Synco™living

Heating Circuit Controller   RRV918

- **RF-controlled heating circuit controller for up to 8 heating circuits**
- **RF communication based on KNX standard (868 MHz, bidirectional)**
- **Connection facility for up to eight 2-position actuators**
- **Mains-powered AC 230 V**
- **1 universal relay output**
- **1 universal input**

Use

- For integration into the Siemens Synco living system
- Suited for use in heating plant
  – With central heat distributors (e.g. underfloor heating or soft steel piping system)
  – For use with motorized radiator valves (e.g. with sill covers)
- Heating circuit control with 2-position actuators
- Universal relay output, e.g. for control of the apartment pump, DHW heating, or fan speeds
- Universal input, e.g. for connection of a DHW temperature sensor or an alarm

The RRV918 heating circuit controller is designed for use with the Siemens Synco living system. For more detailed information about equipment combinations, refer to the Data Sheet covering the central apartment unit (CE1N2707en).
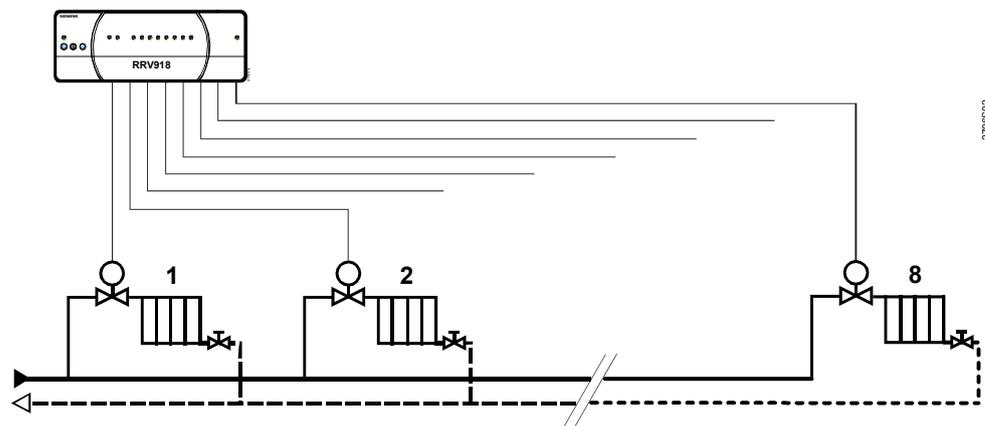
The RRV918 can be used in connection with the following types of actuators from Siemens, depending on the application:

Heat distributor with individual room control
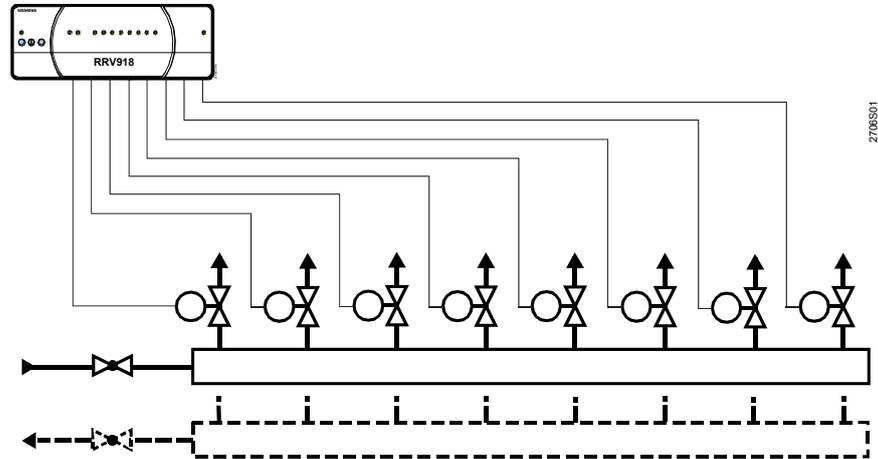
Type of actuator	STA21	STP21
	Thermal	Thermal
Data Sheet no.	N4877	N4878
Normal state	NC	NO
Type of valve	Depending on the type of heat distributor, connection M30 x 1.5 mm	

Radiators

Type of actuator	STA21	STP21
	Thermal	Thermal
Data Sheet no.	N4877	N4878
Normal state	NC	NO
Type of valve	VDN…, VEN…, VUN…, VPD…, VPE…	

Also refer to Data Sheet CE1N2100en: Small valves, actuators and accessories.

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Heating Circuit Controller RRV918

CE1N2706en
07.01.2009

Ordering

When ordering, please give quantity, product name and type reference.

Scope of delivery

The RRV918 is supplied complete with Mounting Instructions.

Product documentation

The Operating and Commissioning Instructions for the RRV918 are contained in the product documentation of the central apartment unit.

Functions

Main function

In operation, the RRV918 maintains the required room temperature of the individual heating circuits. The central apartment unit delivers the relevant data via RF.

Universal relay output

The universal relay output can be used to control different types of devices. Release is controlled via the central apartment unit and delivered via RF.[1]

Universal input

The universal input is used for connection of the DHW temperature sensor, for example. The data are forwarded to the central apartment unit via RF.[1]

Parallel operation

Several heating circuits can be assigned to one room and, therefore, operated in parallel. In that case, the first heating circuit ensures the actual room control and, at the same time, controls the other assigned heating circuits.

Antilime function

The antilime function is triggered by the central apartment unit. When receiving an antilime command, the heating circuit valve will be fully opened and then closed again. When the antilime function is completed, the valve will return to the previous control position.

Summer operation

Summer operation is triggered by the central apartment unit. When receiving a command to start summer operation, the heating circuit valve will be opened or closed, depending on the position predefined by the central apartment unit.
If the antilime function is activated in summer operation, it will be performed. When completed, the control loops will resume summer operation.

Window airing

The window airing function is triggered by the central apartment unit. The function interferes in the control process in a way that overheating of the room will be avoided both during and after the window airing time.

Frost protection for the room

Frost protection for the room becomes active if the room temperature drops below the frost protection setpoint. It remains active until the room temperature returns to a level 1 K above the frost protection setpoint.
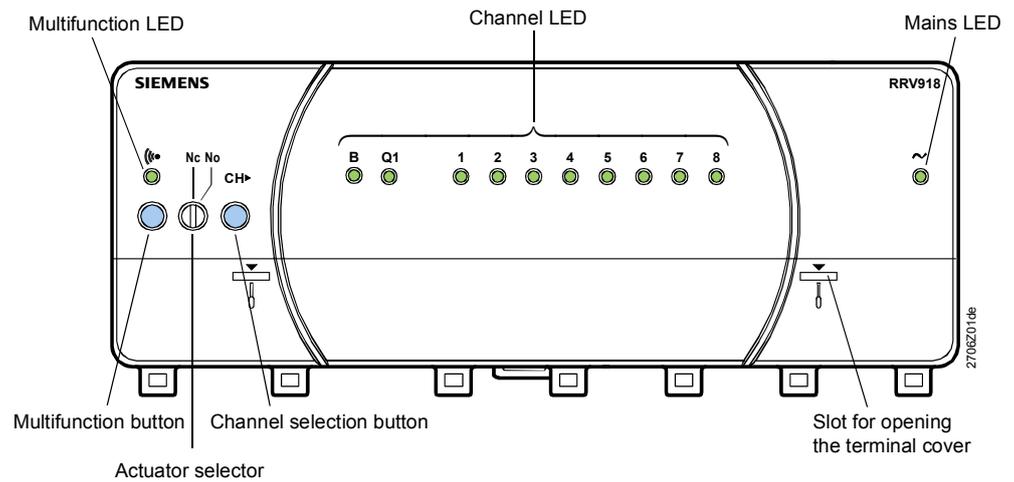
Binding

The binding of the first selected channel is used by the RRV918 to sign on at the central apartment unit, thus ensuring integration into the RF system. Then, the other channels can be assigned to other rooms or function groups. The binding process is triggered via the multifunction button and indicated by the multifunction LED.

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[1] For detailed information about assignment options for the inputs and outputs, refer to the Synco living Mounting and Commissioning Instructions (CE1C2707en).

Status query   The multifunction button can be used to query the state of the configured control channels. The state is indicated by the multifunction LED.

RF binding test   The multifunction button can be used to trigger a binding test per channel. The test is made to check the radio link to the central apartment unit. The RF binding test is indicated by the multifunction LED.

Resetting a channel   The multifunction button can be used to reset a configured channel to its supply state. Then, the channel must be reconfigured in the system. The state is indicated by the multifunction LED.

Supply state   The multifunction button can be used to reset the RRV918 to its supply state. Then, the RRV918 must be reintegrated into the system.

RF failure   If radio transmission between the RRV918 and the central apartment unit breaks down, control is no longer ensured. The heating circuit valves will open.
                          When radio transmission is reestablished, the RRV918 will return to control mode.

Mains failure   In the event power supply to the RRV918 is interrupted, control is no longer ensured. The positions of the individual actuators can only be changed manually on the actuators themselves.
                          When mains supply is restored, the RRV918 will return to control mode.

Error messages   The following error messages are delivered by the RRV918:

Error messages
Communication error (no communication for one hour)

Operating and indicating elements

Multifunction LED	Channel LED	Mains LED

Multifunction button | Channel selection button

Actuator selector

Slot for opening the terminal cover

Function of operating elements

| Operating elements	Function
Multifunction button	State query of channel configuration
	RF binding test
	Binding
	Disconnection of channels from the system
	Restoration of supply state
Actuator selector	Selection of the type of actuator
Channel selection button	Channel selection

Function of indicating elements

Indicating element	Function
Multifunction LED	Indication of channel configuration
	RF binding test
	Binding process
	Disconnection of channel from the system
Channel LEDs:	Indication of channel configuration / status indication:
B	Universal input
Q1	Universal relay output
Y1…Y8	Controller outputs
Mains LED	Power supply

For more detailed information about the functions and operation of the RRV918, refer to the product documentation covering the central apartment unit.

Notes on engineering and operation

Mounting location

- Due to its compact design, the RRV918 can be fitted directly in the heat distribution panel*, on the ceiling in the cellar, or in the cable riser
- The permissible environmental conditions must be observed
- The RRV918 must not be exposed to dripping water
- For notes relating to engineering and mounting RF devices of the Siemens Synco living system, refer to Data Sheet CE1N2708en
- When mounting the RRV918, ensure that there is sufficient space by the connection terminals to introduce the cable (≥ 30 mm)
- At the top of the unit, a minimum clearance of 50 mm must be observed to ensure that the operating elements can be accessed and that the terminal cover can be easily opened.
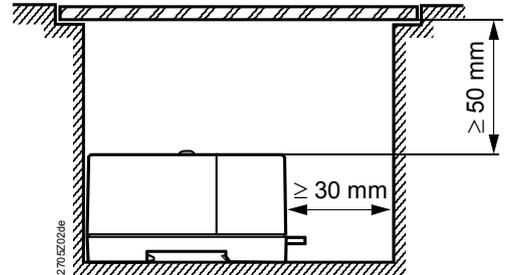
* Plastic covers are used in place of metal covers to support radio communication.

Installation

The RRV918 is designed for:
- Mounting on top hat rails conforming to EN 60715-TH35-7,5
- Fitting with the help of 2 fixing screws

Note

Prior to applying power, connect all heating circuits and the inputs and outputs.

Commissioning

Prior to commissioning, check to ensure that the RRV918 is correctly mounted, that all wiring is correctly made, and that power is switched on.

Maintenance

The RRV918 is maintenance-free.

Disposal

In terms of disposal regulations, the RRV918 is classified as electronic scrap conforming to the European Directive 2002/96/EG (WEEE) and must not be disposed of as domestic waste. Local and currently valid legislation must be observed.

Warranty

Application-related technical data are only warranted in connection with the Siemens Synco living system. For equipment combinations, refer to the Data Sheet of the central apartment unit (CE1N2707en).
When using the RRV918 together with third-party devices, correct functioning must be ensured by the user. In that case, Siemens will assume no responsibility for service and warranty.

Technical data

Power supply	Operating voltage	AC 230V ($\pm$ 10%)
	Frequency	50 Hz
	Power consumption (with no external load)	max. 7 VA
	Fusing of supply line	10 A
RF	Frequency	868 MHz (bidirectional)
	Range	typically 30 m inside buildings
	Protocol	KNX RF-compatible **KNX**
Universal input	Type	LG-Ni 1000 resistor (on / off)
	Quantity	1
	Measuring range	0…120 °C
Permissible cable length to sensor or external contact	Copper cable 0.6 mm dia.	max. 20 m
	Copper cable 1 mm^2	max. 80 m
	Copper cable 1.5 mm^2	max. 120 m
Universal relay output	Type	NO contact AC 24…230 V, AC 0.02…2 (2) A
	Quantity	1
Controller output	Type	Triac AC 230 V, AC 5…30 mA
	Switch-on current	max. 60 mA ≤2 s max. 250 mA ≤0.5 s
	Number of outputs	8
	Number of actuators	max. 2 per output and max. 10 per RRV918
	Permissible cable length	max. 10 m
Electrical connections	Screw terminals for	max. 2.5 mm^2
Type of controller	2-position	PID
Standards	**CE** conformity to	
	EMC directive	2004/108/EC
	- Immunity, Emissions	- EN 60730-1, EN 60730-2-9
	Low-voltage directive	2006/95/EC
	- Electrical safety	- EN 60730-1, EN 60730-2-9
	RTTE (Radio & Telecom. Equipment)	1999/5/EC
	- Wireless communication	- EN 300220-2, EN 301489-1, EN 301489-3
Protection	Safety class	II to EN 60730
	Housing	IP 30 to EN 60529
	Degree of pollution	2 to EN 60730
Environmental compatibility	Environmental product declaration CE1E2706en provides information on environmentally compatible product design and assessment (RoHS compliance, composition of substances, packaging, environmental benefit and disposal)	ISO 14001 (Environment) ISO 9001 (Quality) SN 36350 (Environmentally compatible products) 2002/95/EC (RoHS)
Dimensions		refer to "Dimensions"
Weight	Unit complete with accessories	0.553 kg
Housing material		plastic PC+ABS
Housing color	Upper / lower housing section	RAL 7035 light-gray RAL 5014 dove-blue

|	**operation** EN 60721-3-3	**transport** EN 60721-3-2	**storage** EN 60721-3-1
Environmental conditions			
Climatic conditions	class 3K5	class 2K3	class 1K3
Temperature	0…+50 °C	-25…+70 °C	-20…+65 °C
Humidity	5…95 % r.h. (noncondens-ing)	<95 % r.h.	5…95 % r.h.
Mechanical conditions	class 3M2	class 2M2	lcass 1M2
Elevation above sea level	min. 700 hPa, corresponding to max. 3000 m above sea level		

Connection terminals
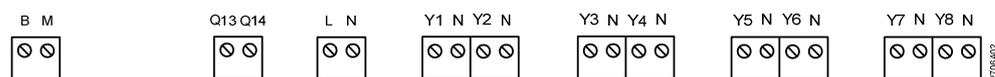
Legend

L	Operating voltage, live wire AC 230 V
N	Operating voltage, neutral conductor AC 230 V
B	Universal input
M	Ground for universal input
Q13, Q14	Universal relay output for AC24…230 V
Y1…Y8	Outputs controllers 1…8, AC 230V
N	Neutral conductor for controller output

Note: With controller outputs Y1…Y8, the live wire (L) is switched. The neutral conductor is internally connected. The relay output is potential-free.

Connection diagram

2-position control
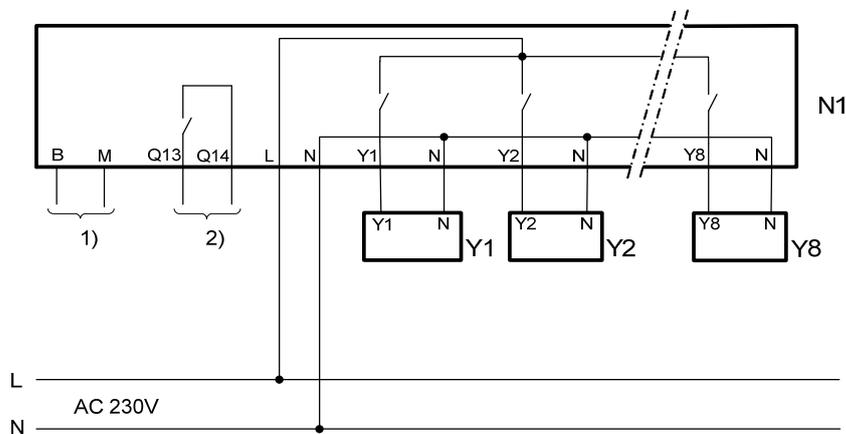
Legend

N1	Heating circuit controller RRV918
Y1…Y8	Actuators (thermal valve actuators)
1)	Universal input, can be used for temperature acquisition / digital input
2)	Universal potential-free relay output, can be used for mains or low-voltage

Dimensions

Dimensions in mm

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