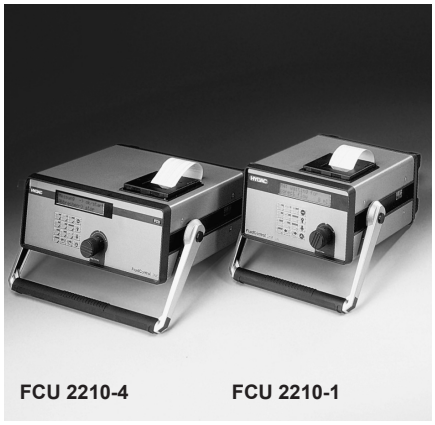


FCU 2210-4 FCU 2210-1

# FluidControl Unit
## FCU 2000 Series

## Description
The Fluid Control Unit FCU 2000 is a portable service instrument for measuring particle contamination in hydraulic and lubrication systems.

The values are measured using infrared technology and are given according to ISO 4406, SAE 4059 and NAS 1638 classifications.

## Applications
- Hydraulic and lubrication systems
- Servicing
- Test rigs
- Bottle sampling analysis
- Tank analysis

## Advantages
- Robust design
- Cleanliness classes according to ISO 4406, SAE 4059 and NAS 1638
- Integrated graphics-capable printer
- Data output on display or via connection to a PC
- RS232 or RS485 interface

## Technical specifications

| | FCU 2xxx -1 | FCU 2xxx -4 |
|---|---|---|
| **Continuous display of measured values via display (LCD)** | | |
| Self-diagnostics | Continuous with error indication on LCD | |
| Measurement range (calibrated) | ISO 12/10/9 ... 23/21/18<br>The instrument is calibrated within this range.<br>Will display up to class ISO 25/23/21. | |
| Data memory (battery back-up) | 3000 measurements | |
| Operating pressure:<br>Pressure inlet<br>Return line outlet | <br>INLET: 1 - 350 bar, with clean filter element<br>OUTLET: max. 3 bar | |
| Ports | INLET (Pressure): Minimess test coupling type 1604;<br>the FCU can be connected to<br>standard 1620-type connectors using the test hose supplied<br>OUTLET: male coupling DN 7<br>INLET (suction): male shut-off coupling DN 6.4 | |
| Measurement flow rate | 50 - 150 ml/min | |
| Total flow rate | 50 ... 800 ml/min (depending on pressure) | |
| Permitted viscosity range | 1 ... 1000 mm²/s | 1 ... 1000 mm²/s<br>1 ... 150 mm²/s<br>(suction port, continuous duty)<br>150 ... 350 mm²/s<br>(suction port, short-term duty) |
| Fluid temperature range | 0 ... +70 °C | |
| Supply voltage FCU | 24 VDC, ± 25% | |
| Power consumption | 25 Watt max. | 100 Watt max. |
| Built-in printer | Dot-matrix printer | |
| Serial interface | Standard: RS232<br>Optional: RS485 | |
| Ambient temperature range | 0 ... +55 °C | |
| Storage temperature range | -20 ... +85 °C | |
| Relative humidity | max. 90%, non-condensing | |
| Protection rating | III (safety extra-low voltage) | |
| Protection class | IP40 | |
| Weight | ≈ 11.3 kg | ≈ 15.8 kg |
| Operating time using battery | ≈ 6 hours | ≈ 6 hours without pump<br>≈ 2 hours with pump |

## Model code

**FCU 2 2 1 0 – 4 – M – /-BUS**

**Type**
FCU = FluidControl Unit

**Resolution**
2 = 4 particle size channels

**ISO Code Format**
0 = ISO 4406 : 1987; NAS 1638 / >5 µm >15 µm>25 µm>50 µm
1 = ISO 4406 : 1987; NAS 1638 / >2 µm >5 µm >15 µm >25 µm
2 = ISO 4406 : 1999; SAE AS 4059 (D) / >4 $\mu m_{(c)}$ >6 $\mu m_{(c)}$ >14 $\mu m_{(c)}$>21 $\mu m_{(c)}$

**Housing**
1 = for portable use

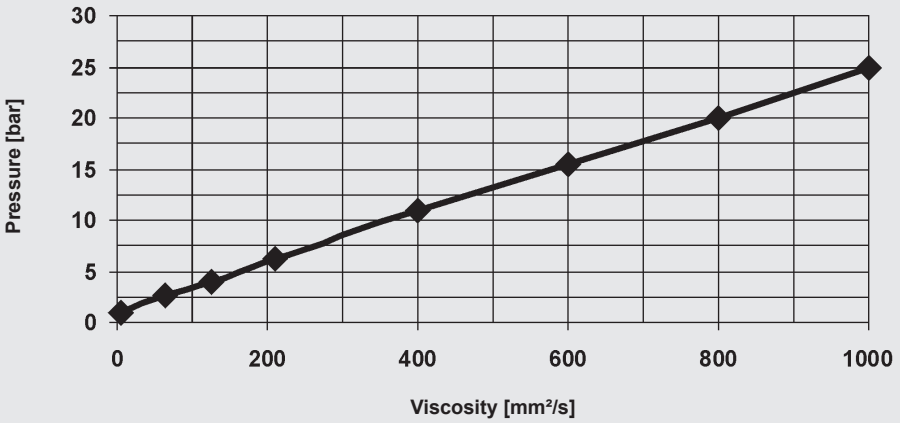
**Fluids**
0 = for standard mineral oils
1 = for phosphate esters (HFD-R)

**Options**
1 = standard, without options
4 = with integral pump (not for phosphate esters (HFD-R))

**Supply voltage mains adapter**
K = 120VAC / 60 Hz / 1 Phase, USA/CDN
M = 230VAC / 50 Hz / 1 Phase, Europe
N = 240VAC / 50 Hz / 1 Phase, UK
O = 240VAC / 50 Hz / 1 Phase, Australia
P = 100VAC / 50 Hz / 1 Phase, Japan

**Supplementary details**
No details = standard
- BUS = RS485 interface instead of RS232

## Pressure required at FCU high-pressure port*




* For a flow rate of 100 ml/min, flow control valve fully open, new filter element

## Items supplied

– FCU
– Power supply adapter
– High pressure inlet hose DN 4 (2m long)
– Low pressure outlet hose DN 7 (2m long)
– Operating manual
– Calibration certificate
– PC software package CoCoS Light
– Connection cable FCU / PC

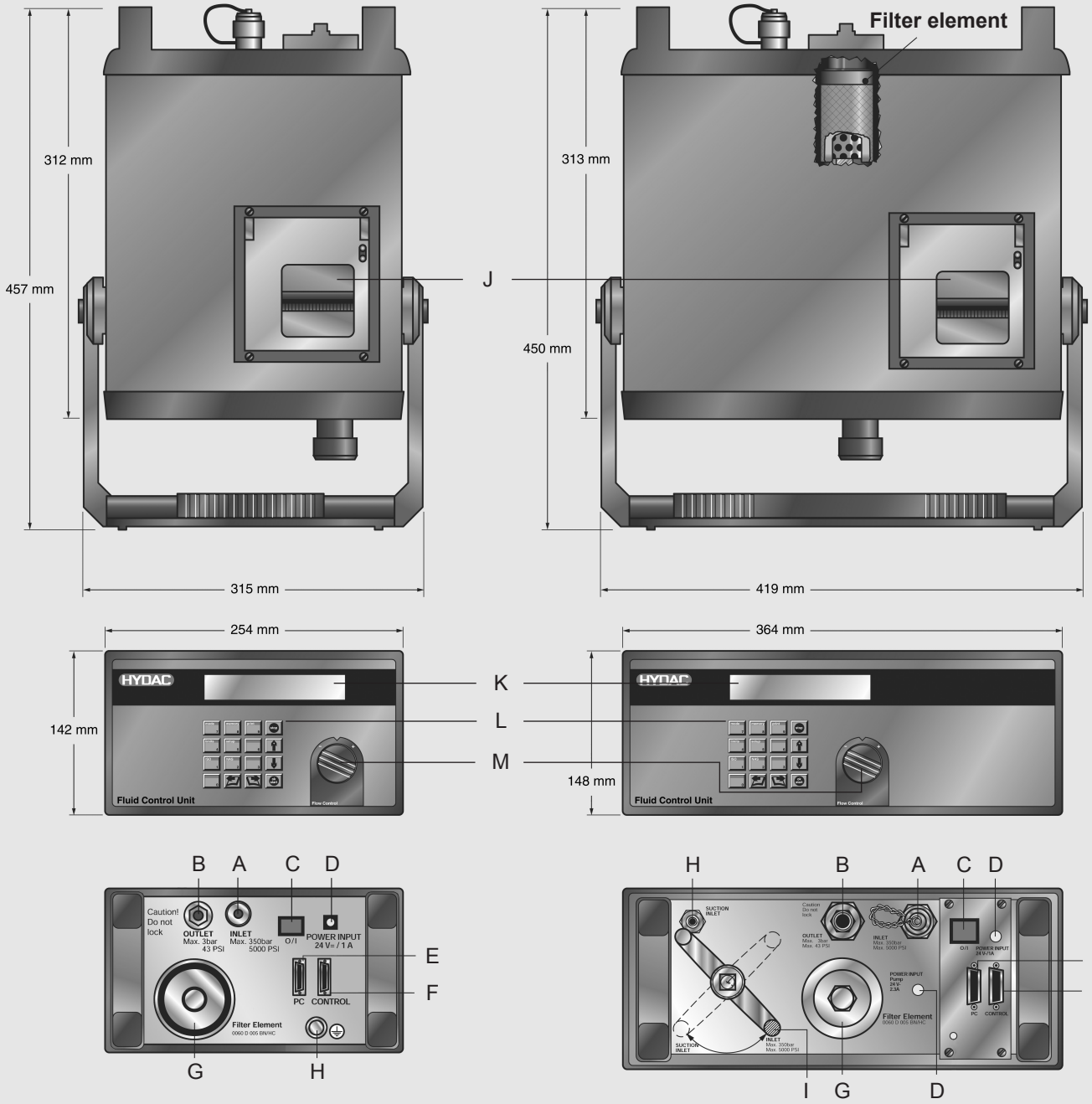
## Additional for FCU 2xxx - 4

– Power supply adapter for integrated pump
– Suction hose DN 6 (1m long)
– Suction hose DN 6 (0.2m long)

## Accessories

– Reservoir Extraction Unit REU
– Inlet and outlet hoses 5 m length
– PC software package CoCoS Professional
– Transport case (aluminium)

## Dimensions




A = High pressure port
B = Outlet
C = On/Off switch
D = Power input 24 Volt
E = Serial port for PC connector
F = Control port
G = Cover for filter
H = Suction port
I = Change-over ball valve high pressure/suction port
J = Dot-matrix printer
K = LCD
L = Keypad
M = Flow control valve

## Note

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

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

Subject to technical modifications.

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