

SF2 250-350 series

Flow rate up to 160 l/min



SF2 250-350 GENERAL INFORMATION

Description

Technical data

Suction filters

Flow rate up to 160 l/min

SF2 250 and SF2 350 are ranges of suction filters with integrated shut-off valve for protection of the downstream pump against the coarse contamination.

They are placed below the minimum oil level, directly connected to the suction line of the pump.

They can be fitted on the side or below the tank, allowing a more flexible design of the tank.

The shut-off valve closes automatically when the cover is removed, allowing the filter element replacement without the fluid drop.

Available features:

- Female threaded connections up to 1" and flanged connections up to 1 1/2", for a maximum flow rate of 160 l/min
- Multiple connections, to connect several suction lines
- Bypass valve, to relieve excessive pressure drop across the filter media
- Magnetic filter, to hold the ferrous particles
- Visual, electrical and electronic clogging indicators

Common application:

- Mobile machines
- Industrial equipment

Filter housing materials

- Filter body: Aluminium
- Cover: Polyamide, GF reinforced
- Valve: Polyamide, GF reinforced - Steel
- Anti-Emptying valve: Steel

Bypass valve

Opening pressure 30 kPa (0.3 bar) $\pm 10\%$

Elements

Fluid flow through the filter element from IN to OUT

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Note

SF2 250-350 filters mounting, see the drawings on page 43 and following.

Weights [kg]

Filter series	
SF2 250	2.6
SF2 350	2.6

GENERAL INFORMATION SF2 250-350

FILTER ASSEMBLY SIZING
Flow rates [l/min]

Filter series	Filter element design - N Series					
	M25	M60	M90	M250	P10	P25
SF2 250	147	151	155	160	85	132
SF2 350	147	151	155	160	85	132

Maximum flow rate for a complete suction filter with a pressure drop $\Delta p = 0.08$ bar.

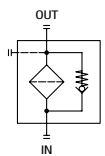
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

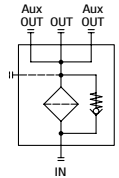
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

Hydraulic symbols

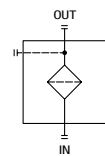
Filter series	Style R - S		Style Q - H	
SF2 250	•	-	•	-
SF2 350	-	•	-	•



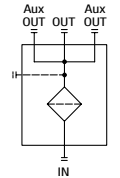
OUT
IN



Aux OUT
OUT
Aux OUT
IN



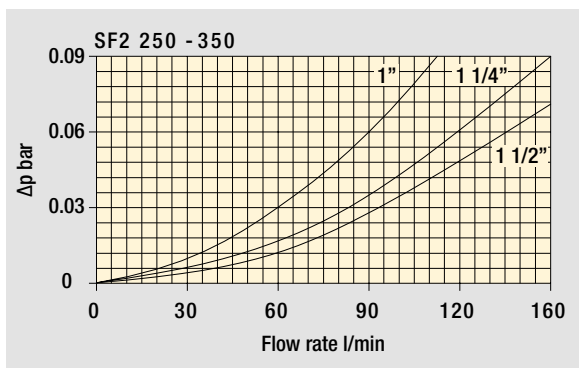
OUT
IN



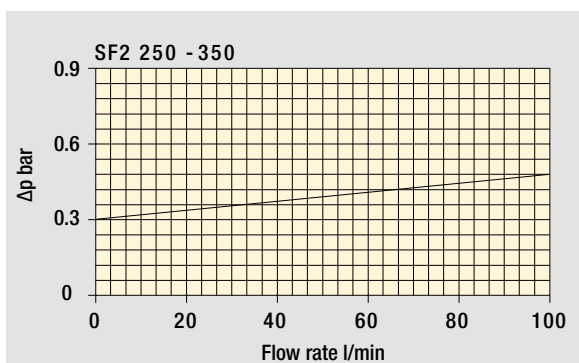
Aux OUT
OUT
Aux OUT
IN

Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

SF2 250-350

Designation & Ordering code

COMPLETE FILTER

Series and size	Configuration example 1:	SF2250	W	F2	R	M25	P01
SF2250	Configuration example 2:	SF2350	A	G1	S	M90	P01
SF2350							

Seals and treatments	Filtration rating	
	Mxx	Pxx
A NBR	•	•
V FPM	•	•
W NBR compatible with fluids HFA-HFB-HFC	•	-
Z FPM compatible with fluids HFA-HFB-HFC	•	-

Connections	Aux (only SF2350)	SF2250	SF2350
G1 G 1 1/2"	G 1"	•	•
G2 1 1/2" NPT	-	•	-
G3 SAE 24 - 1 7/8" - 12 UN	SAE 16 - 1 5/16" - 12 UN	•	•
G4 G 1 1/4"	-	•	-
G5 1 1/4" NPT	-	•	-
G6 SAE 20 - 1 5/8" - 12 UN	-	•	-
G7 G 1"	-	•	-
G8 1" NPT	-	•	-
G9 SAE 16 - 1 5/16" - 12 UN	-	•	-
F1 1 1/2" SAE 3000 psi/M	-	•	-
F2 1 1/2" SAE 3000 psi/UNC	-	•	-

Bypass valve and magnetic filter			
R With bypass, with magnetic filter	Q Without bypass, with magnetic filter		
S With bypass, without magnetic filter	H Without bypass, without magnetic filter		

Filtration rating (filter media)			
M25 Wire mesh 25 µm	P10 Resin impregnated paper 10 µm		
M60 Wire mesh 60 µm	P25 Resin impregnated paper 25 µm		
M90 Wire mesh 90 µm			
M250 Wire mesh 250 µm			

All filter media except M60, P10 and P25 are compatible with fluids HFA, HFB and HFC

Execution	
P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Element series and size	Configuration example 1:	SF250	M25	W	P01
SF250	Configuration example 2:	SF250	M90	N	P01

Filtration rating (filter media)			
M25 Wire mesh 25 µm	P10 Resin impregnated paper 10 µm		
M60 Wire mesh 60 µm	P25 Resin impregnated paper 25 µm		
M90 Wire mesh 90 µm			
M250 Wire mesh 250 µm			

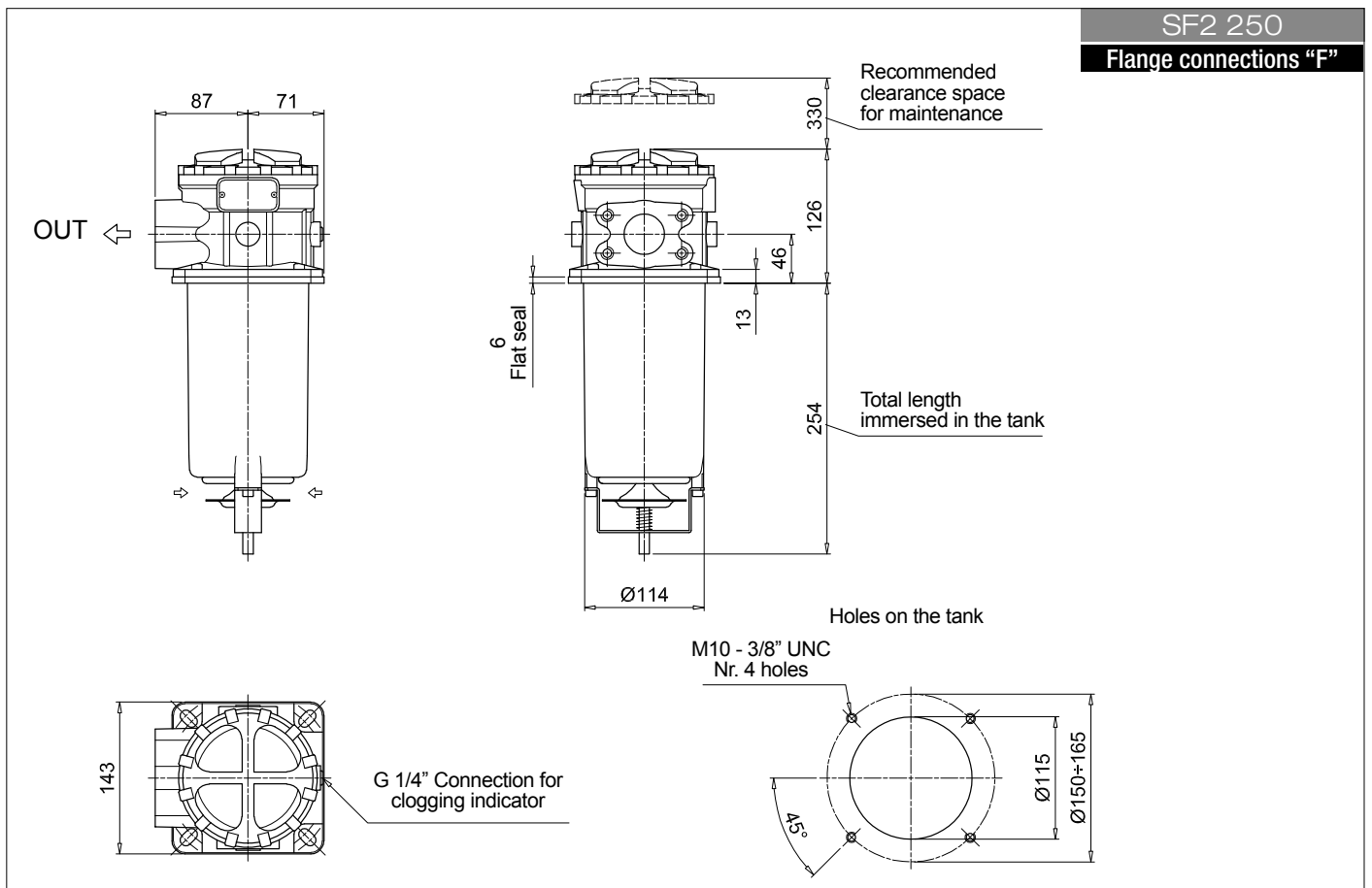
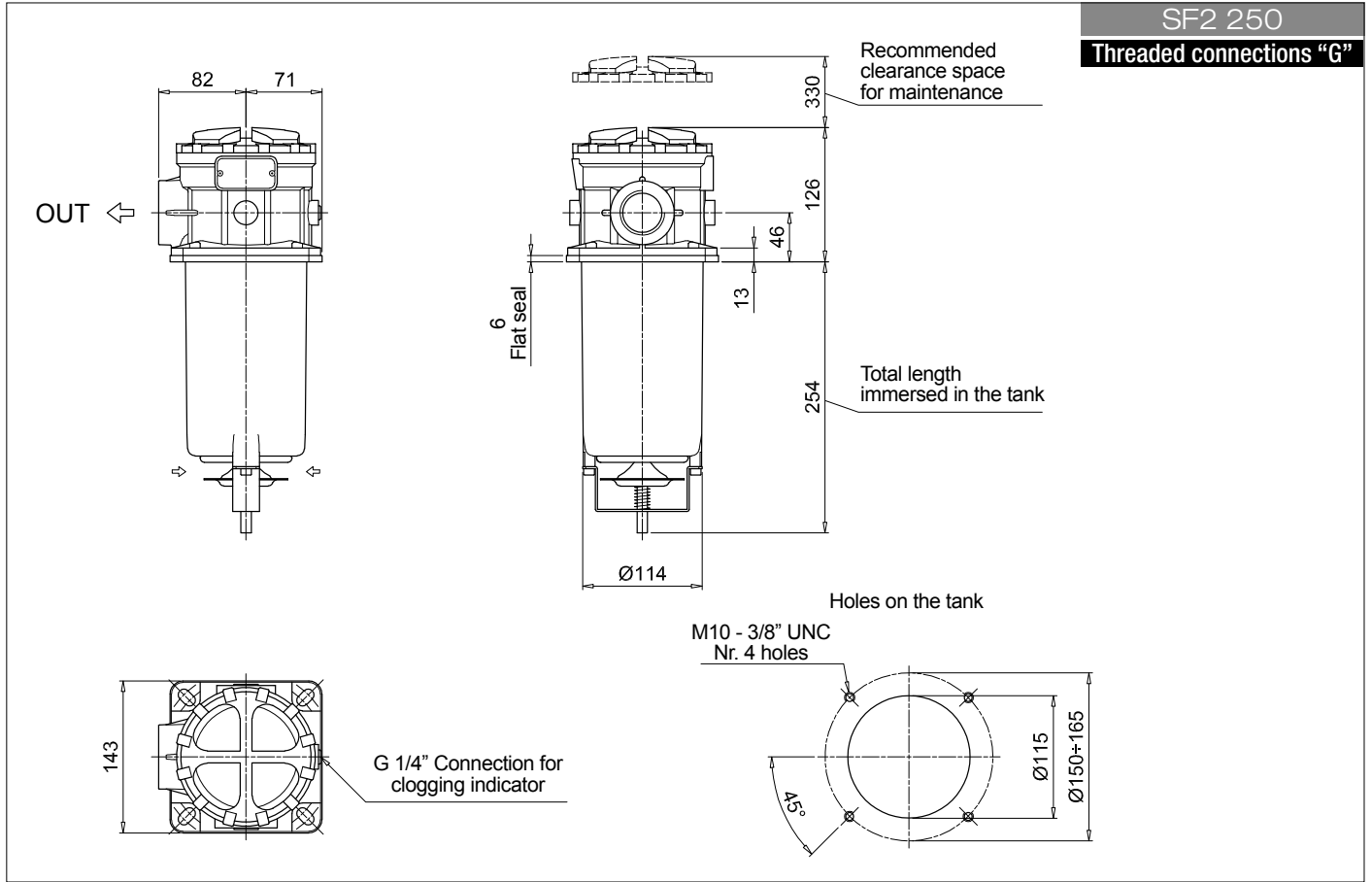
Seals and treatments	Filtration rating	
	Mxx	Pxx
N NBR	•	•
V FPM	•	•
W NBR compatible with fluids HFA-HFB-HFC	•	-
Z FPM compatible with fluids HFA-HFB-HFC	•	-

Execution	
P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 66

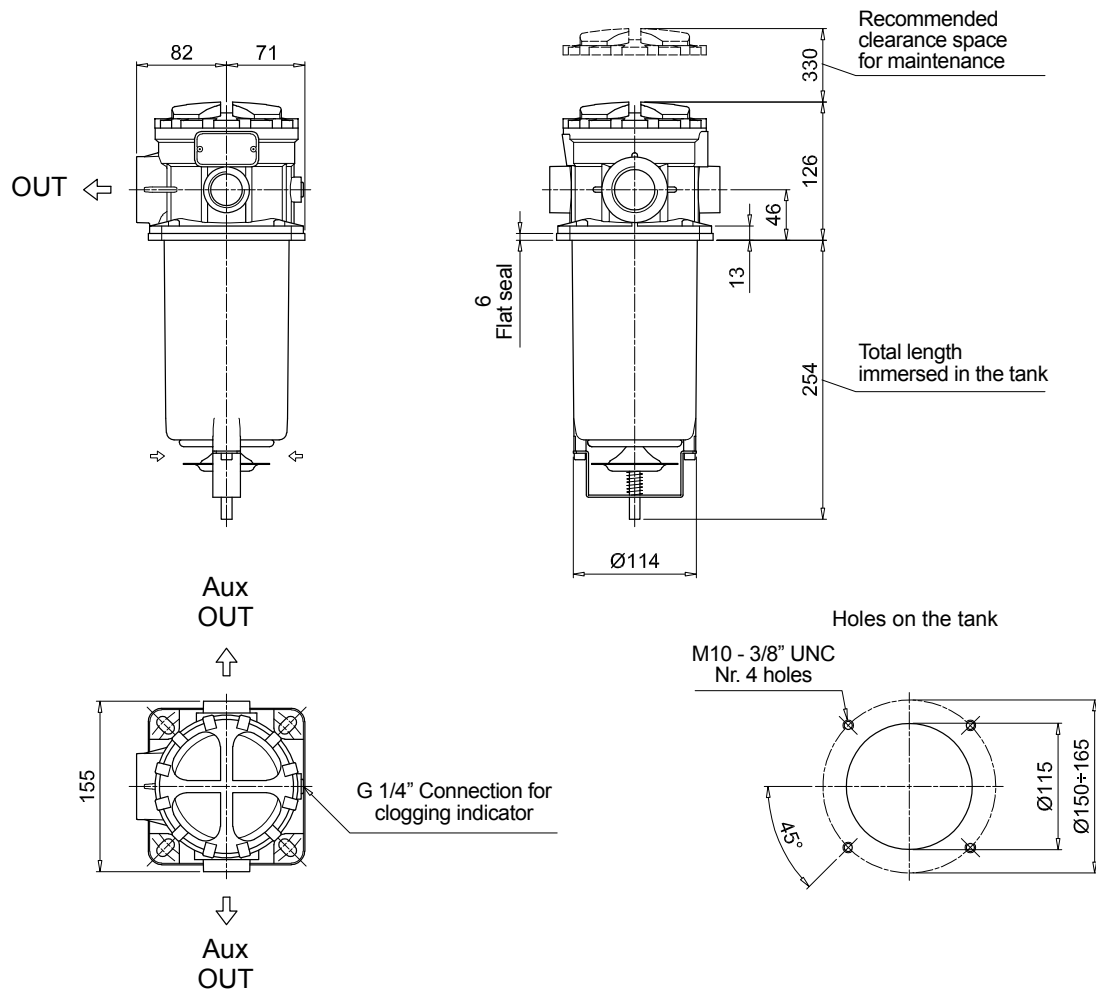
VVA	Axial vacuum gauge
VVR	Radial vacuum gauge
VEA	Electrical vacuum indicator
VLA	Electrical / visual vacuum indicator



SF2 250-350

Dimensions

SF2 350

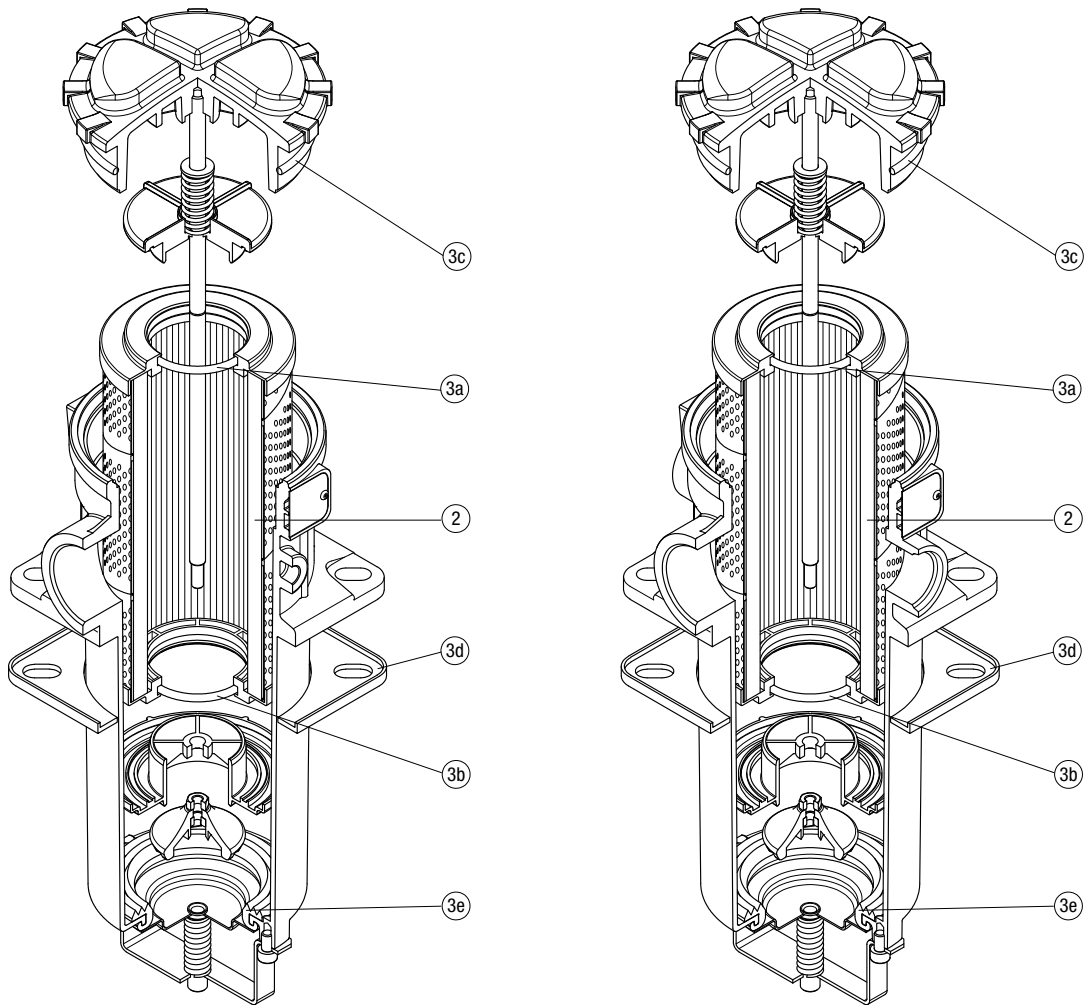


SPARE PARTS SF2 250-350

Order number for spare parts

SF2 250

SF2 350



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number	
SF2 250 - 350	See order table	NBR	FPM
	2	02050586	02050587
		3 (3a ÷ 3e)	

Clogging indicators

Introduction

Filter elements are efficient only if their Dirt Holding Capacity is fully exploited. This is achieved by using filter housings equipped with clogging indicators.

These devices trip when the clogging of the filter element causes an increase in pressure drop across the filter element.

The indicator is set to alarm before the element becomes fully clogged.

MP Filtri can supply indicators of the following designs:

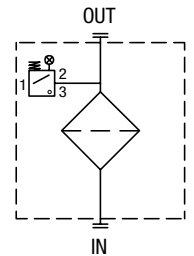
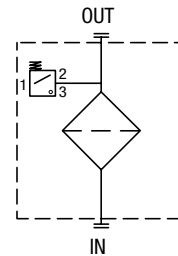
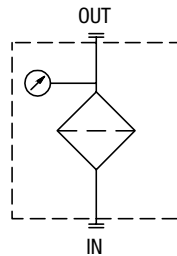
- Vacuum switches and gauges
- Pressure switches and gauges
- Differential pressure indicators

These type of devices can be provided with a visual, electrical or both signals.

Suitable indicator types

VACUUM INDICATORS

Vacuum indicators are used on the Suction line to check the efficiency of the filter element. They measure the pressure downstream of the filter element. Standard items are produced with R 1/4" EN 10226 connection.



Quick reference guide

Filter family	Visual indicators	Electrical indicators	Electrical / Visual indicators
SUCTION FILTERS With bypass valve 0.3 bar	ELIXIR® SFEX060-080-110-160	WB16P01 VVS16P01	VEB21AA50P01 VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01
	SF2 250 - 350 SF2 500 - 501 - 503 - 504 - 505 SF2 510 - 535 - 540	VVA16P01 VVR16P01	VEA21AA50P01

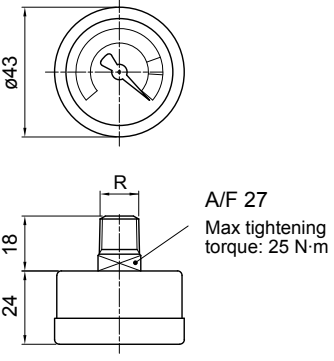

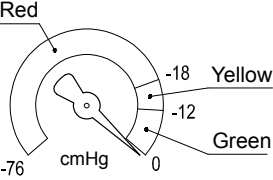
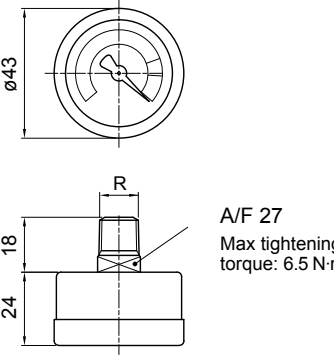

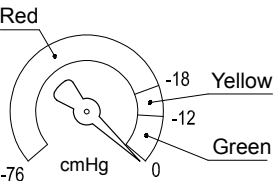
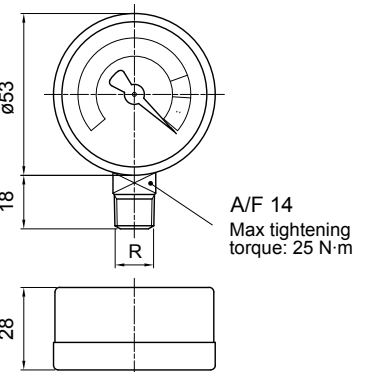

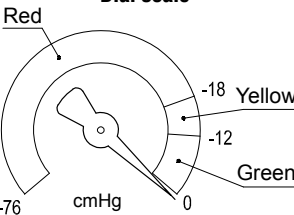
VE*50	
Electrical Vacuum Indicator	
R	Ordering code
EN 10226 - R1/4"	VE A 21 A A 50 P01
EN 10226 - R1/8"	VE B 21 A A 50 P01
<p>A/F 27 Max tightening torque: R 1/4: 25 N·m R 1/8: 6.5 N·m</p>	
<p>Hydraulic symbol</p> <p>Electrical symbol</p>	
<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: NBR <p>Technical data</p> <ul style="list-style-type: none"> - Vacuum setting: -0.21 bar ±10% - Max working pressure: 10 bar - Proof pressure: 15 bar - Working temperature: From -25 °C to +80 °C - Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943 - Degree of protection: IP65 according to EN 60529 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connection: EN 175301-803 - Resistive load: 5 A / 14 Vdc 4 A / 30 Vdc 5 A / 125 Vac 4 A / 250 Vac <ul style="list-style-type: none"> - Available Atex product: II 1GD Ex ia IIC Tx Ex ia IIIC Tx °C X - CE certification 	

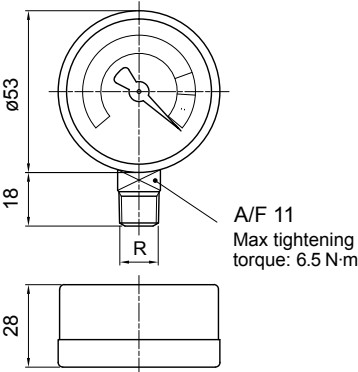

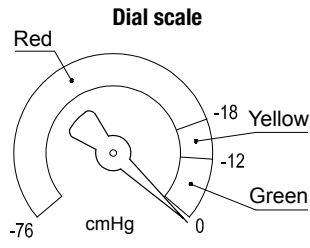
VL*51 - VL*52 - VL*53	
Electrical/Visual Vacuum Indicator	
R	Ordering code
EN 10226 - R1/4"	VL A 21 A A xx P01
EN 10226 - R1/8"	VL B 21 A A xx P01
<p>A/F 27 Max tightening torque: R 1/4: 25 N·m R 1/8: 6.5 N·m</p>	
<p>Hydraulic symbol</p> <p>Electrical symbol</p>	
<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Transparent polyamide - Contacts: Brass - Polyamide - Seal: NBR <p>Technical data</p> <ul style="list-style-type: none"> - Vacuum setting: -0.21 bar ±10% - Max working pressure: 10 bar - Proof pressure: 15 bar - Working temperature: From -25 °C to +80 °C - Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943 - Degree of protection: IP65 according to EN 60529 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connection: EN 175301-803 - Type: 51 52 53 - Lamps: 24 Vdc 110 Vdc 230 Vac - Resistive load: 1 A / 24 Vdc 1 A / 110 Vdc 1 A / 230 Vac 	

VL*71	
Electrical/Visual Vacuum Indicator	
Connections	Indicator code
EN 10226 - R1/4"	VL A 21 A A 71 P01
EN 10226 - R1/8"	VL B 21 A A 71 P01
<p>A/F 27 Max tightening torque: R 1/4: 25 N·m R 1/8: 6.5 N·m</p>	
<p>Hydraulic symbol</p> <p>Electrical symbol</p>	
<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: NBR <p>Technical data</p> <ul style="list-style-type: none"> - Vacuum setting: -0.21 bar ±10% - Max working pressure: 10 bar - Proof pressure: 15 bar - Working temperature: From -25 °C to +80 °C - Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943 - Degree of protection: IP65 according to EN 60529 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connection: IEC 61076-2-101 D (M12) - Lamps: 24 Vdc - Resistive load: 0.4 A / 24 Vdc 	

VACUUM INDICATORS

Dimensions

<p style="text-align: center;">VVA</p> <p style="text-align: center;">Axial Vacuum Gauge</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">R</th> <th style="width: 50%;">Ordering code</th> </tr> </thead> <tbody> <tr> <td>EN 10226 - R1/4"</td> <td>VV A 16 P01</td> </tr> </tbody> </table>  <p style="text-align: right;">A/F 27 Max tightening torque: 25 N·m</p>	R	Ordering code	EN 10226 - R1/4"	VV A 16 P01	<p style="text-align: center;">Hydraulic symbol</p>  <p style="text-align: center;">Dial scale</p>  <p style="text-align: center;">Conversion to SI units</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>[cmHg]</th> <th>[bar]</th> </tr> </thead> <tbody> <tr> <td>-12</td> <td>-0.16</td> </tr> <tr> <td>-18</td> <td>-0.24</td> </tr> <tr> <td>-76</td> <td>-1.01</td> </tr> </tbody> </table>	[cmHg]	[bar]	-12	-0.16	-18	-0.24	-76	-1.01	<p>Materials</p> <ul style="list-style-type: none"> - Case: Painted Steel - Window: Transparent plastic - Dial: Painted Steel - Pointer: Painted Aluminium - Pressure connection: Brass - Pressure element: Bourdon tube Cu-alloy soft soldered <p>Technical data</p> <ul style="list-style-type: none"> - Max working pressure: Static: 7 bar Fluctuating: 6 bar Short time: 10 bar - Working temperature: From -40 °C to +60 °C - Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943 - Accuracy: Class 2.5 according to EN 13190 - Degree of protection: IP31 according to EN 60529
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VVS	
Radial Vacuum Gauge	
R	Ordering code
EN 10226 - R1/8"	VV S 16 P01
	
	
Hydraulic symbol	
	
Dial scale	
Conversion to SI units	
[cmHg]	[bar]
-12	-0.16
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DESIGNATION & ORDERING CODE

Series	Configuration example 1:	VE	A	21	A	A	50	P01
VE Electrical vacuum indicator	Configuration example 2:	VL	A	21	A	A	71	P01
VL Electrical/Visual vacuum indicator	Configuration example 3:	VV	R	16				P01
VV Vacuum gauge								

Type VE - VL	Type VV
A Connection EN 10226 - R1/4"	A Axial connection EN 10226 - R1/4"
B Connection EN 10226 - R1/8"	B Axial connection EN 10226 - R1/8"
	R Radial connection EN 10226 - R1/4"
	S Radial connection EN 10226 - R1/8"

Vacuum setting	VE	VL	VV
16 -0.16 bar	-	-	•
21 -0.21 bar	•	•	-

Seals	VE	VL	VV
A NBR	•	•	-

Thermostat	VE	VL	VV
A Without	•	•	-

Electrical connections	VE	VL	VV
50 Connection EN 175301-803	•	-	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	•	-
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	•	-
53 Connection EN 175301-803, transparent base with lamps 230 Vdc	-	•	-
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	•	-

Option
P01 MP Filtri standard
Pxx Customized