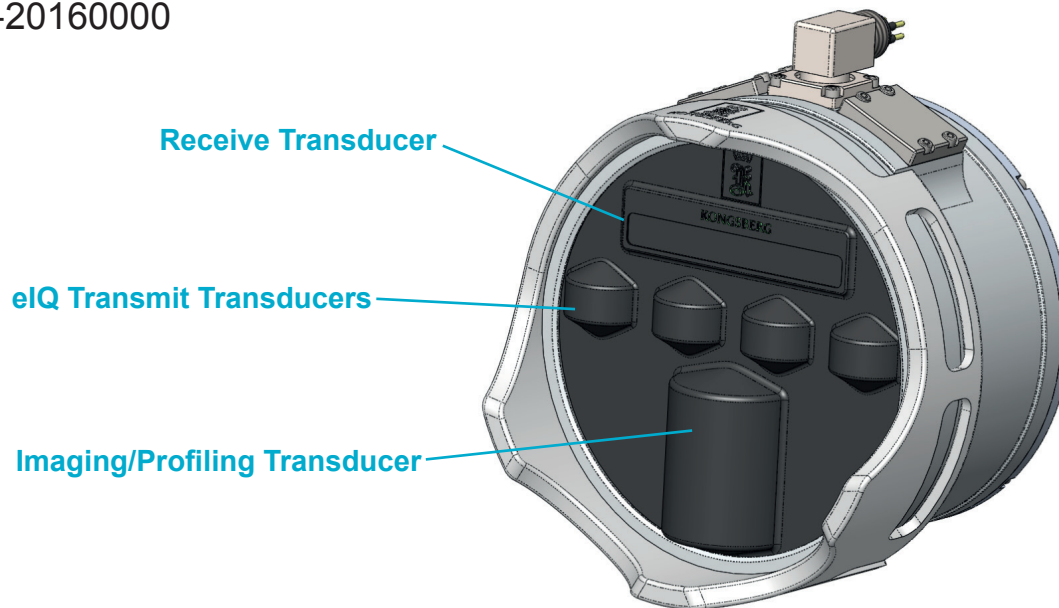


# M3 SONAR® - 500M SUBCONN CONNECTOR



KONGSBERG

P/N 922-20160000



## THE MULTIMODE MULTIBEAM FOR MULTIPLE APPLICATIONS

- 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

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

- 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 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

# TECHNICAL SPECIFICATION

## 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

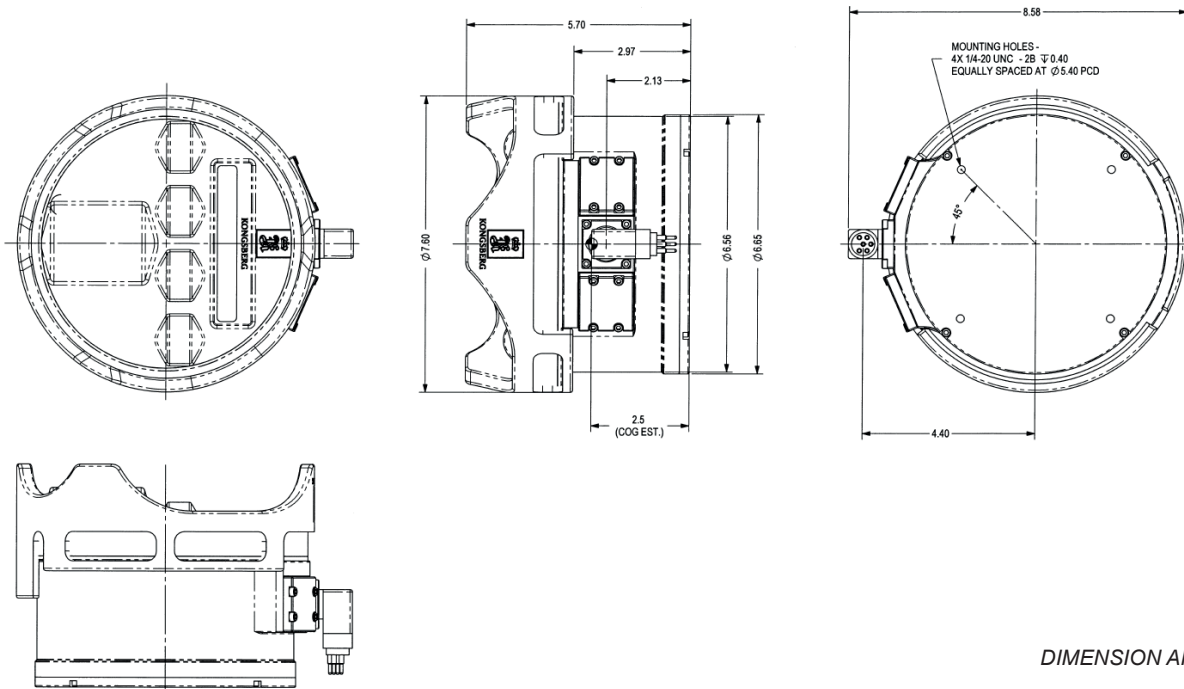
Communication: Ethernet  
 Data Rates: 10/100 Mbps  
 Input Voltage: 12 to 36 VDC  
 Input Power: 22W (avg.), peak power < 60W, mode dependant  
 Operating System: Windows 10 Professional;  
 Windows 7 Professional

## 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

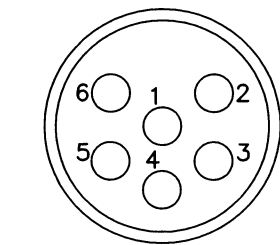


DIMENSION ARE IN INCHES

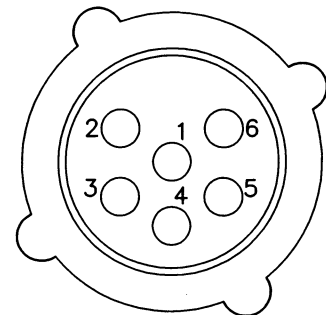
Specifications subject to change without any further notice.

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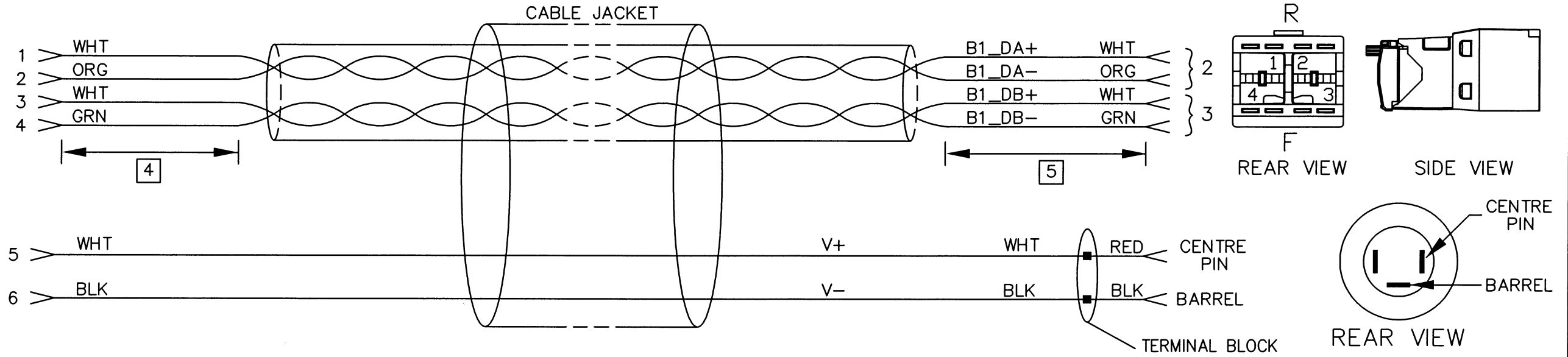




PIN VIEW

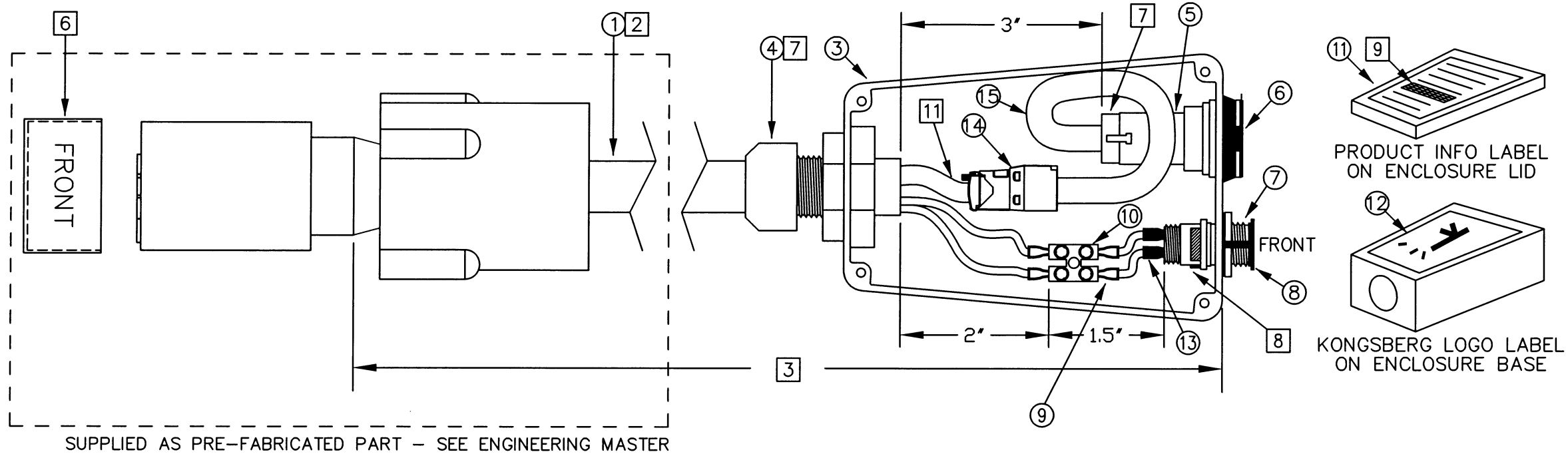


FRONT VIEW



NOTES:

- 1 ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
- 2 CABLE MINIMUM BEND RADIUS = 5".
- 3 LENGTH (IN FT., ± 2%)= XXXX IN PART# 436-0PPP0000-XXXX.
- 4 STRIP CABLE BY 1.5" +/- 0.10". MAXIMUM 0.5" UNTWISTED.
- 5 STRIP CABLE BY 3.5" +/- 0.25". MAXIMUM 0.5" UNTWISTED.
- 6 INSTALL CAP (SUPPLIED WITH CONNECTOR).
- 7 INSTALL CABLE GLAND.  
INSTALL RJ45 JACK:  
a- REMOVE JACK PLUG FROM RJ45 JACK (5), THEN INSTALL OUTER PIECE AND HAND-TIGHTEN WITH 24MM SOCKET (COVER BEND ON TOP).  
b- INSTALL WIRES AS PER T568B ETHERNET STANDARD.  
c- TEST WITH 1 Gbps ETHERNET TESTER (FLUKE CABLE IQ TESTER OR EQUIVALENT).
- 8 INSTALL POWER JACK CONNECTOR:  
a- INSTALL O-RING, THEN INSTALL CONNECTOR THRU THE HOLE IN THE BOX.  
b- INSTALL COVER (WITH THE BEND ON TOP), WASHER, THEN THE NUT.  
c- INSTALL WIRES AS PER WIRING DIAGRAM.
- 9 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
- 10 INSTALL WIRES AS PER T568B ETHERNET STANDARD  
INSTALL RJ45 JACK



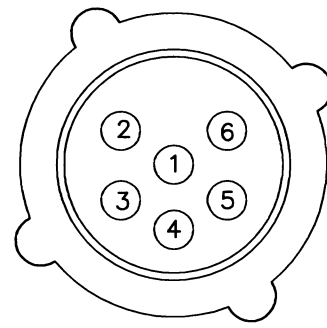
SUPPLIED AS PRE-FABRICATED PART - SEE ENGINEERING MASTER

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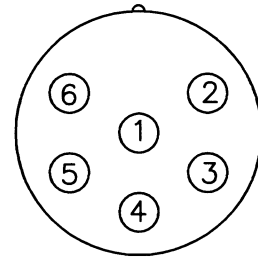
APPROVALS	DATE
DRAWN BD	2015 FEB 6
REVISED	
CHECKED <i>AB</i>	04/29/15
ENGR <i>J.B.</i>	4/23/2015
ISSUED <i>R.C.H.</i>	2015/04/30
CONFIDENTIAL DO NOT COPY	

ISS	DESCRIPTION	DATE
	REVISIONS	
	Kongsberg Mesotech Ltd.	
	M3 SONAR CABLE POWER/ETHERNET WHIP SUBCONN 6PIN CONNECTOR	
SIZE B	NSCM NO 1C965	TYPE MD
DWG NO. 436-03111000	ISS 1.0	
SCALE: NTS	W.O. NO.	SHEET 1 OF 1

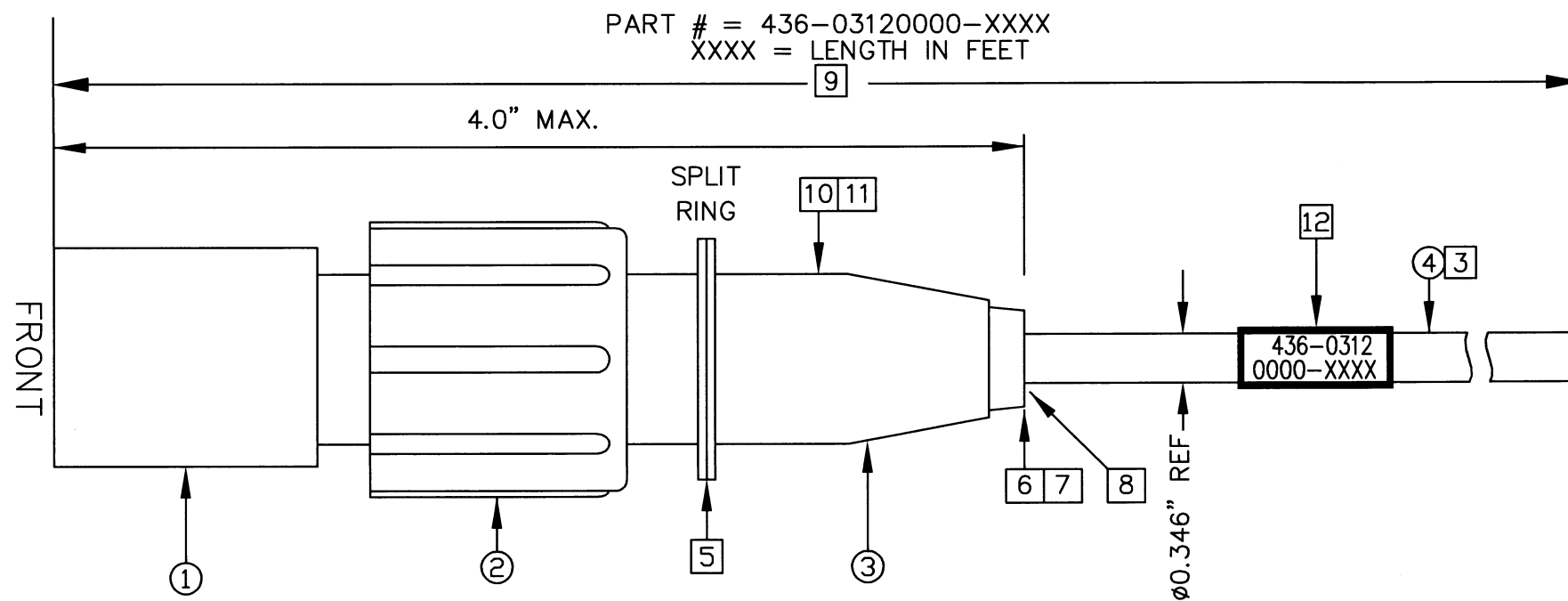
DO NOT SCALE DRAWING



PIN VIEW/  
FACE VIEW



SOLDER LUG/  
REAR VIEW



PART # = 436-03120000-XXXX  
XXXX = LENGTH IN FEET

4.0" MAX.

SPLIT RING

∅0.346" REF

SUBCONN MCOM6F OR SEACON MCAT6F INLINE MOLDED WITH LOCKING SLEEVE		
MCOM6F OR MCAT6F	FALMAT FM02208-04M03	
PIN NUMBER	COLOR	DESC
1	WHT	TWISTED PAIR
2	ORG	
3	WHT	TWISTED PAIR
4	GRN	
5	WHT	18AWG
6	BLK	18AWG

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.

≤1 FT	+1 IN -0 IN
>1 FT-5 FT	+2 IN -0 IN
>5 FT-10 FT	+4 IN -0 IN
>10 FT- 25 FT	+6 IN -0 IN
>25 FT	+5% -0%

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DO NOT SCALE DRAWING

APPROVALS	DATE
DRAWN DM	2017-JAN-10
REVISED	
ENGR <i>dm</i>	Jan 18/2017
CHECKED <i>JH</i>	Jan 18/2017
PROD <i>B.C</i>	Jan 18/2017
QA <i>K.A</i>	18 JAN 17
ISSUED <i>R.C.H</i>	18 JAN 17

1.1	ECO-6004	2016-DEC-08
ISS	DESCRIPTION	DATE
REVISIONS		

Kongsberg Mesotech Ltd.			
M3 SONAR			
CABLE PWR/TEL WHIP			
SUBCONN MCOM6F OR SEACON MCAT6F			
SIZE	NSCM NO	TYPE	DWG NO.
B	1C965	MD	436-03121000
SCALE: NTS			ISS 1.1
W.O. NO.		SHEET 1 OF 1	