

RCX – Room climate controller

Introduction RCX

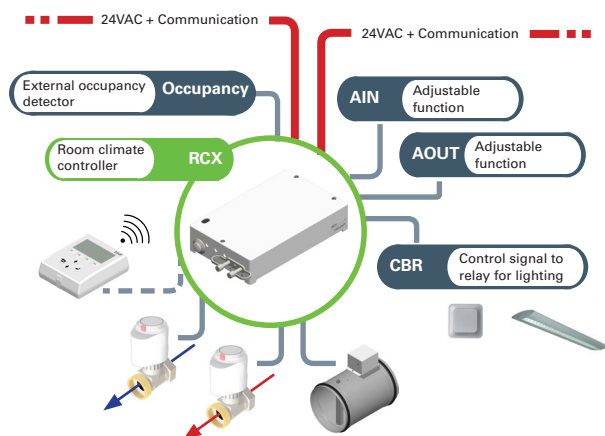
Room climate controller RCX is factory calibrated and is included in room climate control unit DCV-RC. The controller is intended for demand-controlled climate control of large rooms where supply air is distributed with reactive or passive diffusers.

Function

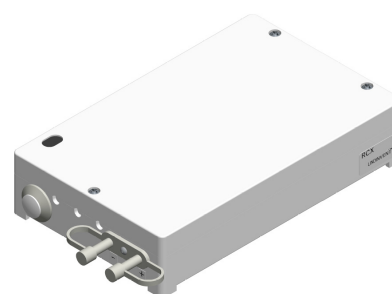
- Duct-mounted active control of air flow to a number of reactive or passive supply air diffusers.
- With the aid of occupancy detectors, can activate occupancy flow and lighting. For range and detection fields, see product description for occupancy detector PD-2400.
- Can adjust additional cooling and heating in sequence.
- Duct temperature sensor included.
- Connections for a number of external sensors.
- Can connect lighting to motion-controlled lighting zones.
- Can be connected via node ID to a communication loop (CAN) for access to and communication with other concurrent nodes or systems via LINDINTELL or Gateway NCE with Modbus TCP/RTU.
- The controller has a great number of parameters that can be read and controlled from LINDINTELL/LINDINSPECT via CAN.

Connections for input and output signals

Many types of equipment/functions can be connected to the controller. If exchange to a superior system is desired but is not possible via Modbus, a number of functions can instead be defined for the controller's inputs and outputs.



Connection diagram RCX. The controller is connected to a voltage feed and communication loop via Lindinvent's standard cable with two conductors for voltage feed and two twisted-pair conductors for communication. The same cable is used for connection of a number of other accessories.



Room climate controller RCX.

User interface

- Server with LINDINTELL/LINDINSPECT via CAN.
- Direct login on the controller via DHP hand unit (IR or wired communication)
- Selected values are available via wall panel DRP (Wired communication via CAN)

LINDINTELL/LINDINSPECT

LINDINTELL is the software package that is installed on a central server and coordinates all optimisation and monitoring functions in Lindinvent's system designs for climate control and protective ventilation. LINDINTELL has, among other things, functions for optimisation, oversteering and free programming.

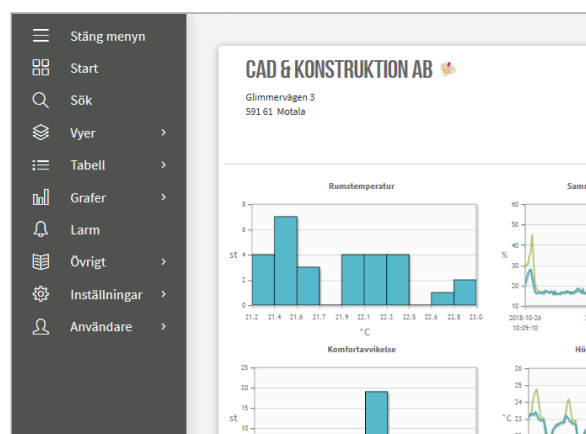
LINDINSPECT is a Web interface that has been developed to be used with LINDINTELL.

Control and alarm

Systems with LINDINTELL/LINDINSPECT can log values continually and set an alarm flag in the event of any deviations.

Simplified start-up

RCX is supplied factory calibrated. Simplified start-up is possible by stating duct diameter or K factor. It is not normally necessary to perform flow calibration on site.



Detail from start page in LINDINSPECT which is Lindinvent's web interface where RCX as well as other connected nodes can be visualized and administered.

RCX – Room climate controller

Technical specifications RCX

General

Dimensions (mm)

200 x 125 x 45 (LxWxH)

Material

Polystyrene encapsulation

Net weight

0.4 kg

Paint colour

RAL 9003

IP classification

Encapsulation complies with IP53

Temperature limits

Operation: 0°C to 40°C; <85% RF

Storage: -20°C to 50°C; <90% RF

Electrical system

Supply voltage

24 VAC

Capacity

1.5 VA

CE marking

Complies with EMC and the Low Voltage Directive

Controlling the air flow

Airflow sensor

RCX is equipped with a flow sensor for measuring supply air flow.

Range

Recommended range: 0.5–6.0 m/s

Maximum range: 0.2 - 7.0 m/s

Tolerance

±5 % or minimum ± x l/s (x = the duct area in dm²)

Performance

Speed: Change regulated within 4 s (95% within 3 s)

Duct temperature measurement

Temperature sensor

Sensor with thermistor of NTC type.

Accuracy

Temperature ± 0.5 K

Connections

- 2 x for 24 VAC + Communication loop (CAN)
- 1 x connection for 0-10 VDC analogue out for damper actuator
- 1 x 0-10 VDC analogue in for feedback from damper actuator
- 1 x terminal block for occupancy sensor 24VAC/13VDC/5VDC
- 1 x terminal block for lighting relay control box
- 1 x terminal block for the normally pre-mounted duct temperature sensor
- 1 x for two general 0-10 VDC (AIN2 and AIN3)
- 1 x for two general 0-10 VDC (AOUT2 and AOUT3)
- 1 x for DIN (G0, DIN1)
- 2 x for valve actuators (Triac 1 and Triac 2)
- IR transceiver "IRDA"
- RJ45 to wired communication via digital room panel DHP
- 1 x for generic voltage feed (G0, +5V, +13V)



Room climate control unit DCV-RC is included in the series of smart dampers. The unit is an assembly in which room climate controller RCX is included.

RCX – Room climate controller

Accessories

The following examples of accessories must be ordered separately:

External occupancy detector

See XPIR or PD-2400.

Flow balancing

Flow control DCV-BL, which is included in Lindinvent's series of smart dampers and measuring units, is used for balancing supply air.

Lighting control

Lighting can be controlled via CBR lighting system control box using occupancy detectors and/or manually via push buttons. See SBD for a DALI lighting solution.

Radiator control

A valve actuator for radiators can be connected for adjustment of heating and cooling in sequence. Parameters can be set for achieving cold intrusion protection.

Electric radiator control

Electric radiators and heaters can be controlled via an electric radiator control box.

Fan cooling

Additional cooling can be adjusted via a fan coil unit control box.

Carbon dioxide (CO₂) sensors

Carbon dioxide sensors can be connected to RCX control air quality. The sensors are available for both wall and duct mounting.

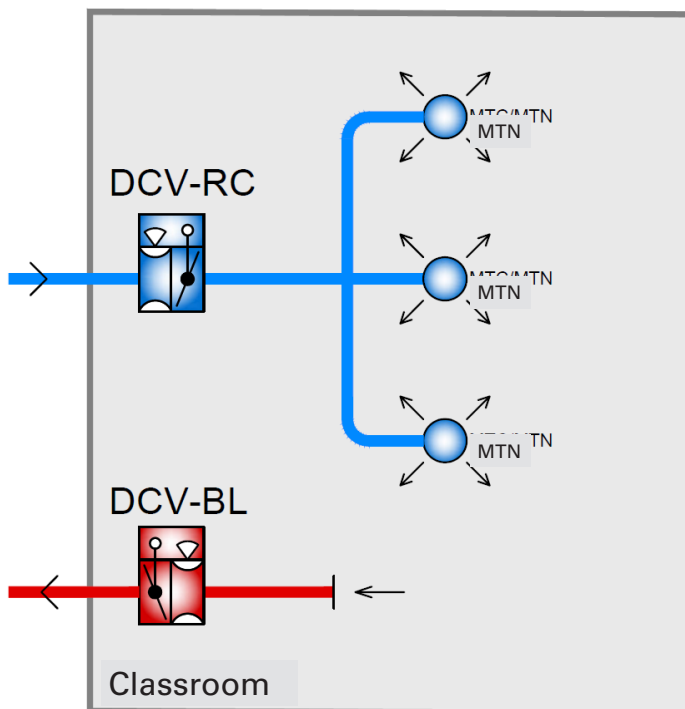
Room panel with reference value adjuster

By fitting and connecting digital room panel DRP, display and changing of selected values can be performed in the premises.

Wireless communication via IR link

DHP is a handheld user panel designed for easy and flexible access to Lindinvent's controllers and control units for climate control. The unit is temporarily connected to RCX via IR link or FTP cable.

Functional chart for climate control with DCV-RC and DCV-BL



Climate control via DCV-RC and reactive supply air diffusers

- Supply air and duct temperature measured by DCV-RC and its internal airflow sensor.
- External sensors for occupancy, room temperature and CO₂ can be connected to DCV-RC.
- The demand-controlled total airflow is distributed in the premises via reactive supply air diffusers (MTN or MTC).
- DCV-RC can also control heating and cooling vents in sequence.

Flow balancing

- DCV-BL operated for airflow balancing.
- DCV-RC and DCV-BL communicate via the communication loop (CAN). DCV-BL balances airflow according to any preset offset.

Product description

RCX – Room climate controller

Additional product documentation RCX

Table 1: Additional documentation for RCX can be obtained via links on the product's website under Products at www.lindinvent.se

Document	Available	Not available	Comments
Installation Instruction	●		Combined installation instruction with DCV-RC (Assembly + connection).
Start-up instruction	●		Describes the complete menu structure with settings for room climate controller RCX.
Maintenance instruction		●	Regarded as maintenance-free.
External connection diagram	●		External connection diagram for RCX.
Environmental product declaration	●		Assessed by Byggvarubedömningen.
User information		●	Not applicable.
Modbus list	●		Room climate controller RCX.
AMA text	●		

Product documentation can be downloaded
via www.lindinvent.se/produkter/



Contact

www.lindinvent.se
Tel: 046-15 85 50

Lindinvent – Smarter indoor climate. **Greener** buildings.

The company offers products and systems for controlling ventilation, lighting, solar shading and local utilization. Equipment and climate solutions are being developed for offices, schools, hospitals, laboratories and similar working environments. Lindinvent's systems work together to provide high indoor comfort and the lowest possible energy use.