

Conter R

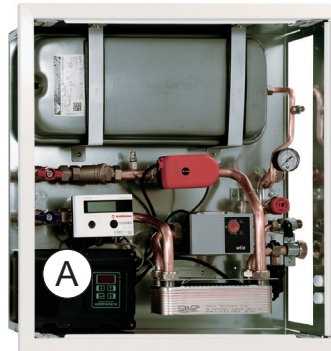
Direct metering, hydraulic separation, regulation and distribution for underfloor heating plants

DESCRIPTION

CONTER R is the Hydraulic Interface Unit (HIU) designed for the replacement of radiators with radiant panels in buildings with central heating and heat cost allocators.

In case of renovations, should it be necessary to move to radiant floor, wall or ceiling panels, it is possible to install one or more **CONTER R** units (according to the housing unit's dimensions and thermal load) directly to the distribution system – riser – and replace the radiators.

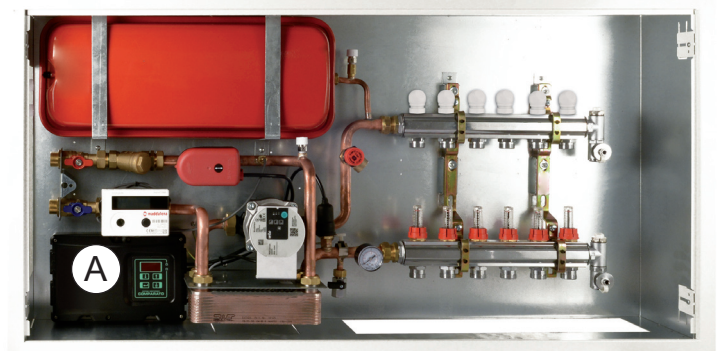
- Direct metering by MID certified heat meter
- Hydraulic separation between central heating plant and housing unit thanks to a heat exchanger
- Fixed point regulation of flow temperature or weather compensation
- Wireless M-Bus transmission of consumptions



CONTER R

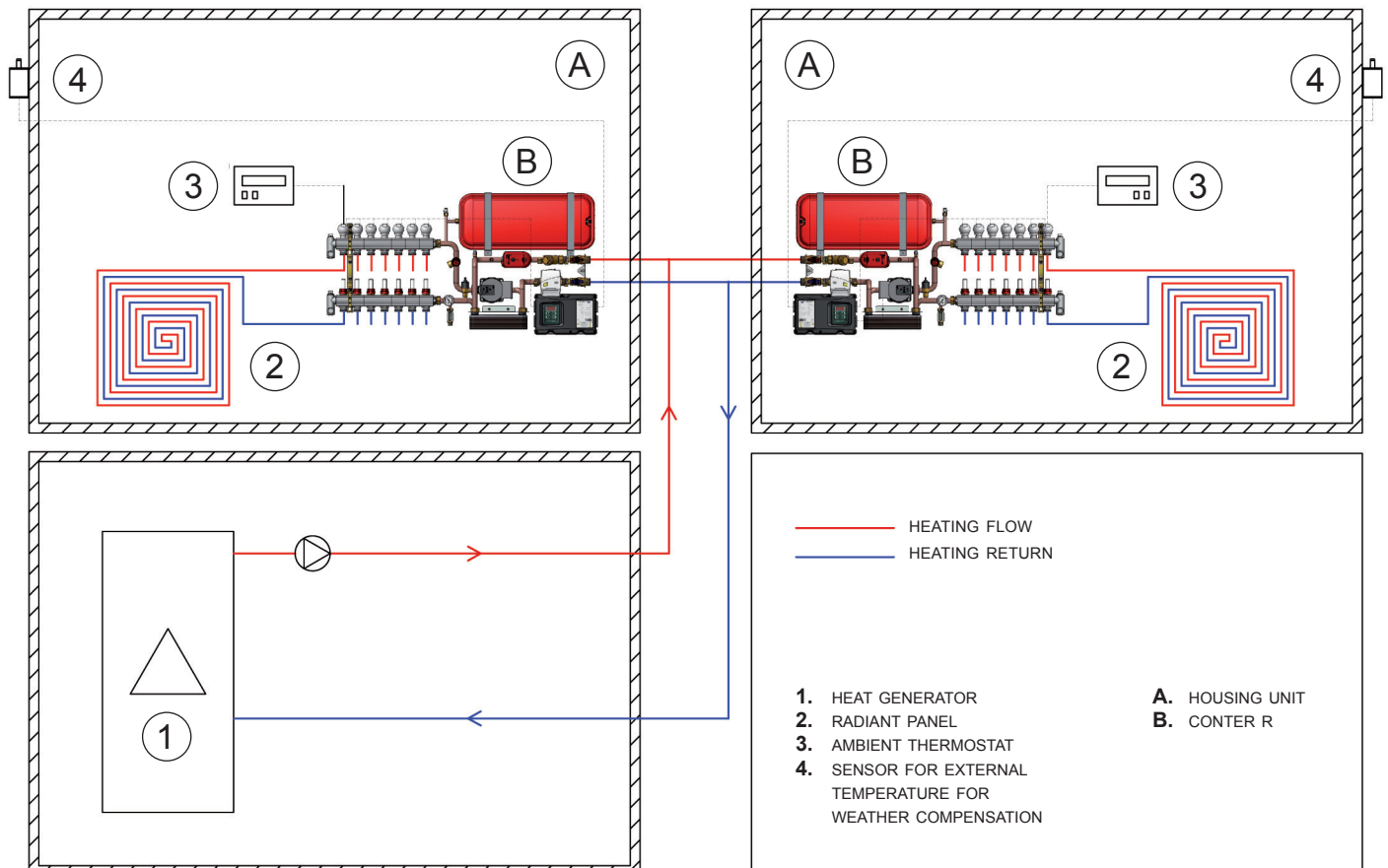


CONTER R WITH DISTRIBUTION MANIFOLDS



CONTER R WITH MANIFOLDS, FLOW METER AND PRESET FOR ELECTROTHERMAL HEADS

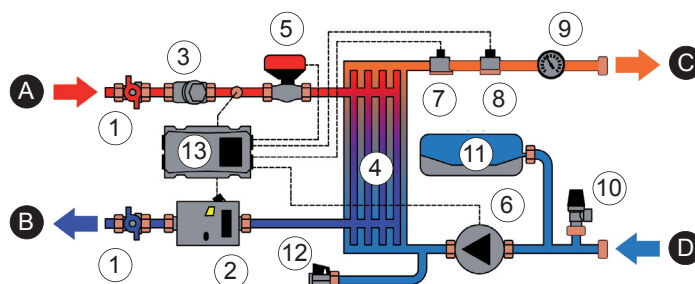
EXAMPLE



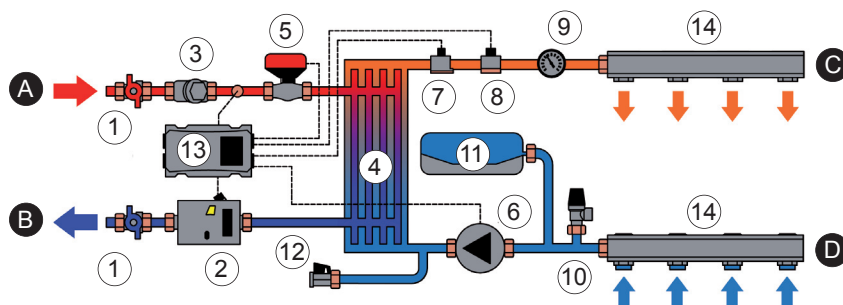
COMPONENTS AND FLOWS

- A : Risers – flow
 B : Risers – return
 C : Radiant system – flow
 D : Radiant system – return

- 1 : Manual shut-off valves
 central heating plant
 2 : Wireless M-bus heat meter
 3 : Y-strainer
 4 : Heat exchanger
 5 : **SINTESI** 2-way modulating
 motorised valve
 6 : Pump
 7 : Flow temperature probe
 8 : Safety thermostat
 9 : Manometer
 10 : Safety valve
 11 : Expansion vessel
 12 : Filling of the plant
 13 : Electrical box
 14 : Distribution manifold

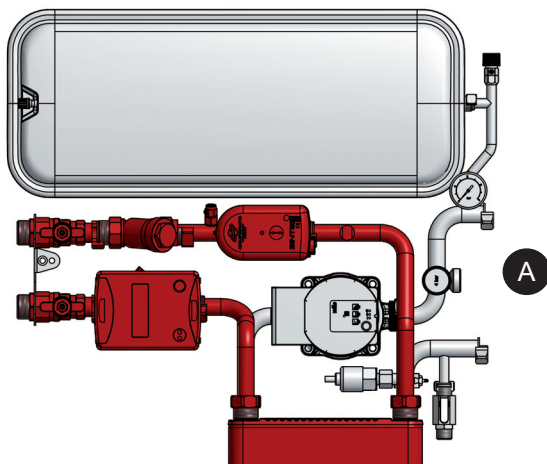


CONTER R



CONTER R WITH MANIFOLDS

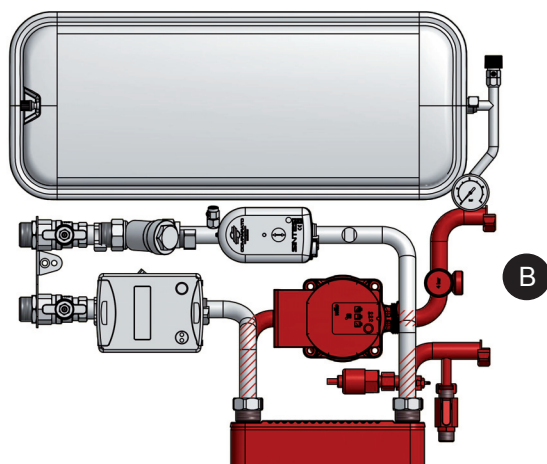
HYDRAULIC FEATURES



A

A

PRIMARY CIRCUIT • CENTRAL HEATING PLANT
 $K_v = 1,8 \text{ m}^3/\text{h}$ (with mechanical heat exchanger)



B

B

SECONDARY CIRCUIT • PLANT
 $K_v = 2,5 \text{ m}^3/\text{h}$
 Pump head @ $1 \text{ m}^3/\text{h} = 50\text{kPa}$

k_v = flow rate coefficient [m^3/h]

Q = flow rate [m^3/h]

Δp = pressure drop = Q^2 / k_v^2 [bar]

TECHNICAL FEATURES

PRIMARY CIRCUIT • Central Heating plant	
Type of fluid	VDI 2035 Water
Max temperature	90°C
Max pressure	6 bar
SECONDARY CIRCUIT • Housing Unit	
Type of fluid	VDI 2035 Water
Max temperature	90°C
Max pressure	6 bar
PIPEWORK	
Material	Copper
Dimension	Ø 18 mm
HYDRAULIC CONNECTIONS	
Material	Brass
Dimension	G3/4"
METAL SHEET BOX	
Material	Galvanised steel 10/10
PAINTED FRAME AND DOOR	
Material	Black steel 10/10
Colour	RAL 9010
POWER SUPPLY	
Voltage	230V ± 10%
Frequency	50 Hz
Max power consumption	70 W
USE	
Installation	Indoor
Ambient temperature	5 ÷ 55°C
Ambient humidity	25 ÷ 85%
MOTORISED VALVES	
Primary circuit	SINTESI modulating with 2-way equal percentage valve

EXPANSION VESSEL	
Volume	10 liters
SAFETY VALVE	
Pressure cut-out	3,5 bar
SAFETY THERMOSTAT	
Action	55°C
ELECTRONIC CONTROL SYSTEM	
Type	Pre-calibrated PID algorithm
Precision	± 1°C
Regulation range	24 ÷ 50°C

FEATURES OF THERMAL EXCHANGE

PRIMARY FLOW	POWER	HEATING	HEATING FLOW	PRIMARY FLOW	RETURN FLOW
T [°C]	P [kW]	T [°C]	Q [l/h]	Q [l/h]	T [°C]
60	1.5	40/35	260	53	35
		45/35	130	54	35,5
	3.0	40/35	520	107	35,5
		45/35	260	112	37
	5.0	40/35	868	184	36
		45/35	434	200	38
70	1.5	40/35	260	38	35
		45/35	130	38	35
	3.0	40/35	520	76	35
		45/35	260	77	35,5
	5.0	40/35	868	128	35,5
		45/35	434	132	36,5

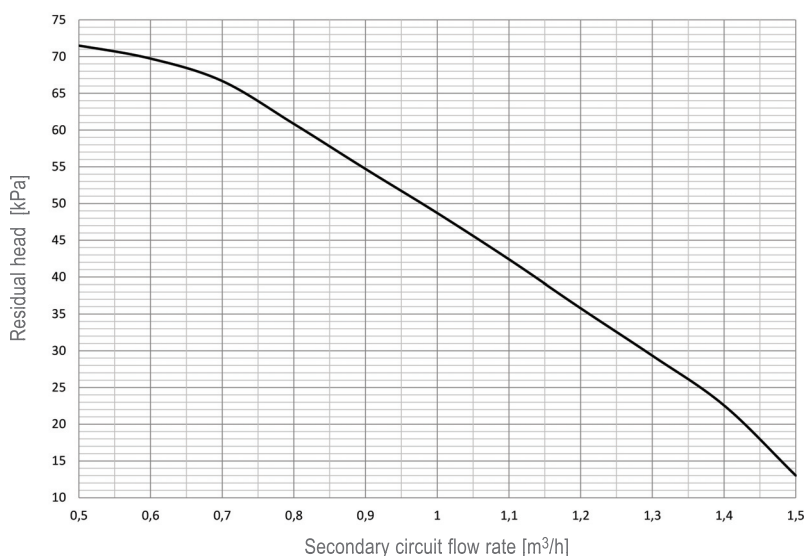
MODELS AND REFERENCES

CONTER R

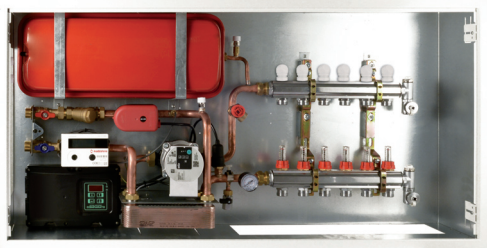


CODE	PRODUCT DESCRIPTION
QR00PR	with stub pieces for heat, DHW and DCW meters

SECONDARY CIRCUIT RESIDUAL HEAD – PLANT



CONTER R WITH MANIFOLDS, FLOW METER
AND PRESET FOR ELECTROTHERMAL HEADS



CODE	PRODUCT DESCRIPTION	ZONES
QRC3PR	simple	3
QRT3PR	with flow meters and preset for electrothermal heads	3
QRC4PR	simple	4
QRT4PR	with flow meters and preset for electrothermal heads	4
QRC5PR	simple	5
QRT5PR	with flow meters and preset for electrothermal heads	5
QRC6PR	simple	6
QRT6PR	with flow meters and preset for electrothermal heads	6
QRC7PR	simple	7
QRT7PR	with flow meters and preset for electrothermal heads	7
QRC8PR	simple	8
QRT8PR	with flow meters and preset for electrothermal heads	8

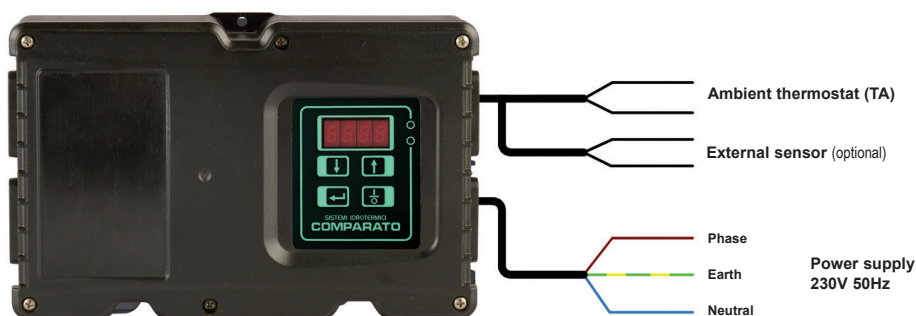
ACCESSORIES

CODE	PRODUCT DESCRIPTION
Add J at the end of the code	balancing valve
QSCCS	painted frame and door for version without manifold
QDCS	painted frame and door for version with manifold
RFSONDAE	external temperature probe for weather compensation

HEAT METERS

CODE	PRODUCT DESCRIPTION
CFCENM34B	mechanical energy meter, heat and cooling DN15 Qp 1,5 m³/h M-bus
CFCENU34B	ultrasonic energy meter, heat and cooling DN15 Qp 1,5 m³/h M-bus
CFCENU34BW	ultrasonic energy meter, heat and cooling DN15 Qp 1,5 m³/h Wireless M-bus
AVV	system start-up and technical support

WIRING



Power supply

3 x 1,5 mm² heat-resistant cable

- phase (brown);
- neutral (blue);
- earth (yellow green).

Ambient thermostat (TA)

- 2 x 0,75 mm² cable (cable length not higher than 30 meters).

This device (not included) shall have free-voltage contacts and shall be connected to terminals marked "TA" inside the electrical box.

IMPORTANT: The closing of the contacts activates the heating system. The opening of the contacts stops the heating system.

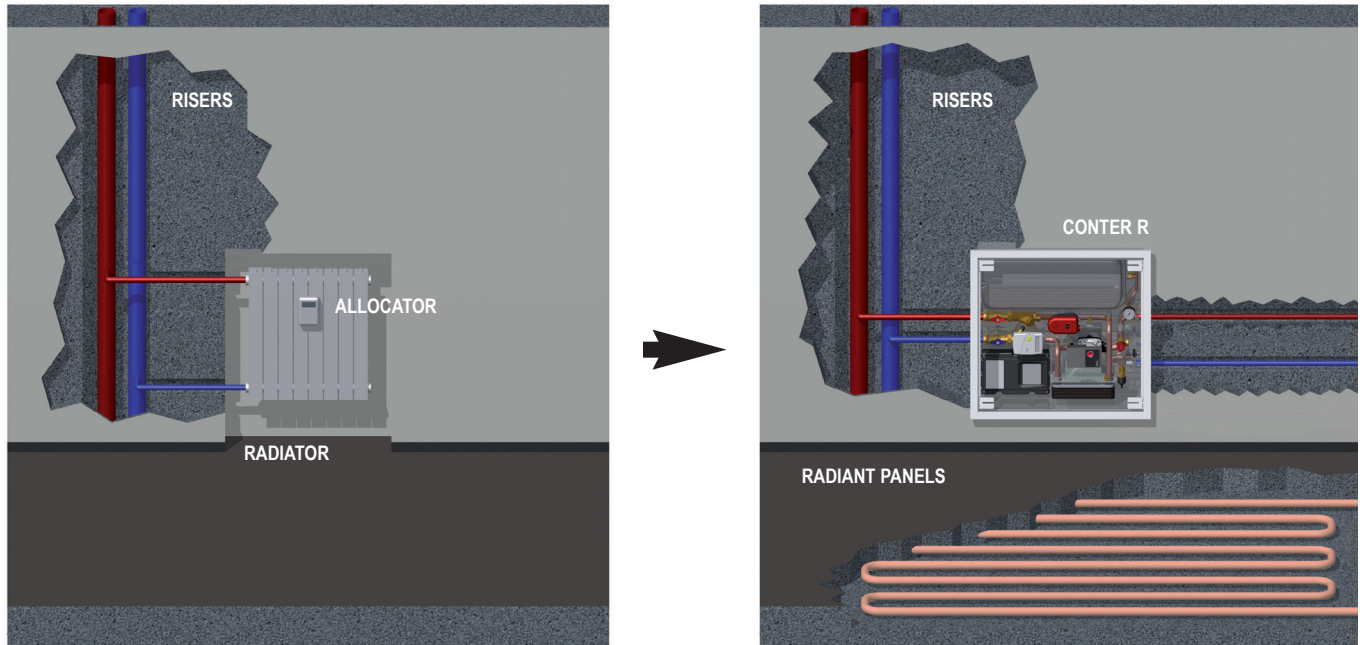
External probe (optional)

- 2 x 0,75 mm² cable (cable length not higher than 30 meters).

INSTALLATION

CONTER R unit is designed for installation inside rooms protected against frost. The unit is supplied with plastic stub pieces temporarily replacing the heat meter. **CONTER R** shall be installed horizontally.

EXAMPLE OF INSTALLATION IN A NICHE FOR RADIATOR



WARNING

It is advisable, if necessary, to install flexible hydraulic connections for compensating possible thermal expansions and misalignments among the plant's connections.

WIRELESS M-BUS DATA COLLECTION



CERTIFICATIONS

CE Machinery directive

2006/42/CE.

CE Low Voltage Directive

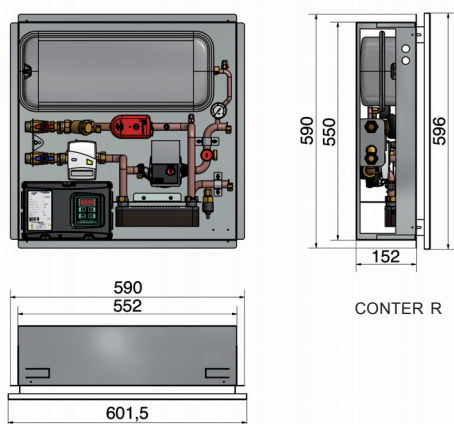
2014/35/ue: 26/04/2014

CE EMC

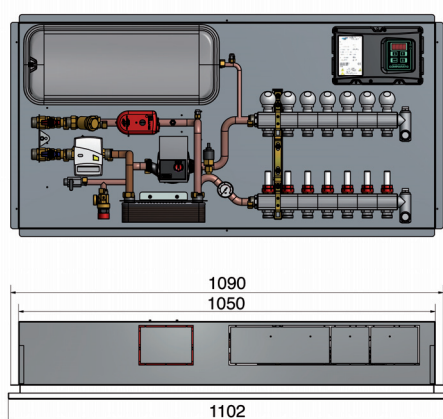
2014/30/UE



DIMENSIONS



CONTER R



CONTER R WITH MANIFOLDS, FLOW METER
AND PRESET FOR ELECTROTHERMAL HEADS

SAMPLE FOR SPECIFICATIONS

CONTER R HYDRAULIC INTERFACE UNIT for the direct metering and the hydraulic separation between central heating plant and housing unit's underfloor heating system by a heat exchanger. Version without distribution manifolds. Fixed point regulation of flow temperature with a pre-set three-term controller (PID) and with a 2-way regulating motorised valve on the heat exchanger's inlet of primary circuit. Main components: - Shut-off valves on central heating side – Stub piece for heat meter – Y-strainer – Heat exchanger - **SINTESI** 2-way modulating motorised valve – Temperature probe on heating flow – Pump – 10-liter expansion vessel – Safety thermostat – Filling valve control display with electronic board and digital display. Copper pipeworts Ø18 mm, hydraulic connections G3/4" M (compliant with ISO 228/1). Max pressure 6 bar, max temperature 90°C. Nominal power 5 kW, primary circuit's nominal flow 0,13 m³/h and secondary 0,87 m³/h, primary temperature difference 70 / 35,5°C and secondary temperature difference 35 / 40°C. Wiring: power supply and ambient thermostat. Power supply: 230V – 50Hz, max power consumption 55 W. In-built installation.

Brand: **COMPARATO**

Code: **QR00PR**

FRAME AND DOOR with customized key, painted with epoxy powder RAL 9010

Brand: **COMPARATO**

Code: **QSCCS**

Ultrasonic **HEAT METER**, DN15, nominal flow Qp 1,5 m³/h, MID certified, Wireless M-Bus communication.

Brand: **COMPARATO**

Code: **CFCCALU34BW**

UPDATED DATA SHEETS AVAILABLE AT www.comparato.com

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HYDROTHERMAL SYSTEMS

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