

Lindab **FRA**

Installation instruction - UK
Asennusohje - FI
Montageanleitung - DE
Istruzioni di montaggio - IT
Instructions de montage - FR



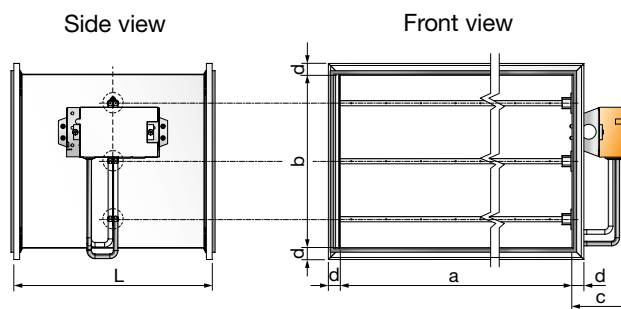
Installation instruction

FRA

Product
Tuote
Produkt
Prodotto
Produit



Dimensions
Mitat
Maße
Dimensioni
Dimensions



NB! Different flange types are available, see order code and dimension table below.
a and b dimensions, see order code.

Dimension table

Flange type	d mm	L mm	c mm
LS	20	341	106
RJFP20	20	341	
RJFP30	30	342	
RJFP40	40	343	

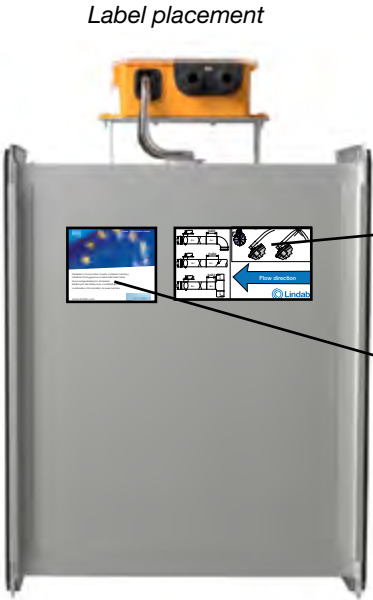
Regulator type table

Type	Regulator
FRA-D	VRU-D3-BAC
FRA-M	VRU-M1-BAC

Installation instruction

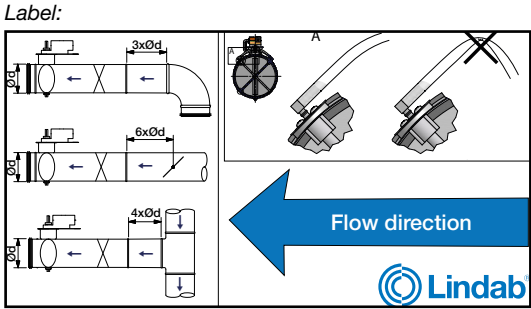
FRA

FRA in details
FRA yksityiskohtaisesti
FRA im Detail
FRA nei dettagli
FRA en détails



Label placement

Front view



Label:

Declaration of incorporation of partly completed machinery leaflet



Regulator (only UNI)

Measuring hoses



Measuring tubes

Joint flange profiles [RJFP](#) or [LS-profile](#)

To avoid clogging of the measuring tubes, it is recommended to use FRA only in applications with clean air, meaning free of dust, particles and similar.

Installation instruction

FRA

Mounting of FRA
 Kannakointi FRA
 Montage des FRA
 Montaggio di FRA
 Montage de FRA



Volume flow measurement

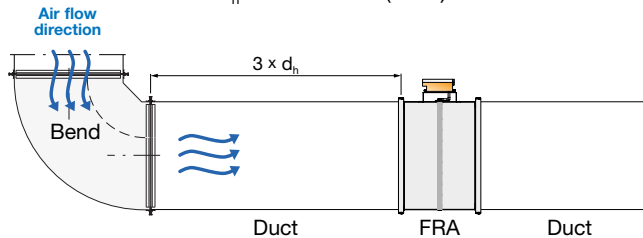
The accuracy of volume flow measurement depends on the flow conditions in front of the measuring cross. It is preferable to have a long straight duct section in front of the measuring point, according to the table below.

If these recommendations are not followed, it will cause an unstable flow measurement and therefore higher inaccuracy in the regulation of the required air flow.

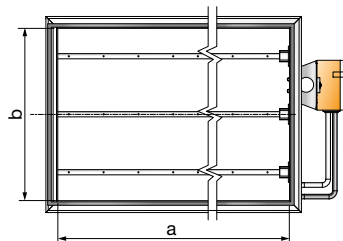
Components	Recommended straight duct before unit
Bend	3 x d _h *
Tee-piece	4 x d _h *
Damper	6 x d _h *

d_h * is the hydraulic diameter for a rectangular duct (and FRA),
 d_h can be calculated by using FRA dimension a and b:

$$d_h^* = 2 \times a \times b / (a + b)$$



Example above showing top view of recommended straight duct distance between duct bend and a FRA.



Front view of FRA and dimension a and b.

Assembly - rectangular air duct systems:

Using LS-profile. Assembly instruction, please go to Lindab Rectangular air duct systems, [LS-profile](#).

Using RJFP-profiles. Assembly instruction, please go to Lindab Rectangular duct systems, [RJFP-profile](#).


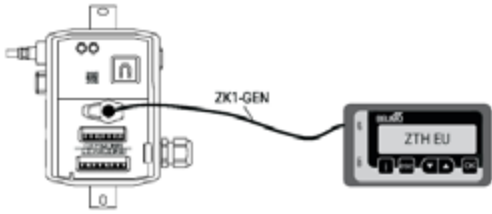
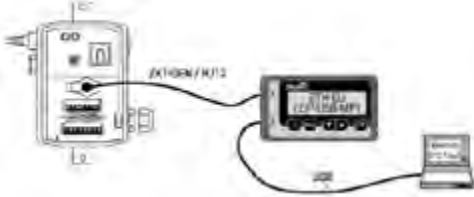
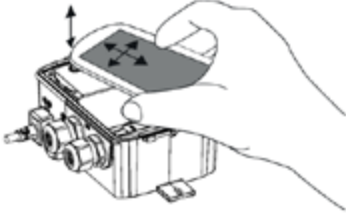
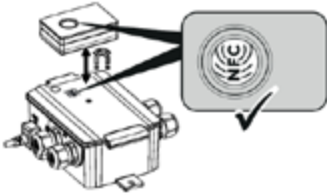
VRA is prepared for insulation with 50 mm thick insulation material. VRA can only be installed with damper blades in a horizontal position.

You can find general information about air duct systems, theory and calculations following this [link](#).

Installation instruction

FRA

Balancing
Säätöohjeet
Einregulierung
Bilanciamento
Réglage

	<p style="text-align: center;">Universal controllers UNI(-M) / SPR(-M) / FAS(-M)</p> 
<p>Belimo Service Tool ZTH-EU</p>	
<p>Belimo PC-Tool MFT-P via ZTH-EU</p>	
<p>Belimo Assistant App with NFC</p>	
<p>Belimo Assistant App with Bluetooth via ZIP-BT-NFC</p>	
<p>Note *)</p>	<p>Modbus/Bacnet/KNX settings can be done with ZTH-EU, PC-Tool, or Belimo Assistant App.</p>
<p>Note **)</p>	<p>Belimo Assistant App works with all Universal controllers.</p>

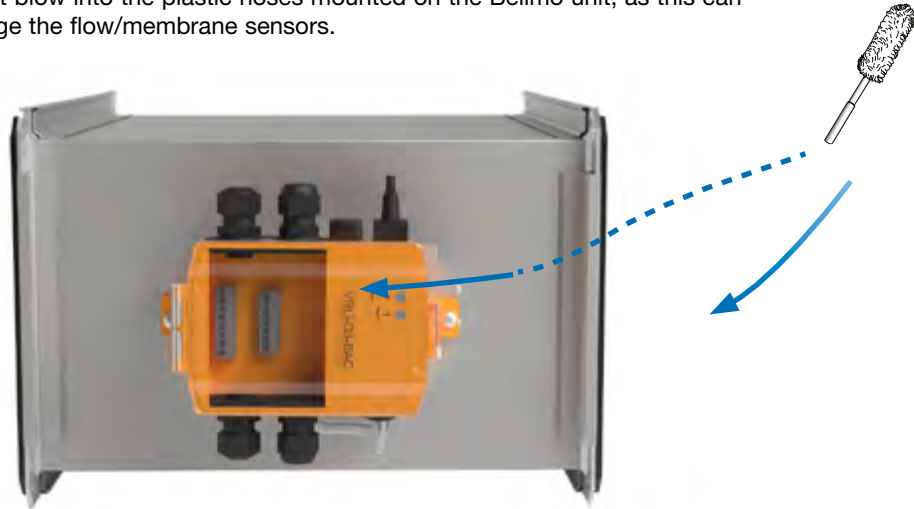
Installation instruction

FRA

Maintenance:
Huolto
Wartung
Manutenzione
Entretien

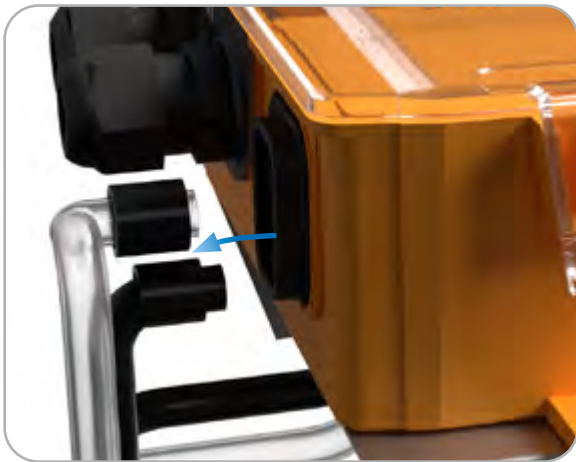
Cleaning of measuring tubes

The visible parts of the product can be wiped with a damp cloth. Remove pressure hoses and blow clean air into the aluminum pipes. Do not blow into the plastic hoses mounted on the Belimo unit, as this can damage the flow/membrane sensors.



Cleaning the measuring tubes

Please demount the hoses and use clean air to clean the hoses and measuring tubes.



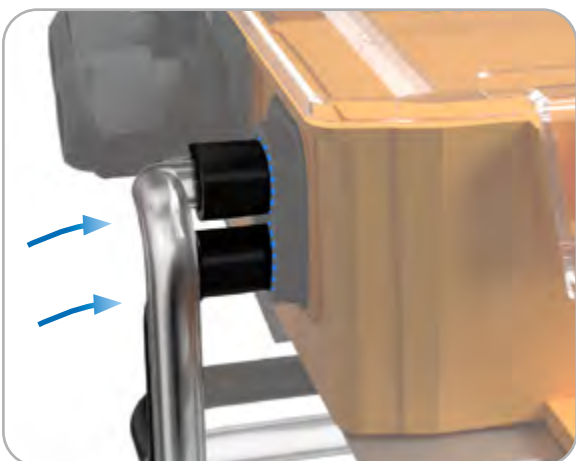
Mounting hoses

Put the hoses back followed by squeezing the black tightness rings back.



Mounting hoses step 1

Put the hoses back.



Mounting hoses step 2

Squeeze the black tightness rings back.





Most of us spend the majority of our time indoors. Indoor climate is crucial to how we feel, how productive we are and if we stay healthy.

We at Lindab have therefore made it our most important objective to contribute to an indoor climate that improves people's lives. We do this by developing energy-efficient ventilation solutions and durable building products. We also aim to contribute to a better climate for our planet by working in a way that is sustainable for both people and the environment.

[Lindab](#) | For a better climate