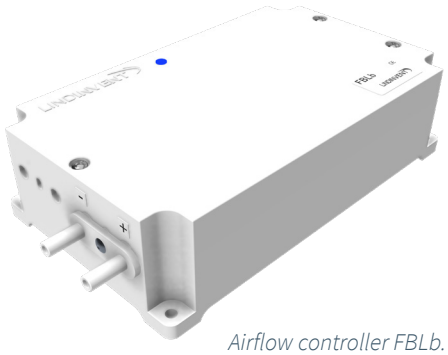
FBLb AIRFLOW CONTROLLER

Version C04



Airflow controller FBLb.

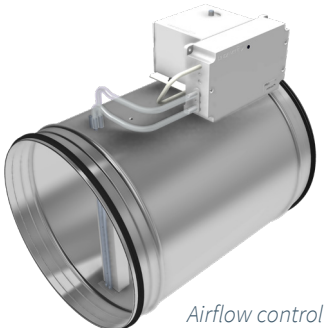
INTRODUCTION

Airflow controller FBLb is used in lab solutions as well as in comfort ventilation. The controller is included in Lindinvent's smart damper and measuring unit DCV-BLb, and flow measuring unit DCV-MFb.

FUNCTIONS

FBLb is equipped with an internal air flow sensor. The sensor and a connected damper actuator are used to measure, sum, and control airflows.

- Can be part of an airflow zone that includes up to 100 active supply air diffusers or other control units
- The controller and it's damper can act as slave unit in relation to another airflow controller in the zone
- Can add a positive or negative airflow offset
- Can be commissioned, also independently, to maintain a constant air flow
- Can be commissioned for pure flow measurement, see DCV-MFb
- Connects via Node ID to a wire-connected local network (CAN-loop) of cooperating controllers
- Gateway NCE is connected to the local network for access and communication with Lindinvent's central unit or another 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



Airflow control unit DCV-BLb.

TECHNICAL SPECIFICATIONS

Airflow measurement and control

Airflow sensor: Digital (factory calibrated)
Recommended 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)

Design features

Spacious enclosure with breakable cutouts adapted for cables ~4 & ~6 mm. The removable cover lid is clamping the cables at reassembly. External ears for attachment. LED tube for exposure of LED showing operating mode.

General

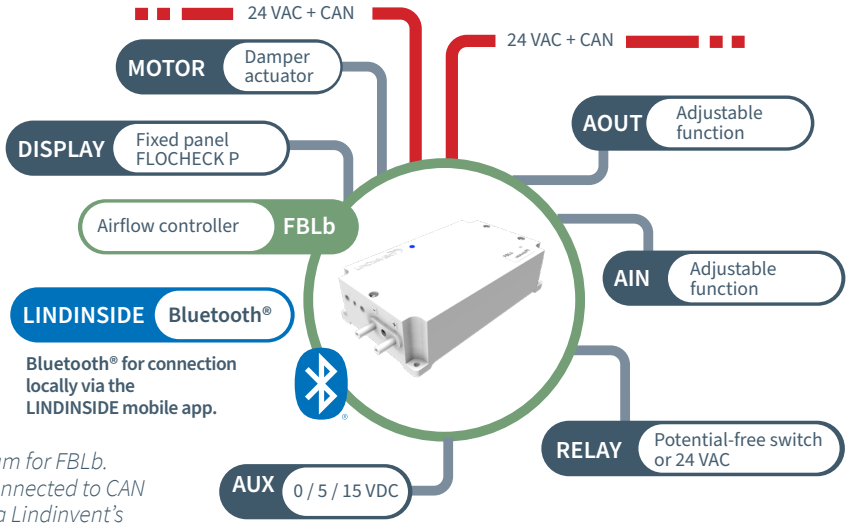
Dimensions (mm): 176 x 105 x 52 (LxBxH)
Material: Polystyrene (Enclosure)
Nettweight: 0.3 kg
Colour: RAL 9003
IP-class: IP53

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



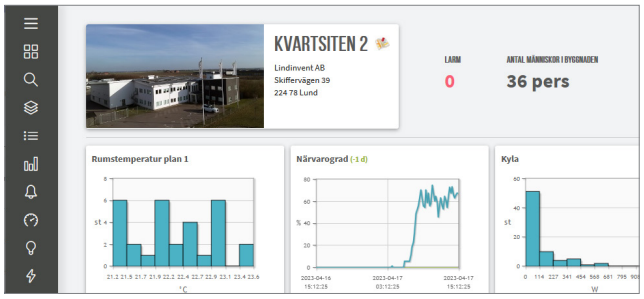
Connection diagram for FBLb. The regulator is connected to CAN and voltage fed via Lindinvent's 4-conductor cable.

CONNECTIONS

- Two terminals for 24 VAC + CAN
- Terminal for AIN1 and AOUT1 (0-10 VDC, dedicated for the damper actuator)
- Terminal for AIN2 and AOUT2 (general 0-10 VDC)
- Terminal for DUT (RELAY) (potential-free switch or 24 VAC)
- Terminal for generic power supply (AUX: 0, 5, 15 VDC)
- Terminal for I2C-bus
- Module for Bluetooth®
- Terminal for monitor and user panel (FLOCHECK P version B02)

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® from which the climate control can be visualized and administered.

USER INTERFACES

Look for details via the product name and it's product description.

- Networking over Gateway NCE and Lindinvent's central unit with LINDINSPECT®
- Other parent system via Gateway NCE and ModbusRTU or ModbusTCP
- Login localy directly to the controller via mobile phone with the LINDINSIDE app
- Fixed panel FLOCHECK P, which is wired directly to FBLb

TROUBLESHOOTING AND ALARM NOTIFICATION

Systems with LINDINSPECT® log and set alarm flags in case of deviations. Alarms can also be indicated both acoustically and optically by connecting user panel FLOCHECK F to the controller.

EASY COMMISSIONING

The internal flow sensor is pre-calibrated. In connection with commissioning, only the duct dimension or k-factor is specified together with a few other selected control parameters.

FLOW ZONE

Equipment that measures airflow can work together in a zone. A control unit in the zone reports its measured airflow and reads the airflow reported by other units via CAN.

When FBLb is set to the airflow balancing function, the extract air is balanced in relation to the sum of supply air in the zone.

CONTROLLER FUNCTION

In connection with commissioning, controller FBLb must be set to one of four available functions:

Airflow balancing
Balances by regulating its own flow relative to the total of all related airflows communicated over CAN with any offset.

Constant flow control
Regulates at a constant flow, and notifies the flow zone (if defined) of its airflow.

Flow measurement
Measures and reports its airflow. See measurement unit DCV-MFb for an application.

Slave regulation
A master (FBLb set to the function flow balancing) controls the damper angle of the slave.

COMPLEMENTARY DOCUMENTATION

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

Document	Comments
Installation instructions	Combined installation instructions for DCV-BLb and airflow controller FBLb (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 FBLb.
Environmental product declaration	For assessment at Byggvarubedömningen in Sweden.
Modbus list	Last entry in the modbus list for FBLb.
AMA-text	Available for download in pdf and word formats via the product's website.