



FluidControl Unit FCU 1000 Series

Description

The FluidControl Unit FCU 1000 is a portable service instrument designed for short-term measurement of particle contamination, water saturation (in %) and fluid temperature in hydraulic systems and diesel fuels.

The integrated pump and hoses supplied with the FCU 1000 series enable it to be used in:

- control circuits,
- pressure circuits and
- unpressurised containers

In the FCU 1000's internal memory, all measured data (ISO, SAE/NAS, % water saturation and temperature in °C or °F) is time stamped and stored in files (measured value file) and folders (test points).

The measured values can be stored, transmitted to a PC and analysed 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 units, mobile machines, etc.)
- Service
- Maintenance

Advantages

- Suitable for hydraulic fluids up to 350 mm²/s (hydraulic fluids up to ISO VG 68)
- Suitable for diesel fuels according to DIN EN 590 and ASTM D975 4-D
- Cleanliness classes to ISO and SAE or NAS
- Integrated data interfaces (wireless and wired) for direct connection to the HYDAC FluidMonitoring Software FluMoS
- USB interface for transferring measured data to a USB memory stick

Technical details

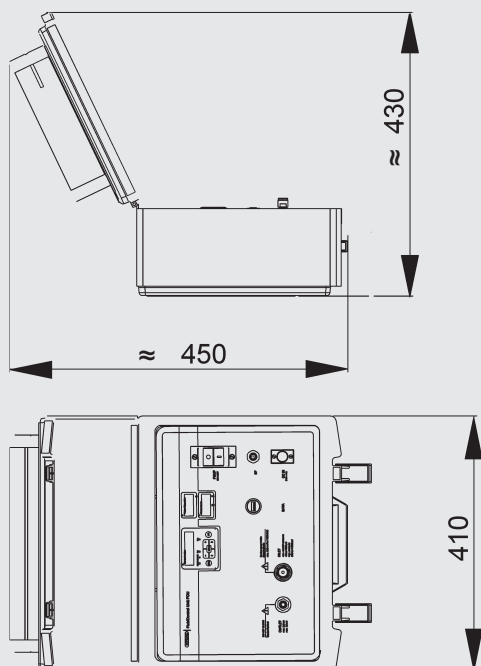
		FCU 1310	FCU 1315
General data			
Type of operation	Periodic intermittent operation, S3 Relative duty cycle 40 % (S3, to DIN EN 60034/VDE 0530)	x	x
Self diagnostics	Continuous with error display via status LED and display	x	x
Display	LED, 6 / 4 / 4-digit, each with 17 segments	x	x
Measured variables	Particle contamination to ISO 4406, SAE AS 4059 NAS 1638	x	x
	Water saturation in %	x	x
	Temperature °C / °F	x	x
Measurement ranges	Particle contamination ISO 9/8/7 to ISO 25/24/23	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
	Water saturation ± maximum 2% (full scale)	x	x
	Temperature ± maximum 2% (full scale)	x	x
Sealing material	FPM	x	x
Ambient temperature range	0 to 45 °C / 32 ... 113°F	x	x
Storage temperature range	-40 to 80 °C / -40 ... 176°F	x	x
IP class	IP50 in operation IP67 when closed	x	x
Weight (without accessories)	≈ 13 kg	x	x
Hydraulic specifications			
- Operation with hydraulic fluids Operating pressure	IN: - 0.5 to 45 bar / - 7.25 to 650 psi OUT: 0 to 0.5 bar / 0 to 7.5 psi	x	x
	With high-pressure adapter IN: 15 to 345 bar / 217 to 5000 psi OUT: 0 to 0.5 bar / 0 to 7.5 psi	x	x
- Operation with diesel acc. to DIN EN 590 / ASTM D975 4-D	IN: 16 bar / 232 psi OUT: 0 to 0.5 bar / 0 to 7.5 psi	—	x
Pressure resistant up to max.	345 bar / 5000 psi	x	x
Measurement flow rate	≈ 180 ml/min (viscosity-dependent)	x	x
Max. suction height	0.5 m	x	x
Permitted viscosity range	2 to 350 mm ² /s; 33 to 1622 Sus	x	x
Temperature range of medium	0 to 70 °C / 32 to 158 °F, however T _{max} (fluid) < T _{flash pt.} (fluid) -10 °C	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
Max. power/current consumption	100 watts / 4000 mA	x	x
Interfaces	USB (A) for USB memory stick and 5-pole male connector, M12x1, pin	x	x
	Bluetooth 4.2, Class 3 (only HYDAC Sensor Interface – HSI)	x	x

Model code

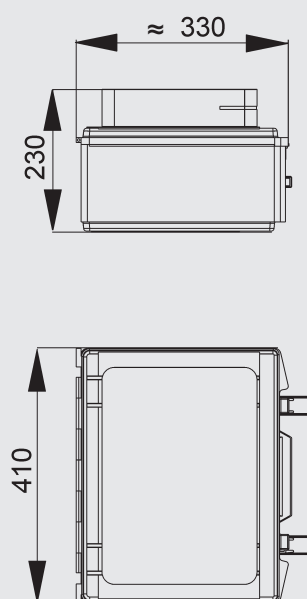
	FCU	1	3	1	5	-	4	-	U	-	AS	-	1
Type													
FCU =	FluidControl Unit												
Series													
1 =	1000 series, 4 particle size channels												
Contamination codes													
3 =	ISO 4406:1987; NAS 1638 / 2-5 μm , 5-15 μm , 15-25 μm , > 25 μm can be switched over to ISO 4406:1999; SAE 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 portable use (plastic case with external compartment for hoses and cables)												
Media													
0 =	mineral oil-based hydraulic and lubrication fluids												
5 =	mineral oil-based hydraulic and lubrication fluids as well as diesel acc. 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 to 240 V AC / 50/60 Hz / 1 phase / 5000 mA (Europe, USA/Canada, UK, Australia, Japan)												

DIMENSIONS

FCU 131X
open



FCU 131X
closed



(All dimensions in mm)

Scope of delivery

- FluidControl Unit FCU 1000
- Electrical network adapter with connector plug for Europe, USA/Canada, UK, Australia, Japan
- High-pressure adapter
- Adapter for suction line (FCU 1315 only)
- INLET pressure hose with threaded connection for measurement coupling type 1620, black, length = 2 m
- INLET suction hose, open end, clear-transparent, length = 2 m (FCU 1315 only)
- INLET suction hose, open end, clear-transparent, length = 0.3 m (only FCU 1310)
- INLET bottle sampling suction pipe, angled
- OUTLET return hose, open end, clear-transparent, length = 2 m
- Earth connection cable for equipotential bonding between the FCU and test item (FCU 1315 only)
- Operating and Maintenance Instructions / certificate of calibration
- USB memory stick containing Operation and Maintenance Instructions in additional languages (PDF viewer software is needed for viewing)

Accessories

- Battery pack (part no.: 350 4605)
- Cable with universal plug (for cigarette lighter or electrical supply connection), length = 10 m (part no.: 330 6236)

NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and/or operating conditions not described please contact the relevant technical department.

Subject to technical modifications.