



SMARTSOLO[®]

World's First Smart Seismic Sensor
Makes \$100/CH High Density Seismic Possible



SmartSolo®

World's First Smart Seismic Sensor

The seismic industry continues to demand that exploration is carried out at ever-greater scale and receiver density, while somehow attempting to balance the requirement to keep project costs under control. To provide the industry with a solution to this challenge, DTCC has developed the SmartSolo intelligent seismic sensor.

SmartSolo is based on DT-SOLO, the high-sensitivity geophone and focuses on the principal of seismic exploration which is known as 3W (**W**ave = high fidelity signal; **W**hen = accurate timing; and **W**here = the location), incorporated with electronics and software technologies in mobile internet era. This smart sensor provides adequate info for highest-quality seismic data acquisition while keeping its functions and structure as simple as possible. Electronics and software technologies are super reliable, mature and cost-effective in mobile internet era. These technologies are used for SmartSolo at maximum possible scale. The result: the geophone is something smart, reliable, user-friendly, cost-effective and could run in any harsh environment.

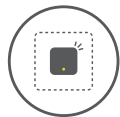
Patent Publication Number 201630504296.0
 Patent Pending Number 201610905491.3



Lowest per Channel Cost
in the Seismic Industry



Light Weight
1.1 kg (including battery and spike)



Small Footprint
95mm X 103mm



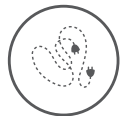
Built-in 8 GB Non-volatile
Flash Memory
could be Expanded to 32 GB



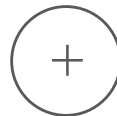
Mobile App
Scanning & Technical Support



DT-SOLO
High-sensitivity Sensor
Technology (10Hz & 5Hz optional)



No Exposed Connector
in the Field



Optional External
Battery and Sensor



50 Days Operating Life
@ 25°C 1ms 12h ON/12h Off



Automatic Sensor Testing
and GPS Logging



Stake-less Operation
for Max Flexibility



Auto Scan Mode
for Fast Deployment

DT-SOLO® The Heart of SmartSolo

High-quality seismic data derives from high-quality seismic sensors. DT-SOLO is a high-sensitivity geophone specially designed for point receiver applications. It is well-known in the seismic industry as the top-quality high-sensitivity geophone which is widely used by contractors and equipment manufacturers.

- High Quality
- High Sensitivity
- Super Reliable
- Greater Savings
- Low Distortion
- Single Point Receiver
- Industry Leader
- Available in 10 Hz & 5 Hz



DMC, DCC, DHR The Peripherals of SmartSolo®

Fast Data Harvesting Speed
240 GB / 7 min
3000 CHs @ 20 days @ 2ms in < 3.5 hrs

Highly Flexible System Configuration
Complete Software Suite



SmartSolo®

The Future of the Seismic Industry

Smaller crew size, less man power and simpler equipment

- Lower operational cost
- Less environmental impact
- Improved HSE

Million channels capability

- High channel density
- Better image at lower cost

Super reliable, lower power consumption, longer operating time

- High productivity
- Lower operational cost

Highly efficient data harvesting and management

- Lower operational cost
- Better user experience



Physical Specs

Size	95mm x 103mm x118mm (without spike)
Weight	1.1kg (including internal battery and spike)
Waterproof	IP67
Operating temperature	-40°C to +70°C
Battery	38.48Wh
Operating Life @25°C	25 days @ 1ms continuous 50 days segmented (12hours ON/12hours SLEEP)

Sensor Specs DT-SOLO 5Hz

(All parameters are specified at +22° C in the vertical position unless otherwise stated.)

Natural Frequency	5Hz
Damping	70%
Sensitivity	76.7 V/m/s (1.95 V/in/s)

Sensor Specs DT-SOLO 10Hz

(All parameters are specified at +25° C in the vertical position unless otherwise stated.)

Natural Frequency	10Hz
Damping	70%
Sensitivity	78.7 V/m/s (2.0 V/in/s)

Smart Electronics Specs

(@ 1ms sample interval, 31.25 Hz, 25°C unless otherwise indicated)

ADC resolution	24bits
Sample intervals	1,2,4 milliseconds
Preamplifier gain	0dB to 24 dB in 6 dB steps
Anti-alias filter	206.5 Hz @ 2ms (82.6% of Nyquist) selectable - linear Phase or minimum phase
DC blocking filter	1Hz to 10Hz,1Hz increments or DC Removal
GPS Time Standard	1ppm
Timing Accuracy	<20µs, GPS disciplined
Maximum Input Signal	2.5V peak @Gain 0dB
Equivalent Input Noise	1.23µV @ 2ms @Gain 12dB
Total Dynamic Range	110dB@Gain 0dB
Total Harmonic Distortion	<0.0005%
Common Mode Rejection	90dB
Gain Accuracy	<1%



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