

HYDAC INTERNATIONAL



FluidControl Unit FCU 1000 Series

Description

The FluidControl Unit FCU 1000 is a portable service unit, designed for the temporary measurement of solid particle contamination, water saturation and fluid temperature in hydraulic systems as well as Diesel fuels.

The integrated pump and the hoses contained in the FCU 1000 series scope of delivery allow operation in

- control circuits (oil hydraulics only)
- pressure circuits (oil hydraulics only) and
- pressureless reservoirs (oil hydraulics and Diesel fuels).

All measurement data are stored with time stamp in files (measurement value file) and folders (measurement points) in the internal data memory of the FCU 131X.

The measured values can be transmitted to a PC or mobile devices and analyzed using HYDAC's own FluidMonitoring Software FluMoS.

Applications

- Hydraulic systems
- Diesel storage, diesel transfer and diesel filling applications, e.g. mines, refineries, ports of transshipment, emergency power systems (emergency power units), mobile machines, etc.
- Service
- Maintenance

Advantages

- Suitable for hydraulic fluids up to 350 mm²/s
- Suitable for Diesel fuels (suction mode only) according to DIN EN 590 and ASTM D975 4-D
- Cleanliness classes to ISO and SAE or NAS
- Integrated data interfaces (wireless and cable) for direct connection to HYDAC's FluidMonitoringSoftware FluMoS
- USB interface for data storage

Technical Details

		FCU 1210	FCU 1310	FCU 1315
General data				
Type of operation	Periodic intermittent operation, S3 Relative duty cycle 40 % (S3, to DIN EN 60034/VDE 0530)	x	x	x
Self diagnostics	Continuously with error display via status LED and display	x	x	x
Display	LED, 6 / 4 / 4-digit, each with 17 segments LED 6 with 17 segments	—	x	x
Measured variables	Solid Contamination to ISO 4406, SAE AS 4059 NAS 1638	x	x	x
	Water saturation in %	—	x	x
	Temperature °C / °F	—	x	x
Measurement ranges	Solid Contamination ISO 9/8/7 to ISO 25/24/23	x	x	x
	Water saturation 0 to 100 %	—	x	x
	Temperature -25 to 100°C	—	x	x
Calibration accuracy	Contamination ± ½ ISO code in calibrated range of ISO 13/11/10 to ISO 23/21/18	x	x	x
	Water saturation ± maximal 2% (Full scale)	—	x	x
	Temperature ± maximal 2% (Full scale)	—	x	x
Material of seal	FPM	x	x	x
Ambient temperature range:	0 to +45 °C / 32 to 113 °F	x	x	x
Storage temperature range	-40 to +80 °C / -40 to 176 °F	x	x	x
Protection class	IP50 in operation IP67 when closed	x	x	x
Weight (without accessories)	≈ 13 kg	—	x	x
	≈ 9 kg	x	—	—
Hydraulic specifications				
- With hydraulic fluids Operating pressure	IN: - 0.5 to 45 bar / -7.25 to 650 psi OUT: 0 to 0.5 bar / 0 ... 7.5 psi	x	x	x
	with adapter for pressure lines IN: 15 to 345 bar / 217 to 5000 psi OUT: 0 to 0.5 bar / 0 to 7.5 psi	x	x	x
- With Diesel according to DIN EN 590 / ASTM D975 4-D	IN: 0 bar / 0 psi OUT: 0 bar / 0 psi	—	—	x
Pressure resistant up to max.	345 bar / 5000 psi	x	x	x
Sensor flow rate	≈ 180 ml/min (viscosity-dependent)	x	x	x
Max. suction height	0.5 m	x	x	x
Permitted viscosity range	2 to 350 mm ² /s; 33 to 1622 Sus (for hydraulic oils up to ISO VG 68)	x	x	x
Temperature range of medium	0 to +70 °C / 32 to 158 °F, but T _{max} (Fluid) < T _{flash} (Fluid) - 10 °C	x	x	x
Electrical data				
Supply voltage	24 V DC ±20%, residual ripple < 10% The FCU must not be used with vehicle supply systems without load dump protection of maximum 30 V DC.	x	x	x
Max. power / current consumption	100 watts / 4000 mA	x	x	x
Interfaces	USB (A) for memory stick and 5 pole, M12x1, pin	—	x	x
	Bluetooth 1.2, Class 3 (only HYDAC Sensor Interface - HSI)	—	x	x

Model code

Type

FCU = FluidControl Unit

Series

1 = 1000 series, 4 particle size channels

Contamination codes

2 = ISO 4406:1999; SAE AS 4059 (D) / > 4 $\mu\text{m}_{(c)}$ > 6 $\mu\text{m}_{(c)}$ > 14 $\mu\text{m}_{(c)}$ > 21 $\mu\text{m}_{(c)}$
3 = ISO 4406:1987; NAS 1638 / 2-5 μm , 5-15 μm , 15-25 μm , > 25 μm
can be switched to
ISO 4406:1999; SAE AS 4059 (D) / > 4 $\mu\text{m}_{(c)}$ > 6 $\mu\text{m}_{(c)}$ > 14 $\mu\text{m}_{(c)}$ > 21 $\mu\text{m}_{(c)}$

Housing

1 = for mobile use (plastic case with attached pocket for hoses and cables)

Media

0 = Hydraulic- and Lubrication fluids based on mineral oils
5 = Hydraulic- and Lubrication fluids based on mineral oils as well as Diesel according to DIN EN 590 / ASTM D975 4-D

Options

4 = with integrated pump

Supply voltage

U = 24 V DC

Integral sensor

AS = AquaSensor AS 1000 (only 131X)

Z = without

Power supply adapter

1 = 100 ... 240 V AC / 50/60 Hz / 1 Phase / 5000 mA (Europe, USA/Canada, UK, Australia, Japan)

Items supplied

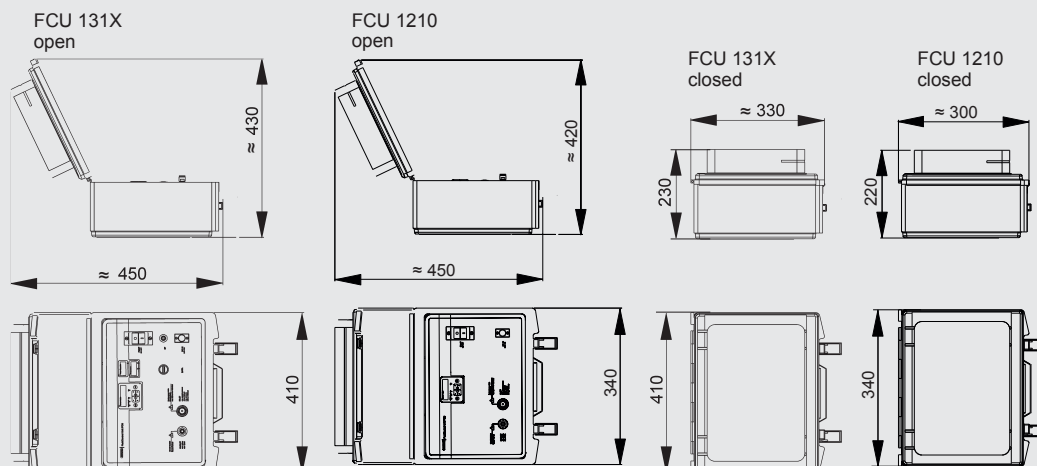
- FluidControl Unit FCU 1000
- mains adapter with power supply cable for Europe, USA/Canada, UK, Australia and Japan
- Adapter for pressure lines
- Adapter for suction hose (only FCU 1315)
- INLET pressure hose with threaded connection for measurement coupling type 1620, black, length = 2 m
- INLET suction hose, open end, transparent, length = 2 m (only FCU 1315)
- INLET suction hose, open end, transparent, length = 0,3 m (only FCU 1210 and FCU 1310)
- INLET Bottle Sampling suction pipe, angled
- OUTLET return hose, open end, transparent, length = 2 m
- Ground cable; ESD protection (only FCU 1315)
- operating and maintenance manual/calibration certificate
- USB memory stick (only FCU 131X) contains operating and maintenance manual in additional languages
(PDF viewer software required for viewing)

Accessories

- BatteryPack (part no.: 350 4605)
- Field Verification Start-Up Kit (part no.: 344 3253)
- Field Verification Kit (part no.: 344 3249)
- Cable with universal plug (for cigarette lighter or on-board electrical system), length = 10 m (part no.: 330 6236)

Dimensions

(All dimensions in mm)



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.