



Description

The FluidAqua Mobil FAM 25/45/60/75/95 series operates according to the principle of vacuum dewatering to separate free and dissolved water as well as free and dissolved gases from hydraulic and lubrication fluids.

By using HYDAC offline filter element technology with its high contamination retention capacity and separation capacity, the unit is extremely economical.

All units have an AquaSensor AS1000 for continuous monitoring of the water content and for controlling the unit. A particle sensor CS1000 can also be fitted as an option for simultaneous monitoring of solid particle contamination.

To increase the dewatering capacity, for high viscosity fluids or for low fluid temperatures an optional heater can be built in or even retrofitted.

The Siemens S7 series of programmable logic control (PLC) in combination with a Siemens control panel in various languages guarantees simple and reliable operation.

Advantages

Extremely low residual water levels, gas levels and particle contamination in the operating fluids make for:

- Longer oil change intervals
- Improved component service life
- Greater machine availability
- Reduction in the LifeCycle Cost (LCC)

FluidAqua Mobil FAM 25/45/60/75/95 Series

Technical Details

FAM	25	45	60	75	95
Flow rates at 50 Hz	≈ 25 l/min	≈ 45 l/min	≈ 60 l/min	≈ 75 l/min	≈ 95 l/min
Flow rates at 60 Hz	≈ 30 l/min	≈ 54 l/min	≈ 72 l/min	≈ 90 l/min	≈ 114 l/min
Permitted fluids**	Fluids compatible with NBR seals: <ul style="list-style-type: none">● Mineral oils to DIN 50524● Gear oils to DIN 51517, 51524 Fluids compatible with FPM (Viton) seals: <ul style="list-style-type: none">● Synthetic esters (HEES) DIN 51524/2● Vegetable oils (HETG, HTG)● HFD fluids (not for pure phosphate ester for which EPDM seals are required).				
Sealing material	see model code				
Filter size of fine filter	OLF-10		2600 MRF 3/11/40		
Filter elements of fine filter xxx= Filtration rating	N10DMxxx		2600RxxxBN4HC/-KB (-V-KB) N40FMxxx		
clogging indicator	VM 2 C.0	VM 2 C.0	VM 2 C.0	VM 2 C.0	VM 2 C.0
Pump type, vacuum pump	Rotary vane vacuum pump		Rotary vane vacuum pump or Water ring vacuum pump		
Pump type, others	Gear pumps				
operating pressure	0 ... 4.5 bar				
Permitted pressure at suction port (without suction hose)	-0.2 ... +1 bar				
Operation viscosity range**	15 ... 350 mm²/sec (without built-in heater) 15 ... 550 mm²/sec (with built-in heater)				
Fluid temperature range**	10 ... 80 °C				
Ambient temperature **	10 ... 40 °C				
Storage temperature range**	10 ... 40 °C				
Relative humidity (ambient)**	max. 90%, non-condensing				
Electrical power consumption					
without heater	≈ 3.5 kW	≈ 4.5 kW	≈ 5.9 kW	≈ 7.5 kW	≈ 7.5 kW
with heater	≈ 10.5 kW	≈ 13.5 kW	≈ 19.5 kW	≈ 25.5 kW	≈ 25.5 kW
Heating output (optional)	≈ 6.75 kW	≈ 9 kW	≈ 13.5 kW	≈ 18 kW	≈ 18 kW
Protection class	IP 54	IP 55	IP 55	IP 55	IP 55
Length of electric cable / plug	10 m / CEE (depending on the nominal voltage, see model code)				
Hoses, length	5 m (mobile FAMs only)				
Material of hoses	see model code				
INLET connection	G 1 1/2"				
OUTLET connection	G 1"	G 1"	G 1 1/2"	G 1 1/2"	G 1 1/2"
Weight when empty	≈ 410 kg	≈ 430 kg	≈ 550 kg	≈ 590 kg	≈ 620 kg
Dimensions (L x W x H (with heater))	1375 x 690 x 1700 (1877)	1375 x 690 x 1700 (1877)	1800 x 850 x 1895 (1960)	1800 x 850 x 1895 (1960)	1800 x 850 x 1895 (1960)
Achievable residual water content	< 100 ppm – hydraulic and heavy oils < 50 ppm – turbine oils (ISO VG 32/46) < 10 ppm – transformer oils ***				

* Maximum specifications given, depends on equipment

** For other fluids, viscosities or temperature ranges, please contact us.

*** Units not suitable for "Online" and "Onload" operation (transformer in operation and connected to grid).

Model code

FAM - 75 - M - 2 - A - 40 - R - H - B - AC1 - 00 - /V

Basic model

FAM = FluidAqua Mobil

Size

25 = 25 l/min 45 = 45 l/min 60 = 60 l/min
75 = 75 l/min 95 = 95 l/min (50 Hz)

Operating medium

M = Mineral oil - NBR seals, NBR hoses, tested with mineral oil*
I = Insulating oil - NBR seals, NBR hoses, tested with insulating oil (Shell Diala)**
X = HFD-R fluids - FPM seals, UPE hoses, tested with HFD-R fluid (Fyrequell)*
B = Rapidly biodegradable oils (based on esters) - FPM seals, NBR hoses, tested with rapidly biodegradable oils based on esters*

Mechanical type

1 = Stationary (with feet)
2 = Mobile (with castors and hose attachment)

Voltage, frequency, power supply

A = 400 V, 50 Hz, 3 Ph	F = 230 V, 60 Hz, 3 Ph	L = 220 V, 50 Hz, 3 Ph
B = 415 V, 50 Hz, 3 Ph	G = 380 V, 60 Hz, 3 Ph	N = 575 V, 60 Hz, 3 Ph ¹⁾
C = 200 V, 50 Hz, 3 Ph ¹⁾	H = 440 V, 60 Hz, 3 Ph ¹⁾	O = 460 V, 60 Hz, 3 Ph ¹⁾
D = 200 V, 60 Hz, 3 Ph ¹⁾	I = 500 V, 50 Hz, 3 Ph	X = other voltages on request
E = 220 V, 60 Hz, 3 Ph	K = 480 V, 60 Hz, 3 Ph ¹⁾	

Filter size of fine filter

10 = OLF 10 Toploader (FAM 25/45 only)
26 = OFU 2600 (FAM 60/75/95 only)
40 = MRF 3/11/40 (FAM 60/75/95 only)

Vacuum pump type

R = Rotary vane vacuum pump
W = Water ring vacuum pump
WA = Water ring vacuum pump with automatic water supply

Heater

H = Heater appropriate for the size (see technical data) for available voltages, see following pages
Z = without heater

Control type

B = Basic
(Control panel language: German/English/French/Spanish/Portuguese (other languages on request))

Measuring equipment

A = AquaSensor
AC1 = AquaSensor + ContaminationSensor ISO4406:1999
AC2 = AquaSensor + ContaminationSensor SAE AS 4059(D)
AC3 = AquaSensor + ContaminationSensor NAS 1638

Modification number

00 = the latest version is always supplied

Supplementary details

No details = standard

V = FPM seals for **operating medium** "M" and "I" (if non-standard seal required for the particular **operating medium** (see Model Code under "Operating medium") : Example:.. FAM-25-M....-/V)

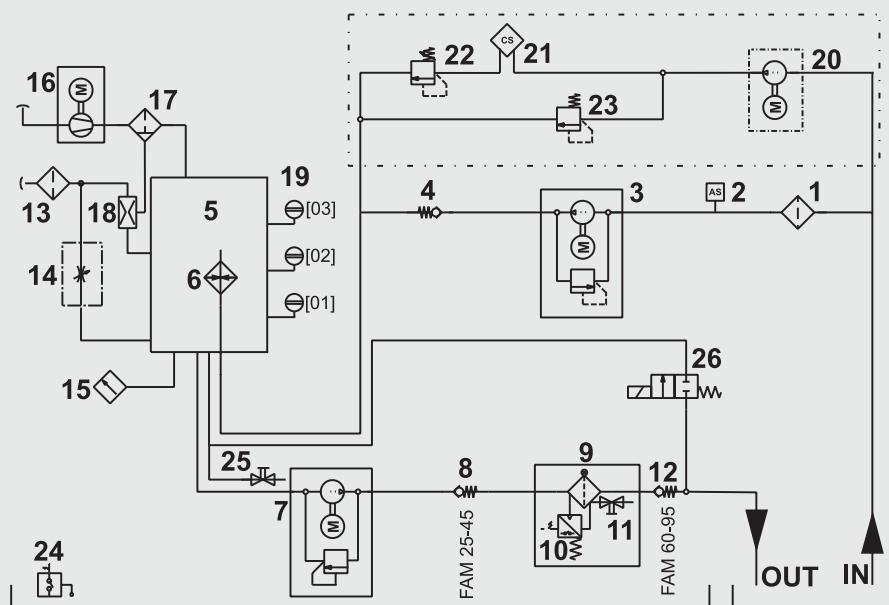
¹⁾ it is delivered without plug

* Residues of test fluid will remain in the unit after testing.

** Units not suitable for "Online" and "Onload" operation (transformer in operation and connected to grid).

Hydraulic circuit diagram

Option: ContaminationSensor CS 1000



- | | |
|---|---|
| 1 Suction filter | 14 Needle valve for vacuum setting |
| 2 AquaSensor AS 1000 | 15 Pressure sensor for measuring the pre-set vacuum |
| 3 Filling pump | 16 Vacuum pump |
| 4 Check valve | 17 Oil mist separator |
| 5 Vacuum column | 18 Vacuum suction nozzle for the oil mist separator |
| 6 Heater (optional) | 19 Level sensor for vacuum column |
| 7 Evacuation pump | 20 Pump for ContaminationSensor CS1000 (optional) |
| 8 Check valve (FAM-25/45 only) | 21 ContaminationSensor CS1000 (optional) |
| 9 Fluid filter for separating solid particles | 22 Pressure relief valve for CS1000 (optional) |
| 10 Differential pressure switch for monitoring the filter | 23 Pressure relief valve for CS1000 (optional) |
| 11 Drain for fluid filter | 24 Leakage indicator for oil drip tray |
| 12 Check valve (only for FAM-60/75/95) | 25 Drain for vacuum column |
| 13 Air filter and dryer | 26 Return valve |

Type of vacuum pump

The vacuum pump used for sizes FAM 25/45 is an oil-lubricated rotary vane vacuum pump.

For FAM 45/60/95 we recommend the reliable water ring vacuum pump, which only requires mains water as the operating medium, instead of a special vacuum pump oil.

Since the vacuum produced is 100% oil-free, it has many advantages: a high level of operating reliability, excellent compatibility with water vapour and condensate, low operating costs and cool, clean and, above all, odourless discharged air.

In addition some of the water removed from the oil is recovered within the water ring vacuum pump and returned to the service water circuit of the pump. Depending on the operating conditions, the water ring vacuum pump is therefore completely self-sufficient in water.

Sizing

As a rough guide, the FluidAqua Mobil can be sized according to the tank volume of the system.

Tank volume	FAM
< 2,000 l	FAM 10 *
2,000 – 7,000	FAM 10/15 *
7,000 – 15,000	FAM 25
15,000 – 25,000	FAM 45
25,000 – 35,000	FAM 60
35,000 – 45,000	FAM 75
> 45,000	FAM 95

* see brochure no. 7.949.1 FluidAqua Mobil FAM 10

In general, it must however be noted that sizing will depend on the application, the fluid, the temperature of the fluid and the ambient temperature, the fluid quantity and the water ingress into the system. These have a great affect on the dewatering capacity. Therefore the specifications can only serve as an indication.

	Dewatering rate	
Water content	↑	↑
Fluid temperature	↑	↑
Detergent additives	↑	↓
Flow rate of the FAM	↑	↑

Heater option

By using the built-in heater, the dewatering capacity can be increased, particularly in the case of high viscosity fluids or fluids at low temperatures.

If the temperature of the fluid is raised by 10 °C then the dewatering capacity increases by up to 50 %. The ideal temperature for dewatering is between 50 - 60 °C.

Generally speaking, for operating viscosities of between 350 - 550 mm²/sec the heater option must be selected and the heater must be in operation.

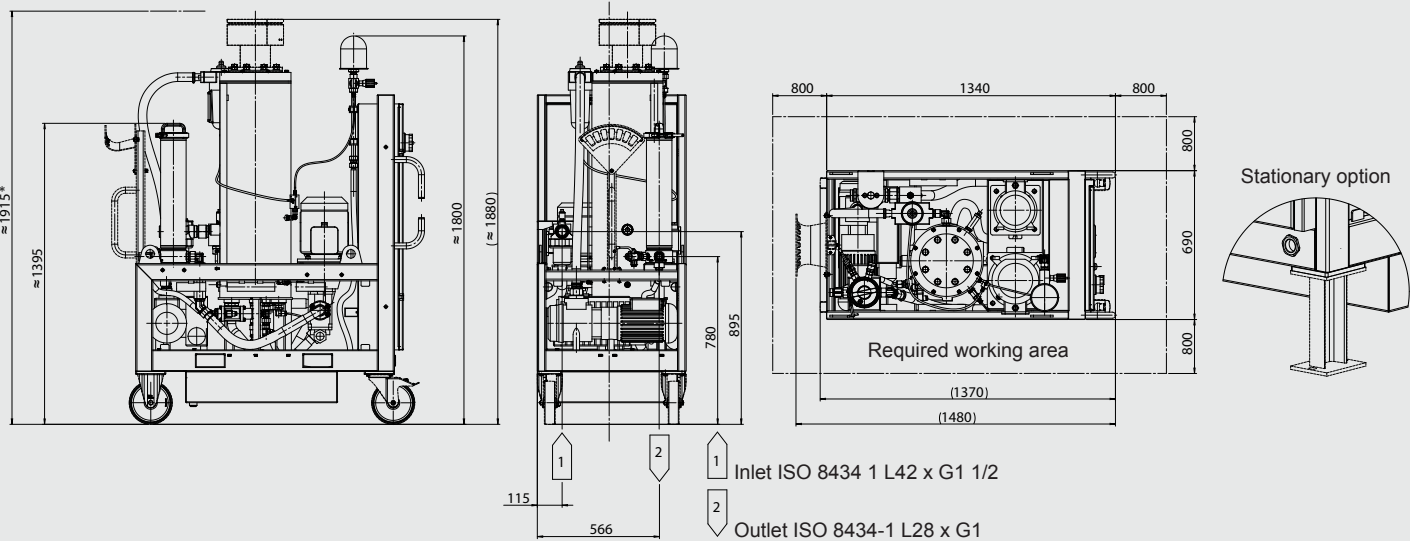
Available voltages and required external fuse

FAM size \ Voltages	FAM - 25	FAM - 25 with heater	FAM - 45	FAM - 45 with heater	FAM - 60	FAM - 60 with heater	FAM - 75	FAM - 75 with heater	FAM - 95	FAM - 95 with heater
A = 400 V, 50 Hz, 3 Ph	16 A	32 A	16 A	32 A	32 A	63 A	32 A	63 A	32 A	63 A
B = 415 V, 50 Hz, 3 Ph	16 A	32 A	16 A	32 A	32 A	63 A	32 A	63 A	32 A	63 A
C = 200 V, 50 Hz, 3 Ph	32 A	63 A	63 A		63 A		63 A		63 A	
D = 200 V, 60 Hz, 3 Ph	32 A	63 A	63 A		63 A		63 A		63 A	
E = 220 V, 60 Hz, 3 Ph	32 A	63 A	32 A	63 A	63 A		63 A		63 A	
F = 230 V, 60 Hz, 3 Ph	32 A	63 A	32 A	63 A	63 A		63 A		63 A	
G = 380 V, 60 Hz, 3 Ph	16 A	32 A	16 A	32 A	32 A	63 A	32 A	63 A	32 A	63 A
H = 440 V, 60 Hz, 3 Ph	16 A	32 A	16 A	32 A	32 A	63 A	32 A	63 A	32 A	63 A
I = 500 V, 50 Hz, 3 Ph	16 A	32 A	16 A	32 A	32 A	63 A	32 A	63 A	32 A	63 A
K = 480 V, 60 Hz, 3 Ph	16 A	32 A	16 A	32 A	32 A	63 A	32 A	63 A	32 A	63 A
L = 220 V, 50 Hz, 3 Ph	32 A	63 A	32 A	63 A	63 A		63 A		63 A	
N = 575 V, 60 Hz, 3 Ph	16 A	32 A	16 A	32 A	32 A	63 A	32 A	63 A	32 A	63 A
O = 460 V, 60 Hz, 3 Ph	16 A	32 A	16 A	32 A	32 A	63 A	32 A	63 A	32 A	63 A

 Special edition, only on request.

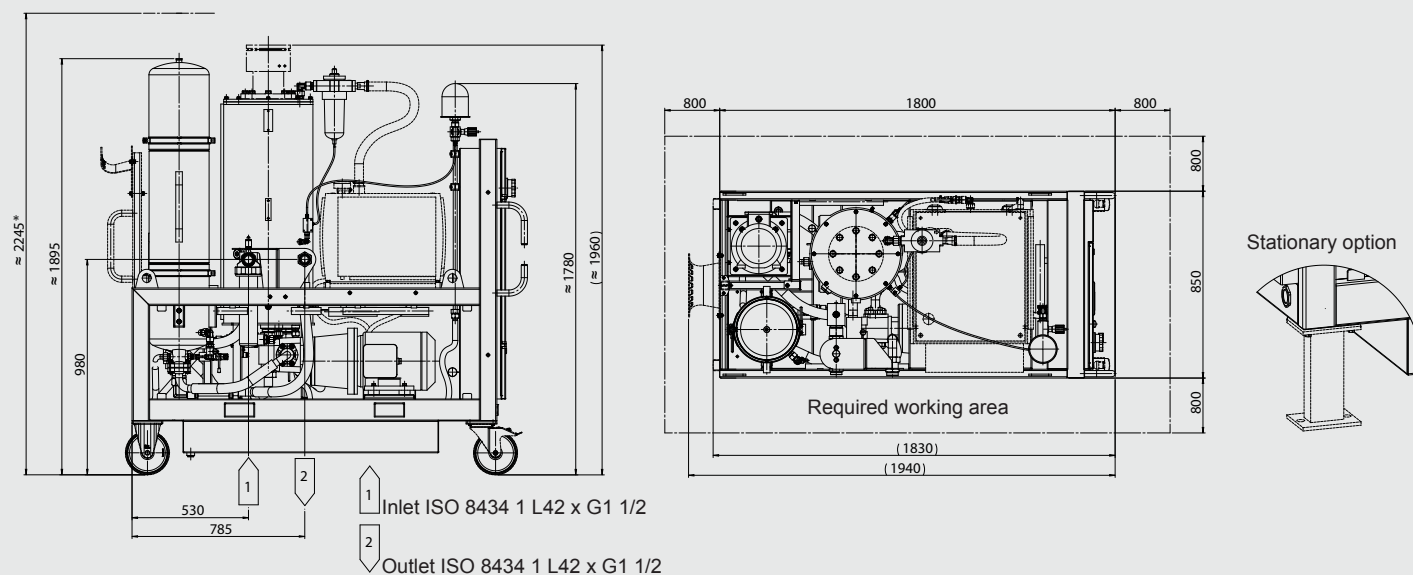
Dimensions

FAM-25/45



Dimensions

FAM-60/75/95



Filter elements for Suction filter

The suction filter is supplied fitted with a filter element.

FAM-25/45

1 filter element of the type 0160 D 200 W/HC is required.

Part number	Description	Filtration rating	Seal
1250304	0160 D 200 W/HC	200µm	NBR
1265447	0160 D 200 W/HC/-V	200µm	FPM

FAM-60/75/95

1 filter element of the type 0280 D 200 W/HC is required.

Part number	Description	Filtration rating	Seal
1269748	0280 D 200 W/HC	200µm	NBR
1271978	0280 D 200 W/HC/-V	200µm	FPM

Filter elements for fine filter

Filter elements for the fine filter must be ordered separately and must be fitted before initial operation on site.

FAM-25/45

OLF 10: 1 filter element of the type N10DMxxx is required.

Part number	Description	Filtration rating	Seal
3539235	N10DM002	2 µm	FPM
3539237	N10DM005	5 µm	FPM
3539238	N10DM010	10 µm	FPM
3539242	N10DM020	20 µm	FPM

FAM 60/75/95

OFU 2600: 1 filter element of the type 2600RxxxBN4HC/-KB (-V-KB) is required.

Part number	Description	Filtration rating	Seal
1263071 (1263784)	2600R003BN4HC/-KB (-V-KB)	3 µm	NBR (FPM)
1263072 (1263785)	2600R005BN4HC/-KB (-V-KB)	5 µm	NBR (FPM)
1263073 (1263786)	2600R010BN4HC/-KB (-V-KB)	10 µm	NBR (FPM)
1263074 (1263787)	2600R020BN4HC/-KB (-V-KB)	20 µm	NBR (FPM)

MRF 3/11/40: 11 filter elements of the type N40MRxxx-PES1F are required.

Part number	Description	Filtration rating	Seal
3509897	N40FM-P001-PES1F	1 µm	FPM
3536452	N40FM-P003-PES1F	3 µm	FPM
3506155	N40FM-P005-PES1F	5 µm	FPM
3506053	N40FM-P010-PES1F	10 µm	FPM
3491730	N40FM-P020-PES1F	20 µm	FPM

Items supplied

- FluidAqua Mobil, ready-for-connection (without cover panel package, see Accessories).
- Suction and pressure hoses supplied with mobile version
- Vacuum pump oil (1 litre) for initial filling of rotary vane vacuum pump (only FAM-x-x-x-x-R-...)
- Key, square 6 mm (for switch cabinet and cover panel)
- Oil filter wrench for suction filter
- Technical documentation consisting of:
 - Operating and Maintenance Manual
 - Electrical circuit diagram
 - Test certificate
- CE declaration of conformity

Accessories

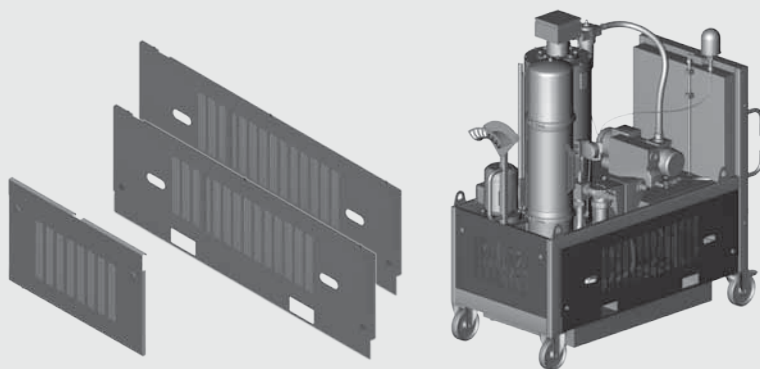
- Cover panel package: 2 x side sections, 1 x rear cover

FAM-25/45

Part number	Description
3334212	Cover panel FAM 25/45

FAM-60/75/95

Part number	Description
3334177	Cover panel FAM 60/75/95



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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