

Off-line Filter Unit
FNU 008

Operating pressure up to 4 bar / 58 psi · Nominal flow rate up to 8 l/min / 2.1 gpm



Off-line Filter Unit FNU 008

Description
Application

In the by-pass flow of hydraulic and lubrication systems.

Performance features
Protection against wear:

The EXAPOR®MAX 2 ultra-fine element meets the highest cleanliness standards, even at full flow.

Protection against failure:

 The off-line filter includes a feature that guarantees a closed by-pass valve even at $v \leq 200 \text{ mm}^2/\text{s}$ / 930 SUS (cold start condition) within specified operating parameters.

Special design features
Pressure relief valve:

An integrated PRV (pressure relief valve) protects against overload.

Filter elements

Flow direction from the inside to the outside. The star-shaped pleating of the filter material results in:

- › large filter surfaces
- › low pressure drop
- › high dirt-holding capacities
- › particularly long maintenance intervals

Filter maintenance

By using a clogging indicator, the correct moment for maintenance is stated, what guarantees optimum utilization of the filter life.

Materials

Pump housing:	Aluminum alloy
Filter housing:	Aluminum alloy
Cover:	Aluminum alloy
Seals:	NBR (Viton on request)
Filter media:	EXAPOR®MAX 2 - inorganic, multi-layer microfiber web

Accessories

Water-absorbing filter elements EXAPOR®AQUA are available on request.

With Part No. FNA 008.1700, a mounting set is available, that facilitates the fitting of incoming and outgoing pipes onto an existing filling / venting connection.

Characteristics

Nominal flow rate

Up to 8 l/min (50 Hz) at $v = 35 \text{ mm}^2/\text{s}$
 up to 2.1 gpm (50 Hz) at $v = 162 \text{ SUS}$
 (see Selection Chart, column 2)

Connection

Threaded port according to ISO 228 or DIN 13.
 Sizes see Selection Chart, column 9 and 10

Filter fineness

5 $\mu\text{m(c)}$
 β -values according to ISO 16889
 (see Selection Chart, column 3 and Diagram Dx)
 (other filter finenesses on request)

Dirt-holding capacity

The dirt-holding capacity values in grams from the ISO MTD test dust are in accordance with the ISO 16889 requirements (see Selection Chart, column 4).

Hydraulic fluids

Mineral oil and biodegradable fluids
 (HEES and HETG, see info-sheet 00.20)

Temperature range of fluids

0 °C ... +65 °C / +32 °F ... +149 °F
 (also see viscosity range)

Ambient temperature range

0 °C ... +50 °C / +32 °F ... +122 °F

Viscosity Range

Electro motor air cooled type of protection: IP 55	Continuous operation min.	Continuous operation max.	Short-term max.
3 ~ 400/690 V 50 (60) Hz	15 mm^2/s / 70 SUS	1200 mm^2/s / 5560 SUS	1500 mm^2/s / 6950 SUS

Tank volume

Approx. 2.4 l / 0.6 gal

Maximum suction height

1.0 m / 3.3 ft (unfilled / first use)
 6.0 m / 19.7 ft (operation condition)

Operating pressure

Max. 4 bar / 58 psi, pressure protection with pressure relief valve; cracking pressure see Selection Chart, column 11

Operating position

Vertical, motor at the top

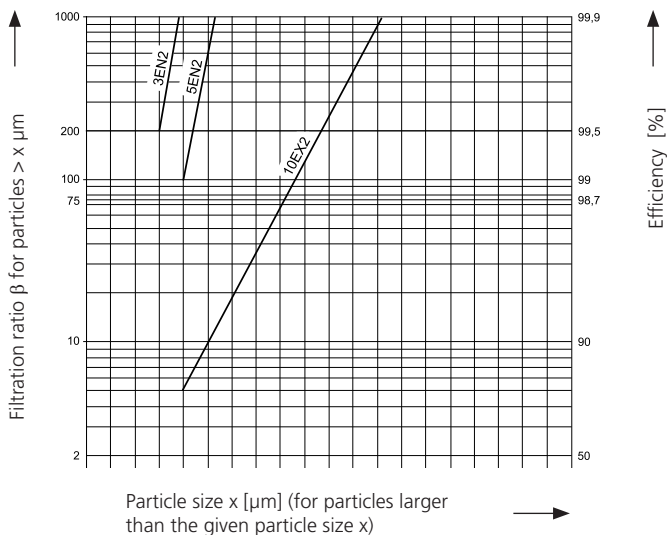
Recommended tank capacities

FNU 008: up to 800 l / 211 gal

Diagrams

Filter fineness curves in Selection Chart, column 3

Dx Filtration ratio β as a function of particle size x obtained by the Multi-Pass Test according to ISO 16889



The abbreviations represent the following β -values resp. finenesses:

With EXAPOR®MAX2 elements:

3EN2 = $\bar{\beta}_{3(c)} = 200$ EXAPOR®MAX 2
 5EN2 = $\bar{\beta}_{5(c)} = 200$ EXAPOR®MAX 2
 10EX2 = $\bar{\beta}_{10(c)} = 200$ EXAPOR®MAX 2

For special applications, finenesses differing from these curves are also available by using special composed filter media.

Selection Chart

Part No.	Nominal flow rate		Filter fineness s. diagram Dx		E-motor operating voltage	E-motor operating frequency (max.)	E-motor power (max.)	Engine speed at 50 Hz (max.)	Connection A Inlet	Connection B Outlet
	l/min	gpm		g						
1	2	3	4	5	6	7	8	9	10	
FNU 008-653	8	2.1	5EN2	140	3 ~ 400 / 690 V	50 (60)	0.37 (0.43)*	1350 (1600)*	G1	G1

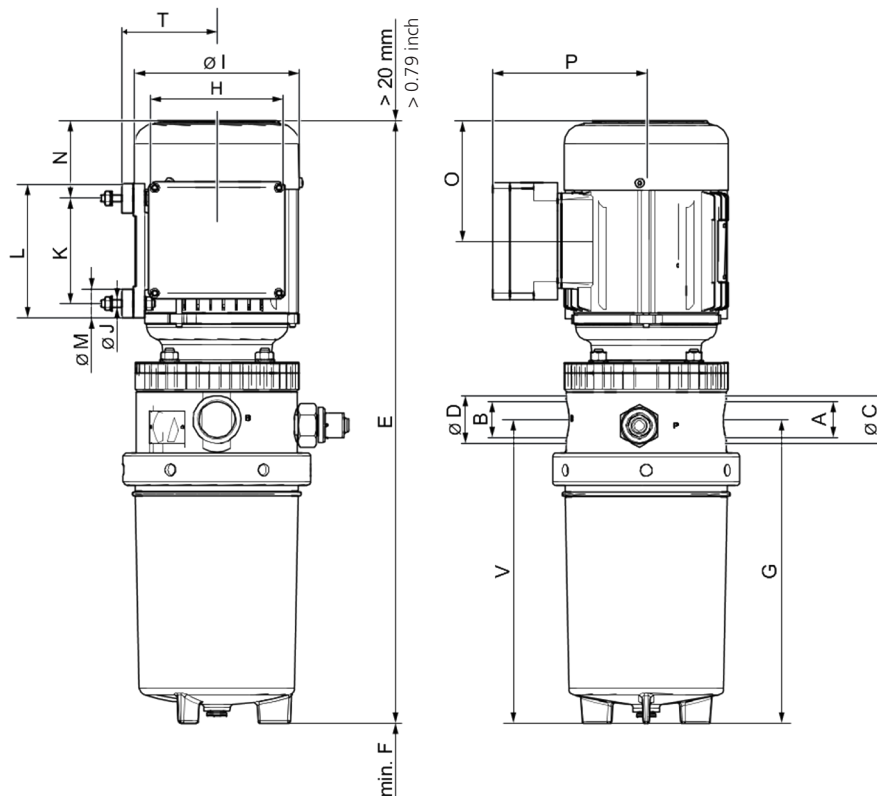
* Indications at 50 Hz. At 60 Hz the value increases by approx. 20 %

Part No.	Cracking pressure of by-pass		Symbols hydraulic	Symbols electric	Measurements, Type No.	Replacement filter element Part No.	Clogging indicator	Remarks
	bar	psi						
	11	12	13	14	15	16	17	
FNU 008-653	4	58	1	1, 2	1	V7.1220-13	optical	DG 842-01

Remarks:

The filter unit listed in this chart is a standard unit. If modifications are required, e.g. with water-absorbing filter elements, pipe extensions, mounting set or 60 Hz motor, we kindly ask for your request.

Dimensions



Measurements in mm

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	T	U	V
FNU 008	G1"	G1"	41	41	515	60	261	261	141	M6	90	115	25	66.5	102.5	131	81	261

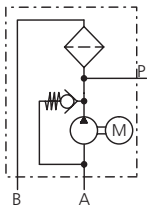
Measurements in inch

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N
FNU 008	G1"	G1"	1.61	1.61	28.28	2.36	10.28	10.28	5.55	M6	3.54	4.53	0.98	2.62

Type	O	T	U	V										
FNU 008	4.04	5.16	3.19	10.28										

Hydraulic symbol

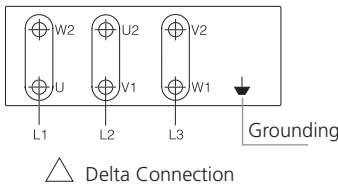
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Electric connections

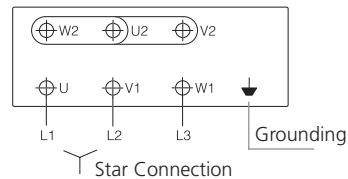
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Connections



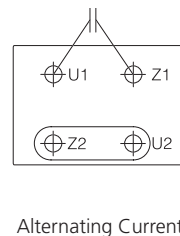
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Connections



3

Connections



Quality Assurance

Quality management according to DIN EN ISO 9001

To ensure constant quality in production and operation, ARGO-HYTOS filter elements undergo strict controls and tests according to the following ISO standards:

ISO 2941	Verification of collapse / burst pressure rating
ISO 2942	Verification of fabrication integrity (Bubble Point Test)
ISO 2943	Verification of material compatibility with fluids
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-Pass-Test (evaluation of filter fineness and dirt-holding capacity)
ISO 23181	Determination of resistance to flow fatigue using high viscosity fluid

Various quality controls during the production process guarantee the leak-free function and solidity of our filters.

Illustrations may sometimes differ from the original. ARGO-HYTOS is not responsible for any unintentional mistake in this specification sheet.