Level, Temperature, Data Logging Instruments

The YSI Level Scout instrument is available as vented or absolute, stainless steel or titanium, and 2 or 4 Mb of memory.

Absolute Level Instrument
- Stainless Steel or Titanium
- 2 or 4 Mb

Vented Level Instrument
- Stainless Steel or Titanium
- 2 or 4 Mb

YSI's Level Scout provides highly accurate level sensing technology. The Level Scout combines pressure sensor technology with low power consumption. Accurate measurements, rugged housings and connectors, and easy data management make the Level Scout ideal for your next level monitoring application.

Features:
- 600,000 data points (level, temperature, or time)
- Level ranges up to 692 feet (210 m)
- Vented gauge or absolute reference pressure
- Baro Scout available for atmospheric pressure compensation
- High accuracy of ± 0.05% FS total error band (level ranges > 10 ft.)
- Networkable RS-485 interface
- On-board surge protection
- Small diameter 316 stainless steel or titanium housing
- Field-replaceable batteries, 3-year life
- IP-68 waterproof rating with NEMA 6P housing
- Field-upgradeable firmware

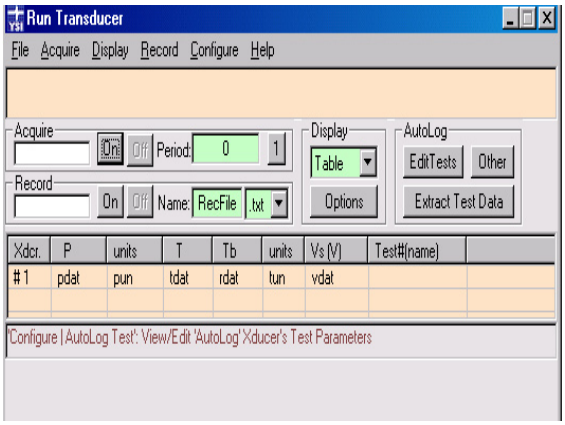
Applications include:

- *Ground water monitoring - long-term studies, resource management*
- *Well monitoring, aquifer testing - pump, slug, step, and recovery tests*
- *Soil Vapor Extraction Tests (SVE)*
- *Open channel monitoring*
- *Gaging stations - rivers, streams, lakes*
- *Tank level measurement*
- *Watershed management*

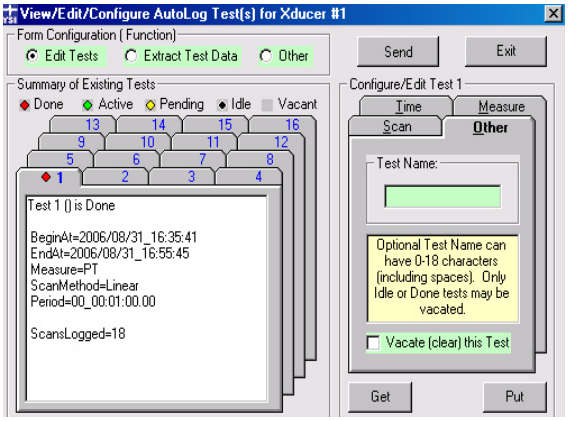
The Level Scout instrument is designed to measure level and temperature accurately and record the readings (along with time stamp) at user-selectable rates. Internal batteries provide power and provide years of data logging capabilities. Data logging modes include linear, linear averaging, event triggered, and logarithmic sampling. The batteries are field-replaceable with a quick-disconnect cable assembly.

Data Scout Advanced desktop software can be used to set up logging sequences, display tabular and graphical data, correlate barometric data, download logged data from multiple Level Scouts, acquire real-time data sampling, and configure alarms. In addition to the software, the instrument firmware can be upgraded in the field as new versions are released.

Data Scout Advanced Desktop Software



Use the Data Scout Advanced home page to find and communicate with any Level Scout in your network.



Create up to sixteen independent logging profiles to download to your Level Scouts.

The easy-to-use desktop software makes operating the Level Scout simple and convenient. Data Scout Advanced is included with the purchase of the level instrument and allows you to complete both simple and complex tasks. Data Scout Advanced runs on PCs with Windows® 98, ME, NT, 2000, or XP.

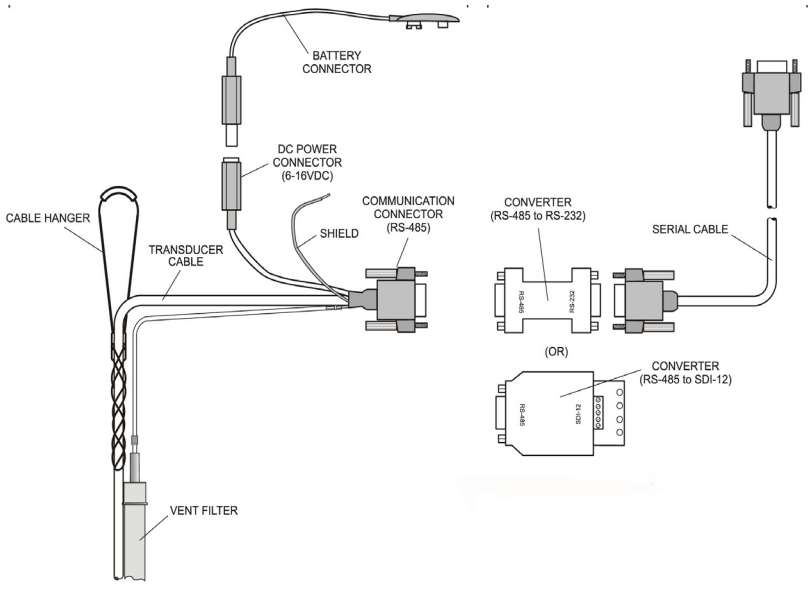
Capabilities

- Run and monitor from one to sixteen transducers, communicating over a serial interface or multi-drop network
- Operate Level Scout instruments without custom software
- Collect and display data in real-time or at future settings with simple setups
- View both tabular and graphical data displays simultaneously
- Easily export data to spreadsheets such as Excel®
- Download new versions of Data Scout Advanced as needed
- Correlate data from an absolute Level Scout with data from a Baro Scout barometric pressure logger
- Configure AutoLog tests to create up to sixteen independent logging profiles for downloading to your transducers

Data Scout Advanced allows you to use default configurations or define your own site net parameters. Use the form to run each individual transducer or a collection of selected transducers for acquisition of both live and AutoLog data. Real-time data may be displayed both numerically or graphically or logged to a file on your PC.

Data Scout, a simplified version of software, and Data Scout Mobile, a pocket PC version, are also included.

Communications



The universal cable assembly (above left) provides a continuous readout while deploying the unit. Available in stainless steel or titanium. Model 771 and 772 communication converters (above right) provide conversion from RS-485 to RS-232 or RS-485 to SDI-12, respectively.

The universal cable assembly provides continuous readouts and atmospheric pressure compensation for vented units. The cable is polyurethane jacketed and available with a stainless steel or titanium connector, depending on which transducer you select. It also comes with a desiccant filter for vented systems, cable hanger, DC power connector with detachable battery connection, RS-485 communication connector, and drain wire for cable shield grounding. This connector works directly with YSI communications adapters.

The communications adapters provide electrical conversion between the Level Scout's native RS-485 interface and other standard electrical interfaces, such as RS-232 for connecting to PCs or SDI-12 for connecting to any SDI-12 compatible equipment. Model 771 converts RS-485 to RS-232 and comes with a 6 foot (3 m) serial cable. The 772 converts RS-485 to SDI-12. The 773 converts RS-232 to USB.

Level Scout Specifications

Level Ranges			
Full Scale Level Range	10, 50, 75, 250, 692 (3, 15, 23, 76, 211)	ft. H_2O (m H_2O)	for vented gauge reference
	10, 50, 70, 230, 692 (3, 15, 21, 70, 211)	ft. H_2O (m H_2O)	for absolute reference
Barometric Pressure Range	8 to 16 (55 to 110)	psia (kPa)	for barometer
Proof Pressure	1.5	x FS	
Burst Pressure	2.0	x FS	

Measurement Accuracy			Standard
Level	±0.05	%FS TEB[1,2]	for level ranges >10 ft. (3 m) H_2O
	±0.10	%FS TEB[1,2]	for level ranges <= 10 ft. (3 m) H_2O
Temperature	±1.0	°C	Models VS2, VT2, AS2, AT2
	±0.2	°C	Models VS4, VT4, AS4, AT4

Level Scout Data Logging Specifications

Modes of Sampling	Linear, Linear Avg, Event, Logarithmic		software selectable
Pressure Units	psi, ft. H_2O, mm H_2O, cm H_2O, m H_2O, kPa		user-specified or by slope and offset
Sampling Rate [3]	Programmable		15 readings per second max
Internal Non-Volatile Memory	2	Mbyte	Models VS2, VT2, AS2, AT2
	4	Mbyte	Models VS4, VT4, AT4, AS4
Maximum Pressure Scans	196,560	with time stamp	Models VS2, VT2, AS2, AT2
	393,120	with time stamp	Models VS4, VT4, AS4, AT4
Maximum Pressure and Temperature Scans	144,144	with time stamp	Models VS2, VT2, AS2, AT2
	288,288	with time stamp	Models VS4, VT4, AS4, AT4
Time Stamp Accuracy	±2	min/year	over compensated temp range
Data Upload Time	100	scans/sec	pressure and temp with time stamp per second @ 19200 baud rate

Level Scout General Specifications

Compensated Temperature Range	14 to 104 (-10 to 40)	°F (°C)	
Operating Temperature Range	-4 to 122 (-20 to 50)	°F (°C)	
Storage Temperature Range	-40 to 176 (-40 to 80)	°F (°C)	without batteries
	-4 to 122 (-20 to 50)	°F (°C)	with batteries
Protection Rating	IP-68, NEMA 6P		
Internal Battery	2 each 1.5 V	AA	alkaline recommended
Battery Life	3	years	15 minute sampling intervals w/alkalines
External Excitation	6 to 16	VDC	
External Input Current	8.0	mA	average current during measurement
	25.0	mA	15 mS peak current during page writes
	0.25	mA	quiescent
Communication Interface	RS-485		3 volt p-p differential w/ selectable baud rates from 1200 to 19200
Communication Protocol	SDI-12		ver 1.3 compliant
Approximate Weights	0.70 (318)	lbs (g)	transducer with batteries
	0.15 (57)	lbs (g)	cable assembly (less cable)
	0.05 (79)	lbs/ft (g/m)	cable
	0.005 (8)	lbs/ft (g/m)	suspension wire
Dimensions	0.75 (19.0)	in (mm)	diameter
	12.44 (316.00)	in (mm)	length

1 Total Error Band (TEB) includes the combined errors due to non-linearity, hysteresis, non-repeatablility, and thermal effects over the compensated temperature range per ISA S51.1
2 Additional error up to ±2% FS/year may be incurred due to offset drift
3 For sampling rates greater than 3 Hz, the pressure/temperature averaging must be reduced as required

Accessories

Model 710 (stainless steel) or Model 730 (titanium)
Universal Cable assembly for atmospheric compensation for vented Level Scouts and direct data readout and communication to absolute or vented sensors while deployed in the field. Includes RS-485 connector, DC power connector, battery connector, and desiccant cartridge.

Model 750 (stainless steel) or Model 760 (titanium)
Wire assembly for suspension of absolute transducers. Includes stainless steel or titanium backshell, carabiner, and Teflon® coated stainless steel suspension wire.

Model 785
4-inch vented, locking well cap. Includes carabiner for attaching equipment. Model 782 for 2-inch wells.

Model 770
Non-submersible RS-485 communication cable. Recommended if not purchasing a universal cable assembly.

Ordering (Transducers, Cables, Communications Adapters Ordered Separately)

AS2-x[2]	Absolute Level Scout, Stainless Steel, 2 Mb memory
AS4-x[2]	Absolute Level Scout, Stainless Steel, 4 Mb memory
AT2-x[2]	Absolute Level Scout, Titanium, 2 Mb memory
AT4-x[2]	Absolute Level Scout, Titanium, 4 Mb memory
BS2	Atmospheric compensation Baro Scout, Stainless Steel, 2 Mb memory
BS4	Atmospheric compensation Baro Scout, Stainless Steel, 4 Mb memory
VS2-x[1]	Vented Level Scout, Stainless Steel, 2 Mb memory
VS4-x[1]	Vented Level Scout, Stainless Steel, 4 Mb memory
VT2-x[1]	Vented Level Scout, Titanium, 2 Mb memory
VT4-x[1]	Vented Level Scout, Titanium, 4 Mb memory
710 or 730-x[3]	Universal Cable, Stainless Steel or Titanium
770	Non-submersible quick disconnect communication cable
750 or 760-x[3]	Suspension Wire Assembly, Stainless Steel or Titanium
771	RS-485 to RS-232 converter and 6 foot RS-232 cable
772	RS-485 to SDI-12 converter
773	USB to RS-232 converter

1 x = transducer rating available in depths of 10, 50, 75, 250, 692 feet (3, 15, 23, 76, 211 meters)
2 x = depth ranges available in 10, 50, 70, 230, 692 feet (3, 15, 21, 70, 211 meters)
3 Available in standard lengths of 25 ft. increments up to 500 ft and 50 ft. increments up to 1000 ft.; specials available.

Pure Data for a Healthy Planet.®

800 897-4151
www.YSI.com

YSI Environmental
+1 937 767 7241
+1 937 767 9353 fax
environmental@YSI.com

Endeco/YSI
+1 508 748 0366
+1 508 748 2543 fax
environmental@YSI.com

SonTek/YSI
+1 858 546 8327
+1 858 748 2543 fax
inquiry@sontek.com

YSI Hydrodata
European Support Centre
+44 1462 673581
+44 1462 673582 fax
europe@ysi.com

YSI (Hong Kong) Ltd
+852 2891 8154
+852 2834 0034 fax
hongkong@YSI.com

YSI Middle East
+973 1753 6222
+973 1753 6333 fax
halsalem@ysi.com

YSI/Nanotech (Japan)
+81 44 222 0009
+81 44 222 1102 fax
nanotech@YSI.com

YSI (Qingdao) Ltd
+86 532 575 3636
+86 532 571 0101 fax
ysiqd@ysiqd.com.cn

ISO 9001
ISO 14001
CE

Printed in USA 1006 W22

YSI incorporated
Who's Minding the Planet?®