RCN200-L Room Controller

Application

The RCN200-L is a LON bus-capable room controller for energy-efficient temperature, air quality and humidity control.

It can be used with LonMark-compliant standard applications or customer-specific solutions (can be freely configured) for up to 4 room control circuits with integrated weekly schedule programs.

The RCN200-L is controlled using additionally connectible room control modules.

Suitable for installation in electrical installation distributors or switch cabinets.

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Important Information Regarding Product Safety

Safety Instructions

This data sheet contains information on installing and commissioning the product "RCN200-L". Each person who carries out work on this product must have read and understood this data sheet. If you have any questions that are not resolved by this data sheet, you can obtain further information from the supplier or manufacturer.

If the product is not used in accordance with this data sheet, the protection provided will be impaired.

Applicable regulations must be observed when installing and using the device. Within the EU, these include regulations regarding occupational safety and accident prevention as well as those from the VDE (Association for Electrical, Electronic & Information Technologies). If the device is used in other countries, it is the responsibility of the system installer or operator to comply with local regulations.

Mounting, installation and commissioning work on the devices may only be carried out by qualified technicians. Qualified technicians are persons who are familiar with the described product and who can assess given tasks and recognize possible dangers due to technical training, knowledge and experience as well as knowledge of the appropriate regulations.

Legend

WARNING

Indicates a hazard of medium risk which can result in death or severe bodily injury if it is not avoided.

CAUTION

Indicates a hazard of low risk which can result in minor or medium bodily injury if it is not avoided.

NOTICE

Indicates a hazard of medium risk which can result in material damage or malfunctions if it is not avoided.

NOTE

Indicates additional information that can simplify the work with the product for you.

Notes on Disposal

For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

Item

RCN200-L	Room controller for decentralized installation in false floors or ceilings. Can be used for energy-efficient temperature, air quality and humidity control with standard applications or freely configurable with up to 4 room control circuits.

Technical Data

Nominal voltage	AC 230 V with integrated fuse; 50/60 Hz; max. 9 VA	
Power consumption	3.5 W - 5 W (depending on the output circuit)	
Inputs and outputs	Three binary outputs	3 A voltage-free relay contact (2 A: with inductive load); AC 230 V
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	Two binary outputs	TRIAC, max. 400 mA (both outputs together)
	Two binary inputs	Contact input (voltage-free)
	Eight universal inputs/outputs that can be independently configured as:	
	■ Binary input	Contact input (voltage-free)
	■ Analog output	DC 0 to 10 V; max. 2.5 mA
	■ Analog input	See table “Sensor types”, page 4.
Bus connection	LON FTT10, 78 kb/s	
Standards	LonMark function profiles:	
	■ Space Comfort Controller #8500	
	■ Real Time Based Scheduler #3301	
Controls and display	Service PIN and LED (on the PCB)	
	■ Green LED: Operating voltage	
	■ Red LED: Node status	
Interface	■ Room control module - 4-wire, for connecting up to 4 room control modules RBW30x-C or RBW20x-C (address 1-4) - Power supply (internal) for room control module: 12 V DC; 1.66 W sufficient for 1 x RBW20x-C and 1 x RBW30x-C or 2 x RBW20x-C can be directly connected to terminals "57" and "58", see page 6 - Max. total cable length for all room control modules: 50 m maximum	
Housing	8TE, plastic housing, self-extinguishing (according to UL 94 V-0)	
Degree of protection	IP20	
Ambient temperature	0..50 °C	
Ambient humidity	During operation: 20%..90% r.h.; non-condensing	
	Out of operation: 5..90 % r.h.; non-condensing	
Installation	Standard rail EN50022 in closed housing. This device is intended for installation in a wall-mounted enclosure/switch cabinet with protection class II.	
Weight	0.29 kg	
Dimensions	WxHxD: 143.5 x 90 x 60 mm	

Sensor types

Type	Value range and unit
0..10 V	0..100 %
KP10	-50..150 °C
NTC10K	-35..100 °C
NTC10KPRE	-35..100 °C
Resistor (potentiometer)	0..10 kΩ

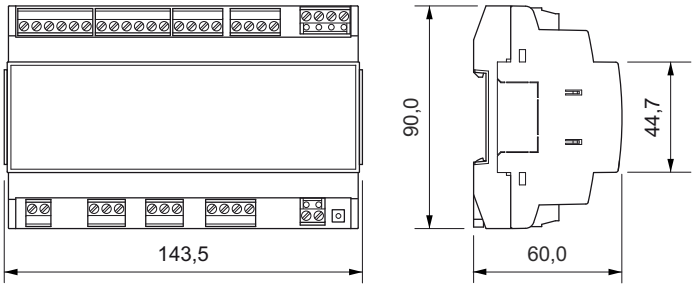
Accessories (included in delivery)

RCx200-L tool as LNS3 plug-in

Accessories (not included in delivery)

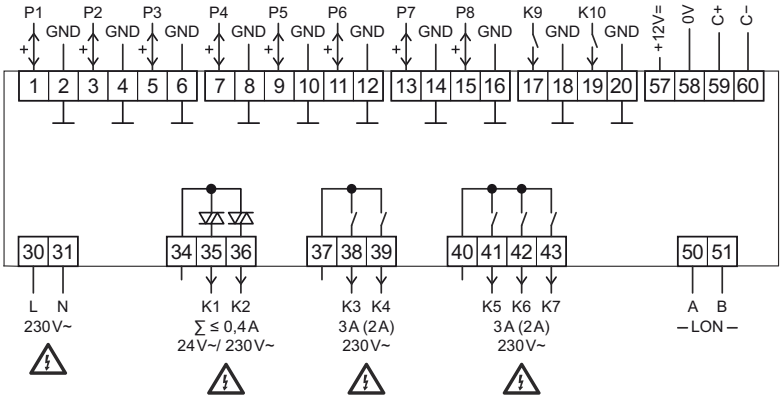
Z230	Power supply unit for 230 V AC / 12 V DC, 0.83 A, 10 W
Z232	Power supply unit for 230 V AC / 12 V DC, 2.5 A, 30 W
HW-102290	Semiconductor relay, input voltage AC/DC 18 - 36 V
HW-101489	Semiconductor relay, input voltage AC 90 - 280 V

Dimensions



Connection

Wiring diagram



P1 to P8 configurable to:

- KP10
- NTC10K , NTC10KPRE
- 0 V to 10 V input
- Binary input
- 0 V to 10 V output
- Resistor (potentiometer) 0..10 kΩ

K1 to K2:

- Binary TRIAC output (BO)

K3 to K4:

- Binary output (BO), voltage-free relay contacts

K3 to K7

- Binary output (BO), 3 A voltage-free relay contacts (2 A: with inductive load)

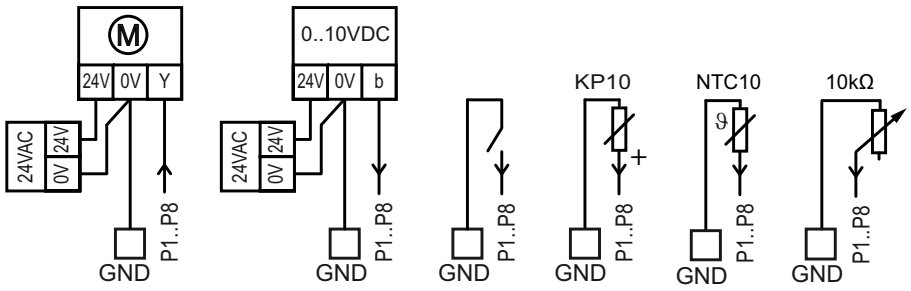
K5 to K7:

- Binary output (BO), voltage-free relay contacts

K9 to K10:

- Binary input (BI)

Wiring diagram P1..P8 for sensors and actuators



NOTICE

The resistor (potentiometer) 0..10 kΩ sensor type can only be used when the RCN200-L is being used as a freely configurable room controller, **not** with basic applications.

Connection of the room control modules

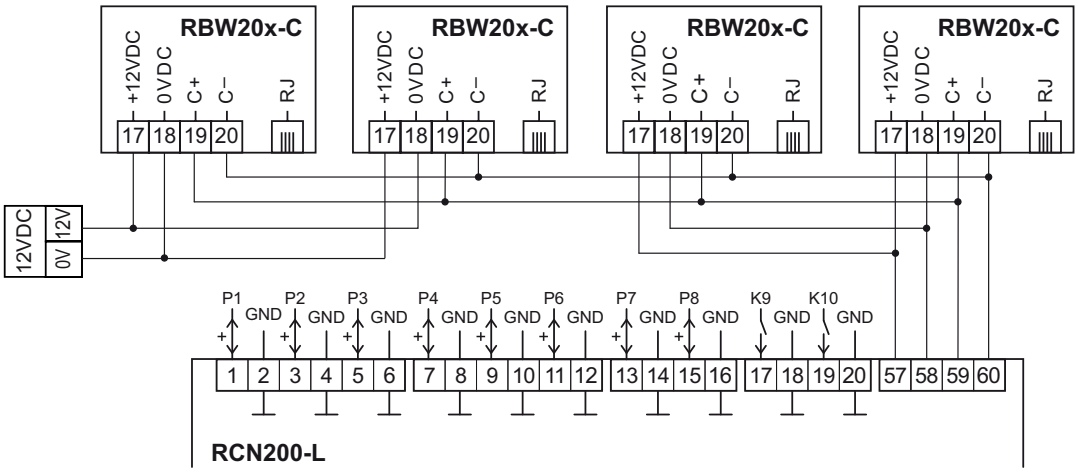
NOTICE

Connecting up to 4 RBW30x-C or RBW20x-C room control modules (address 1-4)

Up to 1 x RBW20X-C and 1 x RBW30x-C or 2 x RBW20x-C can be connected to the internal power supply.

Additional room control modules must be supplied with an additional power supply unit, see connection example.

- Connection example



Range of functions

The range of functions can be configured using standard basic applications that are equipped with an LNS3 plugin.

- Room temperature control for plants with preconditioned air, volume flow control and water afterheater/aftercooler with ChangeOver (BA10101) or electric afterheater
- Room temperature control for plants with preconditioned air, volume flow control and water afterheater and aftercooler (BA10102)
- Room temperature control for air circulation plant, fan convector with water heating coil/cooler with ChangeOver or electric heating coil and second room temperature control, e.g. for bath with radiator (BA10201)
- Room temperature control with fan convector: Electric heating and cooling (BA10202-Electric), as fan convector and second room temperature control, e.g. for bath with radiator
- Room temperature control for air circulation plant, fan convector with cooling coil and radiator or electric heating coil and second room temperature control, e.g. for bath with radiator (BA10207)

You can find a detailed description of the basic applications in the manual “technoLon® RCC/ RCN200-L Room Controller: Basic Applications”.

NOTE

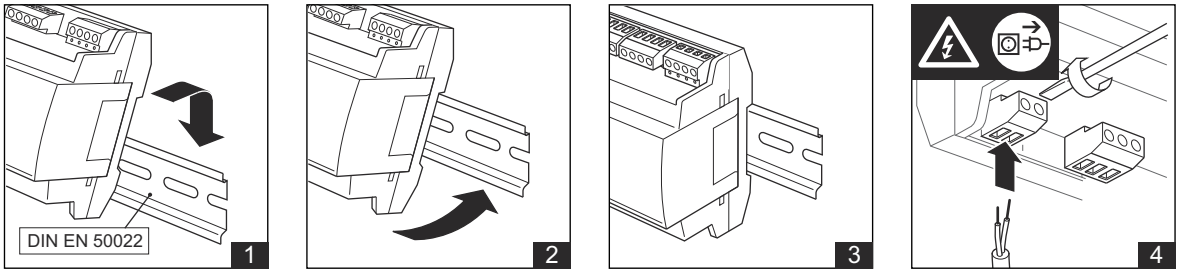
Customer-specific solutions can also be offered with a LonMark-compliant interface. For these solutions, please contact our branch offices or regional technical offices.

Mounting

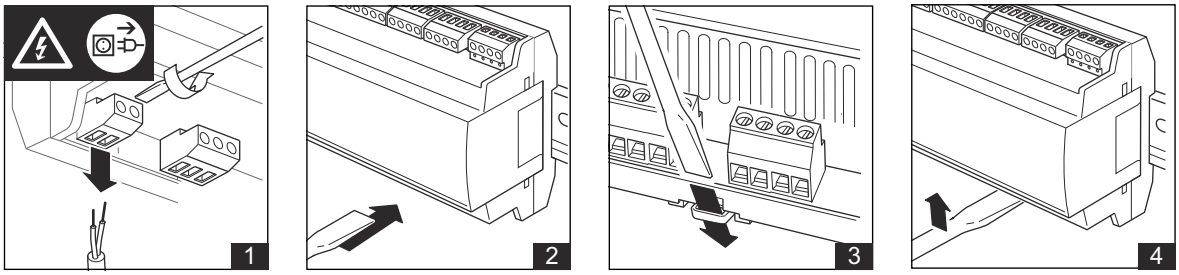
WARNING

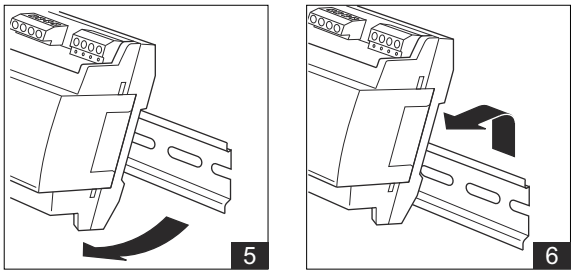
Danger of death by electrocution.

Mount or remove only when power is switched off.



Removal





Network Installation

Network installation is performed using a network management tool based on LonWorks LNS3 network services.

Offline installation

The neuron ID of the technolon® room controller can be found on the included pull-off bar code label, which is used for system documentation.

A simple bar code reader can be used for reading in the neuron ID.

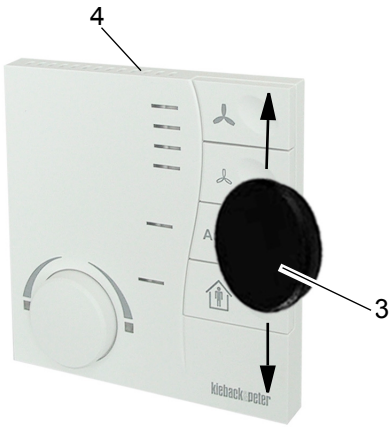
Online installation

- Online installation on the technolon® room controller:
  The node is identified by manually inputting the Neuron ID code or by activating the service PIN (1) on the technolon® room controller.

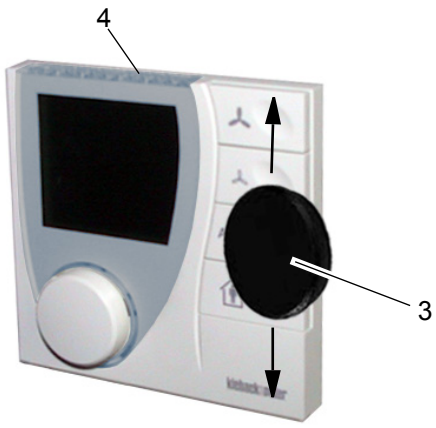
(1) Service PIN
(2) Service LED

LED status:
- Green LED: Operating voltage
- Red LED ON: When the service PIN is pressed
- Red LED flashing: Not commissioned
- Red LED OFF: Commissioned

- Online installation on the room control module RBW20x-C or RBW30x-C:
  The technolon® room controller can also be identified quickly and easily directly on the room control module using a magnet (3). A magnet (3) is guided along the right side of room control module RBW20x-C or RBW30x-C.
  Internally, this triggers the service PIN in the RCN room controller. To verify this, a service LED (4) on the top part of the housing on the room control modules lights up green.



RBW205-C



RBW305-C