Deaerators Series ERD and Air separators Series SA - SAF

Main features

Air separators and deaerators allow the automatic venting of air in air conditioning and heating systems.

- Presence of air conditioning and heating systems causes various problems such as :
  - Increased deposit of scaling with consequent narrowing of the pipe sections
  - Higher noise level in the systems
  - Lower heat exchange capacities
  - Increase in the rate of corrosion of the pipework

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Technology by nature

Description

The standard automatic air vent valves allow venting of air only when the latter is separated from the water and accumulated in the topmost zones of the system. The **ERD** deaerator allows reduction in speed with consequent aggregation of the air in maxi bubbles and the automatic venting of such air.

ERD

EUROVENT.
Air separator with expansion vessel and double automatic/manual deaerator.

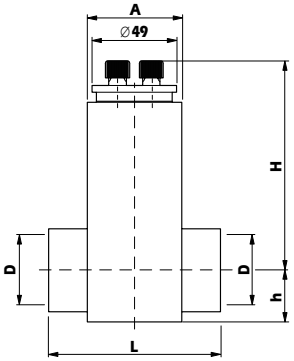
Type	Part No.	Size
ERD	0253625	1”
ERD	0253640	1.1/2”

Technical characteristics	
Max. operating pressure	8 bar
Max. operating temperature	115°C
Test pressure	12 bar

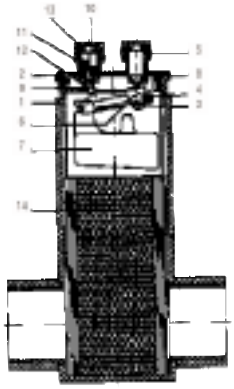
Design features	
Body	Tropicalized sheet steel
Cover	Shot blasted stamped brass OT58
Seals	EPDM rubber
Springs	Stainless steel AISI302
Float	High density PE
Spiral mesh	Stainless steel AISI304
Connections	G 1" F DIN-ISO 228/1 (ERD25) G 1.1/2" F DIN-ISO 228/1 (ERD40)

Overall dimensions (mm)

ERD



DN	A	L	H	h
1”	60x50	94	153	26
1.1/2”	60x60	104	191	32



Features

1. Tank
2. Cover
3. Plug
4. Torque spring
5. Automatic vent plug
6. Lever
7. Float
8. Cover seal ring
9. Manual vent plug
10. Manual vent bushing
11. Manual vent spring
12. Seal ring, manual vent
13. Manual vent plug
14. Spiral mesh

Application

The **EDR** is used for discharging air :

- In circuits with circulator, at the highest point of the pipework to reduce noise and to increase efficiency
- In radiant panel systems because the presence of air would reduce the efficiency of the panels
- In air conditioning system to avoid entrapping of air in the heat exchangers.

Selection criteria

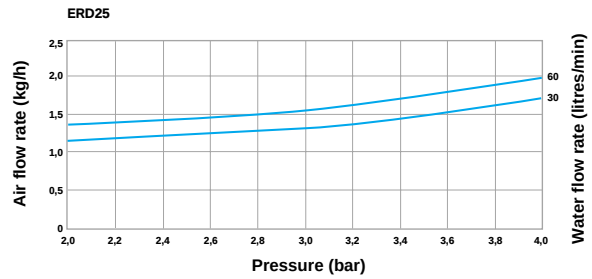
Acceptable speed of water in heating-water-plumbing systems is between 1 and 2 m/s, therefore **ERD25** is used for flow rates up to 60 litres/min, while **ERD40** is used for flow rates up to 150 litres/min. Higher flow rates determine higher speeds with consequent less air venting capacity.

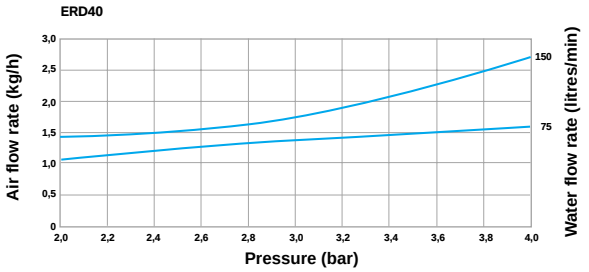
Operation

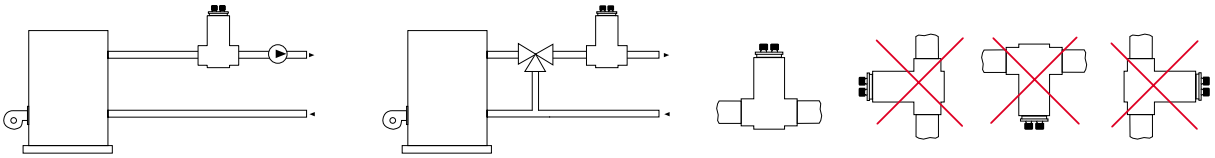
Principle of operation of the **ERD** air separator is as follows:

- The speed of the fluid is reduced inside the device
- The reduction in speed and the presence of the internal spiral mesh leads to separation of the micro air bubbles dispersed in the water
- The micro bubbles, on coming into contact with the mesh, aggregate and tend to be conveyed to the top of the body, from where they are discharged by the automatic valve.

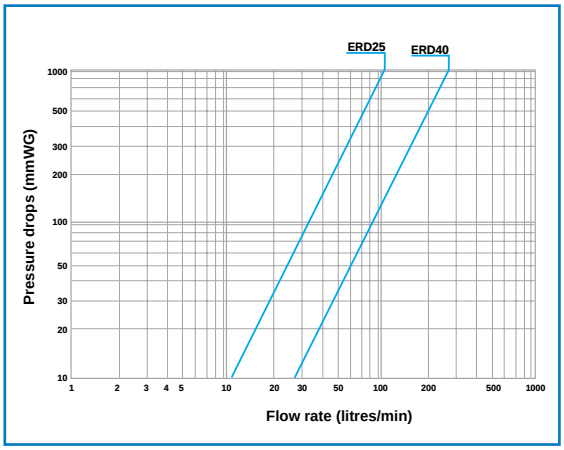
Vent capacity



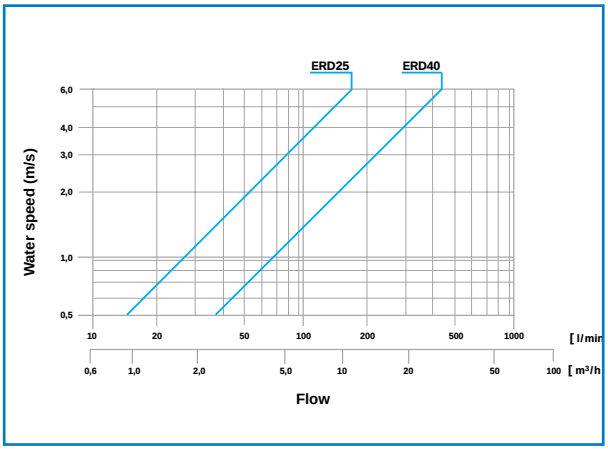




Flow rate - Pressure drop chart



Flow rate - Water speed chart



SA

Air separators with 5 threaded instrument connections.

Type	Part No.	Size
SA	0260125	1”
SA	0260132	1.1/4”
SA	0260140	1.1/2”
SA	0260150	2”
SA	0260165	2.1/2”
SA	0260180	3”

SAF

Flanged air separators with automatic deaerator connection, complete with counter-flange, bolts and seals.

Type	Part No.	Size
SAF	0260200	100
SAF	0260225	125
SAF	0260300	200

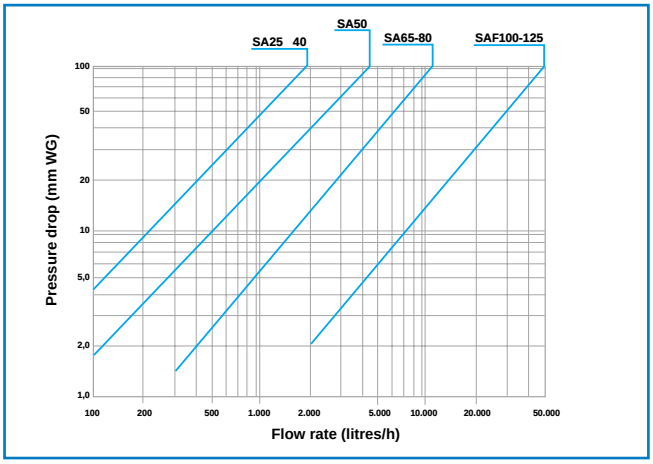
Application

From the critical water speed diagram, it can be deduced that separation of air from water can only take place when the speed of the water lies below the critical speed value. Such value depends on the pipe diameter, on the slope of the latter referred to the horizontal plane (counter slope) and the water temperature.
Air separators **Series SA and SAF** provide the most suitable conditions as regards the characteristics of the above mentioned points:
- Increase in full flow (reduction in speed)
- Zero counter slope (horizontal flow) with partial deviation towards the top owing to the internal fins
- High temperature (determined by the positioning in the vicinity of the boiler).

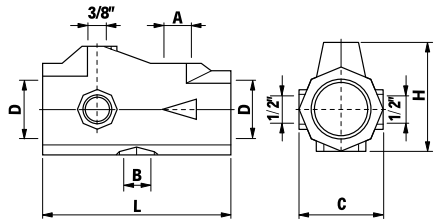
Hence the air collects at the highest point of the separator where an automatic air vent valve is installed (Minivent, Intervent, Microvent or Maxivent). For increased efficiency of the separator, the latter should be preceded by a straight length of piping.

Design features	
Body, separator SA	Painted malleable cast iron
Body, separator SAF	Painted steel
Connections, SA	Threaded DIN-ISO 228/1
Connections, SAF100	Flanged NP6-UNI 2276 with counter flange, bolts and seals
Connections, SAF125	Flanged NP10-UNI 2276 with counter flange, bolts and seals

Flow rate - Pressure drop chart



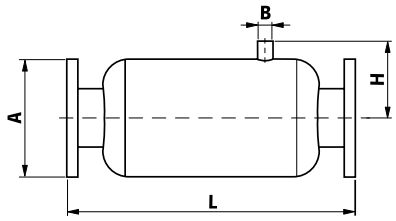
SA



DN	A	B	C	L	H
1”	1/2”	3/4”	70	152	87
1.1/4”	1/2”	3/4”	70	152	87
1.1/2”	1/2”	3/4”	70	152	87
2”	3/4”	1”	87	189	115
1.1/2”	1”	1”	128	300	203
3”	1”	1”	128	300	203

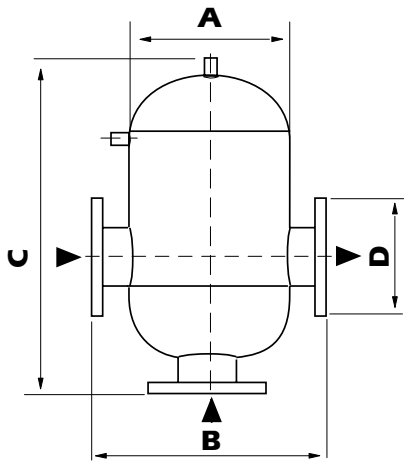
Overall dimensions (mm)

SAF



DN	A	B	L	H
100	PN6	3/4”	600	156
125	PN10	1”	700	168

SAF



DN	A	B	C	D
200	550	800	1100	PN10

Key:

A. safety valve connection (VST, MSL, SV)
B. expansion vessel connection
3/8" automatic air vent valve connection (MV, MKV, MKL, INT)
1/2" thermometer- gauge connection (TMAX)

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