Bonetti Rubinetterie Valduggia S.r.l.

NEWS CATALOGUE

2020 EDITION

MODVLVS

50 YEARS OF INNOVATIONS

Bonetti Rubinetterie Valduggia S.r.l.

ModvlvS:
a range of products in constant evolution.

Dear Customer,

It's a pleasure to enclose the list of news that are updating the **ModvlvS catalogue, edition n.10**. You can look up the products listed in this page on the website www.brv.it, if you're a user with an account; if not we invite you to register yourself, doing the login procedure on the home page of our website.

ModvBox

Modular multi-zone distribution box with integrated hydraulic separator, for wall-mounted gas boilers. Three types of pump units are available: unmixed, with 3 points 230V motorized mixing valve, mixed fixed point 20÷45°C.

It follows page 21.

Magnetic Filter

Art. 652. New device that allows to collect sludge and ferrous particles in hydraulic circuits. It can be mounted in unmixed (with a specific kit) and mixed pump units. Available in DN20, DN25 and DN32 sizes.

Thermostatic mixing valves 720 and 730 series

Renewed range with the addition of new models and availability of temperatures 20÷45°C, 45÷70°C and 35÷60°C for all models of the "Basic" and "Multimix" series.

It replaces pages from 63 to 66.

Pump units with magnetic filter

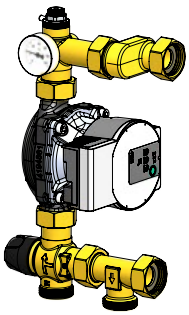
M2 and M2 MIX3/33 pump units with magnetic filter. Available with Wilo Para SC or without circulating pump.

Zone valves

New series of full bore ball valves provided with bidirectional actuator with quick "clip" connection to the valve. Sizes from DN15 to DN32.

It follows page 68.

A RANGE OF PRODUCTS IN CONSTANT EVOLUTION



Art. 686L

Fixed Temperature Kit Basic Series. 3-way thermostatic mixer with piston shutter and adjustable temperature 20÷45°C or 35÷60°C.

It follows page 71.

DomvS Clima

Innovative control system for manifolds of heating radiant panels up to 200 m^2, with room control unit for remote control of the system. Available with fixed point thermostatic mixer (heating) or motorized rotary mixing valve (heating and cooling). Factory pre-wired system which guarantees an easy installation, with power supply and control unit to be inserted into the distribution box.

It follows page 74.

°Caleon room controller and the new °Caleon room thermostat

Available versions with Wi-Fi connectivity for remote control by °Caleon app.

It completes page 77.

ModvFresh Basic

Compact heat exchange unit to deliver fresh domestic hot water (DHW). Four models available for flow from 14 to 25 liters and powers respectively from 34 to 60 kW.

It follows page 120.

35÷60°C thermostatic mixing kit designed for ModvFresh Basic

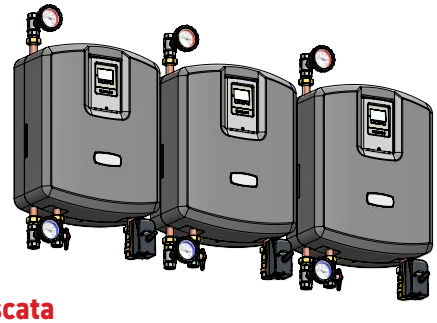
Kit provided with anti-scald thermostatic mixing valve.

It follows page 120.

Flow rate limitation fitting for ModvFresh 4

1" x 3/4" male fitting equipped with flow limiter 38 L/Min. The device, mounted on the DHW output of the ModvFresh 4 100 kW units (flow rate 2-40 L/min), prevents excessive flow rates to go throught the VFS meter, event that could damage it.

It follows page 128.



ModvFresh Kascata

System to connect in cascade several DHW modules Modvfresh 4 for installations requiring high power and flow rate or with medium-temperature heat sources (HP).

It follows page 128.

Art. 652
MAGNETIC FILTER

Function
The magnetic filter is a device that allows to collect sludge and ferrous particles in hydraulic circuits, residues that can compromise the operation of many components such as boilers, synchronous circulating pumps, heat and magnetic meters, etc.

Its particular internal conformation, developed by BRV in its laboratories, exploits some simple principles of physics that allow to create, by pressure difference, an area of calm in the fluid vein where sludge and ferrous particles are deposited, since attracted by a powerful neodymium magnet. These can then be removed easily from the system by acting on the drain valve, an operation that we suggest to repeat at each plant start-up especially in the old ones that are more subject to corrosion and therefore where the concentration of sludge and ferrous particles is higher.

Features
- Compact dimensions combined with very low pressure drops
- No maintenance or cleaning of the device is required, if not periodic discharge of sludge collected through the drain valve
- Neodymium magnet with attraction force of 4.5 kg and magnet strenght 13,000 Gauss
- Simple installation in heating pump units or directly in-line in the circuit (vertical assembly)
- Wide range available for flow rates up to 5,000 l/h
- Compatible with anti-freeze fluids (glycol ≤ 50%)

PN 10. Maximum temperature 110°C
External connections and Kvs available:
DN20: 1" x 130 mm - Kvs 15
DN25: 1"1/2 x 180 mm - Kvs 21
DN32: 2" x 180 mm - Kvs 21

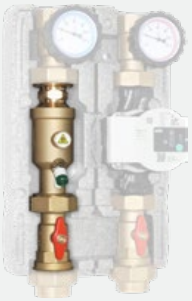
Possibility of installation in heating pump units

Code 1" Kvs 15: **104652-15**
Code 1"1/2 Kvs 21: **106652-21**
Code 2" Kvs 21: **107652-21**

Conversion kit
FOR UNMIXED MODULES

Conversion kit for the installation of the magnetic filter in unmixed modules. It consists of magnetic filter, set nut and gasket, ball valve. The kit must be installed on the return way of the unmixed unit, as shown in the image.

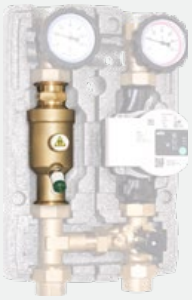
Code for DN20 pump units: **104652-15-SET**
Code for DN25 pump units: **106652-21-SET**
Code for DN32 pump units: **107652-21-SET**



Installation
IN MIXED PUMP UNITS

To install the magnetic filter in mixed units, simply replace the straight fitting of the return.

For DN32 groups it is also necessary to purchase the non-return valve which must be inserted in the special seat in magnetic filter.
Code: **CRKZOV32**



Insulation insert

For DN25 and DN32 units purchased until July 2020 it will be necessary to order the specific insert for the magnetic filter insulation.

Code for DN25 pump units: **ISOL-HG**
Code for DN32 pump units: **ISOL-HG05**

Unmixed and mixed pump units
WITH PREINSTALLED MAGNETIC FILTER

Available pump units provided with magnetic filter, for DN20, DN25 and DN32 series. Unmixed modules (M2) and unit with 3-way mixing valve (M2 MIX3/MIX33). Available with Wilo Para SC or without circulating pump. In the product's code replace "55R" with "652". E.g. in DN25 units: 203**55R**-M3 will becomes 203**652**-M3.

ModvBox

MODULAR MULTI-ZONE DISTRIBUTION BOX FOR WALL-MOUNTED GAS BOILERS

Code without insulation box: **402554-04M-HW**
Code with insulation box: **402554ISO-04M-HW**

Modular multi-zone distribution box for wall-mounted gas boilers. The extremely compact construction allows up to three circuits to be hydraulically connected in a total width of just 450 mm.
The primary circuit towards the boiler includes 2 shut-off valves 1" male, distribution manifold with integrated hydraulic separator for powers up to 50 kW. The separator allows the primary circuit to be hydraulically disconnected from the secondary circuit and allows greater volumetric circulation of the heat transfer fluid in use with respect to what circulates in the boiler. At the same time the return temperature in the boiler is reduced, thus guaranteeing an increase in the efficiency of the plant. Air vent valve and deaeration chamber. IP55 junction box to facilitate electrical wiring. The distribution box, white RAL 9010 powder coated, can be installed on the wall, recessed or inside a hanging cupboard.

For heating with wall-mounted gas boiler

In photo, an example of configuration with pump units, unmixed, mixed motorized and mixed fixed point, with and without insulation box.

Technical features

- Max flow rate in primary circuit up to 2 m^3/h;
- Primary circuit connections: 1" male; center distance 270 mm;
- Dimensions: (LxDxH) 450x160x550 mm;
- Internal insulation box in EPP (where provided);
- Max power: 50 kW – Max 6 bar;
- Pressure drop separator: 0.2 mH_2O at the flow rate of 2000 l/h;
- Pressure drop distribution manifold (low loss header): 0.3 mH_2O at the flow rate of 1500 l/h for each circuit.

The modular system allows to choose between three types of pump units:

- **Unmixed**
- **Mixed motorized**
- **Mixed fixed point**

The pump units, with 70 mm center distance and 3/4" female connection in use, can be connected to the distribution manifold at will, by number and position among those available, thus creating a configuration that is always appropriate to the context. Each zone is supplied with a **Wilo Para 15-130/6 SC** circulating pump (other heads available on request). Each pump unit, in addition to the circulating pump, is equipped with a DN20 shut-off valve for both the supply and return, 0°C-120°C thermometer and non-return valve which can be excluded in case of system maintenance. Each valve has a probe holder if the boiler electronics requires it.

Unmixed circuit

Nominal power of 35 kW (with ΔT=20 K)
at the flow rate of 1500 l/h
(residual head 3.5 mH_2O)
Kvs value: 6.0
Centre distance 70 mm
PN 10, max temperature 95°C
3/4" female connections

CE

Code:
402554-P6

Mixed motorized circuit

Nominal power of 30 kW (with ΔT=20 K)
at the flow rate of 1300 l/h
(residual head 3.5 mH_2O)
Kvs value: 4.0
230V 3-point servomotor, 105 s;
proportional 0-10V on request.
Centre distance 70 mm
PN 10, max temperature 95°C
3/4" female connections

CE

Code:
402554-M3-P6-TRM

Mixed fixed point circuit

Nominal power of 25 kW (with ΔT=20 K)
at the flow rate of 1100 l/h
(residual head 3.5 mH_2O)
Kvs value: 3.0
Temperature adjustable from 20°C to 45°C; other temperatures on request.
Centre distance 70 mm
PN 10, max temperature 95°C
3/4" female connections

CE

Code:
402554-F3-P6

Art. 726 Basic series

ANTI-SCALD THERMOSTATIC MIXING VALVE

Thermostatic mixing valve for small and medium applications for use in underfloor and radiator heating systems, domestic hot water.
The asymmetrical manufacture of the body of the valve, where the mixed outlet is in line with the connection of the hot water, usually allows an easier installation. Hot forged brass body. Yellow brass finish. Control of the temperatures supplied to the user, adjustable and available in three setting ranges.

- Maximum static pressure 10 bar (PN 10); dynamic pressure 5 bar;
- Maximum ratio between the pressures 2:1;
- Maximum inlet temperature: 95°C;
- Setting temperature range: 20÷45°C; 45÷70°C and 35÷60°C;
- Adjustment stability ±2°C within maximum performances;
- It can be used with anti freeze fluids (glycol ≤ 50%).

Available external connections:
3/4" (Kvs 1.5) and 1" (Kvs 1.8 and 3.4) Male flat seal.

The security anti-scald function automatically stops the hot water flow in case of failure of the cold water line.

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Code 3/4" Kvs 1.5: **03726-F(3/4/5)-1.5**
Code 1" Kvs 1.8: **04726-F(3/4/5)-1.8**
Code 1" Kvs 3.4: **04726-F(3/4/5)-3.4**

F3	20÷45°C
F4	45÷70°C
F5	35÷60°C

Available temperatures:

From **20°C** up to **45°C** (code F3)
From **45°C** up to **70°C** (code F4)
From **35°C** up to **60°C** (code F5)

Layout: Asymmetric

Available Kvs:

1.5 = Maximum Kvs 1.55; up to 32 l/min (1.5 bar). Nominal Kv 1.52 (*)

1.8 = Maximum Kvs 1.8; up to 37 l/min (1.5 bar). Nominal Kv 1.77 (*)

3.4 = Maximum Kvs 3.4; up to 70 l/min (1.5 bar). Nominal Kv 3.3 (*)

(*) Tests carried out at our work lab, under the test conditions listed below, with a differential pressure of 1 bar (without connection devices):
F3: Th:55°C, Tc:24°C, Tmix:32°C
F4: Th:75°C, Tc:40°C, Tmix:55°C
F5: Th:65°C, Tc:10°C, Tmix:51°C
Kvs 1.52 → 25.3 l/min
Kvs 1.77 → 29.5 l/min
Kvs 3.3 → 56 l/min

Renewed range, new temperature 35÷60°C

Art. 720

Anti-scald thermostatic mixing valve for small and medium applications. Asymmetric layout. Hot forged brass body. Yellow brass finish.
Available external connections:
1/2" (Kvs 1.5) and 3/4" (Kvs 1.8) Female.
Available technical features and adjustment temperatures are the same as Art. 726.

Code 1/2" Kvs 1.5: **02720-F(3/4/5)-1.5**
Code 3/4" Kvs 1.8: **03720-F(3/4/5)-1.8**

PED 2014/68/EU 4.3

Art. 729

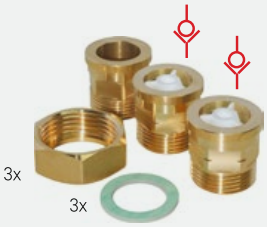
Anti-scald thermostatic mixing valve for small and medium applications. Asymmetric layout. Hot forged brass body with pipe union connections. Yellow brass finish. Check valves built into fittings at the inlets of hot and cold water.
Available external connections:
3/4" (Kvs 1.8 and 3.4) Male with pipe union.
Available technical features and adjustment temperatures are the same as Art. 726.

Code 3/4" Kvs 1.8: **03729-F(3/4/5)-1.8**
Code 3/4" Kvs 3.4: **03729-F(3/4/5)-3.4**

PED 2014/68/EU 4.3

Set union connections "Basic"

Set union connections for thermostatic mixing valve, consisting of: 1" coupling nuts, flat gaskets, and 3/4" male union tail piece. Two tail pieces, specific for the mixer inlets, are equipped with check valve.
Maximum inlet temperature: 95°C.
Connection: 3/4" M x 1" Swivel nut.



Code: **03729SET**

In compliance to the Italian Ministerial Decree N°174/2004 Following specific laboratory tests, the mixing valve, art 726, has been verified to comply with D.M. 174/2004. The other articles of the same family of thermostatic mixing valves are similar to the verified model, having the same components and equal contact surface.

Art. 736 Multimix Series

ANTI-SCALD THERMOSTATIC MIXING VALVE WITH HIGH PERFORMANCES

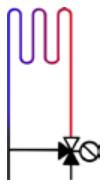
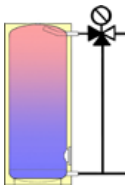
Code 1" Kvs 2.5: **04736-F(3/4/5)-2.5**
Code 1" Kvs 4.0: **04736-F(3/4/5)-4.0**

Use

High performance thermostatic mixing valve for applications in underfloor and radiator heating systems, hot domestic water and solar thermal.

The asymmetrical manufacture of the body of the valve, where the mixed outlet is in line with the connection of the hot water, usually allows an easier installation. The exceptionally high flowrate of the model with 4.0 Kvs is guaranteed by the shutter generously sized: a manufacture choice that allows to work with a very short stroke with a great benefit to the adjustment accuracy when the supply pressure and temperature change. In particular the model with 2.5 Kvs is mainly indicated in applications for drinking water at the point of use, as it can assure a constant adjustment within ±1°C. Moreover 2.5 Kvs model has very compact size.

The below table allows to determine the most suitable model for the different installations allowed by MultiMix thermostatic mixing valves:

Underfloor or radiator heating	Domestic Hot Water: supply	Domestic Hot Water: user point	Solar Thermal
			
Kvs 4.0 ; F3/F4	Kvs 4.0 ; F4/F5	-	Kvs 4.0 ; F4
Kvs 2.5 ; F3/F4	-	Kvs 2.5 ; F4/F5	Kvs 2.5 ; F4

Technical features

Anti-scald thermostatic mixing valve with high performances.
Hot forged brass body. Yellow brass finish. Control of the temperatures supplied to the user, adjustable and available in three setting ranges.

- Maximum static pressure 10 bar (PN 10); dynamic 5 bar.
- Max ratio between the pressures: 2:1;
- Maximum inlet temperature: for F3 and F4 models continuous 100°C, (short time: 120°C for 20 s); for F5 model: 95°C;
- Setting temperature range: 20÷45°C; 45÷70°C and 35÷60°C;
- Adjustment stability: ±2°C (Kvs 4.0) and ±1°C (Kvs 2.5) within maximum performances;
- It can be used with anti freeze fluids (glycol ≤ 50%).

Available external connections:
1" Male flat seal.

The security anti-scald function automatically stops the hot water flow in case of failure of the cold water line.

F3	**20÷45°C**
F4	**45÷70°C**
F5	**35÷60°C**

Available temperatures:

From **20°C** up to **45°C** (code F3)
From **45°C** up to **70°C** (code F4)
From **35°C** up to **60°C** (code F5)

H
C
Layout: Asymmetric

Available Kvs:

4.0 = Maximum Kvs 4.0; up to 82 l/min (1.5 bar). Nominal Kv 3.6 (*)
2.5 = Maximum Kvs 2.5; up to 51 l/min (1.5 bar). Nominal Kv 2.4 (*)

(*) Tests carried out at our work lab, under the test conditions listed below, with a differential pressure of 1 bar (without connection devices):
F3: Th:55°C, Tc:24°C, Tmix:32°C
F4: Th:75°C, Tc:40°C, Tmix:55°C
F5: Th:65°C, Tc:10°C, Tmix:51°C
Kvs 2.4 → 40,6 l/min
Kvs 3.9 → 59,3 l/min

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Renewed range, new temperature 35÷60°C

In compliance to the Italian Ministerial Decree N°174/2004 Following specific laboratory tests, the mixing valve, art 726, has been verified to comply with D.M. 174/2004. The other articles of the same family of thermostatic mixing valves are similar to the verified model, having the same components and equal contact surface.

Art. 730

Anti-scald thermostatic mixing valve with high performances.
Asymmetric layout. Hot forged brass body. Yellow brass finish.
Available external connections:
3/4" Female.

Available technical features and adjustment temperatures are the same as Art. 736.

Code 3/4" Kvs 2.5: **03730-F(3/4/5)-2.5**
Code 3/4" Kvs 4.0: **03730-F(3/4/5)-4.0**

PED 2014/68/EU 4.3

Art. 739

Anti-scald thermostatic mixing valve with high performances.
Asymmetric layout. Hot forged brass body with pipe union connections. Yellow brass finish. Check valves suitable for high temperature and filters built into fittings of hot and cold water, at both inlets.
Available external connections:
3/4" Male with pipe union.

Available technical features and adjustment temperatures are the same as Art. 736.

Code 3/4" Kvs 2.5: **03739-F(3/4/5)-2.5**
Code 3/4" Kvs 4.0: **03739-F(3/4/5)-4.0**

PED 2014/68/EU 4.3

Art. 731C

Anti-scald thermostatic mixing valve with high performances.
Asymmetric layout. Hot forged brass body. Yellow brass finish. Mixed outlet fitted with 1" or 1"1/2 swivel nut (see picture at side) to be connected directly to the circulating pump
Available external connections:
1" Swivel nut x 1" Male and 1"1/2 Swivel nut x 1" Male.

Available technical features and adjustment temperatures are the same as Art. 736.

Code 1" C x 1" M, Kvs 2.5: **04731C-04-F(3/4/5)-2.5**
Code 1" C x 1" M, Kvs 4.0: **04731C-04-F(3/4/5)-4.0**
Code 1"1/2 C x 1" M, Kvs 2.5: **04731C-06-F(3/4/5)-2.5**
Code 1"1/2 C x 1" M, Kvs 4.0: **04731C-06-F(3/4/5)-4.0**

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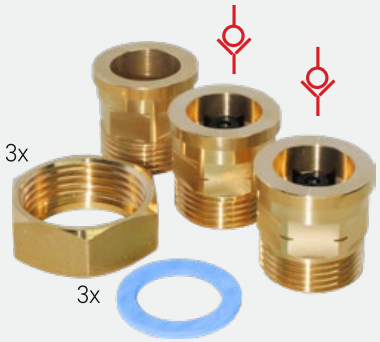
Set union connections "Multimix"

Set union connections for thermostatic mixing valve, for thermal solar applications.
It consists of: 1" coupling nuts, flat gaskets and 3/4" male union tail piece. Two tail pieces, specific for the mixer inlets, are equipped with check valve and filters.
Maximum inlet temperature: 120°C.
Connection: 3/4" M x 1" Swivel nut.



Code: **03739SET**

Art. 1610

MOTORIZED ZONE VALVE

F/F full bore 2-way zone ball valve made of forged brass.
Yellow brass finish.
Threaded connections ISO 228 (DIN 259 BSP 2779).

- Bidirectional actuator with quick "clip" connection to the valve.
- Power supply 230 V AC.

PN 32. Working pressure: 16 bar.
Max differential pressure: 10 bar.
Fluid temperature: -20÷120°C

Codes: **see table**

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		DN15 ; 1/2" Kvs 23 **Code: 021610**	DN20 ; 3/4" Kvs 38.5 **Code: 031610**	DN25 ; 1" Kvs 76 **Code: 041610**	DN32 ; 1"1/4 Kvs 103 **Code: 051610**
	M11 2P, 5 Nm, 20" **Code: M11**	**Code: 021610-M11**	**Code: 031610-M11**	-	-

		DN15 ; 1/2" Kvs 23 **Code: 021610**	DN20 ; 3/4" Kvs 38.5 **Code: 031610**	DN25 ; 1" Kvs 76 **Code: 041610**	DN32 ; 1"1/4 Kvs 103 **Code: 051610**
	M15 2P, 15 Nm, 48" **Code: M15**	-	-	**Code: 041610-M15**	**Code: 051610-M15**

686L FIX

FIXED TEMPERATURE KIT BASIC SERIES

The adjustment kit Art. 686L FIX, thanks to the very small size, can be set up straight into the distribution box of radiant heating installations. The manufacture allows the mounting on the right side or on the left side of the manifold.

The unit for 1/2" circulating pumps (130 mm) consists of:

- 3-way thermostatic mixer with piston shutter (Kvs 3,4) and adjustable temperature 20÷45°C (F3) or 35÷60°C (F5);
- Pre-wired high efficiency synchronous circulating pump (for the models that include it);
- Thermometer 0÷60°C;
- Air vent valve;
- Direct connection to the manifold or by means of an eccentric piece 15 or 30 mm (manifold misalignment between the supply and the return).

Centre distance 210 mm
PN 10, maximum temperature 110°C (unit without circulating pump).
Connections: to the manifold 1" Male swivel connection or 1" swivel nut; to the circuit 1" Male with 76 mm centre distance.

Codes: **see table**

F3	20÷45°C
F5	35÷60°C

Available temperatures:
From **20°C** to **45°C** (code F3)
From **35°C** to **60°C** (code F5)

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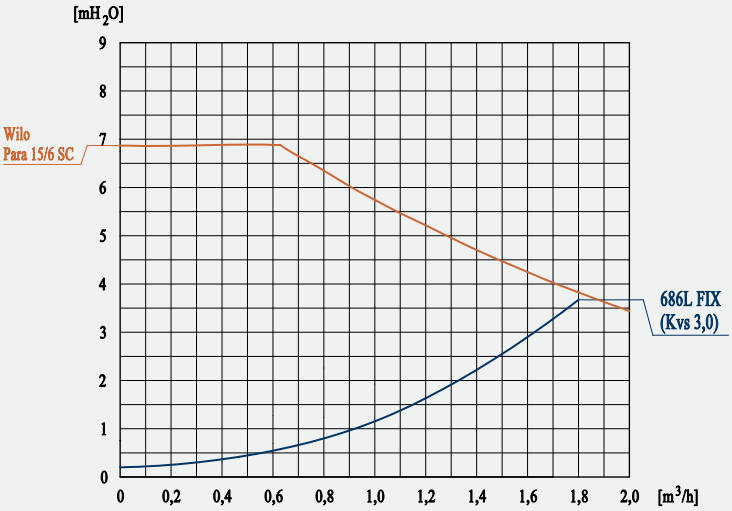
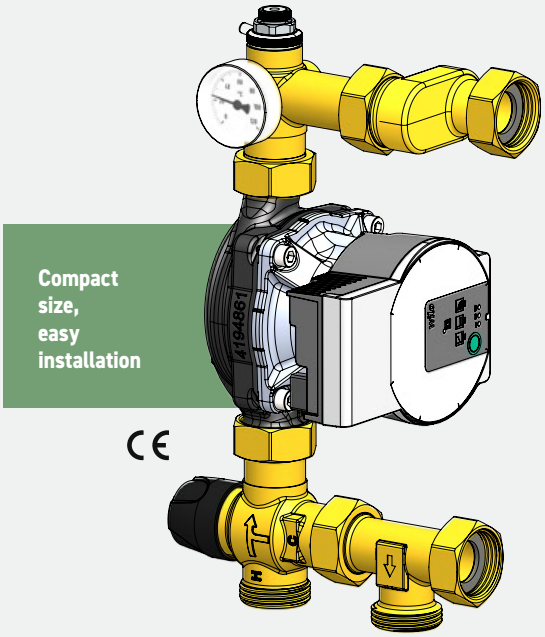
FIELD OF UTILIZATION
For power up to 8 kW (with Δt 8 K) and maximum flow 900 l/h.
Kvs value: 3,0.
Approximate data calculated with a 6 m nominal lifting power circulating pump.
For an accurate measuring or for higher flows, please refer to the curve.





Approximate data for radiant heating installations: codes of the F3 version

Field of regulation	Δt	Approximate power and flow of the installation	Circulating pump	Residual lifting power	Approximate surface of the radiant installation	Eccentric piece	1" swivel nut code	1" Male swivel code
20÷45°C	8 K	8 kW - 900 L/h	Wilo Para SC 15/6	5 mH_20	Up to 90 m^2	-	**104686LC-F3-P6**	**104686LG-F3-P6**
						15 mm	**104686LC-F3-15P6**	**104686LG-F3-15P6**
						30 mm	**104686LC-F3-30P6**	**104686LG-F3-30P6**

Approximate data for radiant heating installations: codes of the F5 version

Field of regulation	Δt	Approximate power and flow of the installation	Circulating pump	Residual lifting power	Approximate surface of the radiant installation	Eccentric piece	1" swivel nut code	1" Male swivel code
35÷60°C	8 K	8 kW - 900 L/h	Wilo Para SC 15/6	5 mH_20	Up to 90 m^2	-	**104686LC-F5-P6**	**104686LG-F5-P6**
						15 mm	**104686LC-F5-15P6**	**104686LG-F5-15P6**
						30 mm	**104686LC-F5-30P6**	**104686LG-F5-30P6**

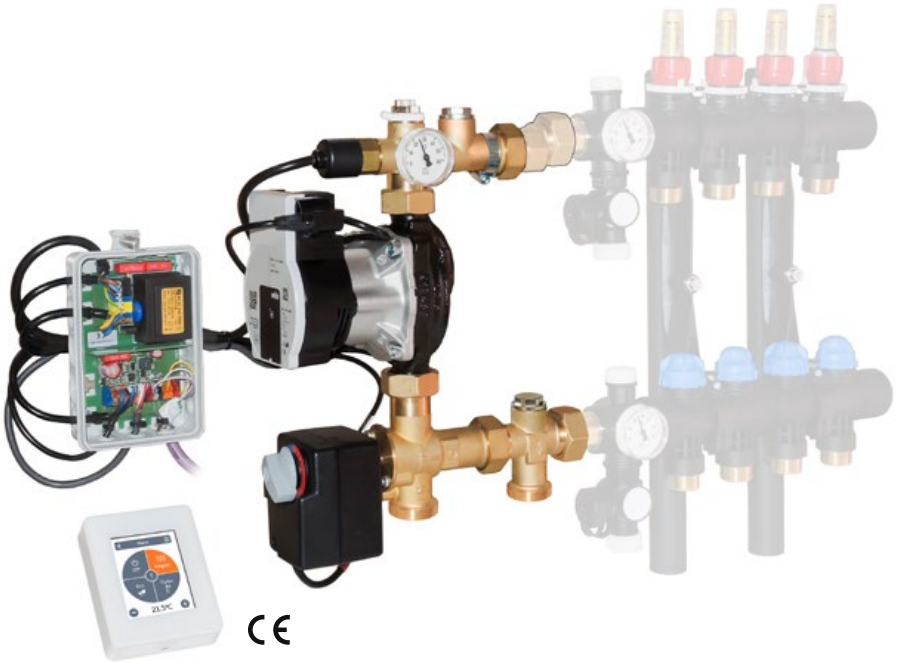
Codes variance: **For the versions without the circulating pump, please skip the identification code of the pump P6**

DomvS Clima

CONTROL SYSTEM FOR MANIFOLDS OF HEATING AND COOLING RADIANT PANELS

Codes: **see table**

Complete Kit:
- **Indoor Controller**
- **Power Unit**
- **Circulating Pump**
- **Motorized or Thermostatic Mixer**



Applications

Innovative control unit for manifolds of heating radiant panels.

It consists of:

Control unit, Art 687, with **fixed point thermostatic mixer (heating)** or **motorized rotary mixing valve (heating and cooling)**;

- Power supply and control unit to be inserted into the distribution box; power cable, circulating pump, supply sensor, safety thermostat and possible actuator are already pre-wired;
- Elegant room control unit with TFT capacitive touch screen for remote control of the system.

Reasons to choose DomvS Clima

- Extremely easy to install thanks to the factory pre-wired system. Only the room thermostat will be connected on site to the power unit with a multipolar cable;
- Guided start-up in the choice of the most suitable settings for the type of insulation (class) of the living unit;
- The intelligent logic intervenes adaptively to the tendential variation of the room temperature by acting on the speed of the circulating pump, in the thermostatic model, or on the flow temperature of the fluid in the version with motorized rotary mixing valve. In this way the system can manage different temperatures in the different time bands set - which is impossible with the normal on/off thermostatic systems.

Main features

Room controller

- Selectable insulation class of the housing unit for greater comfort and energy savings;
- Operating mode: Normal, Turbo, Eco and Off with specific setpoint temperature;
- Holiday program;
- Up to 8 selectable heating daily time bands.

Hydraulic module

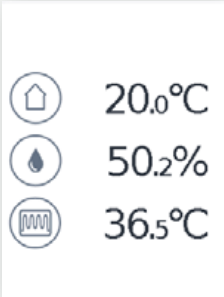
- Fixed point thermostatic mixer or motorized rotary mixing valve;
- 8 meter head synchronous circulating pump for radiant surfaces up to 200 m^2;
- Ready for the addition of differential bypass valve;
- Direct connection to the manifold by means of an eccentric piece, 15 mm or 30 mm (manifold misalignment between supply and return).

Centre distance 210 mm

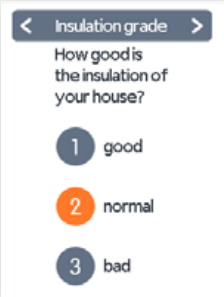
- **PN 10, maximum temperature 100°C.**
- **Connection to the manifold: 1" Male swivel connection or 1" swivel nut**
- **Connection to the circuit: 1" Male with 96 mm centre distance.**

PED 2014/68/EU 4.3

Room thermostat with intelligent logic and adaptive action

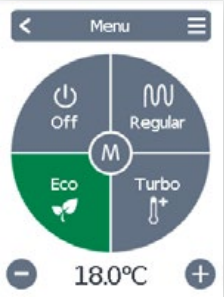


Info screen



Selection of the insulation class of the housing unit

Intuitive time switch for week program



Saving-energy mode with reduced temperature

Field of utilization and codes for ordering

DomvS Clima provided with fixed point thermostatic mixer

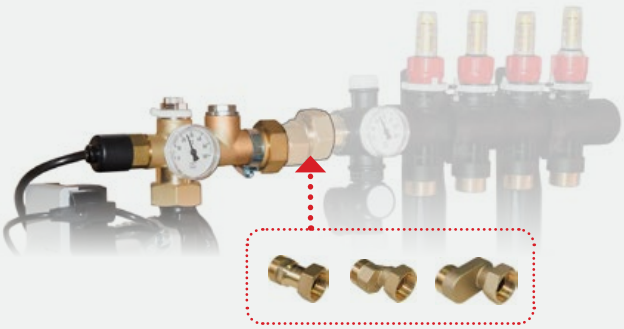
Function	Field of regulation	Δt	Approximate power and flow of the installation	Kvs	Residual lifting power	Approximate surface of the radiant installation	Connection	Code
Heating	20÷45°C	8 K	15 kW - 1600 L/h	3.4	5 mH_20	Up to 150 m^2	1" M swivel	**104687G-RC-F3-P8**
							1" F swivel nut	**104687C-RC-F3-P8**

DomvS Clima provided with rotary mixing valve with actuator

Function	Field of regulation	Δt	Approximate power and flow of the installation	Kvs	Residual lifting power	Approximate surface of the radiant installation	Connection	Code
Heating	20÷55°C (*)	8 K	17 kW - 1800 L/h	4.6	5 mH_20	Up to 200 m^2	1" M swivel	**104687G-RF-M3-P8**
Cooling	(**)	3 K	6,5 kW - 1800 L/h				1" F swivel nut	**104687C-RF-M3-P8**

(*) Temperature limited by the safety thermostat
(**) Selectable temperature: fixed or calculated according to the condensation curve

ATTENTION: The manifold inlet connection, straight or eccentric, is not included. it must be ordered separately according to the manifold's connection type, male or female, and to the distance of the manifolds to be used.



Connection to the manifold 1" male swivel

STRAIGHT
Code **SET687G**

ECCENTRIC 15 mm
Code **SET687G-15**

ECCENTRIC 30 mm
Code **SET687G-30**

Connection to the manifold 1" swivel nut

STRAIGHT
Code **SET687C**

ECCENTRIC 15 mm
Code **SET687C-15**

ECCENTRIC 30 mm
Code **SET687C-30**

°Caleon room controller

Stylish TFT capacitive touch panel for easy remote control of the heating system. Normal, Turbo, Eco and Off operation modes with specific temperature setpoint. Holiday program. Up to 8 adjustable daily heating time slot. CAN Bus connection for the system Connect. Data logging on MicroSD Card via data logger Connnect.
Wi-Fi N 2.4 Ghz connection for remote control by °Caleon app

Main features

- For Weather-Compensated Heating Controllers 24VDC: MHCC and LHCC
- Room temperature sensor 0÷60 °C, accuracy 0.1 °C
- Relative humidity sensor 0÷100%, accuracy 0.1%
- Daily heating time slot: 8 for each room / area
- CAN Bus connection for the Connect system
- TFT Color display 2.8" with Glass front and Capacitive touch panel.
- Dimensions: 75 x 95 x 19 mm
- Power consumption: 0.5-1.0 W
- IP 20.

Code: **RC50**

CONNECT

Wi-Fi

CE

Remote control by app for smartphone and tablet

°Caleon Clima

Caleon Clima version with cooling system managment (combined with LHCC controller).

Supplementary Features

- Cooling Mode
- Output: 2x 0-10V

Code: **RC55**

°Caleon room thermostat

Elegant chrono-thermostat with TFT capacitive touch panel. Normal, Turbo, Eco and Off operation modes. Holiday program. Up to 8 daily heating time slots can be selected.
Wi-Fi N 2.4 Ghz connection for remote control by °Caleon app

Main features

- Room temperature sensor 0÷60 °C, accuracy 0.1 °C
- Relative humidity sensor 0÷100%, accuracy 0.1%
- 1 switching 230 VAC output (or potential free contact with internal jumper)
- Daily heating slots: 8
- TFT Color display 2.8" with Glass front and Capacitive touch panel

Code: **RC51**

CE

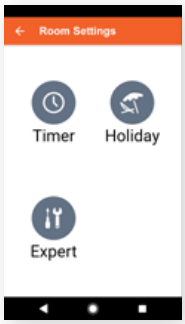
Wi-Fi

- Dimensions: 75 x 95 x 19 mm
- Power supply 230 V AC
- Power consumption: max 2.5 W
- IP 20.

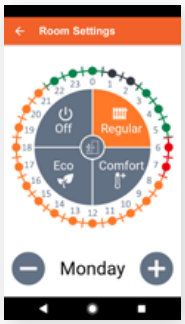
Remote control by °Caleon app

°Caleon Room controller and °Caleon thermostat can be monitored and controlled remotely, via the internet, using the **dedicated app available for Android and Apple systems**. The application can monitor one or more °Caleon devices connected to the internet (Wi-Fi coverage is required in the installation rooms).

App Store Google Play

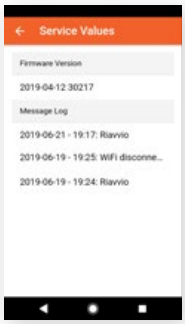


Functionality



Weekly time schedule

Management of multiple devices



History of events. Log messages

ModvFresh Basic

COMPACT HEAT EXCHANGE UNIT TO DELIVER FRESH DOMESTIC HOT WATER (DHW)

Code 14 L/min, 1": **031150-34-14**
Code 16 L/min, 1": **031150-39-16**
Code 20 L/min, 1": **031150-50-20**
Code 25 L/min, 1": **031150-60-25**

Use

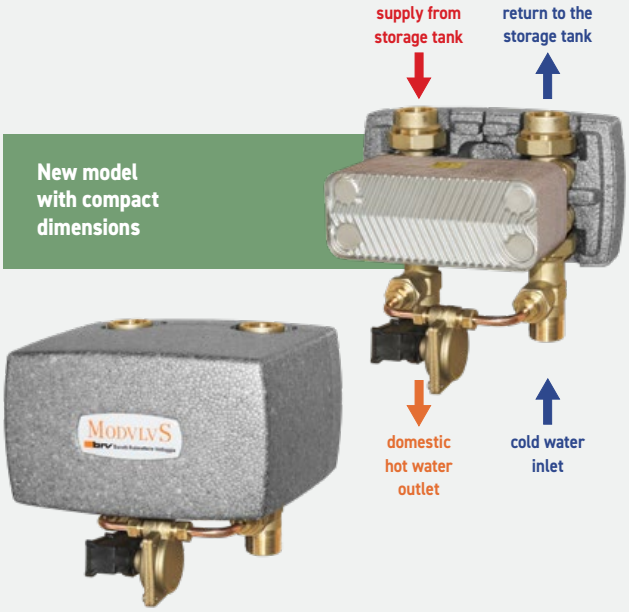
On the inertial cylinders or similar, connected to solar thermal installations, wood, pellets, biomass boilers etc. when the stratification is not a primary requirement.
It provides fresh domestic hot water, avoiding phenomena of bacterial pollution, such as the legionnaire's disease etc., made by the stagnation of the hot water. **ModvFresh Basic** is provided with a weld-braised plate heat exchanger made in stainless steel AISI 316.

Features

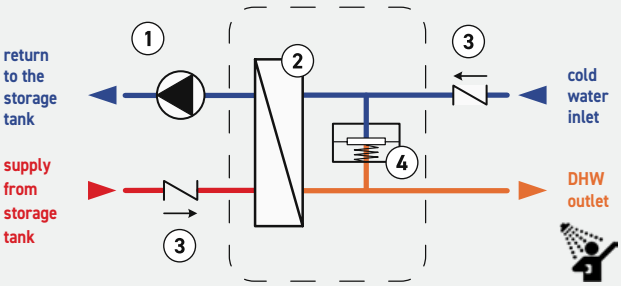
- Low pressure losses thanks to the asymmetrical heat exchanger. The activation of the circulating pump takes place with flow rates lower than 1 L/min through the intervention of a differential pressure switch;
- Four models available for flow from 14 to 25 liters and powers respectively from 34 to 60 kW;
- The unit is supplied with a dedicated electrical box that simplifies the connections between the electricity supply, the circulating pump and the differential pressure switch;
- Heat-insulated heat exchanger with EPP insulation box (Dimensions: 250x143x218 mm).

Connections: 1" male (DHW); 1" female with union (buffer tank). Centre distance 125 mm.

FIELD OF UTILIZATION
For a maximum power of 60 kW and flow up to 25 l/min.
PN10. Max. temperature: 95°C

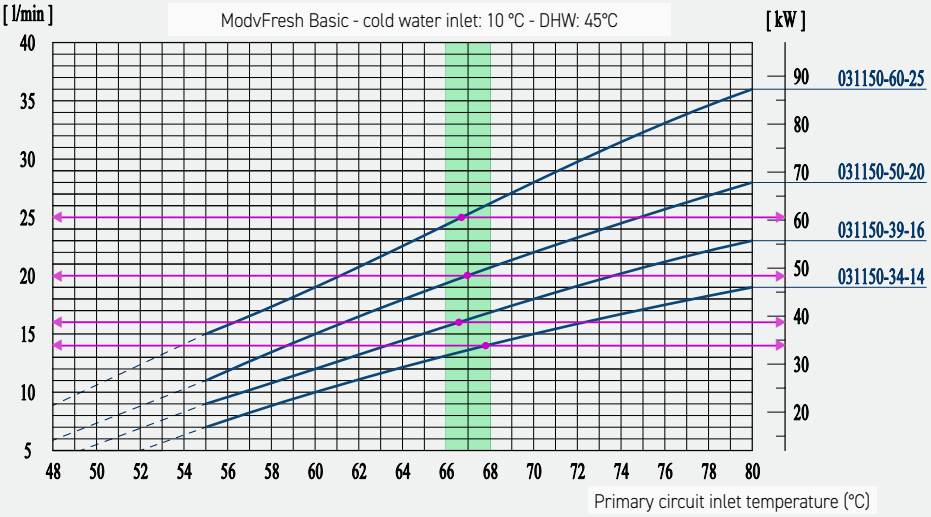


Hydraulic scheme



1 Circulating pump (not included)
2 Plate heat exchanger
3 Check valve (not included)
4 Differential pressure switch

Dedicated box for electrical connections



Mixing kit

35÷60°C THERMOSTATIC MIXING KIT DESIGNED FOR MODVFRESH BASIC

Anti-scald thermostatic mixing valve for small applications. Asymmetric layout with "T" connection. Hot forged brass body. Yellow brass finish. Adjustable user temperature by means of a knob from 35°C up to 60°C.

- Maximum static pressure 10 bar (PN 10); dynamic pressure 5 bar.
- Maximum ratio between the pressures 2:1.
- Maximum inlet temperature: 95°C.
- Setting temperature range: 35÷60°C.
- Accuracy: ±2°C.

Available external connections:
1" Male x 1" Swivel nut.
Centre distance 125 mm.

The security anti-scald function automatically stops the hot water flow in case of failure of the cold water line.

Code: **104721C-3560-1.8**

Available temperatures:

Adjustable temperature from **35°C** to **60°C**

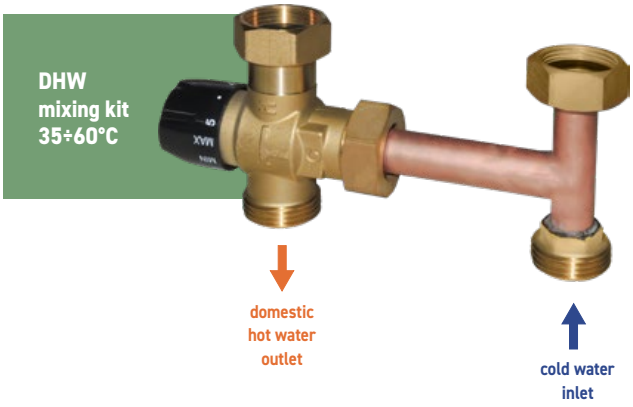
Layout:
Asymmetric "T"

Available Kvs:

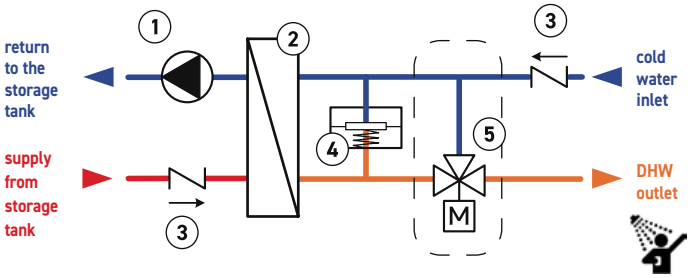
1.8 = Maximum Kvs 1.8; up to 37 l/min (1.5 bar). Nominal Kv 1.77 (*)

(*) Tests carried out at our work lab, with a differential pressure of 1 bar:
Th:65°C Tc:15°C Tmix:50°C (pos.3) → 29.5 l/min

PED 2014/68/EU 4.3



Hydraulic scheme



1. Circulating pump (not included)
2. Plate heat exchanger
3. Check valve (not included)
4. Differential pressure switch
5. Mixing kit

Flow rate limitation fitting

1" x 3/4" male fitting equipped with flow limiter 38 L/Min.
To be installed on the DHW output of the ModvFresh 4 100 kW units.

Code: **DBOJ031000-38/S**

ModvFresh Kascata

SYSTEM TO CONNECT IN CASCADE SEVERAL DHW MODULES MODVFRESH 4 FOR INSTALLATIONS REQUIRING HIGH POWER AND FLOW RATE OR WITH MEDIUM-TEMPERATURE HEAT SOURCES (HP)

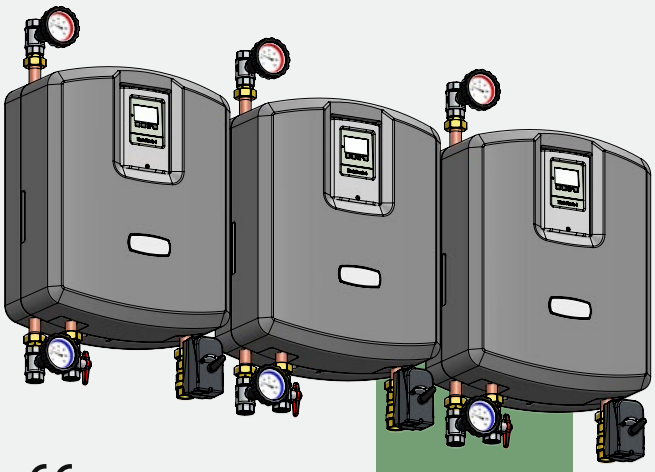
ModvFresh Kascata is an innovative management logic that allows to connect in cascade multiple standard ModvFresh 4 pump units for the production of domestic hot water, with the possibility of obtaining a maximum flow rate and an exchanged thermal power equal to the sum of the performance of the individual modules.

The system finds application with inertial tanks of large plants connected to solar thermal circuits, biomass boilers (i.e. pellets and wood), etc, and guarantees the production of instantaneous domestic hot water avoiding bacterial contamination phenomena (such as Legionella) due to stagnation of heated water.

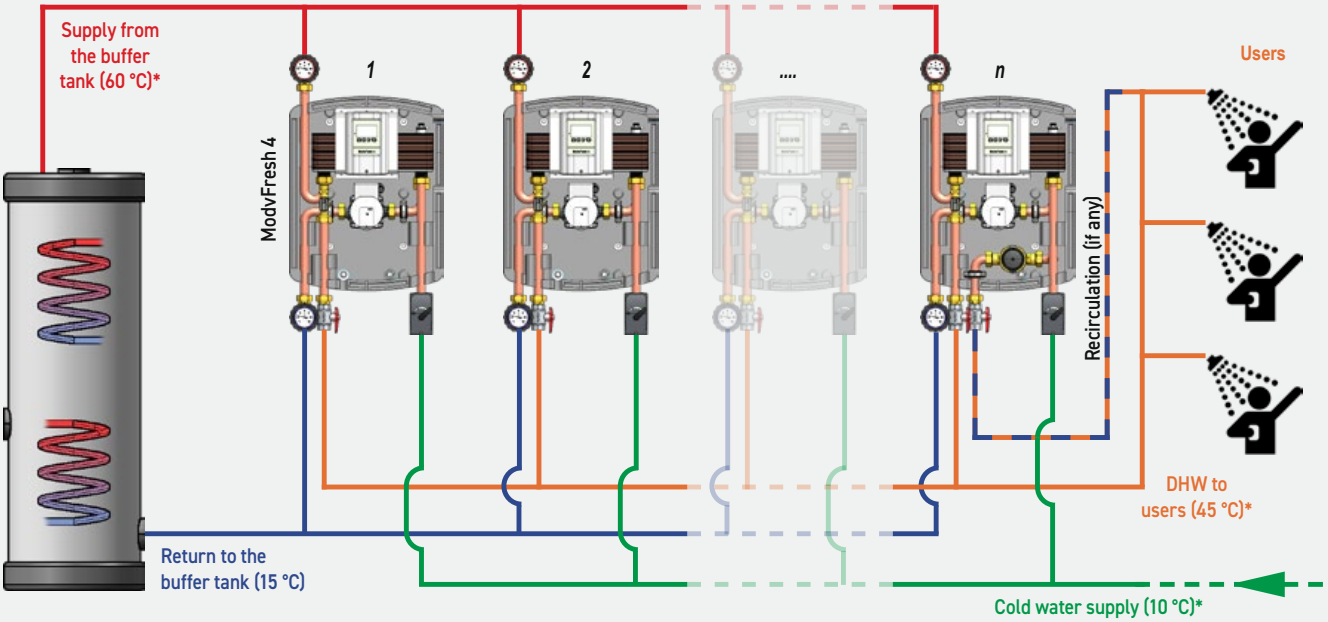
The entire system is managed thanks to a bus connection that connects the control units of the individual Modvfresh 4 units. The control units by reading the flow rate coming from the hot water system, consequently activate the necessary DHW modules, by controlling the respective servomotors on the cold water inlets. The Kascata system is very flexible and it can be designed and carried out with a modular approach, depending on the specific requirements of each installation.

The management logic also allows you to optimize the operation in combination with medium-temperature heat sources, such as for example heat pumps (HP). By connecting in cascade the ModvFresh modules it is possible to maximize the efficiency, making the most of the thermal energy available in the buffer tank. It is possible to adapt the configuration to the project data, which generally are different from one plant to another for temperature and storage volume, flow rates and required temperature in use.

Codes: **see table**



Pre-wired modules: simple and quick modular installation



NOTE: Approximate schematic only. Temperature values marked with an asterisk (*) have to be considered as nominal.

Main technical specifications

- Control of the return temperature to the water tank optimized by every working unit, thanks to the function of speed modulation of the primary circulating pump. This adjustment allows to decrease the return water temperature to the buffer tank up to 15°C: for this reason no devices for the control of the stratified return are needed;
- Wide field of utilization: suitable for commercial installations, hotels, hospitals, sport halls etc;
- "Routine" function that starts up uniformly every DHW unit, on the base of the worked time, allowing a working load equally distributed on the installed units;
- Possibility to enlarge the system (later on) with additional units, in case of increase of power and flow rate request;
- Progressive working of the system without water hammers, thanks to the use of motorized starting valves. The unit is started up or switched off in 20 seconds;
- Possibility to manage a recirculation line using, as last element of the system, a ModvFresh 4 unit with recirculation. Recirculation timetables, temperature and flow rate can be set directly on each device;
- Metering of the heat quantity produced by every unit of DHW system.

Quick and easy installation: ModvFresh 4 modules are supplied already pre-wired. It is sufficient to supply power and connect the CAN-Bus cables to the appropriate connection box.

FIELD OF UTILIZATION
Nominal supply temperature of the buffer tank: 60°C.
Nominal temperature of the cold water supply: 10°C.
Nominal temperature of DHW production: 45°C, adjustable from 30°C to 70°C.
Recirculation line temperature: adjustable from 10°C up to 40°C.

Motorized zone valve (cold water inlet)

Yellow brass finish.
Threaded connections ISO 228 (DIN 259 BSP 2779).
- Quick "clip" connection to the valve for servomotor;
- Power supply 230 V AC.

PN 32. Working pressure: 16 bar.
Max differential pressure: 10 bar.
Fluid temperature: -20÷120°C

On/off servomotor

2 points servomotor: M11 2P, 5 Nm, 20"

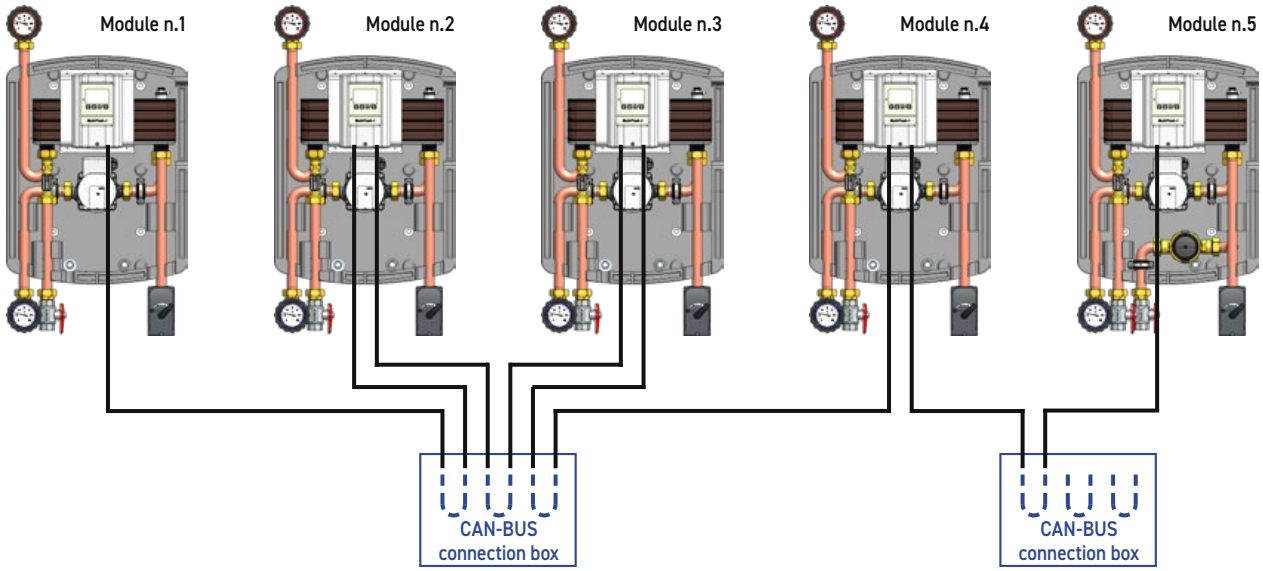
Flow rate limitation fitting

1" x 3/4" male fitting equipped with flow limiter 38 L/Min. To be installed on the DHW output of the ModvFresh 4 100 kW units.

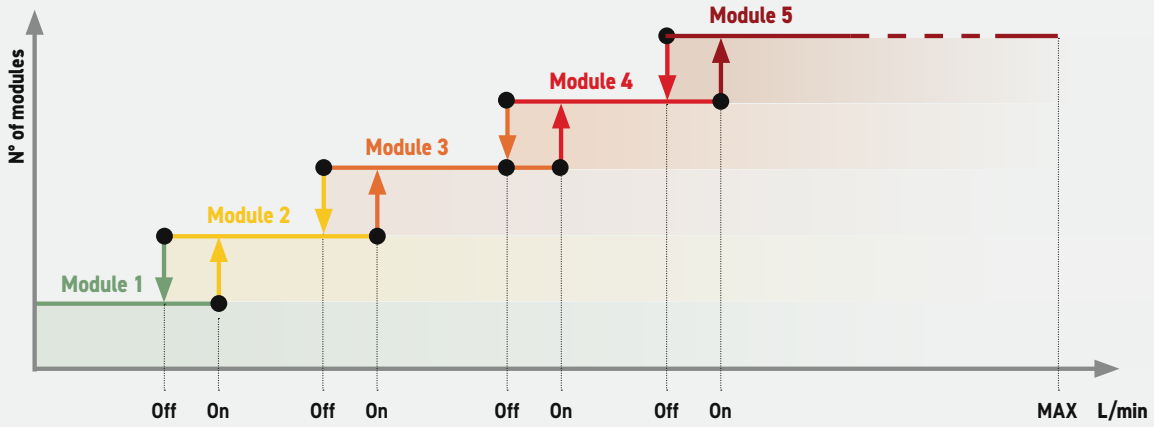
CAN-Bus connection box

Connection box for shielded CAN-Bus cables. It allows to connect up to 4 in cascade ModvFresh 4 modules. For systems that require more modules a second connection box is needed.

Example of system with 4 modules + 1 with recirculation



System start-up of the installation and selective activation of the units



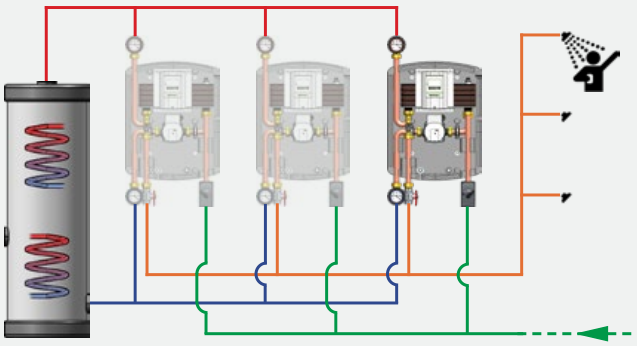
In the start-up mode, without any user's requirement, the first ModvFresh is in stand-by because the isolating valve managed by the Kascata system is usually open. After the request from the first user, the first ModvFresh is activated and it starts to produce domestic hot water. Then, according to the increase of users and, consequently, of the requested flow rate, the VFS sensors progressively register this increase and the Kascata system, that controls the opening of the isolating valves placed on the cold water inlet of each unit, consequently activates the number of units necessary to guarantee the requested flow rate. Therefore, according to this working mode, as the demand for hot water changes, the individual modules are activated or deactivated.

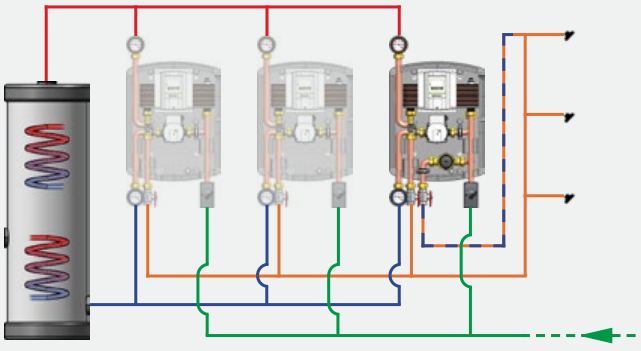
System stop and routine function

Once the user's request stops, the Kascata system operates the closing of all the isolating valves except the one of the priority unit. It is important to say that it does not coincide necessarily with the unit number 1, because it is the routine function that determines, time by time and according to the worked time of every unit, which one has to be kept in stand-by. When a new user's request is coming, the unit which, in that particular moment, is considered primary will start up delivering again the flow and, if necessary, the Kascata system will operate on the insulating valves of other units, bringing the system back to the previously described operating condition.
The importance of the routine function is fundamental, in fact it allows a balanced load on all the units of the system.

Recirculation line

If the design of the system requires a recirculation line, it is possible to manage this function by installing, as the last element of the cascade (to simplify the hydraulic connections), a ModvFresh unit with recirculation. The starting time bands and the recirculation line temperature can be set directly on the built-in controller of the special unit.





Operation in combination with medium-temperature heat sources (heat pumps)

For these systems there is a sizing and configuration procedure based on the project data provided by the Customer, which generally are different from one plant to another for temperature and storage volume, flow rates and required temperature in use.
The product is then delivered customized, based on the technical features of the specific plant.

Custom configuration tailored to the customer

The customization procedure uses a **"Kascata plant booklet"**, available in Excel format via the QR code or in the technical data sheet of the Kascata product on the institutional website www.brv.it.

ModvFresh Kascata - 2020

Sizing calculation for heat pump applications

Input data – By the Customer		
Max temperature of the buffer tank Max water temperature at which the heat source can load the buffer tank uniformly.	55	[°C]
Inlet cold water temperature Cold water temperature from the mains.	10	[°C]
Requested temperature Hot water temperature to user.	45	[°C]
Requested flow rate Constant flow rate to user.	60	[l/min]
Buffer tank capacity Volume of water contained in the buffer tank.	2500	[L]
Power of the heat pump Nominal thermic power at working temperature.	12	[kW]

Input data – By BRV Technical Department		
Min requested temperature of the buffer tank Min usable water temperature of the buffer tank	48	[°C]
DF Station+ (default: 70%)	70%	
DF Station- (default 20%)	20%	
Number of ModvFresh modules needed to compose the Kascata system (min.2 - max. 7)	4	

Data of calculated performances		
Supplied power Total power supplied by Kascata System	146,2	[kW]
Supply time Supply time at requested flow rate and temperature .	9,1	[min]
Overall flow Overall volume of supplied hot water.	547,8	[L]
Time for restarting Requested time to go from min to max buffer tank temperature.	102	[min]

The Customer fills in the first section of the document, with blue cells, reporting the data of the plant design and subsequently forwards the document to BRV.

BRV technical office will evaluate, based on the provided data, the optimal configuration (*), reporting the technical data and the number of ModvFresh 4 modules necessary to obtain required performances.

Thanks to the previously entered data, final performances of the system are automatically calculated and displayed for a checking by the designer.

(*) By working on the threshold values, reducing them for example in the case of use with heat pumps, whose supply temperatures are notoriously of medium-value, it is possible to obtain the maximum return of the system by maximizing the heat exchange of each heat exchanger fitted in the hydraulic modules. It is thus possible to reach acceptable DHW temperature values in use even with medium-temperature heat sources, such as heat pumps.

VFS range:	40	L/min	4.7.2 DF Station+	70%	→	28	L/min
Max. flow:	160	L/min	4.7.3 DF Station-	20%	→	8	L/min

Module n.	*Total flow rate*			*Total flow rate*		
1	Fino a	28	L/min			
2	On	28	L/min	Off	16	L/min
3	On	56	L/min	Off	24	L/min
4	On	84	L/min	Off	32	L/min

Once confirmed, the chosen parameters are set at the factory and the product will be delivered pre-setted to the Customer, in addition to the "Kascata system booklet".

Codes and components - Kascata system without recirculation line

Components list	Quantity				
	200 kW 80 l/min	**300 kW 120 l/min**	**400 kW 160 l/min**	**500 kW 200 l/min**	**600 kW 240 l/min**
ModvFresh 4 modules (pre-wired)	2 pcs	3 pcs	4 pcs	5 pcs	6 pcs
ModvFresh 4 module with recirculation line (pre-wired)	-	-	-	-	-
Motorized zone valve	2 pcs	3 pcs	4 pcs	5 pcs	6 pcs
Flow rate limitation fitting	2 pcs	3 pcs	4 pcs	5 pcs	6 pcs
CAN-Bus connection box	1 pc	1 pc	1 pc	2 pc	2 pc
Complete system code, without recirculation line	**MFK-200**	**MFK-300**	**MFK-400**	**MFK-500**	**MFK-600**

Codes and components - Kascata system with recirculation line

Components list	Quantity				
	200 kW 80 l/min	**300 kW 120 l/min**	**400 kW 160 l/min**	**500 kW 200 l/min**	**600 kW 240 l/min**
ModvFresh 4 modules (pre-wired)	1 pc	2 pcs	3 pcs	4 pcs	5 pcs
ModvFresh 4 module with recirculation line (pre-wired)	1 pc	1 pc	1 pc	1 pc	1 pc
Motorized zone valve	2 pcs	3 pcs	4 pcs	5 pcs	6 pcs
Flow rate limitation fitting	2 pcs	3 pcs	4 pcs	5 pcs	6 pcs
CAN-Bus connection box	1 pc	1 pc	1 pc	2 pcs	2 pcs
Complete system code, with recirculation line	**MFK-R-200**	**MFK-R-300**	**MFK-R-400**	**MFK-R-500**	**MFK-R-600**

The images show ModvFresh 4 units with the optional ball valve kit installed (it can be ordered separately). The installation of this valve kit is recommended in order to carry out maintenance of the various groups if necessary.

Code 3/4": **031000SET**

Warranty

BRV guarantees its **ModvlvS** pump units from manufacturing defects: 5 years for taps, 2 years for other components (or what is granted by the manufacturer of the components). The warranty provides the replacing of the defected item: the way of handling the returns, due to assessed or presumed faultiness, must be in accordance with the procedure written in the special section "Customer Service" of the official website www.brv.it. Claims have to reach BRV within the maximum terms in compliance with the regulations in force. Charges, expenses, damages or indemnities are excluded.

The manufacturer's responsibility is limited to defects found out in conditions of normal use and correct use of the product. In case of any dispute rising from the use of BRV products, it will be regulated by the Italian Law in force and the sole Court of Vercelli will be competent.

The performances of the **ModvlvS** pump units are tested and guaranteed only if all the "accessory" devices are supplied by BRV (circulating pumps, servomotors, controllers etc.).This because BRV cannot know and test all these "accessories" produced by the worldwide manufacturers. Anyway it is a mission of BRV to test all the most known devices within a reasonable period of time and eventually to update the **ModvlvS** systems accordingly.

Declaration of conformity

The **ModvlvS** products are properly manufactured, by completely fulfilling procedures stated in Company Certified Quality System to UNI EN ISO 9001:2015. In addition, all the used components correspond to EC directive regarding: materials, pressure devices, low-voltage components, electromagnetic compatibility, RoHS, etc.

Sales conditions

Minimum purchase order amount: Euro 250,00. A sum of Euro 30,00 will be charged on purchase orders of lower amount to cover their operating costs (spare parts and sample purchase orders are excluded). As regards other sales conditions please contact our sales department.
BRV reserves the right to amend the design and the specifications of the products, as well as to carry out improvements and technical developments, without prior notice. All illustrations, numerical data, etc., are not binding.

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WARRANTY 5 years ON BRASSWARE

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