



NINOX

Ferrous Oxide Filtration

For Heating & Cooling Systems



NINOX® and NINOX® LARGE Self Cleaning Magnetic Filters

■ Applications

Ninox® is a maintenance-free magnetic filter designed to collect and evacuate the ferric sludge (Magnetite) present in heating and cooling circuits. Ninox® is compact, intelligent and automatic. Ninox® can be installed in new build or retro fitted to existing heating and cooling systems. Ninox® is suitable for large industrial and commercial LTHW and MTHW heating systems.

■ Range

The range is made up of 9 models as standard, from DN 32 to DN 125. All are fully automatic and maintenance free.

■ Features and benefits

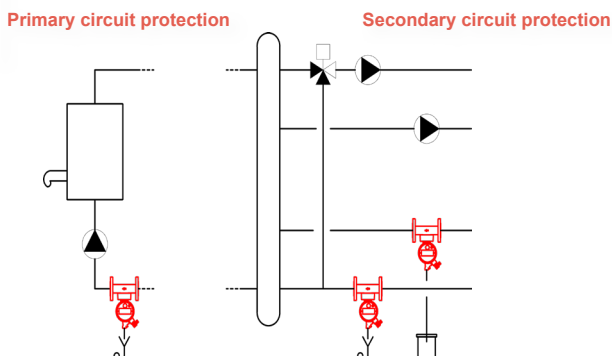
Ninox® is a new and unique solution for the commercial and industrial heating sector and the innovative hydraulic design is fully patented.

■ Installation

Each heating and cooling circuit can be protected with Ninox®. Being compact and fully automatic, the Ninox® can be installed on each circuit return. The sludge collection is then carried out zone by zone ensuring optimal protection for each circuit.

In-line installation means no bypass or additional pump is required. The Ninox® can be installed either horizontally or vertically depending on the orientation of the circuit pipework. The sludge will be discharged to a foul drain. The Ninox® can also be installed on the primary circuit where it should be positioned on the return before the boiler.

For a new installation, the Ninox® would be positioned where the Y strainer would normally be. Thanks to its standard dimensions (flanges + centre distance), the Ninox® can be installed in place of a standard Y filter on existing systems. This allows the protection of the system from the ferric sludge (magnetite) to evolve over time on an existing installation without having to modify the pipe work. The flexible multi-directional controller allows perfect ergonomics.



■ Discharge volumes

The following table indicates the volume of water discharged during each flush with the factory setting of the Ninox®.

System working pressure	Discharge volume	
	Ninox	Ninox L
1.5 bar	0.22 litre	0.40 litre
2 bar	0.23 litre	0.44 litre
2.5 bar	0.28 litre	0.51 litre
3 bar	0.33 litre	0.60 litre
3.5 bar	0.34 litre	0.64 litre
4 bar	0.35 litre	0.68 litre
4.5 bar	0.36 litre	0.70 litre
5 bar	0.38 litre	0.74 litre
5.5 bar	0.40 litre	0.77 litre
6 bar	0.42 litre	0.80 litre

■ Technical characteristics

Material	AISI 304 stainless steel
Box	IPX4D
Electrical	24V DC (or AC) 100mA, 1 x 230V power adapter (supplied)
PN	Recommended pressure range: 1.5 bar to 6 bar
Temperature	+ 15°C to + 80°C up to + 105°C with high temperature option

■ Pressure losses

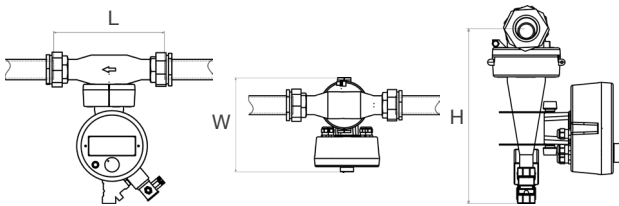
Model	Pressure loss
Ninox 32 G	0.12 kPa
Ninox 40 G	0.20 kPa
Ninox 50 G	0.36 kPa
Ninox 50	0.16 kPa
Ninox 65	0.10 kPa
Ninox 80	0.18 kPa

Model	Pressure loss*
Ninox L80	0.031 mCE
Ninox L100	0.009 mCE
Ninox L125	0.006 mCE

* At nominal flow rate corresponding to a circulation speed of 1.5 m / s



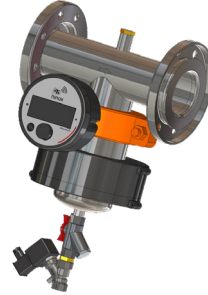
■ Dimensions Ninox®



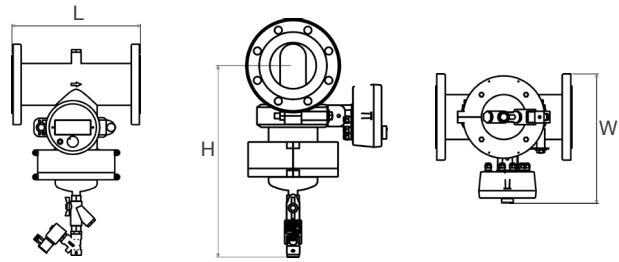
Model with female union fittings: Ninox - G

Model	Fittings Union	Weight Kg	Dimensions in mm		
			L	H	W
Ninox 32G	G 1" 1/4 F	7	230	279	211
Ninox 40G	G 1" 1/2 F	7	230	279	211
Ninox 50G	G 2" F	8	260	279	211

L = centre distance of threaded piping



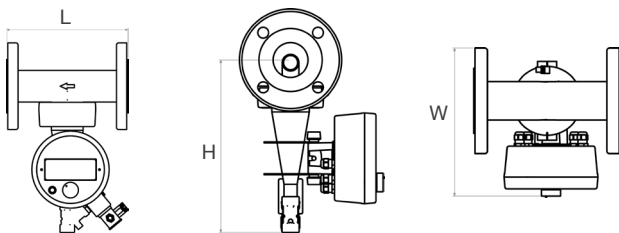
■ Dimensions Ninox® Large



Flanged model * PN 10: Ninox

Model	Flanges PN10	Weight kg	Dimensions in mm		
			L	H	W
Ninox L80	DN 80	20	310	425	317
Ninox L100	DN 100	22	350	449	330
Ninox L125	DN 125	24	400	445	345

* Stainless steel stamped rotating flanges



Flanged model * PN 10: Ninox

Model	Flanges PN10	Weight Kg	Dimensions in mm		
			L	H	W
Ninox 50	DN 50	8	230	279	232
Ninox 65	DN 65	10	290	287	242
Ninox 80	DN 80	12	310	286	251

* Stainless steel stamped rotating flanges

■ Selection

Selection	DN Ninox	Flow range m³/h	Power range kW
Ninox 32G	1" 1/4 F	3 - 8	70 - 185
Ninox 40G	1" 1/2 F	6 - 13	140 - 300
Ninox 50G	2" F	10 - 20	230 - 470
Ninox 50	DN50	10 - 20	230 - 470
Ninox 65	DN65	16 - 30	370 - 700
Ninox 80	DN80	20 - 35	460 - 800
Ninox L80	DN80	30 - 55	700 - 1300
Ninox L100	DN100	45 - 100	1000 - 2300
Ninox L125	DN125	70 - 150	1600 - 3500

■ Operation / adjustment

Being fully automatic the Ninox® collects and then removes ferric sludge (magnetite) with no maintenance required. The unique controller self-adjusts as required to the frequency of cleaning cycles, offering entire system protection. Via its sensors, Ninox® continuously measures the quantity of magnetite collected and can thus optimise the frequency of discharge of the sludge.

A unique feature of Ninox® allows the system to program the automatic discharge of ferric sludge only when it is necessary. Each discharge uses a very small volume of water, with a high concentration of sludge.

With the Ninox®, a reduced top-up of fresh water minimises the amount of oxygen introduced into the system and this therefore reduces future corrosion.

The Ninox® parameters are set in the factory and it is delivered ready to install.

Parameters of the Ninox® can be modified for specific system requirements, for example:

- Discharge management via an analog pressure sensor (available as an accessory). This suspends the discharge when the system minimum pressure threshold is reached
- Programming of forced periodic discharges
- Discharging time slots (days and / or hours).

See installation manual for other possible settings.

■ Measurement and data collection

Ninox® records operational data (discharge history) and can share this information with the building's management system (BMS). The variation in the frequency of discharge cycles is an accurate indication of the water quality of the system.

- To meet the needs of a BMS, data recovery is also available via the modBUS connection
- Other parameters can be utilised such as low pressure alarm through an analog pressure sensor (available as an accessory).

Automatic

The automatic control of cleaning cycles and sludge removal requires no manual intervention

Green

Sensor measurement of ferric sludge (magnetite) collected optimise's the cleaning cycle resulting in maximum sludge removal with minimal water discharge which reduces the frequency of discharge cycles

Compact

Flanged version with standard centres can accommodate horizontal or vertical installations with flexible positioning of the controller

Intelligent

An optional automatic pressure management and water make-up on the network filling line (with pressure sensor kit) is available on request

Communicating

Data collection from the operation of the Ninox® is communicated via modBUS and is suitable for BMS

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