

Flow measuring unit - circular

FRU



Description

FRU is a measuring unit with a measuring cross, which is used for measuring volume flow in circular ducts.

FRU is equipped with Belimo VRD3, providing an output signal that is proportional to the volume flow. FRU can be used to monitor the actual airflow or can be used to control a volume flow regulator.

FRU is equipped with Lindab Safe in the front for connection to the duct and a female coupling in the back, and is ready for insulation up to 50 mm.

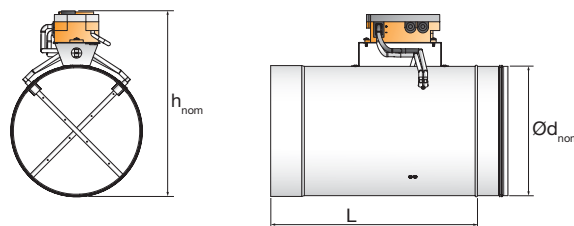
FRU can be installed in any position without requiring adjustment.

To avoid contamination of the measuring cross, FRU should only be used for clean air.

FRU needs a certain distance of straight duct before the unit and this has to be observed to obtain a stable and accurate airflow regulation.

- Requires minimal initial pressure (Less than 20 Pa at V_{nom})
- Output signal indicates actual volume flow

Dimensions



Ød_{nom}	L	h_{nom}
100	300	202
125	300	227
160	300	262
200	300	302
250	400	352
315	400	417
400	400	504
500	510	604
630	560	734

Order code

Product	FRU	aaa
Type	FRU	
Dimension	Ød 100 - 630	

Example: FRU - 250

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Technical data

Settings

V_{nom} indicates the measuring range for the actuator. A standard FRU is calibrated to V_{nom} of 7 m/s according to the table below.

In special cases the FRU can be set to a higher V_{nom} , e.g. 10 m/s.

The output signal from VRD3 is linear between 2-10 V which corresponds to a flow between 0 and V_{nom} .

Air flows corresponding to air velocities below 1,2 m/s will result in a 2 V signal. (Zero flow).

Air flow measurement

The accuracy of air 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 air flow measurement and therefore higher inaccuracy in the regulation of the required air flow.

Components	Recommended straight duct before unit
Bend	3 x Ød
Tee-piece	2 x Ød
Damper	6 x Ød

With recommended straight duct in front of the unit, the air flow accuracy will be according to the table below.

Duct velocity	Air flow accuracy
> 3 m/s	+/- 5%
1,2 - 3 m/s	+/- 10%

FRU nominal air flow (V_{nom})

Size Ød _{nom} mm	(Standard) V_{nom} (7m/s)	
	m ³ /h	l/s
100	198	55
125	309	86
160	506	141
200	791	220
250	1236	343
315	1963	545
400	3165	879
500	4946	1374
630	7851	2181