

## Frese MODULA Direct Bypass Unit

### Description

Frese MODULA Direct is a versatile valve system that combines the Frese range of OPTIMA Compact pressure independent control valves with isolation, flushing, draining and measurement components within a prefabricated, tested and ready to install terminal bypass unit.

The Frese MODULA Direct is supplied with an integral venturi metering station for accurate flow verification.

Each unit is also supplied with isolation valves, combi-drains, P/T plugs, integral venturi metering station and the Frese OPTIMA Compact PICV for flow, temperature and pressure control.

The Frese MODULA Direct has been designed in accordance with the design guidelines from BSRIA for terminal unit installations.

### Application

For direct mounting to terminal units in heating and cooling applications.

### Benefits

#### Design benefits

- Fitted with OPTIMA Compact PICV
- Venturi metering station for flow measurement

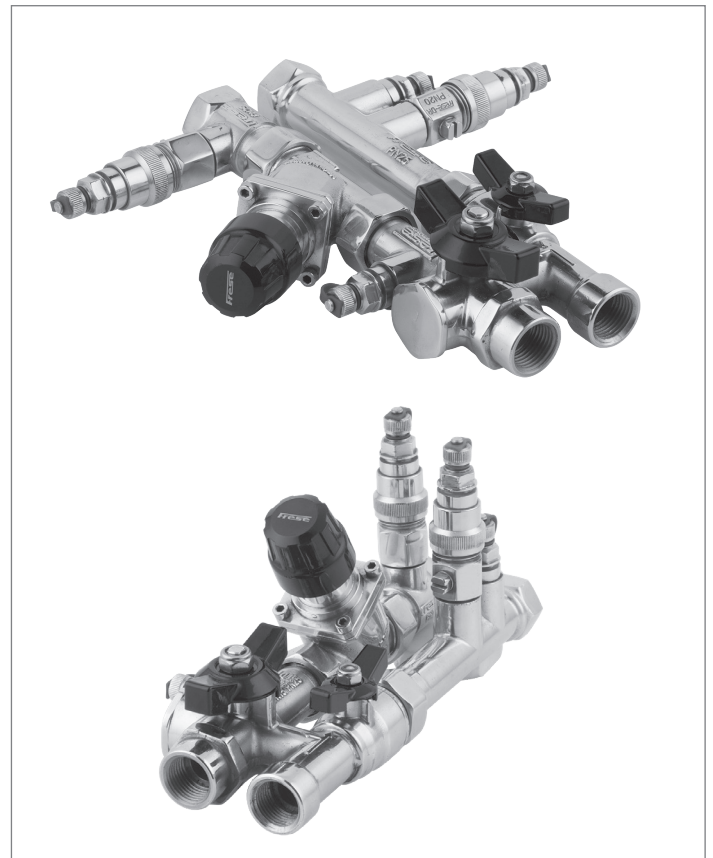
#### Installation benefits

- Can be mounted directly to a terminal unit
- Compact design for installations with limited space
- Minimized installation and commissioning costs
- Allows easy flushing and coil isolation
- Available in left hand and right hand versions
- Fits directly over standard drip trays

#### Operation benefits

- High comfort with minimized operation and maintenance costs
- Efficient flow, temperature and pressure control
- 4 modes of operation (see pages 4 and 5)

For further information on the Frese OPTIMA Compact PICV, please refer to the relevant technote



### Features

- Integral Venturi metering station for accurate flow verification. Kv-signal values: 0.198 - 0.598 - 1.394 - 2.361
- Available in DN15
- Supplied with the Frese OPTIMA Compact PICV
- Compact 40 mm supply/return centres
- Integrated union joints for easy valve alignment
- T-handle isolation-valves for flow, return and bypass
- Drains on the flow and return
- PT plugs across the PICV to measure DP
- PT plug on the flow side for measuring the DP across the terminal unit
- Manufactured in DZR brass, CW602N

# Frese MODULA Direct Bypass Unit

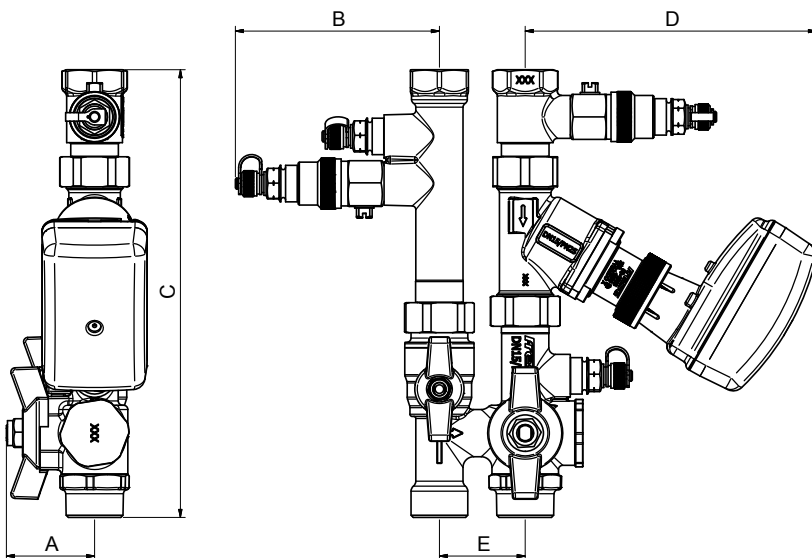
## Technical data

**Material:** DZR Brass, CW602N  
**O-rings:** EPDM  
**Pressure class:** PN20  
**Medium temperature range:** 0°C to 120°C

KV values (\*Accuracy KV<sub>signal</sub>: +/- 5%)

KV <sub>signal</sub> *	KV <sub>max</sub>
0.198	0.262
0.598	0.723
1.394	2.309
2.361	4.399

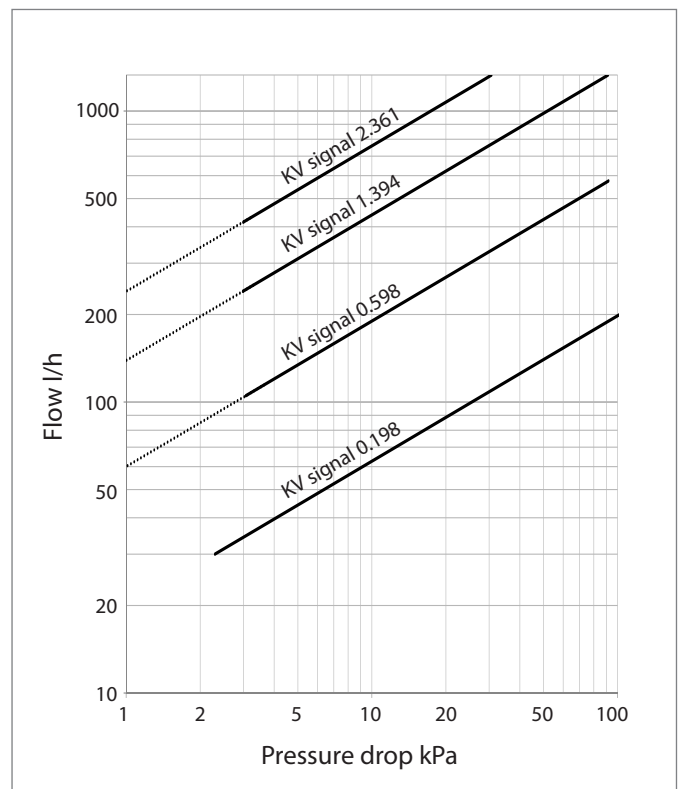
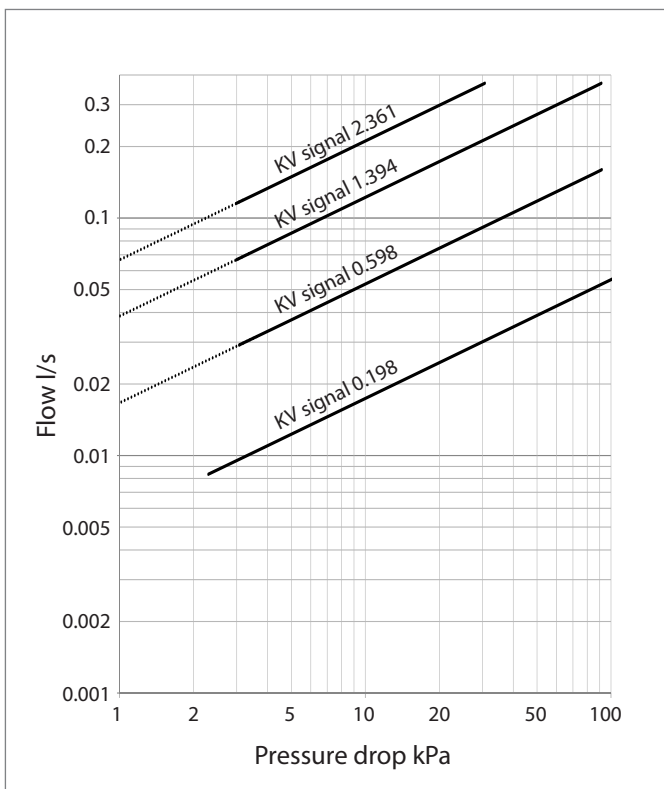
## Dimensions



## Frese MODULA Direct

Dim	mm
A	41
B	95
C	209
D	136
E	40

## Flow graphs for Venturi Metering station



# Frese MODULA Direct Bypass Unit

## Product Code Builder

Please use the following table to select the components and build the MODULA Direct product code.

59	MODULA Direct											
7	Frese OPTIMA Compact											
A	Low Flow / 2.5 mm stroke											
B	Low Flow / 5.0 mm stroke											
C	High Flow / 2.5 mm stroke											
D	High Flow / 5.0 mm stroke											
L	Left hand version											
R	Right hand version											
S	Strainer											
N	No strainer											
0	No 4-port valve											
1	4-port valve ver. 1 (0.4)											
2	4-port valve ver. 2 (0.63)											
3	4-port valve ver. 3 (1.0)											
4	4-port valve ver. 4 (1.6)											
5	4-port valve ver. 5 (2.5)											
1	Combi valve											
2	PT											
1	Venturi Metering Station Kv-value : 0.198											
2	Venturi Metering Station Kv-value : 0.598											
3	Venturi Metering Station Kv-value : 1.394											
4	Venturi Metering Station Kv-value : 2.361											
X	No end fittings											
A	1/2" x 15 Compression Unions											
B	1/2" x 15 Solder Unions											
D	1/2" x 22 Compression Unions											
H	1/2" x 3/4" M/M Coupling											
G	1/2" x 1/2" Hex Nipple											
F	1/2" x 3/4" Union Threaded											
J	1/2" x 15 Compression Unions Female											
59	7X	-	X	-	X	-	X	-	X	X	-	X

**Example of product code: 597C-L-N-0-11-A**

**Note**

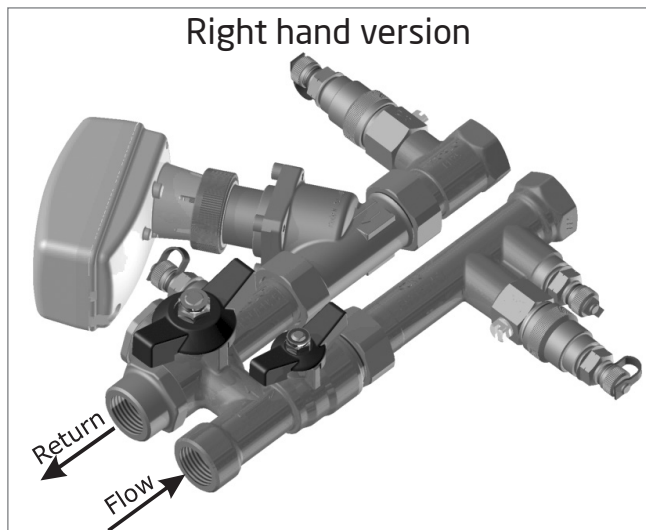
In pumped systems, pump vibration is carried by the liquid, and also regenerated by liquid turbulence, and may reappear as noise at any location where there is a hard contact between the pipe and the structure.

Vibration transmission occurs along pipes and ducts, despite the use of flexible connectors so it is recommended to use flexible attachments to the structure and/or terminal unit as detailed in CIBSE Guide B4 Noise and Vibration Control for Building servicesystems.

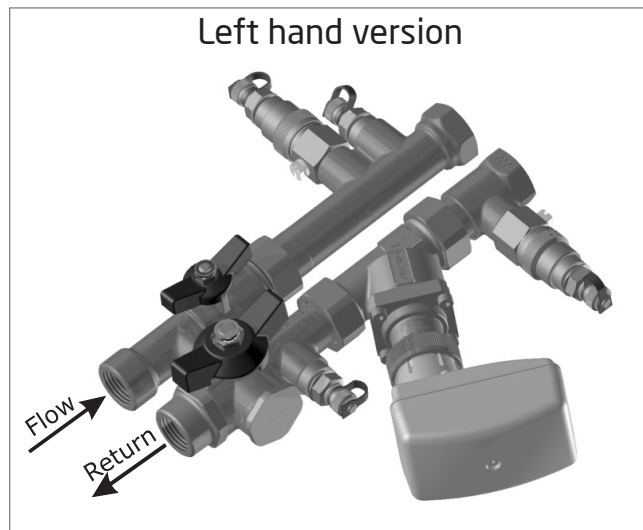
## Frese MODULA Direct Bypass Unit

### Versions

Right hand version



Left hand version



## Frese MODULA Direct Bypass Unit

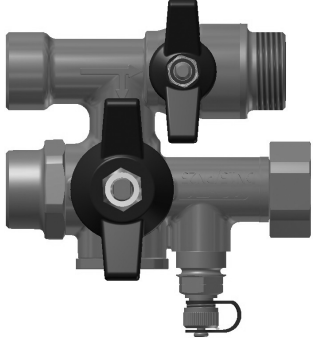
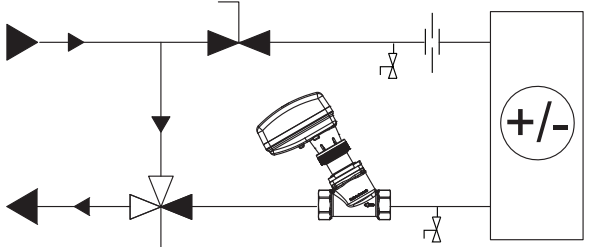
### Modes of Operation - Right Hand Version

<p>Mode 1 Isolation &amp; Flushing bypass</p>		
<p>Mode 2 Normal operation</p>		
<p>Mode 3 Forward flushing Step 1</p>		
<p>Mode 4 Forward flushing Step 2</p>		


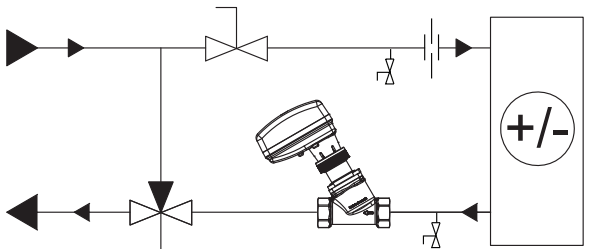
## Frese MODULA Direct Bypass Unit

### Modes of Operation - Left Hand Version

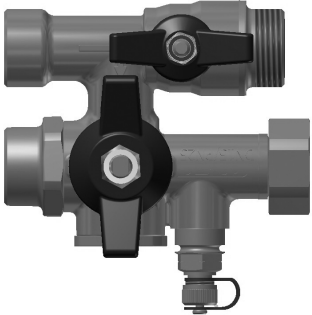
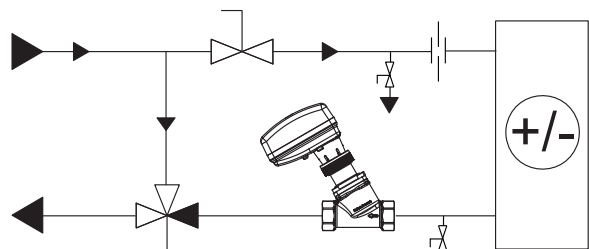
**Mode 1**  
Isolation & Flushing bypass

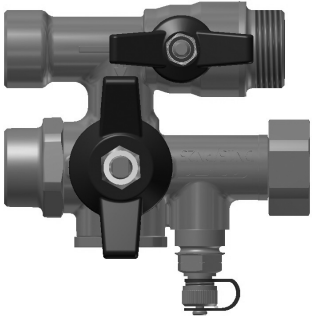
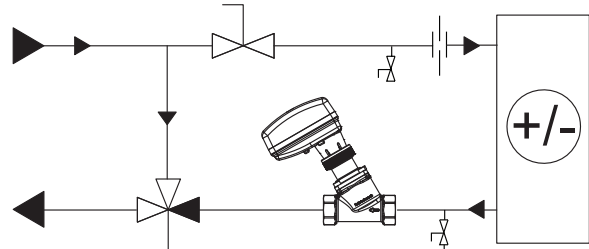
**Mode 2**  
Normal operation

**Mode 3**  
Forward flushing  
Step 1

**Mode 4**  
Forward flushing  
Step 2

## Frese MODULA Direct Bypass Unit

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### Specification Text - Frese MODULA Direct

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The valve system shall combine a Frese OPTIMA Compact PICV with fixed 40 mm centres between supply and return.

The valve system shall also include an integral Venturi metering station, isolation valves and combi-drains.

The valve system shall include a PT plug either side of the PICV.

The valve system shall include a drain on the flow and return.

The bypass unit shall have a pressure class of PN20.

The medium temperature shall be 0°C to 120°C.

All material shall be DZR brass, CW602N.

Venturi accuracy +/- 5%

The valve system shall be fitted with PT plugs that allow to:

1. Measure DP across the valve
2. Measure DP across the coil
3. Verify flow

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