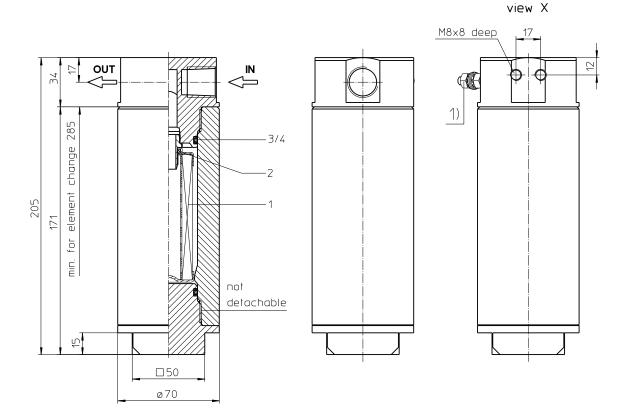
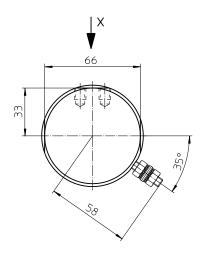
# Series EHP 31 PN 800/1400





 Connection for the potential equalization, only for application in the explosive area.

Weight: approx. 6 kg

Dimensions: mm

Designs and performance values are subject to change.

## Stainless Steel-Pressure Filter Series EHP 31 PN 800/1400

#### **Description:**

Stainless steel pressure filter series EHP 31 have a working pressure up to 800 bar or 1400 bar. Pressure peaks can be absorbed with a sufficient safety margin. The EHP-filter is inline mounted.

The filter element consists of star-shaped, pleated filter material, which is supported on the inside by a perforated core tube and is bonded to the end caps with a high-quality adhesive. The flow direction is from outside to inside. Filter elements are available down to  $5 \mu m_{(c)}$ . Finer filtration is available upon request.

Eaton filter elements are known for high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.

Eaton filter elements are available up to a pressure resistance of  $\Delta p$  2320 PSI and a rupture strength of  $\Delta p$  3625 PSI.

Eaton filter can be used for petroleum-based fluids, HW emulsions, water glycols, most synthetic fluids and lubrication fluids. Consult factory for specific fluid applications.

The internal valve is integrated into the filter head. After reaching the bypass pressure setting, the bypass valve will send unfiltered partial flow around the filter.

#### Type index:

Complete filter: (ordering example)

EHP. 31. 10VG. HR. E. P. VA. NPT. 3. -. VA. 800

1 series:

EHP = stainless steel-pressure filter

2 nominal size: 31

3 filter-material:

80G, 40G, 25G, stainless steel wire mesh 25VG, 16VG, 10VG, 6VG, 3VG microglass

4 filter element collapse rating:

 $= \Delta p 30 bar$ 

HR = Δp 160 bar (rupture strength Δp 250 bar)

5 filter element design:

Е = single-end open

6 sealing material:

= Nitrile (NBR) = Viton (FPM)

7 | filter element specification:

= standard

= stainless steel

IS06 = for HFC application, see sheet-no. 31601

8 process connection:

UG2 = autoclave medium pressure

= thread connection

9 process connection size:

= MP 3/8" (9/16"-18UNF)

3 = NPT 1/2"

10 internal valve:

S1 = with by-pass valve Δp 3,5 bar S2 = with by-pass valve Δp 7,0 bar

11 filter housing specification:

= stainless steel

12 pressure level:

800 = max. operating pressure 800 bar = max. operating pressure 1400 bar

Filter element: (ordering example)

01E. 30. 10VG. HR. E. P. VA 1 2 3 4 5 6 7

1 series:

01E. = filter element according to company standard

2 nominal size: 30

3 - 7 see type index-complete filter

#### Technical data:

test pressure:

operating temperature: -10 °C bis +100 °C

operating medium: mineral oil, other media on request max. operating pressure: 800 bar 1400 bar

800 bar 1400 bar 1145 bar 2000 bar

process connection: thread connection

housing material: EN10088-3 - 1.4462 800 bar EN10088-3 - 1.4418\_+ QT900 1400 bar

sealing material: Nitrile (NBR) or Viton (FPM), other materials on request

installation position: vertical volume tank: volume tank: volume tank: vertical volume tank: vertical volume tank: vertical verti

Pressure stage 800: Classified under the Pressure Equipment Directive 2014/68/EU for mineral oil (fluid group 2), Article 4, Para. 3. Pressure stage 1400: Classified under the Pressure Equipment Directive 2014/68/EU for mineral oil (fluid group 2), Category I (Modul A) Classified under ATEX Directive 2014/34/EU according to specific application (see questionnaire sheet-no. 34279-4).

#### Pressure drop flow curves:

#### Filter calculation/sizing

The pressure drop of the assembly at a given flow rate Q is the sum of the housing  $\Delta p$  and the element  $\Delta p$  and is calculated as follows:

 $\Delta p$  assembly =  $\Delta p$  housing +  $\Delta p$  element

 $\Delta p_{housing} = (\text{see } \Delta p = f(Q) - \text{characteristics})$ 

$$\Delta p_{element} \textit{(mbar)} = Q \left( \frac{l}{min} \right) x \; \frac{\textit{MSK}}{10} \left( \frac{mbar}{l/min} \right) x \; v \left( \frac{mm^2}{s} \right) x \; \frac{p}{0.876} \left( \frac{kg}{dm^3} \right)$$

For ease of calculation our Filter Selection tool is available online at www.eaton.com/hydraulic-filter-evaluation

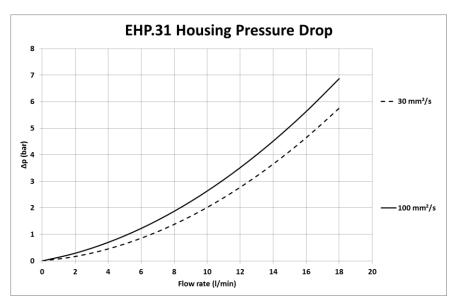
#### Material gradient coefficients (MSK) for filter elements

The material gradient coefficients in mbar/(l/min) apply to mineral oil (HLP) with a density of 0,876 kg/dm³ and a kinematic viscosity of 30 mm²/s (139 SUS). The pressure drop changes proportionally to the change in kinematic viscosity and density.

EHP	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
31	10,116	7,023	4,496	3,915	2,674	0,2073	0,1935	0,1325

#### $\Delta p = f(Q)$ – characteristics according to ISO 3968

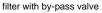
The pressure drop characteristics apply to mineral oil (HLP) with a density of 0,876 kg/dm³. The pressure drop changes proportionally to the density.



#### Symbols:

filter without by-pass valve







### **Spare parts:**

item	qty.	designation	dimension	article-no.		
1	1	filer element	01E.30			
2	1	O-ring	11 x 3	312603 (NBR)	312727 (FPM)	
3	1	O-ring	34 x 3	330601 (NBR)	340165 (FPM)	
4	2	support ring	40 x 2,6 x 1	330602		

Test methods: Filter elements are tested according to the following ISO standards:

> ISO 2941 Verification of collapse/burst resistance ISO 2942 Verification of fabrication integrity

ISO 2943 Verification of material compatibility with fluids

ISO 3723 Method for end load test

ISO 3724 Verification of flow fatigue characteristics

ISO 3968 Evaluation of pressure drop versus flow characteristics ISO 16889 Multi-pass method for evaluating filtration performance

North America

44 Apple Street Tinton Falls, NJ 07724 Toll Free: 800 656-3344 (North America only) Tel: +1 732 212-4700

Europe/Africa/Middle East

Auf der Heide 2 53947 Nettersheim, Germany Tel: +49 2486 809-0

Friedensstraße 41 68804 Altlußheim, Germany Tel: +49 6205 2094-0

An den Nahewiesen 24 55450 Langenlonsheim, Germany Tel: +49 6704 204-0

Greater China

No. 7, Lane 280, Linhong Road Changning District, 200335 Shanghai, P.R. China Tel: +86 21 5200-0099

Asia-Pacific 100G Pasir Panjang Road #07-08 Interlocal Centre Singapore 118523 Tel: +65 6825-1668

For more information, please email us at filtration@eaton.com or visit www.eaton.com/filtration

© 2021 Eaton. All rights reserved. All trademarks and registered trademarks are the property of their respective owners. All information and recommendations appearing in this brochure concerning the use of products described herein are based on tests believed to be reliable. However, it is the user's responsibility to determine the suitability for his own use of such products. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Eaton as to the effects of such use or the results to be obtained. Eaton assumes no liability arising out of the use by others of such products. Nor is the information herein to be construed as absolutely complete, since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

