Filtertechnik

OIL PARTICLE COUNTER

The new PC9001 oil contamination monitor from Filtertechnik uses high quality laser diodes and the established principle of light obscuration to provide accurate and repeatable oil contamination data in ISO, NAS and SAE formats.

Delivering real-time, on-line monitoring of particulate contamination levels to provide an early warning for oil quality degradation, essential for an effective preventative maintenance package.



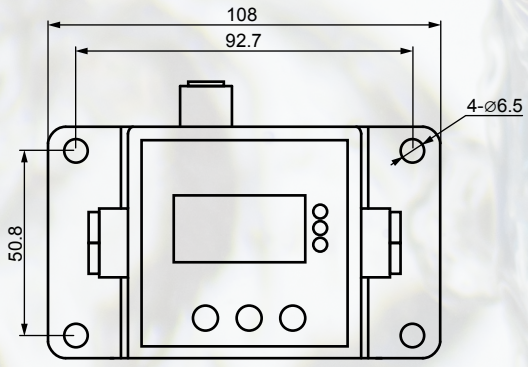
Industry Applications

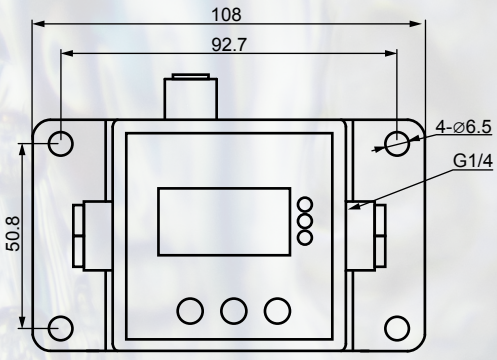
Hydraulics & Fuels	Engine
Mining, metallurgy, petrochemicals	Hydraulic equipment, transformers, Compressors
Construction machinery, special vehicles	Wind turbines
Aviation, aerospace, marine	Industrial production line equipment
Oil production, testing, storage	Turbine Oil

Technical Parameters

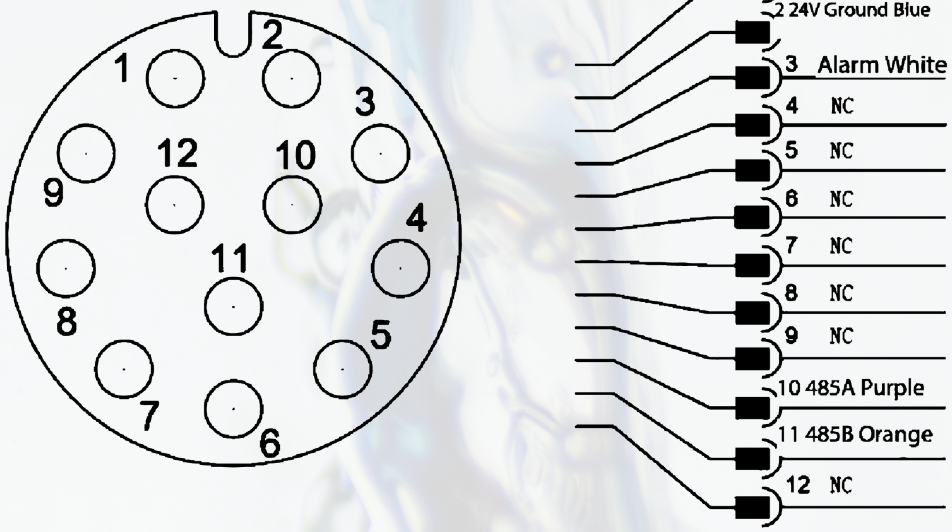
Mechanical Interface	SAE -8; SAE-4; G1/4
Voltage supply	12~36V
Storage temperature	–40 ~85 °C
Operating temperature	–10 ~60 °C
Particle size/channel	4, 6, 14, 21, 38, 50, 70, 100um
Storage/Operating Humidity	97% relative humidity, non-condensing
Fluid Compatibility	Hydraulic and lubricating oils, mineral, synthetic (phosphate ester compatible)
Fluid Viscosity	2 ~450 cSt
Output Standards	ISO4406, NAS, SAE and GJB cleanliness standards
Detection accuracy	±0.5 ISO Code
Weight	473g
Serial Interface	RS485 Modbus RTU
Flow Requirements	50~ 500ml/min
Max Pressure	50Bar/ 725psi
Protection class	IP 66

Mounting Dimensions

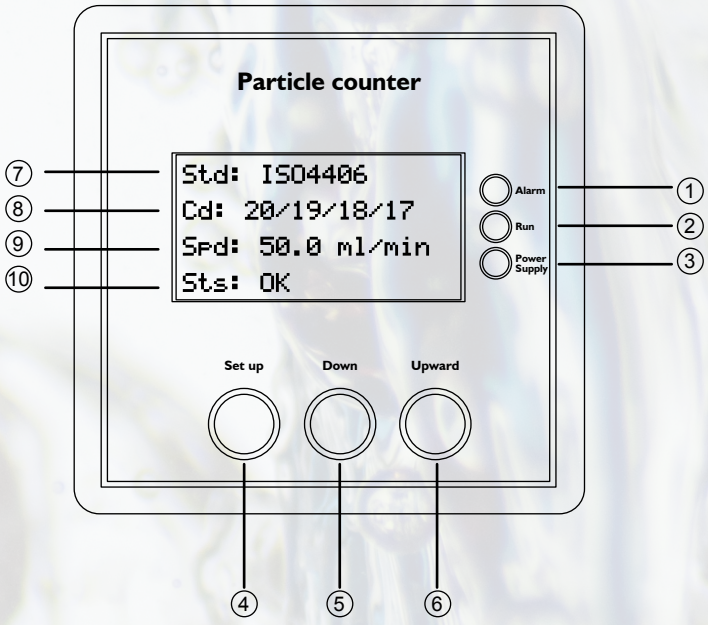




Wiring Information

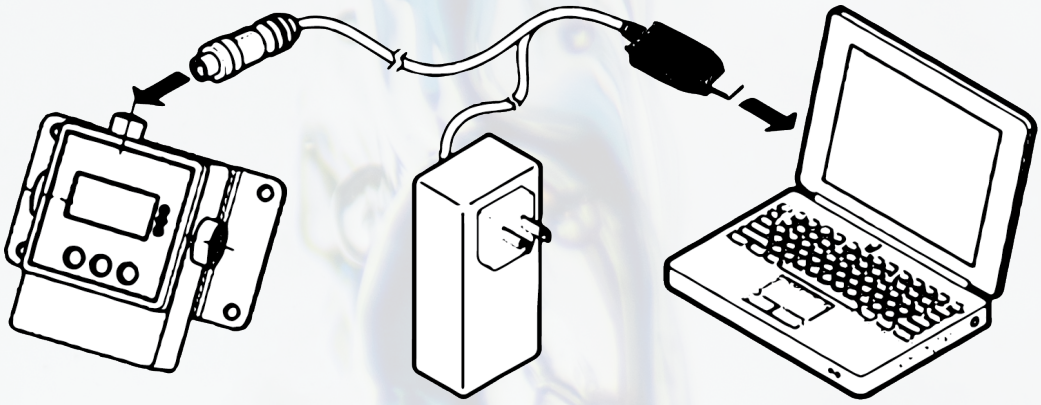


Instructions for use



1 Alarm indicator	2 Normal operation	3 Power indicator	4 Setting key
5 Scroll down key	6 Scroll Up Key	7 Detection standard	8 Detection level
9 Background preset flow rate	10 Sensor Status		

Connection Instructions



Use the 485 signal cable to connect to the sensor, the other end is connected to the 485 to USB serial converter (to connect A +, B -), and use the 24V DC power supply to the sensor power supply (connected to the 485 signal cable of +VDC, -VDC), and connect USB to the computer, open the test software Modbus Poll or serial assistant.

Communication Protocol Description

Communication Protocol

Communicates with host computer via RS485 serial communication interface.
Serial port single byte setting: 9600BIT/S, 8 BIT data, no parity, 1BIT stop bit.
Command/data response Tdmax ≤ 500ms, usually Td ≤ 10ms.
Byte interval ≥4-5ms.

MODBUS Protocol Commands and Responses

The MODBUS specification (PI-MBUS-300, Rev J) includes two methods of constructing communications. One method uses ASCII characters to send all communications. The second method uses binary communications called RTU format. Pollution levels use the MODBUS-RTU format. However, some registers may have their contents packed into a single byte. Due to the RTU format, there are no specific characters to indicate the end of the message. the MODBUS official specification for the idle interval is 3-5 character times (minimum interval). The general form of the message format is shown below. Each line represents one byte, except for the idle interval. The message structure is the same from host to device or from device to host.