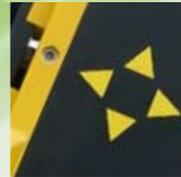


TESTERS



SENSOR

GRIP GEOPHONE STRING ANALYZER



Since 1967 I/O Sensor has been providing geophysicists worldwide with exceptional quality, precision geophones, testers and ancillary equipment.

Sensor introduced the first geophone testing equipment in the early 80's and has been setting the industry standard ever since. So much so, that even our competitors use Sensor testing equipment in their geophone production and test facilities. To date we have delivered over one thousand testers in the SMT series to hundreds of customers worldwide.

As market leader and an ISO 9001: 2000 certified company, Sensor maintains production facilities and service support in The Netherlands, USA, Dubai, India, Canada, China, Russia and the UK.



■ GRIP GEOPHONE STRING ANALYZER

- Water resistant and rugged construction.
- True portability for field use
- Temperature compensation in a 50°C range ensures accurate readings
- Low amplitude sine-wave drive can detect dragging coils
- Plug-in modules allow for easy reconfiguration to a different string, geophone, or hydrophone type
- Self testing with low battery alarm



The GRIP Geophone String Analyzer is a hand-held unit, allowing a quick and efficient method of checking Geophone string Resistance, Impedance, and Polarity (GRIP). It is calibrated to match string parameters by a plug-in module, and any deviation from the nominal values are displayed on a panel meter. The unit is temperature compensated and has an audible tone for polarity and low battery warning.

Using the GRIP on the line, supported by the SMT-300 Geophone Tester to analyze any faults detected, ensures complete quality control of geophone strings. The GRIP can also be configured for checking hydrophone parameters and in combination with the SHARP Hydrophone Tester offers quality assurance for hydrophone units.

SPECIFICATIONS: GRIP

Resistance Analysis Detects	Open-circuit coils Open-circuit shunt resistors Open-circuit strings Short-circuit geophones Short-circuit strings
Impedance Analysis Detects	Dragging coils Sticking coils Significant frequency, sensitivity, damping and distortion problems Incorrectly planted geophones
Polarity Analysis Detects	Reversed polarity strings or geophones
Battery Life	50 to 100 hours with alkaline batteries
Battery Type	2 x 'PP-3' 9 V
Physical Characteristics	
- Dimensions	Approx. 185 mm x 90 mm x 65 mm (7.2 in x 3.5 in x 2.5 in)
- Weight	Approx. 980 g (31.4 oz)
Limited Warranty Period	180 days

GRIP

SMT-300 GEOPHONE TESTER

■ SMT-300 GEOPHONE TESTER

- Backwards compatible with the SMT-200
- Traceable to the SENSOR final test
- Ultra rugged die-cast aluminum body
- High durability piezo keypad
- Geophone specification library
- Long life on-board rechargeable NiMH battery
- Downloads/uploads data to PC
- Future expandable test platform

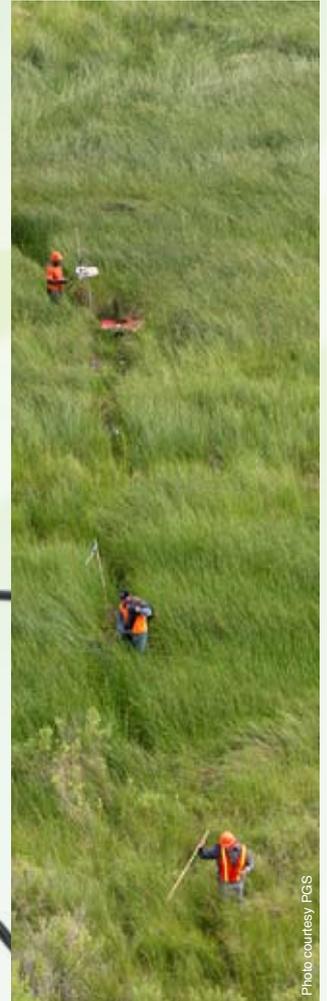


Photo courtesy PGS

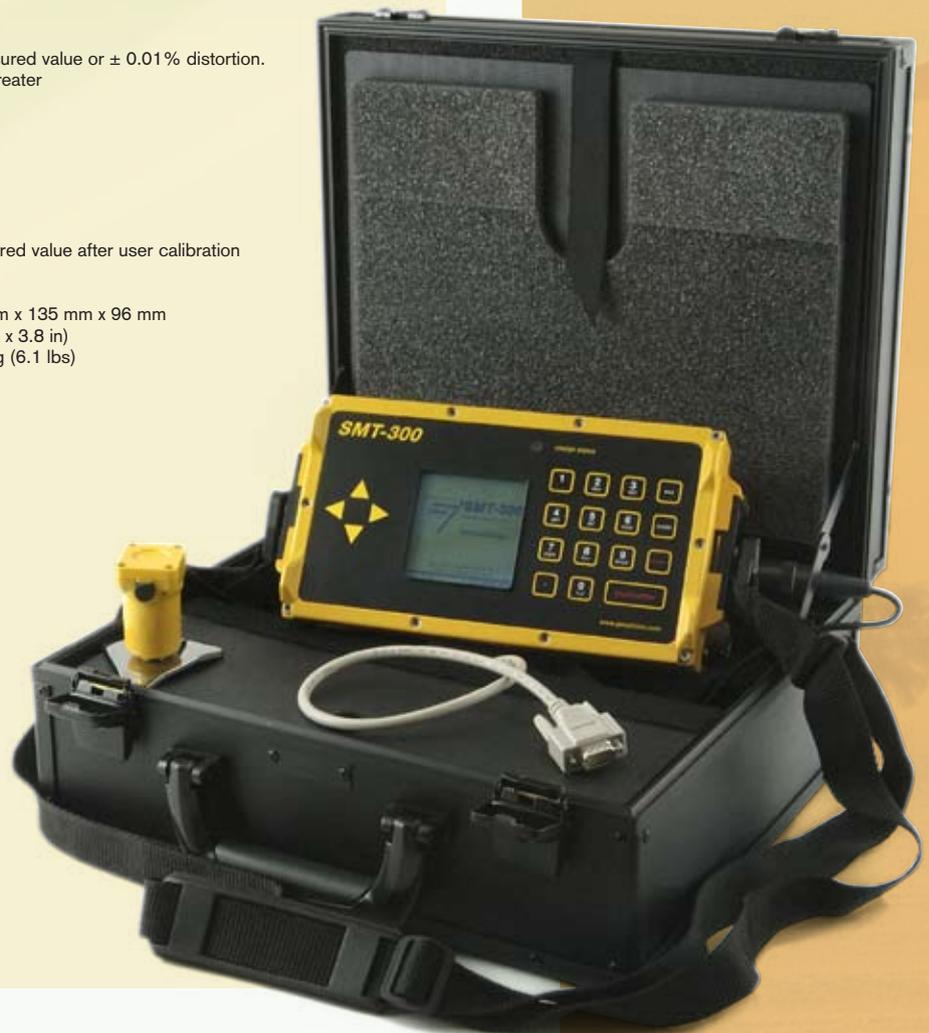
This fourth generation of the SMT series geophone tester is equally at home in the laboratory or field environment, and again sets the industry standard for testing geophone strings or individual elements to manufacturer's standards.

An internal NiMH battery will power the SMT-300 for over 20 hours of continuous operation and the versatile onboard charger can accommodate 12 – 30 VDC. (110 - 230 VAC adaptor provided) When the fast-charge mode is selected, your SMT-300 can be recharged and ready to use in as little as 2 hours.

The water resistant, rugged aluminum body of the tester, improved durability keypad, and provided custom carrying case ensures that your SMT-300 will provide all the reliability and performance that you demand for years to come.

SPECIFICATIONS: SMT-300

Measurement Capability	Measured at +20°C
Natural Frequency	
Range	1 to 100 Hz
Accuracy	8 to 14 Hz \pm 0.5 % of the measured value. Other: \pm 2% of the measured value or \pm .5 Hz, whichever is greater.
Display resolution	0.01 Hz
Coil Resistance	
Range	20 to 99,999 Ω
Accuracy	\pm 1% or \pm 1 Ω whichever is greater
Display resolution	1 Ω
Damping	
Range	0.10 to 0.85
Accuracy	\pm 1% of measured value
Display resolution	0.001
Sensitivity	
Range	0 to 999 V/m/s (0 to 25.37 V/in/s)
Accuracy	\pm 2 %
Display resolution	0.1 V/m/s (0.003 V/in/s)
Harmonic Distortion	
Range	0 to 20%
Accuracy	\pm 10% of measured value or \pm 0.01% distortion. Whichever is greater
Display resolution	0.01%
Impedance	
Range	20 to 200k Ω
Leakage Test	
Range	1 to 100 M Ω
Accuracy	\pm 5% of measured value after user calibration
Physical Characteristics	
- Dimensions	Approx. 260 mm x 135 mm x 96 mm (10.2 in x 5.3 in x 3.8 in)
- Weight	Approx. 2.75 kg (6.1 lbs)
Environmental Specifications	
Operating temperature range	-20 to +50°C
Storage temperature range	-20 to +40°C
Humidity	0 - 80% RH
Housing standard	IP-65



SHARP HYDROPHONE TESTER

■ SHARP HYDROPHONE TESTER

- Suitable for testing a wide range of hydrophones
- Easy portability with electronics, acoustic source, and reference hydrophone all in one case
- Consistent results by eliminating air temperature and humidity variations through the use of a feedback control loop



- $\frac{1}{4}$ - λ , acoustic, resonance pipe ensures strong signal amplitude at measurement point; sensitivity adjustment accessible on front panel
- Battery-powered for portability with external 12-Volt power connector provided
 - Provision for GRIP Analyzer connection for resistance and impedance tests

Testing hydrophones in the field can be complicated with results strongly influenced by the level of the measurement drive signals. The Sensor Hydrophone Acoustic Response and Polarity (SHARP) tester allows a quick and reliable, in-field, acoustic measurement of hydrophone sensitivity and polarity.

SPECIFICATIONS: SHARP

Sensitivity	Selectable 0 V/bar, 1 V/bar – 20 V/bar, or 10 V/bar – 200 V/bar
Polarity	Direct and clear indication using red / green LED's
Test Frequency	Approximately 170 Hz
Acoustic Test Level	Approximately 1 mbar RMS
Power	Internal, 12-V, 1.2-Ah battery, providing 6 hours of continuous testing External, 12-V battery Selectable 110-Vac or 230-Vac adapter / charger
Physical Characteristics	
Transport case	
- Dimensions	340 mm x 185 mm x 530 mm (13.4 in x 7.3 in x 20.9 in)
- Weight	12.6 kg (27.7 lb)
SHARP	
- Dimensions	680 mm x 260 mm x 160 mm (26.8 in x 10.2 in x 6.3 in)
- Weight	5.1 kg (11.2 lb)
Limited Warranty Period	180 days

■ THE SMT HERITAGE

The idea that spawned the SMT series of geophone testers began in the early 1980's with the development of the automated testing equipment for use in the Sensor geophone production facility in The Netherlands. Sensor engineers quickly realized the potential benefits of a portable test unit for use by customers to test Sensor geophones on factory specifications.

Released in 1986 at the Houston SEG the SMT-100 was the first computerised portable geophone tester and was an immediate industry wide success. In March of 1989 Sensor released a smaller, lighter and more portable Field Box version of the SMT-100. 1991 saw the introduction of the SMT-150. This economical laboratory based tester utilized the most advanced computer technology of the time...The XT.

Within a few short years chip technology had advanced to the point that it was possible to develop truly portable geophone and string testing equipment. In 1996 the first customer took delivery on the revolutionary new SMT-200. To date Sensor has sold well over 1000 SMT testers, most of which are still working in the field and in labs worldwide to this day. The introduction of the SMT-300 ensures that the success of the SMT line of test equipment will continue well into the future.



SMT-100



SMT-100 Fieldbox II



SMT-150



SMT-200

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