

FCU 2000 Series Fluid Control Units



FCU 2000-1



FCU 2000-4

Description

The FCU 2000 Series Fluid Control Unit is the second generation of diagnostic equipment for measuring and controlling contamination in hydraulic and lubrication systems. These Units are portable, which makes them ideal for use on multiple machines in a plant, or in-the-field use. The rugged construction incorporates a folding handle which also serves as a prop stand for optimal viewing.

Online Measurement

A key advantage of the FCU is that it allows the user to measure changes in contamination instantaneously as they occur. The unit continuously detects solid particles and displays the results in cleanliness classes according to ISO 4406 (1992 or 1999), SAE AS 4059 or NAS 1638 standards.

Tank Extraction

The FCU 2000-4 model is equipped with a specific suction inlet and an integrated pump for reservoir, in addition to the standard online measurement capability.

Comprehensive Reporting

Measurements are automatically stored in memory and can be used to print tabular and graphic reports in a wide variety of formats. Although extensive functions for data recording and documentation are available, clear built-in menus make it easy for a user to develop highly informative reports with minimal training.

PC Capability

For many applications, the built-in printer will produce the necessary reports. In addition, data can be transmitted to a PC via an RS232C interface, providing the user with flexibility in analysis with the supplied CoCos light software package, or with standard packages like MS-EXCEL.

Contamination Control

By means of control software, the user can program the FCU to activate an auxiliary filtration unit through built-in relays when contamination reaches a specified maximum level. This makes it possible to control system cleanliness reliably and automatically.

The FCU also can be programmed to de-activate an off-line unit when contamination reaches a preset target level, an especially useful feature in flushing operations.

Applications

The versatility and simplicity of the FCU 2000 Series is advantageous in various applications:

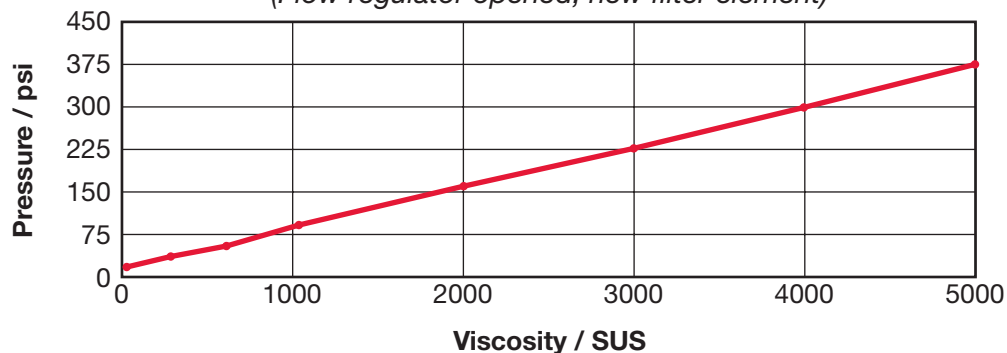
- Preventive Maintenance
- Field Service
- System Production and Testing
- Fluid Cleanliness Documentation
- Flushing Process Control

Technical Details

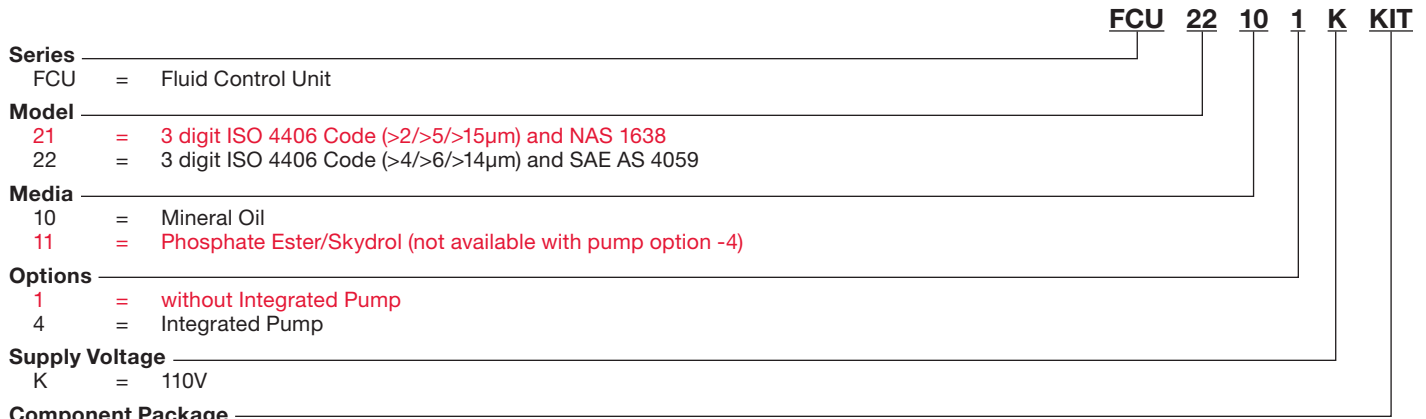
	FCU 2100	FCU 2200
Particle size channels	2µm / 5µm / 15µm / 25µm	4µm _(c) / 6µm _(c) / 14µm _(c) / 21µm _(c)
Measurement Range	NAS 2 to 12	SAE 2 to 12
	ISO 13/11/10 to 23/21/18	ISO 13/11/10 to 23/21/18
Indication Range	NAS 2 to 15	SAE 2 to 15
	ISO 12/10/9 to 25/23/21	ISO 12/10/9 to 25/23/21
Accuracy	± 1/2 class (ISO, NAS, SAE)	
Calibration	ISO 4402	ISO 11943
Recalibration	Recommended every 2 years	
Log Memory	Can accommodate up to 3000 measured values / 100 Test Headers	
Inlet Operating Pressure	45 to 5000 psi	
Outlet Flow Rate	800 ml/min max	
Outlet Operating Pressure	max 45 psi back pressure	
Measurement Flow Rate	50 - 150 ml/min	
Permissible Viscosity Range	1 to 1000 cSt (<i>inlet port, see graph below</i>) / 1 to 150 cSt (<i>suction port, continuous operation</i>) / 150 to 350 cSt (<i>suction port, brief operation, 10 min.</i>)	
Fluid Temperature Range	32° to 160°F	
Supply Voltage	24 V DC, ± 25% or 110 V AC with supplied adapter	
Wattage	25 W max	100 W max
Battery Powered Operating Duration	Measurement without pump or pump supplied externally: up to 6 hours	
Serial Port	RS 232 with 15-pin Sub D plug	
Ambient Temperature Range	0° to 130° F	
Storage Temperature Range	-4° to 185° F	
Relative Humidity	max 90%, non-condensing	
Protection Type	IP40	
Weight	approx. 30 lbs (13.6 kg)	

The minimum inlet pressure required to achieve a flow rate of 100 ml/min for a given viscosity can be found by referring to the graphic below. The required inlet pressure increases with increasing clogging of the filter element.

**Pressure Required at the FCU High-Pressured Port
(inlet) for a Flow Rate of 100 ml/min
(Flow regulator opened, new filter element)**



Model Code



- Minimess Adapter to SAE-6
 - One Inlet and One Outlet Hose
 - CoCos Light Software Package (CD supplied with Unit – Also available for download from www.hydac.com)
 - PC Cable
 - Power Adapter
 - Instruction Manuals
 - Shipping Case
- Additionally for FCU 2xxx-4:
- Second power adapter
 - Suction hose 6mm bore (1m length)
 - Suction hose 6mm bore (0.2m length)

Model Codes Containing RED are non-standard items – Minimum quantities and longer lead times may apply - Contact HYDAC for information and availability

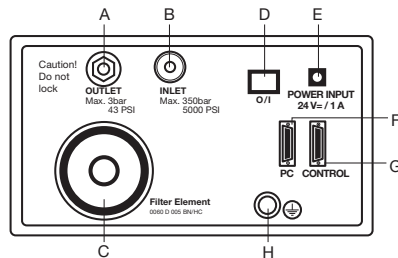
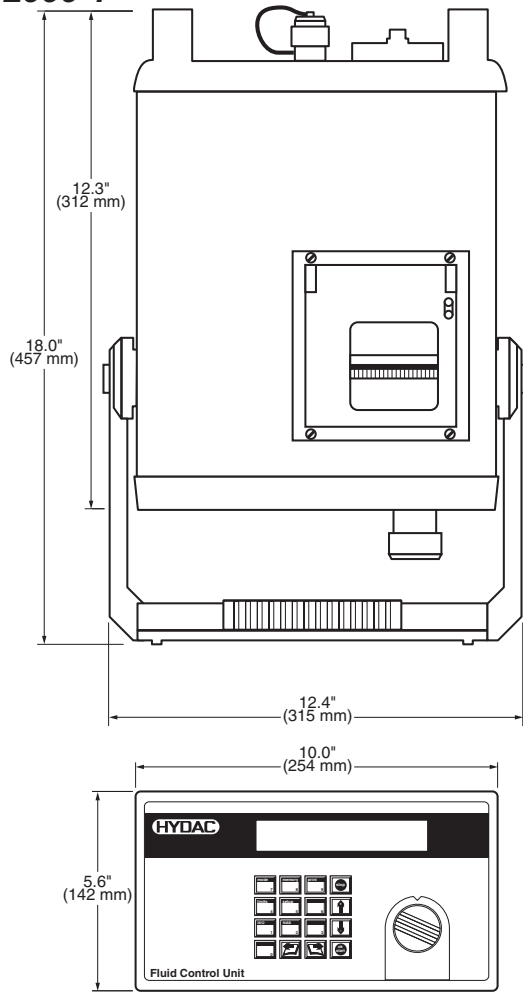
FCU Accessories

FCU Accessories	Part Number
Aluminum Transport Case for FCU-1 Series	00349153
Aluminum Transport Case for FCU-4 Series	03040814
Printer Paper (5 rolls)	00349155
Printer Ink Ribbon	00349156
Line Adapter 110V	03090803
High Pressure Hose (2 meters / 6.5 feet)	00349150
Return Hose (2 meters / 6.5 feet)	00349151

TestPoints available in HYDAC Hydraulic Accessories #02080105

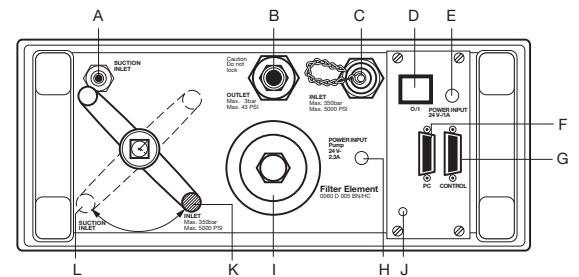
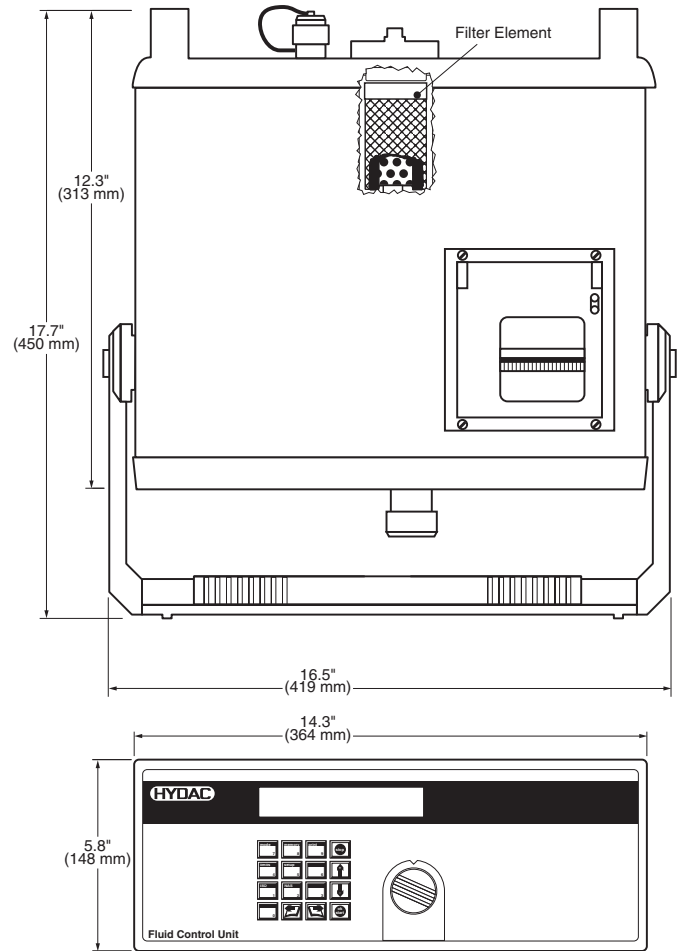
Dimensions

FCU 2000-1



- A = Outlet (return flow to tank)
- B = Inlet (high pressure port)
- C = Filter Cover
- D = On/Off Switch
- E = Power Supply Connection (main)
- F = PC Connector (serial port)
- G = Control Connector
- H = Case Ground

FCU 2000-4



- A = Suction Inlet (suction port)
- B = Outlet (return flow to tank)
- C = Inlet (high pressure port)
- D = On/Off Switch
- E = Power Supply Connection (main)
- F = PC Connector (serial port)
- G = Control Connector
- H = Power Supply Connection (pump)
- I = Filter Cover
- J = Case Ground
- K = Ball Valve (for INLET/high pressure port)
- L = Ball Valve (for SUCTION INLET/suction port)

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.