

# SMARTSOLO<sup>®</sup>

## IGU-16HR 3C

World's First Smart Seismic Sensor



# Features of IGU-16HR 3C



New Generation Smart 3C Seismic Sensor



High resolution data with up to 0.25ms sampling and 24-bit delta-sigma ADC



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



Light weight and compact size



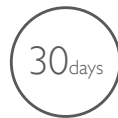
Share the same peripherals as IGU-16  
Greater equipment investment savings



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



Suitable for one station to million station operations



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"

# Technical Specifications

## General Specifications

| Parameters                 | Specification   |  |
|----------------------------|---|--|
| Seismic data channel(s)    | 3   |  |
| ADC resolution             | 24 bits   |  |
| Sample intervals           | 0.25, 0.5, 1, 2, 4 milliseconds   |  |
| Preamplifier gain          | 0dB to 36 dB in 6 dB steps  |  |
| Anti-alias filter          | 206.5 Hz @ 2ms (82.6% of Nyquist)<br>Selectable - Linear Phase or Minimum Phase |  |
| DC blocking filter         | 1Hz to 10Hz, 1Hz increments or DC Removed                                       |  |
| Operating temperature      | -40°C ~ +70°C   |  |
| Waterproof                 | IP67  |  |
| Data Storage               | 32 GB (can be expanded to 64GB)   |  |
| Physical Size              | w/ High Capacity Battery Pack<br>103mm (L) × 95mm (W)<br>×187mm (H) (w/o spike) | w/ Standard Battery Pack<br>103mm (L) × 95mm (W)<br>×150mm (H) (w/o spike) |
| Weight                     | 2.4kg (Including internal battery and spike)                                    | 1.7kg (Including internal battery and spike)                               |
| Operating Life@25°C        | 30 days Continuous<br>60 days Segmented<br>(12hours ON/12hours SLEEP)           | 15 days Continuous<br>30 days Segmented<br>(12hours ON/12hours SLEEP)      |
| Recharge Time              | < 6 hours   | < 3.5 hours  |
| Charging Temperature Range | +3°C ~ +40°C  |  |

## Acquisition Performance

| Parameters         | Specification   |   |
|--------------------|---|---|
| Natural Frequency  | 5Hz   | 10Hz  |
| Spurious Frequency | >170Hz<br>(>150Hz in horizontal sensor)   | >240Hz  |
| Distortion         | <0.1%@12Hz, (0° ~ 10°) V<br>tilt. <0.15%, (0° ~ 3°) H tilt  | <0.1%@12Hz, (0° ~ 10°) V<br>tilt, <0.15%, (0° ~ 3°) H tilt  |
| Damping            | 0.7   | 0.7   |
| Sensitivity        | 76.7V/m/s (1.95 V/in/s)   | 78.7V/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. |

# Technical Specifications

## Channel Performance

| Parameters  | Specification                              |
|---|--|
| (@ 2ms sample interval, 31.25 Hz, 25°C, unless otherwise indicated) |  |
| Maximum Input Signal  | $\pm 2.5\text{V}_{\text{peak}}$ @ Gain 0dB |
| Dynamic Range   | 125dB@ 2ms Gain 0dB                        |
| Equivalent Input Noise  | 0.18 $\mu\text{V}$ @ 2ms Gain 18dB         |
| Total Harmonic Distortion   | <0.0002%@ Gain 0dB                         |
| Common Mode Rejection   | >100dB                                     |
| Gain Accuracy   | <0.5%                                      |
| GPS Time Standard   | 1ppm                                       |
| Timing Accuracy   | $\pm 10\mu\text{s}$ , GPS Disciplined      |
| Cross Feed  | < -110dB                                   |

DTCC reserves the right to change the specifications without prior notice while improving the quality of products



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