Rexroth
Bosch Group

Inline filter with filter element according to DIN 24550

RE 51448/05.12 1/18
Replaces: 03.12

Type 110LEN0040 to 0400; 110LE0130, 0150

Size **according to DIN 24550**: 0040 to 0400
Additional sizes: 0130, 0150
Nominal pressure 110 bar *[1595 psi]*
Connection up to G 1 1/2; SAE 24
Operating temperature –10 °C to 100 °C *[14 °F to 212 °F]*

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Features

Inline filters are used in hydraulic systems for separating solid materials from the hydraulic fluids and lubricating oils. They are intended for attachment in pipelines.

They distinguish themselves by the following:

- Filtration of very fine particles across a broad pressure differential range
- Good chemical resistance of the filter elements
- High collapse resistance of the filter elements (e.g. in case of cold start)
- Filter ratings of 3 µm to 100 µm
- By default equipped with mechanical optical maintenance indicator with memory function
- Flow-optimized design due to 3D computer-supported design
- Optional Minimess connections from size 0130

Ordering code

of the filter

110 LE [ ] – [ ] – [ ] – [ ] [ ]

Pressure
up to 110 bar
[1595 psi] **= 110**

Inline filter
Single **= LE**

Filter element
Not according to DIN 24550 **= no code**
According to DIN 24550 **= N**

Size
LEN… **= 0040 0063 0100 0160 0250 0400**
LE… **= 0130 0150**

Filter rating in µm
nominal
Stainless steel wire mesh, cleanable
G10, G25, G40, G100 **= G…**
absolute (ISO 16889)
Micro glass, non-cleanable
H3XL, H6XL, H10XL, H20XL **= H…XL**

Pressure differential
Max. admissible pressure differential of the filter element
30 bar *[435 psi]*, with bypass valve **= A00**
330 bar *[4786 psi]*, without bypass valve **= B00**

Maintenance indicator
Maintenance indicator, mechanical optical
Switching pressure 5.0 bar *[72.5 psi]* **= V5.0**
Switching pressure 2.2 bar *[31.9 psi]* **= V2.2**
Switching pressure 1.5 bar *[21.8 psi]* **= V1.5**

Supplementary information
no code = Without supplementary information
– M = Minimess connections G 1/4 at the side (from size 0130)

Port

	Frame size	0040	0063-0100	0130-0150	0160-0400	
	Port					
R3 =	G 3/4	•	x			Pipe thread according to ISO 228
R4 =	G 1	x	•	x		
R5 =	G 1 1/4			•		
R6 =	G 1 1/2				•	
U4 =	SAE 12	x	x			Pipe thread according to SAE J1926
U9 =	SAE 16			x		
U6 =	SAE 24				x	

• = Standard port
x = Additional connection possibility

Seal
M = NBR seal
V = FKM seal

Order example:
110LEN0100-H3XLA00-V5,0-M-R4

Further versions (filter materials, connections,...) are available upon request.

of the filter element

2. [ ] [ ] – **0** –

Filter element
Design **= 2.**

Size
LEN… **= 0040 0063 0100 0160 0250 0400**
LE… **= 0130 0150**

Filter rating in µm
nominal
Stainless steel wire mesh, cleanable
G10, G25, G40, G100 **= G…**
absolute (ISO 16889)
Micro glass, non-cleanable
H3XL, H6XL, H10XL, H20XL **= H…XL**

Seal
M = NBR seal
V = FKM seal

Bypass valve
0 = With filter element always 0

Pressure differential
Max. admissible pressure differential of the filter element
A00 = 30 bar *[435 psi]*
B00 = 330 bar *[4786 psi]*

Order example:
2.0100 H3XL-A00-0-M

More information on Rexroth filter elements is available in the data sheet 51420

Preferred types

NBR seal, with bypass, flow specifications for 30 mm²/s *[143 SUS]*

Inline filter 110 LE(N), filter rating **3 µm**

Type	Flow in l/min *[gpm]* with Δ*p* = 1 bar *[14.5 psi]*	Material no. Filter				Material no. Replacement element
110LEN0040-H3XLA00-V5,0-M-..	24 *[6.34]*	..R3	R928046899	..U4	R928046914	R928006645
110LEN0063-H3XLA00-V5,0-M-..	32 *[8.45]*	..R4	R928046901	..U4	R928046915	R928006699
110LEN0100-H3XLA00-V5,0-M-..	46 *[12.15]*	..R4	R928046903	..U4	R928046916	R928006753
110LE0130-H3XLA00-V5,0-M-..	90 *[23.78]*	..R5	R928046909	..U9	R928046917	R928022274
110LE0150-H3XLA00-V5,0-M-..	92 *[24.31]*	..R5	R928046910	..U9	R928046918	R928022283
110LEN0160-H3XLA00-V5,0-M-..	115 *[30.38]*	..R6	R928046911	..U6	R928046919	R928006807
110LEN0250-H3XLA00-V5,0-M-..	152 *[40.16]*	..R6	R928046912	..U6	R928046920	R928006861
110LEN0400-H3XLA00-V5,0-M-..	250 *[66.04]*	..R6	R928046913	..U6	R928046921	R928006915

Inline filter 110 LE(N), filter rating **10 µm**

Type	Flow in l/min *[gpm]* with Δ*p* = 1 bar *[14.5 psi]*	Material no. Filter				Material no. Replacement element
110LEN0040-H10XLA00-V5,0-M-..	33 *[8.72]*	..R3	R928046922	..U4	R928046923	R928006647
110LEN0063-H10XLA00-V5,0-M-..	50 *[14.53]*	..R4	R928041640	..U4	R928046924	R928006701
110LEN0100-H10XLA00-V5,0-M-..	61 *[16.12]*	..R4	R928041641	..U4	R928046925	R928006755
110LE0130-H10XLA00-V5,0-M-..	100 *[26.42]*	..R5	R928037470	..U9	R928046926	R928022276
110LE0150-H10XLA00-V5,0-M-..	127 *[33.55]*	..R5	R928041642	..U9	R928046927	R928022285
110LEN0160-H10XLA00-V5,0-M-..	192 *[50.73]*	..R6	R928037471	..U6	R928046928	R928006809
110LEN0250-H10XLA00-V5,0-M-..	243 *[64.20]*	..R6	R928041643	..U6	R928046929	R928006863
110LEN0400-H10XLA00-V5,0-M-..	300 *[79.25]*	..R6	R928041644	..U6	R928046930	R928006917

Ordering code: Electronic switching element for maintenance indicator

WE – – –

Maintenance indicator
Electronic switching element **= WE**

Type of signal
1 switching point **= 1SP**
2 switching points, 3 LED **= 2SP**
2 switching points, 3 LED and signal suppression up to 30 °C *[86 °F]* **= 2SPSU**

Connector
M12x1 = Round plug-in connection M12x1, 4-pole
EN175301-803 = Rectangular plug-in connection, 2-pole design A according to EN-175301-803

Material numbers of the electronic switching elements

Material no.	Type	Signal	Switching points	Connector	LED
R928028409	WE-1SP-M12x1	Changeover	1	M12x1	No
R928028410	WE-2SP-M12x1	Normally open (at 75 %) / normally closed contact (at 100 %)	2		3 pieces
R928028411	WE-2SPSU-M12x1				
R928036318	WE-1SP-EN175301-803	Normally closed contact	1	EN 175301-803	No

More information on maintenance indicators is available in the data sheet 51450

Order example: Inline filter with mechanical optical maintenance indicator for $p_{Nominal}$ = 110 bar *[1595 psi]* with bypass valve, size 0160, with filter element 10 µm and electronic switching element M12x1 with 1 switching point for hydraulic fluid mineral oil HLP according to DIN 51524.

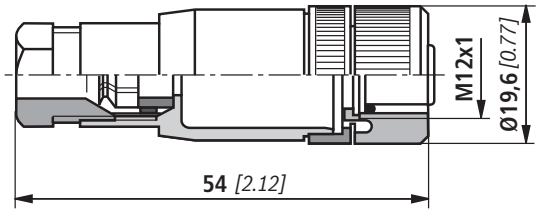
Filter with mech.-opt. maintenance indicator:	**110LEN0160-H10XLA00-V5,0-M-R6**	**Material no. R928037471**
Electr. switching element:	**WE-1SP-M12x1**	**Material no. R928028409**

Mating connectors according to IEC 60947-5-2 (dimensions in mm *[inch]*)

for electronic switching element with round plug-in connection M12x1

Mating connector suitable for K24 4-pole M12x1 with screw connection, cable gland Pg9.

Material no. R900031155

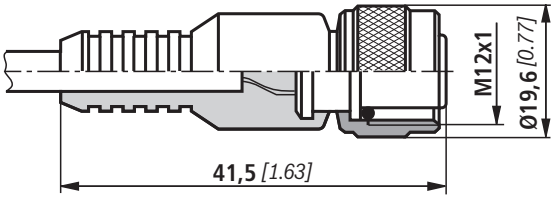


Mating connector suitable for K24-3m 4-pole, M12x1 with potted-in PVC cable, 3 m long.

Line cross-section: 4 x 0.34 mm²

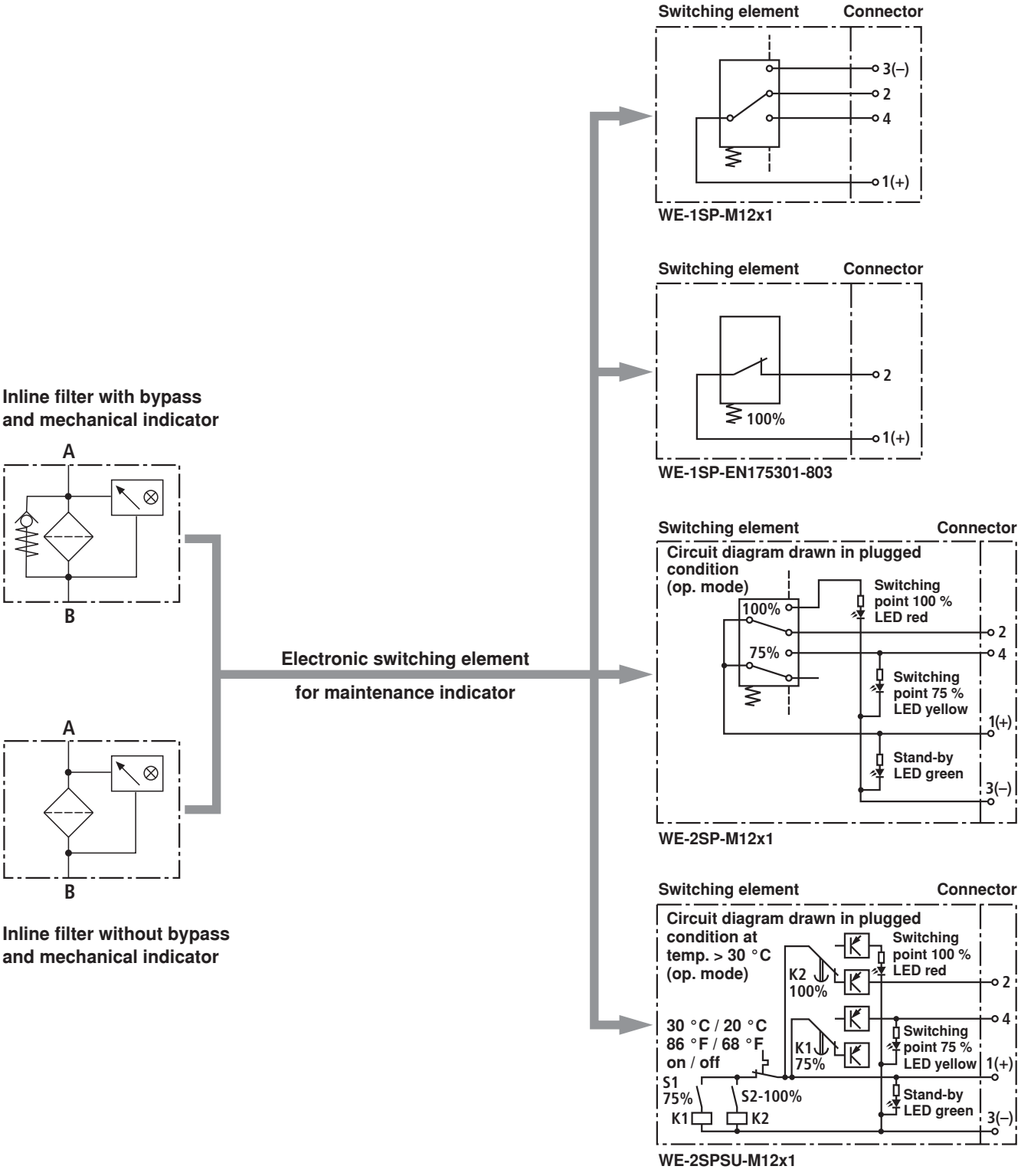
Core marking:
1 Brown
2 White
3 Blue
4 Black

Material no. R900064381



For more round plug-in connections refer to data sheet 08006.

Symbols


Switching element
Connector
3(–)
2
4
1(+)
WE-1SP-M12x1
Switching element
Connector
2
100%
1(+)
WE-1SP-EN175301-803
Inline filter with bypass and mechanical indicator
A
B
Electronic switching element for maintenance indicator
Switching element
Connector
Circuit diagram drawn in plugged condition (op. mode)
100%
75%
Switching point 100 % LED red
Switching point 75 % LED yellow
Stand-by LED green
2
4
1(+)
3(–)
WE-2SP-M12x1
Inline filter without bypass and mechanical indicator
Switching element
Connector
Circuit diagram drawn in plugged condition at temp. > 30 °C (op. mode)
K2 100%
K1 75%
30 °C / 20 °C
86 °F / 68 °F
on / off
S1
75%
K1
S2-100%
K2
Switching point 100 % LED red
Switching point 75 % LED yellow
Stand-by LED green
2
4
1(+)
3(–)
WE-2SPSU-M12x1

Function, section

The 110LE(N) inline filters are suitable for direct installation into pressure lines. They are mostly installed upstream open-loop or closed-loop control units to be protected.

They basically consist of filter head (1), a screwable filter bowl (2), filter element (3) as well as mechanical optical maintenance indicator (4). In case of filters with low-pressure-differential-stable filter elements (= code letter pressure differential A), there is also an assembled bypass valve (5).

The installed spring (6) prevents possible vibrations of the filter element (3). During disassembly, the contact pressure of the spring (6) holds the filter element in the filter bowl (2).

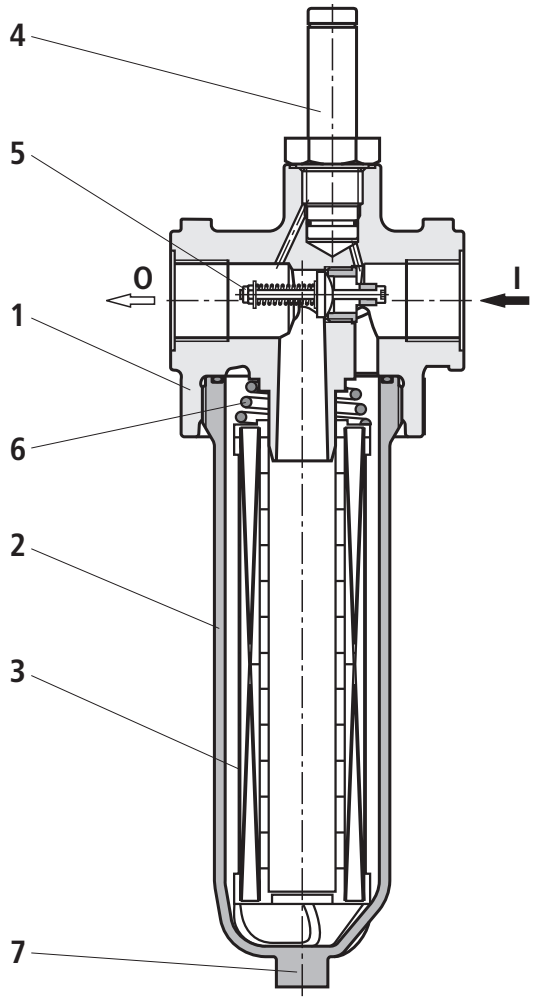
Via port I, the hydraulic fluid reaches the filter element (3) where it is cleaned. The dirt particles filtered out settle in the filter bowl (2) and in the filter element (3). Via port 0, the filtered hydraulic fluid enters the hydraulic circuit.

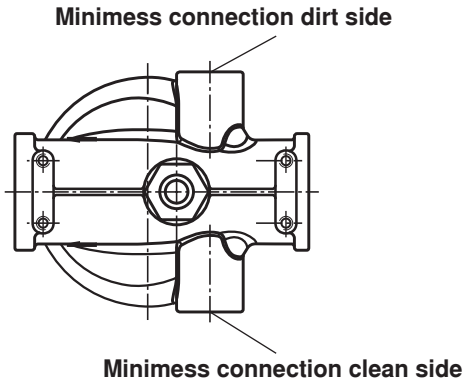
The filter housing and all connection elements are designed so that pressure peaks - as they may e.g. occur in case of abrupt opening of large control valves due to the accelerated fluid weight - can be securely absorbed. As of size 0160, the standard equipment comprises an oil drain plug (7).

Basically, the filter is equipped with mechanical optical maintenance indicator (4). The electronic maintenance indicator is connected via the electronic switching element with 1 or 2 switching points (see p. 4), which has to be ordered separately.

The electronic switching element is attached to the mechanical optical maintenance indicator and held by means of a locking ring.

As of size 0130, bores for Minimess connections can be ordered.





Type 110LEN0100

Technical data (For applications outside these parameters, please consult us!)

general

Installation position			Vertical			
Ambient temperature range		°C *[°F]*	–30 to +100 *[–22 to +212]*			
Weight		Size	**0040**	**0063**	**0100**	**0130**
		kg *[lbs]*	1.1 *[2.4]*	1.3 *[2.9]*	1.5 *[3.3]*	2.5 *[5.5]*
		Size	**0150**	**0160**	**0250**	**0400**
		kg *[lbs]*	2.6 *[5.7]*	3.5 *[7.7]*	4.0 *[8.8]*	4.9 *[10.8]*
Volume		Size	**0040**	**0063**	**0100**	**0130**
		l *[US gal]*	0.3 *[0.08]*	0.4 *[0.11]*	0.6 *[0.16]*	0.9 *[0.24]*
		Size	**0150**	**0160**	**0250**	**0400**
		l *[US gal]*	1.1 *[0.29]*	1.3 *[0.34]*	1.9 *[0.50]*	2.9 *[0.77]*
Material	Filter head		Aluminum			
	Filter bowl		Aluminum			
	Optical maintenance indicator	V1.5; V2.2	Aluminum			
		V5.0	Brass			
	Electronic switching element		Plastic PA6			

hydraulic

Maximum operating pressure	bar *[psi]*	110 *[1595]*	
Hydraulic fluid temperature range	°C *[°F]*	–10 to +100 *[+14 to +212]*	
Minimum conductivity of the medium	pS/m	300	
Fatigue strength according to ISO 10771	Load cycles	> 10^6 with max. operating pressure	
Type of pressure measurement of the maintenance indicator		Pressure differential	
Assignment: Response pressure of the maintenance indicator / cracking pressure of the bypass valve		Response pressure of the maintenance indicator	Cracking pressure of the bypass valve
	bar *[psi]*	1.5 ± 0.2 *[21.8 ± 2.9]*	2.5 ± 0.25 *[36.3 ± 3.6]*
		2.2 ± 0.3 *[31.9 ± 4.4]*	3.5 ± 0.35 *[50.8 ± 5.1]*
		5.0 ± 0.5 *[72.5 ± 7.3]*	7.0 ± 0.5 *[101.5 ± 7.3]*

Technical data (For applications outside these parameters, please consult us!)

electric (electronic switching element)

Electrical connection			Round plug-in connection M12x1, 4-pole			Standard connection EN 175301-803
		Version	1SP-M12x1	2SP-M12x1	2SP-M12x1	1SP-EN175301-803
Contact load, direct voltage		$A_{max.}$	1			
Voltage range		$V_{max.}$	150 (AC/DC)	10-30 (DC)		250 (AC) / 200 (DC)
Max. switching power with resistive load		W	20			70
Switching type	75 % signal		–	Normally open contact		–
	100 % signal		Changeover	Normally closed contact		Normally closed contact
	2SPSU				Signal interconnection at 30 °C *[86 °F]*, return switching at 20 °C *[68 °F]*	
Display via LEDs in the electronic switching element 2SP...				Stand-by (LED green); 75 % switching point (LED yellow) 100 % switching point (LED red)		
Protection class according to EN 60529			IP 67			IP 65
Ambient temperature range		°C *[°F]*	–25 to +85 *[–13 to +185]*			
For direct voltage above 24 V, spark extinguishing is to be provided for protecting the switching contacts.						
Weight Electronic switching element: – with round plug-in connection M12x1		kg *[lbs]*	0.1 *[0.22]*			

Filter element

Glass fiber paper H..XL			Single-use element on the basis of inorganic fiber	
			Filtration ratio according to ISO 16889 up to Δp = 5 bar *[72.5 psi]*	Achievable oil cleanliness according to ISO 4406 *[SAE-AS 4059]*
		H20XL	$\beta_{20}(c) \geq 200$	19/16/12 – 22/17/14
		H10XL	$\beta_{10}(c) \geq 200$	17/14/10 – 21/16/13
		H6XL	$\beta_{6}(c) \geq 200$	15/12/10 – 19/14/11
		H3XL	$\beta_{5}(c) \geq 200$	13/10/8 – 17/13/10
Admissible pressure differential	A	bar *[psi]*	30 *[435]*	
	B	bar *[psi]*	330 *[4785]*	

Seal material for hydraulic fluids

Mineral oil			Ordering code
Mineral oil	HLP	according to DIN 51524	M
Flame-resistant hydraulic fluids			Ordering code
Emulsions	HFA-E	according to DIN 24320	M
Synthetic water solutions	HFA-S	according to DIN 24320	M
Water solutions	HFC	according to VDMA 24317	M
Phosphoric acid esters	HFD-R	according to VDMA 24317	V
Organic esters	HFD-U	according to VDMA 24317	V
Fast biodegradable hydraulic fluids			Ordering code
Triglycerides (rape seed oil)	HETG	according to VDMA 24568	M
Synthetic esters	HEES	according to VDMA 24568	V
Polyglycols	HEPG	according to VDMA 24568	V

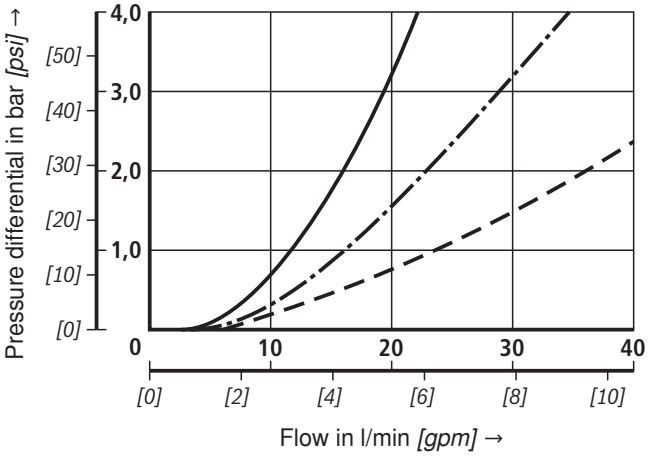
Characteristic curves H3XL

Spec. weight: < 0.9 kg/dm³
Δ*p*-Q characteristic curves for complete filter
recommended initial Δ*p* for design = 1 bar *[14.5 psi]*

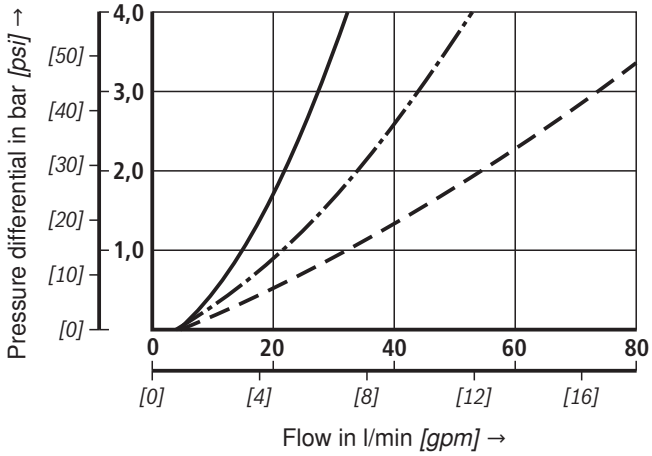
A proper filter design is enabled by our computer program "BRFilterSelect".

Oil viscosity:
- 140 mm²/s *[649 SUS]*
- 68 mm²/s *[315 SUS]*
- 30 mm²/s *[143 SUS]*

110LEN0040-H3XLA00-V5,0-M-R3



110LEN0063-H3XLA00-V5,0-M-R4



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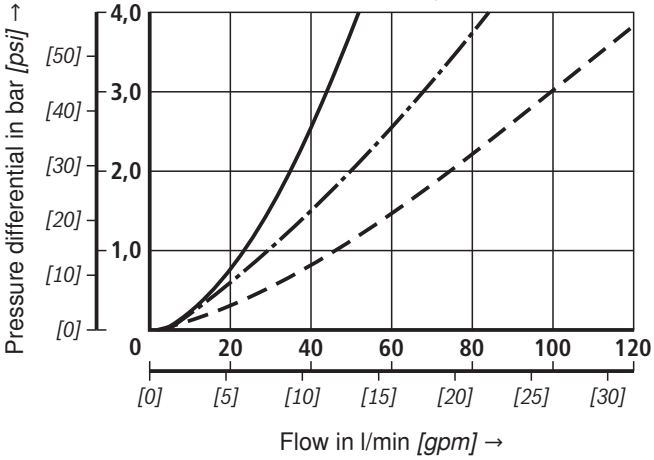
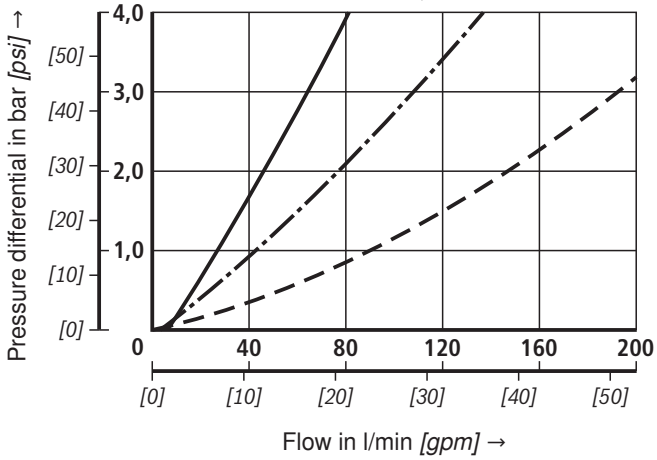


110LE0130-H3XLA00-V5,0-M-R5



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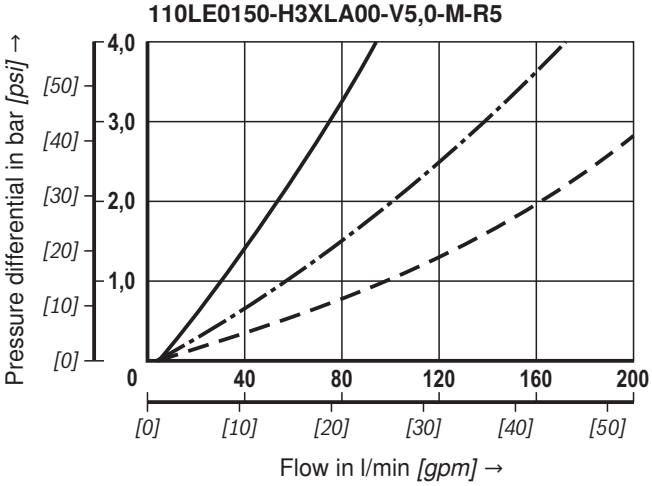
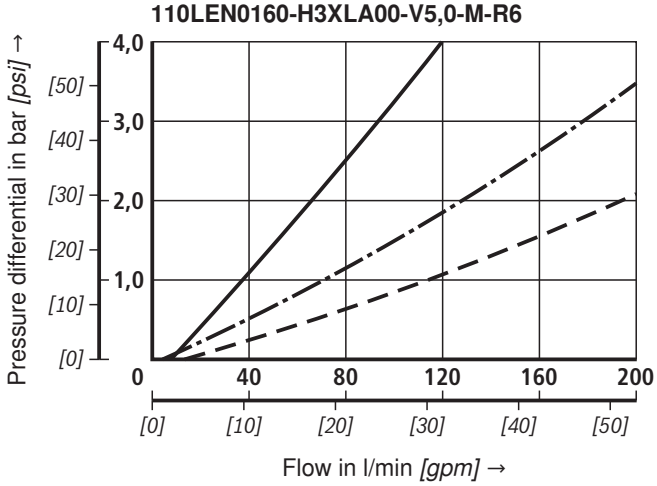


110LEN0160-H3XLA00-V5,0-M-R6



Characteristic curves — H3XL, H10XL

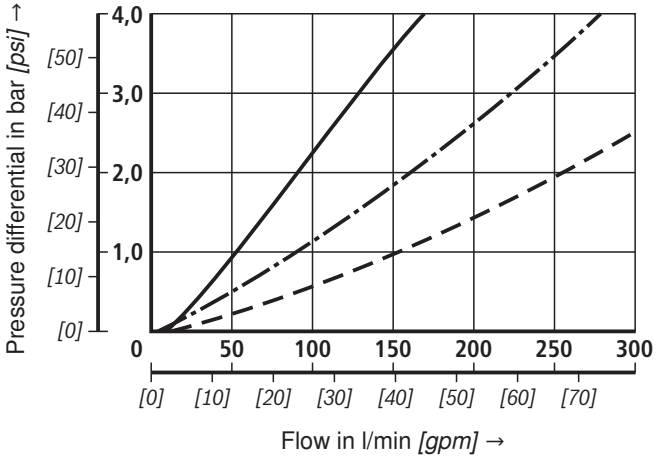
Spec. weight: < 0.9 kg/dm³
Δ*p*-Q characteristic curves for complete filter
recommended initial Δ*p* for design = 1 bar *[14.5 psi]*

A proper filter design is enabled by our computer program "BRFilterSelect".

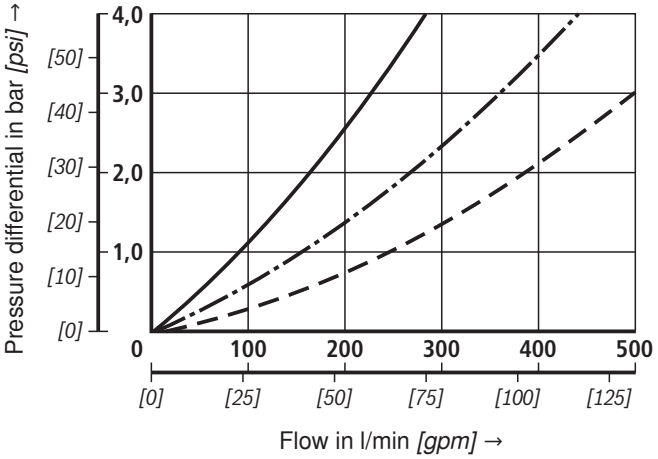
Oil viscosity:
- 140 mm²/s *[649 SUS]*
- 68 mm²/s *[315 SUS]*
- 30 mm²/s *[143 SUS]*

H3XL

110LEN0250-H3XLA00-V5,0-M-R6

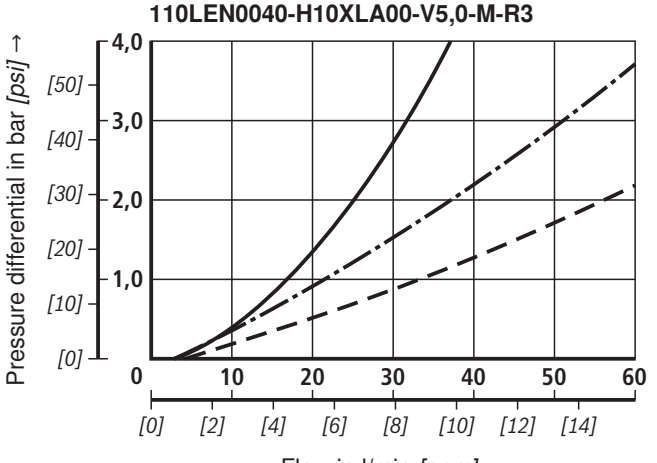


110LEN0400-H3XLA00-V5,0-M-R6

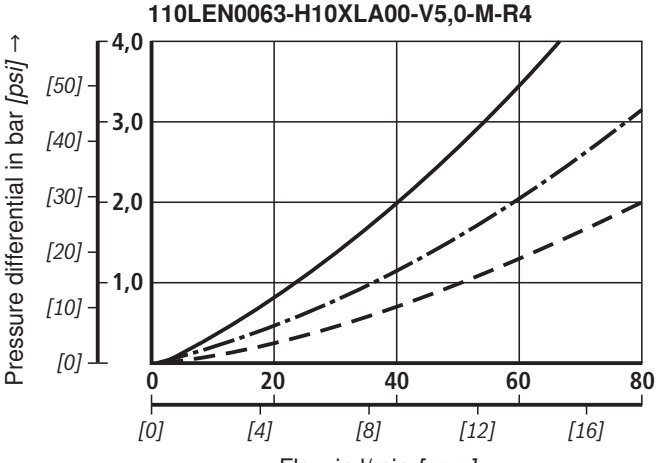


H10XL

110LEN0040-H10XLA00-V5,0-M-R3



110LEN0063-H10XLA00-V5,0-M-R4



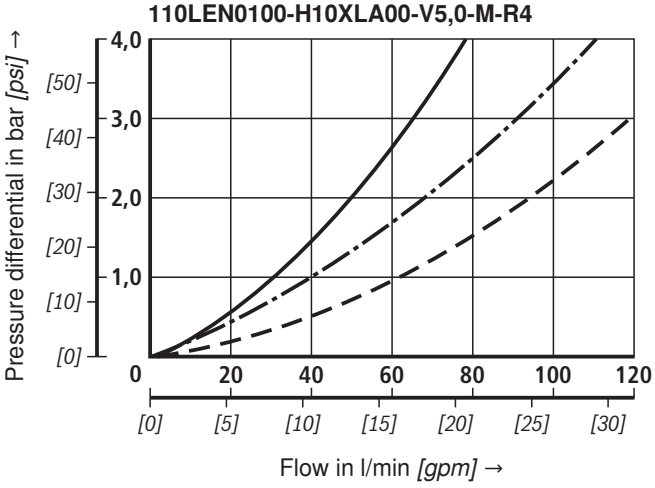
Characteristic curves H10XL

Spec. weight: < 0.9 kg/dm³
Δ*p*-Q characteristic curves for complete filter
recommended initial Δ*p* for design = 1 bar *[14.5 psi]*

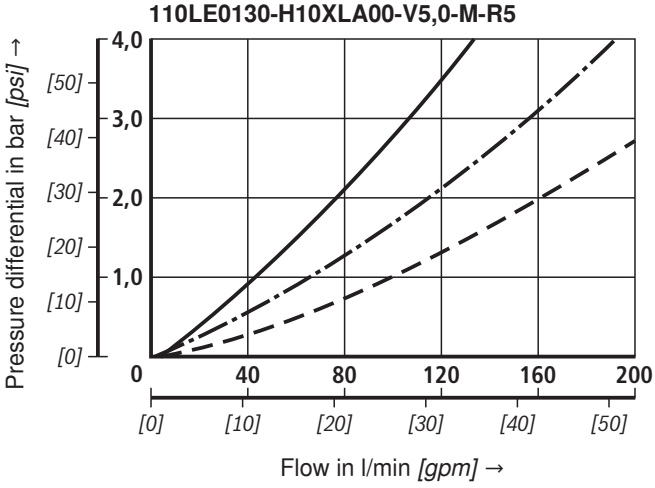
A proper filter design is enabled by our computer program "BRFilterSelect".

Oil viscosity:
- 140 mm²/s *[649 SUS]*
- 68 mm²/s *[315 SUS]*
- 30 mm²/s *[143 SUS]*

110LEN0100-H10XLA00-V5,0-M-R4



110LE0130-H10XLA00-V5,0-M-R5



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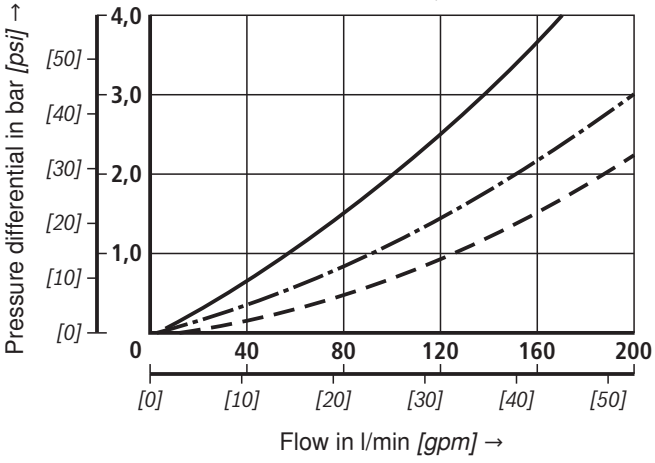
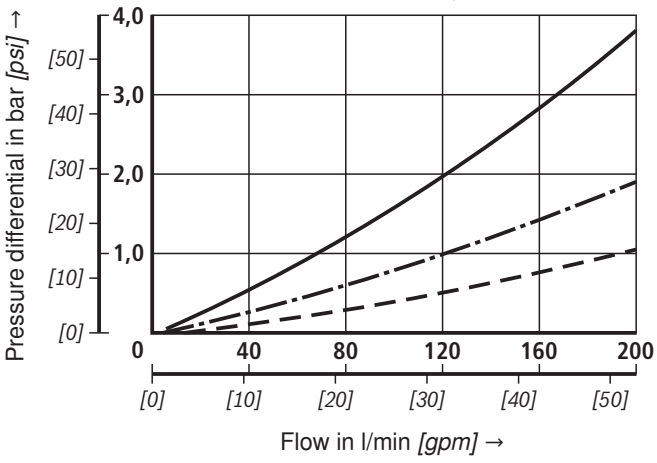
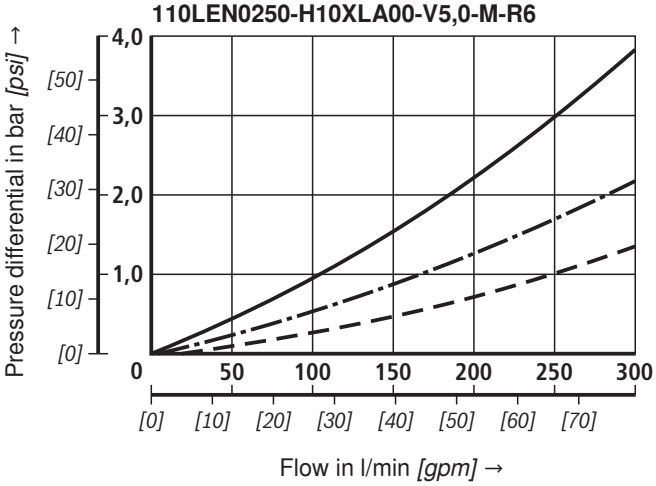


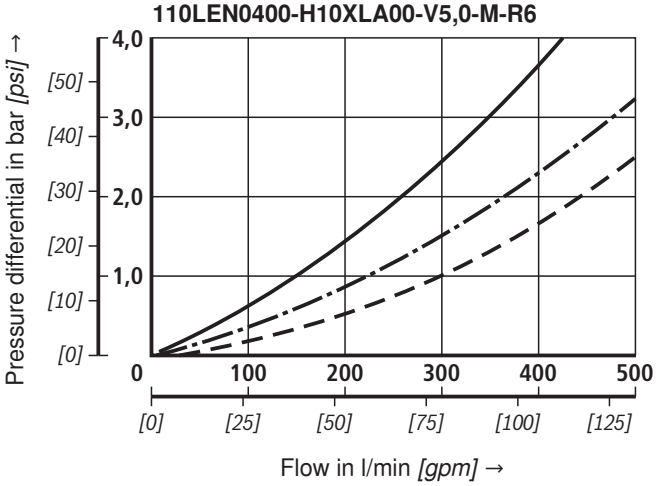
110LEN0160-H10XLA00-V5,0-M-R6



110LEN0250-H10XLA00-V5,0-M-R6

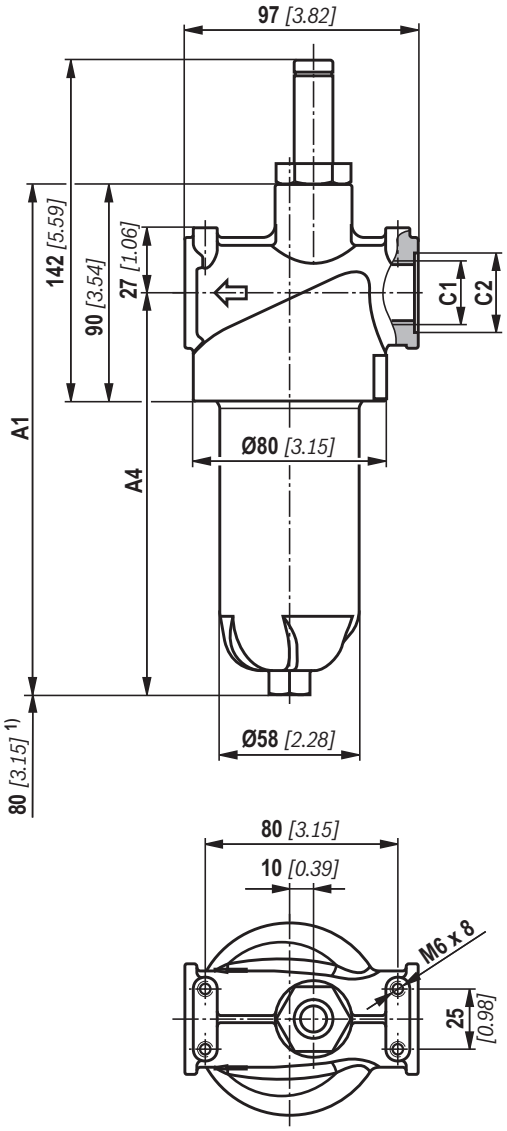


110LEN0400-H10XLA00-V5,0-M-R6



Unit dimensions size 0040 - size 0100 (dimensions in mm *[inch]*)

110 LEN 0040-0100



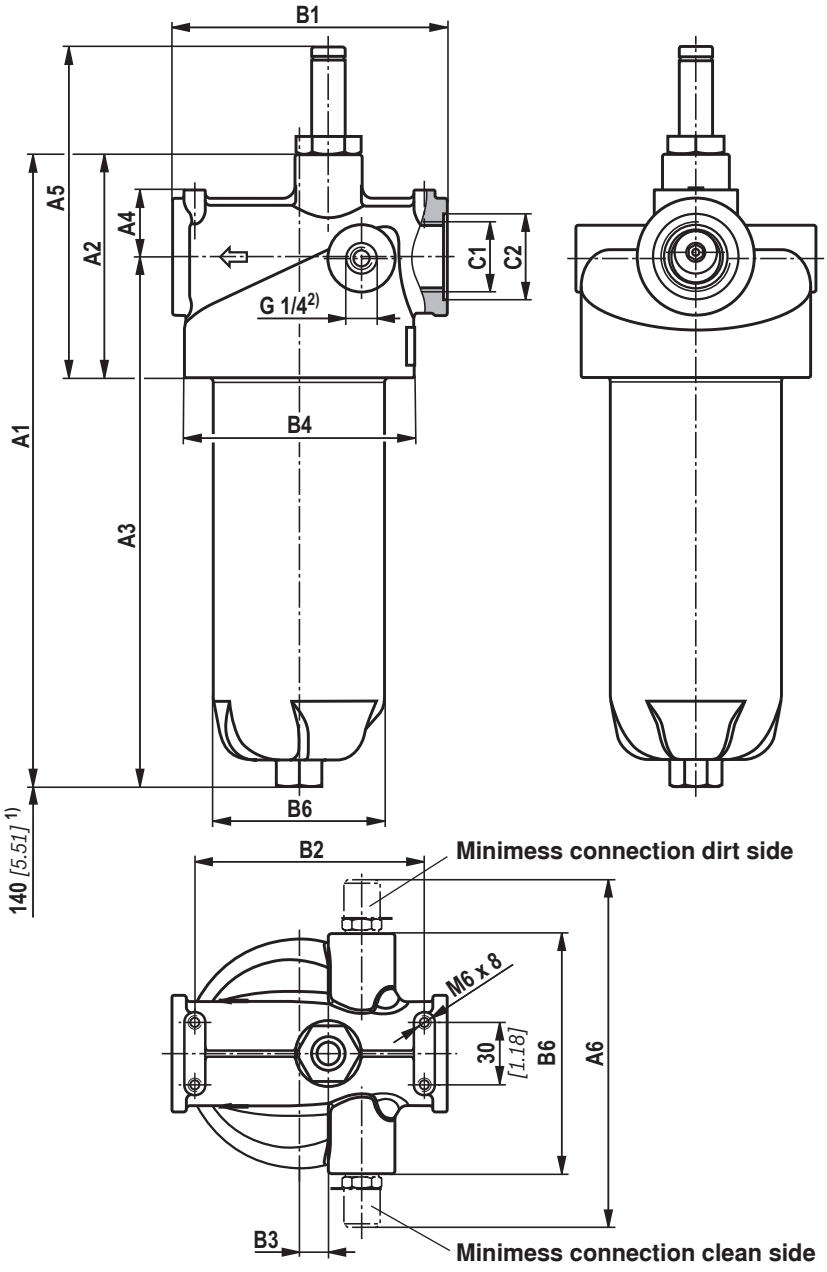
Filter housing for filter elements according to DIN 24550 and according to Rexroth standard

Type 110 LEN	A1	A4	C1 connection			
			Standard	ØC2	U… (SAE J1926)	ØC2
0040	212 *[8.35]*	167 *[6.57]*	G 3/4	33 *[1.30]*	SAE 12 1 1/16-12 UN-2B	41 *[1.61]*
0063	272 *[10.71]*	227 *[8.94]*	G 1	41 *[1.61]*		
0100	*362* *[14.25]*	317 *[12.48]*				

1) Servicing height for filter element exchange

Unit dimensions size 0130 - size 0150 (dimensions in mm *[inch]*)

110 LE 0130, 0150



Filter housing for filter elements according to Rexroth standard

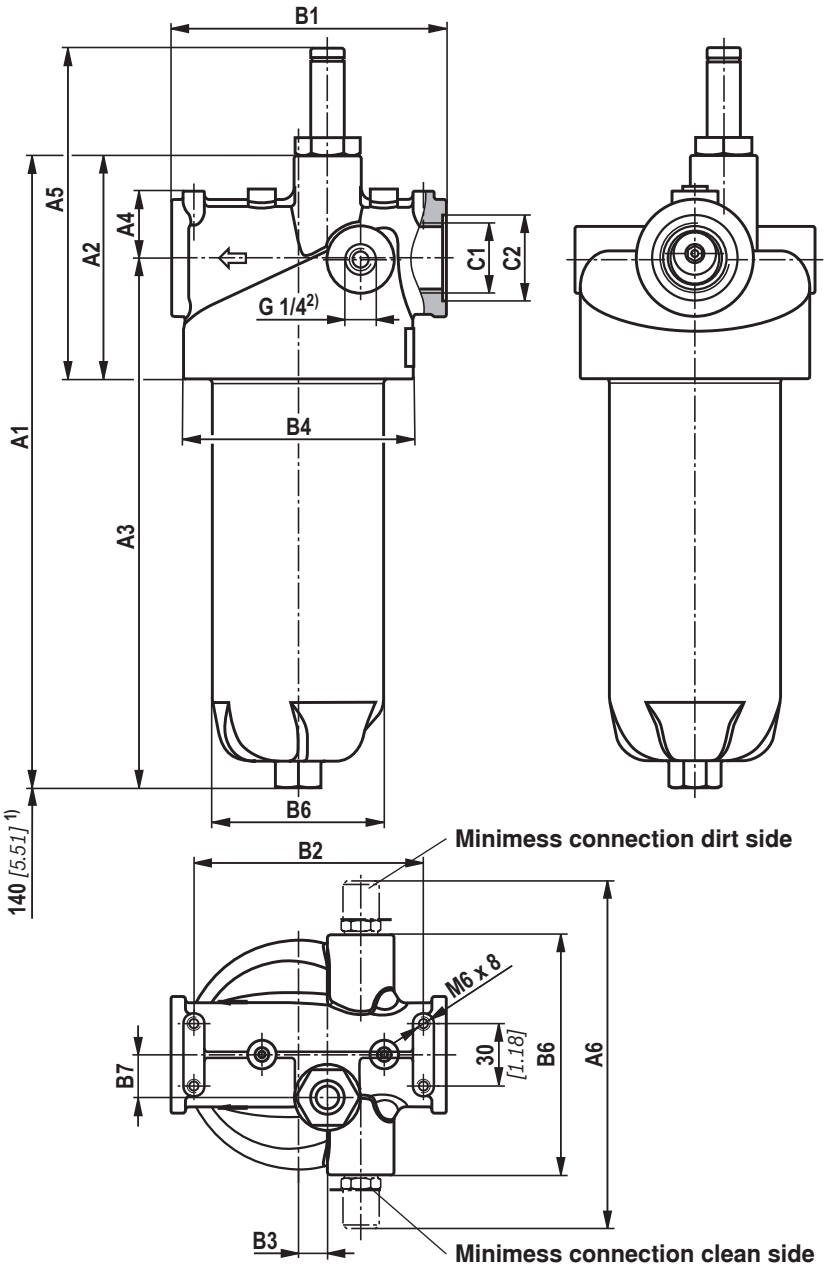
Type 110 LE	A1	A2	A3	A4	A5	A6	B1	B2	B3	ØB4	ØB5	B6	C1 connection			
													Standard	ØC2	U… (SAE J1926)	ØC2
0130	*303 [11.93]*	107 *[4.21]*	254 *[10.00]*	32 *[1.26]*	159 *[6.26]*	175 *[6.89]*	132 *[5.20]*	110 *[4.33]*	14 *[0.55]*	110 *[4.33]*	82 *[3.23]*	115 *[4.53]*	G 1 1/4	51 *[2.01]*	SAE 16 1 5/16-12 UN-2B	49 *[1.93]*
0150	*354 [13.94]*		305 *[12.01]*													

1) Servicing height for filter element exchange

2) Thread only drilled with Minimess connection option

Unit dimensions size 0160 - size 0400 (dimensions in mm *[inch]*)

110 LEN 0160-0400



Filter housing for filter elements according to DIN 24550

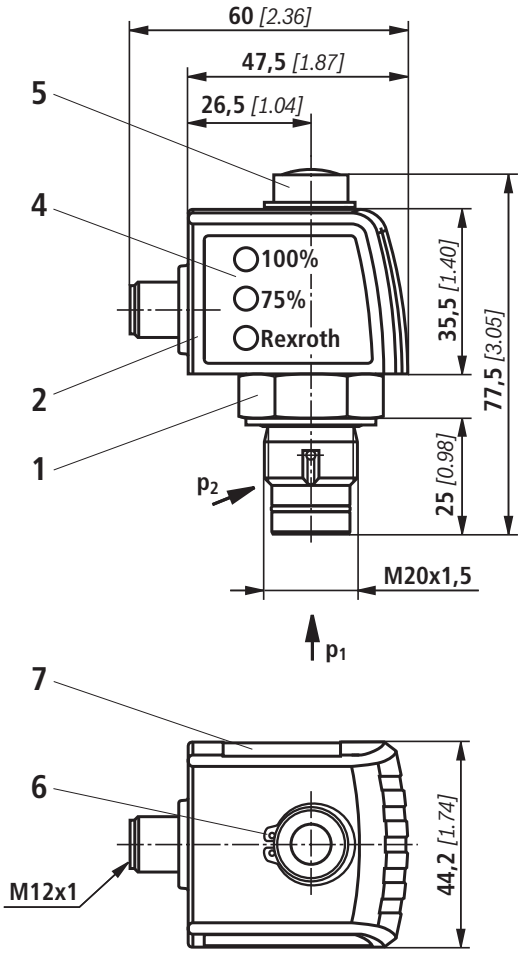
Type 110 LEN	A1	A2	A3	A4	A5	A6	B1	B2	B3	ØB4	ØB5	B6	B7	C1 connection			
														Standard	ØC2	U... (SAE J1926)	ØC2
0160	*305 [12.01]*	120 *[4.72]*	255 *[10.04]*	38 *[1.50]*	172 *[6.77]*	200 *[7.87]*	152 *[5.98]*	130 *[5.12]*	15 *[0.59]*	132 *[5.20]*	102 *[4.02]*	140 *[5.51]*	20 *[0.79]*	G 1 1/2	56 *[2.20]*	SAE 24 1 7/8-12 UN-2B	65 *[2.56]*
0250	*395 [15.55]*		345 *[13.58]*														
0400	545 *[21.46]*		495 *[19.49]*														

1) Servicing height for filter element exchange

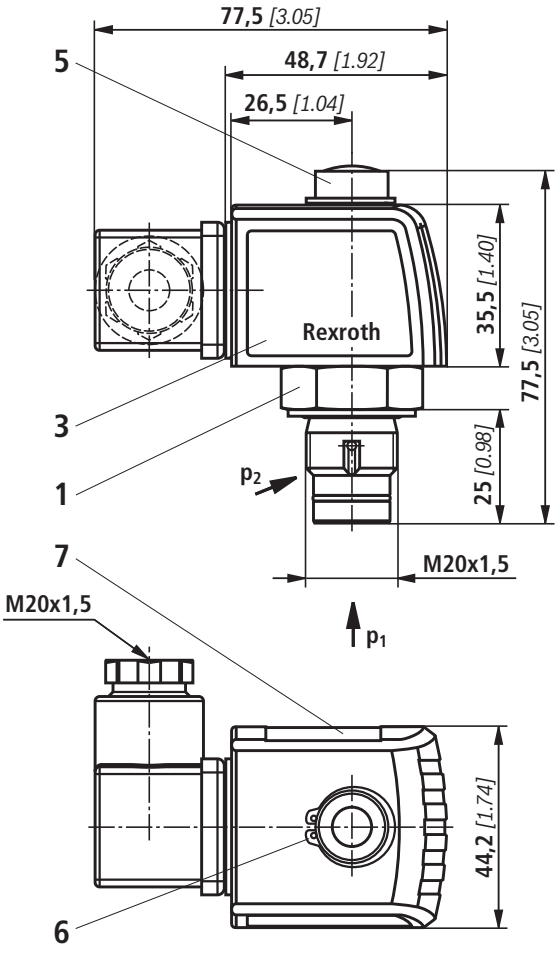
2) Thread only drilled with Minimess connection option

Maintenance indicator (dimensions in mm *[inch]*)

Pressure differential indicator with assembled switching element M12x1



Pressure differential indicator with assembled switching element EN-175301-803



1 Mechanical optical maintenance indicator; max. tightening torque $M_{A\,max}$ = 50 Nm *[36.88 lb-ft]*

2 Switching element with locking ring for electrical maintenance indicator (rotatable by 360°); round plug-in connection M12x1, 4-pole

3 Switching element with locking ring for electrical maintenance indicator (rotatable by 360°); rectangular plug-in connection EN175301-803

4 Housing with three LEDs: 24 V =
Green: Stand-by
Yellow: Switching point 75 %
Red: Switching point 100 %

5 Optical display bistable

6 Locking ring DIN 471-16x1, **material no. R900003923**

7 Name plate

Notice:

Representation contains mechanical optical maintenance indicator (1) and electronic switching element (2) (3).

Switching elements with increased switching power upon request.

Spare parts

Mechanical optical maintenance indicator

W | O – D01 – – – 160

Maintenance indicator **= W**

Mechanical optical indicator **= O**

Design

Pressure differential, design 01 **= D01**

Switching pressure

5.0 bar **= 5.0**

2.2 bar **= 2.2**

1.5 bar **= 1.5**

Max. operating pressure

D01-1,5; D01-2,2

160 = 160 bar *[2321 psi]*

D01-5,0

450 = 450 bar *[6527 psi]*

Seal

M = NBR seal

V = FKM seal

Mechanical optical maintenance indicator	Material no.
WO-D01-5,0-M-450	**R901025312**
WO-D01-2,2-M-160	**R901025312**
WO-D01-1,5-M-160	**R928038781**

Seal kit

D | 110LE | – |

Seal kit **= D**

Series **= 110LE**

Size

Size 0040-0100 **= N0040-0100**

Size 0130-0150 **= 0130-0150**

Size 0160-0400 **= N0160-0400**

Seal

M = NBR seal

V = FKM seal

Seal kit	Material no.
D110LEN0040-0100-M	R928046935
D110LE0130-0150-M	R928046936
D110LEN0160-0400-M	R928046937

Installation, operating and maintenance notes

Installation of the filter

Verify operating pressure with name plate information. Remove the blanking plugs in the filter inlet and outlet. Screw the filter head (1) to the fastening device, considering flow direction (direction arrows) and servicing height of the element. Make sure that the components are assembled without tension stress. The housing must be grounded.

The filter must preferably be installed with the filter bowl (2) downward. The maintenance indicator must be arranged in a well visible way.

Connection of the electronic maintenance indicator

Basically, the filter is equipped with mechanical optical maintenance indicator (4). The electronic maintenance indicator is connected via the switching element (6) with 1 or 2 switching points, which is attached to the mechanical optical maintenance indicator and held by means of the locking ring.

When must the filter element be exchanged or cleaned respectively?

- The filter element is to be exchanged after initial start-up of the system.
- Upon start-up in cold condition, the red pushbutton of the optical maintenance indicator (4) may jump out and an electrical signal is output via the switching element. Only push the red pushbutton in again after the operating temperature has been reached. If it jumps out again immediately or if the electrical signal has not gone out at operating temperature, the filter element must be exchanged or cleaned respectively after the end of the shift.
- The filter element should be replaced or cleaned after max. 6 months. Cleaning instructions for filter elements G.. see data sheet 51420.

Element exchange

- Switch off the system and discharge the filter on the pressure side.
- Screw off the filter bowl (2) by anticlockwise rotation. Clean the filter housing in a suitable medium.
- Remove the filter element (3) from the spigot in the filter head by turning it slightly.
- Check the seal ring in the filter bowl for position and damage. If necessary, these parts are to be renewed.
- Replace filter elements H...XL, clean filter elements G....
- The efficiency of the cleaning process depends on the type of dirt and the amount of the pressure differential before the filter element exchange. If the differential pressure after the filter element exchange exceeds 150 % of the value of a brand-new filter element, the G… element also needs to be replaced.
- Check whether the type designation or material number on the replacement element corresponds to the type designation/material number on the name plate of the filter.
- Install replaced or cleaned filter element on the spigot again by slightly turning it.
- Now screw in the filter bowl to stop (torque 50 Nm $^{+10\ Nm}$).

Quality and standardization

The inline filters for hydraulic applications according to 51448 are pressure holding equipment according to article 1, section 2.1.4 of the Pressure Equipment Directive 97/23/EC (PED). However, on the basis of the exception in article 1, section 3.6 of the PEG, hydraulic filters are exempt from the PED if they are not classified higher than category I (guideline 1/19). They do not receive a CE mark.

Use in explosive areas according to directive 94/9/EC (ATEX)

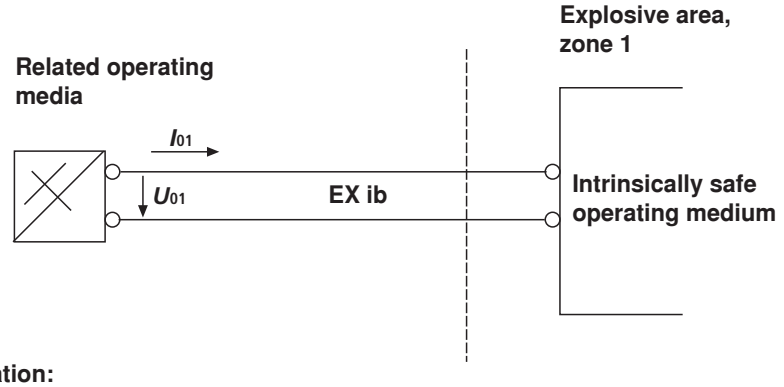
The inline filters according to 51448 are no equipment or components in the sense of directive 94/9/EC and are not provided with a CE mark.

When using the inline filters according to 51448 in explosive areas, appropriate equipotential bonding has to be ensured.

According to DIN EN 60079-11, the electronic maintenance indicators WE-1SP-M12x1 and WE-1SP-EN175301-803 are simple, electronic operating equipment not having an own voltage source. This simple, electronic operating equipment may - according to DIN EN 60079-14 - in intrinsically safe electric circuits (EEx ib) be used in systems without marking and certification.

Use / assignment		**Gas 2G**	**Dust 2D**
Assignment		Ex II 2G Ex ib IIB T4 Gb	Ex II 2D Ex ib IIIC T100°C Db
Zone suitability		Zone 1, zone 2	Zone 21, zone 22
Adm. intrinsically safe electric circuits		Ex ia IIC, Ex ib IIC, Ex ic IIC	Ex ia IIIC, Ex ib IIIC
Technical data			
Switching voltage	Ui_{max} V AC/DC	150	
Switching current	Ii_{max} A	1.0	
Switching power	Pi_{max}	1.3 W T4 T_{max} 40 °C	750 mW T_{max} 40 °C
Max. switching power		1.0 W T4 T_{max} 80 °C	550 mW T_{max} 100 °C
Surface temperature	°C *[°F]*	–	Max 100 *[212]*
Inner capacity	*Ci*	Neglectable	
Inner inductivity	*Li*	Neglectable	
Dust accumulation	mm *[inch]*	–	0.5 *[0.02]*

Possible circuit according to DIN EN 60079-14



Planner/operator documentation:

R928028899 Declaration of Incorporation according to DIN EN 13463 for components not subject to approval.

Bosch Rexroth Filtration Systems GmbH
Hardtwaldstraße 43
68775 Ketsch, Germany
Phone +49 (0) 62 02 / 6 03-0
Fax +49 (0) 62 02 / 6 03-1 99
brfs-support@boschrexroth.de
www.boschrexroth.de