

HT Series™

15 Ton Digital Cone

The digital electronic subtraction 15 ton cone is designed to address the accuracy, sensitivity and durability problems inherent in other cone designs of the same or lower capacity. With a resolution of 10 pounds, this cone provides excellent data in medium to stiff materials and provides good resolution in most materials. This cone has a 15 sq. cm tip.

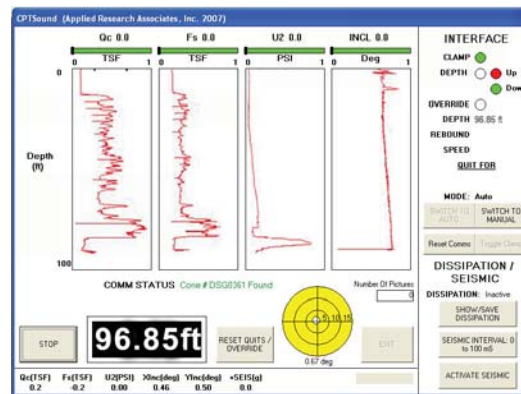
The unit consists of a dual element strain gauge transducer, with the cone electronics packaged directly behind the transducers. The cone channels are temperature compensated to provide stable readings during testing. The cone tip, sleeve (local friction element) and pore pressure element (filter) are easily and quickly changed when necessary by the operator.

The cone is available with our standard channels (tip, local friction, pore pressure, inclinometer, seismic, and temperature) and can be used in conjunction with our Vision or Resistivity modules.

Pore Pressure can be measured in either U1 or U2 position (on the face of the tip or just behind the tip) (U2 shown at left)

Cone Channels:

- Tip
- Local Friction
- Pore Pressure
- Temperature
- Inclination
- Seismic



CPTSound Penetration Screen

Calibration data for tip, local friction and pore pressure channels is stored in CPU nonvolatile memory. Digital cones conform to all international standards.



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Electrical Specifications 15 Ton

- Power: +12 vdc at 200 ma (max)
- Connector: 10 pin LEMO waterproof
- Operating Temperature: 0 C to 60 C
- Storage Temperature: -40 c to 70 c
- 4 channel, 24 bit A/D converter for measurement of tip, friction, and pore pressure. Minimum noise-free resolution of 1 part in 65000.
- 10 channel, 12 bit A/D converter for measurement of inclination, seismic, temperature and spare channels.
- 8 bit microcontroller with 8kb flash memory for cone identification and calibration data storage.
- 32 kb non-volatile ram for data storage.
- RS-485 serial communication. Cable lengths of 1000 ft possible. CRC error checking to prevent transmission of incorrect data.
- Cones are interchangeable in the field.
- Field verification of calibration can be accomplished with optional field verification kit.
- Can be used with vision or resistivity modules.

Mechanical Specifications 15 Ton

Tip

- Tip angle: 60 degrees
- Tip area: 15 sq cm
- Net area ratio: 0.807
- Tip range: 150 MPa, 225 kn, 50,000 lbs
- Tip mechanical overload capacity: 150 %
- Accuracy: 0.5 %
- Temperature compensated.

Sleeve

- Sleeve area: 225 sq cm
- Sleeve capacity: 2 MPa, 23 kn, 10,000 lbs
- Sleeve mechanical overload capacity: 150 %
- Accuracy: 0.5 %
- Temperature compensated
- Equal end area eliminates pore pressure effects.

Pore Pressure Transducer

- Pore pressure range: 3500 KPa (1000 psi).
- Pore pressure mechanical overload pressure: greater than 200 %.
- Accuracy: 0.5 %
- Temperature compensated

Inclinometer

- Two channel inclinometer. X and Y measurement provides information on cone migration.
- Uses accelerometers to measure inclination. No moving parts.
- Range: 0 to 15 degrees.
- Resolution: 0.1 degree

Seismic

- Available with Uni or Biaxial geophone.
- Capacity: +/- 2 g.
- True DC response.
- Digitized in cone and transmitted over serial port. No extra wires or analog measurement required.

