

SERIES



MRSX

165 - 166

Return/Suction Filter



Maximum flow to 300 l/min



Technical data

MRSX 165 - 166

Filter housing (Materials)

- Head: Aluminium
- Cover: Aluminium
- Bowl: Nylon

Pressure

- Working pressure: 10 bar

Temperature

- From -25 °C to +110 °C

Δp Elements

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

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

Length	1	2	3	4
• MRSX 165	3,40	3,80	4,10	-
• MRSX 166	3,40	3,80	4,10	-

Volumes (dm³)

Length	1	2	3	4
• MRSX 165	2,00	2,60	3,00	-
• MRSX 166	2,00	2,60	3,00	-

MRSX

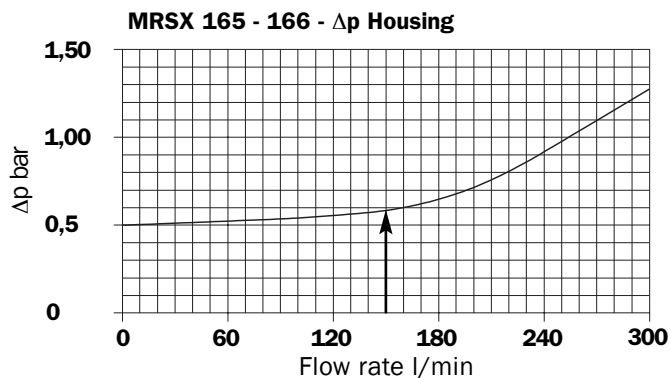
Compatibility (to ISO 2943)

- Mineral oils
- Synthetic fluids
- Biodegradable fluids

Filter housings Δp pressure drop

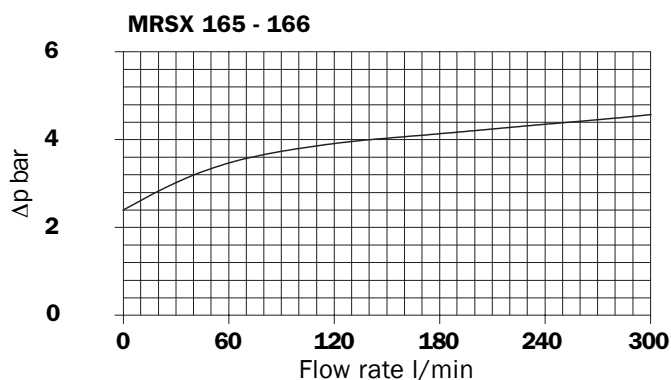
The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

Δp varies proportionally with density.



Valves

Bypass valve pressure drop



Multiplication factor “Y” for definition of the pressure drop of filter elements.

Reference viscosity 30 mm²/s

Filter Element	Absolute Filtration		
	N Series		
Type	A 1 0	A 1 6	A 2 5
RSX 165 1	2,06	1,75	1,46
2	1,24	1,05	0,96
3	0,94	0,86	0,61

Filter sizing

Sizing data for single cartridge, head at top

Δp Tot.

Δpc Filter housing

Δpe Filter element

Y Multiplication factor (see below)

Q l/min = flow rate

V1 = reference viscosity 30 mm²/s (cSt)

V2 = operating viscosity in mm²/s (cSt)

Δp Tot. = Δpc + Δpe

Δpe = Y : 1000 x Q x (V2/V1)

Calculation example with HLP Mineral Oil Variation in viscosity

Data:

Filter with in-line connections

Pressure = 6 bar

Flow rate = 200 l/min

Viscosity = 46 mm²/s (cSt)

Density = 0,86 Kg/dm³

Filtration = 10 μ absolute

With bypass valve

Practical example

Δpe Filter housing

Q = 200 l/min

V₂ = 46 mm²/s (cSt)

Pmax = 6 bar

Filtration = 10 μ absolute

Δp Tot. max = 0,4 bar (max. recommended value)

Δpe = (1,24 : 1000) x 200 x (46/30) = 0,37 bar

Δpc Filter housing

Q tot = 200 l/min

Q1 to the tank = 150 l/min

Q2 to the pump = 50 l/min

Filter type - MRSX 165 (see housings pressure drop)

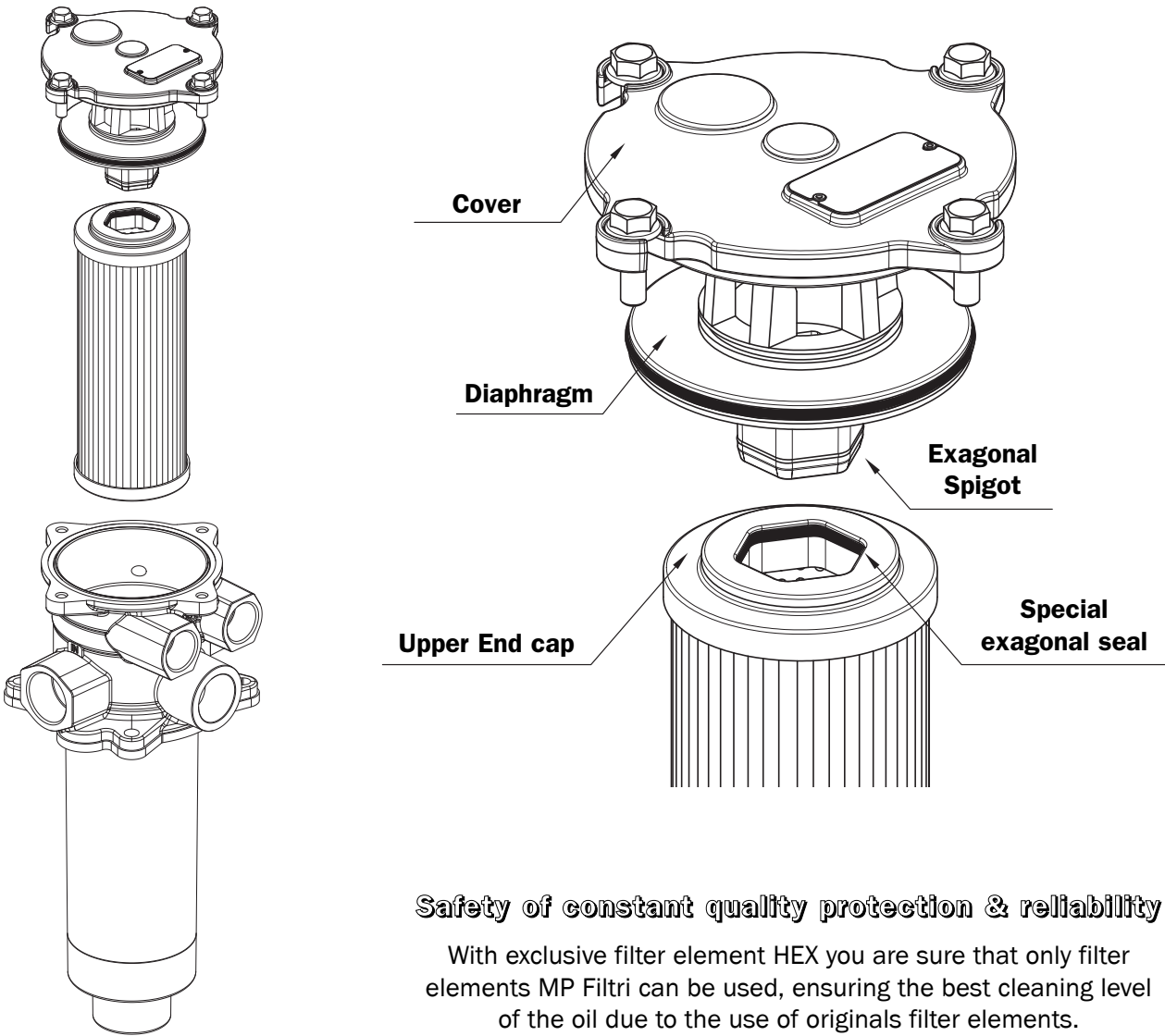
Δp Tot. max 1 - 1,6 bar = Δpc + Δpe

Δp Tot. = 0,59 (Q1) + 0,37 = 0,96 bar

Sized filter type:

MRSX 165 2 F A G1 0 A10 S P01

New filter element **HEX series**
with exclusive interface connection



Safety of constant quality protection & reliability

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

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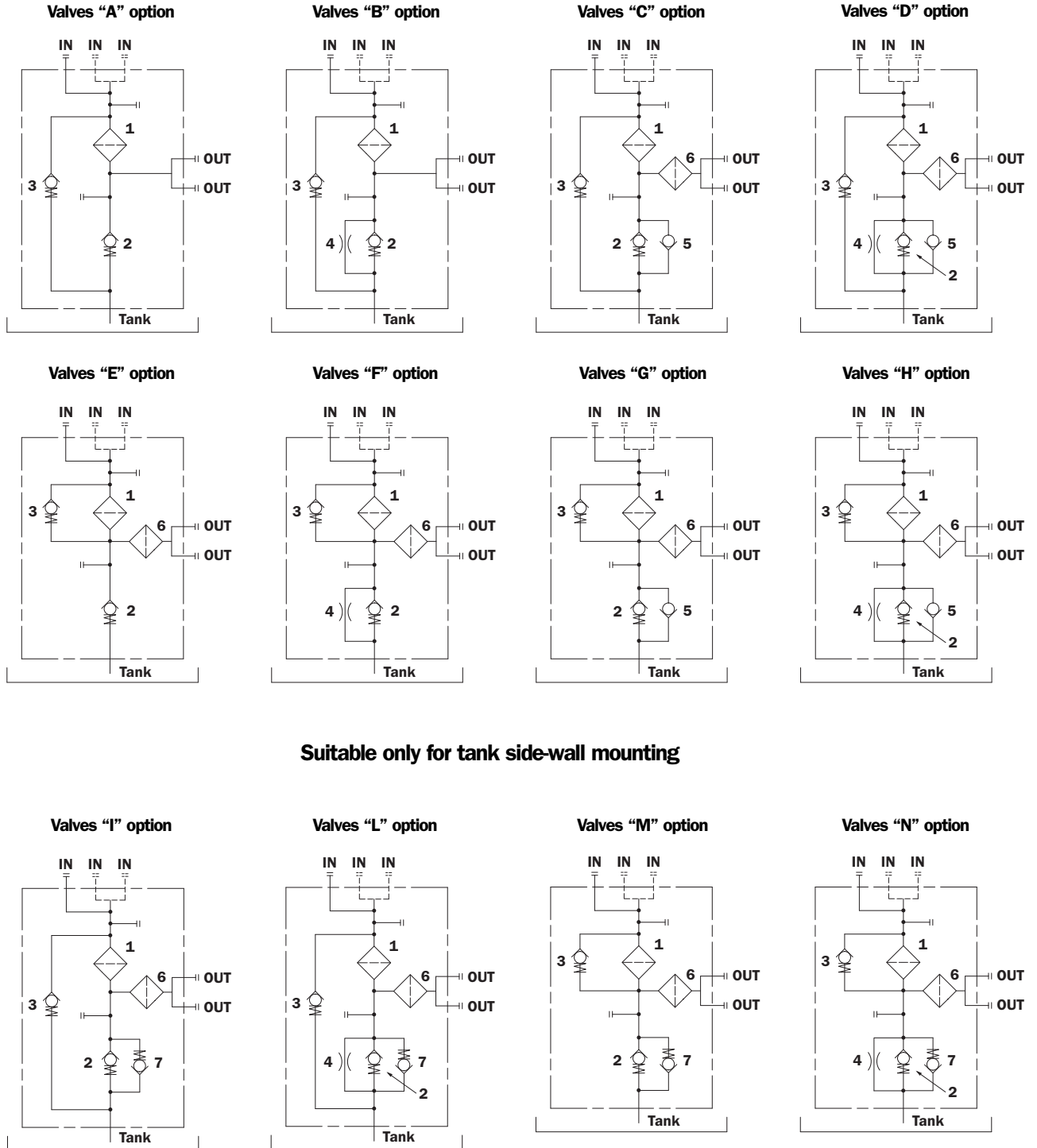
Note:
Available on request filter series MRS diaphragm with cylindrical spigot, element RS with standard O-Ring on the upper end cap.

Hydraulic schemes

LEGEND

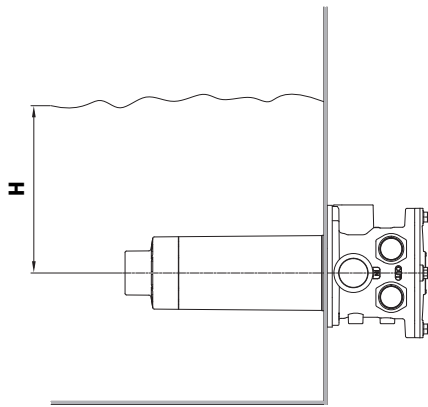
- | | |
|---|--|
| 1 - Filter element | 4 - Depressurization valve |
| 2 - Back-Pressure valve: opening pressure 0,5 bar \pm 10% | 5 - Anti-Cavitation valve |
| 3 - Bypass valve: opening pressure 2,5 bar \pm 10% | 6 - Safety filter element (wire mesh 60 μ m) |
| | 7 - Anti-Cavitation valve / Anti-Emptying valve |

MRSX 165 - 166



Suitable only for tank side-wall mounting

Tank side-wall mounting application



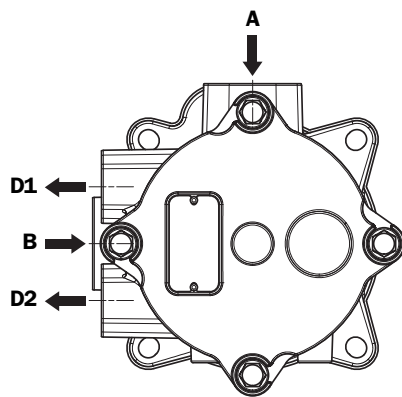
H= max. 800 mm

Only for hydraulic schemes:

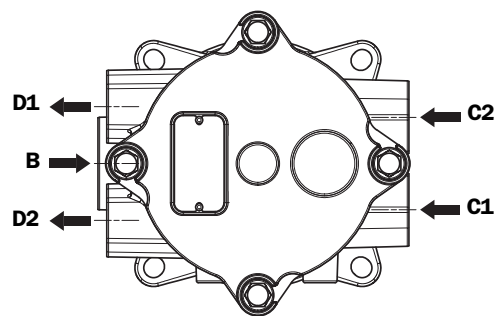
I - L - M - N

Port configuration

MRSX 165



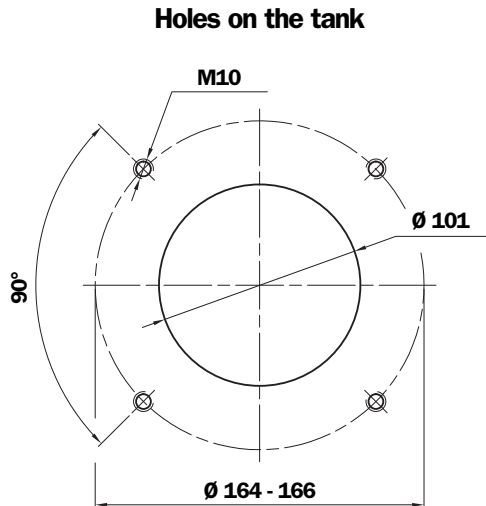
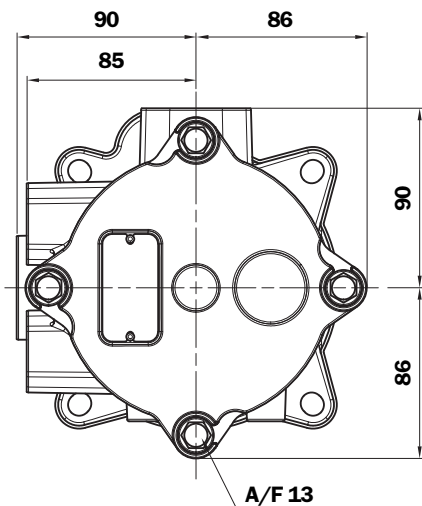
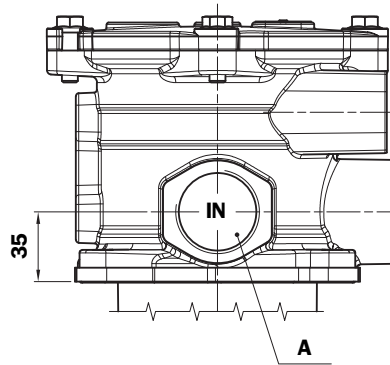
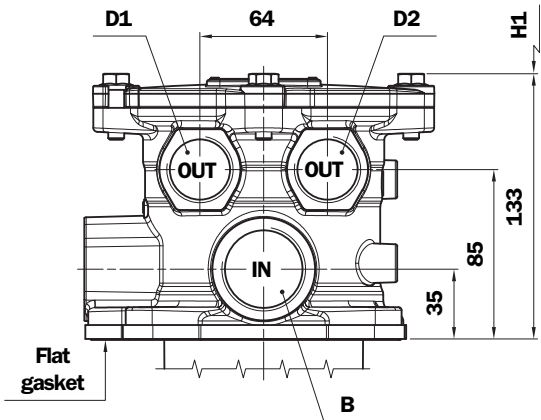
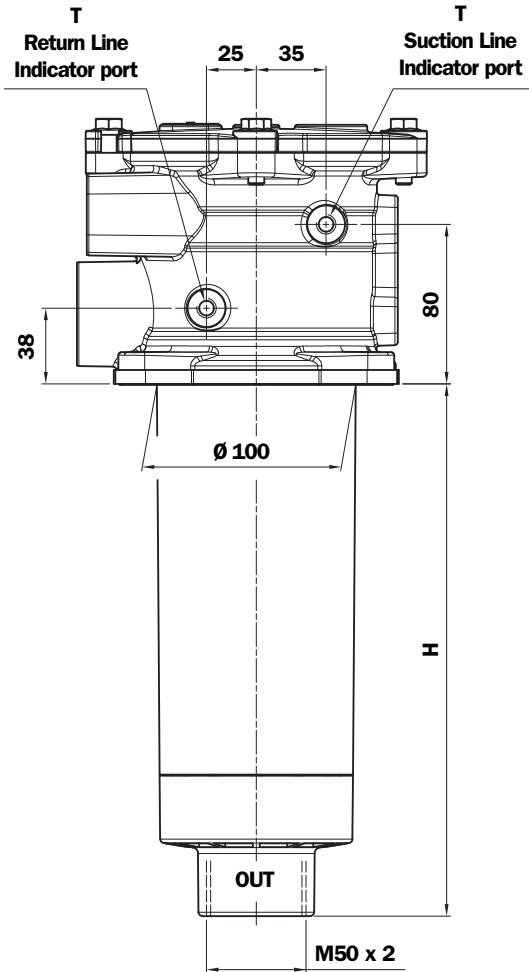
MRSX 166



Thread connections

Code	A (IN)	B (IN)	C1 (IN)	C2 (IN)	D1 (OUT)	D2 (OUT)	T (Indicator port)
MRSX 165 x x G1 0 xxx x P01	G 1 1/4"	-	-	-	G 1"	G 1"	G 1/8"
MRSX 165 x x G2 0 xxx x P01	1 1/4" NPT	-	-	-	1" NPT	1" NPT	1/8" NPT
MRSX 165 x x G3 0 xxx x P01	SAE 20	-	-	-	SAE 16	SAE 16	1/8" NPT
MRSX 165 x x G1 1 xxx x P01	G 1 1/4"	G 1 1/4"	-	-	G 1"	G 1"	G 1/8"
MRSX 165 x x G2 1 xxx x P01	1 1/4" NPT	1 1/4" NPT	-	-	1" NPT	1" NPT	1/8" NPT
MRSX 165 x x G3 1 xxx x P01	SAE 20	SAE 20	-	-	SAE 16	SAE 16	1/8" NPT
MRSX 166 x x G1 1 xxx x P01	-	G 1 1/4"	G 1"	G 1"	G 1"	G 1"	G 1/8"
MRSX 166 x x G2 1 xxx x P01	-	1 1/4" NPT	1" NPT	1" NPT	1" NPT	1" NPT	1/8" NPT
MRSX 166 x x G3 1 xxx x P01	-	SAE 20	SAE 16	SAE 16	SAE 16	SAE 16	1/8" NPT

MRSX 165

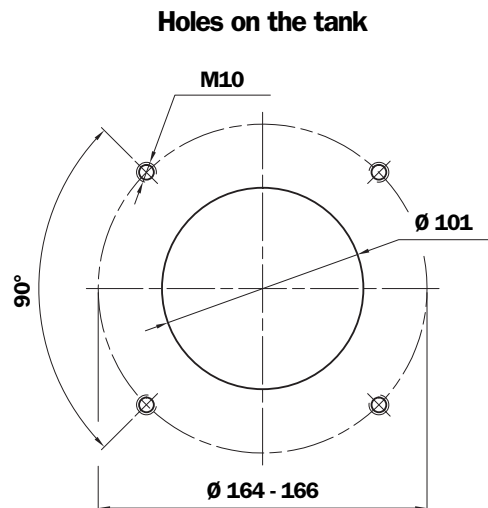
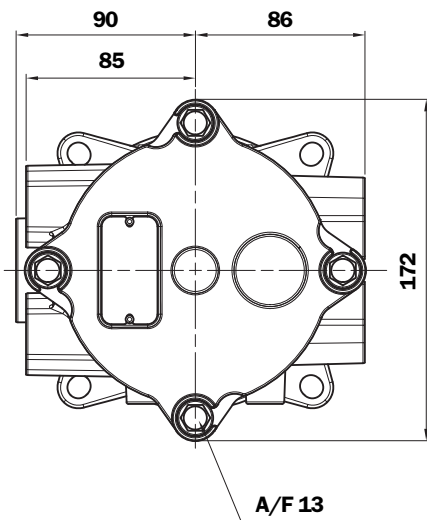
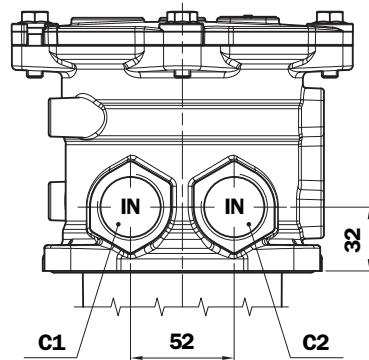
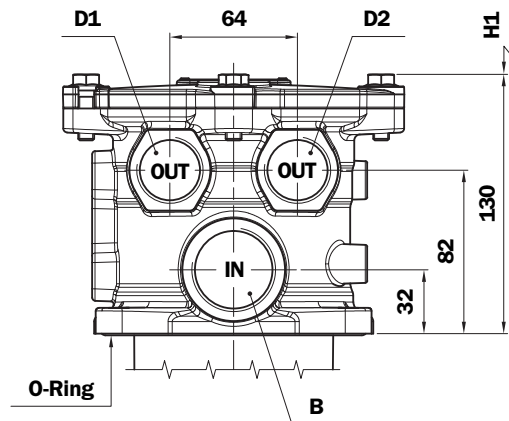
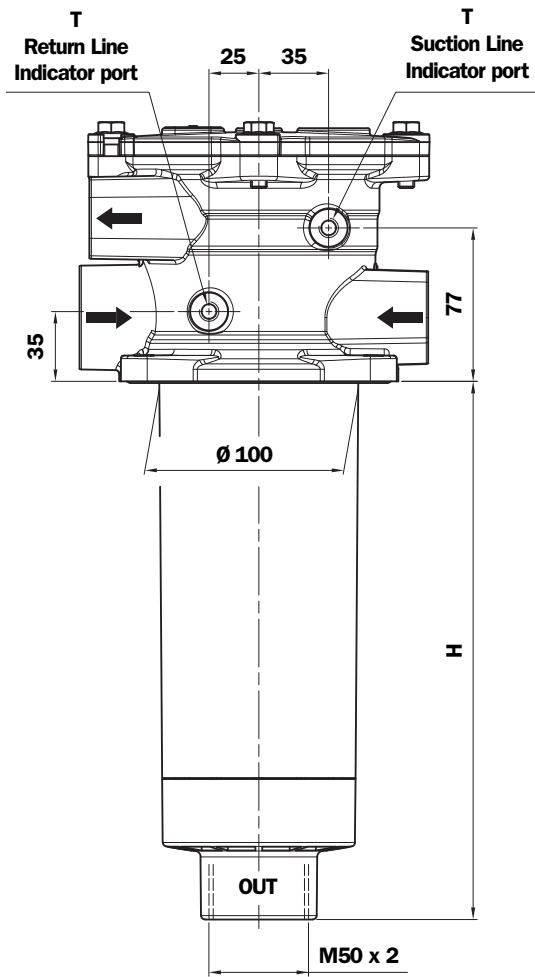


MRSX 165

Filter Length	H mm	H1 mm
1	267	320
2	375	430
3	442	500

See page 5 to choose thread connections

MRSX 166



MRSX 166

Filter Length	H mm	H1 mm
1	270	320
2	378	430
3	445	500

See page 5 to choose thread connections

Ordering information MRSX 165 - 166

Filter assembly

MRSX

	1	2	3	4a	5	6	7	8	9
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example 1: MRSX	165	2	C	B	G3	0	A10	S	P01
Example 2: MRSX	166	3	G	A	G2	1	A25	S	P01

Filter element

RSX

	1	2	7	4b	9
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example 1: RSX	165	2	A10	A	P01
Example 2: RSX	165	3	A25	A	P01

1 - Size

Filter

165
 166

Filter element

165
 166

2 - Filter length

165
 166

1 2 3
 1 2 3

3 - Valves option

A E
 B F
 C G
 D H

See page 4
for "Hydraulic schemes"

I M
 L N

Only for tank side-wall
mounting applications
(see point "8 - Style", option "B")

4 - Seals

4a - Filter assembly

A NBR - O-Ring on head
 B NBR - Flat gasket on head
 V FPM - O-Ring on head
 D FPM - Flat gasket on head

4b - Filter element

A NBR
 V FPM

5 - Standard connections

MRSX 165 - 166

G1
 G2
 G3

See page 5 to choose
threaded connections

6 - Additional IN connections

0
 1

Without connections (not available for MRSX 166)
With connections

See page 5 to choose threaded connections

7 - Filter element

A10
 A16
 A25

Inorganic microfibre 10 μ
Inorganic microfibre 16 μ
Inorganic microfibre 25 μ

Absolute filtration
Inorganic
Microfibre
fx (c) \geq 1000

8 - Style

S
 B

Standard
For tank side-wall mounting applications.
Only for valves: A - B - E - F - I - L - M - N

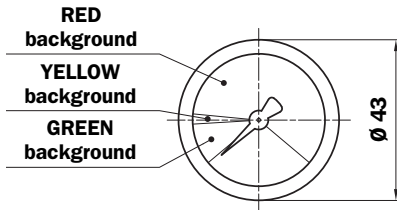
9 - Option

P01
 Pxx

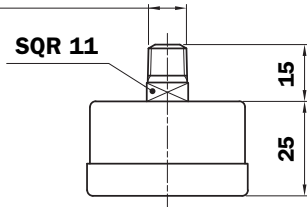
MP Filtri standard
On request

Barometric indicators

BVA



R 1/8" - EN 10226



Ordering code: **BVA25P01**

Pressure setting: 2,5 bar ±10%

Axial Pressure Gauge

Materials:

- Case: Painted Steel
- Window: Clear plastic
- Dial: Painted Steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tub cu-alloy soft soldered

Technical data:

- Indicator type: Axial pressure gauge
- 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 fluids in according to ISO 2943
- Accuracy class: cl. 2.5
- Protection degree: IP 31 in according to EN 60529

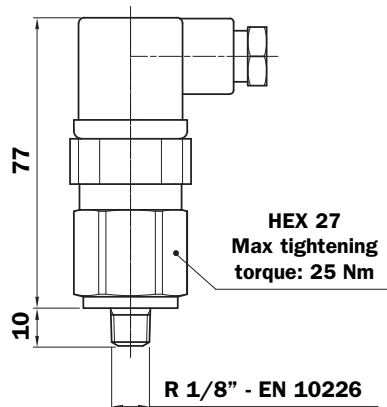
HYDRAULIC SYMBOL



DYED RANGE

- BVA25P01
GREEN BACKGROUND (from 0 to 2,5 bar)
Clean filter element
YELLOW BACKGROUND (from 2,5 to 3 bar)
Warning
RED BACKGROUND (from 3 to 10 bar)
Bypass

BEA



Ordering code: **BEA25HA50P01**

Pressure setting: 2,5 bar ±10%

Electrical Pressure Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: NBR

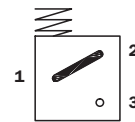
Technical data:

- Indicator type: Electrical pressure indicator
- 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 fluids in according to ISO 2943

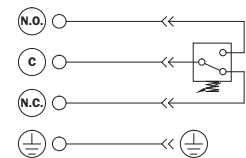
Electrical data:

- Resistive load: 5 A / 14 VDC
4 A / 30 VDC
5 A / 125 VAC
5 A / 250 VAC
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 65 in according to EN 60529
- Available ATEX product: II 1GD Ex ia IIC Tx Ex ia IIIC Tx°C X

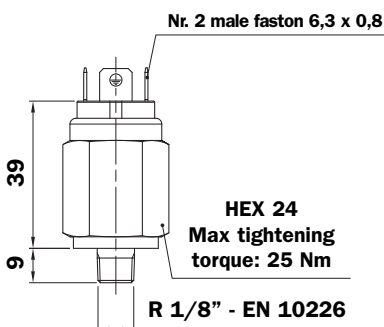
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



BET



Ordering code: **BET25HF05P01**

Pressure setting: 2,5 bar ±10%

Electrical Pressure Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR

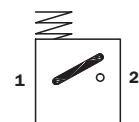
Technical data:

- Indicator type: Electrical pressure indicator with thermostat
- Thermostat setting: 30°C
- 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 fluids in according to ISO 2943

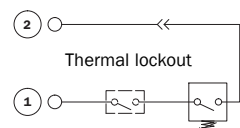
Electrical data:

- Resistive load: 0,5 A / 48 VDC
- Electrical connections: Faston 6,3 x 0,8

HYDRAULIC SYMBOL



ELECTRICAL SYMBOL

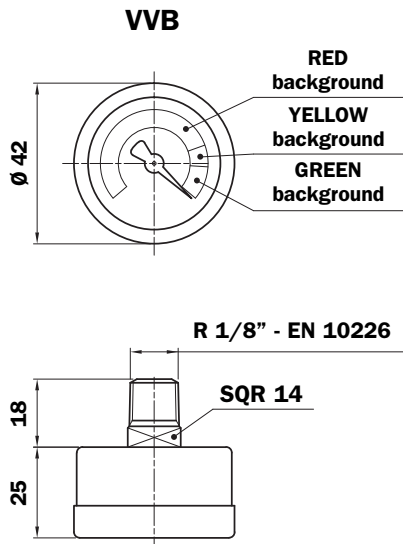


Barometric indicators

Electrical Pressure Indicator available in configuration:

- Connector: EN175301-803
 - Thermostat setting: 30 °C
 - Code: BET25HF50P01
-
- Connector: Deutsch DT-04-2-P
 - Thermostat setting: 30 °C
 - Code: BET25HF31P01
-
- Connector: AMP superseal 1.5 series
 - Thermostat setting: 30 °C
 - Code: BET25HF11P01
-
- Connector: Deutsch DT-04-2P
 - Electrical cable: Length 300 mm
 - Code: BEM25HA31P01
-

Vaacum indicators



Ordering code: **VVB16P01**
 Connection: R 1/8" EN 10226

Axial Vacuum Gauge

Materials:

- Case: Painted Steel
- Window: Clear plastic
- Dial: Painted Steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tub Cu-alloy soft soldered

Technical data:

- Indicator type: Axial vacuum gauge
- 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 fluids in according to ISO 2943
- Accuracy class: cl. 2.5
- Protection degree: IP 31 in according to EN 60529

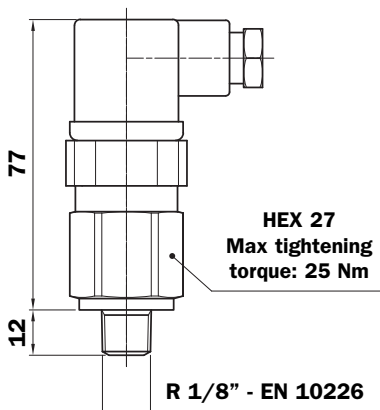
HYDRAULIC SYMBOL



GRADUATED DISPLAY

- GREEN BACKGROUND
(from 0 to -12 cmHg)
Clean filter element
- YELLOW BACKGROUND
(from -12 to -18 cmHg)
Warning
- GREEN BACKGROUND
(from -18 to -76 cmHg)
Bypass

VEB



Ordering code: **VEB21AA50P01**
 Connection: R 1/8" EN 10226

Electrical Vacuum Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: NBR

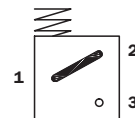
Technical data:

- Indicator type: Electrical vacuum indicator
- Setting pressure: -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 fluids in according to ISO 2943

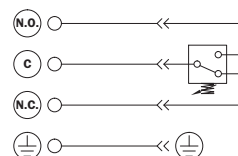
Electrical data:

- Resistive load: 5 A / 14 VDC
4 A / 30 VDC
5 A / 125 VAC
5 A / 250 VAC
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 65 in according to EN 60529
- Available Atex product: II 1GD Ex ia IIC Tx Ex ia IIIC Tx °C X

HYDRAULIC SYMBOL



ELECTRICAL SYMBOL





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