



## Digital Marine Streamer System DMS-1

- ❑ **Digital Streamer Means Better Quality Data, Less Time Deploying System**
- ❑ **Comparable In Price To Analog Systems**
- ❑ **Light Weight, Easy To Deploy On Small Boats**
- ❑ **4 ms to 1/16 ms Sampling Means Suitability For More Kinds of Surveys**
- ❑ **24-Bit, 110 dB Dynamic Range**
- ❑ **Automatic Configuration and Fully Self-Testing**
- ❑ **Small Diameter (38 mm, 1.5") Means Easy Deployment by Hand or With Small Winches**
- ❑ **Easily Shippable, No Special Environmental Requirements, Filled with Inert Silicon Oil**
- ❑ **Rugged, 1/8" Wall Thickness, Can Be Used As Bay Cable, Transition Zones**
- ❑ **Multiple Streamer Configuration**
- ❑ **Works with Standard Birds**
- ❑ **Uses Geometrics CNT-1 PC Controller**
  - Separate Windows Display Shots, Gathers, Trigger Timing, Noise, Gun Energy, Tape Status, Alarms
  - Real-Time Brute Stack
  - Multiple Storage Devices
  - Integrates Data from Guns, Nav, Birds
  - Drives Multiple Printers

The DMS-1 series of digital towed hydrophone streamers are the first small diameter arrays with the performance of larger systems. With a diameter of only 38mm, the DMS-1 is easy to deploy, easy to transport and largely immune from the noise, leakage and ground loops that plague the installation of analog streamers in a marine environment.

The DMS-1 is filled with inert silicon oil which makes it environmentally safe. Thick 1/8" abrasion resistant polyurethane keeps the streamer extremely rugged but still flexible enough to deploy by hand or mount on small winches. And the DMS-1 is easy to repair – no fragile fiber optics to break or go bad.



Sampling intervals of 4 ms to 1/16 ms make the DMS-1 suitable for deep petroleum, high-resolution engineering surveys or even sub-bottom profiling. Near-zero dead time makes surveys fast and efficient. A built-in digitally controlled oscillator provides calibration test signals for each channel. Other tests include noise, offset, pulse test, timing, leakage and capacitance of hydrophone elements.

The DMS-1 transmits data via fast Ethernet to Geometrics CNT-1 controller, running field-proven software that is used on over 40 vessels today. And the DMS-1 is entirely built by Geometrics, known for over 30 years as an industry leader in rugged, reliable and well-supported instrumentation.



## Specifications:

### A-D Converter Module (ADCM):

**Number of channels per active section:** 8 (plus 1 optional depth sensor channel)

**Sample Rates:** 1/16 ms, 1/8 ms, 1/4 ms, 1/2 ms, 1 ms, 2 ms, 4 ms

**Bandwidth:** 1Hz to 8kHz

**Programmable Gain:** 0 dB, 12dB, 24 dB, 36 dB, 42 dB

**Maximum Input Range:**  $\pm 2.25V$

**Resolution:** 24 Bits including sign

**Dynamic Range:** 120db Typical @ 1ms, 40db Typical @ 1/16 ms

**QC Tests:** Leakage and capacitance of hydrophone elements, pulse, oscillator, timing.

**Power Consumption:** Approximately 100 mA at 48 VDC

**Calibration Oscillator:** 10 Hz to 2 kHz, 1  $\mu$ volt to 100 mV AC RMS

**Dimensions:** 38 mm diameter x 22cm long (1.75" diameter by 8.5")

**Weight:** 900 grams (2.0 lbs)

**Packaging Material:** 304 Stainless Steel Body

**Connectors:** Waterproof high density stainless steel, 41 pin

### Hydrophone Array:

#### Active Section:

**Number of Channels:** 8 maximum per section

**Number of Sections:** Dependent on array, 12 typical for 96 channel

**Hydrophones per group:** User option, 10 typical at 12.5m

**Hydrophone Type:** Benthos RDA Geopoint

**Depth sensor (optional):**  $\pm 2.5$  percent accuracy, 0-50 meters

**Jacket Material:** Clear polyurethane, 70 Duro, 3.18mm (1/8") wall thickness

**Outer Diameter:** 38 mm (1.5 inches)

**Ballast Fluid:** Inert, non-polluting silicon oil, 100 cSt

**Weight:** ~90 kg (200 pounds) for 8 channels @12.5 meter group

**Break Strength:** 1250 kg (2750 lbs)

**Maximum Tow Speed:** ~8 knots recording, ~10 knots steaming, depending on configuration and sea state

#### Stretch Section:

**Length:** 10, 25 or 50 meters standard

**Outer Diameter:** 38mm, 1.5".

**Compass/Bird Coil:** IO Model 587, mounted at center of section

**Jacket Material:** Clear polyurethane, 70 Duro, 3.18mm (1/8") wall

**Outer Diameter:** 35 mm (1.375 inches)

**Ballast Fluid:** Inert, non-polluting silicon oil, 100 cSt

**Weight:** ~ 45 Kg for 50 meter section

**Break strength:** 1250 kg (2750 lbs)

### Tow Cable:

**Electrical conductors:** 10 twisted pair shielded, 22 awg

**Weight:** Dependent on length, ~ 25 kg (55 lbs) for 50 meters

**Strain member:** Kevlar

**Break strength** 1250 kg (2750 lbs)

### Deck Interface and Power Supply (DIPS):

**Power Requirements:** 115/230 VAC, 3/1.5 Amp max, 50/60 Hz

**Voltage to Streamer:** 36 – 72 VDC

**I/O Communications:** 100Base TX Fast Ethernet, IEEE 802.3 compliant

**Trigger Requirements:** Isolated Input, Positive or Negative TTL, software selectable

#### Testing:

- Continuous monitoring of cable condition for leakage
- Continuous monitoring of Ethernet for faults and collisions

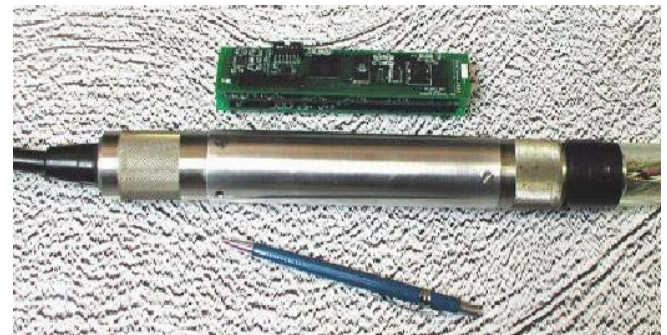
#### Displays:

- LCD Display with touch screen
- LED's for trigger and Ethernet status

**Optional Auxiliary Inputs:** 8, Analog channels with 24 bit resolution

**Ethernet Connection:** RJ-45

**Trigger Connection:** BNC



**Controller:** PC based running Geometrics CNT-1 software.

Multiple shot and gather windows, waterfall and bar graph noise displays, windows for shot timing, gun energy, brute stack, tape status, spectral analysis. Sure-save software protects data loss even with total storage device failure. Files automatically kept in sequential order. Auto-switching between storage device, dual tape writing. Supports multiple printers. Full log kept of all parameter changes. Integrates navigation, gun, bird parameters into SEG-D, SEG-Y or SEG-2 header.

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