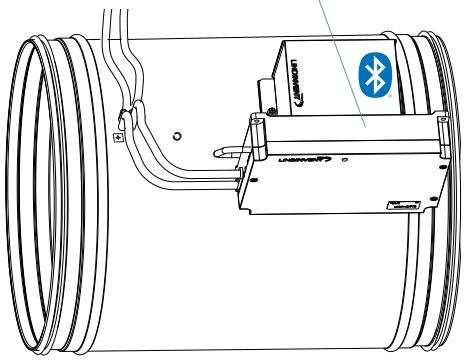
FBLb & DCV-BLb FLOW CONTROL

Preconditions

- The regulator is expected to be connected to 24 VAC + CAN
- The control unit DCV-BLb and regulator FBLb are equipped with Bluetooth® and can therefore be commissioned via the mobile app LINDINSIDE. An account with the necessary permissions for the building in question is required for the app. The app can be downloaded from Google Play/App Store. A link to the software can be accessed by scanning the attached QR code.

FBLb and Flow Control DCV-BLb



A smartphone with the LINDINSIDE app is used for communication with Lindinvent devices equipped with Bluetooth®.

Commissioning

Follow the instructions below. Once a control unit has been assigned the intended Node ID, the final settings can be made either on-site using the ”Quick setup” screen in LINDINSIDE or centrally via LINDINTELL/LINDINSPECT®.

Status Screen and Control Parameters

The control parameters for the FBLb and the earlier version FBL are the same. Refer to the following presentation of the status screen and the set of control parameters for FBLb and FBL.

Learn More About LINDINSIDE

Download on the App Store

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COMMISSIONING PROCESS VIA LINDINSIDE

(See the next page for instructions with screenshots from LINDINSIDE)

1. **Scan for Nearby Devices**
   - **Pull down to scan for devices nearby.**
     Select the correct control unit from the list.
     Use the bell icon to make the device emit a beep and flash a blue light to identify it.
2. **Set (Change) Nod-ID*:**

Select the Node ID field for the intended device from the list of scanned devices. Enter the unique Node ID between 1-239 assigned to the regulator as per Lindinvent’s recommendation. *After assignment: Perform a new scan to verify that the Node ID has been updated correctly. For assigning Node IDs to a larger number of devices, use the ”Set nodeIDs” function.

3. **Connect to the Dive:**

Anslut genom att tryck på fältet för enhetens produkt-namn i listan av skannade enheter.

4. **Set the Intended Regulator Function**
   - Flow Balancing (Default)
   - Constant Flow Control
   - Flow Measurement (Setting for DCV-MFb)
   - Slave Control (During Flow Balancing)
5. **Complete Commissioning via Quick Setup**
   - **<Test Damper Motor (Manual motor control):**
     - Ensure the damper fully opens and closes and confirm the position.
   - **Assign Flow Zone**
     Usually the same as the Node ID.
   - **Specify Duct Size or K-Factor:**
     (G1 Duct dimension or G1 K-factor)
     For circular ducts, select the duct size from a list.
     For rectangular ducts, enter the current K-factor.
   - **Specify Placement for Supply or Exhaust Air (G1 placement):**
     For circular ducts, select the duct size from a list. For rectangular ducts, enter the current K-factor.
   - **Specify Setpoint (Balance offset SP or Flow SP):**
     Balance offset (l/s) or Flow setpoint (l/s) depending on the function selected in step 4.

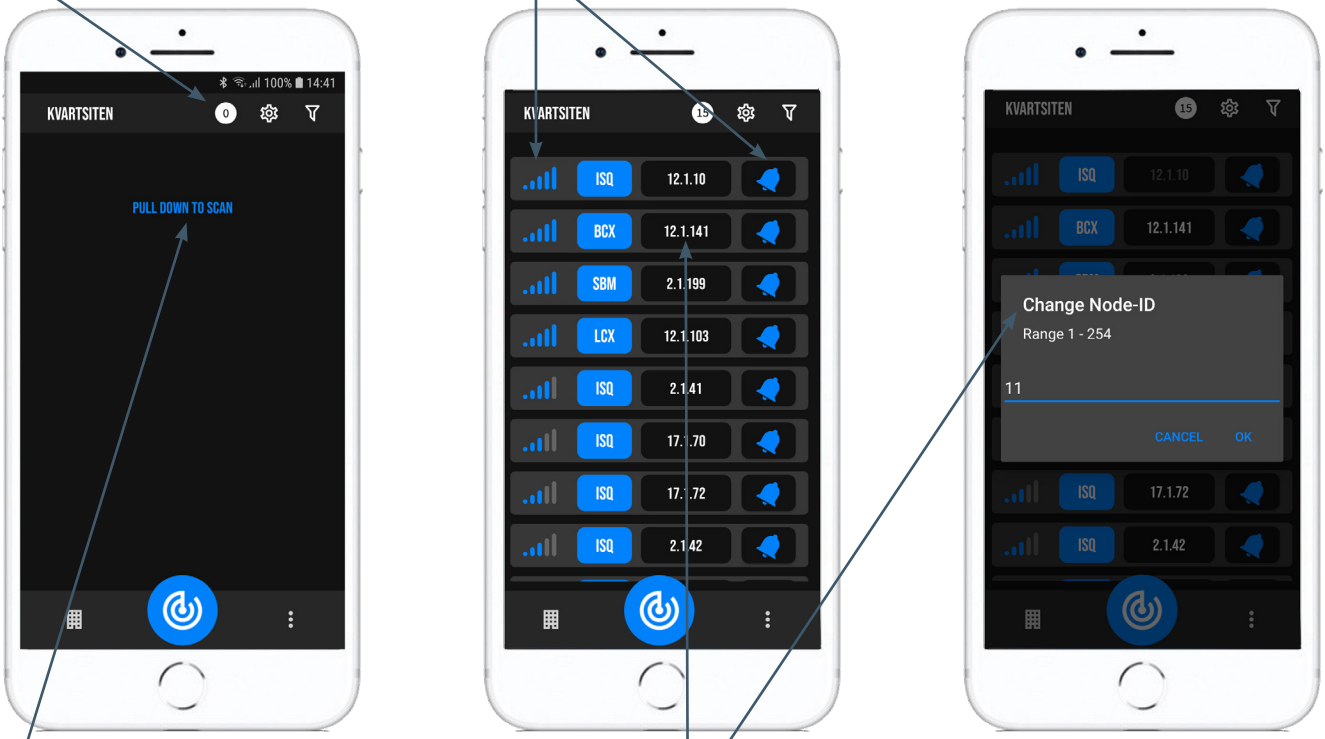
After completing Quick Setup, the flow control configuration is ready for the selected function.

SETTING NODE ID VIA LINDINSIDE

LINDINSIDE

Number of Devices Found

After scanning: Indicator for current signal strength and field with bell icon. By selecting the bell icon, a sound and light signal is triggered from the selected device.



By pulling down, all available devices are scanned and displayed on the screen in LINDINSIDE.

First step in commissioning: By selecting the Node ID field for the desired device, a window opens where a new Node ID can be set.

AVAILABLE VIA LINDINSIDE

Status Values
After selecting a scanned device:
A selection of status values related to ongoing regulation is displayed on the home screen.

Available screen options via the home screen in the app:

- Quick setup
- Symbols
- Histor
- System
- Peripherals

About the Symbols Screen
Via the Symbols screen, all settings are grouped for easy access.

STATUS SCREEN AND MENU

This attachment presents the status screen with selected current values and the entire menu structure of settings in the FBL. The set of control parameters is identical for the FBL and FBLb regulators.

NOTE: All settings for the FBLb regulator are accessible from LINDINSIDE via the Symbols screen.

The settings are displayed with factory default values; refer to comments and notes for guidance. The listed menu structure with parameter list applies from software version FBL_FBLb_6.0.0.

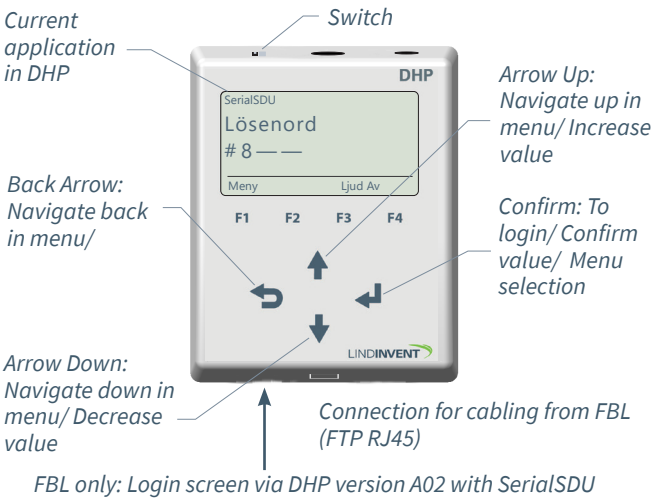
LOGIN

- FBL/DCV-BL: Access directly via the control unit only through the DHP user panel. A control unit with an assigned Node ID can be accessed via CAN from the LINDINTELL Remote tool.
- FFBLb/DCV-BLb: The control unit can be accessed via CAN from the LINDINTELL Remote tool.

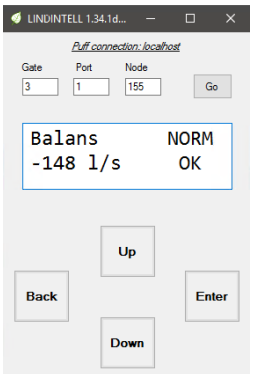
For DHP Operation: See the specific instructions.

For LINDINSIDE Operation:
Refer to the commissioning instructions for FBLb and DCV-BLb.

Note: No login is required to read status values on the FBL/DCV-BL. However, login is required to change settings.



FBL only: Login screen via DHP version A02 with SerialSDU application for wired connection.



Both FBLb and FBL: Screenshot from connection to the regulator via network connection (CAN) and the LINDINTELL Remote tool.

STATUS SCREEN FOR FBL & FBLB

Selected actual values can be displayed on the screen without prior login.

FBL only: Via the screen on a directly connected DHP.
FBLb only: Via the start screen in LINDINSIDE.
FBL/FBLb: The status screen can alternatively be accessed via either a directly connected display unit or via CAN from the LINDINTELL Remote tool.

When selecting the function Flow Balancing:

Actual Values	Comment
Balance	Airflow in l/s
Total form	Airflow in l/s
Total to	Airflow in l/s
Flow	Airflow in l/s
Flow	Airflow in l/s
Damper Opening	Damper Opening in Degrees

When selecting the function Constant Flow Control:

Actual Values	Comment
Flow	Airflow in l/s
Damper Opening	Damper Opening in Degrees

When selecting the function Flow Measurement:

Actual Values	Comment
Flow	Airflow in l/s

When selecting the function Slave Control:

Actual Values	Comment
Flow	Airflow in l/s
Damper Opening	Damper Opening in Degrees

FUNCTION SELECTION AND SETTINGS

When assigning the function of the controller, the settings requested during *Quick Config* (equivalent to *Quick Setup* in LINDINSIDE) are determined.

Flow Balancing

Setting/Parameter

Displayed on screen	**Comment [Default Value]**
Quick configuration	Heading_1 (Main Menu)
Node-ID	Enter Node-ID
Flow Zone	[0]; 0 = unassigned flow zone
Channel size (Not 1)	Select damper size [315]
K-factor (Not 1)	Enter as per note 1
Placemenat	Select sensor placement [Exhaust]
Balansce offset	Airflow difference in l/s [0]
Damper calib. (Not 11)	Test the motor; find max & min

Constant Flow Control

Displayed on screen	**Comment [Default Value]**
Quick configuration	Heading_1 (Main Menu)
Node-ID	Enter Node-ID
Flow Zone	[0]; 0 = unassigned flow zone
Channel size (Not 1)	Select damper size [315]
K-factor (Not 1)	Enter as per note 1
Placemenat	Select sensor placement [Exhaust]
Balansce offset	Airflow difference in l/s [0]
Damper calib. (Not 11)	Test the motor; find max & min

Slave Control

Displayed on screen	**Comment [Default Value]**
Quick configuration	Heading_1 (Main Menu)
Node-ID	Enter Node-ID
Flow Zone	[0]; 0 = unassigned flow zone
Channel size (Not 1)	Select damper size [315]
K-factor (Not 1)	Enter as per note 1
Placemenat	Select sensor placement [Exhaust]
Damper calib. (Not 11)	Test the motor; find max & min

Flow Measurement

Displayed on screen	**Comment [Default Value]**
Quick configuration	Heading_1 (Main Menu)
Node-ID	Enter Node-ID
Flow Zone	[0]; 0 = unassigned flow zone
Channel size (Not 1)	Select damper size [315]
K-factor (Not 1)	Enter as per note 1
Placemenat	Select sensor placement [Exhaust]

PRESENTATION OF VARIABLES

In the order that the headings are presented in the main menu of the control unit.

Meny Bör- och Ärvär-

Börvärden	**Rubrik_2 (huvudmenyn)**
Balansoffset	[0] l/s
Flöde	Luftflöde i l/s [50]
Ärvärden	**Rubrik_3 (huvudmenyn)**
Balans	Luftflöde i l/s
Total fran	Luftflöde i l/s []
Total till	Luftflöde i l/s []
Flöde	Luftflöde i l/s []
Ext flöde	Luftflöde i l/s []
Spjällöppn	Spjällöppning i grader [90]
Spjällåter	
In/Ut-signaler	Aktuella signalnivåer [V]
AIN1	
AIN2	
DIN1	
AUT1	
AUT2	
DUT1 (Relä)	
G1	

Meny Inställningar

Inställningar	**Rubrik_4 (huvudmenyn)**
Larm	
Larmavvikel	Otillåten flödesavvikelse [200 l/s]
Tid till lar	Tid till larm i sekunder [10]
Larmljud	[Av = inaktiverad summer]
Larmgräns 1	[0] l/s; Nedre gräns
Larmgräns 2	[2000] l/s; Övre gräns
In/Ut-signaler	
Insignaler	
AIN1 och AIN2	
Funktion (Not 2)	[AIN1:Spjäll] [AIN2:Inaktiv]
Parameter 1 (Not 3)	[0.0]
Parameter 2 (Not 3)	[0.0]
DIN1	DIN1 [Stöds ej]
Funktion	Används ej [Inaktiv]
Parameter	Används ej
Utsignaler	
AUT1 och AUT2	
Funktion (Not 2)	[AIN1:Spjäll] [AIN2:Inaktiv]
Parameter 1 (Not 3)	[0.0]
Parameter 2 (Not 3)	[0.0]
DUT1 (Relä)	
Funktion (Not 2)	[Inaktiv]
Parameter (Not 3)	[0.0]
Filter AIN8-1 (Not 4)	[11111111 = filter På 8-1]; 0 = Av
Regulator	Avancerade inställningar
Parametrar	
R-intervall (Not 5)	Beräknat: Kan ställas via R-int user
R-int user (Not 5)	Om > 0 ställer R-intervall
Hyst flöde (Not 6)	Beräknat: Kan ställas via Hyst fl user
Hyst fl use (Not 6)	Om > 0 ställer Hyst flöde
Hyst rel	Flödesavvikelse i % [+/- 5]
Hysterestid	Tid i sekunder [0]
Skalning (Not 7)	PID-skalning [-10 = fast angivna värden]
P	[0.40]
I	[0.02]
Minvinkelbeg	i grader [10]
Maxvinkelbeg	i grader [90]

Meny Kommunikation

Kommunikation	**Rubrik_5 (huvudmenyn)**
Nod-ID	1 - 247; Får ej sättas till 0
CAN Hastighet (Not 8)	
Grupper	
Grupp 8-1 (Not 9)	[0 = ingen grupptillhörighet]
Grupp 16-9	[0 = ingen grupptillhörighet]
Grupp 24-17	[0 = ingen grupptillhörighet]
Grupp 32-25	[0 = ingen grupptillhörighet]
Zoner	
Brand	
Brandzon	[0 = ingår ej i brandzon]
Vid zonbrand (Not 10)	[0]
Vid övrbrand (Not 10)	[0]
Flöde	
Flödeszon	[0];1 - 254;0 = ej knuten till zon
Frekvens	[5000] ms
Antal noder	Ärvärde = Antal noder i flödeszonen

Meny Kalibrering, System, Logga ut,

Kalibrering	**Rubrik_6 (huvudmenyn)**
Spjäll (Not 11)	
Hitta max:	[255]
Hitta min:	[0]
Givarkonfig GF1	
GF1 Placering	[Frånluft]
GF1 Storlek	Spjällstorlek alt. ”Ange K-faktor”
GF1 K-faktor	[56 = för Spjäll 315]
GF1 K-korr	Korrektion av K-faktor i % [0]
LDE (GF1) (Not 12)	Aktuellt från FBL version 3B
Tryckvärde	Korrigerat uppmätt tryck i Pa
LDE korr (Not 12)	[i %]; korrigeringskoeff. tryck
Honeywell (Not 12)	Tidigare versioner av FBL
Nollpunkt (Not 13)	Nollpunktskalibrering
Flödespunkter (Not 13)	
Punkter	
Sekunder	Instr. uppd.frekvens [2] sek
Punkt 1-2 Spjällöppn.	Med piltangenter hitta punkt
Punkt 1-2 Ange flöde	Ange uppmätt flöde vid punkt
Koeff	Kalibreringskoefficienter
GF1 K2	Läs alt. ange kalibreringskoefficient
GF1 K1	Läs alt. ange kalibreringskoefficient
GF1 K0	Läs alt. ange kalibreringskoefficient
Prod kalib	Enbart internt Lindinvent
System	**Rubrik_7 (huvudmenyn)**
Firmware	Visar aktuell mjukvaruversion
Reset (Not 14)	Satta värden sparas
Fabriksinst. (Not 15)	Notera: Nollställer
Självtest	Enbart internt Lindinvent
Logga ut (Not 16)	**Rubrik_8 (huvudmenyn)**
Debug	Enbart internt Lindinvent

The presentation of the menu in FBL and FBLb is completed.

NOTES

Note 1 When applying to a circular duct/circular damper, the current duct size is selected from a predefined list. For non-standard dimensions or rectangular ducts, choose the function <Enter K-factor>.
Under <K-factor>, enter the current K-factor. The value can only be changed if <Enter K-factor> was selected under Duct Size as mentioned above.

Note 2 Selecting a function from a predefined list:
AIN: <Inactive>; <Ext Flow>; <Damper>; <Fire>
DIN: <Inactive> Not used
AUT: <Inactive>; <Flow>; <Damper>; <Param>; <C>
DUT(Relay): <Inactive>; <Summary Alarm>; <Limit Alarm>; <Follow Fire>; <Param>

Note 3 Parameters are used or not used depending on the selected function; they can be values at min and max.

Note 4 Filter function; Binary input from AIN1 to AIN8.

Note 5 Provides the ability to correct the calculated flow change as a function of the changed damper opening. If R-int user > 0, the R-interval value is set to the specified value. The calculation takes into account the current duct size.

Note 6 If Hyst fl user > 0, the Hyst flow value is replaced.

Not 7 Set to -10 (< 0) for the regulation to take the set values of P and I.

Note 8 If loop without NCE: At least one controller on the loop should be switched from AUTO to the projected speed.

Note 9 General group affiliation;
Binary input [00000000]; Specified in decimal.

Note 10 If in a fire zone;
0 = regulates as usual;
1 = closed in case of fire;
2 = open in case of fire.

Note 11 For testing the motor and damper; confirm min and max positions with <Confirm>.

Note 12 From FBL Version B03 onwards, LDE sensors are introduced. The calibration procedure on site now applies only to FBL up to and including version A02. The correction coefficient in % indicates how the pressure value has been corrected as a result of calibration. A change in LDE correction allows adjustment to the measured pressure value after verification measurement.

Note 12 The Honeywell menu option is only relevant for FBL version A02 and earlier, which are all equipped with Honeywell sensors.

Note 13 Reset the flow sensor via the menu option <Zero Point> (tubes disconnected for atmospheric pressure over the sensor). Reattach the tubes to/from the sensor:

Connect a measuring instrument to the extra measurement ports on the measuring flange. Normally, two flow points are selected in the menu option <Flow Points>. Then set the update frequency of the measuring instrument. The menu options <Damper Opening> and <Set Flow> will follow in sequence for each point. Choose the first point at low flow (approx. 0.5-0.6 V sensor signal). Adjust the damper using <Up Arrow> and <Down Arrow> to find the point. Both the damper position and the set flow from the external measuring instrument are confirmed with <Confirm>.
Select the second point at the approximately calculated maximum flow. If an alarm signal or ”invalid calibration” occurs, the flow calibration must be repeated as described above.

Note 14 The menu choice Reset causes a restart with logout; counters and other set values are retained.

Note 15 Factory Settings: All settings and counters are reset to factory settings. The exception is the Node ID, which is not reset.

Note 16 Logout: Set values and counters are retained.