

SMARTSOLO[®]

World's First Smart Seismic Sensor



IGU-16HR 3C

www.SmartSolo.com

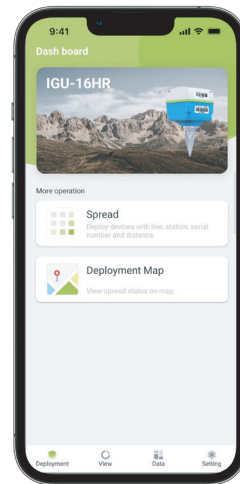
SMARTSOLO
SCIENTIFIC

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.



New Generation
Smart 3 Components Seismic Sensor



Small Footprint
95mm X 103mm



Built-in GPS receiver and
disciplined high precision clock



Based on the most highly regarded
DT-SOLO HS geophone
with 10Hz and 5Hz options



Most cost effective system
on the market



2.4kg Light weight and compact size



Share the same
peripherals as IGU-16, IGU-16HR,
Greater equipment investments savings



All-In-One Modular design provides maximum
productivity, maintenance free operation and
easy battery replacement



Suitable for one station
to million station operations



30 days Up to 30 days of continuous recording
(see Technical specs for details)



Compatible with vibroseis
and impulsive energy sources



Simple LED State Indicator.
Green for "good to go" and Red for "no good"

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



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

Parameters	Specification
Seismic data channel(s)	3
ADC resolution	32 bits
Sample intervals	0.25, 0.5, 1, 2, 4, 8, 10, 20 milliseconds
Preamplifier gain	0dB to 36 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 Removed
Operating temperature	-40°C ~ +70°C
Waterproof	IP68
Physical Size	103mm(L) × 95mm(W) × 187mm(H)(w/o spike)
Weight	2.4kg(Including internal battery and spike)
Data Storage	64GB
Operating Life@25°C	30 days Continuous@ 2ms 60 days Segmented (12hours ON/12hours SLEEP) @ 2ms
Recharge Time	<6hours
Charging Temperature Range	+3°C ~ +45°C

Channel Performance

Parameters	Specification
(@ 2ms sample in terval, 31.25 Hz, 25°C, unless otherwise indicated)	
Maximum Input Signal	±2.5Vpeak @ Gain 0dB
Equivalent Input Noise	0.18μV @ 2ms Gain 18dB
Total Harmonic Distortion	<0.0002% @ Gain 0dB
Common Mode Rejection	>100dB
Gain Accuracy	<1%
GPS Time Standard	1ppm
Timing Accuracy	±10μs, GPS Disciplined
Cross Feed	< -110dB
System Dynamic Range	145dB
Frequency Response	0 ~ 1652Hz

Acquisition Performance

Parameters	Specification	
Natural Frequency	5Hz	10Hz
Spurious Frequency	>170Hz (>150Hz in horizontal sensor)	>240Hz
Distortion	<0.1%@12Hz, (0° ~ 10°) vertical tilt, (0° ~ 3°) horizontal tilt	<0.1%@12Hz, (0° ~ 10°) vertical tilt, (0° ~ 3°) horizontal tilt
Damping	0.7	0.7
Sensitivity	76.7 V/m/s (1.95 V/in/s)	78.7 V/m/s (2.0 V/in/s)
Remark	All parameters are specified at +22°C in the vertical position for vertical geophone and horizontal position for horizontal geophone unless otherwise stated.	All parameters are specified at +25°C in the vertical position for vertical geophone and horizontal position for horizontal geophone unless otherwise stated.

SMARTSOLO
S C I E N T I F I C

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