M3 SONAR® - 500M
SUBCONN CONNECTOR

P/N 922-20160000

**Imaging and profiling capabilities**
- GeoTIFF output for image mosaics
- Multiple true-zoom windows
- CHIRP and Doppler modes of operations

**User-friendly interface**
- Significant time savings
- Integrated tilt and pan/tilt control

**APPLICATIONS**
- Marine Engineering
- Shallow Water Bathymetric Surveying
- Site Inspection
- Environmental Monitoring
- Site Clearance
- Defense and Security

**INSTALLATION OPTIONS**
- Pole mount on a surface vessel
- Suitable for a wide range of vehicles from large work-class ROVs to small observation class ROVs
- Tripod mounted

**M3 SOFTWARE**

The Kongsberg Mesotech M3 Sonar® is a multibeam system with both imaging and profiling capabilities. The M3 Sonar® provides high-resolution and easy to interpret images by combining the rapid refresh rate of a conventional multibeam sonar with image quality comparable to a single-beam sonar.

Detection of small objects out to 150 meters combined with a 120° to 140° field of view allows the operator to see the complete underwater picture in real-time.

**APPLICATIONS**

- Imaging and profiling capabilities
- GeoTIFF output for image mosaics
- Multiple true-zoom windows
- CHIRP and Doppler modes of operations

**INSTALLATION OPTIONS**

- Pole mount on a surface vessel
- Suitable for a wide range of vehicles from large work-class ROVs to small observation class ROVs
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**M3 SOFTWARE**

The M3 Software was developed specifically for the M3 Sonar® to manage communications with the head and operate all beam-forming and imaging processing.

**Four Pre-Defined Operating Modes:**

1. **Imaging:** long range navigation with high speed update rate
2. **Enhanced Image Quality (eIQ):** greatest image quality (0.95° angular resolution) from a short range with a slower update
3. **ROV Navigation:** selects eIQ or imaging based on range
4. **Profiling:** narrow 3° beam used to generate a 3D point cloud
Sonar Specifications
Range: 0.2m to 150m  
Range Resolution: 1cm  
Frequency: 500 kHz  
Pulse Types: CW, CHIRP  
Modes: Variable Vertical Beamwidth, eIQ

Imaging Mode
Horizontal Field of View: 120°  
Vertical Beamwidth: 3°, 7°, 15°, 30°  
Angular Resolution: 1.6°  
Update Rate: up to 40 Hz

eIQ Imaging Mode
Horizontal Field of View: 140°  
Vertical Beamwidth: 30°  
Angular Resolution: 0.95°  
Update Rate: up to 10 Hz

Profiling Mode
Horizontal Field of View: 120°  
Vertical Beamwidth: 3°  
Number of Beams: 256  
Update Rate: up to 40 Hz

Interface Specifications
Communication: Ethernet  
Data Rates: 10/100 Mbps  
Input Voltage: 12 to 36 VDC  
Input Power: 22W (avg.), peak power < 60W, mode dependant  
Operating System: Windows 10 Professional; Windows 7 Professional

Environmental Specifications
Temperature
Operation: -2°C to +38°C  
Storage: -40°C to +55°C

Shock and Vibration
Shock Qualified: +/-50gs, 3 Axes, 6 shocks per axis  
Vibration Qualified: 4g, 30Hz 3 Axes, 2 hours per axis.  
No resonance below 800Hz

Mechanical Specifications
Dimensions: (see diagram below)  
Weight in Air: 4.6kg  
Weight in Water: 1.7kg  
Depth Rating: 500m  
Connector Type: Subconn  
Connector Model: MCBHRA6MSS  
Materials: Hard Anodized Aluminum, Stainless Steel 316, Elastomeric Polyurethane

Specifications subject to change without any further notice.
NOTES:
1. ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
2. MAX. PRESSURE RATING: 4500 PSI.
3. CABLE MINIMUM BEND RADIUS = 5″.
4. REFER TO TABLE FOR TOLERANCES.
5. SNAP SPLIT RING INTO SHELL.
6. TRIM BOOT BACK USING EXACTO KNIFE.
7. POUR POTTING MATERIAL INTO THE BOOT.
8. COVER SOLDER JOINT WITH HEATSHRINK.
9. THE LAST 4 DIGITS OF THE PART NUMBER STATES THE LENGTH OF THE CABLE IN FEET.
10. O-RINGS MUST BE INSTALLED ON CONNECTOR IF APPLICABLE.
11. MAXIMUM 1/2″ UNTWISTED FOR ALL TP.
12. PRINT PART NUMBER USING 1/8″ BLACK TEXT ON WHITE, THEN INSTALL CLEAR HEATSHRINK OVER.
### SUBCONN MCOM6F OR SEACON MCATC6F TO M3 BOX CONNECTION

<table>
<thead>
<tr>
<th>MCOM6F OR MCATC6F</th>
<th>BULGIN</th>
<th>RJ45(T568B)</th>
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<tbody>
<tr>
<td>PIN NUMBER</td>
<td>SIGNAL</td>
<td>PIN NUMBER</td>
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<tr>
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<td>BL_DA+</td>
<td>N/C</td>
</tr>
<tr>
<td>2</td>
<td>BL_DA-</td>
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<tr>
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<tr>
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<td>1</td>
</tr>
<tr>
<td>6</td>
<td>V-</td>
<td>2</td>
</tr>
</tbody>
</table>

### FRONT VIEW

#### BULGIN PIN VIEW (FRONT)

#### RJ45 PIN VIEW (FRONT)

### NOTES:

All parts and processes used on this assembly must comply with the RoHS Directive.

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### REVIEWS

- **ISS**
- **DESCRIPTION**
- **DATE**

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<thead>
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<tbody>
<tr>
<td></td>
<td>ASSEMBLY PINOUT</td>
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### Kongsberg Mesotech Ltd.

**ASSEMBLY PINOUT MCOM6F OR MCATC6F TO POWER/ETHERNET BREAKOUT BOX**

**SIZE:** NSCM NO. 1C965

**TYPE:** MD

**DWG NO.:** 436-00001212

**ISS:** 1.0

**SCALE:** NTS

**W.O. NO.:**

**SHEET 1 OF 1**
NOTES:
1. ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
2. REFER TO THE TABLE FOR TOLERANCES
3. STRIP CABLE BY 3.5" +/- 0.25". MAXIMUM 0.5" UNTWISTED.
4. INSTALL CABLE GLAND.
5. INSTALL RJ45 JACK
6. REMOVE LABEL THAT IS ON THE CABLE WHIP.
7. INSTALL RJ45 COUPLER
   a. REMOVE JACK PLUG FROM RJ45 COUPLER ⑨. THEN INSTALL OUTER PIECE AND HAND-TIGHTEN WITH 24MM SOCKET (COVER BEND ON TOP).
   b. TEST WITH ETHERNET TESTER (FLUKE CABLE IQ TESTER OR EQUIVALENT).
8. CRIMP FERRULES.
9. INSTALL POWER JACK CONNECTOR:
   a. INSTALL CONNECTOR, WASHER, THEN THE NUT.
   b. INSTALL PINS WITH SOLDERED WIRES TO THE CONNECTOR.
   c. INSTALL CAP (SUPPLIED WITH CONNECTOR).
10. INSTALL A STICKER WITH CABLE P/N ON ENCLOSURE LID.
    LABEL SIZE 45mm x 10mm, BROTHER LABEL MAKER SETTINGS;
    FONT: HEL, WIDTH x1, SIZE: 12PT, STYLE: BOLD

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