

SMARTSOLO®

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(Wave = high fidelity signal; When = accurate timing; and Where = 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



Small Footprint
95mm X 103mm



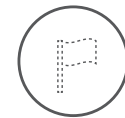
Mobile App
Scanning & Technical Support



No Exposed Connector
in the Field



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



Stake-less Operation
for Max Flexibility



1.1 kg
Light Weight
1.1 kg (including battery and spike)



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



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



Optional External
Battery and Sensor



Automatic Sensor Testing
and GPS Logging



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

3000CHs@20days@2ms in<3.25hrs

Highly Flexible System Configuration
Complete Software Suite



World's First Smart Seismic Sensor
Makes Cost-effective High Density Seismic Possible

www.smartsolo.com





International Sales

Unit 145, 3901-54 Ave, NE
Calgary, AB T3J 3W5
Canada
Tel: +1-403-264 1070
Toll Free: +1-888-604 SOLO(7656)
Email: sales@smartsolo.com

Business Development Centre

301, Building B, No.15 South of Ronghua Road,
BDA, Beijing, 100176, China
Tel: +86-10-60844158
Fax: +86-10-87220112
Email: marketing@dtcc.asia

www.smartsolo.com

Physical Specs

Size	95mm x 103mm x 118mm (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(Fn)	5Hz
Coil Resistance	1850 Ω
Damping	Open Circuit Damping 0.6 Damping with 43kΩ 0.70
Sensitivity	Open Circuit Intrinsic Voltage Sensitivity 80 V/m/s (2.03 V/in/s)
Distortion	< 0.1%

Sensor Specs DT-SOLO 10Hz

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

Natural Frequency(Fn)	10Hz
Coil Resistance	1800 Ω
Damping	Open Circuit Damping 0.51 Damping with 20kΩ 0.70
Sensitivity	Open Circuit Intrinsic Voltage Sensitivity 85.8 V/m/s (2.18 V/in/s)
Distortion	< 0.1%

Smart Electronics Specs

(@ 2ms 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	206.5Hz@2ms (82.6% of Nyquist) selectable - linear Phase or minimum phase
DC blocking filter	1Hz to 10Hz, 1Hz increments or DC Removed
GPS Time Standard	1ppm
Timing Accuracy	±10μs, GPS disciplined
Maximum Input Signal	± 2.5V peak @Gain 0dB
Equivalent Input Noise	0.71μV@2ms@Gain 12dB (Typical)
Instantaneous Dynamic Range	116dB @2ms@Gain 0dB
Total Harmonic Distortion	<0.0005%@Gain 0dB
Common Mode Rejection	≥100dB
Gain Accuracy	<1%
System Dynamic Range	140dB
Frequency Response	0~413Hz



DT-SOLO 5Hz

DT-SOLO 10Hz

Specifications are subject to change without prior notice.

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

