

## BRQ-ACT-13-01

Precision control. Quiet performance.



**24 V AC/DC**

POWER SUPPLY

**0-10 VDC**

CONTROL INPUT

**IP54**

ALL INSTALLATION POSITIONS

Indoor heating and cooling applications. Maximum stroke 8.5 mm. Noise level <30 dB(A).

### 01 / DESIGN

## Compact. Quiet. Responsive.

A proportional valve actuator with electronic failsafe, automatic valve travel recognition and position feedback. Internal stored energy drives the valve to a preset parking position after supply loss.

#### Position feedback

Separate output for valve position and errors.

#### Local indication

LC display and multicolour LED status.

#### Simple installation

Plug-in cable and valve-specific adapter.

### 02 / TECHNICAL PROFILE

## Specification at a glance

Force configurations

**125 N / 200 N**

Running time

**15 s/mm standard; 30 s/mm option**

Operating power

**2.6 VA / 1.4 W**

Ambient temperature

**0 to +50°C**

Size / weight

**65 × 45 × 90 mm (H × W × D); 155 g including 1 m cable**



# Technical specifications

Electrical performance, motion and operating environment

## 01 ELECTRICAL & CONTROL

| Parameter                  | Specification                                                               |
|----------------------------|-----------------------------------------------------------------------------|
| Supply                     | 24 VAC, -10% / +20%, 50-60 Hz; 24 VDC, -20% / +20%                          |
| Operating / charging power | 2.6 VA / 1.4 W; charging: 3.1 VA / 1.7 W (temporary)                        |
| Maximum / standby current  | <160 mA / <10 mA                                                            |
| Control input              | 0-10 VDC; active range 0.5-10 VDC; 100 kΩ input resistance; PWM 100-1000 Hz |
| Position feedback          | 1-9 V position; error indication <0.5 V or >9.5 V                           |
| Feedback electrical data   | Output range 0-10 V; 1 mA; load 10-1000 kΩ; resolution 0.1 V                |

## 02 MOTION & FAILSAFE

| Parameter                 | Specification                                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Stroke / recognition      | Maximum 8.5 mm; preconfigured stroke 2-8.5 mm; automatic travel recognition                                                 |
| Force / speed             | 125 N or 200 N; tolerance -20% / +40%; 15 s/mm standard, 30 s/mm option                                                     |
| Failsafe / energy storage | Supply loss $\geq 2$ s; parking position preset in 10% steps; at least 4 power failures/day; full recharge from empty: 16 h |

## 03 ENVIRONMENT & CONSTRUCTION

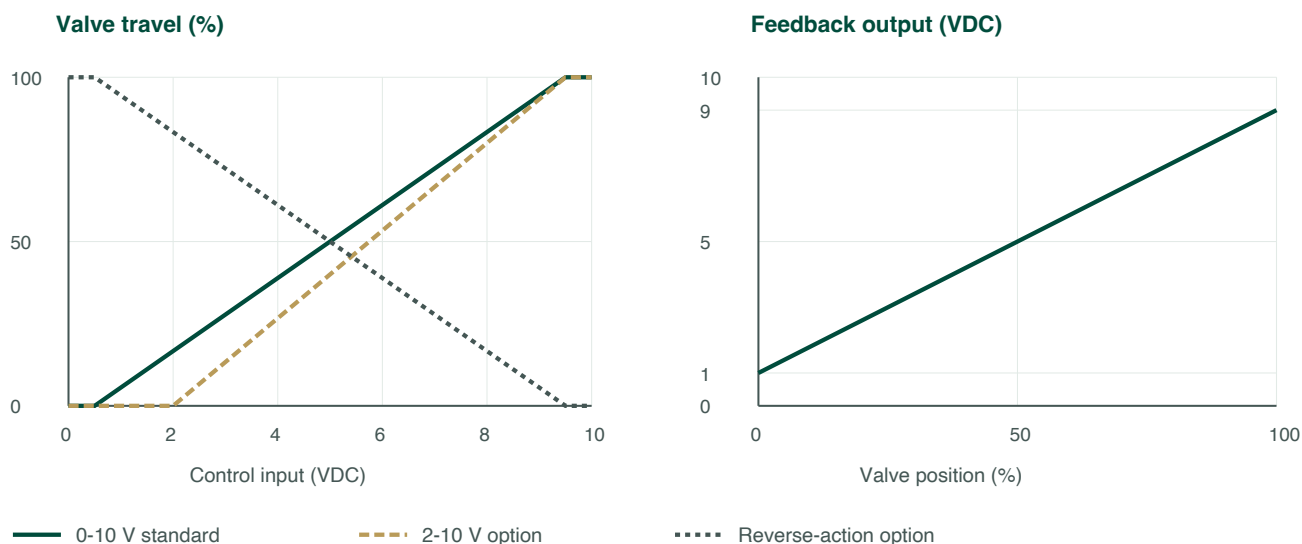
| Parameter              | Specification                                                                                                           |
|------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Temperatures           | Ambient 0 to +50°C; fluid 0 to +100°C; storage -20 to +70°C                                                             |
| Protection / materials | IP54 in all positions / Class III; polyamide housing, RAL 9003; transparent polycarbonate cover                         |
| Display / cable        | LCD 10 × 20 mm (H × W), optional blue backlight; multicolour LED; plug-in white PVC cable 1 m, 4 × 0.22 mm <sup>2</sup> |



## Control & failsafe

Proportional positioning, diagnostics and power-loss response

A 0-10 VDC command positions the valve using its detected travel. A separate feedback output reports valve position and operating errors.



Control curves apply with the correct valve adapter. PWM: 100-1000 Hz. Signal variants are selected before supply.

| Feedback signal | Interpretation                               |
|-----------------|----------------------------------------------|
| <0.5 V          | No function or no contact                    |
| 1-9 V           | Proportional position: 1 V closed / 9 V open |
| >9.5 V          | Internal error                               |

### 02 ELECTRONIC FAILSAFE SEQUENCE

Supply loss for at least 2 seconds → stored energy moves the valve to its preset parking position → the position is held until power returns and initialization restarts.

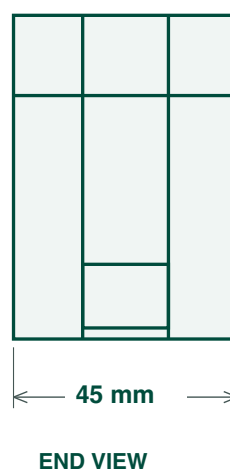
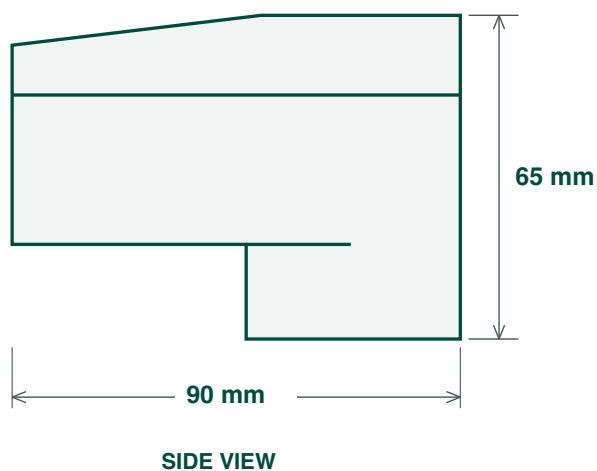
Parking position: 10% increments. At least four power failures per day; 16 hours for full recharge from empty.



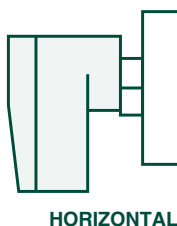
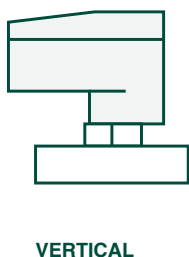
## Dimensions & installation

Compact envelope and valve-adapter mounting

### 01 OVERALL DIMENSIONS



### 02 PERMITTED ORIENTATIONS



IP54 is maintained in vertical, horizontal and overhead positions. Use the valve adapter matched to the valve connection.

### 03 ADAPTER MOUNTING

1. Screw the selected adapter onto the valve by hand. 2. Align and press the actuator onto the adapter until it clicks. 3. Connect the cable and initialize on the valve.

Mount only with the valve pressure plate fully retracted. If extended, retract it manually or electrically first.



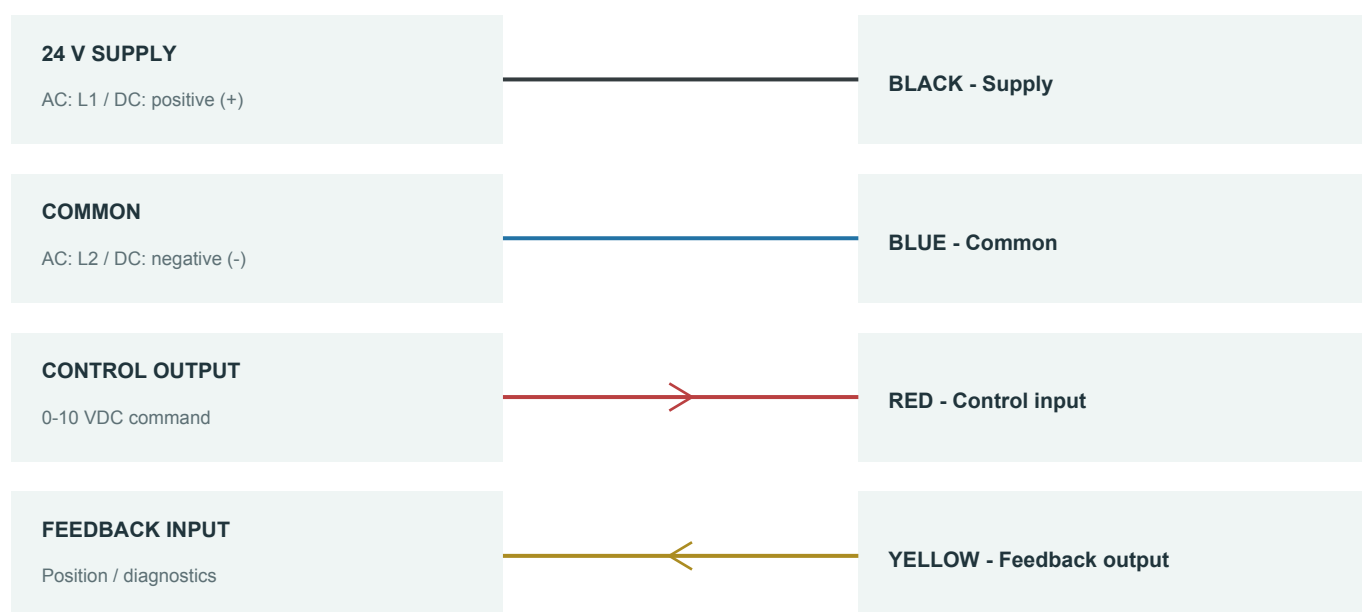
## Electrical connection

24 V AC/DC · Four-wire control and position feedback

### 01 CONNECTION DIAGRAM

#### CONTROLLER / SUPPLY

#### BRQ-ACT-13-01



Control and feedback share the blue common conductor. Control input: 100 kΩ. Feedback: 1-9 V position; <0.5 V no function/contact; >9.5 V internal error. Lead: 1 m PVC, 4 × 0.22 mm<sup>2</sup>.

### 02 MAXIMUM CABLE LENGTHS

| Cable              | Conductor            | Maximum length |
|--------------------|----------------------|----------------|
| Standard DDC cable | 0.22 mm <sup>2</sup> | 20 m           |
| J-Y(ST)Y           | 0.8 mm diameter      | 45 m           |
| NYM / NYIF         | 1.5 mm <sup>2</sup>  | 136 m          |

Use a safety isolating transformer to EN 61558-2-6 or switching supply to EN 61558-2-16. Size for the maximum starting demand of connected actuators.



# Display & manual adjustment

Operating indication and local valve positioning

## 01 LOCAL DISPLAY

The LCD alternates between setting position and applied control voltage. A direction arrow indicates movement; operating errors are shown as an error code.

## 02 LED STATUS INDICATION

| Indicator | State          | Meaning                               |
|-----------|----------------|---------------------------------------|
| LED 1     | Flashing green | Initialization                        |
| LED 1     | Red            | Error                                 |
| LED 2     | Flashing green | Failsafe movement to parking position |
| LED 2     | Green          | Device ready                          |
| LED 2     | Orange         | Ready; energy store charging          |
| LED 2     | Red            | Error                                 |

## 03 MANUAL VALVE POSITIONING

### 01 ISOLATE & WAIT

Disconnect the cable or switch off supply. Wait for failsafe movement to end and LED 2 to go out.

### 02 ACCESS & ADJUST

Remove the protective plug. Insert a 0.3 × 2 mm slotted screwdriver. Clockwise retracts the plate; counterclockwise extends it. At the stop, turn back 1/4 turn.

### 03 RESTORE OPERATION

Remove the screwdriver, refit the plug and reconnect power. Removing the locking button provides anti-removal protection.



## Initialization & selection

Automatic travel recognition and application configuration

At power-up, the actuator identifies the valve closing point and actual travel. During initialization, the LCD alternates between “In” and the applied control voltage.

### 01 FIND UPPER STOP

The pressure plate retracts fully to identify the upper actuator end stop.

### 02 FIND CLOSING POINT

The plate extends to identify the lower end stop and valve closing point.

### 03 DETECT VALVE TRAVEL

The plate retracts quickly, then extends slowly to measure the valve travel.

Initialization takes up to 15 minutes. If travel is not detected, the configured stroke is used; the standard configured value is 8.5 mm.

| Configuration        | Selection                                                         |
|----------------------|-------------------------------------------------------------------|
| Force                | 125 N or 200 N; tolerance -20% / +40%                             |
| Stroke / time        | Maximum 8.5 mm; preset 2-8.5 mm; 15 s/mm standard, 30 s/mm option |
| Command              | 0-10 VDC standard; 2-10 V or reverse-action options               |
| Failsafe / interface | Parking position in 10% steps; valve-specific adapter             |

After valve adjustment or transfer to another valve, briefly interrupt both supply and control voltage. Restoring supply starts a new initialization cycle.