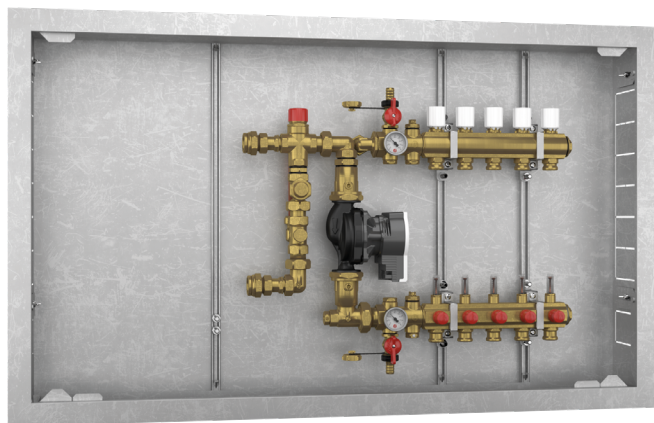


Preassembled manifold with mixing valve, for heating and cooling systems

Datasheet/Instruction
0705EN 04/2026
047U53898



The R559N preassembled manifold is used for the regulation of heating/cooling in mixed systems, or rather in the case of simultaneous installation of heating elements supplied with not mixed water (high temperature in winter for toweldryers or radiators; low temperature in summer for fan-coils or dehumidifiers) and radiant panel circuits to be supplied with mixed water.

The unit is preassembled into a cabinet with adjustable depth, with distribution manifolds from 4 to 12 outlets for mixed water circuits while the manifolds for not mixed water circuits must be ordered separately.

The circulator is self-modulating, compliant with the ErP 2009/125/EC Directive.

The mixed water temperature control is electronic, with K281 actuator controlled by the KLIMAbus thermoregulation, that manage the opening and closing of the mixing valve.

➤ Versions and product codes

PRODUCT CODE	CONNECTIONS MANIFOLD x OUTLETS	Nr OF OUTLETS FOR MIXED WATER	CABINET L x H x D [mm]
R559NY004	G 1" x B.18	4	850 x 605 x 115÷150 (R557RY075)
R559NY005		5	
R559NY006		6	1000 x 605 x 115÷150 (R557RY076)
R559NY007		7	
R559NY008		8	
R559NY009		9	
R559NY010		10	1200 x 605 x 115÷150 (R557RY077)
R559NY011		11	
R559NY012		12	

NOTE. The minimum depth of the metal cabinet is 110 mm, however the pre-assembled manifold requires at least 115 mm of depth. In case of installation with insulation, the minimum depth is 125 mm.

Completion codes

- **R553AY002:** kit for not mixed water; nr. 2 delivery and return outlets of 1" (brackets included)
- **R553AY002:** kit for not mixed water; nr. 3 delivery and return outlets of 1" (brackets included)
- **GE550Y100:** delivery and return thermal energy metering kit of 1", complete with filter, zone valve and plastic spacer for meter installation (bracket R588RY010, energy meter GE552 and actuator K270 not included)
- **K281X012:** actuator 0÷10 V to control the mixing valve (to combine with KLIMAbus thermoregulation)
- **KPM22Y002** electronic controller and other **KLIMAbus** components
- **R559W:** insulation for R559N

Spare parts

- **R557Y061:** frame + door for cabinet R557RY075
- **R557Y062:** frame + door for cabinet R557RY076
- **R557Y063:** frame + door for cabinet R557RY077
- **R588RY010:** single bracket
- **P76WY016:** circulator 25/7; center distance 130 mm

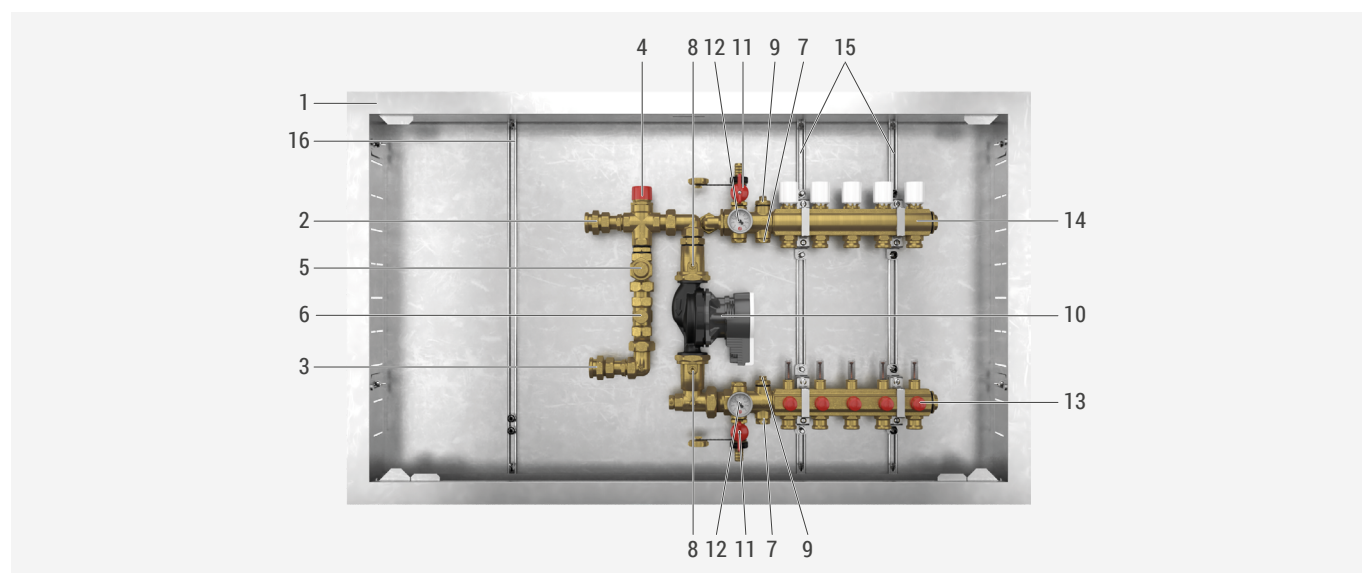
Technical data

- Temperature range: 5÷90 °C
- Fluids of use: water with glycol for HVAC systems
- Max. glycol percentage: 30%
- Max. working pressure: 10 bar
- Centre distance between the outlets: 50 mm
- Self-modulating circulator 25/7, center distance 130 mm

Materials

- Manifold and main components: EN 12165 CW617N brass
- Return manifold handwheels: plastic
- Metallic cabinet: galvanized sheet metal
- Seals: EPDM

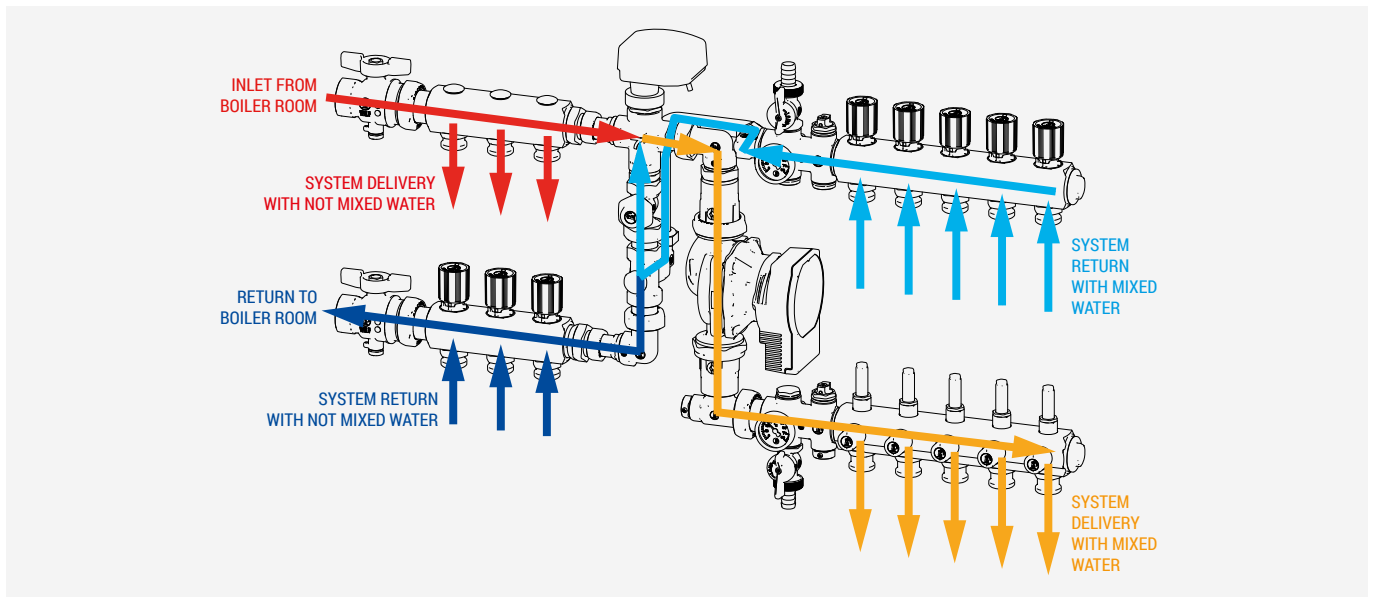
Components



1	Metallic cabinet	9	Manual air vent valve
2	Fluid inlet from boiler room	10	Circulator
3	Fluid return to boiler room	11	Drain cock
4	Three-way mixing valve with M30 x 1,5 mm actuator connection	12	Thermometers
5	Primary lockshield	13	Delivery manifold for mixed water
6	Secondary lockshield	14	Return manifold for mixed water
7	Housing for delivery temperature probe	15	Rails for manifold
8	Shut-off valve for circulator	16	Rails for not mixed water completion kit or metering kit

All components are preassembled:

- a delivery manifold R553M equipped with flow meter (0.5-5 l/min); the delivery manifold is composed by a drawn brass bar with an internal balancing lockshield with mechanical memory for each connection. This allows the detection and the maintenance of the calibration position into the single circuits, even in case of total shut-off. The mechanical memory is made of an appropriate ring that, regulated by R558 key, allows limiting the maximum opening of the lockshield to the value chosen at the balancing stage.
- a return manifold R553V; the return manifold is equipped with micrometric shut-off valves with thermostatic option, that allow the manual opening and closing of the circuits. The automatic temperature control of the single rooms is possible, by installing normally closed thermo-electric actuators (R473/R473M series) or normally open ones (R478/R478M). The installation of the actuators occurs by releasing the micrometric handwheel on the manifolds, and freeing the valve connection.



The fluid coming from the boiler room enters to the manifold (Components - Ref. 2) and is partly diverted to the not mixed water circuits of the system (if kit R553A is present).

The regulation of the supply mixed water temperature is made by the three-way mixing valve (Components - Ref.4) on which the K281 actuator is installed through the M30 x 1,5 mm threaded connection, and managed by the components of KLIMABus thermoregulation.

The delivery of the mixed water to the radiant system comes through the lower manifold (Components - Ref.13) while the return comes through the upper manifold (Components - Ref.14).

The fluid returning from the radiant system goes towards the lockshield (Components - Ref.6) and then, depending on the position of the mixing valve, in part goes to the mixing valve itself through the lockshield (Components - Ref. 5) and in part to the boiler room return circuit (Components - Ref. 13).

The installation of the GE550 kit in combination with the K270 actuator for the two-way zone valve and the GE552 thermal energy meter, allows to meter the thermal energy used for heating.

KLIMABus thermoregulation

The KPM30/KPM31 regulation unit for controlling the mixing valve actuator must be installed in a control cabinet near the R559N manifold. At the manifold must be brought:

- the 230 V power supply of the circulator and of the thermo-electric actuators (to be ordered separately) which are to be installed only when filling and balancing operations are completed.
- the delivery temperature probe K463PY001, to be inserted in the specific housing (Components - Ref. 7).
- K281X012 actuator power supply (24 V; 0÷10 V).

► Installation

It is suggested to install the R559N unit in a place that permits an easy inspection.

Before proceeding with the installation of the cabinet, the frontal cover and the respective support frame shall be removed; they will have to be reinstalled at the end of the wall finishing operations (tiling or painting).

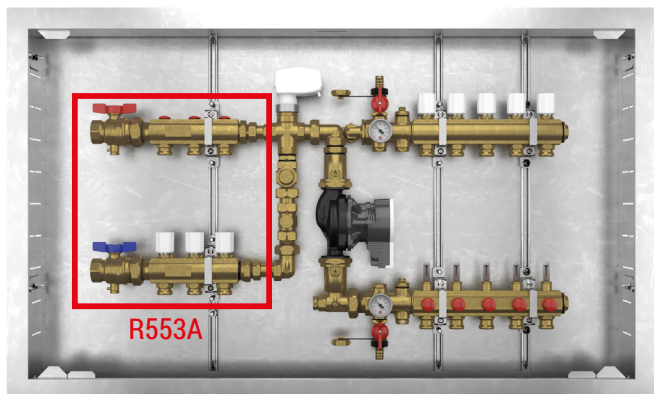
The connections arranged for the joint of the radiant floor circuits, are characterised by Giacomini base 18 connections.

For the connection of the radiator supply pipes and radiant panel circuits, suitable adapters are used depending on the material of the pipe.

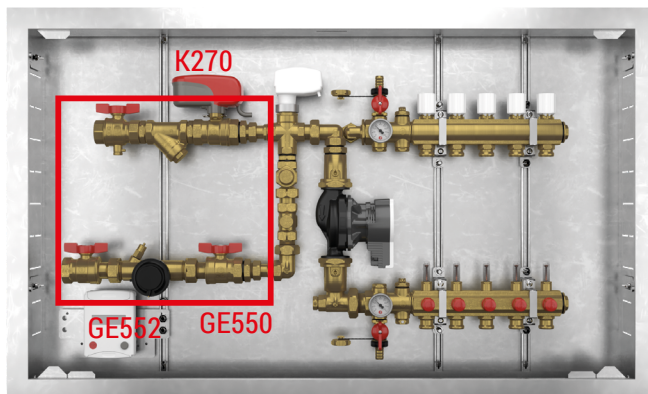
The R559N unit can be installed together with the various options depending on the system requirements:

▲ WARNING. Installation must be carried out by authorized and qualified personnel.

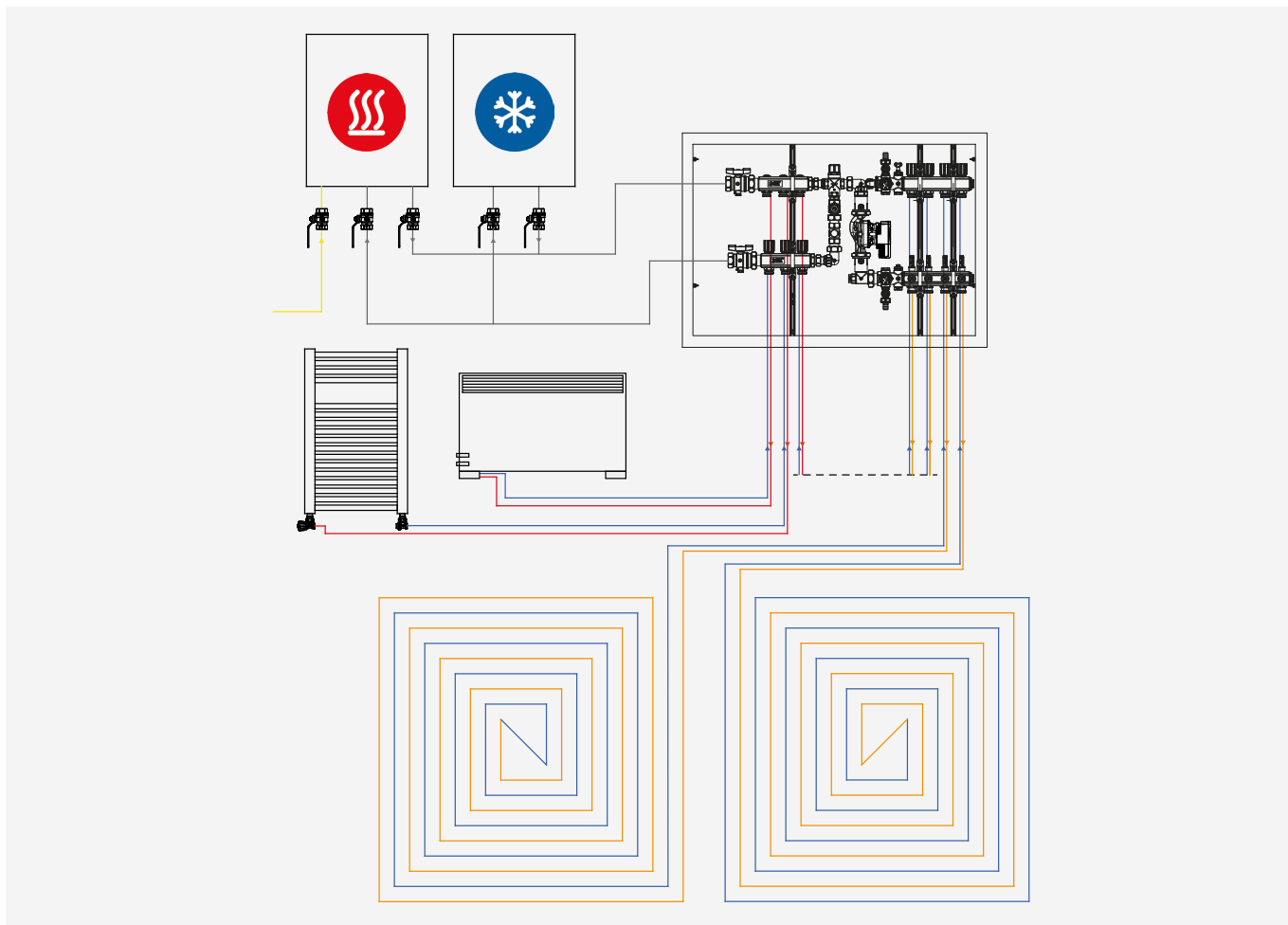
Installation with not mixed water circuit kit



Installation with metering kit



Example of installation



► Regulation

Filling and pressurising the radiant floor system

As for all manifolds for radiant panel systems, before casting the screed to cover the pipes you must fill and pressurise the system (as envisaged by Standard UNI-EN1264-4).

To fill the system correctly, proceed as follows:

- Close the shut-off ball valves (Components - Ref.8) positioned upstream and downstream the circulator.
- Close the secondary lockshield (Components - Ref.6) with an appropriate 8 mm Allen key, so as to isolate the secondary circuit from the primary.
- Close all the lockshields on the delivery manifold using the R558 key (5 mm hexagon).
- Completely unscrew the mechanical memory of the lockshields using the screwdriver part of the R558 key.
- Close all the valves on the return manifold using the appropriate manual handwheels.
- Connect a normal rubber pipe to the drain cock (Components - Ref.11) on the intermediate fitting of the return manifold.
- Connect a normal rubber pipe to the drain cock (Components - Ref.11) on the intermediate fitting of the delivery manifold, for filling purpose.
- Fill the first circuit by opening the relative lockshield (on the delivery manifold) and valve (on the return manifold).
- When you are sure no more air/water mix is emerging from the drain pipe, close the circuit using the respective valve and lockshield and then open the next circuit. This operation must be carried out methodically until the circuits are fully drained.
- Now open the shut-off valves (Components - Ref.8) of the circulator and the lockshield (Components - Ref.6), to fill the manifolds and allow all the air to be vented from them via the air vent valves (Components - Ref.9).
- Then it is possible to re-open all the delivery and return valves and pressurise the system at the values envisaged by Standard UNI EN 1264-4, using for example a manual pump.
- The low temperature circuits must only be balanced at system start up, respecting the indications given in the project documentation.

Primary lockshield regulation

TWO TURNS OPENING (recommended calibration)

Secondary lockshield regulation

FULLY OPEN (recommended calibration)

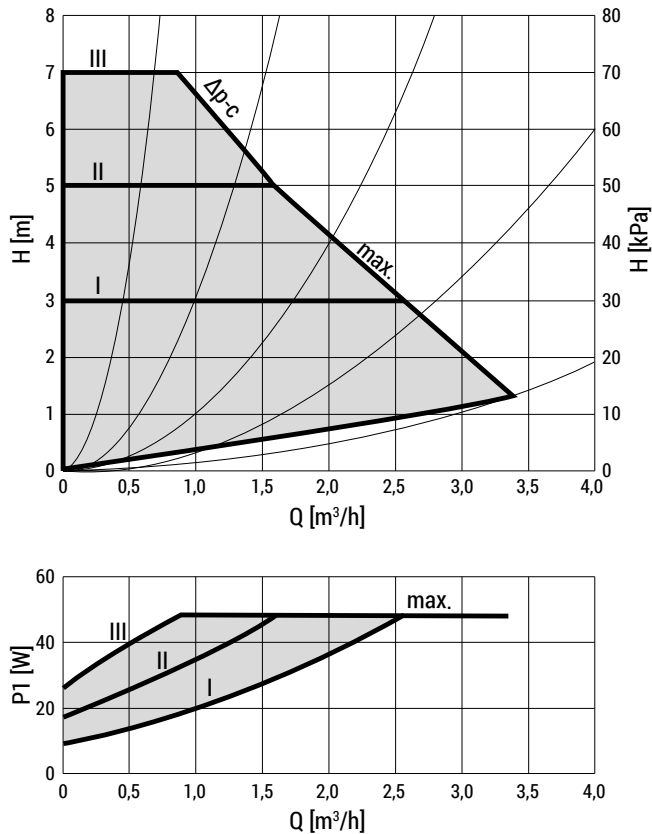
Manifolds regulation



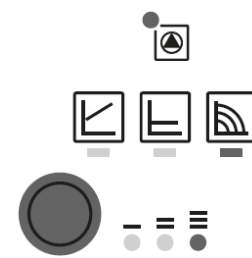
In order to make the regulation proceed with the complete opening of the lockshields mechanical memory by using the screw driver part of the R558 key; by using then the hexagonal part of the same key, proceed with the opening of the lockshield up to the achievement of the desired flow rate. Then close the mechanical memory, by using the screw driver part of the R558 key.

Circulator features

Constant differential pressure Δp -c (I, II, III) [RECOMMENDED]



Setting the control mode



The LED selection of control modes and corresponding pump curves takes place in clockwise succession.

- Press the operating button briefly (approx. 1 second).

→ LEDs display the set control mode and pump curve.

Air venting



- Fill and vent the system correctly.

If the pump does not vent automatically:

- Activate the pump venting function via the operating button: press and hold for 3 seconds, then release.

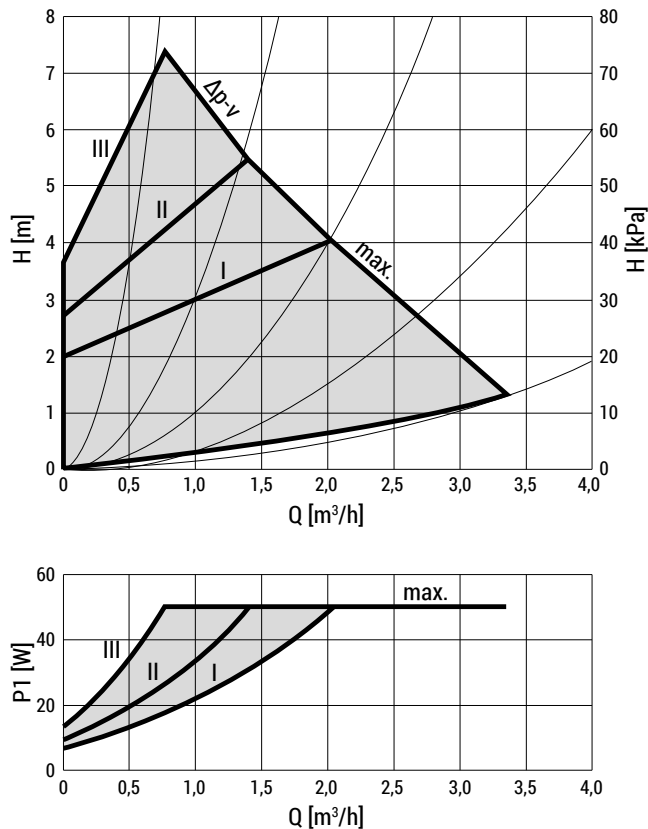
→ The pump venting function is initiated and lasts 10 minutes.

→ The top and bottom LED rows flash in turn at 1 second intervals.

- To cancel, press and hold the operating button for 3 seconds.

After venting, the LED display shows the previously set values of the pump.

Variable differential pressure Δp -v (I, II, III)

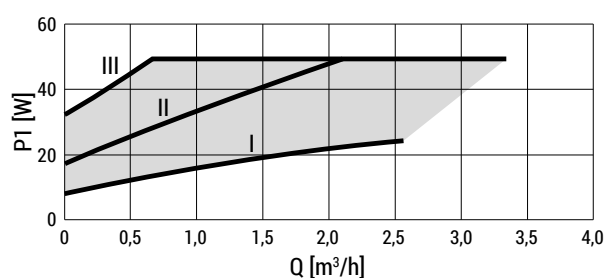
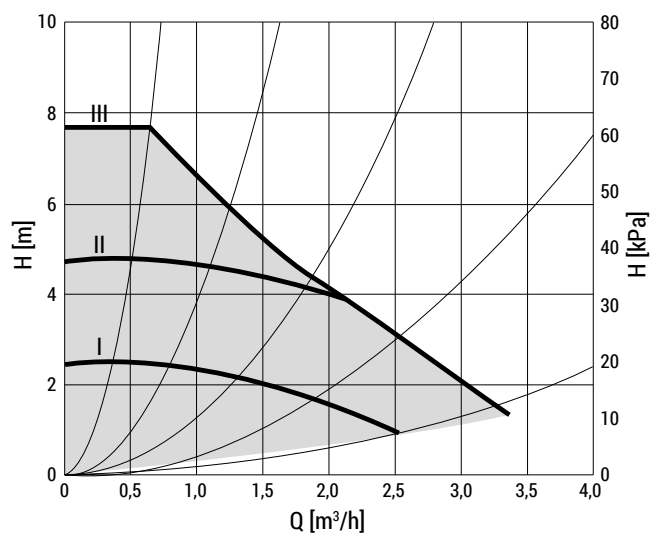


Recommended for two-pipe heating systems with radiators to reduce the flow noise at thermostatic valves. The pump reduces the delivery head to half in the case of decreasing volume flow in the pipe network.

Electrical energy saving by adjusting the delivery head to the volume flow requirement and lower flow rates.

There are three pre-defined pump curves (I, II, III) to choose from.

Constant speed (I, II, III) [FACTORY SETTING]



Recommended for systems with fixed system resistance requiring a constant volume flow.

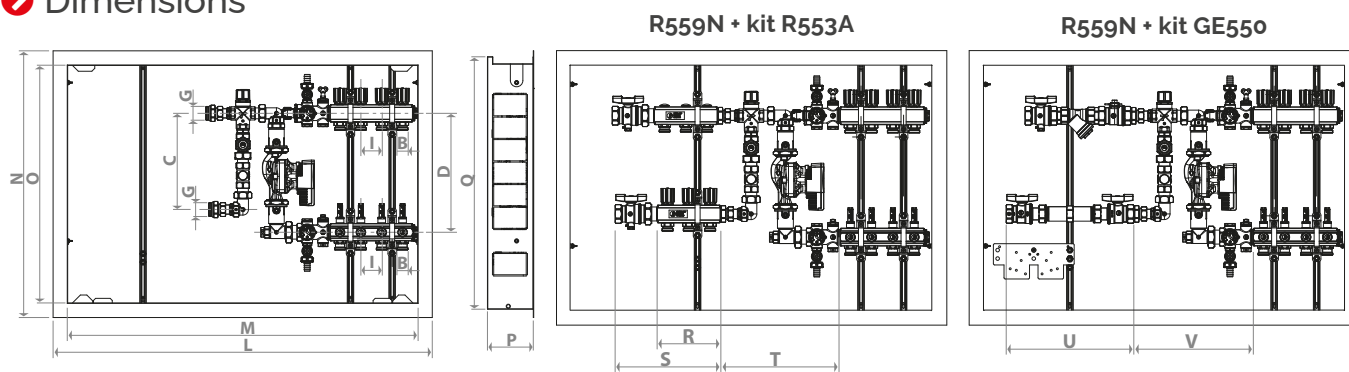
The pump runs in three prescribed fixed speed stages (I, II, III).

Fault signals

- The fault signal LED indicates a fault.
- The pump switches off (depending on the fault) and attempts a cyclical restart.

LED	Faults	Causes	Remedy
 Lights up red	Blocking	Rotor blocked	Activate manual restart or acontact customer service
	Contacting/winding	Winding defective	
 Flashing red	Under/overvoltage	Power supply too low/high on mains side	Check mains voltage and operating conditions, and request customer service
	Excessive module temperature	Module interior too warm	
	Short-circuit	Motor current too high	
 Flashes red/ green	Generator operation	Water is flowing through the pump hydraulics, but there is no mains voltage at the pump	Check the mains voltage, water quantity/pressure and the ambient conditions
	Dry run	Air in the pump	
	Overload	Sluggish motor, pump is operated outside of its specifications (e.g. high module temperature). The speed is lower than during normal operation	

➤ Dimensions



PRODUCT CODE	Nr. OF OUTLETS	G x B	C [mm]	D [mm]	I [mm]	L [mm]	M [mm]	N [mm]	O [mm]	P [mm]	Q [mm]	R [mm]	S [mm]	T [mm]	U [mm]	V [mm]
R559NY004	4 mixed water	G 1" M x B.18	231	285	50	910	850	640	570	115÷150	605	-	-	-	-	-
R559NY005	5 mixed water	G 1" M x B.18	231	285	50	1060	1000	640	570	115÷150	605	-	-	-	-	-
R559NY006	6 mixed water	G 1" M x B.18	231	285	50	1060	1000	640	570	115÷150	605	-	-	-	-	-
R559NY007	7 mixed water	G 1" M x B.18	231	285	50	1060	1000	640	570	115÷150	605	-	-	-	-	-
R559NY008	8 mixed water	G 1" M x B.18	231	285	50	1260	1200	640	570	115÷150	605	-	-	-	-	-
R559NY009	9 mixed water	G 1" M x B.18	231	285	50	1260	1200	640	570	115÷150	605	-	-	-	-	-
R559NY010	10 mixed water	G 1" M x B.18	231	285	50	1260	1200	640	570	115÷150	605	-	-	-	-	-
R559NY011	11 mixed water	G 1" M x B.18	231	285	50	1260	1200	640	570	115÷150	605	-	-	-	-	-
R559NY012	12 mixed water	G 1" M x B.18	231	285	50	1260	1200	640	570	115÷150	605	-	-	-	-	-
R553AY002	2 not mixed water	G 1" F x B.18	-	-	-	-	-	-	-	-	-	98	197	282	-	-
R553AY003	3 not mixed water	G 1" F x B.18	-	-	-	-	-	-	-	-	-	148	247	282	-	-
GE550Y100	-	1" F	-	-	-	-	-	-	-	-	-	-	-	-	300	282

NOTE. The minimum depth of the metal cabinet is 110 mm, however the pre-assembled manifold requires at least 115 mm of depth. In case of installation with insulation, the minimum depth is 125 mm.

➤ Product specifications

R559N

Preassembled manifold for heating/cooling systems, made of brass, with three-way mixing valve. Connections 1". Outlets connections: base 18. Center distance between outlets 50 mm. Temperature range: 5÷90 °C. Max. working pressure: 10 bar. Composed of: delivery manifold with frontal lockshield with mechanical memory and flow meters scale 0,5÷5 l/min; return manifold with shut-off valves with manual handwheel, suitable for thermo-electric actuators installation; EPDM gaskets; drain cocks; thermometers; manual air vent valves; self-modulating circulator complying with Directive ErP 2009/125/EC; flush-mounting metallic cabinet with adjustable depth (850÷1200)x605x115÷150 mm (LxHxD) with painted frame and door. Mixing obtained by means of a three-way mixing to be completed with K281 actuator and KLIMAbus thermoregulation. To be completed with R553A not mixed water kit (for two or three zones) or with GE550 metering kit with GE552 thermal energy meter and K270 actuator for zone valve.

⚠ 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.

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