

# Inline filters with filter element according to DIN 24550

Type 245LEN0040 to 0400; 245LE0130, 0150

**RE 51421**

Edition: 2023-05

Replaced: 2021-04



- ▶ Size according to **DIN 24550**: 0040 to 0400
- ▶ additional sizes: 0130, 0150
- ▶ Nominal pressure 250 bar [3628 psi]
- ▶ Connection up to G1 1/2; SAE 1 1/2; SAE 24
- ▶ Operating temperature: -10 °C to +100 °C [+14 °F to +212 °F]

## Features

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

They distinguish themselves by the following:

- ▶ Filters for inline installation
- ▶ Special highly efficient filter materials
- ▶ Filtration of very fine particles and high dirt holding capacity across a broad pressure differential range
- ▶ High collapse resistance of the filter elements
- ▶ By default equipped with mechanical optical maintenance indicator with memory function
- ▶ Various, optional electronic switching elements, modular design
- ▶ Optional bypass valve integrated in the filter housing
- ▶ High filtration performance due to the tangential cyclone-effect flow path

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## Ordering code filter

01	02	03	04	05	06	07	08	09
245LE	N		-			-	-	

### Series

01	Inline filter 250 bar [3628 psi]	245LE
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### Filter element

02	With filter element according to <b>DIN 24550</b>	N
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### Size

03	LEN...	0040 0063 0100 0160 0250 0400
	LE...	0130 0150

### Filter rating in $\mu\text{m}$

04	<b>Absolute</b> (ISO 16889; $\beta_x(c) \geq 200$ )	Glass fiber material, not cleanable	PWR3 PWR6 PWR10 PWR20
	<b>Nominal</b>	Stainless steel wire mesh, cleanable	G10 G25 G40 G60 G100

### Pressure differential

05	Max. permissible pressure differential of the filter element 30 bar [435 psi] – Filter <b>with</b> bypass valve	A00
	Max. permissible pressure differential of the filter element 330 bar [4786 psi] – Filter <b>without</b> bypass valve	B00

### Maintenance indicator

06	Maintenance indicator, mech./optical, switching pressure 2.2 bar [31.9 psi] – bypass cracking pressure 3.5 bar [51 psi]	V2.2
	Maintenance indicator, mech./optical, switching pressure 5.0 bar [72.5 psi] – bypass cracking pressure 7.0 bar [101 psi]	V5.0

### Seal

07	NBR seal	M
	FKM seal	V

**Ordering code filter**

01	02	03	04	05	06	07	08	09
245LE	N		-		-	-	-	-

**Connection**

08	Frame size		0040	0063-0100	0130-0150	0160-0400	
	Connection						
	G1/2	Pipe thread according to ISO 228	●	X			R2
	G3/4		X	X			R3
	G1		X	●	X		R4
	G1 1/4				●	X	R5
	G1 1/2				X	●	R6
	SAE 1 1/2"	SAE flange 6,000 psi				X	S6
	SAE 10	Pipe thread according to SAE J1926	X				U3
	SAE 12			X			U4
	SAE 20				X		U5
	SAE 24					X	U6
			●	Standard connection			
			X	Alternative connection			

**Supplementary information**

09	Manufacturer's inspection certificate M according to DIN 55350 T18	Z1
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**Order example:**

**245LEN0100-PWR10A00-V5,0-M-R4**

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

## Preferred types

245LE(N) preferred types, NBR seal, flow specifications for 30 mm<sup>2</sup>/s [143 SUS]

### Inline filter with bypass, filter rating 3 µm

Type	Flow in l/min [gpm] at $\Delta p = 1.5 \text{ bar}$ [21.75 psi] <sup>1)</sup>	Material no. Filter				Material no. Replacement element
245LEN0040-PWR3A00-V5,0-M-..	29 [6.1]	..R2	R928030024	..U3	R928030216	R928006645
245LEN0063-PWR3A00-V5,0-M-..	44 [7.9]	..R4	R928030025	..U4	R928030217	R928006699
245LEN0100-PWR3A00-V5,0-M-..	61 [11.6]	..R4	R928030026	..U4	R928030218	R928006753
245LE0130-PWR3A00-V5,0-M-..	101 [19.5]	..R5	R928030027	..U5	R928030219	R928022274
245LE0150-PWR3A00-V5,0-M-..	123 [23.5]	..R5	R928030028	..U5	R928030220	R928022283
245LEN0160-PWR3A00-V5,0-M-..	184 [34.9]	..R6	R928030029	..U6	R928030221	R928006807
245LEN0250-PWR3A00-V5,0-M-..	261 [50.2]	..R6	R928030030	..U6	R928030222	R928006861
245LEN0400-PWR3A00-V5,0-M-..	330 [66.0]	..R6	R928030031	..U6	R928030223	R928006915

### Inline filter with bypass, filter rating 6 µm

Type	Flow in l/min [gpm] at $\Delta p = 1.5 \text{ bar}$ [21.75 psi] <sup>1)</sup>	Material no. Filter				Material no. Replacement element
245LEN0040-PWR6A00-V5,0-M-..	48 [12.7]	..R2	R928030280	..U3	R928030472	R928006646
245LEN0063-PWR6A00-V5,0-M-..	78 [20.6]	..R4	R928030281	..U4	R928030473	R928006700
245LEN0100-PWR6A00-V5,0-M-..	82 [21.7]	..R4	R928030282	..U4	R928030474	R928006754
245LE0130-PWR6A00-V5,0-M-..	152 [40.2]	..R5	R928030283	..U5	R928030475	R928022275
245LE0150-PWR6A00-V5,0-M-..	170 [45.0]	..R5	R928030284	..U5	R928030476	R928022284
245LEN0160-PWR6A00-V5,0-M-..	245 [64.7]	..R6	R928030285	..U6	R928030477	R928006808
245LEN0250-PWR6A00-V5,0-M-..	310 [81.9]	..R6	R928030286	..U6	R928030478	R928006862
245LEN0400-PWR6A00-V5,0-M-..	400 [105.7]	..R6	R928030287	..U6	R928030479	R928006916

### Inline filter with bypass, filter rating 10 µm

Type	Flow in l/min [gpm] at $\Delta p = 1.5 \text{ bar}$ [21.75 psi] <sup>1)</sup>	Material no. Filter				Material no. Replacement element
245LEN0040-PWR10A00-V5,0-M-..	58 [15.3]	..R2	R928030536	..U3	R928030728	R928006647
245LEN0063-PWR10A00-V5,0-M-..	98 [18.2]	..R4	R928030537	..U4	R928030729	R928006701
245LEN0100-PWR10A00-V5,0-M-..	84 [22.2]	..R4	R928030538	..U4	R928030730	R928006755
245LE0130-PWR10A00-V5,0-M-..	172 [45.4]	..R5	R928030539	..U5	R928030731	R928022276
245LE0150-PWR10A00-V5,0-M-..	196 [51.8]	..R5	R928030540	..U5	R928030732	R928022285
245LEN0160-PWR10A00-V5,0-M-..	281 [74.2]	..R6	R928030541	..U6	R928030733	R928006809
245LEN0250-PWR10A00-V5,0-M-..	330 [87.2]	..R6	R928030542	..U6	R928030734	R928006863
245LEN0400-PWR10A00-V5,0-M-..	420 [111.0]	..R6	R928030543	..U6	R928030735	R928006917

<sup>1)</sup> An appropriate differential pressure via the filter and measuring device according to ISO 3968. The differential pressure measured on the maintenance indicator is lower.

### Ordering code accessories

(dimensions in mm [inch])

### Electronic switching element for maintenance indicators

01	02	03
WE	-	-

#### Maintenance indicator

01	Electronic switching element	<b>WE</b>
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#### Type of signal

02	1 switching point	<b>1SP</b>
	2 switching points, 3 LED	<b>2SP</b>
	2 switching points, 3 LED and signal suppression up to 30 °C [86 °F]	<b>2SPSU</b>

#### Connector

03	Round plug-in connection M12 x 1, 4-pole	<b>M12 x 1</b>
	Rectangular plug-in connection, 2-pole, design A according to EN-175301-803	<b>EN175301-803</b>

### Material numbers of the electronic switching elements

Material no.	Type	Signal	Switching points	Connector	LED
<b>R928028409</b>	WE-1SP-M12 x 1	Changeover	1	M12 x 1	without
<b>R928028410</b>	WE-2SP-M12 x 1	Normally open (at 75%) / normally closed contact (at 100%)	2		3 pieces
<b>R928028411</b>	WE-2SPSU-M12 x 1				
<b>R928036318</b>	WE-1SP-EN175301-803	Normally closed contact	1	EN 175301-803	without

### Connection sockets according to IEC 60947-5-2 (max. switching elements 50 V)

for electronic switching element with round plug-in connection M12 x 1

Connection socket suitable for K24 4-pole, M12 x 1 with screw connection, cable gland Pg9.

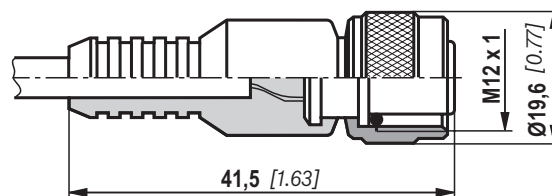
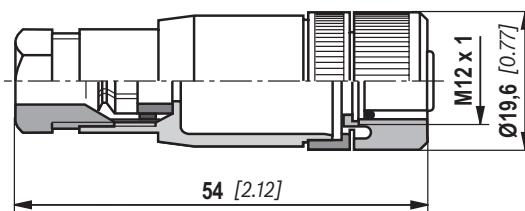
#### Material no. R900031155

Connection socket suitable for K24-3m 4-pole, M12 x 1 with integrated PVC cable, 3 m long.

Wire cross-section: 4 x 0.34 mm<sup>2</sup>

Wire identification: **1** brown                      **2** white  
**3** blue    **4** black

#### Material no. R900064381



#### Order example:

Inline filter with mechanical optical maintenance indicator for  $p_{nom.} = 250 \text{ bar}$  [3628 psi] with bypass valve, size 0100, 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. optical maintenance indicator:** 245LEN0100-PWR10A00-V5,0-M-R4

**Material no. R928030538**

**Switching element:** WE-1SP-M12 x 1

**Material no. R928028409**

**Connection socket:** Connection socket suitable for K24 4-pole, M12 x 1 with screw connection, cable gland Pg9.

**Material no. R900031155**

## Filter design

Filter size selection is made easy by using our online FilterSelect tool. The filter can be selected using basic parameters like, flow rates, system pressure, viscosities, etc.. The filter fineness is dependant on the required cleanliness level, application, type of contamination and environmental conditions.

The online tool is very user friendly with step-by-step guidelines.

A PDF file can be created of the selected filter, which contains all the stipulated parameters, including relevant part numbers of the selected filter and its spare parts.

Link FilterSelect:

<https://filter-select.com>

Other languages can be selected using the page navigation.

### standard search

**application:** hydraulics for industrial use and applications with lubricating oil

**Product category:** please select

**type:** please select

**pressure range:** please select

**filter material:** please select

**fineness:** please select

**volume flow rate:**  [l/min]

**viscosity:**  
 \* = working point

kin viscosity 1:  [mm<sup>2</sup>/s]

search via type of medium full-text search medium  
 please select    
 please select

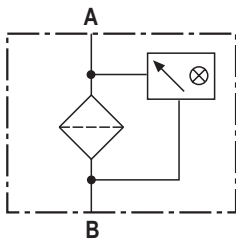
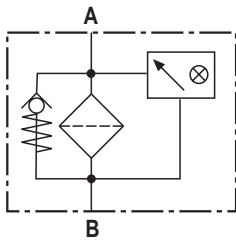
temp 1:  [°C]  [°F] kin viscosity 1:  [mm<sup>2</sup>/s]

dyn. viscosity 1:  [cP] density 1:  [kg/dm<sup>3</sup>] kin viscosity 1:  [mm<sup>2</sup>/s]

**collapse pressure resistance according to ISO 2941:** 30 bar

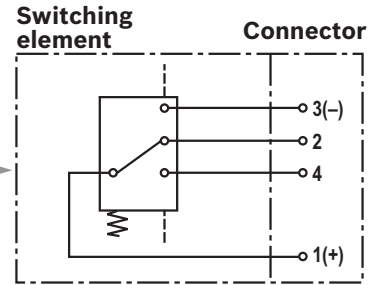
**Symbols**

**Inline filter** with bypass and mechanical indicator

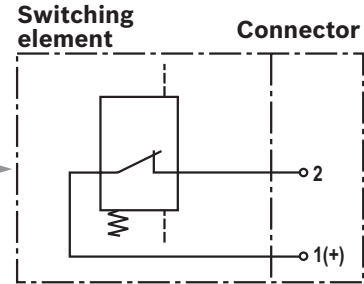


**Inline filter** without bypass and with mechanical indicator

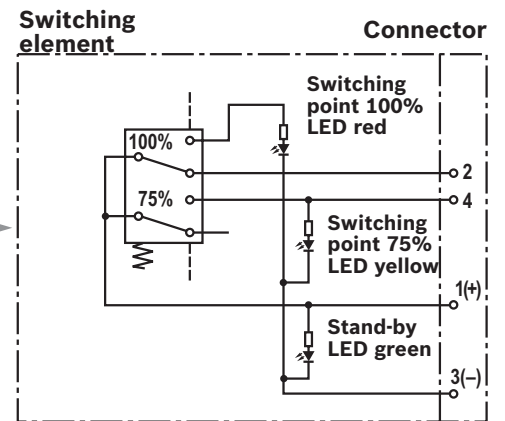
**Electronic switching element for maintenance indicator**



**WE-1SP-M12 x 1**

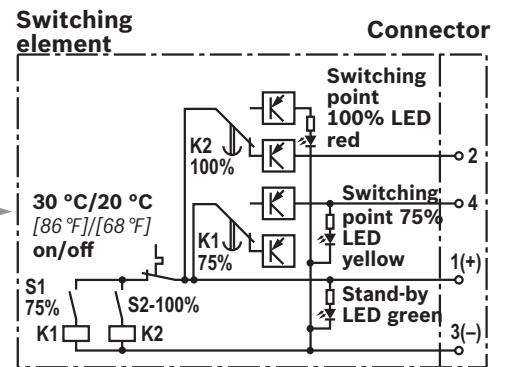


**WE-1SP-EN175301-803**



**WE-2SP-M12 x 1**

Circuit diagram drawn in plugged condition (operating state)



**WE-2SPSU-M12 x 1**

Circuit diagram drawn in plugged condition at temperature > 30 °C [86 °F] (operating condition)

## Function, section

The 245LE(N) inline filter is suitable for inline installation. The inline filter consists of filter head (1), a removable filter bowl (2), filter element (3) as well as a mechanical optical maintenance indicator (4). In case of filters with low-pressure-differential-stable filter elements (= code letter pressure differential A), a by-pass valve (5) is fitted as a standard.

The fluid reaches the filter element (3) through the inlet port where it is cleaned.

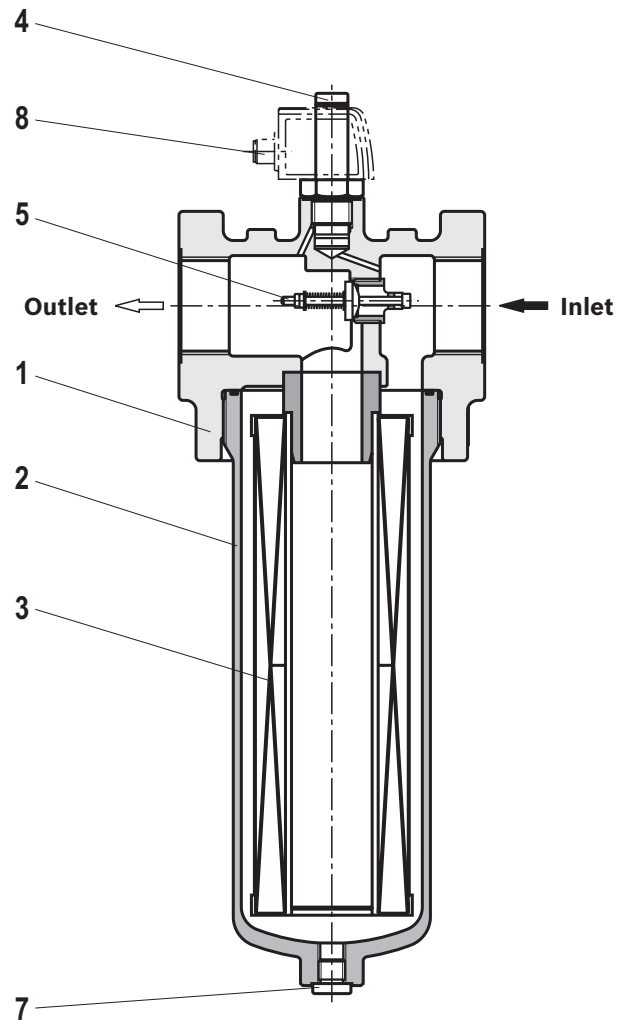
The filtered particulate settle in the filter element (3).

The fluid then exits the filter through the outlet port and 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 quantity - can be securely absorbed. As of size 0160, the standard equipment comprises a drain screw (7).

As a standard, the filter is equipped with a mechanical optical maintenance indicator (4). The electronic switching element (8) which has to be ordered separately is attached over the mechanical optical maintenance indicator (4) and is secured in place by a circlip ring.

The electronic switching elements with 1 or 2 switching points are connected via a connection socket according to IEC-60947-5-2 or via a cable connection according to EN17301-803.



### WARNING!

- ▶ If the maintenance indicator warning is not adhered to, and the filter element is not changed on indication, the by-pass valve will open with the increase in differential pressure and part of the flow will be diverted passed the filter element, to the clean side without being filtered. Thus, effective filtration is no longer guaranteed.



## Technical data

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

General						
Installation position		vertical				
Ambient temperature range		°C [°F]	-10 ... +65 [+14 ... +149]; (short periods down to -30 [-22])			
Storage conditions	- NBR seal	°C [°F]	40 ... +65 [-40 ... +149]; max. relative air humidity 65%			
	- FKM seal	°C [°F]	-20 ... +65 [-4 ... +149]; max. relative air humidity 65%			
Weight	- Filter	Size	<b>0040</b>	<b>0063</b>	<b>0100</b>	<b>0130</b>
		kg [lbs]	3.2 [7.10]	3.8 [8.40]	4.2 [9.30]	6.95 [15.30]
		Size	<b>0150</b>	<b>0160</b>	<b>0250</b>	<b>0400</b>
		kg [lbs]	7.25 [16]	11.5 [25.40]	12.2 [26.90]	13.8 [30.40]
	- Filter bowl	Size	<b>0040</b>	<b>0063</b>	<b>0100</b>	<b>0130</b>
		kg [lbs]	0.57 [1.26]	1.03 [2.27]	1.44 [3.17]	1.93 [4.25]
		Size	<b>0150</b>	<b>0160</b>	<b>0250</b>	<b>0400</b>
		kg [lbs]	2.27 [5.00]	2.49 [5.49]	3.33 [7.34]	4.72 [10.41]
Volume	Size	<b>0040</b>	<b>0063</b>	<b>0100</b>	<b>0130</b>	
		l [US gal]	0.21 [0.06]	0.38 [0.10]	0.53 [0.14]	0.76 [0.20]
	Size	<b>0150</b>	<b>0160</b>	<b>0250</b>	<b>0400</b>	
		l [US gal]	0.96 [0.25]	1.13 [0.30]	1.6 [0.42]	2.4 [0.63]
Material	- Filter head	GGG				
	- Filter bowl	Steel				
	- Bypass valve	PA6 / steel / POM				
	- Seals	NBR or FKM				
	- Optical maintenance indicator	Brass				
	- Electronic switching element	Plastic PA6				

Hydraulic			
Maximum operating pressure	bar [psi]	250 [3628]	
Hydraulic fluid temperature range	°C [°F]	-10 ... +100 [+14 ... +212]	
Fatigue strength according to ISO 10771 <sup>1)</sup>	Load cycles	> 10 <sup>6</sup> at rated 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]	2.2 ± 0.3 [31.9 ± 4.4]	3.5 ± 0.35 [50.8 ± 5.1]
	bar [psi]	5.0 ± 0.5 [72.5 ± 7.3]	7.0 ± 0.5 [101.5 ± 7.3]
Filtration direction	From the outside to the inside		

<sup>1)</sup> The service life of the components is e.g. influenced by:

- ▶ The individual load frequency of the application
- ▶ The actually occurring pressure increase rate

The technical specifications apply complying with the specified performance limits. Extended operational resistance/load change upon request.

**Technical data**

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

<b>Electric</b> (electronic switching element)				
Electrical connection	Round plug-in connection M12 x 1, 4-pole			Standard connection EN 175301-803
	Version	WE-1SP- M12 x 1	WE-2SP- M12 x 1	WE-2SPSU- M12 x 1
				WE-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	
	- 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		65
Ambient temperature range	°C [°F]	-25 ... +85 [-13 ... +185]		
For direct voltage above 24 V, spark extinguishing is to be provided for protecting the switching contacts.				
Weight	- electronic switching element	kg [lbs]	0.1 [0.22]	
<b>Filter element</b>				
<b>Glass fiber material PWR..</b>		Single-use element on the basis of inorganic fiber		
			Filtration ratio according to ISO 16889 up to $\Delta p = 5 \text{ bar [72.5 psi]}$	Achievable oil cleanliness accord- ing to ISO 4406 [SAE-AS 4059]
Particle separation	PWR20		$\beta_{20(c)} \geq 200$	19/16/12 ... 22/17/14
	PWR10		$\beta_{10(c)} \geq 200$	17/14/10 ... 21/16/13
	PWR6		$\beta_{7(c)} \geq 200$	15/12/10 ... 19/14/11
	PWR3		$\beta_{5(c)} \geq 200$	13/10/8 ... 17/13/10
Permissible pressure differential	- A00	bar [psi]	30 [435]	
	- B00	bar [psi]	330 [4785]	

**Compatibility with permitted hydraulic fluids**

Hydraulic fluid	Classification	Suitable sealing materials	Standards
Mineral oil	HLP	NBR	DIN 51524
Biodegradable	- insoluble in water	HETG	VDMA 24568
		HEES	
	- soluble in water	HEPG	VDMA 24568
Flame-resistant	- water-free	HFDF, HFDR	VDMA 24317
	- containing water	HFAS	DIN 24320
		HFAE	
	HFC	NBR	VDMA 24317

**Important information on hydraulic fluids!**

- For further information and data on the use of other hydraulic fluids, please contact us.
- **Flame-resistant – containing water:** Due to possible chemical reactions with materials or surface coatings of machine and system components, the service life with these hydraulic fluids may be less than expected.

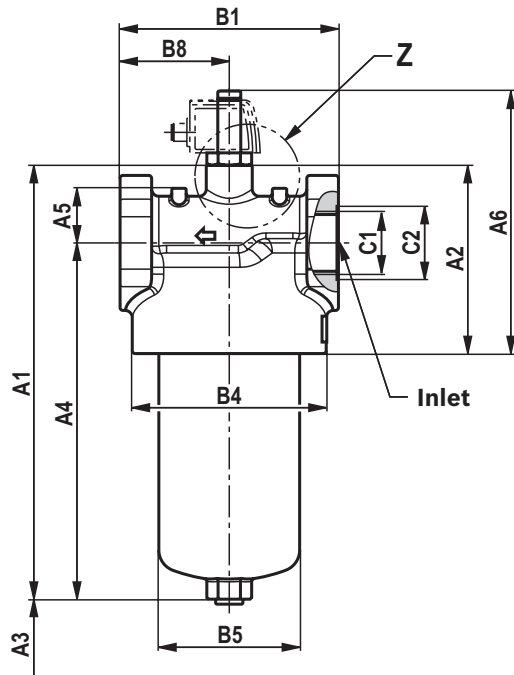
Filter materials made of filter paper must not be used, instead filter elements with glass fiber filter material or wire mesh must be used.

- **Biodegradable:** If filter materials made of filter paper are used, the filter life may be shorter than expected due to material incompatibility and swelling.

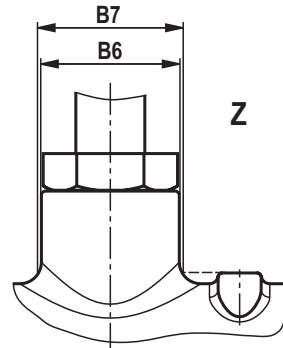
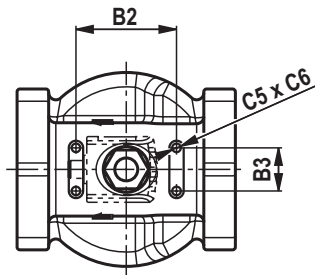
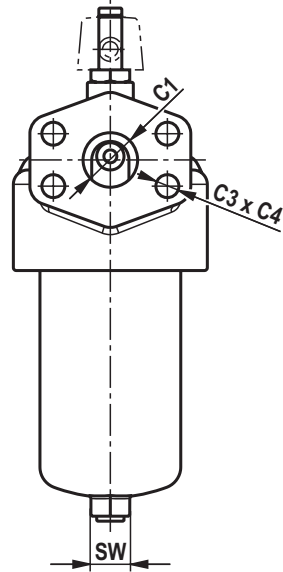
**Dimensions: 245LE(N) NG0040 ... NG0400**

(Dimensions in mm [inch])

Pipe thread connections  
UNF thread



Connection SAE 1 1/2"  
- 3000 psi



**Dimensions: NG0040 ... NG0400**(Dimensions in mm [*inch*])

Type	A1	A2	A3 <sup>1)</sup>	A4	A5	A6
245LEN0040	200 [7.87]	94 [3.70]	120 [4.72]	156 [6.14]	25 [0.98]	146 [5.75]
245LEN0063	264 [10.39]			220 [8.66]		
245LEN0100	354 [13.94]			310 [12.20]		
245LE0130	324 [12.76]	121 [4.76]	140 [5.51]	270 [10.63]	38 [1.50]	173 [6.81]
245LE0150	374 [14.72]			320 [12.60]		
245LEN0160	356 [14.02]	131 [5.16]	120 [4.72]	302 [11.89]		183 [7.20]
245LEN0250	392 [15.43]			338 [13.31]		
245LEN0400	542 [21.34]			488 [19.21]		

Type	B1 <sup>2)</sup>	B2	B3	ØB4	ØB5	ØB6	ØB7	B8
245LEN0040	92 [3.62]	60 [2.36]	25 [0.98]	85 [3.35]	55 [2.17]	32 [1.26]	34 [1.34]	46 [1.81]
245LEN0063								
245LEN0100								
245LE0130	122 [4.80]	80 [3.15]	30 [1.18]	116 [4.57]	77 [3.03]		32 [1.26]	61 [2.40]
245LE0150								
245LEN0160	152 [5.98]	70 [2.76]	135 [5.31]	98 [3.86]	76 [2.99]			
245LEN0250								
245LEN0400								

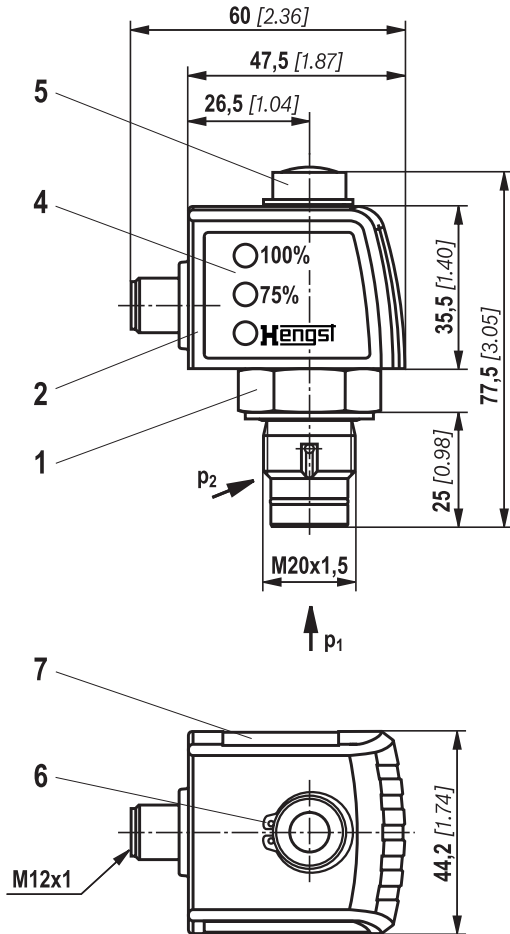
Type	C1 connection					C3	C4	C5	C6	SW
	Standard R...	ØC2	Optional U...	ØC2	Optional S...					
245LEN0040	G1/2	28 [1.10]	SAE 10 7/8-14 UNF-2B	41 [1.61]	-	M16	22 [0.87]	M6	8 [0.31]	19 [0.75]
245LEN0063	G1	41 [1.61]	SAE 12 1 1/16-12 UN-2B							
245LEN0100										
245LE0130	G1 1/4	51 [2.01]	SAE 20 1 5/8-12 UN-2B	58 [2.28]	SAE 1 1/2" 3000 psi					24 [0.94]
245LE0150										
245LEN0160	G1 1/2	56 [2.20]	SAE 24 1 7/8-12 UN-2B	65 [2.56]	27 [1.06]					
245LEN0250										
245LEN0400										

1) Servicing height for filter element exchange

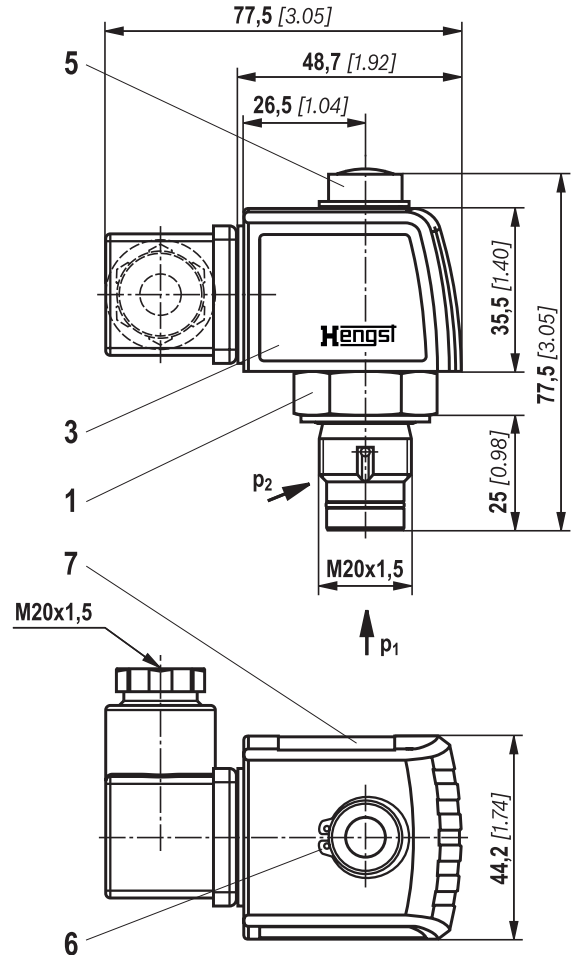
2) Dimension B1 is reduced with SAE flanges by 4 mm [0.16 inch]

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

Pressure differential indicator with mounted switching element M12 x 1



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



- 1 Mechanical optical maintenance indicator; max. tightening torque  $M_{A\max} = 50 \text{ Nm}$  [36.88 lb-ft]
- 2 Switching element with locking ring for electrical maintenance indicator (rotatable by 360°); round plug-in connection M12 x 1, 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 Visual indicator bistable
- 6 Locking ring DIN 471-16 x 1
- 7 Name plate

### Notices:

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

## Ordering code spare parts

### Filter element

01	02	03	04	05	06
2.			-	-	0

### Filter element

01	Design	2.
----	--------	----

### Size

02	LEN...	0040 0063 0100 0160 0250 0400
	LE...	0130 0150

### Filter rating in $\mu\text{m}$

03	<b>Absolute</b> (ISO 16889; $\beta_x(c) \geq 200$ )	Glass fiber material, not cleanable	PWR3 PWR6 PWR10 PWR20
	<b>Nominal</b>	Stainless steel wire mesh, cleanable	G10 G25 G40 G60 G100

### Pressure differential

04	Max. permissible pressure differential of the filter element 30 bar [435 psi] – Filter <b>with</b> bypass valve	A00
	Max. permissible pressure differential of the filter element 330 bar [4786 psi] – Filter <b>without</b> bypass valve	B00

### Bypass valve

05	<b>without</b> bypass valve	0
----	-----------------------------	---

### Seal

06	NBR seal	M
	FKM seal	V

### Order example:

**2,0100 PWR3-A00-0-M**

For detailed information on Hengst filter elements please refer to data sheet 51517.

### Preferred program replacement filter element

Replacement filter element 3 micron		Replacement filter element 6 micron		Replacement filter element 10 micron	
<b>R928006645</b>	2,0040 PWR3-A00-0-M	<b>R928006646</b>	2,0040 PWR6-A00-0-M	<b>R928006647</b>	2,0040 PWR10-A00-0-M
<b>R928006699</b>	2,0063 PWR3-A00-0-M	<b>R928006700</b>	2,0063 PWR6-A00-0-M	<b>R928006701</b>	2,0063 PWR10-A00-0-M
<b>R928006753</b>	2,0100 PWR3-A00-0-M	<b>R928006754</b>	2,0100 PWR6-A00-0-M	<b>R928006755</b>	2,0100 PWR10-A00-0-M
<b>R928022274</b>	2,0130 PWR3-A00-0-M	<b>R928022275</b>	2,0130 PWR6-A00-0-M	<b>R928022276</b>	2,0130 PWR10-A00-0-M
<b>R928022283</b>	2,0150 PWR3-A00-0-M	<b>R928022284</b>	2,0150 PWR6-A00-0-M	<b>R928022285</b>	2,0150 PWR10-A00-0-M
<b>R928006807</b>	2,0160 PWR3-A00-0-M	<b>R928006808</b>	2,0160 PWR6-A00-0-M	<b>R928006809</b>	2,0160 PWR10-A00-0-M
<b>R928006861</b>	2,0250 PWR3-A00-0-M	<b>R928006862</b>	2,0250 PWR6-A00-0-M	<b>R928006863</b>	2,0250 PWR10-A00-0-M
<b>R928006915</b>	2,0400 PWR3-A00-0-M	<b>R928006916</b>	2,0400 PWR6-A00-0-M	<b>R928006917</b>	2,0400 PWR10-A00-0-M

**Ordering code  
spare parts**

**Mechanical optical maintenance indicator**

01	02	03	04	05	06
<b>W</b>	<b>O</b>	-	<b>D01</b>	-	-

01	Maintenance indicator	<b>W</b>
----	-----------------------	----------

02	Mechanical optical indicator	<b>O</b>
----	------------------------------	----------

**Version**

03	Pressure difference, modular design	<b>D01</b>
----	-------------------------------------	------------

**Switching pressure**

04	2.2 bar [32 psi]	<b>2,2</b>
	5.0 bar [72.5 psi]	<b>5,0</b>

**Seal**

05	NBR seal	<b>M</b>
	FKM seal	<b>V</b>

**Max. operating pressure**

06	Switching pressure 2.2 bar [32 psi], 450 bar [6527 psi]	<b>450</b>
	Switching pressure 5.0 bar [72.5 psi], 450 bar [6527 psi]	<b>450</b>

Material no.	Mechanical optical maintenance indicator
<b>R928038783</b>	WO-D01-2.2-M-450
<b>R928038782</b>	WO-D01-2.2-V-450
<b>R901025313</b>	WO-D01-5,0-M-450
<b>R901066235</b>	WO-D01-5,0-V-450

## Ordering code spare parts

### Seal kit

01	02	03	04
<b>D</b>	<b>245LE</b>		-

01	<b>Seal kit</b>	<b>D</b>
----	-----------------	----------

02	<b>Series</b>	<b>245LE</b>
----	---------------	--------------

### Size

03	NG0040-0100	<b>N0040-0100</b>
	Size 0130-0150	<b>0130-0150</b>
	NG0160-0400	<b>N0160-0400</b>

### Seal

04	NBR seal	<b>M</b>
	FKM seal	<b>V</b>

Material no.	Seal kit
<b>R928028016</b>	D245LEN0040-0100-M
<b>R928028214</b>	D245LE0130-0150-M
<b>R928028017</b>	D245LEN0160-0400-M
<b>R928047988</b>	D245LEN0040-0100-V
<b>R928048951</b>	D245LE0130-0150-V
<b>R928039838</b>	D245LEN0160-0400-V




## Assembly, commissioning, maintenance

### Installation

- ▶ The max. operating pressure of the system must not exceed the max. permissible operating pressure of the filter (see type plate).
- ▶ During assembly of the filter (see also chapter “Tightening torque”), the flow direction (direction arrows) and the required servicing height of the filter element (see chapter “Dimensions”) are to be considered.
- ▶ Easy filter element exchange is guaranteed in the installation position filter bowl vertically downwards. The maintenance indicator should be arranged in a visible manner.
- ▶ Remove the plastic plugs in the filter inlet and outlet.
- ▶ Ensure that the system is assembled without tension stress.
- ▶ The optional electronic maintenance indicator is connected via the electronic switching element with 1 or 2 switching points, which is attached to the mechanical optical maintenance indicator and held by means of the locking ring.

### Commissioning


- ▶ Commission the system.

 **Notice:**

There is no bleed function provided at the filter.

### Maintenance

- ▶ If at operating temperature, the red indicator pin extends out of the mechanical optical maintenance indicator and/or if the switching process in the electronic switching element is triggered, the filter element is contaminated and needs to be replaced and cleaned respectively. More details see data sheet 51517.
- ▶ The material number of the corresponding replacement filter element is indicated on the name plate of the complete filter. It must comply with the material number on the filter element.
- ▶ Decommission the system.
- ▶ The operating pressure is to be release on the system side.

 **Notice:**

There is no bleed function provided at the filter.

- ▶ Via the drain screw (from size 0160 fitted by default), the oil on the dirt side can be drained.
- ▶ Screw off the filter bowl.
- ▶ Remove the filter element from the spigot by rotating it slightly.
- ▶ Clean the filter components, if necessary.
- ▶ Check the seals at the filter bowl for damage and renew them, if necessary.  
For suitable seal kits refer to chapter “Spare parts”.
- ▶ Filter elements made of wire mesh can be cleaned. For detailed cleaning instructions refer to data sheet 51548.
- ▶ Install the new or cleaned filter element on the spigot again by slightly rotating it.
- ▶ The filter is to be assembled in reverse order.
- ▶ The torque specifications (Tightening torques chapter) are to be observed.
- ▶ Commission the system.

 **WARNING!**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>▶ Assemble and disassemble only with depressurized system!</li> <li>▶ Filter is pressurized!</li> <li>▶ Remove the filter bowl only if it is not under pressure!</li> <li>▶ Do not exchange the optical/mechanical maintenance indicator while the filter is under pressure!</li> </ul> | <ul style="list-style-type: none"> <li>▶ If the flow direction is not considered during assembly, the filter element will be destroyed. Particle contaminants could enter the system and damage the downstream components.</li> <li>▶ We recommend shielding walkways and workplaces from escaping medium by means of suitable protective devices (e.g. housing or protective glass).</li> </ul> |
|--|--|

 **Notices:**

- ▶ All maintenance of the filter should be performed by trained specialists.
- ▶ Proper function and safety are only guaranteed if original Hengst filter elements and spare parts are used.
- ▶ Warranty becomes void if the delivered item is changed by the ordering party or third parties or improperly mounted, installed, maintained, repaired, used or exposed to environmental condition that do not comply with the installation conditions.

## Tightening torques

(dimensions in mm [*inch*])

### Mounting

Series 245...	LEN0040	LEN0063	LEN0100	LE0130	LE0150	LEN0160	LEN0250	LEN0400
Screw/tightening torque with $\mu_{\text{total}} = 0.14$	M6 / 4.5 Nm $\pm$ 10%							
Quantity	4							
Recommended property class of screw	8.8							
Minimum screw-in depth	6 + 1 mm [ <i>0.24 + 0.04 in</i> ]							

### Filter bowl and maintenance indicator

Series 245...	LEN0040	LEN0063	LEN0100	LE0130	LE0150	LEN0160	LEN0250	LEN0400
Tightening torque filter bowl	50 Nm + 10 Nm							
Tightening torque maintenance indicator	max. 50 Nm							
Tightening torque cubic connector screw switching element EN-175301-803	M3/0.5 Nm							

## Directives and standardization

### Product validation

Hengst filters, the filter elements built into them and filter accessories are tested and quality-monitored according to different ISO test standards:

Pressure pulse test	ISO 10771:2015-08
Filtration performance test (multipass test)	ISO 16889:2022-01
$\Delta p$ (pressure loss) characteristic curves	ISO 3968:2017-07
Compatibility with hydraulic fluid	ISO 2943:1998-11
Collapse pressure test	ISO 2941:2009-04

The development, manufacture and assembly of Hengst industrial filters and Hengst filter elements is carried out within the framework of a certified quality management system in accordance with ISO 9001:2015.

### Classification according to the Pressure Equipment Directive

The filters are pressure holding equipment according to article 2, section 5 of the Pressure Equipment Directive 2014/68/EU (PED). However, due to the safety requirements fulfilled in article 4, section 3, hydraulic filters are exempt from the PED if they are not classified higher than category I.

For the classification, fluids from the chapter “Compatibility with permitted hydraulic fluids” have been taken into consideration. The intended use is only permitted with fluids of group 2 and within the specified application limits (see chapter “Technical data”). Therefore, these filters are not provided with the CE mark.

### Use in explosive areas according to directive 2014/34/EU (ATEX)

The inline filters according to 51421 are no equipment or components in the sense of directive 94/9/EC and are not provided with a CE mark. It has been proven with the ignition risk analysis that these inline filters do not have own ignition sources acc. to DIN EN 13463-1:2009.

According to DIN EN 60079-11:2012, electronic maintenance indicators with a switching point:


WE-1SP-M12 x 1 **R928028409**

WE-1SP-EN175301-803 **R928036318**

are simple, electronic operating equipment that do not have an own voltage source. This simple, electronic operat-

ing equipment may - according to DIN EN 60079-14:2012 - in intrinsically safe electric circuits (Ex ib) be used in systems without marking and certification. The inline filters and the electronic maintenance indicators described here can be used for the following potentially explosive areas:

	zone suitability	
Gas	1	2
Dust	21	22

 **Note:**

Maintenance Indicators with EC type examination certificate on request.

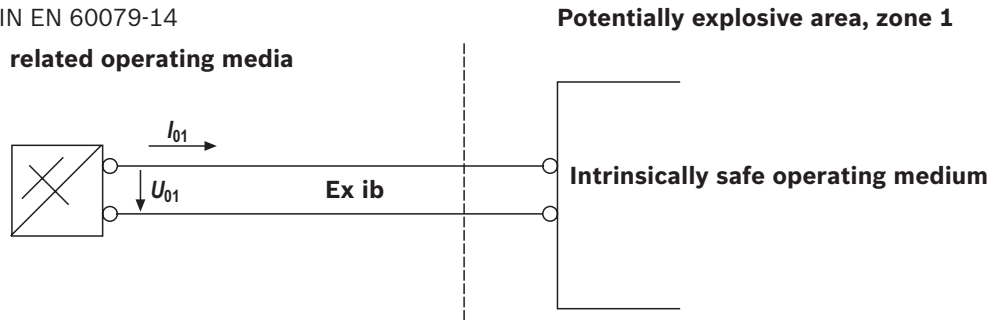
**Directives and standardization**

Complete filter with mech./opt. Maintenance indicator			
Use /assignment		Gas 2G	Dust 2D
Assignment <sup>1)</sup>		Ex h IIC T4...T1 Gb	Ex h IIC T100°C...T450°C Db
Conductivity of the medium	pS/m	min	300
Dust accumulation		max	–
			0.5 mm

electronic switching element in the intrinsically safe electric circuit			
Use /assignment		Gas 2G	Dust 2D
Assignment		Ex II 2G Ex ib IIB T4 Gb	Ex II 2D Ex ib IIIC T100°C Db
perm. intrinsically safe electric circuits		Ex ib IIC, Ex ic IIC	Ex ib IIIC
Technical data		Values only for intrinsically safe electric circuit	
Switching voltage	Ui	max	150 V AC/DC
Switching current	li	max	1.0 A
Switching power	Pi	max	1.3 W T4 T <sub>max</sub> 40 °C
		max	1.0 W T4 T <sub>max</sub> 80 °C
Surface temperature		max	–
inner capacity	Ci		negligible
inner inductivity	Li		negligible
Dust accumulation		max	–
			0.5 mm

<sup>1)</sup> The temperature depends on the temperature of the medium in the filter and must not exceed the value specified here.

Possible circuit according to DIN EN 60079-14



**⚠ WARNING!**

- ▶ Risk of explosion due to high temperature! The temperature depends on the temperature of the medium in the hydraulic circuit and must not exceed the value specified here from the previously mentioned table with regard to assignment of device identification. Measures are to be taken to ensure that the maximum permissible ignition temperature is not exceeded in the potentially explosive atmosphere.
- ▶ When using the inline filters in accordance with 51421 in potentially explosive areas, appropriate equipotential bonding has to be ensured. The filter is preferably to be grounded via the mounting screws. It has to be noted in this connection that paintings and oxidic protective layers are not electrically conductive.
- ▶ During filter element exchanges, the packaging material is to be removed from the replacement element outside the explosive area

**👉 Notices:**

- ▶ Maintenance only by trained specialists, instruction by the machine end-user acc. to DIRECTIVE 1999/92/EC appendix II, section 1.1
- ▶ Warranty is only applicable when using genuine Hengst spare parts

## Use

### Intended use

The filters consist of a filter housing, filter element and maintenance indicator, which serve as components in the sense of the EC Machinery Directive 2006/42/EC in hydraulic machinery for the separation of dirt particles. The filters are used under the following boundary conditions and limits:

- ▶ Only in systems with fluids of group 2, according to Pressure Equipment Directive 2014/68/EU
- ▶ Only according to the application and environmental conditions in the section "Technical data".
- ▶ Only in compliance with the specified performance limits in the section "Technical data"; extended operational durability/load cycles on request
- ▶ Only with hydraulic fluids and the intended seals according to the section "Compatibility with hydraulic fluids"

### Improper use

Any use deviating from the intended use is improper and thus not permissible.

Improper use of the filters includes:

- ▶ Incorrect storage
- ▶ Incorrect transport
- ▶ Lack of cleanliness during storage and assembly
- ▶ Incorrect installation
- ▶ Use of inappropriate/not-permissible hydraulic fluids
- ▶ Exceedance of the specified maximum pressures and load cycles

- ▶ Use in potentially explosive areas according to the section "Directives and standardization".
- ▶ The notes regarding the operating modes according to the section "Assembly, commissioning, maintenance" must be observed.
- ▶ Compliance with application and environmental conditions according to the technical data.
- ▶ Compliance with the specified performance limits.
- ▶ Use in the original condition, without damage.
- ▶ Maintenance work, such as the replacement of seals, filter elements and optical indicators with original Hengst spare parts, is permissible. Repair by the customer, particularly at pressurized components, is not permissible.
- ▶ This filter is exclusively intended for professional use and not for private use.

- ▶ Operation outside the approved temperature range
- ▶ Installation and operation in a not-permissible device group or category
- ▶ Operation outside the specified limits for the operating voltage, see the section "Technical data"

Hengst Filtration GmbH does not assume any liability for damage caused by improper use. The user assumes all risks involved with improper use.

## Environmental and recycling

- ▶ The used filter element should be disposed of in accordance with the respective country-specific legal regulations of environmental protection.
- ▶ After completion of the filter life, the components of the filter, in accordance with the respective country-specific legal regulations of environmental protection, are recycled.

## Notes

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