

CLOUD BASED CONDITION MONITORING

SFS-1 PARTICLE MONITOR



Reporting Fluid Cleanliness: ISO4406:99

The SFS-1 Particle Monitor is a compact particle measurement device for continuous monitoring of contamination and wear in diesel, hydraulic fluids and lubricants.

Recognizing Changes:

SFS-1 Particle Monitor precisely display any change in contamination of a system. Thus you can react quickly with an increase in particle concentration and countermeasures can be taken. Subsequent damages are minimized and costs are reduced.

High Pressure Range

The SFS-1 Particle Monitor is designed for operating with high pressure. Thus it can directly be mounted to a pressure line.

Intuitive Operating

The SFS-1 Particle Monitor is equipped with an intensely illuminated graphic display and a keypad by which you may set up all required adjustments. The menu navigation is made up intuitively and logically.

Wide communication possibilities

The SFS-1 Particle Monitor exports data to a serial interface or optionally to a CAN-Bus (CANopen + SAE J1939). In parallel, the configurable 4 - 20 mA interface can be connected (With Smart IIoT Sync). Over a digital alarm output you will be warned when limits are exceeded or fallen below. Readings can run time-controlled, manually or started and stopped over a digital input. The data can also be stored on the integrated memory unit.

Design Characteristics

The fluid side, the SFS-1 Particle Monitor is equipped with two Minimes connections to connect the sensor generally in the off-line circuit to the system. The electrical connection is installed via an 8-pole M12 x 1 circular plug. The integrated data memory allows data recording over a longer period. Besides all its technical functions, the SFS-1 Particle Monitor scores by its compact and optical design.



Measurement Principles:

The SFS-1 Particle Monitor is an optical particle monitor which works to a so-called light extinction principle. This means that particles are classified within a measuring cell with the help of a laser regarding their size and quantity. The device is calibrated to ISO 11943. It calculates and displays results according to ISO 4406:99, SAE AS 4059, NAS 1638 und GOST 17216.

Calibration:

The instrument is calibrated following procedures described in ISO 11943. The equipment used in the calibration is primary calibrated in accordance with ISO 11171 and therefore traceable to NIST SRM 2806A.

Technical data

Sensor data	Size	Unit
<i>Max. operating pressure</i>		
dynamic	420 (6090)	bar (psi)
static	600 (8700)	bar (psi)
Permissible flow rate	50 ... 400	ml/min
<i>Operating conditions</i>		
Temperature	-20 ... +85 (+4 ... +185)	°C °F
Rel. humidity	0 ... 100	% r.H. (non-condensing)
Display readable up to	+60 (+140)	°C °F
Compatible fluids	mineral oils (H, HL, HLP, HLPD, HVLP), synthetic esters (HETG, HEPG, HEES, HEPR), polyalkylenglycols (PAG), zinc and ash-free oils (ZAF), polyalphaolefins (PAO) phosphate ester*1	
Wetted materials	Stainless steel, sapphire, chrome, FFKM*1, NBR*2, Minimes coupling*2, zinc/nickel	
Protection class ¹	IP67	-
Power supply	9 ... 33	V
Power input	max. 0.3	A
Max. power consumption	2	W
Sensor data	Size	Unit
<i>Output</i>		
Power output ²	4 ... 20	mA
Accuracy power output ²	± 2	%
Interfaces	RS 232/CANopen/ SAE J1939	
Alarm contact	Open Collector	-
<i>Digital input for start and stop</i>		
Power supply	9 ... 33	V
Data memory	3000	data records
<i>Connecting dimensions</i>		
Fluid connections	G¼ Minimes*2 M16x2	inch -
Electrical connection	M12 x 1, 8-pole	-
Tightening torque M12-connection	0.1	Nm
<i>Display particle measurement</i>		
ISO 4406:99	0 ... 28 (calibrated area 10 ... 22)	ordinal number (OZ)
SAE AS 4059E	000 ... 12	ordinal number (OZ)
NAS 1638 (based) ³	00 ... 12	ordinal number (OZ)
GOST 17216 (based) ³	00 ... 17	ordinal number (OZ)
Size channels	4, 6, 14, 21	µm (c)
<i>Measuring accuracy</i>		
Particle measurement (in calibrated area)	±1	ordinal number (OZ)
Weight	~720	g

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