ES3-M™

INTEGRATED MULTIBEAM AND MOTION SENSOR

TELEDYNE
ODOM HYDROGRAPHIC
A Teledyne Technologies Company

ES3-M™

The ES3-M integrates the best features of products from two industry leaders in one compact package. In the ES3-M Odom Hydrographic's paradigm changing ES3 multibeam sonar is united with Teledyne TSS's survey proven DMS line of motion sensors. The two companies' technical cooperation has resulted in a system with virtually zero fixed offsets (roll and pitch) between the two central components of a Hydrographic Multibeam System. Eliminating offsets means quicker installations, faster calibrations and reduced setup errors, helping you maximize productivity.

GENERAL SPECIFICATIONS

SONAR:

Frequency
- 240 kHz

Swath Width (Nominal Beam Geometry)
- 120° x 3° Transmit
- 120° x 3° Receive

Effective Beam Widths
- Narrow – 0.75°
- Medium – 1.5°
- Wide – 3.0°

Number of Beams
- Default – 480
- Selectable – 240, 120

Range
- 60m (197 ft.) water depth
- 100m (328 ft.) slant range

Minimum Detectable Range
- 0.5 m below transducer

Maximum Operating Depth (submersion depth)
- 100 m (328 ft.)

Interface to PC
- Ethernet (10 base-T) using UDP

Maximum Cable Length
- 100 m (328 ft.) using CAT5-e

Connector
- Underwater wet-mateable 8 conductor

Power Supply
- 24 VDC nominal (9 to 30 VDC range with PDI)
- Power Dissipation <25 Watts total

Dimensions
- 162 mm (6.3 in.) L x 117mm (4.62 in.) H x 92 mm (3.63 in.) W

Weight
- 8.2 kg (18.07 lbs.) in air

Material
- Stainless steel housing
- Urethane acoustic window

Power/Data Interface "PDI:" (Included in ES3 scope of supply)
- Three (3) port Ethernet switch (ES3, Data Acquisition System, and spare)
- 9 to 30 VDC input range

MOTION SENSOR:

Dynamic Accuracy
- Heave: All units 5cm or 5% — whichever is a greater (period of 0 to 20s)
- Roll and Pitch: DMS-05 = 0.05°; DMS-10 = 0.10° DMS-25 = 0.25° Amplitude ±30°

Maximum Range
- Heave ±10m
- Roll & Pitch ±60°

Bandwidth
- Heave 0.05 to >30 Hz.
- Roll & Pitch 0 to 30 Hz.

Data Output Rate
- Digital: up to 200 Hz.

Output Parameters
- Data packet output down to 1 Hz.; Heave; roll; pitch; remote heave; angular rate X, Y, Z — acceleration X, Y, Z (body frame); angular rate east, north, up — acceleration east, north, up (geographical frame); IMU temperature; surge; sway; sensor status; external speed; external heading; UTC time

Dimensions
- L = 185mm, W = 92mm, H = 92mm (includes connector)

Weight
- 4 kg (7 lbs.)

Power Supply
- 15 to 30 VDC

Inputs and Outputs
- Standard TSS and other manufacturers data strings in addition to user configurable menu
- Aiding speed inputs from GPS require VTG, GLL or GGA strings
- Aiding from heading: NMEA 0183; SGB, Robertson; Sperry

Shock (survival)
- 30g peak 40ms half-sine

Vibration (operation)
- 30mm/s 02 0.2mm, 7-300 Hz.

TDSI (Time Data Sync Interface):

- Provides multiple buffered RS232 outputs to acquisition systems and sensors

Connections:
- DC Power – 24 VDC powers the Active J-Box and connected motion sensor
- Motion Sensor: Accepts motion data from sensor and routes heading (NMEA 0183 String) and Velocity (NMEA 0183 VTG & GLL or GGA) to the sensor.
- Heading Sensor: Input from Gyro Compass or GPS heading system
- GPS Rx, GPS Out, GPS I/O Connections for communication to the GPS Receiver plus buffered outputs to the acquisition system
- Heading Out, Heading I/O: Connections for communications with the heading systems plus buffered output for the acquisition system
- Motion Out, Motion I/O: Connections for communications with the motion sensor plus buffered output for the acquisition system
- PPS input from GPS. Provides conditioning circuitry and output to Data Acquisition System and ES3 Controller

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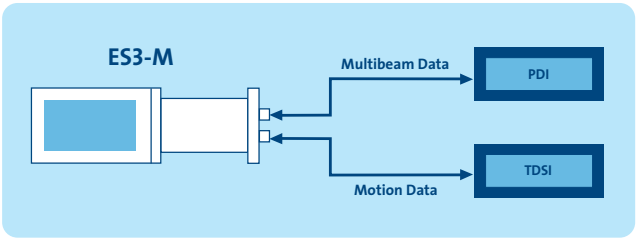

▶ See our entire product line at: **odomhydrographic.com**

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