Optimicron® Power Filter Elements ON/PO

for power plant applications
up to 20 bar, filtration rating 5, 10 and 20 µm

Optimicron® Power

1. OPTIMICRON® POWER-ELEMENT

1.1 DESCRIPTION

The new filter elements in the Optimicron® Power series demonstrate impressive levels of robustness, safety and a particularly low pressure drop. They are compact in design and enable a homogeneous flow of the fluid thanks to the innovative filter mesh pack structure.

Optimicron® Power elements have been designed to meet the requirements of the API 614 Standard.

The Stat-Free® technology incorporated into Optimicron® Power elements also ensures an increased level of operational safety since electrical charging on the filter element is prevented. As a result the service life of the oil is also considerably extended.

1.2 STAT-FREE® TECHNOLOGY INCLUDED

As standard, Optimicron® Power elements are equipped with the tried-and-tested Stat-Free® technology (to prevent electrostatic charging in the system).
As a result of increasing environmental awareness worldwide, operators are using zinc-free and ashless oils, such as bio oils which have very low conductivity, to a greater extent. In these oils, electrostatic discharges are a common occurrence in the form of sparking, for example on the filter element or in the tank. Depending on the gas composition in and around the tank, sparking can cause deflagrations or explosions. Furthermore, the discharges can cause a chemical reaction in the oil, giving rise to oil ageing products.

1.3 GENERAL DATA

Collapse stability	20 bar for return line filter elements
Temperature range	-30 °C to +100 °C For sealing material FPM to -10 °C
Flow direction	From outside to inside
Filtration rating	5, 10, 20 µm
Bypass cracking pressure	Return line filter element (**"R"**): standard 3 bar Return line filter element for API applications (**"A"**): Without bypass valve as standard (others on request)
Category of filter element	Single use element

Oil ageing products can be deposited in the system and can clog up expensive system components. In addition, the filtration efficiency of the filter elements is impaired by sparking due to the holes burned in the filter mesh pack which in turn can lead to reduced retention of system contamination.
The Stat-Free® technology incorporated into Optimicron® Power elements slows down the oil ageing described above because the special filter mesh pack design prevents electrical charging in the system. This means that the service life of both the oil and the components can be extended. The Stat-Free® technology prevents the phenomenon of electrostatic charging and therefore the sparking in the system. It can be used in every conceivable application, irrespective of oil type.

1.4 INNOVATIVE OUTER WRAP WITH IMPROVED DIFFUSER EFFECT FOR PRINTING WITH CUSTOMER LOGO

Since the outer wrap can be printed with the customer logo, it also acts as an advertising medium for the OEM and guarantees security of the spares business. At the same time, the user can be certain of obtaining an original spare part. Particular benefit: the logo remains perfectly legible even in the contaminated condition.

1.5 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- Hydraulic oils H to HLPD DIN 51524
- Lubrication oils DIN 51517, API, ACEA, DIN 51515, ISO 6743
- Compressor oils DIN 51506
- Biodegradable operating fluids VDMA 24568 HETG, HEES, HEPG
- Fire-resistant fluids HFA, HFB, HFC and HFD
- Operating fluids with high water content (>50% water content) on request

E 7.213.0/06.14

2. MODEL CODE

2.1 MODEL CODE FOR STANDARD RETURN LINE FILTER ELEMENTS

(Can be used in the following filters: RFL, RFLD)

0660 R 010 ON/PO /-KB

Size
0110, 0240, 0330, 0500, 0660, 0850, 0950, 1300, 1700, 2600, 2700

Type
R Return line filter element

Filtration rating in µm
005, 010, 020

Filter material of element
ON/PO Optimicron® Power, collapse stability up to 20 bar

Supplementary details
V FPM (Viton) seal
KB without bypass valve

2.2 MODEL CODE FOR RETURN LINE FILTER ELEMENTS IN AFLD AND ALFS FILTERS

0880 A 010 ON/PO /-V

Size
0110, 0120, 0230, 0240, 0330, 0500, 0540, 0880, 1400, 2700

Type
A Filter elements to API guidelines

Filtration rating in µm
005, 010, 020

Filter material of element
ON/PO Optimicron® Power, collapse stability up to 20 bar

Supplementary details
V FPM (Viton) seal

3. FILTER CALCULATION / SIZING

The total pressure drop of a filter at a certain flow rate Q is the sum of the housing Δp and the element Δp and is calculated as follows:

$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element}$

$\Delta p_{housing}$ = see housing curve in the relevant filter brochure

$$\Delta p_{element} = Q \cdot \frac{SK^*}{1000} \cdot \frac{viscosity}{30}$$

(*see point 4.1)

4. ELEMENT CHARACTERISTICS

4.1 GRADIENT COEFFICIENTS FOR FILTER ELEMENTS

The gradient coefficients in mbar/(l/min) apply to mineral oils with a kinematic viscosity of 30 mm²/s. The pressure drop changes proportionally to the change in viscosity.

Return line filter element "R"...ON/PO			
Size	5 µm	10 µm	20 µm
0110	3.63	3.08	2.03
0240	1.32	1.12	0.72
0330	0.81	0.69	0.44
0500	0.53	0.45	0.29
0660	0.35	0.30	0.19
0850	0.28	0.24	0.16
0950	0.18	0.21	0.14
1300	0.18	0.15	0.10
1700	0.13	0.11	0.07
2600	0.08	0.07	0.05
2700	0.08	0.07	0.05

Return line filter element "A"...ON/PO	
Size	10 µm
0110	3.08
0120	1.37
0230	0.68
0240	1.12
0330	0.69
0500	0.45
0540	0.33
0880	0.14
1400	0.09
2700	0.07

For information on bypass valve curves, please see Filter Element (Quick Selection) brochure no.: E 7.221../..

NOTE

The information in this brochure relates to the operating conditions and applications described.
For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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