

Anti-condensation group

R005

ICMA[®]

ST.R005.05.26.EN

/ Description

The anti-condensation relay unit is used to connect the solid fuel generator to the distribution manifold, controlling the return temperature to the generator to avoid the condensation phenomenon.

This process is controlled by the thermostatic sensor contained inside it.

This system also allows the generator to be connected to the inertia accumulator or directly to the heating system of use.

-Group advantages:

- Right/Left adaptability
- Compatible with every 125mm axis manifold. (With shell type 93)



/ Condensation process

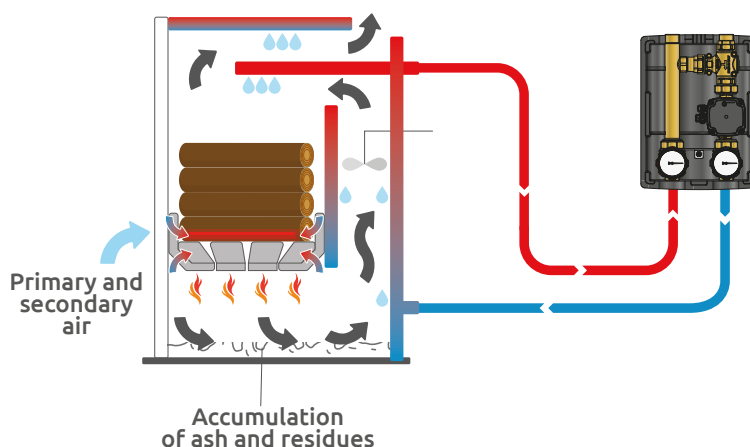
Solid wood fuel contains a variable moisture percentage based on the type (chips, pellets, chips etc.) and seasoning. Water vapor is released during the drying phase of the fuel inside the combustion chamber. The presence of cold areas in the generator or the chimney can bring the smoke temperature to the condensation point. The water vapor condenses on the generator walls, along with the soot and the part of hydrocarbons that does not participate in the combustion contained in the fumes, producing deposits and catrams. These adhere to the walls of the generator and the internal surfaces. Catrams, besides being dangerous for their high flammability, are harmful to the integrity of the generator and limit the efficiency of the plant.

The anti-condensation group limits the condensation by keeping the heat-generator walls at the highest possible temperature.

This contributes to greater combustion efficiency, better emissions control in the environment and longer lifetime of the the heat-generator.

THE CIRCULATION GROUP AVOIDS:

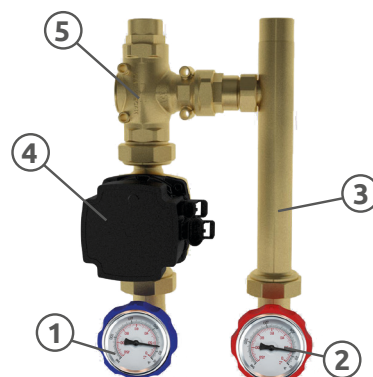
- Deposits and tar
- Corrosion
- Reduction in heat exchanger efficiency
- Flammability



/ Components List

Anti-condensation mixin group complete with:

1. Ball valve G3/4" or G 1" M with blue hand-wheel for connection to the return pipes, thermometer 0-120°C and incorporated check valve.
2. Ball valve G3/4" or G 1" M with red hand-wheel and thermometer 0-120°C for connection to the return pipes.
3. Steel pipe with ends threaded G1" 1/2 M.
4. Energy class "A" electronic circulator with variable speed, G1 1/2" threaded connections and a centre-to-centre distance of 130 mm.
5. Anti-condensation valve on the 3 way. Working temperature range 45°/55°/60°/70°.



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Technical features

TECHNICAL DATA:

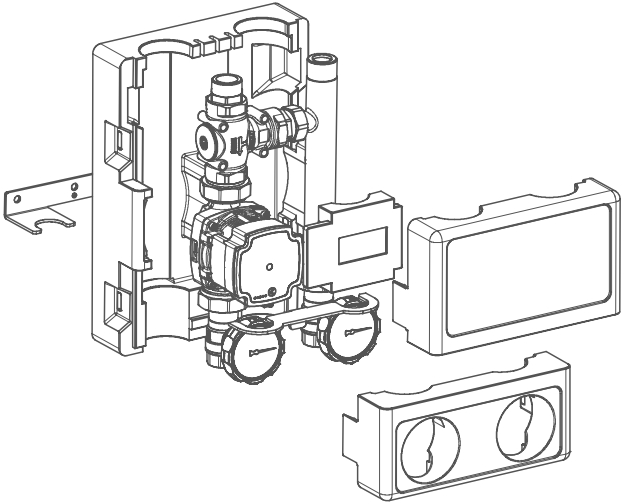
Fluids used:	Water and glycol based solutions
Maximum percentage of glicole:	50%
Maximum operating pressure:	1 bar
Working range:	110° C
Thermometers scale:	0÷160 °C
Setting temperatures:	45°C - 55°C - 60°C - 70°C
Circulators:	See specifications on page 3

MATERIALS:

Bodies:	Brass CW617N - EN 12165
Caps and unions:	Brass CW617N - EN 12165
Stub:	Tropicalized steel
Thermometer:	Steel/Aluminium
Locking brackets:	Galvanized steel
Flat gaskets:	EPDM Perox
Sealing gaskets:	PTFE
Sealing components:	EPDM Perox
Insulation shell:	EPP
Density Ver. 93:	40 kg/m3
Density Ver. 94:	60 kg/m3
Conducibility of shell λ (ΔT) Ver. 93:	0,036 W/(m·k) at 10°C
Conducibility of shell λ (ΔT) Ver. 94:	0,039 W/(m·k) at 10°C

CONNECTIONS:

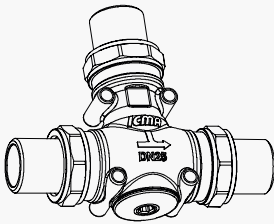
Upper connections:	G 1" M
Lower connections:	G 1" M



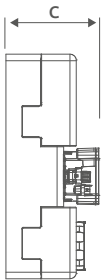
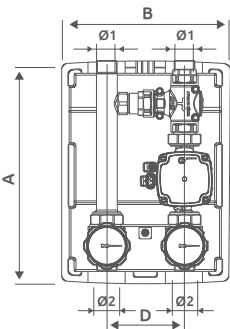
ANTI-CONDENSATION VALVE:

Body	Brass CB 753 S - UNI EN 1982
Nuts and unions	Brass CW 617 N - UNI EN 12165
Cap / Shutter	Brass CW 614 N - UNI EN 12164
Spring	Stainless Steel
Thermostatic element	Composite
O-Rings	EPDM Peroxide
Union seals	Sesalit Plus-G Fibre

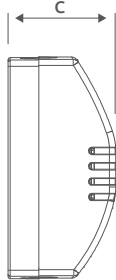
Fluids used:	Water, glycol solutions
Maximum percentage of glycol:	50%
Setting temperatures:	45°C - 55°C - 60°C - 70°C
Complete closing temperature:	T taratura + 10°C
Working temperature range:	5°C - 100°C
Setting accuracy:	+/- 2°C
Max. working pressure:	10 bar



Dimensions



GUSCIO 93



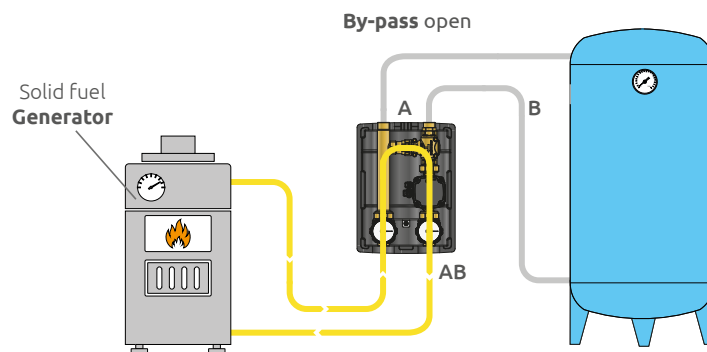
GUSCIO 94

ART.	A		B		C		D	Ø 1		Ø 2
	93	94	93	94	93	94		93	94	
R005	350	360	248	270	200	180	125	3/4" F	G 1" M	G 1" 1/2 M

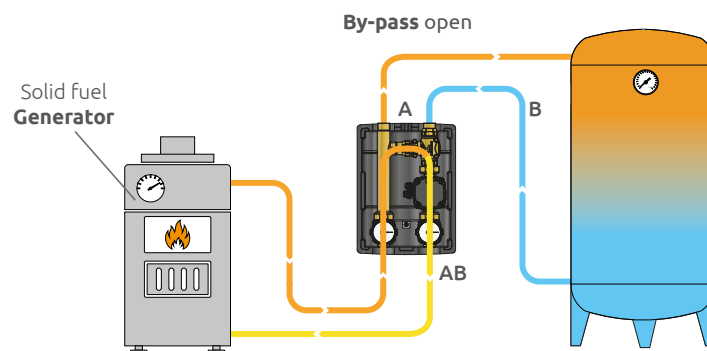
/ Principle of operation

When the plant is started, the temperature of the heat transfer fluid will be far below the calibration temperature of the anti-condensate valve that will be in the completely open by-pass condition **(A)**, while the return pipe from the plant **(B)** will be Completely closed.

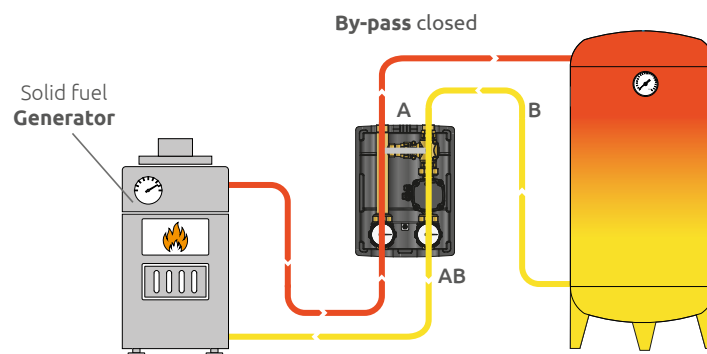
This situation creates a recirculation of the delivery water and is intended to bring the temperate into the boiler as fast as possible.



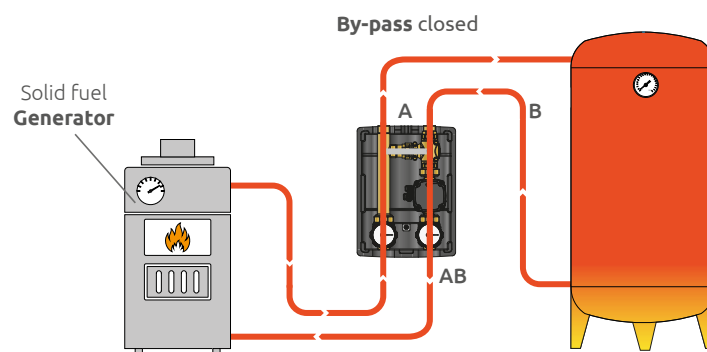
When the flow temperature of the flow-through fluid **(A)** exceeds the calibration value of the anti-condensate valve, the return pipe from the plant **(B)** opens and the delivery water from the boiler is mixed with the cold of the plant **(AB)**. The system load begins.



When the return temperature of the heat transfer fluid from the plant is greater than about 10 °C compared to the anti-condensate valve calibration value, the by-pass duct **(A)** will be closed while the return pipe from the plant **(B)** will be Fully open. The load of the plant continues, all the flow coming from the boiler is sent directly to the plant.



The loading phase continues until the plant has reached the set temperature, at which point the boiler will operate the plant temperature maintenance.



/ Group customization

Shells



Version **93**



Version **94**

Circulation pumps



Art. P330 - Circulator with fixed ΔP , variable ΔP and 3 constant speed:

TECHNICAL SPECIFICATIONS:

Brand:	Wilo
Model:	PARA RS 25/7 130
Centre to centre distance:	130 mm
Connections:	G 1"1/2 M
Electrical power supply:	230V – 50/60Hz
Operating temperature:	Ambient. temp. 50°C = 2 ÷ 105°C Ambient. temp. 55°C = 2 ÷ 90°C Ambient. temp. 60°C = 2 ÷ 77°C Ambient. temp. 65°C = 2 ÷ 60°C
Max operating pressure:	10 bar
Minimum pressure on the intake side:	0,5 bar
Max. percentage of glycol:	50%
Protection level:	IPx4D
Energy Class (EEI):	≤0.21



Art. P327 - Circulator with ΔP constant and ΔP variable:

TECHNICAL SPECIFICATIONS:

Brand:	Wilo
Model:	PARA RS 25/8 130
Centre to centre distance:	130 mm
Connections:	G 1"1/2 M
Electrical power supply:	230V – 50/60Hz
Operating temperature:	Ambient. temp. 50°C = 2 ÷ 105°C Ambient. temp. 55°C = 2 ÷ 90°C Ambient. temp. 60°C = 2 ÷ 77°C Ambient. temp. 65°C = 2 ÷ 66°C
Max operating pressure:	10 bar
Minimum pressure on the intake side:	0,5 bar
Max. percentage of glycol:	50%
Protection level:	IPx4D
Energy class (EEI):	≤0.21

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Art. P329 - Circulator with nr. 2 proportional-pressure curves, nr. 2 constant-pressure curves, min-max mode – Fixed speed

TECHNICAL SPECIFICATIONS:

Brand:	Taco
Model:	ES2 25-70/130
Centre to centre distance:	130 mm
Connections:	G 1"1/2 M
Electrical power supply:	230V – 50/60Hz
Operating temperature:	Ambient. temp. 30°C = 30 ÷ 95°C Ambient. temp. 35°C = 35 ÷ 90°C Ambient. temp. 40°C = 40 ÷ 70°C
Max operating pressure:	6 bar
Minimum pressure on the intake side:	50°C = 0,3 bar 95°C = 1,0 bar
Max. percentage of glycol:	30%
Protection level:	IP44
Energy Class (EEI):	≤0.21



Thermal limit!

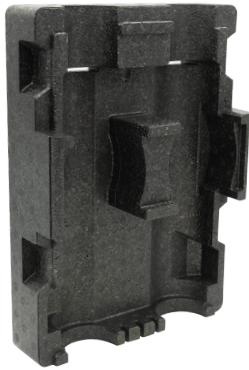


Art. P331 - Wet-rotor circulator driven by a permanent magnet motor. Features a self-adaptive mode, enabled by default

TECHNICAL SPECIFICATIONS:

Brand:	Shinoo
Model:	GPA 25/70 III
Centre to centre distance:	130 mm
Connections:	G 1"1/2 M
Electrical power supply:	230V – 50/60Hz
Operating temperature:	Ambient. temp. . 30°C = 30 ÷ 110°C Ambient. temp. . 50°C = 50 ÷ 110°C Ambient. temp. . 70°C = 70 ÷ 110°C
Max operating pressure:	10 bar
Minimum pressure on the intake side:	75°C = 0,05 bar 95°C = 0,5 bar 110°C = 1,08 bar
Max. percentage of glycol:	50%
Protection level:	IP44
Energy Class (EEI):	≤0.2

/ Composizione guscio ver. 93



Basamento C66R003AE66250



Coperchio inferiore C67R003AE66250



Coperchio superiore C68R003AE66250



Insert C05R003AE66250



Label C03S001AE20RT

Anti-condensation group

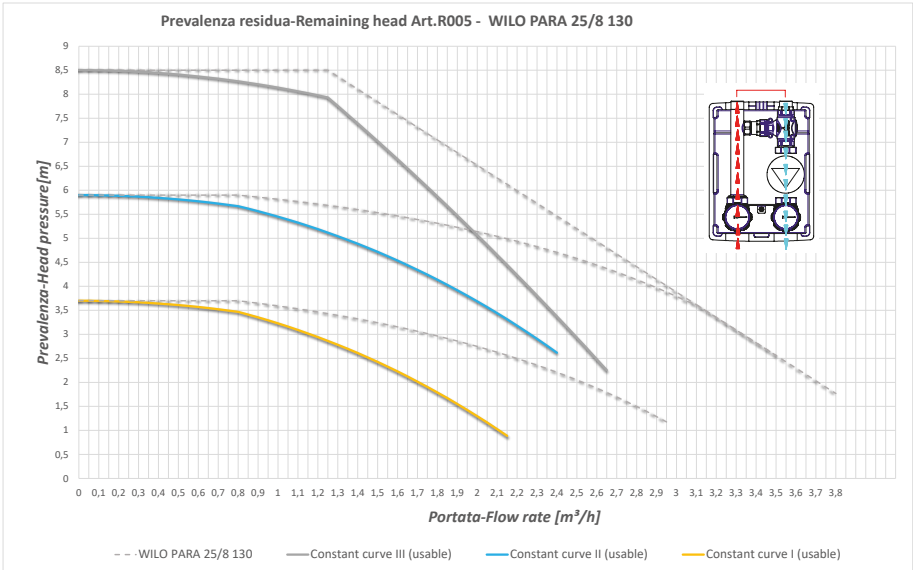
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Shell Composition, Version 94



Hydraulical Specifications

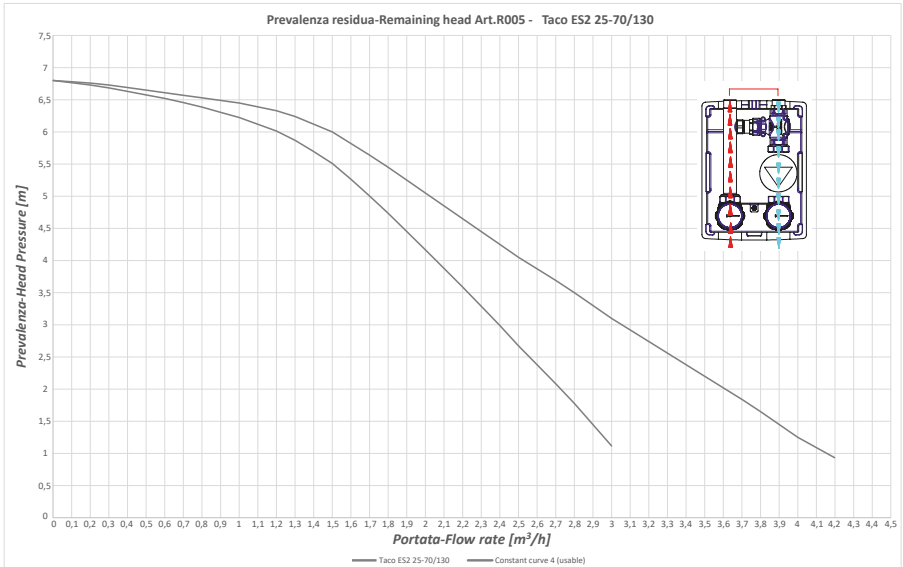
Art. **P327**



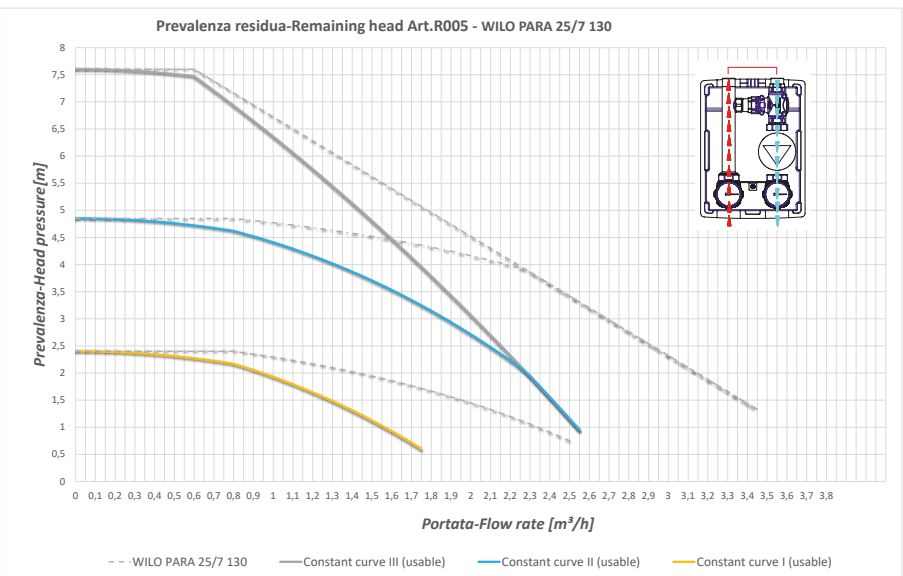
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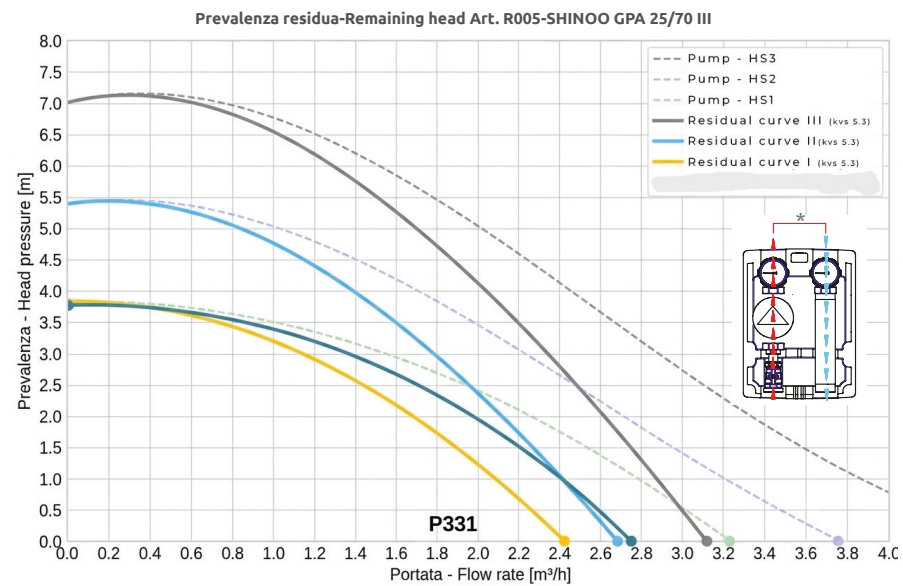
Art. **P329**



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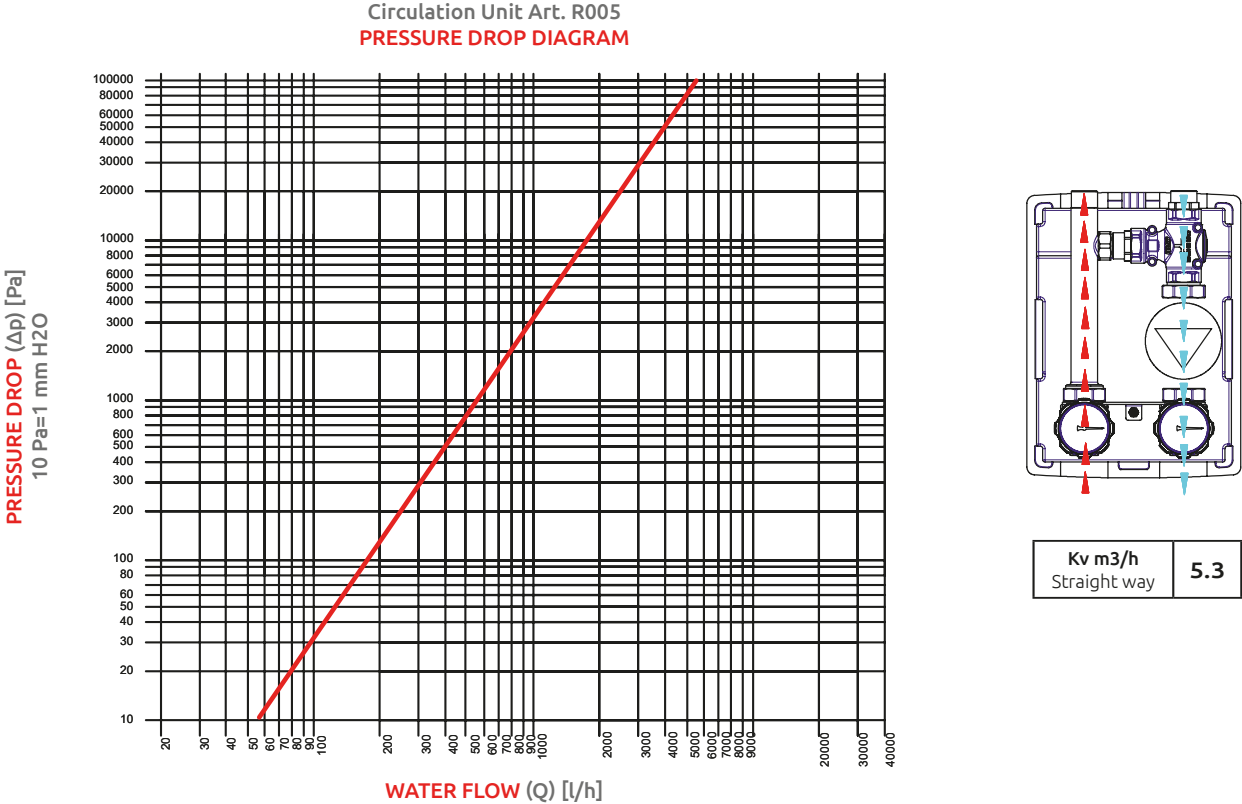
Art. **P331**



Anti-condensation group

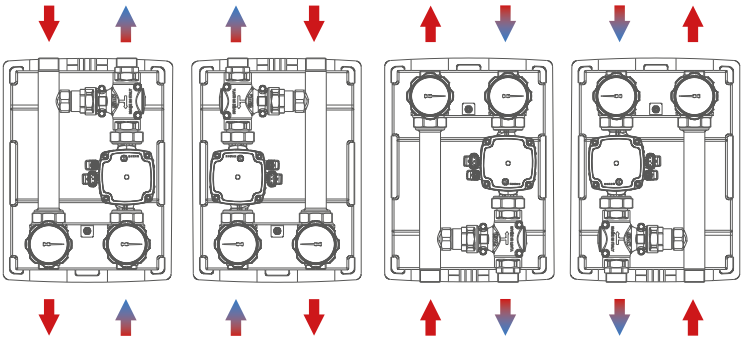
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Hydraulic Specifications



Positioning

Group orientation



Right-Left Switching

