



Certificate of Authorization Holder



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TECHNEL ENGINEERING INC.

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ELECTRICAL METROLOGY
DEADWEIGHT TESTERS
CALIBRATION EQUIPMENT
PRESSURE TRANSDUCERS
FLIGHT TEST INSTRUMENTATION
DATA ACQUISITION
SIGNAL CONDITIONING



Paroscientific, Inc.



Honeywell



STAINLESS STEEL PRESSURE TRANSDUCERS

- Industrial grade pressure transducers
- 0-3 to 0-20 000 psi
- mV, V, 4-20 mA
- low cost, 13mm diam.



INDUSTRIAL / AEROSPACE PRESSURE TRANSDUCERS

- Two models: PPT for dry gas, & PPT-R for rugged industrial applications
- High accuracy over wide temperature range
- Output: 0-5 Vdc, RS232 or RS485
- Wide range of pressure ranges
- CSA approved, explosion-proof



OEM PRESSURE SENSORS

- Low cost small sensors
- Ranges from 1" H₂O to 5000 psi, High Static Line Pressure
- Different accuracies
- SenSym ICT, Data Instruments and Honeywell brand products



LINEAR & ROTARY TRANSDUCERS

- Vibration damped element
- 0.5" to 60"
- Mechanical travel
- Precious metal contacts, s/s shafts
- Mystr® plastic element
- High DC level output
- 1 billion operations



WIRELESS AND STANDARD SAFETY SWITCHES

- Limitless™ wireless switches
- From ultra miniature to large basic switches
- Tested — tough for industrial machinery
- Sealed in rugged housings
- Available with variety of actuators, electrical specifications, terminations, circuits, and sealing ratings



PORTABLE PRESSURE SOURCE

- Self contained pneumatic cylinder to 3000 psi
- Micro-metering valves
- Stable, fine control provides precise pressure source
- NATO STOCK Number



PORTABLE PRESSURE CALIBRATOR

- Self contained cylinder
- Vacuum to 10,000 psi
- Current display of pressure
- Exclusive precision vernier for precise pressure control
- NATO STOCK Number



DIGITAL INDICATOR

- Built in transducer
- Economical, Digital Pressure Indicator
- "Freeze mode: and "min /max " for setting pressure switches or pressure relief valves
- Table top or rack mount
- Traceable to NIST

DEPTH TRANSDUCERS

- Ranges: 0-3 to 900 ft of water
- Accuracy: to 0.1% FS
- Output: 0-5, 0-10 VDC, 4-20 mA, RS-485
- Lightning surge protection
- S/S Hastelloy C or Titanium



KELLER



PRESSURE TRANSDUCERS

- Ranges: ABS to 15,000 psi
- Accuracy: to 0.01% FS
- Output: 0-5, 0-10 VDC, 4-20 mA, RS-485
- ATEX-Ei, CE,
- ABS, Gauge, Diff.
- S/S Hastelloy C or Titanium



DIGILEVEL EC

- SDI-12 digital interface
- Range: 0-10 m H₂O to 30 m H₂O
- Accuracy: 0.01% FS Total Error Band
- Integral cable or seacon connector
- Separate Electrical and vent cable
- Field Serviceable
- Lightning/surge protection
- Emulates: Tavis, KPSI, Design Analysis



PIEZORESISTIVE OEM SENSORS

- Accuracy: 0.5% typ. (includes lin/hyst/repeat)
- Series 9 offers range from ABS to 3000psi
- Series 8 offers ranges from 150 psi to 15,000 psi
- 15mm and 19mm diam
- Diaphragm: 316L S/S or Hastelloy C
- Standard operating temp range: -30°C to 100°C



Paroscientific, Inc.



LABORATORY DIGITAL PRESSURE STANDARD

- Accuracy: 0.008% FS
- Ranges: 0-15 psia to 40,000 psia
- RS-232 interface
- Integral DigiQuartz® transducer
- Two-line menu display with selectable functions



DEPTH & PRESSURE TRANSDUCERS

- Digital output or quartz crystal frequency
- Fully calibrated and thermally characterized
- Accuracy: 0.01% FS or better
- Ranges 0-15 psia to 40,000 psia, 0-3, 0-6, 0-18 psid
- Depth range to 7000 meters
- Metrology, Hydrology, Aerospace



FIELD DIGITAL PRESSURE STANDARD

- Accuracy: to 0.008% F.S..
- Ranges: 0-15 psia to 40,000 psia
- Environmental enclosure
- Integral digiquartz® transducer
- RS-232 and USB interfaces
- Airfield functions



METEOROLOGICAL SYSTEM

- Pressure accuracy 0.08 hPa from 620 to 1100 hPa
- Temperature accuracy 0.1°C from -50 to +60°C
- Relative humidity accuracy 2% 25°C
- Standard configuration or fan aspirated
- RS-232/RS-485 interface
- Used to calculate air density



RACK MOUNTED PRESSURE SCANNERS

- Intelligent, temperature compensated
- 6+ month calibration cycle
- Ethernet, ARINC429, RS232 interface
- LabVIEW® drivers
- 625 samples/chan/sec



INTELLIGENT PRESSURE SCANNER

- Air or Liquid pressure measurement
- 16 chan, temperature compensated sensors
- Scan at 500 samples/chan/sec
- Ethernet, LabVIEW®, OPC



INTELLIGENT TEMPERATURE SCANNER

- Ethernet TCP/IP protocol "network ready"
- Engineering unit output
- Open thermocouple test
- Accepts type E, J, K, N, R, S, and T
- 10 samples/channel/second
- 1000 VDC input isolation
- 16, 32, 64 chan



MINIATURE PRESSURE SCANNER

- Compact, 128 pressure inputs
- Scan pressure up to 100 KHZ
- Accuracy: 0.08% F.S.
- Different sizes and shapes
- Interfaces to DSM3400 or E-RAD4000



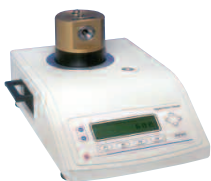
MODULAR DATA SYSTEM

- DSP technology
- Interfaces to ZOC modules
- Modular 1 to 8 A/D sections
- Ethernet TCP/IP, network "ready"
- Engineering Unit output
- Sample rates to 625 Hz/chan



INDUSTRIAL DEADWEIGHT TESTERS

- Hydraulic & Pneumatic
- Pressure ranges from 5" H₂O to 100,000 psi
- Accuracy: to 0.006% of RDG
- Automatic dual piston for low/high range
- Dual area screw pump for priming & fine control



DIGITAL PRESSURE STANDARD

- Vacuum to 2,500 psi
- Accuracy: 15 ppm over 3 years
- Digital display and RS232 output
- Integrated environmental monitoring module
- Based on fundamental piston/cylinder
- Automatic Self-Calibration

DIGITAL PRESSURE GAUGE

- Ranges from 10" H₂O to 6,000 psi
- ABS, gauge, bi-directional, vacuum
- Accuracy: 0.03% FS
- Selectable Engineering units
- Large, easy to read display
- RS-232 or RS-485 interface



INTELLIGENT TRANSDUCERS

- RS-232 or RS-485
- Ranges: 0-10" H₂O to 6,000 psi
- Accuracy: from ± 0.01% F.S.



AUTOMATED PRESSURE CONTROLLER

- 1 or 2 independent channels + barometer
- 1 or 2 transducers per channel
- Control Stability 0.003% F.S.,
- Total Accuracy 0.01% RDG
- Ranges: from 10" H₂O to 6,000 psi
- RS-232, Ethernet, IEEE-488
- Air Data Test Set also available



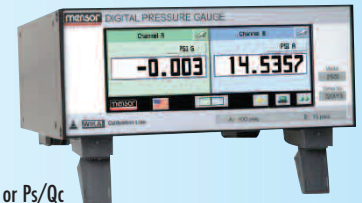
HAND HELD DIGITAL PRESSURE CALIBRATOR

- Dual or single range
- Accuracy: 0.015% F.S.
- Pressure range: 0-3 to 6000 psi
- ABS, Gauge and mA input
- Large, easy to read display



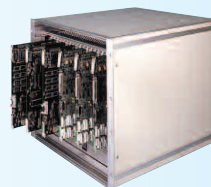
DIGITAL PRESSURE STANDARD

- Ranges from 10" H₂O to 10,000 psi
- Accuracy: 0.01% FS
- Single or dual range / display
- RS-232 and Ethernet interface
- User-friendly interface
- Large, easy to read display
- Avionics functions available, Ps, Qc, Ps/Pt or Ps/Qc



TRANSDUCER SIGNAL CONDITIONING

- Individual or rack mount
- Transducer & instrumentation amplifiers
- 10 or 300 volts common mode
- Gains from 1 to 10,000
- Fully programmable



DATA ACQUISITION & CONTROL

- Strain gauge, bridge, T/C, RTD, LVDT, V, I, event, frequency, count, period and time
- Turnkey software
- Amplifier-per-channel signal conditioning
- Analog calibration



PROGRAMMABLE DIGITAL TERAOHMMETER

- Ultra high resistance measurement to: $10^{16} \Omega$
- In current mode measures to: $10^{-13} A$
- Logging, graphical display and analysis of measurements
- SCPI compliant IEEE-488.2 and RS232C
- TeraCal™, new Windows-based calibration software



AUTOMATIC RESISTANCE/TEMP BRIDGE

- Automated resistance and temperature bridge
- Modular design, expandable capabilities
- Range: $1 \mu\Omega$ to $1 G\Omega$
- Accuracy: 0.02 ppm RDG
- Built-in voltages to 1000 VDC
- Range extenders in 150 Amp increment
- Currents up to 3000 Amps
- Wide range of ratios
- BridgeWorks™ Data Acquisition Software



STANDARD RESISTORS

- A family of standard resistors
- Stability: to 2.5 PPM / year
- Low temperature coefficient
- Range: $1 \mu\Omega$ to $10 P\Omega$
other values available



DECADE BOXES

- 3 to 7 dial models
- Low temperature coefficient
- Smallest increments is 10Ω
- Largest full scale total resistance $>10 T\Omega$
- Accuracy of 0.01% from 1Ω to $10 M\Omega$
- Smooth dial rotation w/stop position at "10"
- Special ranges and "zero" resistance "stop" Available



TEMPERATURE AIR BATH

- Excellent temperature stability, better than $0.03^\circ C$ over 24 hours
- Temperature range $15^\circ C$ to $50^\circ C$
- Forced air convection ensures uniform temperature
- Large volume enclosure – over 82 Litres
- Enclosure is fully EMI shielded
- Convenient front access door
- Fully Programmable via the Optional IEEE-488.2 Interface



FLIGHT DATA ACQUISITION

- All-digital backplane
- Reliable and rugged
- Compact and low power - Ideal when space and power are limited
- High performance, High system throughput and data integrity
- COTS modular design - 100+ plug-in modules fit all chassis
- Powerful software - Intuitive, fast set-up and programming; Tight integration with display/analysis systems



GROUND STATIONS

- PC based architecture
- Powerful software suite for real-time and post-test data display and analysis
- Broad range of PCI hardware including: RF Receivers, Bit Synchronizers, PCM decommutation, video decompression, digital and analog I/O



NETWORK SWITCHES

- Significantly less wiring
- Standard open interfaces and protocols
- Higher data rates and improved time synchronization
- Reduction of programming and troubleshooting time during installation and test
- Reduced cost and ease of integration with COTS equipment
- Digital architecture allows future technology upgrades



RECORDERS

- Rugged, compact form factor
- Live on power-up
- Integrated Ethernet recording, 100/1000BaseT
- CF or SATA SSD storage media
- Integrated fast media formatting
- IRIG-B and IEEE 1588 Precision Time Protocol (PTP) time synchronization
- Open PCAP file format; conversion to IRIG Ch10 format in post-processing
- Streamlined data buffering techniques protect data from power outages



Technel Engineering Inc. has TSSA Certificates of Authorization for Category A, D, F & H fittings. Technel designs, builds and installs CRN labeled "fittings". On-site training is also provided.



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SERVICES OFFERED

- CALIBRATION
- CUSTOM PRESSURE CALIBRATION BENCHES
- PRESSURE BOUNDARY TOOLS
- ON-SITE PRESSURE TRAINING