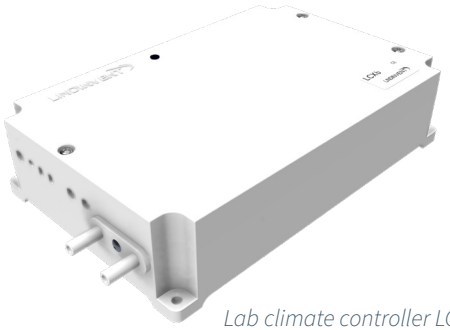
LCXB LABKLIMATSREGULATOR



Lab climate controller LCXb.

INTRODUCTION

Lab climate controller LCXb is part of the duct-mounted Lab climate control unit DCV-LCb. The controller is intended for on-demand control of room climate in laboratories.

FUNCTIONS

The controller works continuously with input from sensors to, in cooperation with an airflow balancing control unit, maintain setpoints for air quality and room temperature in a laboratory.

- Can be set to read and sum all relevant and reported airflows in the zone to continuously (compensate) make the airflow adjustments that maintain setpoints
- A function selection specifies whether a balancing airflow control unit acts as a master or not
- Can be set to control only from its own setpoints. The airflow is reported to the balancing master
- It is normally positioned for control of extract air
- Equipped with an internal airflow sensor
- Reads and sums airflows in the zone via CAN to adapt its own airflow
- Connections for a range of additional sensors
- Can control lighting and link lighting to lighting zones
- Controls additional cooling and heating in sequence
- Connects via Node-ID to a local area network (CAN) for stable communication between cooperating units
- Gateway NCE is connected to the local network for access and communication via a parent system
- The controller is programmable and its parameters can be read or set locally via handset or centrally over the network
- Equipped with Bluetooth® for communication via mobile application LINDINSIDE

LCXb is part of Lab climate control unit DCV-LCb.

TECHNICAL SPECIFICATIONS

Airflow measurement and control

Airflow sensor: Digital (factory calibrated)
Recommended measuring range: 0.5 to 6.0 m/s
Maximum range: 0.2 to 7.0 m/s
In laboratories, one should not go lower than 0.5 m/s, taking into account requirements for accuracy.
Tolerance*: ± 5 % or atleast ± y l/s
(where y is the duct area in dm^2) *Applies together with Lindinvent's controller.
Performance: Change effected within 5 s (95% within 4 s)

Duct temperature measurement

Type of sensor:
Sensor with NTC thermistor.
Accuracy: ± 0.5K

Design features

Spacious enclosure with breakable cutouts adapted for cables ~4 & ~6 mm. The cover, which is removable, replaces at reassembley the need for cable glands by clamping the cables. External holes for attachment. Lid with LED tube for exposure of an RGB LED showing operating mode.

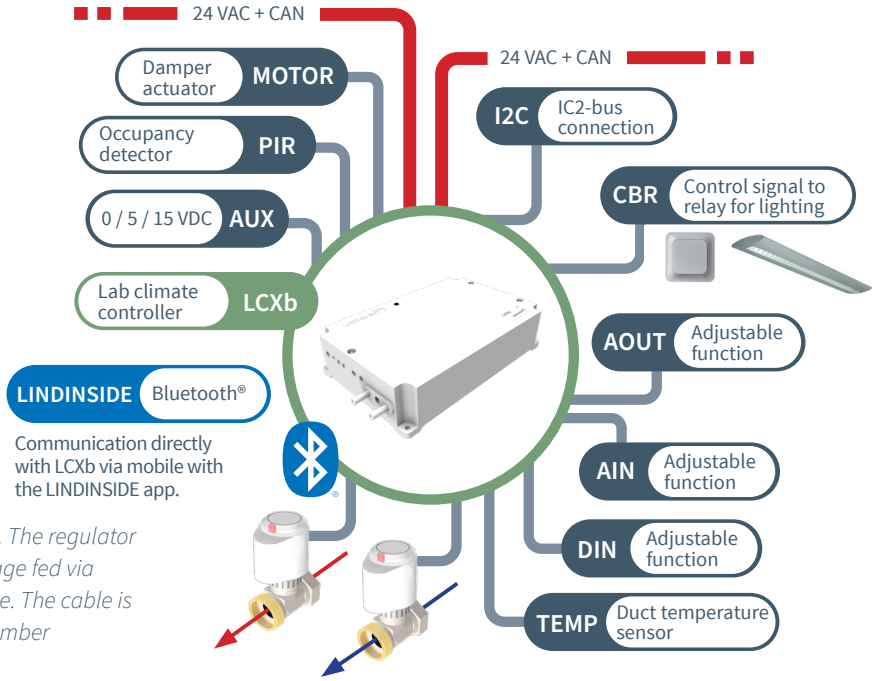
General

Dimensions (mm): 200 x 130 x 45 (LxWxH)
Material: Polystyrene (Enclosure)
Nettweight: 0.4 kg
Colour: RAL 9003
IP-class: IP53
Temperature limits:
Operation: 10 °C to 40 °C; <85% RF
Storage: -20 °C to 50 °C; <90% RF

Electrical system

Supply voltage: 24 VAC
Effect: 1.5 VA
CE-marking: Complies with EMC and the low voltage directive

CONNECTION DIAGRAM



Connection diagram for LCXb. The regulator is connected to CAN and voltage fed via Lindinvent's 4-conductor cable. The cable is also used for connecting a number of accessories.

FUNCTIONS VS INPUT AND OUTPUT SIGNALS

Equipment connected to AIN, AOUT or DIN is activated by selecting a pre defined function, with our without parameters that adapts signals.

CONNECTIONS

- Two terminals for 24 VAC + CAN
- Terminal for 0 to 10 VDC AIN and AOUT (dedicated for the damper actuator)
- Terminal for AIN2 and AOUT2, General 0 to 10 VDC
- Terminal for generic power supply (AUX: 0, 5, 15 VDC)
- Terminal for lighting box CBR
- Terminal for duct temperature sensor (an accessory not normally supplied with LCXb)
- Terminal for DIN1: PULL-UP [+5V] alt. 0 to 5 VDC
- Terminals for Triac 1 and Triac 2 for 24 VAC Maximum number of 1W actuators is 10W per TRIAC
- Terminal for I2C-bus
- Module for Bluetooth®

WAYS TO COMMUNICATE

Look for details about a specific interface via it's product name and product description.

- Logging in to the controller via mobile phone and the LINDINSIDE app.
- Lindinvent's central unit with LINDINSPECT® via Gateway NCE
- An external parent system through Gateway NCE and ModbusRTU or ModbusTCP

TROUBLESHOOTING AND ALARM NOTIFICATION

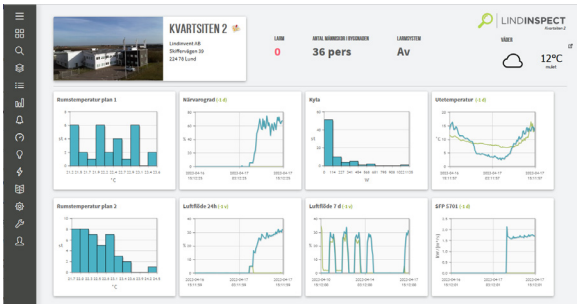
Systems with LINDINSPECT®, see below, continuously log operational data such as air flows and temperatures. An alarm flag is set in case of deviation. The availability of visualized operating data enables effective troubleshooting. Deviating values are noticed and analyzed.

EASY COMMISSIONING

The internal air flow sensor is delivered factory calibrated. In connection with commissioning, only a few control variables are requested, including the current duct diameter or the k-factor.

VISUALIZATION WITH LINDINSPECT®

LINDINSPECT® is a powerful web-based tool that is part of the system software that enables a central and coordinated optimization, administration and visualization of everything from control units to supplementary systems for comfort and sustainable energy use in buildings.



Detail from the start page in LINDINSPECT® where climate control can be visualized and administered.

ACCESSORIES:

Examples of products that can be connected to or interact with LCXb. Accessories are ordered separately. For technical specifications, see the product description.

Flow balancing
See airflow control unit DCV-BLb.

Additional airflow measurement
See measurement unit DCV-MFb.

Occupancy detector
- GO-C
- PD-2400

Other sensors
- GTQ-V, Temperature- and CO^2 , wall mounted
- GTQ-D, Temperature- and CO^2 , duct mounted

Additional heat or cooling
- CBT - Connection box for Heating batteries and electric radiators
- CBF-S or CBF-E Connection box for air fan cooling

Radiator valve control
- A40405 (24VAC, On/Off NC),
- A41405 (24VAC, On/Off, NO)
- APR40405 (0 to 10V, NC)

Lighting control
CBR - Lighting connection box.
See SBDb for DALI lighting control.

COMPLEMENTARY DOCUMENTATION

Document can be viewed on the product page at www.lindinvent.com

Document	Comments
Installation instructions	Combined installation instructions for DCV-LCb and lab climate controller LCXb (mounting + connection).
Operation instructions	Instructions for handling the mobile application LINDINSIDE for setting the node ID and for accessing settings in the controller.
Maintenance instructions	Considered maintenance free. For cleaning and control measurement of the flange, see the maintenance instructions for SPMF.
External connection diagram	Shows how conductors from equipment are connected to LCXb.
Environmental product declaration	For assessment at Byggvarubedömningen.
Modbus list	Last entry in the modbus list for LCXb.
AMA-text	Available for download in pdf and word formats via the product's website.