



# SMARTSOLO<sup>®</sup>

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



[www.SmartSolo.com](http://www.SmartSolo.com)

**SMARTSOLO**  
S C I E N T I F I C

The leading manufacturer in serving geoscience

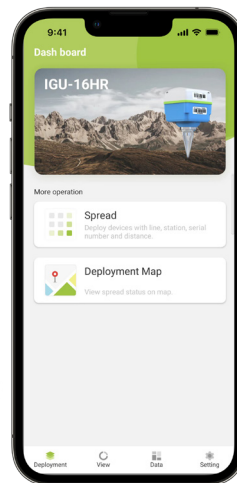
## SmartSolo® World's First Smart Seismic Sensor

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, SmartSolo Inc. 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.

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Lowest per Channel Cost  
in the Seismic Industry



Small Footprint  
95mm X 103mm



Mobile App  
Scanning & Technical Support



No Exposed Connector  
in the Field



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



Stake-less Operation  
for Max Flexibility



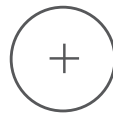
Light Weight  
1.1 kg (including battery and spike)



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



DT-SOLO  
High-sensitivity Sensor  
ology (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  
3000 CHs @ 20 days @ 2ms in < 3.25 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 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	50 days @ 1ms continuous 100 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		1800Ω
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		1800Ω
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	32bits
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	±10us, GPS disciplined
Maximum Input Signal	±2.5Vpeak @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

# **SMARTSOLO** S C I E N T I F I C

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