

# HY-TRAX® Fluid Sampling Systems

## Introduction

The Schroeder HY-TRAX® Sampling Systems are the newest additions to our hydraulic sensor lineup. The compact HY-TRAX® units include a micro VSD pump and TestMate® Contamination Monitor (TCM)/TestMate® Water Sensor (TWS) mounted on a single manifold block. The HY-TRAX® units can sample directly from a reservoir tank or a low pressure (<50PSI) line. The integral VSD pump will supply our TCM with the proper flow and pressure to obtain accurate particle counts. HY-TRAX® is designed for mineral based hydraulic fluids with viscosities up to 350 cST.

The HY-TRAX® Sampling System is available in two versions. The **HY-TRAX® Manually Controlled Fluid Sampling System** provides local visibility to ISO contamination codes and optional saturation levels. A manually controlled rheostat adjusts the pump's speed to compensate for variances in fluid viscosities. This will provide the TestMate® Contamination Monitor (TCM) sensor with optimal flow for accurate sensor readings. The VSD pump controller is housed in a compact (app 9.3" x 5.75" x 2.6") rugged IP 40 rated enclosure that can be mounted within 3.3' of the manifold block.

The **HY-TRAX® Telematic Communications Module with Remote Controlled Sampling System** adds greater flexibility to the end user. The same VSD pump is automatically adjusted by the Communication Module to provide optimal flow to the TestMate® Contamination Monitor (TCM) particle counter. The fluid sampling system collects data and the Communications Module transmits this data, via GSM cellular communications, at scheduled intervals. All data is transmitted through a secure VPN and is archived in a protected database. The information is displayed on a custom dashboard with user selectable parameters. HY-TRAX® will even send alert emails when programmed thresholds are reached. This will provide maintenance managers with the visibility and information to pro-actively schedule preventative maintenance on local and remote equipment.



**HY-TRAX® Manually Controlled Fluid Sampling System**



**HY-TRAX® Telematic Communications Module with Remote Controlled Sampling System**

## Features

### HY-TRAX® Telematic Communications Module with Remote Controlled Sampling System

- Local and remote visibility
- Measure particles >4, >6, >14, >21µ
- Integrated VSD pump/motor
- Pump speed automatically controlled
- Data is viewed/stored on secure website
- Alert emails when thresholds reached

### HY-TRAX® Manually Controlled Fluid Sampling System

- Local Visibility to fluid condition
- Measure particles >4, >6, >14, >21µ
- Integrated VSD pump/motor
- Pump speed manually controlled
- Compact design
- Integrated flow control manifold

**Schroeder**  
**INDUSTRIES**

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An ISO 9001:2008 Certified Company

## Applications

- Mobile Equipment
- Construction
- Agricultural Machinery
- Marine
- Fleet Services
- Monitoring Cleanliness Storage Tanks
- Surface Mining
- Rail
- Industrial Hydraulic Systems

## Specifications

**Measuring Range:** Display ISO ranges between 25/24/23 and 9/8/7 Calibration within the range ISO 13/11/10 to 23/21/18

**Contamination Output Code:** Standard: ISO 4406:1999 or SAE AS 4059(D)  
Optional: ISO 4406:1987; NAS 1638 and ISO 4406:1999

**Self-Diagnosis:** Continuously with error indication via status LED

**Pressure Rating:** 50 psi (3.4 bar) max

**Fluid Inlet/Outlet:** SAE ORB, Size 4

**Seal Material:** Viton®

**Pump Speed:** 500-5000 RPM (adjustable)

**Optimal Sampling Pump Flow Rate:** 0.008-0.079 GPM (30-300 mL/min)

**Fluid Temperature Range:** 32°F to 185°F (0°C to +85°C)

**Ambient Temperature Range:** -22°F to 176°F (-30°C to 80°C)

**Max Viscosity:** 350 cSt

**Pump Type:** Gear Pump

**Power Supply Voltage:** 24 VDC +/- 10%, Residual Ripple <10%

**Max Power/Current Consumption:** 100 Watt/4amp

**Electric Output:** 4-20 mA analog output; 0-10 V analog (option for contamination monitor (TCM)) RS485 for communication with FluMoS Software

**Electrical Specifications:** 4-20 mA analog output (max burden 330 Ω)  
0 to 10v output (min load resistor 82 Ω)  
Limit switching output (Power MOSFET): max current 1.5A

**TestMate® Contamination Monitor (TCM) Signal Output Connections Located on Control Enclosure:** USB-B Female Port for use with Windows-based computer and FluMoS Software  
M12 8 pole, Male Port, Analog or Digital, for use with PLC or RS485 Communication, (4-20 mA is standard). 0-10 V is optional, must specify when ordering TestMate® Contamination Monitor (TCM)

**Water Sensor (TWS-D) Signal Output Connection Located on Control Enclosure:** Water sensor (TWS-D) M12-5 pole Signal Output 5 pole Male Port, located on Control Enclosure

**Electrical Safety Class:** III (low voltage protection)

**Enclosure Ratings:** IP 40 enclosure

# Dashboard Display



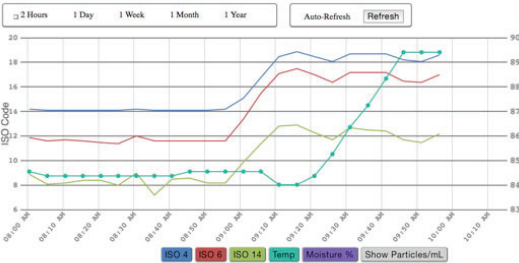
## FLUID MONITORING DETAIL

DOMAIN ADMIN

- Home
- Domain Setup
- Client Models
- Users
- Portals
- Devices
- Billing
- Terms

### NUMBER 1 MAIN ENGINE

Pump & Valve Test Bench



Count	Date	Time	ISO 4	ISO 6	ISO 14	Temp F	Moist %
1393141	11/14/14	09:56:15	18.6	17.0	12.2	89.4	0
1393118	11/14/14	09:51:13	18.1	16.4	11.5	89.4	0
1393090	11/14/14	09:46:10	18.2	16.5	11.7	89.4	0
1393067	11/14/14	09:41:08	18.7	17.2	12.4	88.3	0
1393037	11/14/14	09:36:06	18.7	17.2	12.5	87.3	0
1393012	11/14/14	09:31:04	18.7	17.2	12.7	86.4	0
1392983	11/14/14	09:26:02	18.1	16.4	11.7	85.3	0
1392954	11/14/14	09:20:59	18.5	17.0	12.3	84.4	0
1392930	11/14/14	09:15:57	18.9	17.5	12.9	84.0	0
1392902	11/14/14	09:10:55	18.5	17.1	12.8	84.0	0
1392879	11/14/14	09:05:53	16.8	15.5	11.4	84.6	0

Cleanliness Limits		
	Max	Min
ISO 4 (4 µm)	22	10
ISO 6 (6 µm)	21	7
ISO 14 (14 µm)	19	10
Temp (°F)	130	50
Saturation (%)	60	10

HELP +



## FLUID MONITORING SUMMARY

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### NUMBER 1 MAIN ENGINE



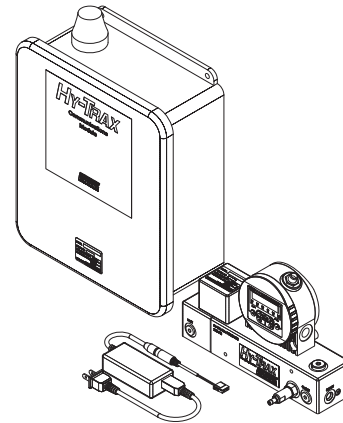
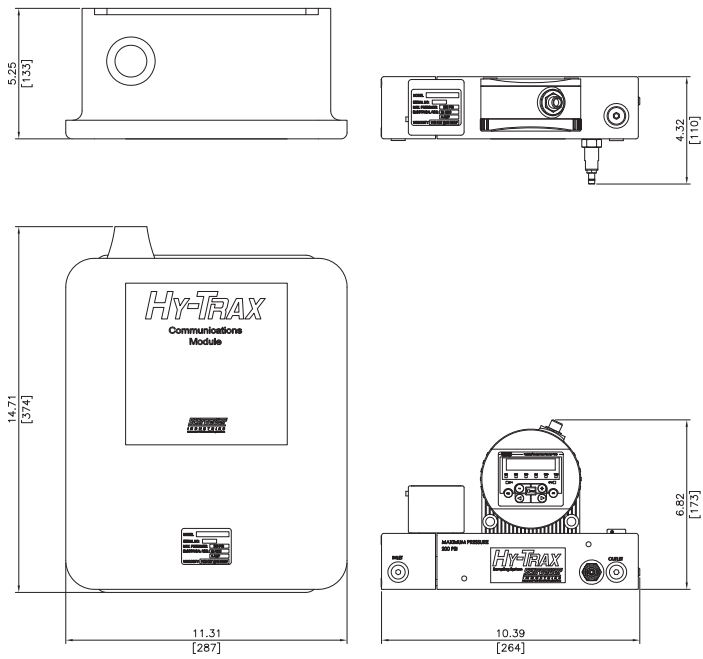
### FUELING STATION



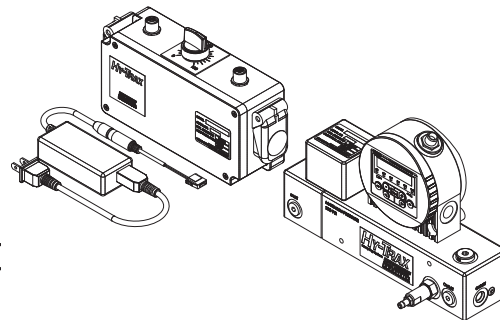
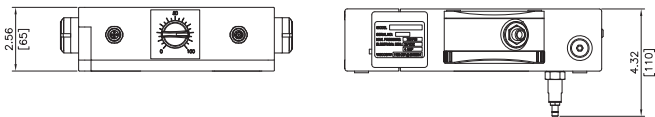
### SHOVEL



## Drawings



**HY-TRAX® Telematic Communications  
Module with Remote Controlled  
Sampling System**



**HY-TRAX® Manually Controlled  
Fluid Sampling System**

