

Preventive Maintenance In The Palm Of Your Hand

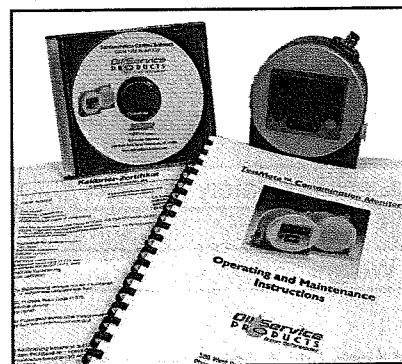
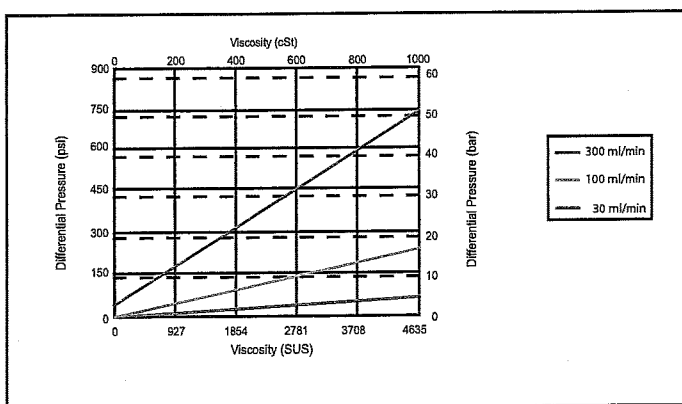
Optically measures solid particle contamination in hydraulic and lubricating fluids with Schroeder's TestMate[®] Contamination Monitor

Don't let the size of Schroeder's TestMate Contamination Monitor (TCM) fool you! It is among the newest generation of particle monitors that continuously measure solid contamination in fluid. Enclosed in a 4 inch diameter case, the TCM utilizes an optical sensor and measures particles in four sizes: >4, >6, >14 and >21 microns. Measurement results can be output as a contamination code according to ISO 4406 : 1999 or SAE AS 4059 (D).

The TCM is designed for connection to hydraulic and lubrication lines with pressures up to 4350 psi (300 bar) and viscosities up to 4635 SUS (1000 cSt). The unit requires that a small flow of oil (between 30 ml/min and 300 ml/min) is diverted for measurement purposes.

The TestMate Contamination Monitor provides the user with a smaller, tougher and more versatile stationary sensor. It provides instantaneous readings and is able to self-diagnose continuously with error indication via the status LED.

The attractive cost-to-performance ratio makes it especially applicable for OEM applications. Online, real-time condition monitoring allows you to have total predictive maintenance.



Standard TCM includes:
Unit, CoCos Software, Operation
Manual and Calibration Certificate

Features

- Measures Particles In Four Sizes: >4, >6, >14, >21 microns
- Pipe or Wall Mounting
- ISO or SAE codes can be output in 4-20 mA analog signal
- Compatible with Standard Mineral Fluids & Phosphate Esters
- Display & Keypad can be rotated
- Inlet & Outlet Ports are Interchangeable (bi-directional)

Applications

- Construction Equipment
- Industrial Hydraulic Systems
- Agricultural Machinery
- Combination with Filter Unit
- Mobile and Stationary Mining Equipment
- Any hydraulic system that requires on-line monitoring

Test Benches

TestMate[®] Contamination Monitor Specifications

Measuring Range:	Display ISO ranges between 28/27/26 and 9/8/7 Calibration within the range ISO 13/11/10 to 23/21/18
Self-Diagnosis:	Continuously with error indication via status LED
Inlet/Outlet	4350 psi (300 bar) max.
Connections	Inlet: ISO 228 G1/4 Threaded Outlet: ISO 228 G1/4 Threaded
Sensor Flow Rate	30 to 300 ml/min
Permissible Viscosity Range	0 to 4635 SUS (1 to 1,000 cSt)
Fluid Temperature Range	32° to 185° F (0° to +85° C)
Power Supply Voltage	9 to 36 VDC residual ripple <10%
Power Consumption	3 WATT max.
Electrical Outputs	4 to 20mA Analog; 0 to 10V Analog (option) RS485 for communication with CoCos 1000 software
Electrical Specifications	4 to 20 mA Analog output (max. burden 300Ω); 0 to 10 V output (min. load resistor 820Ω) Limit switching output (Power MOSFET): max. current 1.5A
Ambient Temperature Range	-22° to 176° F (-30° to +80° C)
Storage Temperature Range	-40° to 176° F (-40° to +80° C)
Relative Humidity	max. 95%, non-condensing
Seal Material	Mineral Oil: FPM Phosphate Ester: EPDM
Electrical Safety Class	III (low voltage protection)
IP Class	IP67
Weight	2.9 lbs (1.3 kg)

All models feature an analog electrical output and an RS485 interface for outputting the measured contamination levels and error codes. Additionally, an electronic switching output can be configured to alert the operator about rising or falling contamination levels.

Model Number Selection

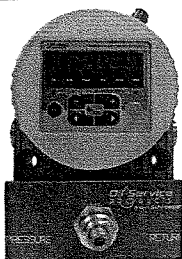
Model	Display	Fluid	Output	Option
TCM	D= display X= no display	H = Hydraulic Fluids E = Phosphate Esters (EPR seals)	A = 4-20 mA V = 0-10 V	Omit = Std in-line M = Flange
TCM-FC*	Flow Conditioning Manifold (includes: TCM-D-H-A mounted to a manifold)			

TCM-FC - Manifold will have pressure compensated flow control and orifices for flow conditioning. Customer is required to supply power (9-36 VDC) and pressure 100 psi or greater.

Example: TCM-D-H-A-M

Additional Accessories Available For Use With TCM

Flow Conditioning Manifold (TCM-FC)



FEATURES

- Manifold has pressure compensated flow control and orifices for flow conditioning.
- Customer only needs to supply power (9-36 VDC) and pressure 200 psi or greater
- Allows installation in only minutes
- Compensates for varying pressures, flow rate, and viscosities

WHAT'S INCLUDED

TCM-D-A, manifold, TCM-C-3M, 2 pcs. 4mm 1620 microflex hose (p/n SM4-1620-035) and 2 test points (p/n SP1620UN716VM) for installation into customer's system.

Flow Conditioning Manifold with Water Sensor (TCM-FC-W)



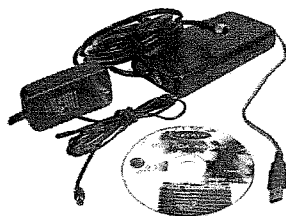
FEATURES

- Manifold has pressure compensated flow control and orifices for flow conditioning.
- Customer only needs to supply power (9-36 VDC) and pressure 200 psi or greater
- Allows installation in only minutes
- Compensates for varying pressures, flow rate, and viscosities
- Manifold has water sensor TWS-C installed for measurement of percentage saturation

WHAT'S INCLUDED

TCM-D-A, manifold, TCM-C-3M, 2 pcs. 4mm 1620 microflex hose (p/n SM4-1620-035), TWS-C, TWS Power & Communication cable and 2 test points (p/n SP1620UN716VM) for installation into customer's system.

Communication Kit (TCM-RS485/USB)



FEATURES

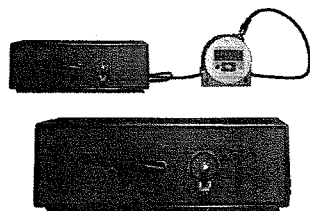
- Enables the user transfer data from TCM to PC
- Enables user to change TCM settings
- Enables user to have real time monitoring & data storage

Note: Not shown in photo is transport case & CoCoS software.

WHAT'S INCLUDED

Converter box, 115 VAC to 24 VDC adapter, USB driver, CoCoS 1000 software, communication & power cables, case

TCM-WIFI



FEATURES

- Connect any TCM to an 802.11b/g wireless network
- Connect to TCM from anywhere on the customer's network including VPN connections for off-site monitoring
- Fully compatible with CoCoS 1000
- Monitor ISO and SAE cleanliness codes
- Change TCM settings, download history log, and save values in real-time

WHAT'S INCLUDED

Wireless Access Point, Antenna, Power Cable and M12 x 8 cable

Cable (TCM-C-3M)



Cable includes leads for power & communication

WHAT'S INCLUDED

9.8 ft.(3 m) length cable with M12x8 pin electrical connector on one end and flying leads on the other

Power Adapter (TCM-PS)

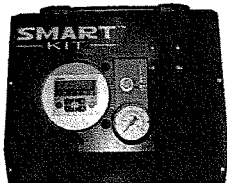


Allows user to connect TCM to standard wall outlet

WHAT'S INCLUDED

115 VAC to 24 VDC power adapter

SMART™ Kit



FEATURES

- Real time ISO 4406:1999 codes
- Eliminated the need for bottle samples to determine contamination level
- Plug and play with all standard Schroeder carts and kidney loops
- Download data for trending

WHAT'S INCLUDED

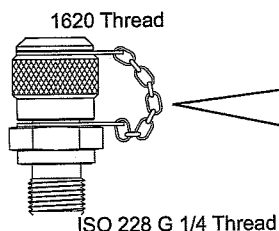
TestMate Contamination Monitor, TCM Calibration Certificate, Operating and Instruction Manual, CoCos Software, Connection Hoses, Clips and Screws, RS-232 connection for ability to download and change settings.

(Please see Schroeder L-2778 for additional information)

Schroeder Check® Test Points and Microflex Hose Options For TCM

Schroeder Check® Test Point Recommend For TCM

G Thread	Sealing System	Part Number
1/4" BSPP	WD Seal Viton	SP1620G14WDVM



Schroeder Microflex Hose Part Numbers

Length inches (mm)	P (max) psi (bar)	Part Number
6" (200mm)	6,500 (450)	SM4-1620-006
12" (300mm)	6,500 (450)	SM4-1620-012
35" (500mm)	6,500 (450)	SM4-1620-035
71" (800mm)	6,500 (450)	SM4-1620-071

