



## 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 reservoirs

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 mm<sup>2</sup>/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

## FluidControl Unit FCU 1000 Series

### Technical details

		FCU 1310	FCU 1315
<b>General data</b>			
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
<b>Hydraulic specifications</b>			
- 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 <sup>2</sup> /s; 33 to 1622 Sus (for hydraulic oils up to ISO VG 68)	x	x
Temperature range of medium	0 to +70 °C / 32 to 158 °F, however T <sub>max</sub> (fluid) < T <sub>flash pt.</sub> (fluid) - 10 °C	x	x
<b>Electrical data</b>			
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 code

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 µm<sub>(c)</sub> > 6 µm<sub>(c)</sub> > 14 µm<sub>(c)</sub> > 21 µm<sub>(c)</sub>

### 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 according to DIN EN 590 / ASTM D975 4-D

### Options

4 = with integrated pump

### Supply voltage

U = 24 V DC

### Integrated sensor

AS = AquaSensor AS 1000 (131X only)

Z = no sensor

### Power supply adapter

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

## Items supplied

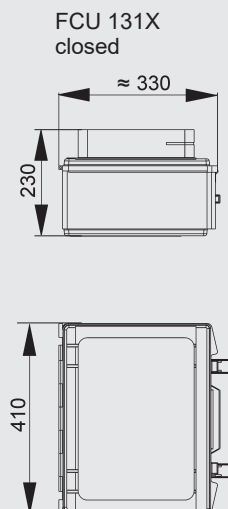
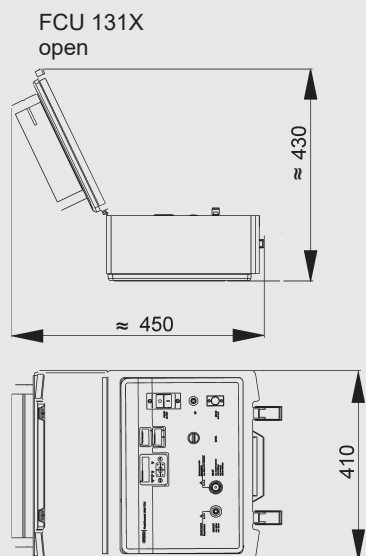
- FluidControl Unit FCU 1000
- mains adapter with power supply cable for Europe, USA/Canada, UK, Australia and Japan
- high-pressure adapter
- adapter for suction line (FCU 1315 only)
- INLET pressure hose with threaded connection for test point type 1620, black, length = 2 m
- INLET suction hose, open end, transparent, length = 2 m (FCU 1315 only)
- INLET suction hose, open end, transparent, length = 0.3 m (FCU 1310 only)
- INLET bottle sampling suction tube, angled
- OUTLET return hose, open end, transparent, length = 2 m
- earth connection cable for equipotential bonding between the FCU and test item (FCU 1315 only)
- operating and maintenance manual/certificate of calibration
- USB memory stick contains operation and maintenance instructions in additional languages (PDF viewer software required 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)

## 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.

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