



Features and Benefits

- Ensuring essential coolant parameters
- Documentation of quality-relevant data
- Creation of digital laboratory reports
- Cost efficiency through high degree of automation
- I4.0-ready through direct cloud connection

Description

The FCU 5000 is a stationary measuring system for the automation of the cooling lubricant supply. For this purpose, the essential fluid parameters are monitored. The specified target concentration in the system and the tank level can be kept almost constant at the target specifications by automated subsequent metering of cooling lubricant concentrate and refilling of the tank with ready-mixed emulsion. The FCU5000 can be used standalone on central coolant systems or in conjunction with the Hydac Fluid Controller to cover up to 10 measuring points.

The unit continuously monitors concentration, pH, conductivity, and temperature. The measured values are monitored for limit values and, if the set limits are exceeded, signaling takes place on the display and via the electrical interfaces. Due to an intelligent flushing concept, a permanent measurement can be realized without manual intervention.

Applications

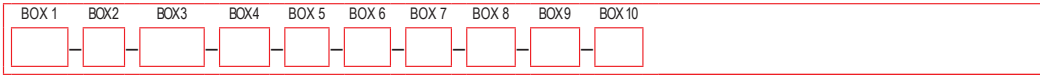
- Monitoring / control of central coolant systems
- Automation of fluid management on interlinked, decentralized machine tools

Specifications

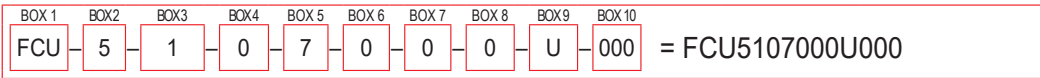
| General Data | | | | | | | | | | | | | | | | | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|--------------|--------------------------|-------------------|---------------------|------------|---------------------|--------------------------|---------------------|----------------------------|---------------------|-------------|-------------------|----------------------|-----------------|
| Operating Mode: | Suitable for permanent operation | | | | | | | | | | | | | | | | |
| Self Diagnostics: | Continuously with error indication using display | | | | | | | | | | | | | | | | |
| Display: | 7" Touch Panel | | | | | | | | | | | | | | | | |
| Measured Variables/Ranges: | <table border="0"> <tr> <td>Concentration:</td> <td>0...25 %</td> <td>Temperature:</td> <td>10...40 °C / 50...104 °F</td> </tr> <tr> <td>pH Value:</td> <td>0...14</td> <td>Flow Rate:</td> <td>3,2...22 l/min</td> </tr> <tr> <td>Electrical Conductivity:</td> <td>0...10000 µS</td> <td>Inlet Pressure (optional):</td> <td>0...8 bar / 116 psi</td> </tr> </table> | Concentration: | 0...25 % | Temperature: | 10...40 °C / 50...104 °F | pH Value: | 0...14 | Flow Rate: | 3,2...22 l/min | Electrical Conductivity: | 0...10000 µS | Inlet Pressure (optional): | 0...8 bar / 116 psi | | | | |
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| Calibration Accuracy: | <table border="0"> <tr> <td>Concentration:</td> <td>± 0.3 Brix</td> <td>Temperature:</td> <td>± 1% (Full Scale)</td> </tr> <tr> <td>pH Value:</td> <td>± 2,5% (full scale)</td> <td>Flow Rate:</td> <td>± 2,5% (Full Scale)</td> </tr> <tr> <td>Electrical Conductivity:</td> <td>± 1,5% (full scale)</td> <td>Inlet Pressure (optional):</td> <td>± 1% (Full Scale)</td> </tr> </table> | Concentration: | ± 0.3 Brix | Temperature: | ± 1% (Full Scale) | pH Value: | ± 2,5% (full scale) | Flow Rate: | ± 2,5% (Full Scale) | Electrical Conductivity: | ± 1,5% (full scale) | Inlet Pressure (optional): | ± 1% (Full Scale) | | | | |
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| Electrical Conductivity: | ± 1,5% (full scale) | Inlet Pressure (optional): | ± 1% (Full Scale) | | | | | | | | | | | | | | |
| Sealing Material: | FKM | | | | | | | | | | | | | | | | |
| Ambient Temp. Range: | 0 ... +60 °C / -17,8 ... +140 °F | | | | | | | | | | | | | | | | |
| Storage Temp. Range: | 0 ... +50 °C / -17,8 ... +122 °F | | | | | | | | | | | | | | | | |
| Relative Humidity: | 0 ... 70%, non-condensing | | | | | | | | | | | | | | | | |
| CE Mark: | EN 61000-6-1 / 2 / 3 / 4 | | | | | | | | | | | | | | | | |
| Protection class to DIN 40050: | IP 44 | | | | | | | | | | | | | | | | |
| Housing: | Aluminum/ steel | | | | | | | | | | | | | | | | |
| Weight (Without Accessories): | ~ 44 kg | | | | | | | | | | | | | | | | |
| Hydraulic Data | | | | | | | | | | | | | | | | | |
| Operating Pressure / Pressure Stability | 0...8 bar / 0...116 psi | | | | | | | | | | | | | | | | |
| Measurement Flow Rate | ~ 5-20 l/min | | | | | | | | | | | | | | | | |
| Permissible Viscosity Range | 1...40mm ² /s;...180 Sus | | | | | | | | | | | | | | | | |
| Fluid Temperature Range | +10...+40°C / +50...+104 °F | | | | | | | | | | | | | | | | |
| Electrical Data | | | | | | | | | | | | | | | | | |
| Power Supply: | 230V AC | | | | | | | | | | | | | | | | |
| Max. Power / Current Consumption: | 0,7 A | | | | | | | | | | | | | | | | |
| Interfaces / Data Logs: | <table border="0"> <tr> <td>Analog In:</td> <td>2 x 4...20 mA</td> <td>Ethernet 3:</td> <td>MQTT</td> </tr> <tr> <td>Analog In Niveau:</td> <td>2 x 4...20 mA</td> <td>WiFi:</td> <td>WLAN, 4G (optional)</td> </tr> <tr> <td>Ethernet 1:</td> <td>Config</td> <td>2x Switching Output</td> <td>NC contact</td> </tr> <tr> <td>Ethernet 2:</td> <td>Modbus TCP / REST</td> <td>2x Pulse output (2x)</td> <td>(metering pump)</td> </tr> </table> | Analog In: | 2 x 4...20 mA | Ethernet 3: | MQTT | Analog In Niveau: | 2 x 4...20 mA | WiFi: | WLAN, 4G (optional) | Ethernet 1: | Config | 2x Switching Output | NC contact | Ethernet 2: | Modbus TCP / REST | 2x Pulse output (2x) | (metering pump) |
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Fluid Control Unit 5000 **FCU 5000**

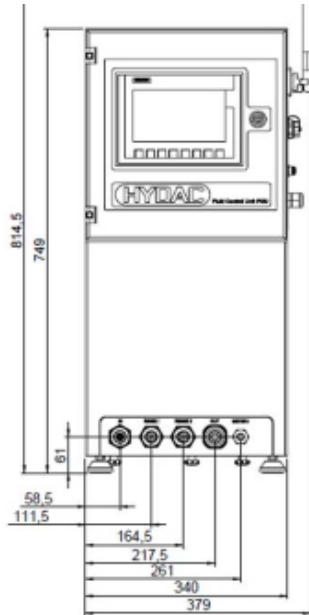
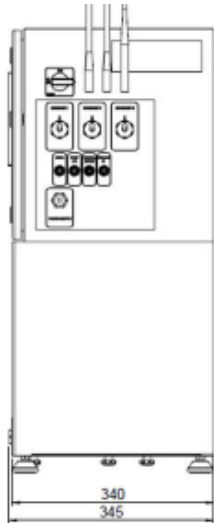
How to Build a Valid Model Number for a Schroeder FC 5000:



Example: NOTE: One option per box



| BOX 1 | BOX 2 | BOX 3 | BOX 4 |
|-----------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Type | Series | Measured Variables | Additional Functions |
| FCU | 5 = 5000 Series | 1 = Concentration, Temperature 2 = Concentration, Temperature, pH-value 3 = Concentration, Temperature, pH-value, Electrical Conductivity | 0 = Without Additional Function 1 = Tank Refill |
| BOX 5 | BOX 6 | BOX 7 | |
| Fluids | Display | Data Interface | |
| 7 = Water-Based Coolant Lubricants | 0 = Standard: 7" Touch Display | 0 = Standard (Ethernet: TCP/IP, Modbus TCP) 1 = Standard + MQTT 2 = Standard + MQTT + 4G | |
| BOX 8 | BOX 9 | BOX 9 | |
| Options | Supply Voltage | Modification | |
| 0 = ohne 1 = Data Storage 2 = CMX Integration | U = 230V AC | 000 = Standard | |



Dimensions in mm

Model Number Selection

Accessories

| Designation | Part Number |
|----------------------------------------|-------------|
| Metering Pump | |
| Metering Pump Model 6 Flow Rate 30 l/h | 4656596 |
| Hydraulics | |
| Wombat filter housing WBF201-B-B-L-F-Z | 4158239 |
| Fluid Controller | |
| FC 5000 | 4724385 |

Consumable Materials

| Designation | Part Number |
|------------------------|-------------|
| Filter bag 5µm FCU5000 | 4619116 |
| pH-electrode | 4571815 |