

R297, R297FL

3-way sector mixing valves



Energy
Management

Datasheet
0868EN  06/2025



R297
3/4", 1", 1-1/4"



R297
1-1/2", 2"



R297FL
DN50, DN65, DN80, DN100, DN125

The R297, R297FL 3-way sector mixing valves enable to intercept and mix heat transfer fluids in HVAC systems. The fluids are mixed through a rotating sector conferring a linear function to the valve while maintaining a low manoeuvring torque.

R297, R297FL valves can be used to both mix and divert the flow.

For optimal operation and control, the valves must be combined to a K275 or K275-1 actuator and may be controlled by KLIMAbus electronic control products.

Main features

R297, R297FL 3-way valves include a special sector rotor.

The special shape of this rotor enables these valves to perform an equal-percentage regulation (more details below).

In addition, the sector rotor can rotate by 360° so that valves can be used both for mixing and diverting.

Last but not least, the rotor system of low-friction coefficient seals ensures low manoeuvring torques during operation.

➤ Versions and product codes

SERIES	PRODUCT CODE	CONNECTIONS	COMPATIBLE ACTUATORS	
			ACTUATOR	ACTUATOR INSTALLATION KIT
R297	R297Y004	Rp 3/4"F x Rp 3/4"F	K275Y002 (series K275) K275Y011 (series K275-1) K275Y013 (series K275-1)	KIT 0297 (included with valve) SPARE PART: P275Y004
	R297Y005	Rp 1"F x Rp 1"F		
	R297Y006	Rp 1-1/4"F x Rp 1-1/4"F		
	R297Y007	Rp 1-1/2"F x Rp 1-1/2"F	K275Y002 (series K275) K275Y011 (series K275-1) K275Y013 (series K275-1)	KIT 0297A (included with valve) SPARE PART: P275Y001
	R297Y008	Rp 2"F x Rp 2"F		
R297FL	R297Y105	DN50 (EN 1092-2)	K275Y002 (series K275) K275Y011 (series K275-1) K275Y013 (series K275-1)	KIT P275Y001 (to be ordered separately)
	R297Y106	DN65 (EN 1092-2)		
	R297Y108	DN80 (EN 1092-2)		
	R297Y110	DN100 (EN 1092-2)		
	R297Y112	DN125 (EN 1092-2)		

Accessories

- **K275Y002**: actuator with integrated constant temperature control
- **K275Y011**: 3-point floating actuator for use with KLIMAbus electronic control
- **K275Y013**: actuator with 0..10 V control for use with KLIMAbus electronic control
- **P275Y001**: kit for installation of K275 and K275-1 actuators on R297 flanged valves
- **KLIMAbus electronic control**: KLIMAbus electronic control components (regulation module, thermostats, room probes, etc....)

Spare part

- **P275Y004**: spare part installation kit for K275 and K275-1 actuators on 3/4", 1", 1-1/4" threaded R297 valves
- **P275Y001**: spare part installation kit for K275 and K275-1 actuators on 1-1/2", 2" threaded R297 valves

Technical data

Performance

- Fluids: water, glycol-based solutions (max. 50%)
- Temperature range: 5÷110 °C
- Max. working pressure: 10 bar (R297)
6 bar (R297FL)
- Max. differential pressure: 1 bar
- Rotation angle: 90° from initial position, in both directions (clockwise and counterclockwise)
- Kv/Kv_{min} setting range: 100
- Leakage: max. 0,1% Kv with $\Delta P = 1$ bar

R297 materials

- Valve body: CW617N brass
- Rotating sector: CW617N brass
- Anti-friction ring: PTFE
- Gaskets: EPDM, FPM
- Covering plate: aluminum

R297FL materials

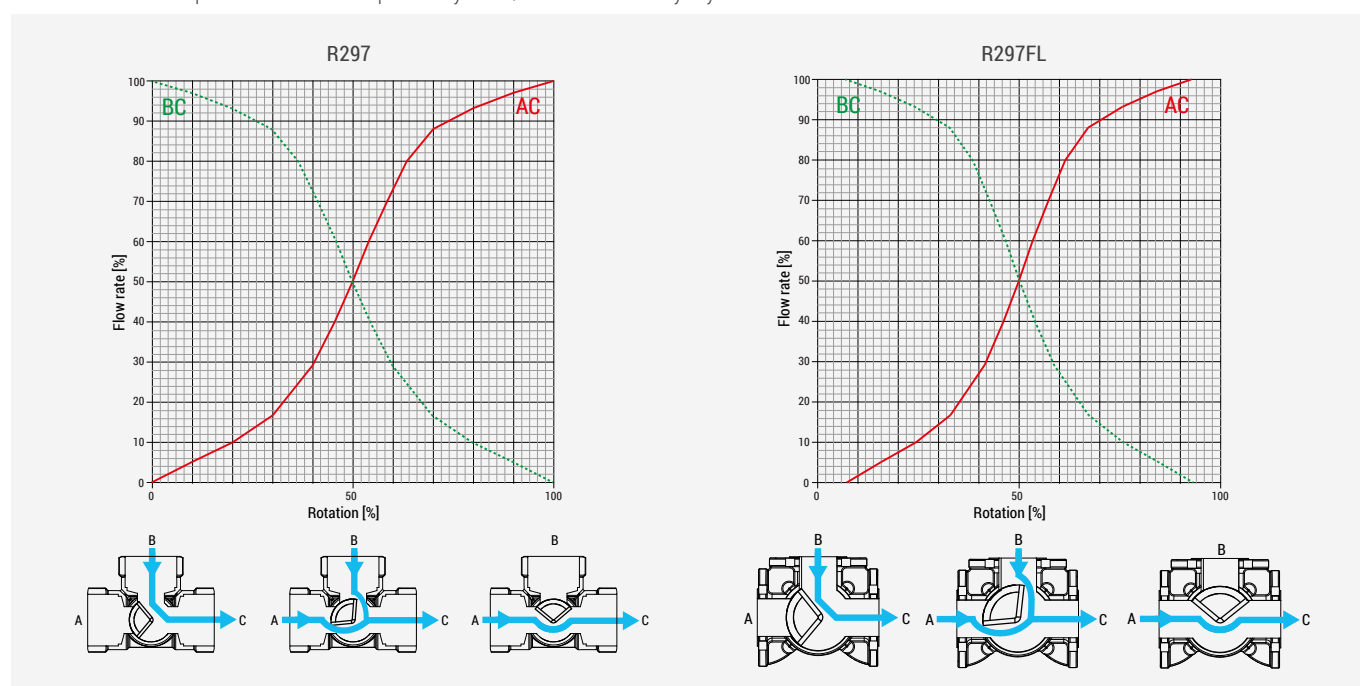
- Body valve: EN-JL 1030 cast iron
- Rotating sector: CW614N brass and stainless steel
- Bush: CW602N brass
- Gaskets: EPDM
- Covering plate: cast iron

Kv and weight

PRODUCT CODE	CONNECTIONS	Kv	WEIGHT [Kg]
R297Y004	Rp 3/4"F x Rp 3/4"F	7	1,1
R297Y005	Rp 1"F x Rp 1"F	11	1,2
R297Y006	Rp 1-1/4"F x Rp 1-1/4"F	15	1,5
R297Y007	Rp 1-1/2"F x Rp 1-1/2"F	25	1,6
R297Y008	Rp 2"F x Rp 2"F	40	2,3
R297Y105	DN50	60	9,1
R297Y106	DN65	90	10
R297Y108	DN80	150	16,2
R297Y110	DN100	225	21
R297Y112	DN125	280	27

Flow diagram

Equal-percentage valve: equal variations of the stroke absolute value always correspond to the same% variation of the efflux coefficient (example: if the valve opens by 10%, the Kv will vary by 10%).

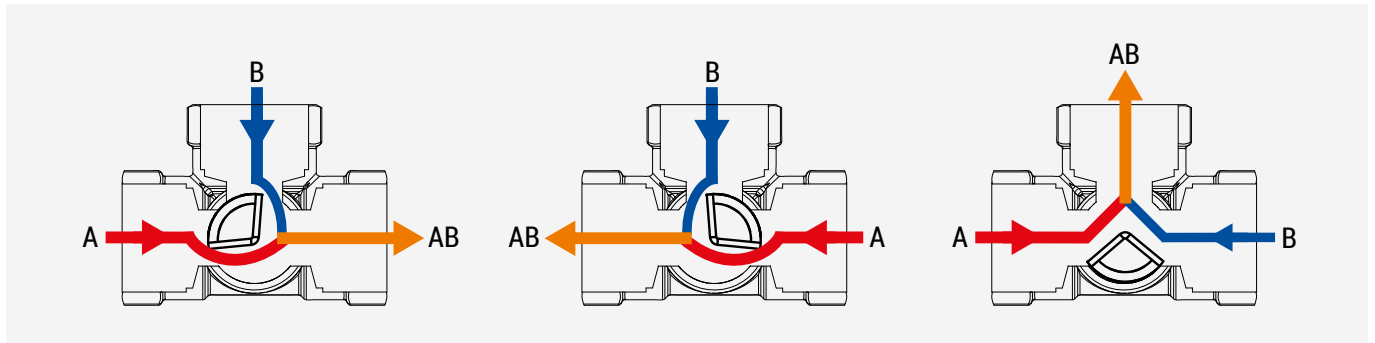


Operation

Mixing mode operation

R297, R297FL flanged valves may include a K275Y002, K275Y011 or K275Y013 actuator and work as mixing valves.

The valve rotor, controlled by the actuator, can move by 90° in both directions (clockwise and counterclockwise) to mix the fluid from the boiler room (A) with the fluid from the heating/cooling system return circuit (B) and guarantee a supply water temperature (AB) complying with the project requirements.



Diverting mode operation

The R297, R297FL valves, when equipped with the K275Y011 or K275Y013 actuator, can operate as diverter valves.

NOTE. The valves cannot be used in diverting mode when installing the K275Y002 actuator.

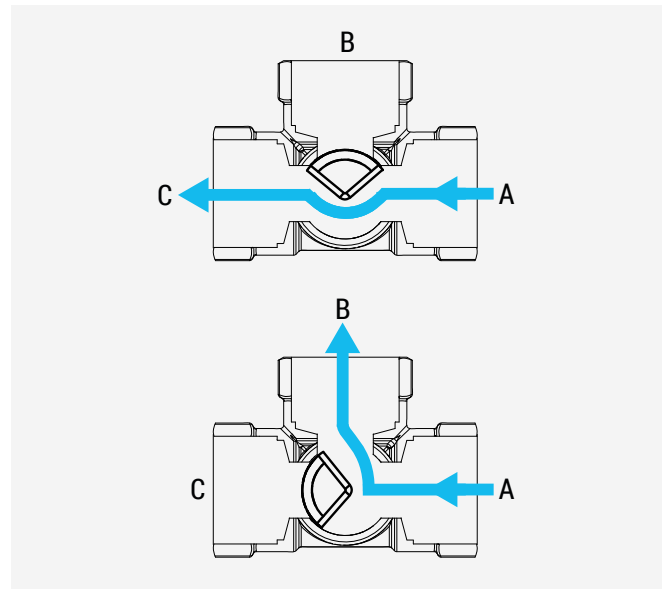
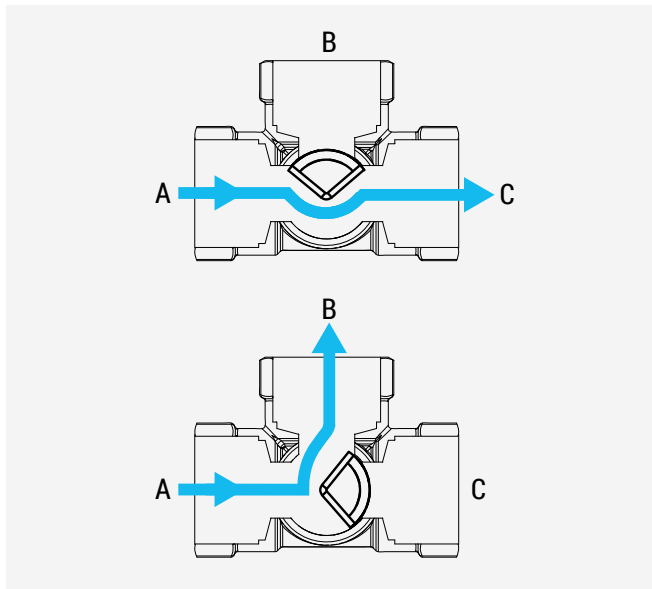
Both actuators perform a 90° rotation: the direction of rotation can be clockwise or counterclockwise, depending on the configuration of the Dip-Switches (K275Y013) or the wiring of the control wires (K275Y011).

Depending on the direction of rotation set for the actuator, the rotor of the valves allow, alternatively, the deviation of the input flow towards one of the two outputs as shown in the diagrams below.

The deviation of the flow rate entering A can be diverted towards outlets B and C by adopting one of the proposed configurations:

- 1a) positioning the rotor start on B and setting the actuator to clockwise operation.
- 1b) positioning the rotor start on C and setting the actuator to counterclockwise operation.

- 2a) positioning the rotor start on B and setting the actuator to counterclockwise operation.
- 2b) positioning the rotor start on C and setting the actuator to clockwise operation.



► Installation

Allowed positions

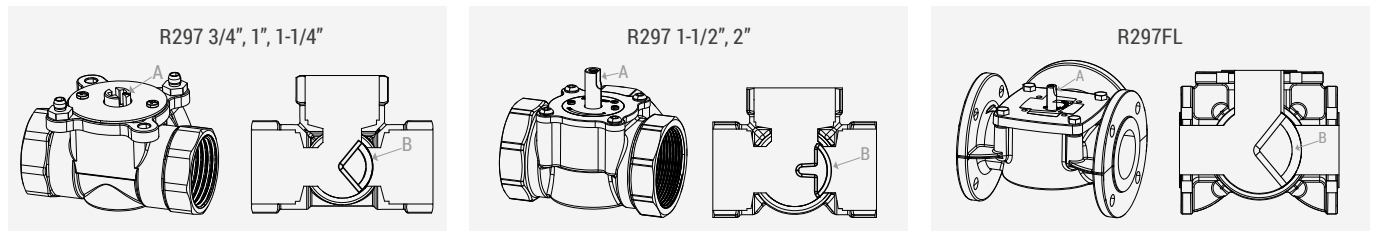
R297, R297FL valves may be installed vertically with the actuator on the left or right side or horizontally with the actuator on top. Horizontal installation with the actuator pointing downward is not allowed.



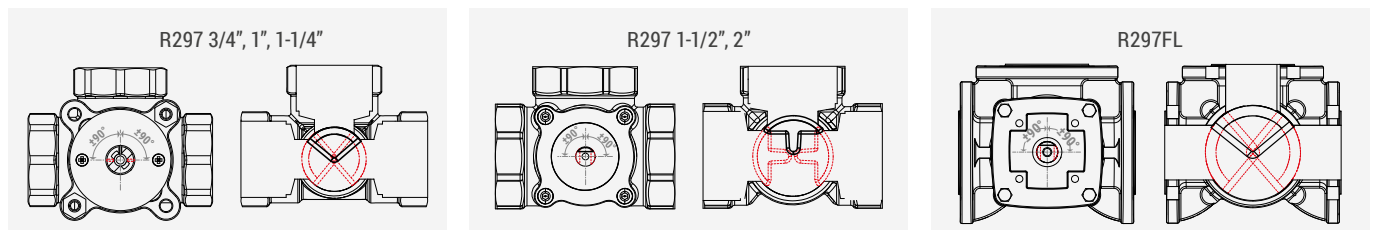
Actuator installation: preliminary operations

Before installing the actuator on the valve it is necessary to manually position the valve stem according to the desired operation (operation as a mixing valve or as a diverter valve).

The milling (A) on the valve stem always shows the current position of the rotor (B).



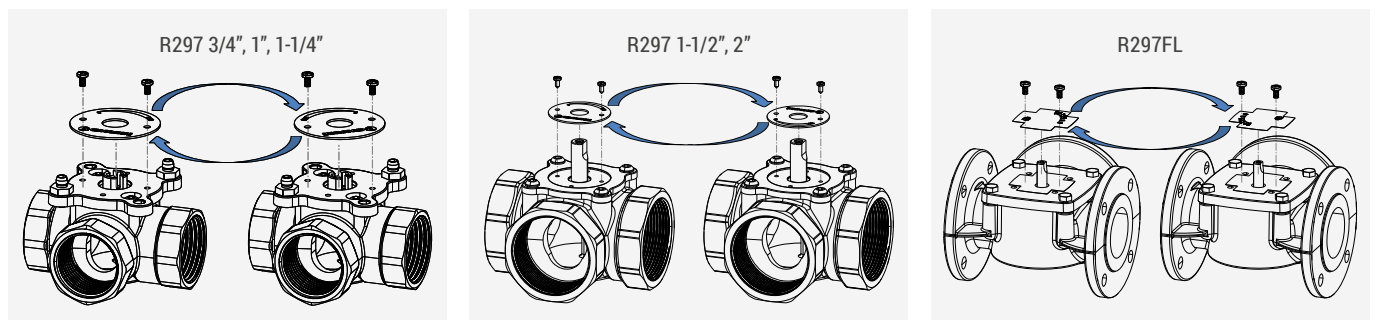
The valve rotor has a rotation angle of 90° in both directions (clockwise and counterclockwise); therefore depending on the starting point set it can move within a range of $\pm 90^\circ$.



Based on the rotation you want the rotor to perform, it is necessary to correctly set the operating values of the actuator (direction of rotation, control signal, etc.)

⚠ **NOTE.** For the installation and setting of the actuators and the correct setting, please refer to the operating instructions of the valves and actuators.

The face of the metal plate on the upper side of the valve can be inverted based on the rotation direction set on the actuator so as to show the proper opening range.



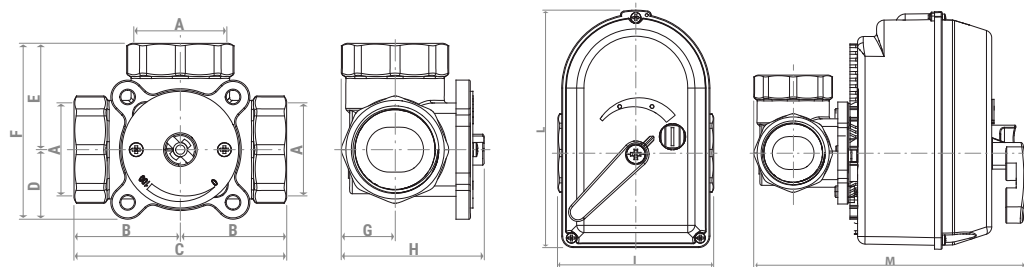
► Operation

R297, R297FL valves do not require any specific maintenance.

We however recommend to verify proper operation of the valve and actuator once a year.

➤ Dimensions

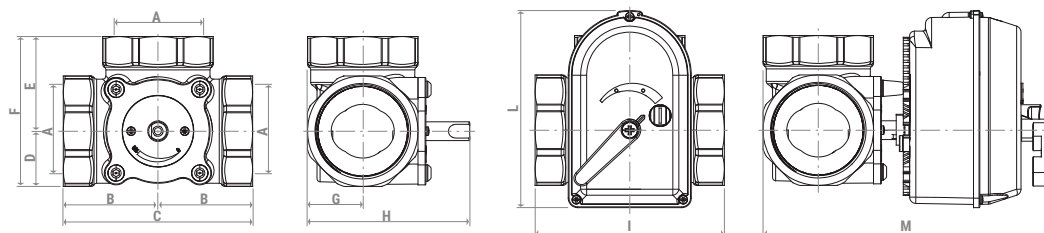
R297 3/4", 1", 1-1/4"



VALVE + ACTUATOR K275 OR K275-1

PRODUCT CODE	CONNECTIONS A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	L [mm]	M [mm]
R297Y004	Rp 3/4" F x Rp 3/4" F	36	72	27	36	63	19	53	78	125	145
R297Y005	Rp 1" F x Rp 1" F	41	82	27	41	68	21	55	82	125	147
R297Y006	Rp 1-1/4" F x Rp 1-1/4" F	47	94	27	47	74	25	62	94	125	154

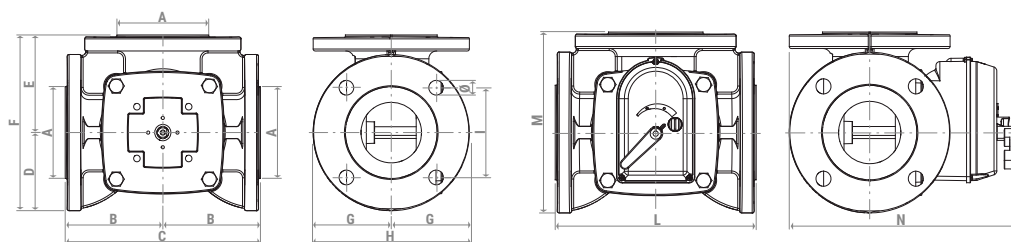
R297 1-1/2", 2"



VALVE + ACTUATOR K275 OR K275-1

PRODUCT CODE	CONNECTIONS A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	L [mm]	M [mm]
R297Y007	Rp 1-1/2" F x Rp 1-1/2" F	53	106	30	53	83	30	96	106	125	179
R297Y008	Rp 2" F x Rp 2" F	60	120	35	60	95	35	103	120	125	186

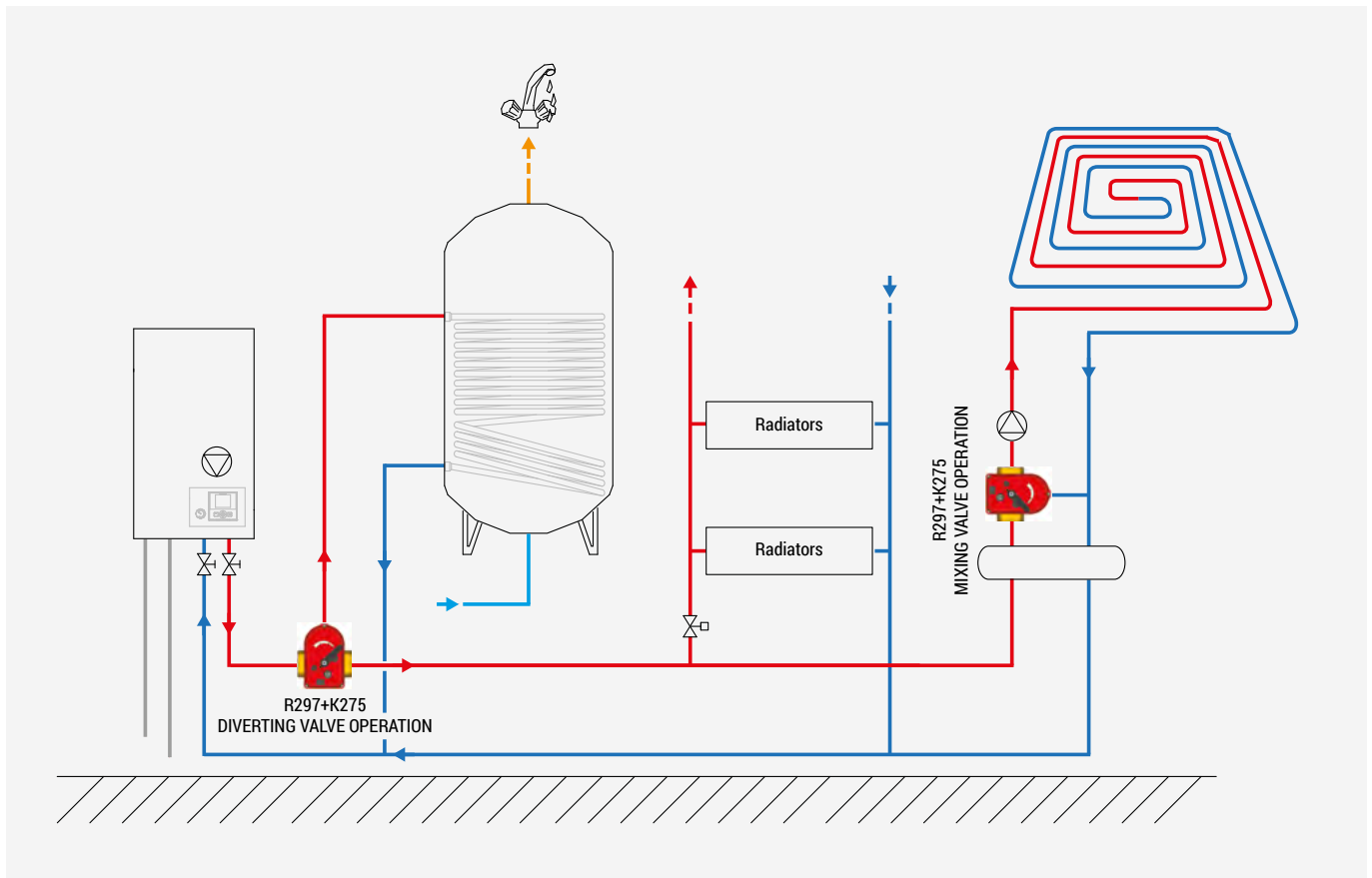
R297FL



VALVE + ACTUATOR K275 OR K275-1

PRODUCT CODE	CONNECTIONS A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Ø [mm]	L [mm]	M [mm]	N [mm]
R297Y105	DN50 (EN 1092-2)	97,5	195	70	98	168	70	140	78	N°4 x Ø15	195	168	225
R297Y106	DN65 (EN 1092-2)	100	200	80	100	180	80	160	92	N°4 x Ø15	200	180	245
R297Y108	DN80 (EN 1092-2)	120	240	95	120	215	95	190	107	N°4 x Ø15	240	215	265
R297Y110	DN100 (EN 1092-2)	132,5	265	105	133	238	105	210	121	N°4 x Ø15	265	238	290
R297Y112	DN125 (EN 1092-2)	150	300	120	150	270	120	240	77	N°4 x Ø15	300	270	300

► Example of application diagram



► Product specifications

R297Y004

3-way sector mixing valve with Rp 3/4"F threaded connections EN 10226-1. Body, bonnet and rotating sector UNI EN 12165 CW617N brass; PTFE anti-friction ring; EPDM or FPM gaskets; aluminum covering plate. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 10 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 1,1 kg. Motorizable with installation of K275 or K275-1 actuator.

R297Y005

3-way sector mixing valve with Rp 1"F threaded connections EN 10226-1. Body, bonnet and rotating sector UNI EN 12165 CW617N brass; PTFE anti-friction ring; EPDM or FPM gaskets; aluminum covering plate. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 10 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 1,2 kg. Motorizable with installation of K275 or K275-1 actuator.

R297Y006

3-way sector mixing valve with Rp 1-1/4"F threaded connections EN 10226-1. Body, bonnet and rotating sector UNI EN 12165 CW617N brass; PTFE anti-friction ring; EPDM or FPM gaskets; aluminum covering plate. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 10 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 1,5 kg. Motorizable with installation of K275 or K275-1 actuator.

R297Y007

3-way sector mixing valve with Rp 1-1/2"F threaded connections EN 10226-1. Body, bonnet and rotating sector UNI EN 12165 CW617N brass; PTFE anti-friction ring; EPDM or FPM gaskets; aluminum covering plate. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 10 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 1,6 kg. Motorizable with installation of K275 or K275-1 actuator.

R297Y008

3-way sector mixing valve with Rp 2"F threaded connections EN 10226-1. Body, bonnet and rotating sector UNI EN 12165 CW617N brass; PTFE anti-friction ring; EPDM or FPM gaskets; aluminum covering plate. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 10 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 2,3 kg. Motorizable with installation of K275 or K275-1 actuator.

R297Y105

3-way sector mixing valve with flanged connections EN 1092-2, DN50. Cast iron body and covering plate; rotating sector UNI EN 12165 CW617N brass and stainless steel; bush CW602N brass; EPDM gaskets. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 6 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 9,1 kg. Motorizable with installation of K275 or K275-1 actuator and P275 kit.

R297Y106

3-way sector mixing valve with flanged connections EN 1092-2, DN65. Cast iron body and covering plate; rotating sector UNI EN 12165 CW617N brass and stainless steel; bush CW602N brass; EPDM gaskets. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 6 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 10 kg. Motorizable with installation of K275 or K275-1 actuator and P275 kit.

R297Y108

3-way sector mixing valve with flanged connections EN 1092-2, DN80. Cast iron body and covering plate; rotating sector UNI EN 12165 CW617N brass and stainless steel; bush CW602N brass; EPDM gaskets. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 6 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 16,2 kg. Motorizable with installation of K275 or K275-1 actuator and P275 kit.

R297Y110

3-way sector mixing valve with flanged connections EN 1092-2, DN100. Cast iron body and covering plate; rotating sector UNI EN 12165 CW617N brass and stainless steel; bush CW602N brass; EPDM gaskets. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 6 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 21 kg. Motorizable with installation of K275 or K275-1 actuator and P275 kit.

R297Y112

3-way sector mixing valve with flanged connections EN 1092-2, DN125. Cast iron body and covering plate; rotating sector UNI EN 12165 CW617N brass and stainless steel; bush CW602N brass; EPDM gaskets. Fluids: water, glycol-based solutions (max. 50%). Temperature range: 5÷110 °C. Max. working pressure: 6 bar. Rotation angle: 90° from initial position, in both directions (clockwise and anti-clockwise). Weight: 27 kg. Motorizable with installation of K275 or K275-1 actuator and P275 kit.

⚠ Safety Warning. Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

♻ Package Disposal. Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

ℹ Additional information. For more information, go to giacomini.com or contact our technical assistance service. This document provides only general indications. Giacomini S.p.A. may change at any time, without notice and for technical or commercial reasons, the items included herewith. The information included in this technical sheet do not exempt the user from strictly complying with the rules and good practice standards in force.

♻ Product Disposal. Do not dispose of product as municipal waste at the end of its life cycle. Dispose of product at a special recycling platform managed by local authorities or at retailers providing this type of service.