, the modulating actuator requires self-learning before normal use. Only qualified personnel may access the controller. Isolate supply before wiring or servicing; refit the protective cover before normal operation.



Manual operation & service

Operation, maintenance intervals and lubrication

Switch off the power supply before repair. Only qualified personnel may open the protective cover.

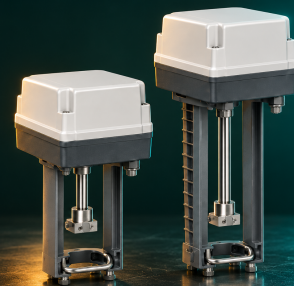
01 MANUAL OPERATION

Where a handwheel mechanism is fitted, use it to operate the valve when opening or closing is required. If no handwheel is fitted, operate the actuator electrically.

02 MAINTENANCE SCHEDULE

Interval	Action
After commissioning	Inspect for paint damage. Repair the coating where necessary to prevent corrosion.
Every 3 months	Check lubrication of gears and transmission parts. If dry, replenish with the specified solid grease.
Every 6 months · infrequent use	Check actuator performance when the equipment is operated only rarely.
After one year	Check and retighten the mechanical connection to the valve body if necessary. Inspect gear and transmission lubrication.

Use only the specified grease. Do not add unspecified grease or oil; unsuitable lubricants can cause sintering or accelerated wear. For overhaul after several years, contact BARIQ for a maintenance plan suited to the operating condition.



Transport, storage & safety

Protect the actuator throughout handling and service

Condition	Limit
Operation	0 to +55°C
Storage	-15 to +55°C
Transport	-30 to +60°C
Relative humidity	<95%, non-condensing

01 PROTECT DURING TRANSPORT

Pack suitably for transport to the installation site. Do not place equipment or other loads on the actuator.

02 STORE DRY & VENTILATED

Protect against moisture and dust. Keep the actuator in a dry, well-ventilated location.

03 PROTECT EXPOSED METAL

Apply anti-corrosion protection to bright metal surfaces.

04 INSTALLATION SAFETY

Confirm supply voltage against the nameplate. Do not operate with the protective cover removed. For outdoor use, provide a ventilated protective cover with heat dissipation. Prevent water ingress and internal frost.