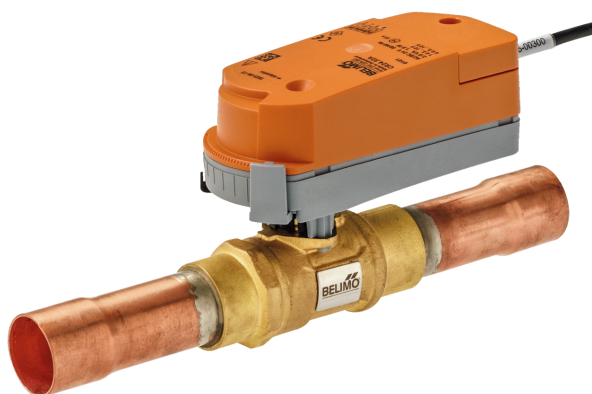


# Characterised control valve

- Suitable for safety class A3 refrigerants (ISO 817)
- Suitable for CFC, HFC, HFO and R290 refrigerants
- For refrigerant flow control



Picture may differ from product

## Type Overview

| Type         | Kvs<br>[m³/h] | ODF      | PN |
|--------------|---------------|----------|----|
| X8016M.11323 | 1.2           | 16-16 mm | 50 |
| X8016M.21323 | 4.8           | 16-16 mm | 50 |
| X8022M.32323 | 8             | 22-22 mm | 50 |
| X8028M.1A323 | 1.2           | 28-28 mm | 50 |
| X8028M.2A323 | 4.8           | 28-28 mm | 50 |
| X8035M.2A323 | 4.8           | 35-35 mm | 50 |
| X8042M.3B323 | 8             | 42-42 mm | 50 |

## Technical data

|                        |                                    |                                                    |
|------------------------|------------------------------------|----------------------------------------------------|
| <b>Electrical data</b> | Nominal voltage                    | AC/DC 24 V                                         |
|                        | Nominal voltage frequency          | 50/60 Hz                                           |
|                        | Nominal voltage range              | AC 19.2...28.8 V / DC 21.6...28.8 V                |
|                        | Power consumption in operation     | 0.3 W                                              |
|                        | Power consumption in rest position | 0.3 W                                              |
|                        | Power consumption for wire sizing  | 0.6 VA                                             |
|                        | Connection supply / control        | Cable 3 m, 4x 0.34 mm²                             |
|                        | Parallel operation                 | Yes (note the performance data)                    |
| <b>Functional data</b> | Operating range Y                  | 0.5...10 V                                         |
|                        | Input impedance                    | 100 kΩ                                             |
|                        | Position feedback U                | 0.5...10 V                                         |
|                        | Running time motor                 | 15 s / 90°                                         |
|                        | Sound power level motor            | 35 dB(A)                                           |
|                        | Fluid                              | HFC, HFO, R290                                     |
|                        | Fluid temperature                  | -20...70°C [-4...158°F]                            |
|                        | Fluid temperature note             | with ZCQ-E 70...120°C [158...248°F]                |
|                        | Differential pressure Δpmax        | 3500 kPa                                           |
|                        | Flow characteristic                | equal percentage (VDI/VDE 2173)                    |
|                        | Flow setting                       | See installation instruction                       |
|                        | Leakage rate                       | air-bubble tight, leakage rate A (EN 12266-1)      |
|                        | Angle of rotation note             | Adjustable<br>Operating range 15...90°             |
|                        | Pipe connection                    | Internal soldering sleeve ODF                      |
|                        | Installation orientation           | upright to horizontal (in relation to the spindle) |
| <b>Safety data</b>     | Servicing                          | maintenance-free                                   |
|                        | Manual override                    | with actuator (clicked out)                        |
|                        | Protection class IEC/EN            | III, Safety Extra-Low Voltage (SELV)               |

**Technical data**

|                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Safety data</b> | Degree of protection IEC/EN            | IP40                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                    | EMC                                    | CE according to 2014/30/EU                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                    | Certification IEC/EN                   | IEC/EN 60730-1 and IEC/EN 60730-2-14                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                    | Type of action                         | Type 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                    | Rated impulse voltage supply / control | 0.8 kV                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                    | Pollution degree                       | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                    | Compatible refrigerants                | R1234ze, R134a, R404A, R407C, R407H, R410A, R417A, R427A, R448A, R449A, R450A, R507A, R452A, R513A, R1234yf, R32, R452B, R454A, R454B, R454C, R455A, R290                                                                                                                                                                                                                                                                                                             |
|                    | Flammable refrigerants                 | The product is not to be considered a source of ignition when used together with A2L and A3 classified refrigerants and is compliant with clauses 22.116 and 22.117 from IEC 60335-2-40. Compliance with clause 22.117 has been checked by measuring the appropriate surface temperatures during the tests of IEC 60335-2-40, clauses 11 and clauses 19. The maximum surface temperature of the devices and components did not exceed the temperature limit of 370°C. |
|                    | Ambient humidity                       | Max. 95% RH, non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                    | Ambient temperature                    | -30...60°C [-22...140°F]                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                    | Ambient temperature note               | Without radiation                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                    | Storage temperature                    | -40...80°C [-40...176°F]                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Materials</b>   | Valve body                             | Brass CW617N                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                    | Closing element                        | Stainless steel AISI 316L                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                    | Spindle                                | Stainless steel AISI 316L or chrome-plated brass                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                    | Spindle seal                           | HNBR O-ring                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**Safety notes**


- This device has been designed for use in refrigeration application, stationary heating, ventilation and air conditioning systems and must not be used outside the specified field of application, especially in aircraft, any other airborne means of transport or explosive atmosphere.
- Outdoor application: Only possible if no (sea) water, snow, ice, sunlight or aggressive gases act directly on the device and if it is ensured that the ambient conditions remain within the limit values specified in the data sheet at all times.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- Cables must not be removed from the device.
- The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- The valve has been designed for use in stationary electrical heat pumps, air-conditioning systems and dehumidifiers and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- The suitability of these products for applications in which flammable refrigerants are used must be checked by the user for each individual application. Any application is the sole responsibility of the user.
- The valve does not contain any parts that can be replaced or repaired by the user.
- The valve may not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

**Product features**

**Operating mode** The ball valve is adjusted by a rotary actuator.  
The ball valve is opened in a counterclockwise direction and closed in a clockwise direction.

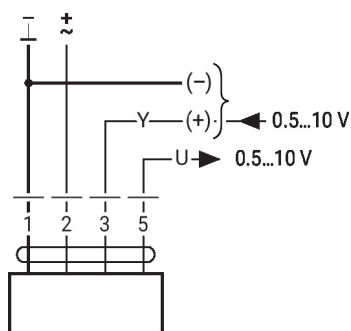
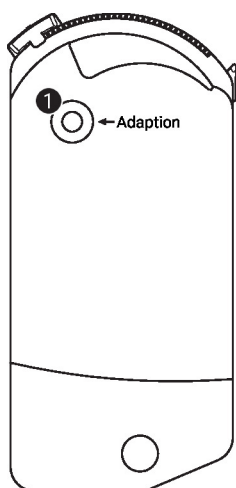
**Electrical installation**


**Supply from isolating transformer.**  
**Parallel connection of other actuators possible. Observe the performance data.**

**Wire colours:**

1 = black  
2 = red  
3 = white  
5 = orange

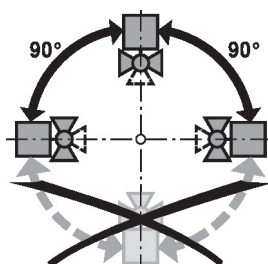
AC/DC 24 V, modulating


**Operating controls and indicators**

**1 Push-button**

Press button: Triggers angle of rotation adaptation, followed by standard mode

**Installation notes**

**Permissible installation orientation** The ball valve can be installed upright to horizontal. The ball valve may not be installed in a hanging position, i.e. with the spindle pointing downwards.

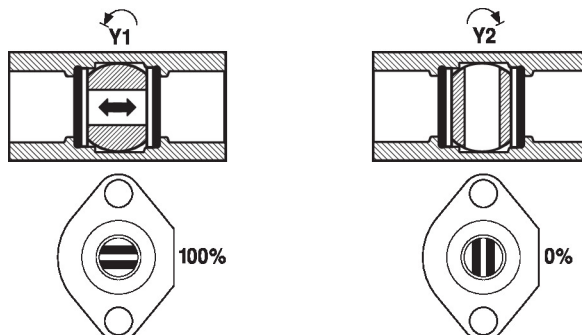


**Installation notes**

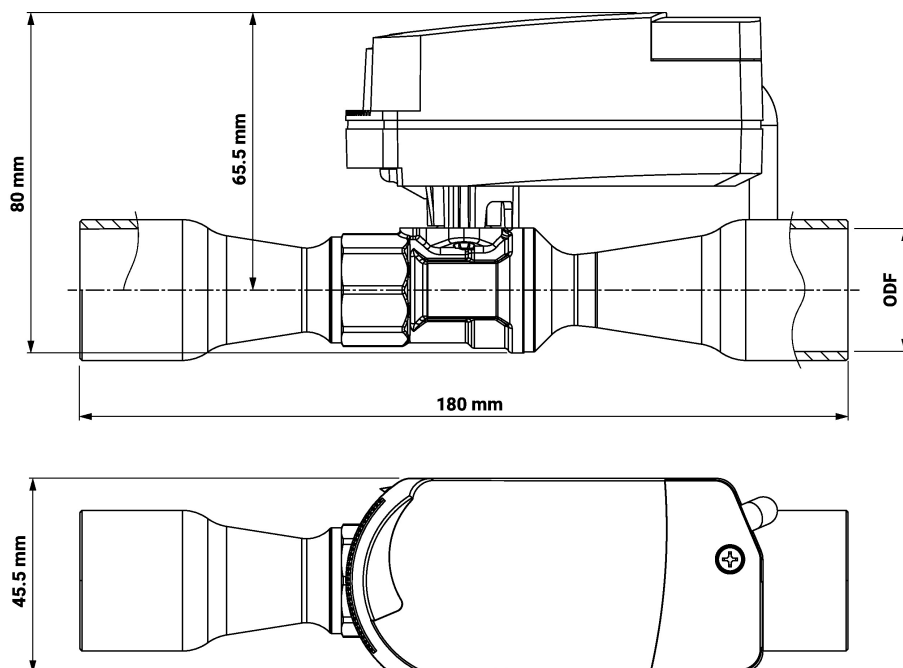
**Servicing** Ball valves and rotary actuators are maintenance-free.

Before any service work on the control element is carried out, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable if necessary). The operating conditions of the refrigerant circuit and its components must be observed.

**Flow direction** Direction of flow in both directions possible.


**General notes**

**Valve selection** The Bereva sizing software is going to be updated with these valve models. In the meantime, the Bereva support team is available to help size them.

**Dimensions**


| Type         | L<br>[mm] | ODF      | Weight  |
|--------------|-----------|----------|---------|
| X8016M.11323 | 180       | 16-16 mm | 0.45 kg |
| X8016M.21323 | 180       | 16-16 mm | 0.47 kg |
| X8022M.32323 | 190       | 22-22 mm | 0.56 kg |
| X8028M.1A323 | 180       | 28-28 mm | 0.65 kg |
| X8028M.2A323 | 180       | 28-28 mm | 0.67 kg |
| X8035M.2A323 | 180       | 35-35 mm | 0.76 kg |
| X8042M.3B323 | 190       | 42-42 mm | 0.85 kg |