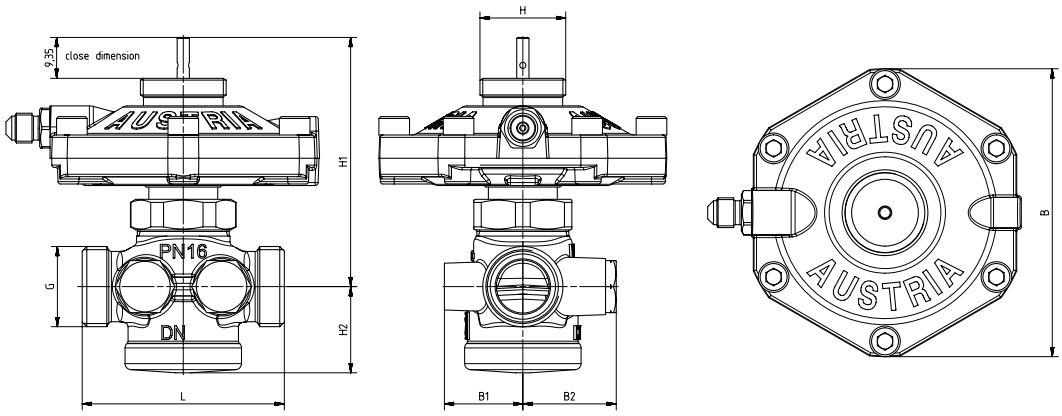
# HERZ Differential pressure controller with fixed pressure regulation range and connection thread for drives

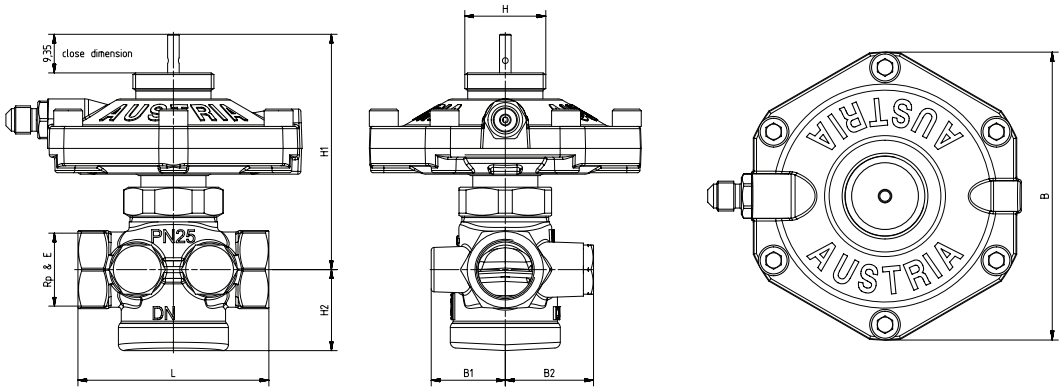
Data sheet 1 **4X02** XX (FIX TS, Issue 0122)

## Dimensions in mm

1 4002 XX




1 4202 XX




| FIX TS [kPa] | DN | Item | Drive | Thread, in | | L, mm | H1, mm | H2, mm | B, mm | B1, mm | B2, mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 kPa | DN15 | 1 4002 81 | M28*1,5 | MT | 3/4 G | 66 | 81 | 28 | 94 | 26 | 31 |
| | DN20 | 1 4002 82 | M28*1,5 | | 1 G | 76 | 82 | 29 | 94 | 28 | 33 |
| | DN25 | 1 4002 83 | M28*1,5 | | 5/4 flat sealing | 76 | 82 | 29 | 94 | 28 | 33 |
| | DN32 | 1 4002 84 | M28*1,5 | | 1 1/2 flat sealing | 114 | 98 | 47 | 94 | 32 | 32 |
| | DN40 | 1 4002 85 | M28*1,5 | | 1 3/4 flat sealing | 132 | 108 | 58 | 94 | 41 | 41 |
| | DN50 | 1 4002 86 | M28*1,5 | | 2 3/8 flat sealing | 140 | 108 | 58 | 94 | 41 | 41 |
| 50 kPa | DN15 | 1 4002 91 | M28*1,5 | MT | 3/4 G | 66 | 81 | 28 | 94 | 26 | 31 |
| | DN20 | 1 4002 92 | M28*1,5 | | 1 G | 76 | 82 | 29 | 94 | 28 | 33 |
| | DN25 | 1 4002 93 | M28*1,5 | | 5/4 flat sealing | 76 | 82 | 29 | 94 | 28 | 33 |
| | DN32 | 1 4002 94 | M28*1,5 | | 1 1/2 flat sealing | 114 | 98 | 47 | 94 | 32 | 32 |
| | DN40 | 1 4002 95 | M28*1,5 | | 1 3/4 flat sealing | 132 | 108 | 58 | 94 | 41 | 41 |
| | DN50 | 1 4002 96 | M28*1,5 | | 2 3/8 flat sealing | 140 | 108 | 58 | 94 | 41 | 41 |

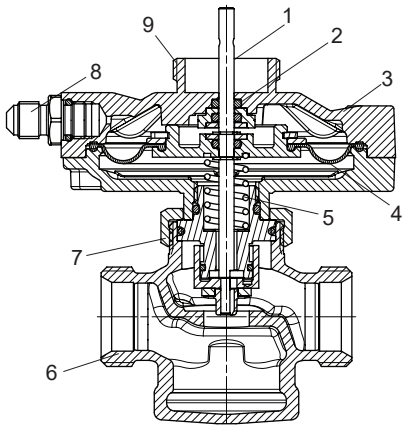
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 kPa | DN15 | 1 4002 11 | M28*1,5 | MT | 3/4 G | 66 | 81 | 28 | 94 | 26 | 31 |
| 23 kPa | DN15 | 1 4202 81 | M28*1,5 | FT | 1/2 | 66 | 59 | 28 | 94 | 26 | 31 |
| | DN20 | 1 4202 82 | M28*1,5 | | 3/4 | 76 | 60 | 29 | 94 | 28 | 33 |
| | DN25 | 1 4202 83 | M28*1,5 | | 1 | 90 | 60 | 29 | 94 | 28 | 33 |
| | DN32 | 1 4202 84 | M28*1,5 | | 5/4 | 114 | 76 | 46 | 94 | 32 | 32 |
| | DN40 | 1 4202 85 | M28*1,5 | | 1 1/2 | 132 | 86 | 57 | 94 | 41 | 41 |
| | DN50 | 1 4202 86 | M28*1,5 | | 2 | 140 | 86 | 57 | 94 | 41 | 41 |
| 50 kPa | DN15 | 1 4202 91 | M28*1,5 | FT | 1/2 | 66 | 59 | 28 | 94 | 26 | 31 |
| | DN20 | 1 4202 92 | M28*1,5 | | 3/4 | 76 | 60 | 29 | 94 | 28 | 33 |
| | DN25 | 1 4202 93 | M28*1,5 | | 1 | 90 | 60 | 29 | 94 | 28 | 33 |
| | DN32 | 1 4202 94 | M28*1,5 | | 5/4 | 114 | 76 | 46 | 94 | 32 | 32 |
| | DN40 | 1 4202 95 | M28*1,5 | | 1 1/2 | 132 | 86 | 57 | 94 | 41 | 41 |
| | DN50 | 1 4202 96 | M28*1,5 | | 2 | 140 | 86 | 57 | 94 | 41 | 41 |
| 13 kPa | DN15 | 1 4202 11 | M28*1,5 | FT | 1/2 | 66 | 59 | 28 | 94 | 26 | 31 |

## Technical data

| | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 |
|---|---|---|---|---|---|---|
| $k_{VS}$ value | 2,66 | 4,36 | 5,38 | 9,48 | 14,95 | 14,95 |
| Operating pressure | max. 16 bar (4002)<br>max. 25 bar (4202) | | | | | |
| Max. differential pressure on the body | 4 bar | | | | | |
| Min. operating temperature | 2 °C (pure water); - 20 °C (frost protection) | | | | | |
| Max. permissible operating temperature | up to DN32: 130 °C<br>DN40 - DN50: 110 °C | | | | | |
| Control set (see table above) | FIX 23 kPa<br>FIX 50 kPa<br>FIX 13 kPa | | | | | |
| Water quality | according to ÖNORM H 5195 and VDI 2035<br>The use of ethylene glycol and propylene glycol is permitted in a mixing ratio of 25 - 50% by volume. | | | | | |

## Werkstoffe

| N | Description | Material |
|---|---|---|
| 1 | Valve stem | Stainless steel 14301 |
| 2 | O-Ring | EPDM |
| 3 | Membrane body | Brass |
| 4 | Membrane | EPDM |
| 5 | Compression spring | Spring steel, rust and acid resistant |
| 6 | Body | DZR brass |
| 7 | Connection nut | Brass |
| 8 | Connection nipple | Brass |
| 9 | Connection thread for drive | Brass |

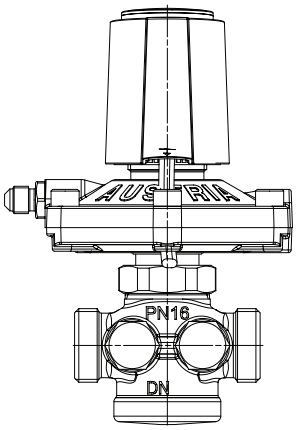


Ammonia contained in hemp damages brass valve housings, EPDM seals are swollen by mineral oils or lubricants containing mineral oil and thus lead to failure of the EPDM seals. For antifreeze and corrosion protection agents based on ethylene and propylene glycol, the relevant information can be found in the manufacturer‘s documentation.
Pursuant to Article 33 of the REACH Regulation (EC No. 1907/2006), we are obliged to point out that the material lead is listed on the SVHC list and that all brass components manufactured in our products exceed 0.1% (w/w) lead (CAS: 7439-92-1 / EINECS: 231-100-4). Since lead is a component part of an alloy, actual exposure is not expected and therefore no additional information on safe use is necessary.

## Field of application

The Differential pressure controller is a straight-version linear controller and works without auxiliary power. The fixed nominal differential pressure is 23 kPa or 50 kPa. A capillary (1000 mm) is included and should be connected to the regulating valve in the flow.

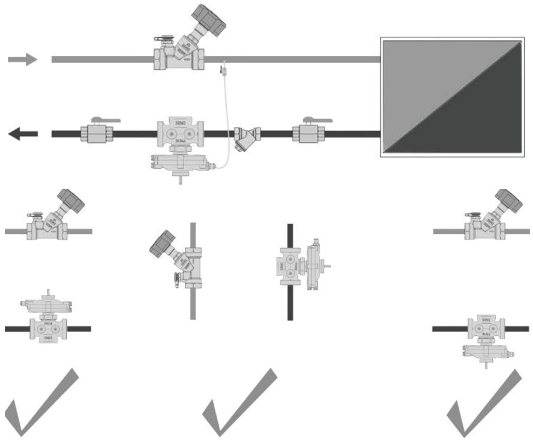
## Function description




Automatic HERZ differential pressure controller with integrated zone valve model 4002-FIX-TS and thermal drive.
In two-pipe heating systems, all radiators are equipped with presettable thermostat control valves and thermostat heads (except in the room with room temperature controller). A differential pressure controller with a fixed preset - e.g. 13 kPa - is installed for each apartment or zone with a maximum of 8 radiators. The zone valve integrated in the differential pressure controller is opened or closed as required using a two-point actuator and a programmable room temperature controller. It should be noted that a temperature difference of 2K is selected for the proportional band of the radiator thermostatic valves. In the living room in which the room temperature controller is positioned, the valves should be equipped with a HERZ handwheel (valves always fully open).
Since all differential pressure controllers of the 4002 and 4202 series have a pressure relieved upper part, these automatic zone valves can also be used in risers of systems with district heating and weather-compensated secondary systems. In these cases, however, the factory setting of 23 kPa should be selected. The actuating forces of the thermal drive of 100 N are sufficient in any case.

## Installation

The valve is fitted in the return in any position. The arrow on the valve body should align with the direction of flow. It is recommended that an isolation valve is fitted both upstream and downstream of the differential pressure controller.



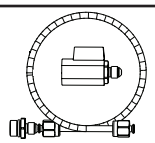
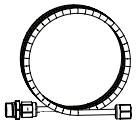
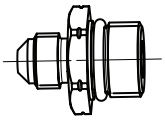
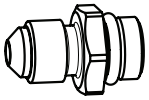
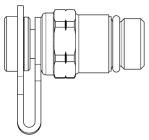
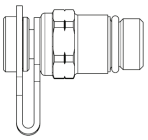
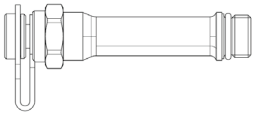
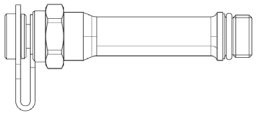
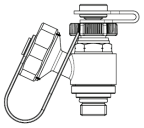
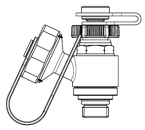
## Warning notices

The valves must be installed for the correct application using clean fittings. A HERZ strainer (4111) should be fitted to prevent impurities.

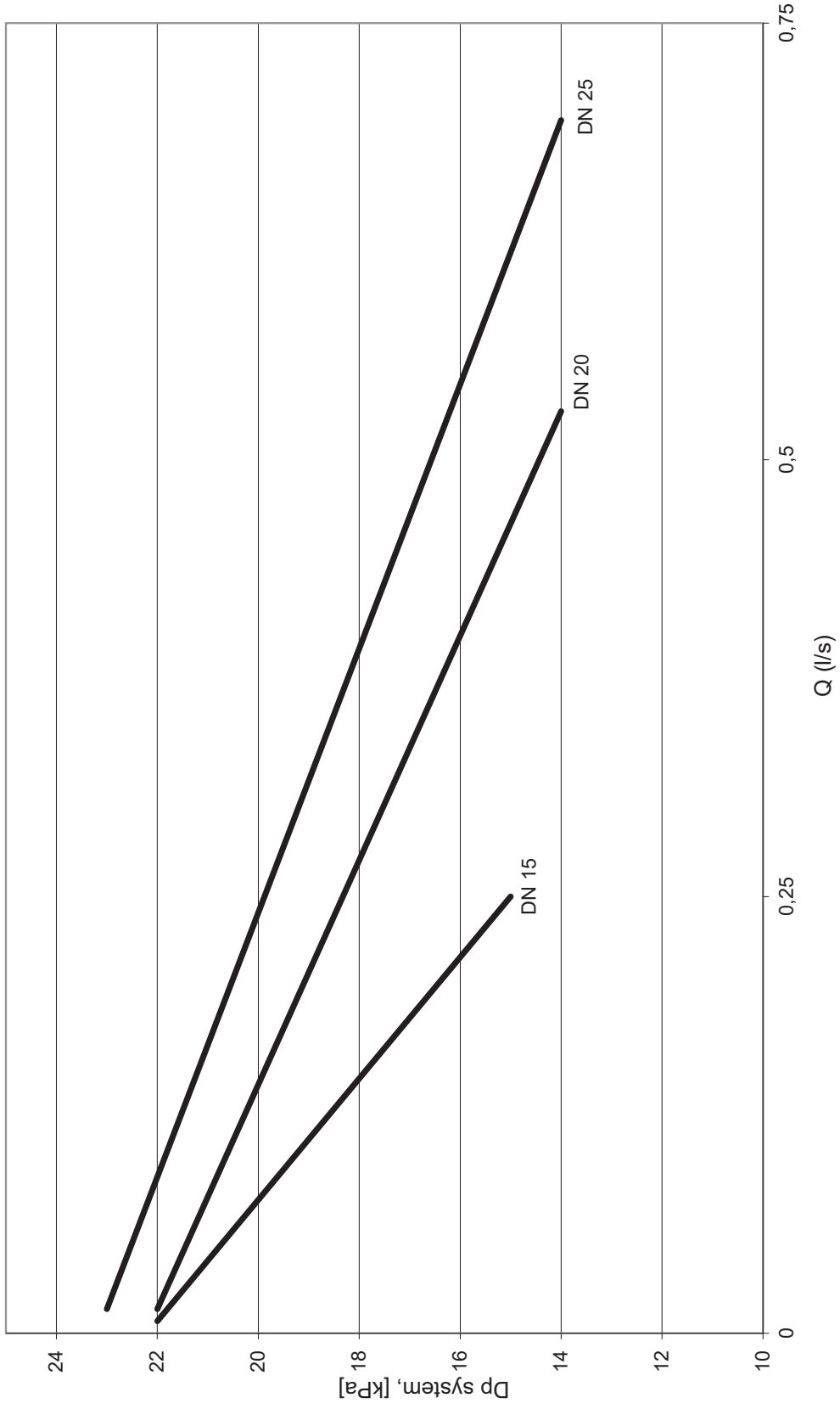
## Test points

Two test points are fitted next to each other. This arrangement ensures the best accessibility and optimal connection of measuring devices in all installation positions.

## Accessories and spare parts

| Item | Dim. | Description | Image |
|---|---|---|---|
| 1 4002 78 | 1,0 m | Capillary for differential pressure controller with ball valve 1/8″. |  |
| 1 4002 80 | 2,0 m | Capillary for differential pressure controller with connection nipple 1/8″G x 1/4″G. |  |
| 1 0269 19 | 1/8″ x 1/4″ | Connection nipple for capillary |  |
| 1 0269 09 | 1/8″ x 1/8″ | Connection nipple for capillary |  |
| 1 0284 01 | 1/4″ | Test point for HERZ regulating valve, blue cap (return) |  |
| 1 0284 02 | 1/4″ | Test point for HERZ regulating valve, red cap (supply) |  |
| 1 0284 11 | 1/4″ | Test point for HERZ regulating valve, extended design, blue cap (return) |  |
| 1 0284 12 | 1/4″ | Test point for HERZ regulating valve, extended design, red cap (supply) |  |
| 1 0284 21 | 1/4″ | HERZ test point with drain valve, blue cap (return) |  |
| 1 0284 22 | 1/4″ | HERZ test point with drain valve, red cap (supply) |  |
| 1 7708 52 | M28*1,5 | HERZ actuating drive for 2-point control, 24 V ~, NC. |  |
| 1 7708 53 | M28*1,5 | HERZ actuating drive for 2-point control, 230 V ~, NC. | |

| HERZ - Standard diagram | Differential pressure controller |
|---|---|
| 1 4X02 FIX TS, 23kPa | Dim. DN 15-25 |



| HERZ - Standard diagram | Differential pressure controller |
|---|---|
| 1 4X02 FIX TS, 23kPa | Dim. DN 32 - 50 |