MRSX series

Maximum working pressure up to 1 MPa (10 bar) - Flow rate up to 250 l/min

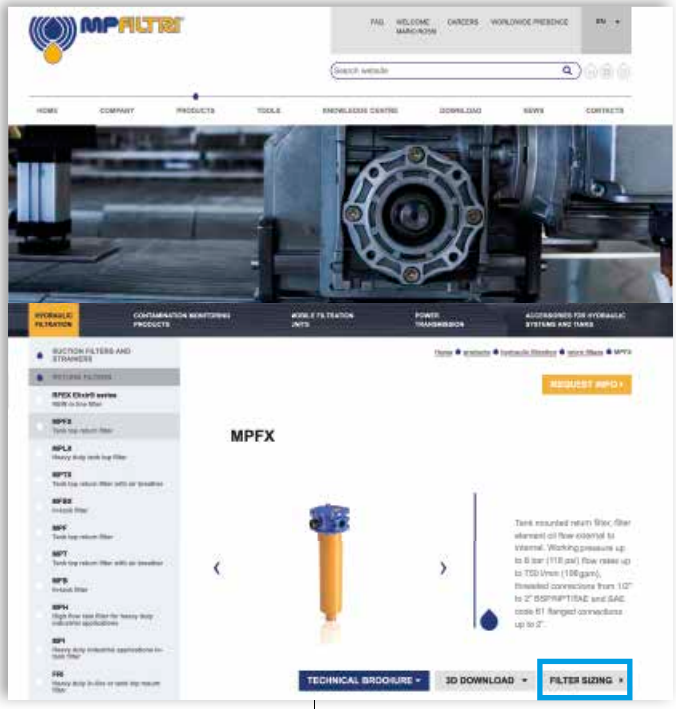
TYPICAL FILTER SIZING Selection Software

Step 1

Select “FILTER SIZING SOFTWARE” after login

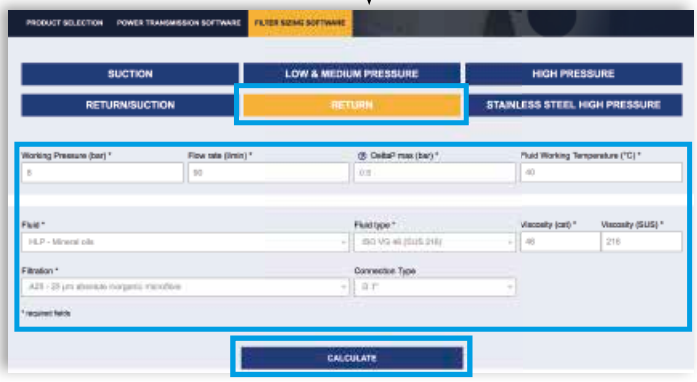
OR

Select “FILTER SIZING” after login from a product page

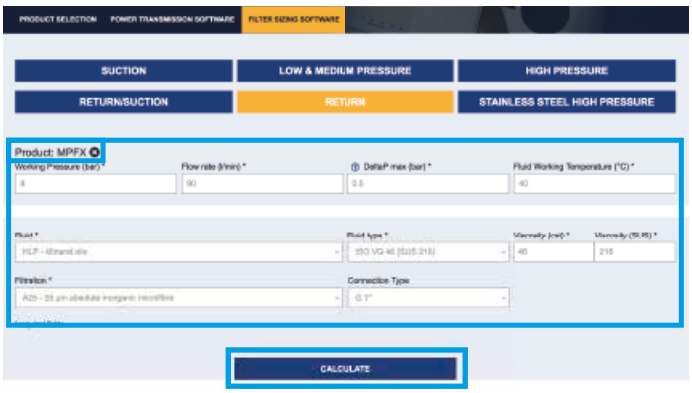


Step 2

Choose the type of filter family.
Enter the main data for sizing the filter then push CALCULATE.

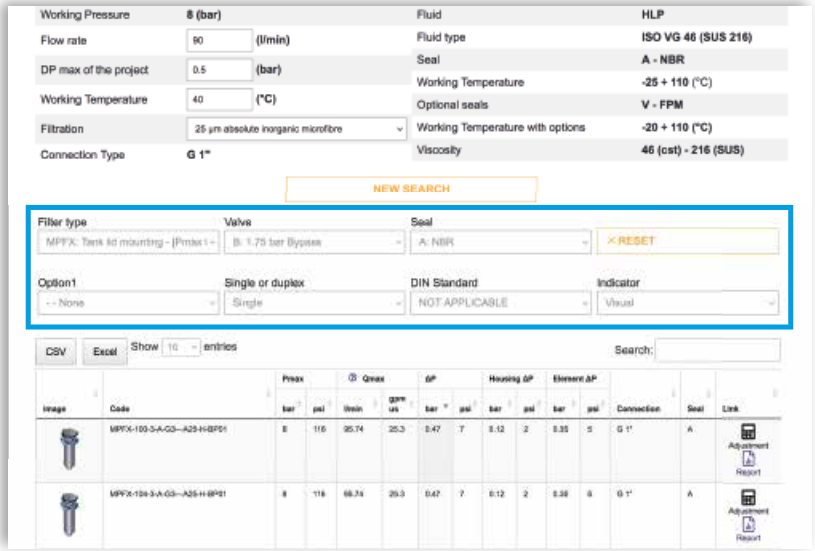


Enter the main data for sizing the filter then push CALCULATE.



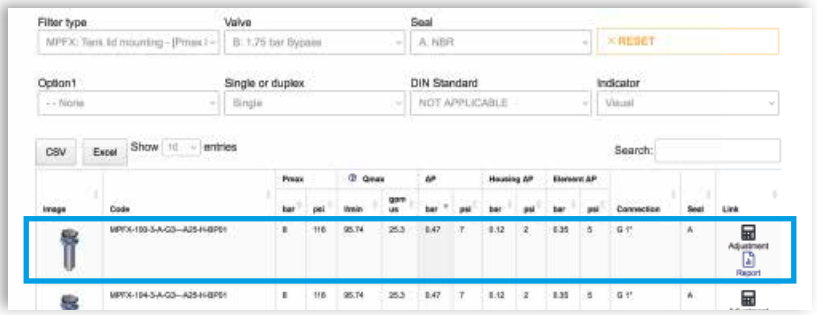
Step 3

Select the desidered options to choose the appropriate filter type for the application.



Step 4

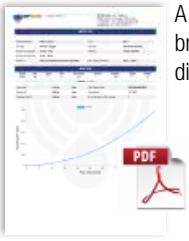
Choose the most suitable filter from the proposed list.



Step 5

A SAVE YOUR FILTER'S REPORT

SAVE IN YOUR ARCHIVE
typing your reference data and then SAVE AS PDF

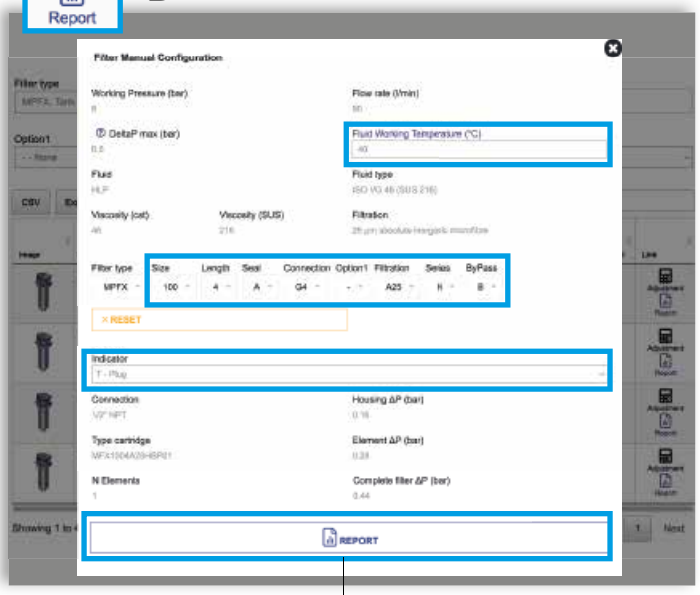


A new
browser window
displays the pdf

Close the report window

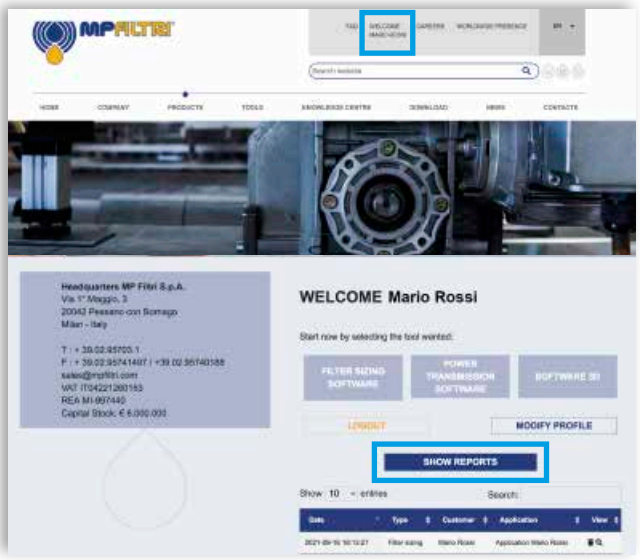
B MANUAL EDIT

It is possible to change the filter
modifying every parameter.



see **A**

By clicking your WELCOME button,
the SHOW REPORTS is displayed: select it to see your filters list.



MYCLEAN

THE X CONCEPT FOR OUR FILTERS

**Protect the performance of your system with MYclean.
Quality and efficiency are fundamental for MP Filtri:
this exclusive new filter element possesses polygon shape geometry and specific seal that ensures only original spare parts can be used - ensuring correct operation and higher system reliability.**

MRSX series

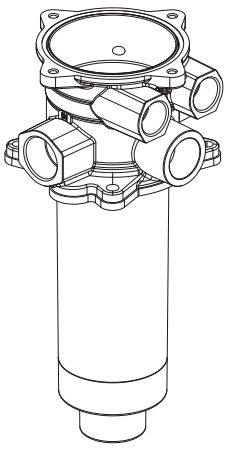
with MYCLEAN RSX Filter Element

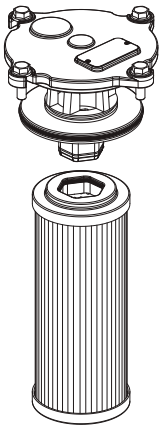
- **Protects the machine from improper use of non-original products.**
- **Safety of constant quality protection & reliability**

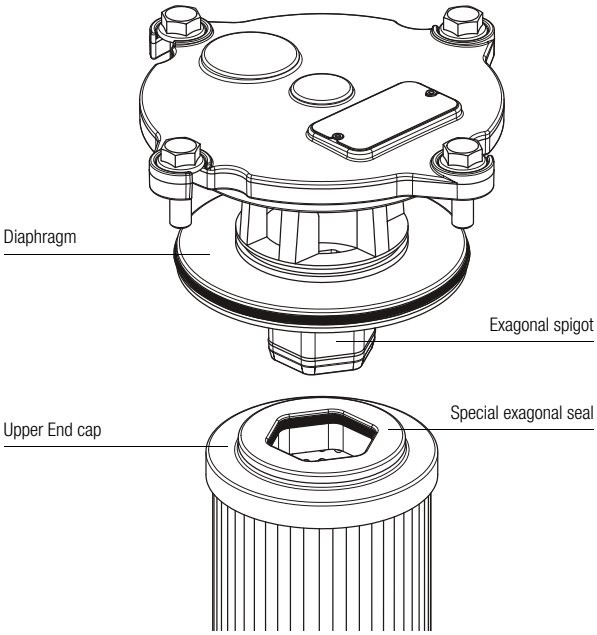
With exclusive filter element you are sure that only MP Filtri filter elements can be used, ensuring the best cleaning level of the oil due to the use of originals filter elements.

The products identified as MRSX are protected by:

- Italian Patent n° 102014902261205
- Canadian Patent n° 2,937,258
- European Patent n° 16181725.9
- US Patent n° 15/224,337







MRSX GENERAL INFORMATION

Description

Return / Suction filter | Tank mounted

Maximum working pressure up to 1 MPa (10 bar)
Flow rate up to 250 l/min

MRSX is a range of suction/return filters for hydraulic systems with two or more circuits (both open and closed loops). They are able to provide pressurized oil cleaned by fine filtration to the feed pump of the hydrostatic systems.
They are directly fixed to the reservoir, in immersed or semi-immersed position.
The filter output must be always immersed into the fluid to avoid aeration or foam generation into the reservoir.

Available features:
- Female threaded return connections up to 1 1/4", for a maximum return flow rate of 250 l/min
- Multiple connections, to connect several return and suction lines
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve to the tank, to relieve excessive pressure drop across the filter media when the return flow is enough higher than the suction flow
- Bypass valve to the suction line with additional suction filter element, to relieve excessive pressure drop across the filter media when the return flow is not enough higher than the suction flow
- De-pressurization valve, to reduce the pressure inside the filter during the maintenance operations
- Anti-cavitation valve with additional suction filter element, to ensure fluid to the feed pump of the hydrostatic systems during cold starts or initial filling
- O-ring or Flat Seal to suit a variety of reservoir surfaces
- Reservoir side mounting, to save space in the machines
- Visual, electrical and electronic clogging indicators
- MYclean interface connection, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:
Mobile machines with hydrostatic systems on board
(i.e. skid steer loaders, telehandlers, dumpers, road sweepers)

Technical data

Filter housing materials
- Head: Aluminium

- Cover
  Polyamide: MRSX 116
  Aluminium: MRSX 165-166

- Bowl: Polyamide

Δp element type
- RSX: 10 bar
- Oil flow from exterior to interior.

Seals
- Standard NBR series A
- Optional FPM series V

Temperature
From -25 °C to +110 °C

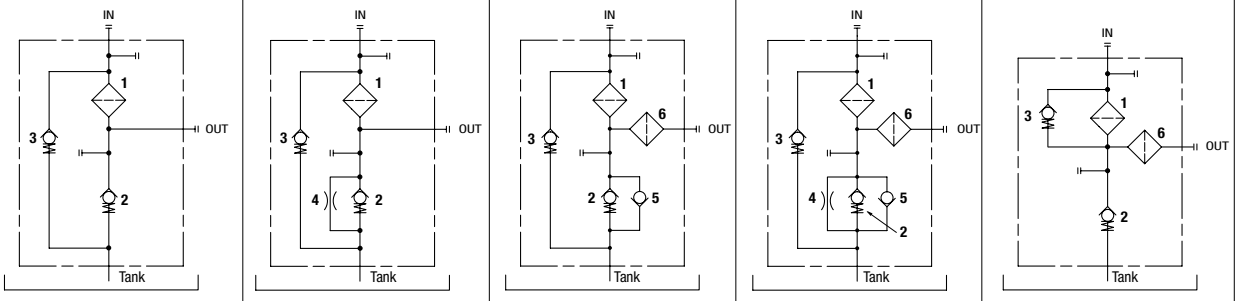
FILTER ASSEMBLY SIZING
Flow rates [l/min]

Filter series	Length	A10	A16	A25
MRSX 116	1	74	82	87
	2	108	113	124
MRSX 165 - 166	1	155	166	178
	2	187	196	200
	3	201	205	217

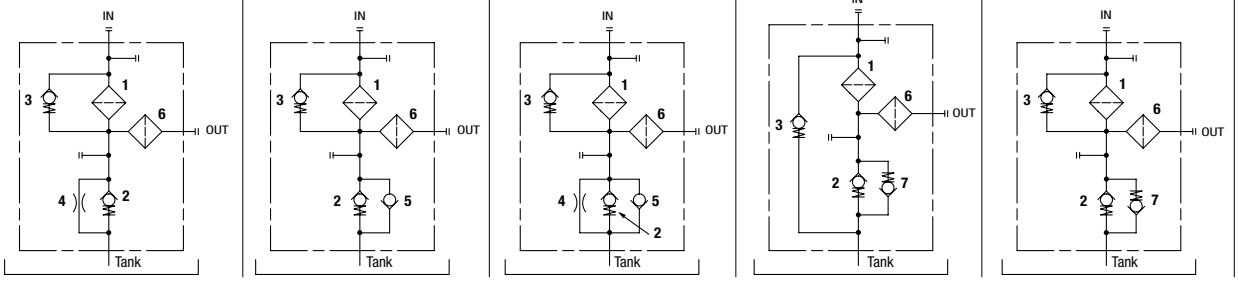
Maximum flow rate for a complete return/suction filter with a pressure drop Δp = 1 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
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

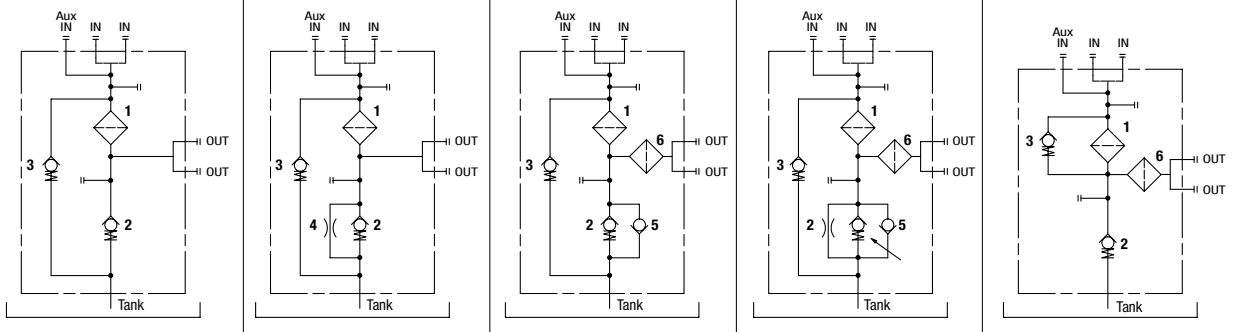
Valves A option	Valves B option	Valves C option	Valves D option	Valves E option	Filter series
					MRSX 116



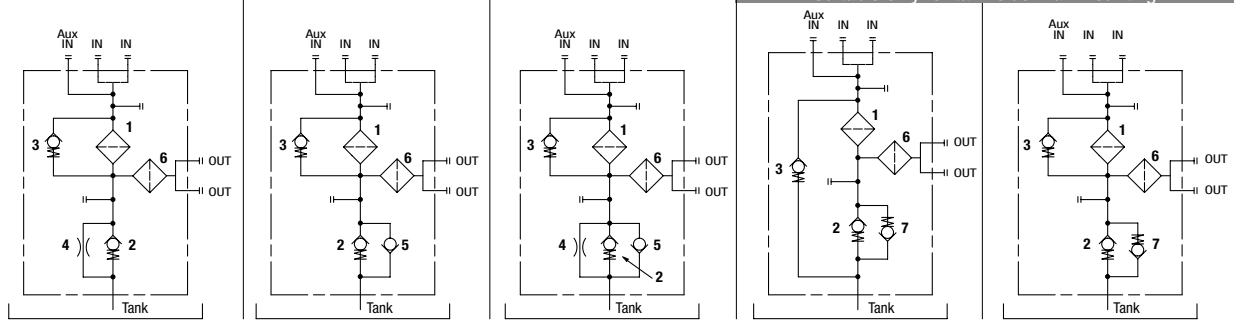
Valves F option	Valves G option	Valves H option	Valves I option	Valves M option
			Suitable only for tank side-wall mounting	



Valves A option	Valves B option	Valves C option	Valves D option	Valves E option	Filter series
					MRSX 165-166



Valves F option	Valves G option	Valves H option	Valves I option	Valves M option
			Suitable only for tank side-wall mounting	

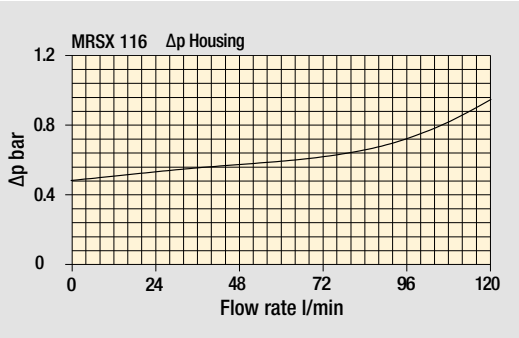


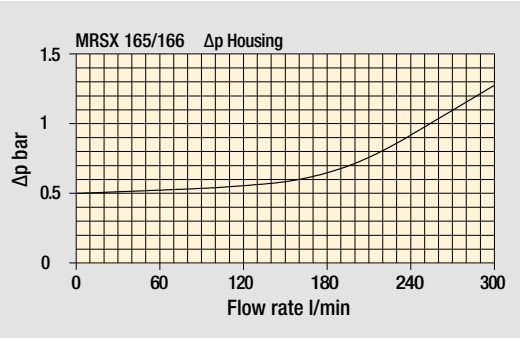
LEGEND

1 - Filter element
2 - Back-Pressure valve: opening pressure 0.5 bar ±10%
3 - Bypass valve: opening pressure 2.5 bar ±10%
4 - Depressurization valve
5 - Anti-Cavitation valve
6 - Safety filter element (wire mesh 60 µm)
7 - Anti-Cavitation valve / Anti-Emptying valve

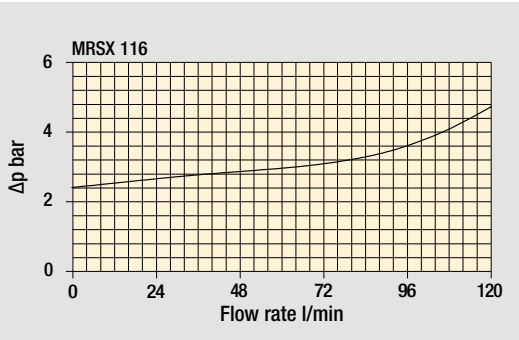
Pressure drop

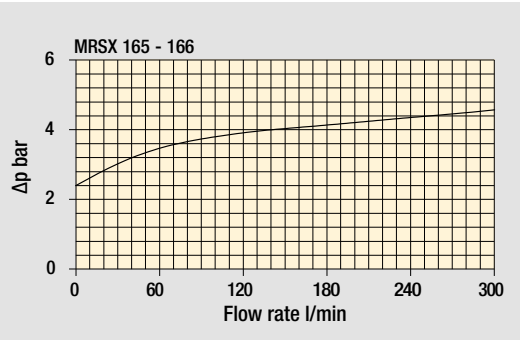
Filter housings Δp pressure drop





Bypass valve pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Weights [kg] and volumes [dm^3]

Filter series	Weights [kg]				Volumes [dm^3]			
	Length	1	2	3	Length	1	2	3
MRSX 116		1.30	1.40	-		0.80	1.00	-
MRSX 165		3.40	3.80	4.10		2.00	2.60	3.00
MRSX 166		3.40	3.80	4.10		2.00	2.60	3.00

Designation & Ordering code

COMPLETE FILTER

Configuration example: MRSX116 | 1 | B | A | G1 | 0 | A16 | B | P01

Series and size

MRSX116 Filter featuring MYCLEAN Filter Element

Length

1 | **2**

Hydraulic diagram configuration - see page 285

	Bypass valve to tank	Bypass valve to OUT
A | **B** | **C** | **D**	•	-
E | **F** | **G** | **H**	-	•
I	•	-
M	-	•

Seals and treatments

A	NBR, O-Ring on head	**B**	NBR, flat seal on head
V	FPM, O-Ring on head	**D**	FPM, flat seal on head

Connections IN		Connections OUT
G1	G 3/4"	G 3/4"
G2	G 1"	G 1"
G3	3/4" NPT	3/4" NPT
G4	1" NPT	1" NPT
G5	SAE 12 - 1 1/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN
G6	SAE 16 - 1 5/16" - 12 UN	SAE 16 - 1 5/16" - 12 UN
D1	G 1"	G 3/4"
D2	1" NPT	3/4" NPT
D3	SAE 16 - 1 5/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN

Aux IN connection

0 Without aux IN connection

Filtration rating (filter media)

A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Valves configuration

Mounting position	A	B	C	D	E	F	G	H	I	M
S Standard	•	•	•	•	•	•	•	•	-	-
B Tank side-wall mounting	•	•	-	-	•	•	-	-	•	•

Execution

P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: RSX116 | 1 | A16 | A | P01

Element series and size

RSX116 Filter Element with MYCLEAN feature

Element length

1 | **2**

Filtration rating (filter media)

A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals

A NBR
V FPM

Execution

P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 303

Indicators on Return Line

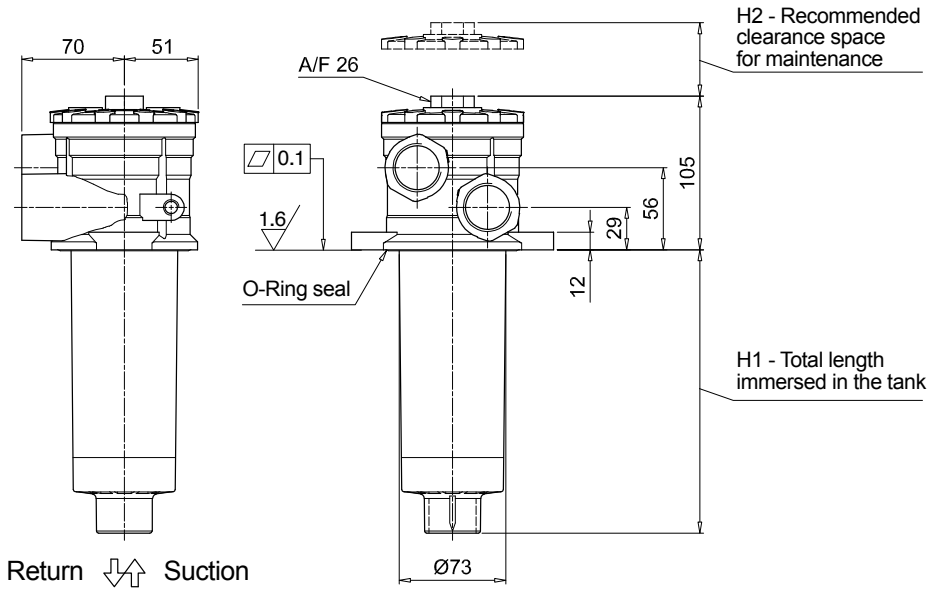
BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BET Electrical pressure indicator
BLA Electrical / visual pressure indicator

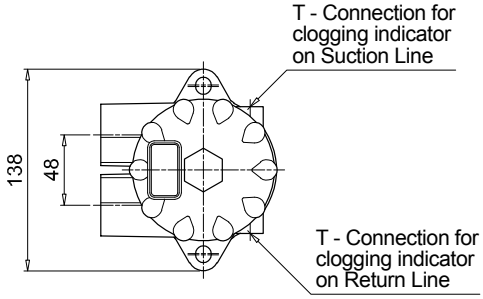
Indicators on Suction Line

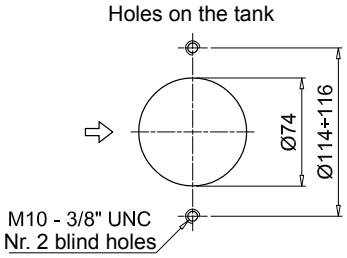
VVB Axial vacuum gauge
VVS Radial vacuum gauge
VEB Electrical vacuum indicator
VLB Electrical / visual vacuum indicator

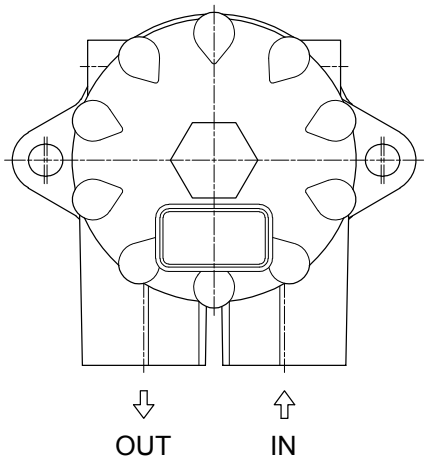
MRSX116		
Filter length	**H1 [mm]**	**H2 [mm]**
1	203	240
2	263	300

Connections	T
G1 - G2	G 1/8”
G3 - G4	1/8” NPT
G5 - G6	1/8” NPT
D1	G 1/8”
D2 - D3	1/8” NPT









MRSX MRSX165 - MRSX166

Designation & Ordering code

COMPLETE FILTER

Configuration example: MRSX166 | 2 | C | V | G3 | 1 | A10 | S | P01

Series and size

MRSX165 | **MRSX166** Filter featuring MYCLEAN Filter Element

Length

1 | **2** | **3**

Hydraulic diagram configuration - see page 285

	Bypass valve to tank	Bypass valve to OUT
A | **B** | **C** | **D**	•	-
E | **F** | **G** | **H**	-	•
I	•	-
M	-	•

Seals and treatments

A	NBR, O-Ring on head	**B**	NBR, flat seal on head
V	FPM, O-Ring on head	**D**	FPM, flat seal on head

Connections

	IN (size 165)	IN (size 166)	Aux IN	OUT
G1	G 1 1/4”	G 1”	G 1 1/4”	G 1”
G2	1 1/4” NPT	1” NPT	1 1/4” NPT	1” NPT
G3	SAE 20 - 1 5/8” - 12 UN	SAE 16 - 1 5/16” - 12 UN	SAE 20 - 1 5/8” - 12 UN	SAE 16 - 1 5/16” - 12 UN

Aux IN connection

		MRSX 165	MRSX 166
0	Without aux IN connection	•	-
1	With aux IN connection - see previous table	•	•

Filtration rating (filter media)

A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Valves configuration

Mounting position	A	B	C	D	E	F	G	H	I	M
S Standard	•	•	•	•	•	•	•	•	-	-
B Tank side-wall mounting	•	•	-	-	•	•	-	-	•	•

Execution

P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: RSX165 | 2 | A10 | V | P01

Element series and size

RSX165 Filter Element with MYCLEAN feature

Element length

1 | **2** | **3**

Filtration rating (filter media)

A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals

A NBR
V FPM

Execution

P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 303

Indicators on Return Line

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BET Electrical pressure indicator
BLA Electrical / visual pressure indicator

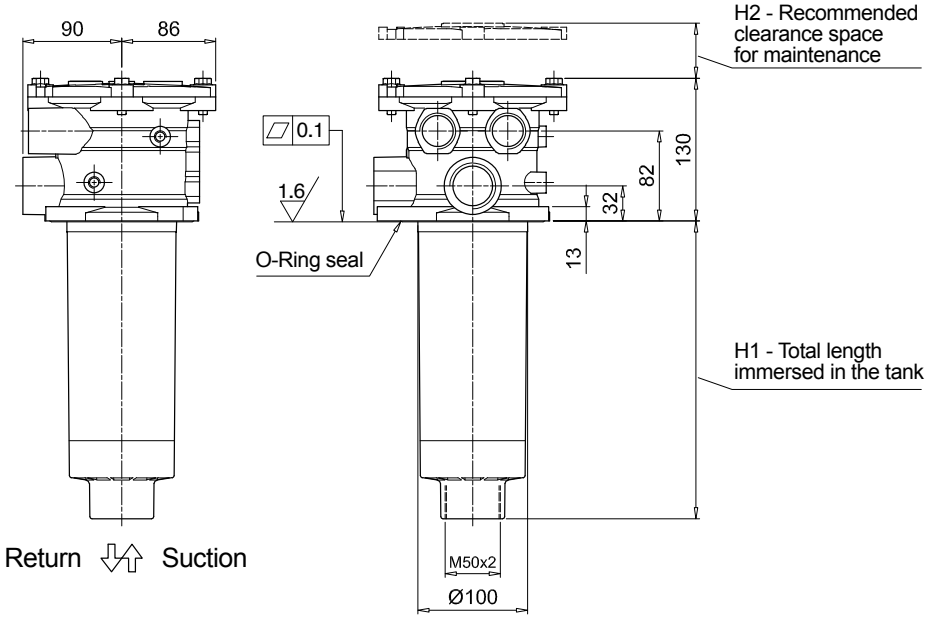
Indicators on Suction Line

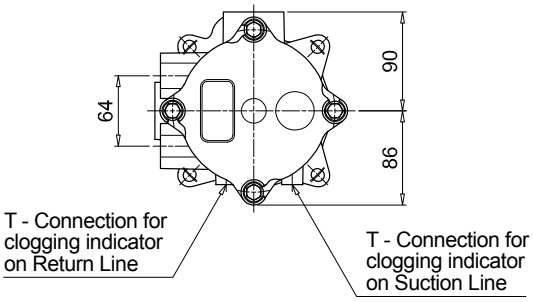
VVB Axial vacuum gauge
VVS Radial vacuum gauge
VEB Electrical vacuum indicator
VLB Electrical / visual vacuum indicator

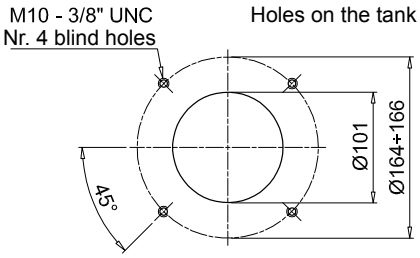
MRSX165

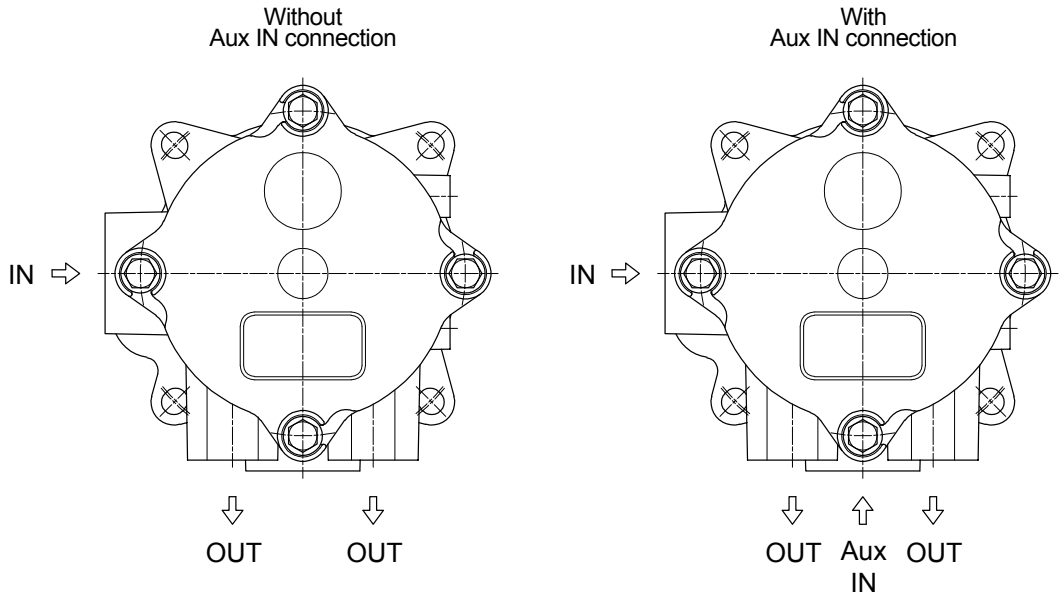
Filter length	H1 [mm]	H2 [mm]
1	270	320
2	378	430
3	445	500

Connections	T
G1	G 1/8"
G2 - G3	1/8" NPT

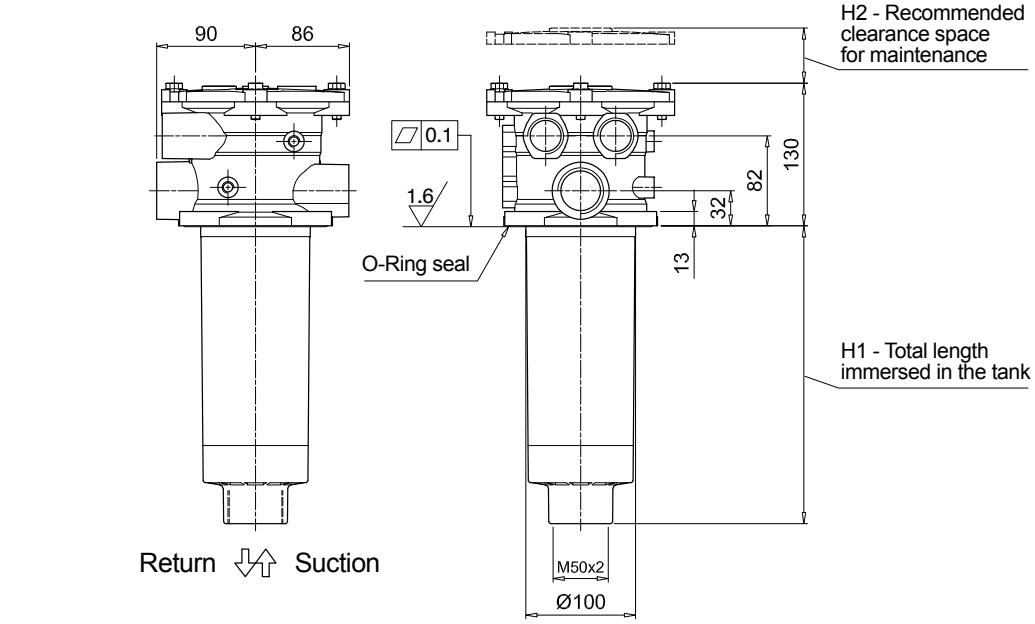


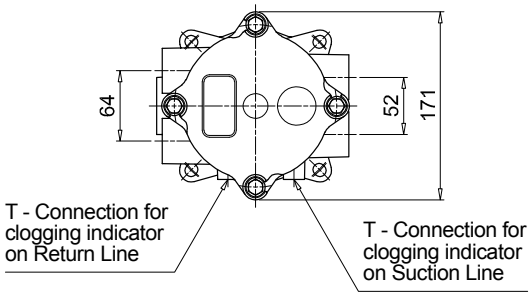


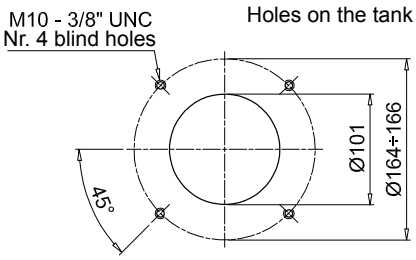


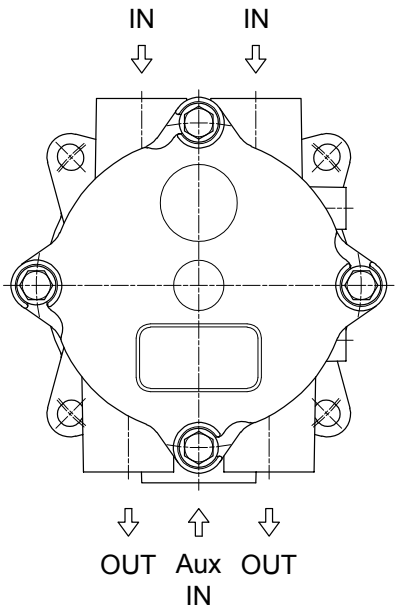


Dimensions







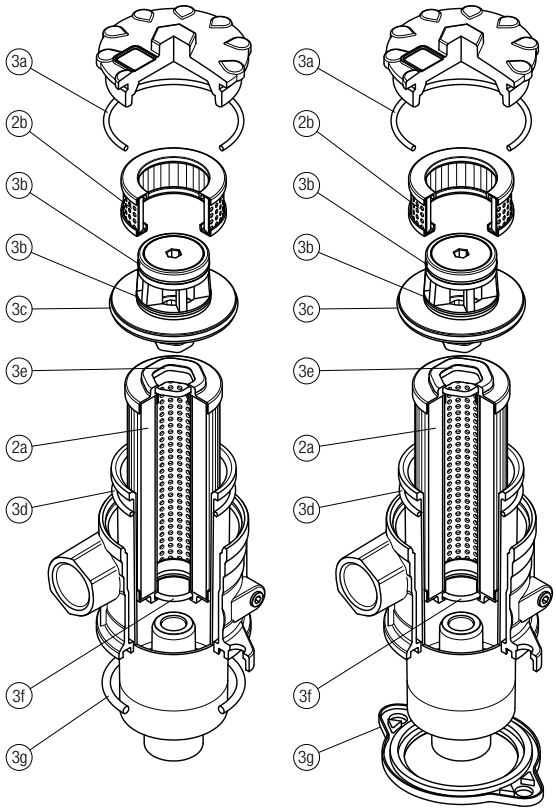


MRSX166

Filter length	H1 [mm]	H2 [mm]
1	270	320
2	378	430
3	445	500

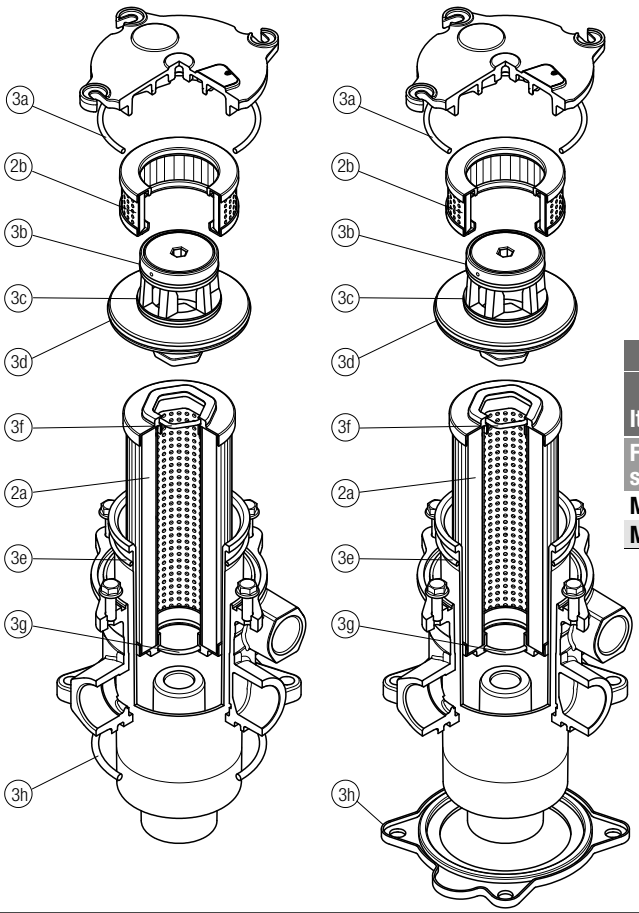
Connections	T
G1	G 1/8"
G2 - G3	1/8" NPT

MRSX 116



			O-RING SEAL		FLAT SEAL	
	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 1 pc.	
Item:	**2a**	**2b**	**3** (3a ÷ 3g)		**3** (3a ÷ 3g)	
Filter series	**Filter element**	**Safety filter element**	**Seal Kit code number NBR**	**FPM**	**Seal Kit code number NBR**	**FPM**
MRSX 116	See order table	S116M60P01	02050617	02050619	02050618	02050620

MRSX 165 - 166



			O-RING SEAL		FLAT SEAL	
	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 1 pc.	
Item:	**2a**	**2b**	**3** (3a ÷ 3h)		**3** (3a ÷ 3h)	
Filter series	**Filter element**	**Safety filter element**	**Seal Kit code number NBR**	**FPM**	**Seal Kit code number NBR**	**FPM**
MRSX 165	See order table	S165M60P01	02050627	02050630	02050628	02050631
MRSX 166			02050627	02050630	02050629	02050632

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:

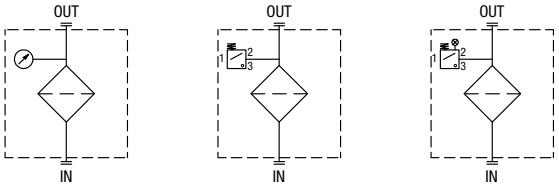
- **Vacuum switches and gauges**
- **Pressure switches and gauges**
- **Differential pressure indicators**

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

Suitable indicator types

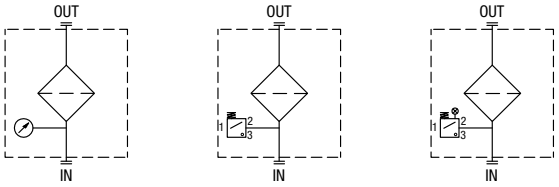
VACUUM INDICATORS

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. Available products with R 1/8" EN 10226 to be fitted on MPS series.



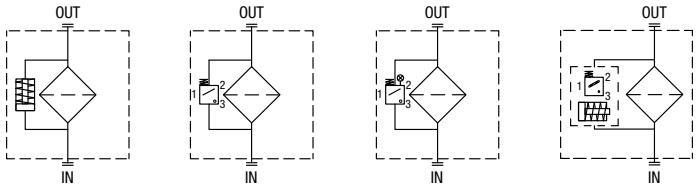
BAROMETRIC INDICATORS

Pressure indicators are used on the Return line to check the efficiency of the filter element. They measure the pressure upstream of the filter element. Standard items are produced with R 1/8" EN 10226 connection.



DIFFERENTIAL INDICATORS

Differential indicators are used on the Pressure line to check the efficiency of the filter element. They measure the pressure upstream and downstream of the filter element (differential pressure). Standard items are produced with special connection G 1/2" size. Also available in Stainless Steel models.



Quick reference guide

Filter family	Filter series		Visual indicators	Electrical indicators	Electrical / Visual indicators
RETURN / SUCTION FILTERS	With bypass valve 2.5 bar	MRSX 116 - 165 - 166 Suction line	VVB16P01 VVS16P01	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01
		MRSX 116 - 165 - 166 Return line	BVA14P01 BVA25P01 BVR14P01 BVR25P01 BVP15HP01 BVP20HP01 BVQ15HP01 BVQ20HP01	BEA15HA50P01 BEA20HA50P01 BEM15HA41P01 BEM20HA41P01 BET20HF10P01 BET20HF30P01 BET20HF50P01 BET25HF10P01 BET25HF30P01 BET25HF50P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01 BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01
	With bypass valve 2.5 bar	LMP 124 MULTIPORT	BVA14P01 BVA25P01 BVR14P01 BVR25P01 DVA20xP01 BVP15HP01 DVM20xP01 BVP20HP01 BVQ15HP01 BVQ20HP01	BEA15HA50P01 BEA20HA50P01 BEM15HA41P01 DEA20xA50P01 BEM20HA41P01 DEM20XX10P01 BET20HF10P01 DEM20XX20P01 BET20HF30P01 DEM20XX30P01 BET20HF50P01 DEM20XX35P01 BET25HF10P01 BET25HF30P01 DTA20xF70P01 BET25HF50P01	BLA15HA51P01 BLA15HA52P01 DLA20xA51P01 BLA15HA53P01 DLA20xA52P01 BLA15HA71P01 DLA20xA71P01 BLA20HA51P01 BLA20HA52P01 DLE20xA50P01 BLA20HA53P01 DLE20xF50P01 BLA20HA71P01

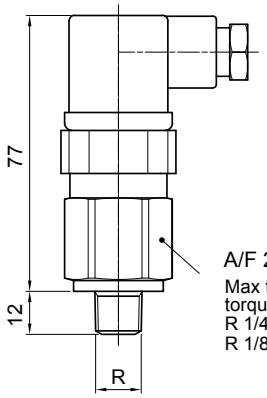
VACUUM INDICATORS

Dimensions

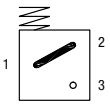
VE*50

Electrical Vacuum Indicator

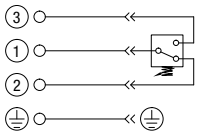
R	Ordering code
EN 10226 - R1/4"	VE A 21 A A 50 P01
EN 10226 - R1/8"	VE B 21 A A 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: NBR

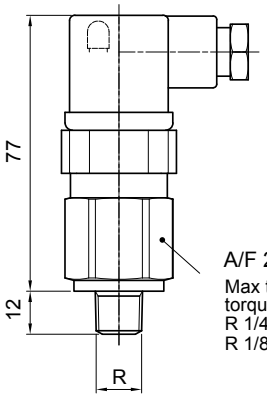
Technical data
- Vacuum setting: -0.21 bar ±10%
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 5 A / 14 Vdc; 4 A / 30 Vdc; 5 A / 125 Vac; 4 A / 250 Vac
- Available ATEX product: I M1 Ex ia I Ma; II 1GD Ex ia IIC Tx Ex ia IIIC Tx°C X
- CE certification

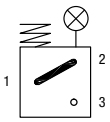
VL*51 - VL*52 - VL*53

Electrical/Visual Vacuum Indicator

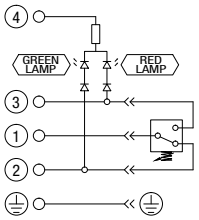
R	Ordering code
EN 10226 - R1/4"	VL A 21 A A xx P01
EN 10226 - R1/8"	VL B 21 A A xx P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Transparent polyamide
- Contacts: Brass - Polyamide
- Seal: NBR

Technical data
- 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

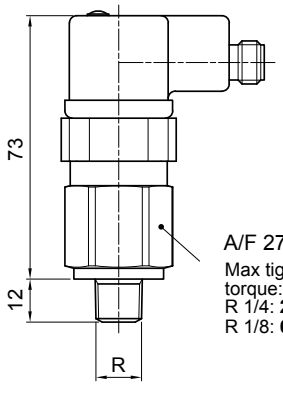
Electrical data

- 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

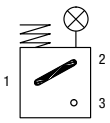
VL*71

Electrical/Visual Vacuum Indicator

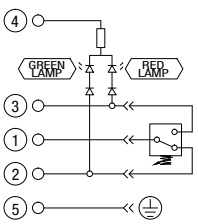
Connections	Indicator code
EN 10226 - R1/4"	VL A 21 A A 71 P01
EN 10226 - R1/8"	VL B 21 A A 71 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: NBR

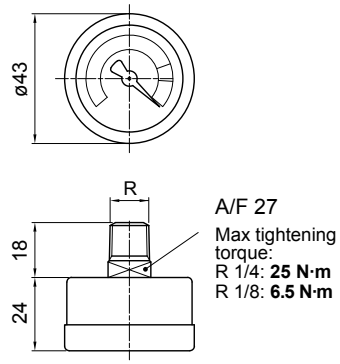
Technical data
- Vacuum setting: -0.21 bar ±10%
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: IEC 61076-2-101 D (M12)
- Lamps 24 Vdc
- Resistive load: 0.4 A / 24 Vdc

VVA - VVB

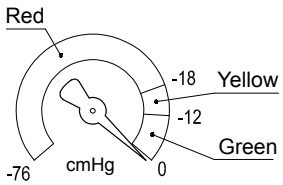
Axial Vacuum Gauge

R	Ordering code
EN 10226 - R1/4"	VV A 16 P01
EN 10226 - R1/8"	VV B 16 P01



Hydraulic symbol

Dial scale



Conversion to SI units

[cmHg]	[bar]
-12	-0.16
-18	-0.24
-76	-1.01

Materials

- Case: Painted steel
- Window: Transparent plastic
- Dial: Painted steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tube Cu-alloy soft soldered

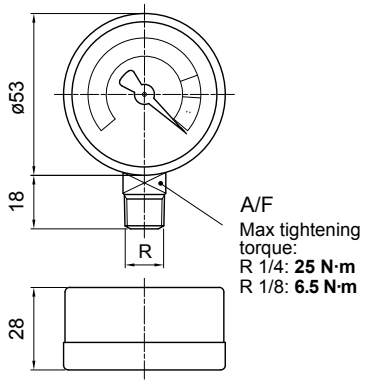
Technical data

- 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

VVR - VVS

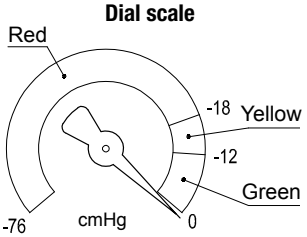
Radial Vacuum Gauge

R	A/F	Ordering code
EN 10226 - R1/4"	14	VV R 16 P01
EN 10226 - R1/8"	11	VV S 16 P01



Hydraulic symbol

Dial scale



Conversion to SI units

[cmHg]	[bar]
-12	-0.16
-18	-0.24
-76	-1.01

Materials

- Case: Painted steel
- Window: Transparent plastic
- Dial: Painted steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tube Cu-alloy soft soldered

Technical data

- 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

DESIGNATION & ORDERING CODE

Configuration example 1:	VE	A	21	A	A	50	P01
Configuration example 2:	VL	B	21	A	A	71	P01
Configuration example 3:	VV	R	16				P01

Series

- **VE** Electrical vacuum indicator
- **VL** Electrical/Visual vacuum indicator
- **VV** Vacuum gauge

Type VE - VL

- **A** Connection EN 10226 - R1/4"
- **B** Connection EN 10226 - R1/8"

Type VV

- **A** Axial connection EN 10226 - R1/4"
- **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

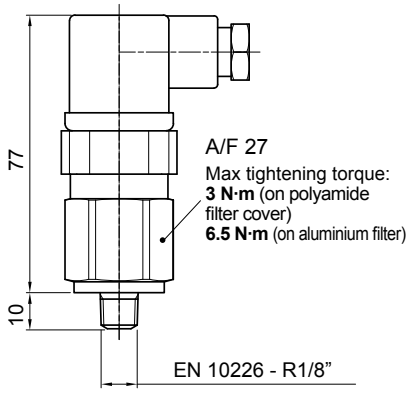
- **P01** MP Filtri standard
- **Pxx** Customized

Dimensions

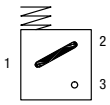
BEA*50

Electrical Pressure Indicator

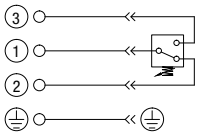
Settings	Ordering code
1.5 bar ±10%	BE A 15 H A 50 P01
2.0 bar ±10%	BE A 20 H A 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

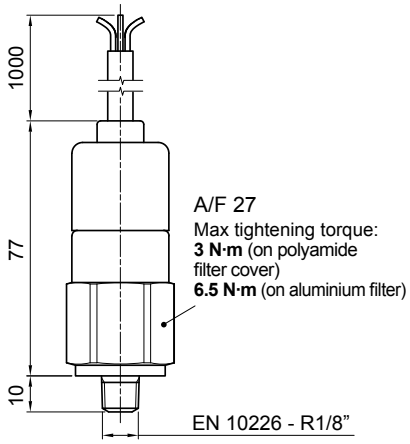
Technical data
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 5 A / 14 Vdc
  4 A / 30 Vdc
  5 A / 125 Vac
  4 A / 250 Vac
- Available ATEX product: I M1 Ex ia I Ma
  II 1GD Ex ia IIC TX Ga Ex ia IIIC TX °C Da
- CE certification

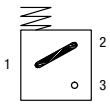
BEM*41

Electrical Pressure Indicator

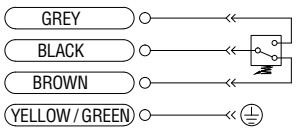
Settings	Ordering code
1.5 bar ±10%	BE M 15 H A 41 P01
2.0 bar ±10%	BE M 20 H A 41 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

Technical data
- Max working pressure: 40 bar
- Proof pressure: 60 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: IP67 according to EN 60529

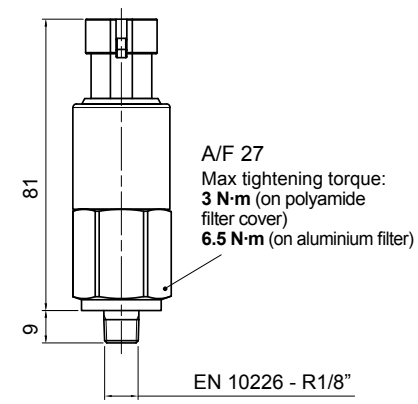
Electrical data
- Electrical connection: Four-core cable
- Resistive load: 5 A / 14 Vdc
  4 A / 30 Vdc
  5 A / 125 Vac
  4 A / 250 Vac
- CE certification

On request this indicator can be provided with main connectors in use for wirings.

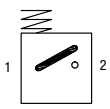
BET*10

Electrical Pressure Indicator

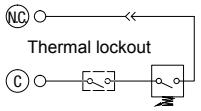
Settings	Ordering code
2.0 bar ±10%	BE T 20 H F 10 P01
2.5 bar ±10%	BE T 25 H F 10 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

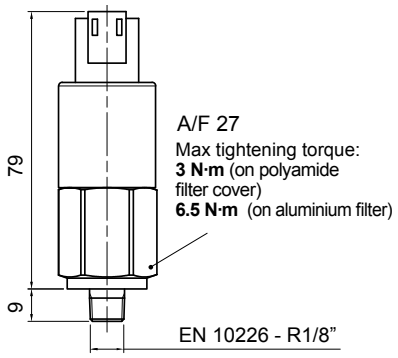
Technical data
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +100 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.5 A / 48 Vdc
- Thermostat condition: Open up to 30 °C
- CE certification

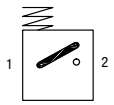
BET*30

Electrical Pressure Indicator

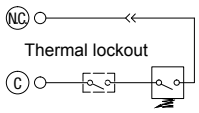
Settings	Ordering code
2.0 bar ±10%	BE T 20 H F 30 P01
2.5 bar ±10%	BE T 25 H F 30 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black Polyamide
- Contacts: Silver
- Seal: HNBR

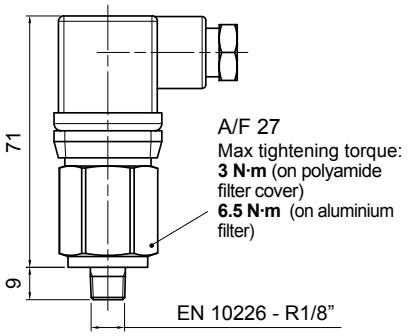
Technical data
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +100 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: Deutsch DT-04-2-P
- Resistive load: 0.5 A / 48 Vdc
- Thermostat condition: Open up to 30 °C
- CE certification

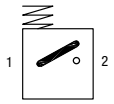
BET*50

Electrical Pressure Indicator

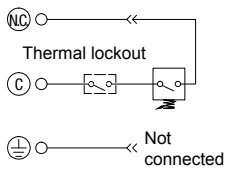
Settings	Ordering code
2.0 bar ±10%	BE T 20 H F 50 P01
2.5 bar ±10%	BE T 25 H F 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black Polyamide
- Contacts: Silver
- Seal: HNBR

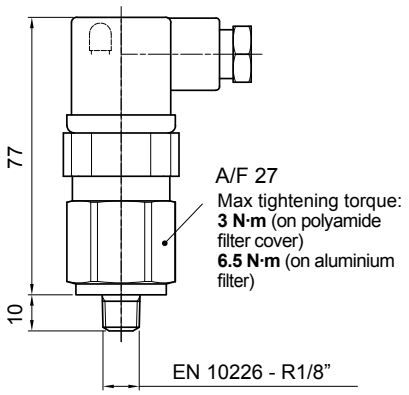
Technical data
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +100 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 0.5 A / 48 Vdc
- Thermostat condition: Open up to 30 °C
- CE certification

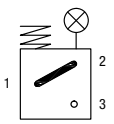
BL*51 - BL*52 - BL*53

Electrical/Visual Pressure Indicator

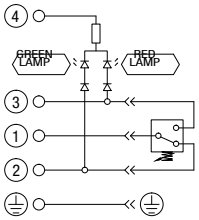
Settings	Ordering code
1.5 bar ±10%	BL A 15 H A xx P01
2.0 bar ±10%	BL A 20 H A xx P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Transparent polyamide
- Contacts: Silver
- Seal: HNBR

Technical data
- Max working pressure: 40 bar
- Proof pressure: 60 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

Electrical data

- 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

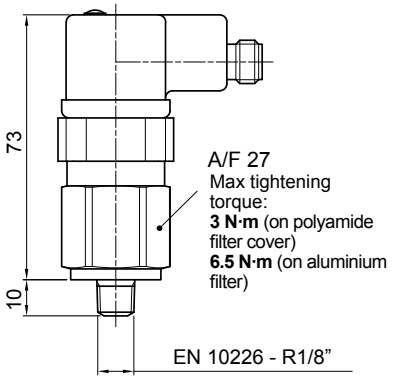
BAROMETRIC INDICATORS

Dimensions

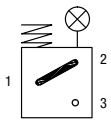
BL*71

Electrical/Visual Pressure Indicator

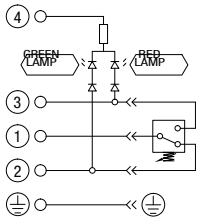
Settings	Ordering code
1.5 bar ±10%	BL A 15 H A 71 P01
2.0 bar ±10%	BL A 20 H A 71 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

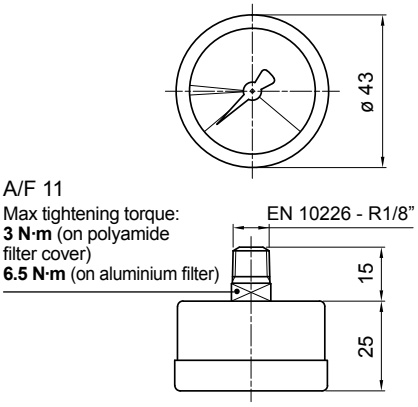
Technical data
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: IEC 61076-2-101 D (M12)
- Lamps: 24 Vdc
- Resistive load: 0.4 A / 24 Vdc

BVA

Axial Pressure Gauge

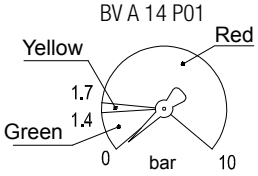
Settings	Ordering code
1.4 bar ±10%	BV A 14 P01
2.5 bar ±10%	BV A 25 P01



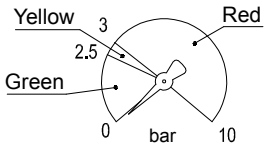
Hydraulic symbol

Dial scale

BV A 14 P01



BV A 25 P01



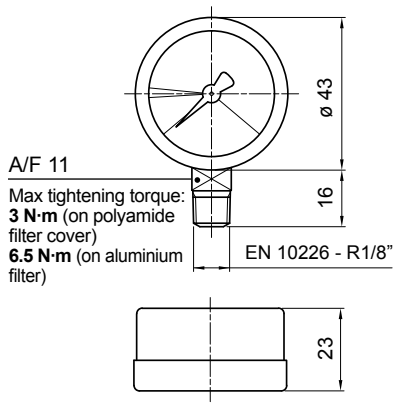
Materials
- Case: Painted steel
- Window: Transparent plastic
- Dial: Painted steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tube Cu-alloy soft soldered

Technical data
- 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

BVR

Radial Pressure Gauge

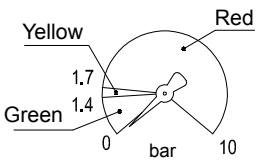
Settings	Ordering code
1.4 bar ±10%	BV R 14 P01
2.5 bar ±10%	BV R 25 P01



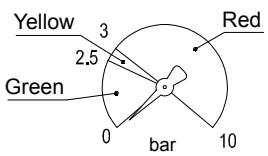
Hydraulic symbol

Dial scale

BV R 14 P01



BV R 25 P01



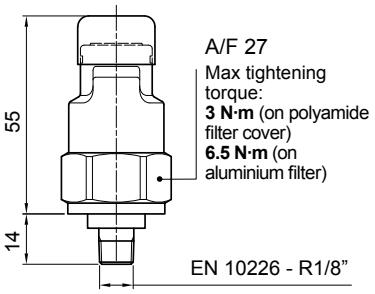
Materials
- Case: Painted steel
- Window: Transparent plastic
- Dial: Painted steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tube Cu-alloy soft soldered

Technical data
- 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

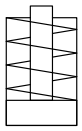
BVP - BVQ

Visual Pressure Indicator

Setting	Ordering code
1.5 bar ±10%	BV P 15 H P01
	BV Q 15 H P01
2.0 bar ±10%	BV P 20 H P01
	BV Q 20 H P01



Hydraulic symbol



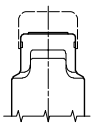
Materials

- Body: Brass
- Cover / internal parts: Polyamide
- Caps: VMQ
- Seal: HNBR

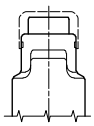
Technical data

- Reset: BVP - Automatic reset; BVQ - Manual reset
- 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: IP45 according to EN 60529

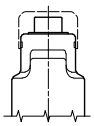
Signals



Absence of pressure (no indicator)



Presence of pressure (green button rises gradually)



Clogged filter element (red button risen)

DESIGNATION & ORDERING CODE

Configuration example 1:	BE	M	15	H	A	41	P01
Configuration example 2:	BL	A	20	H	A	71	P01
Configuration example 3:	BV	R	14				P01
Configuration example 4:	BV	P	20	H			P01

Series

BE Electrical pressure indicator
BL Electrical/Visual pressure indicator
BV Visual pressure indicator

Type	BE	BL	BV
A Standard type	•	•	**A** Axial connection pressure gauge
M With wired electrical connection	•	-	**R** Radial connection pressure gauge
T With thermal switch	•	-	**P** Visual indicator with automatic reset
			Q Visual indicator with manual reset

Pressure setting	BEA-BEM	BET	BLA	BVA-BVR	BVP-BVQ
14 1.4 bar	-	-	-	•	-
15 1.5 bar	•	-	•	-	-
20 2.0 bar	•	•	•	-	•
25 2.5 bar	-	•	-	•	-

Seals	BE	BLA	BVA-BVR	BVP-BVQ
H HNBR	•	•	-	•

Thermostat	BEA-BEM	BET	BLA	BV
A Without	•	-	•	-
F With	-	•	-	-

Electrical connections	BEA	BEM	BET	BL	BV
10 Connection AMP Superseal series 1.5	-	-	•	-	-
30 Connection Deutsch DT-04-2-P	-	-	•	-	-
41 Connection via four-core cable	-	•	-	-	-
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

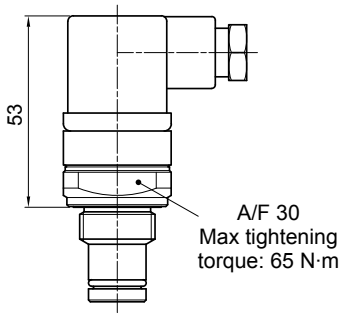
P01 MP Filtri standard
Pxx Customized

Dimensions

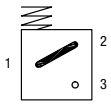
DEA*50

Electrical Differential Indicator

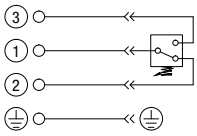
Settings	Ordering code
2.0 bar ±10%	DE A 20 x A 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

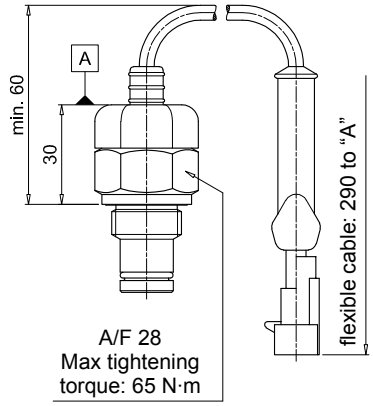
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529 IP69K according to ISO 20653

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 0.2 A / 115 Vdc

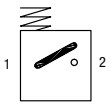
DEM*10

Electrical Differential Indicator

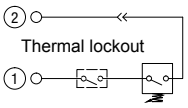
Settings	Ordering code
2.0 bar ±10%	DE M 20 xx 10 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

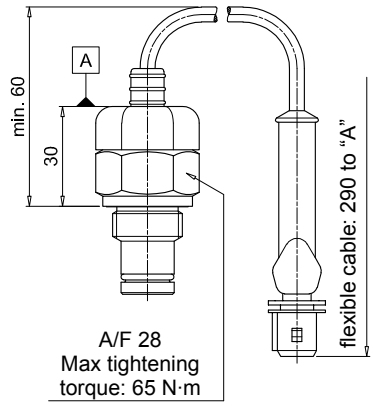
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

Electrical data
- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option "F")

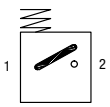
DEM*20

Electrical Differential Indicator

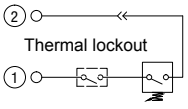
Settings	Ordering code
2.0 bar ±10%	DEM20xx20P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

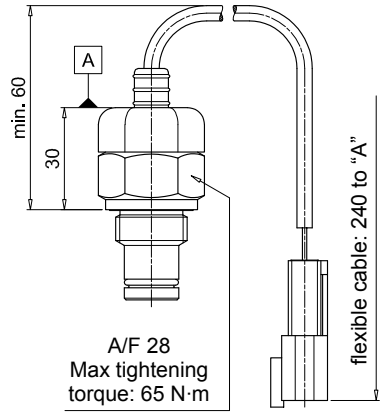
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

Electrical data
- Electrical connection: AMP Time junior
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option "F")

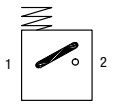
DEM*30

Electrical Differential Indicator

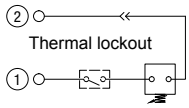
Settings	Ordering code
2.0 bar ±10%	DE M 20 xx 30 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

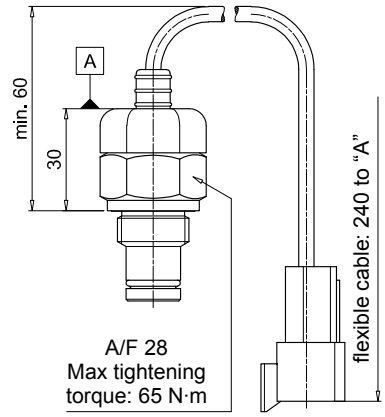
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

Electrical data
- Electrical connection: Deutsch DT-04-2-P
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option "F")

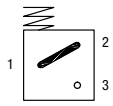
DEM*35

Electrical Differential Indicator

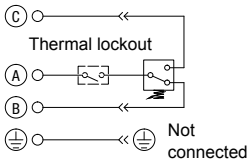
Settings	Ordering code
2.0 bar ±10%	DE M 20 xx 35 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

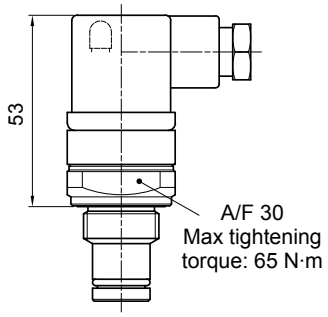
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

Electrical data
- Electrical connection: Deutsch DT-04-3-P
- Resistive load: 0.2 A / 115 Vdc
- Switching type: SPDT contact
- Thermal lockout: Normally open up to 30 °C (option "F")

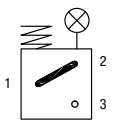
DLA*51 - DLA*52

Electrical/Visual Differential Indicator

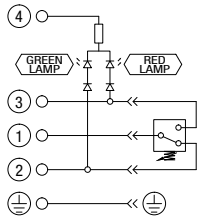
Settings	Ordering code
2.0 bar ±10%	DL A 20 x A xx P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Transparent polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529 IP69K according to ISO 20653

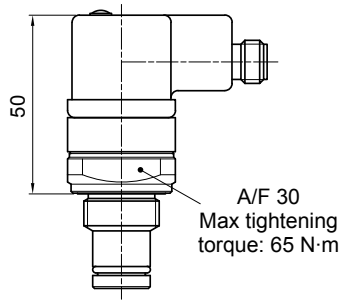
Electrical data

- Electrical connection:	EN 175301-803	
- Type	51	52
- Lamps	24 Vdc	110 Vdc
- Resistive load:	1 A / 24 Vdc	1 A / 110 Vdc

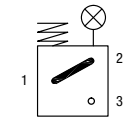
DLA*71

Electrical/Visual Differential Indicator

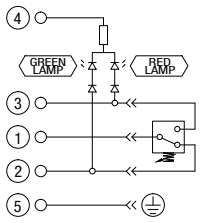
Settings	Ordering code
2.0 bar ±10%	DL A 20 x A 71 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

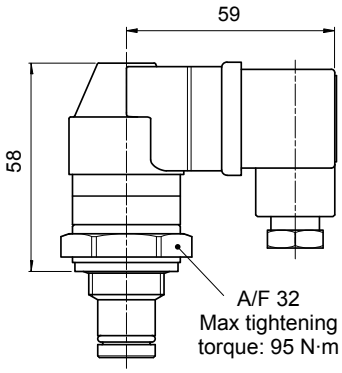
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529 IP69K according to ISO 20653

Electrical data
- Electrical connection: IEC 61076-2-101 D (M12)
- Lamps 24 Vdc
- Resistive load: 0.4 A / 24 Vdc

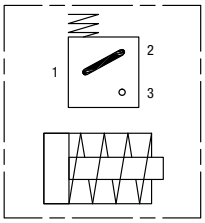
DLE*A50

Electrical/Visual Differential Indicator

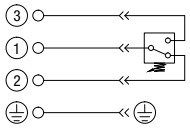
Settings	Ordering code
2.0 bar ±10%	DL E 20 x A 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

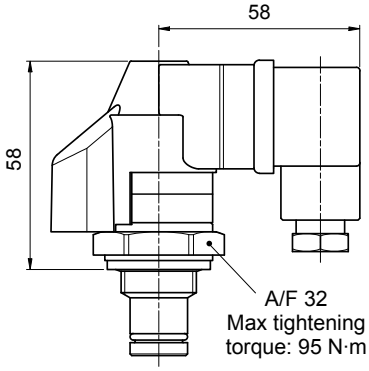
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

Electrical data
- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Available the connector with lamps

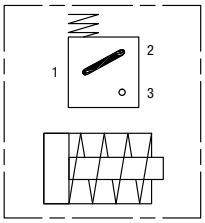
DLE*F50

Electrical/Visual Differential Indicator

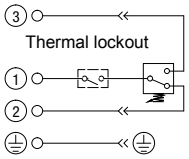
Settings	Ordering code
2.0 bar ±10%	DL E 20 x F 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

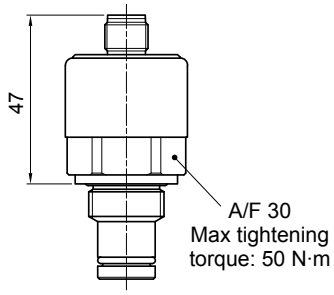
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

Electrical data
- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Thermal lockout setting: +30 °C

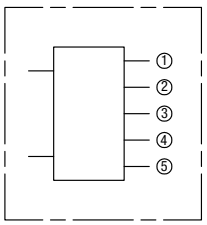
DTA*70

Electronic Differential Indicator

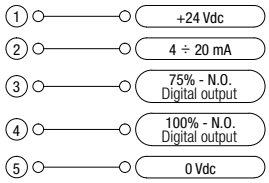
Settings	Ordering code
2.0 bar ±10%	DT A 20 x x 70 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Industry 4.0 READY

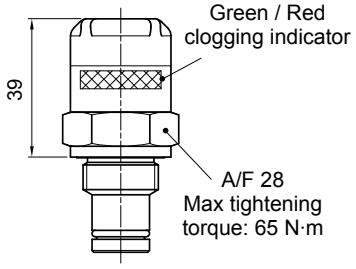
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP67 according to EN 60529

Electrical data
- Electrical connection: IEC 61076-2-101 D (M12)
- Power supply: 24 Vdc
- Analogue output: From 4 to 20 mA
- Thermal lockout: 30 °C (all output signals stalled up to 30 °C)

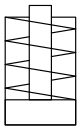
DVA

Visual Differential Indicator

Settings	Ordering code
2.0 bar ±10%	DV A 20 x P01



Hydraulic symbol



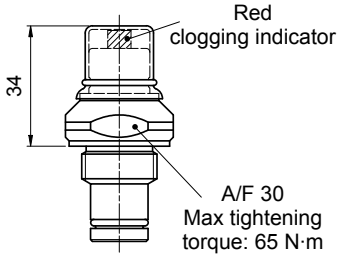
Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- Reset: Automatic reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

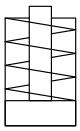
DVM

Visual Differential Indicator

Settings	Ordering code
2.0 bar ±10%	DV M 20 x P01



Hydraulic symbol



Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR - FPM

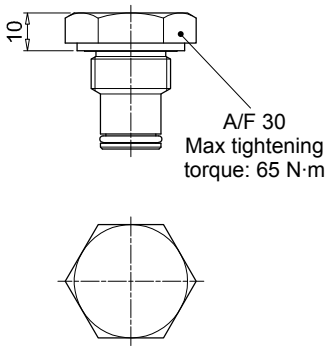
Technical data
- Reset: Manual reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

Dimensions

T2

Indicator plug

Seal	Ordering code
HNBR	T2 H
FPM	T2 V



Materials

- Body: Phosphatized steel
- Seal: HNBR / FPM

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS

Configuration example 1:	DE	M	20	H	F	50	P01
Configuration example 2:	DL	E	20	V	A	71	P01
Configuration example 3:	DT	A	20	H	F	70	P01
Configuration example 4:	DV	M	20	V			P01

Series

DE Electrical differential indicator
DL Electrical/Visual differential indicator
DT Electronic differential indicator
DV Visual differential indicator

Type	DE	DL	DT	DV
A Standard type	•	•	•	**A** With automatic reset
M With wired electrical connection	•	-	-	**M** With manual reset
E For high power supply	-	•	-	

Pressure setting

20 2.0 bar

Seals

H HNBR
V FPM

Thermostat	DEA	DEM	DLA	DLE	DT	DV
A Without	•	•	•	•	-	-
F With thermostat	-	•	-	•	•	-

Electrical connections	DEA	DEM	DLA	DLE	DT	DV
10 Connection AMP Superseal series 1.5	-	•	-	-	-	-
20 Connection AMP Timer Junior	-	•	-	-	-	-
30 Connection Deutsch DT-04-2-P	-	•	-	-	-	-
35 Connection Deutsch DT-04-3-P	-	•	-	-	-	-
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	-	-	•	-	-	-
70 Connection IEC 61076-2-101 D (M12)	-	-	-	-	•	-
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	•	-	-	-

Option

P01 MP Filtri standard
Pxx Customized

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG

Configuration example	T2	H

Series

T2 Indicator plug

Seals

H HNBR
V FPM