



Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

Table of Contents

Introduction.....	3
Included Parts.....	4
Installation.....	8
Charging Altimeter Battery.....	11
Configuring SBE Software.....	12
Additional Notes.....	15
Appendix.....	16

## Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

### *Introduction to Using CTD Altimeter*

#### Purpose

The system is designed to allow real-time monitoring and logging of payload altitude from sea floor. Proper monitoring of data will allow deeper casts while minimizing risk of bottoming rosette. Estimated altimeter range is  $0.5\text{m} < x < 200\text{m}$ .

#### System

A battery powered Kongsberg 1007 Altimeter passes a voltage signal (pins 2 and 3, see Appendix B) through a SBE 911*plus* CTD, where signal is then transmitted up cable to ship-side data processing unit. Using SBE Seasave software, a conversion factor for the appropriate A/D channel converts the voltage signal into a corresponding altitude.

## Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

### Included Parts

- 1) Battery case - tested to 10,000psi (Figure 1):
  - Ti Lid (2-157 o-ring, 2-242 o-ring, 8-842 parbak, Ti pressure relief valve, purge plug, MCBH6F-Ti 1/2-20 connector, MCBH4M-Ti 1/2-20 connector, AG306 1/2-20 connector).
  - LiMnNi Battery (25.9V, 12Ah).
  - Ti Case (w/ 316 SS hardware)
  - Two open-cell foam cushions for battery.
  - Purge Plug (2-013 o-ring, 2-010 o-ring).

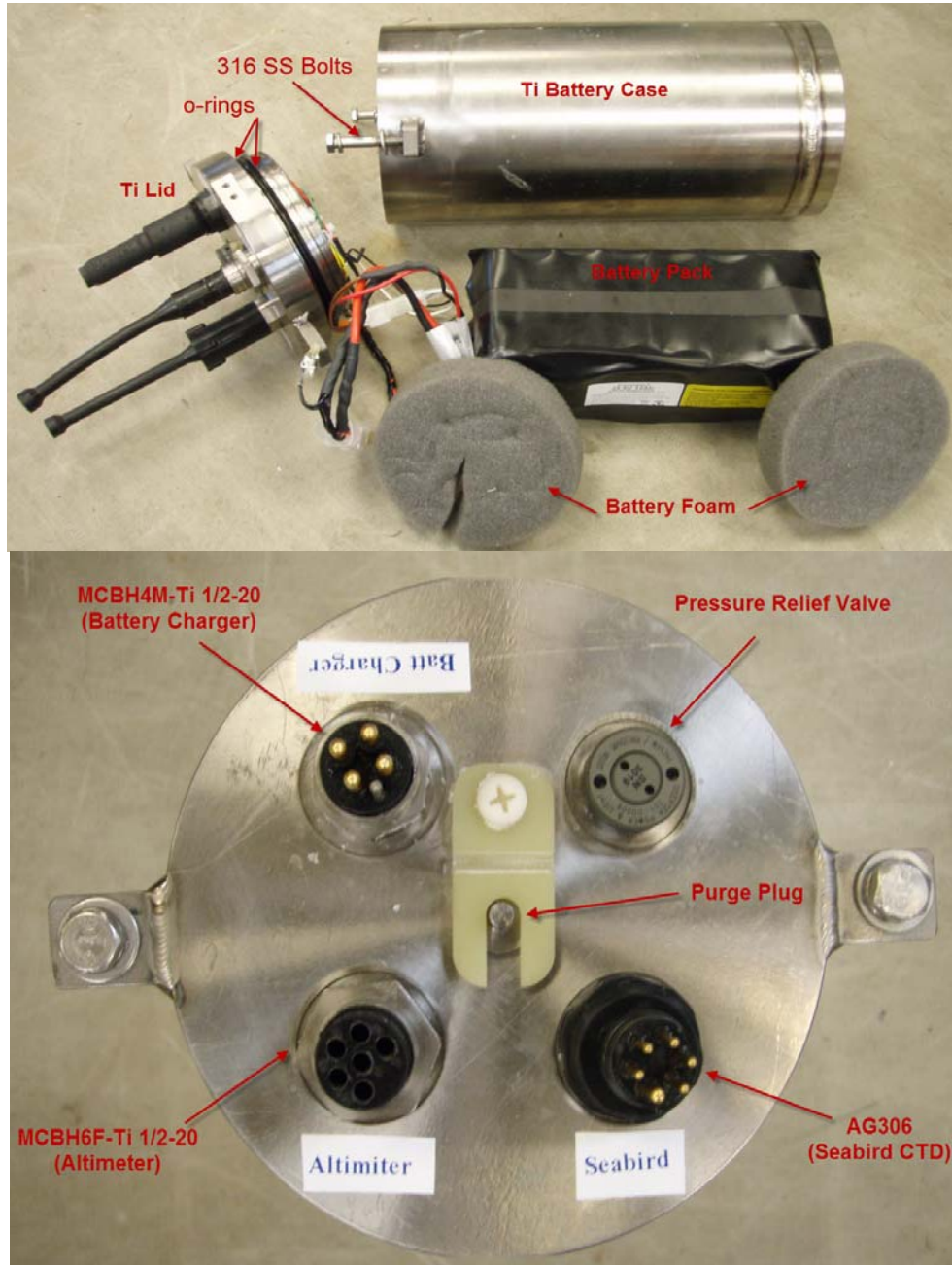


Figure 1: Battery Case.

Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

2) Kongsberg 1007 Altimeter – preconfigured (Figure 2).



Figure 2: Kongsberg 1007 Altimeter.

3) Cables (Figure 3):

- Altimeter cable (RMG-6-FS to MCIL-6-MP, 118”).
- Seabird CTD cable (AG206-FS to AG206-FS, 80”).

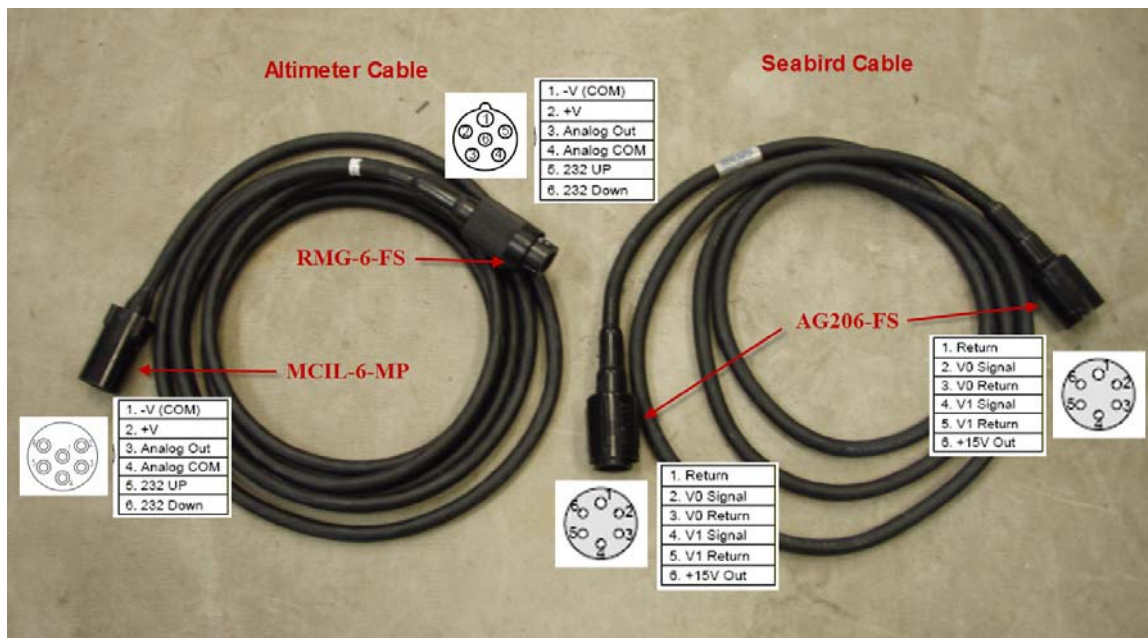


Figure 3: Cables.

Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

4) Battery charger (Figure 4).

**NOTE: Charger is water resistant, NOT waterproof.**



Figure 4: Battery Charger.

5) Mounts (316 SS) (Figure 5):

- Mounting post.
- Battery clamps (2 sets).
- Altimeter clamps (1 set).
- 316 SS hardware with nylocks.

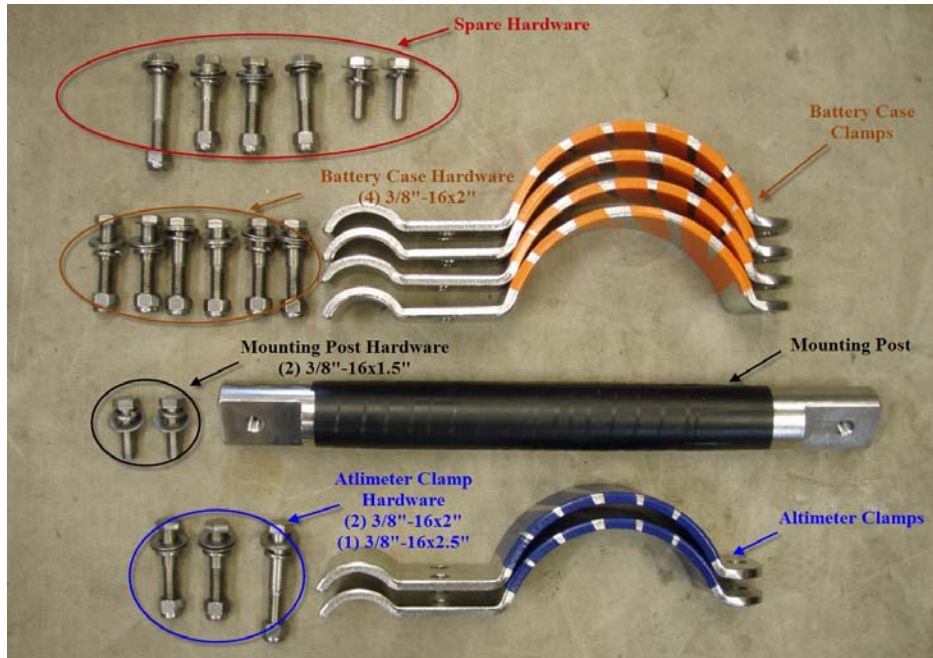


Figure 5: Mounts.

## Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

### Installation

- 1) Determine if your rosette frame will need the optional mounting post. The post is only needed if there are no suitable 1.5" dia. supports around perimeter of rosette base. A suitable post is solid, vertical, ~12" long, and has ~13" clearance radially for clamps.
- 2) If mounting post is needed, install by drilling two, 0.4" dia. holes, spaced 12.9" vertically (Figure 7). Mount post to holes using stainless hardware (isolated if necessary).

**NOTE: If unable to mount supplied post, bolting or welding a similar post is recommended.**

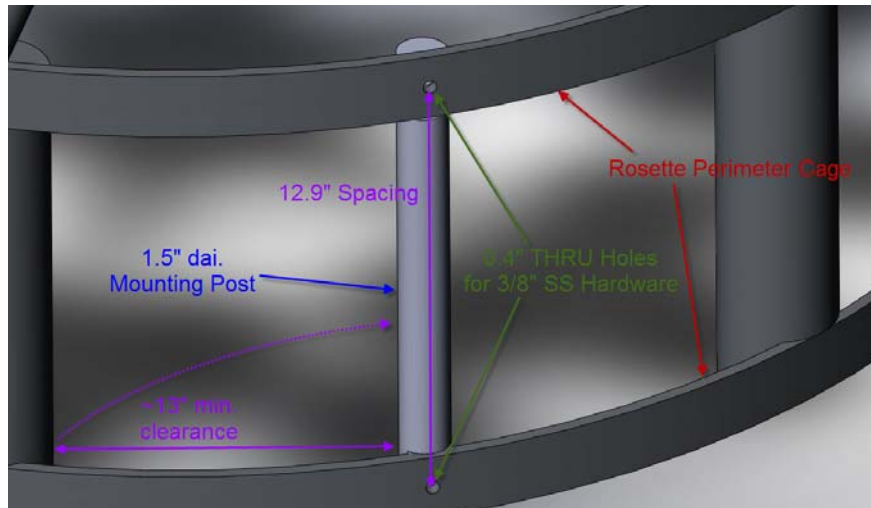


Figure 7: Placement of mounting post.

- 3) Position battery case as shown (Figure 8). Place dunnage under case to raise bottom ~1.5" above rosette base. Install battery clamps as shown with supplied stainless hardware. First tighten four middle bolts, until clamps do not rotate on mounting post, then tighten two case bolts. Remove dunnage.

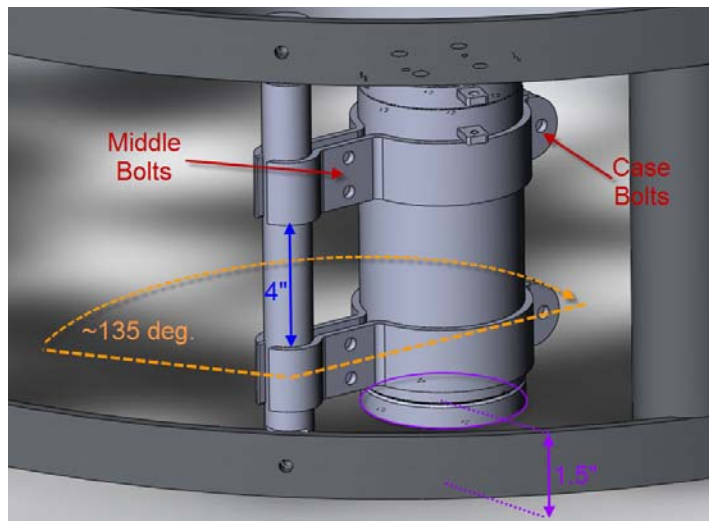


Figure 8: Placement of battery case.

Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

- Position altimeter as shown, (Figure 9). Place dunnage under case to raise sonar head ~1.5” above rosette base. Be careful not to damage sonar head. Install battery clamps as shown with supplied stainless hardware. First tighten two middle bolts, until clamps do not rotate on mounting post, then tighten case bolt. Remove dunnage.

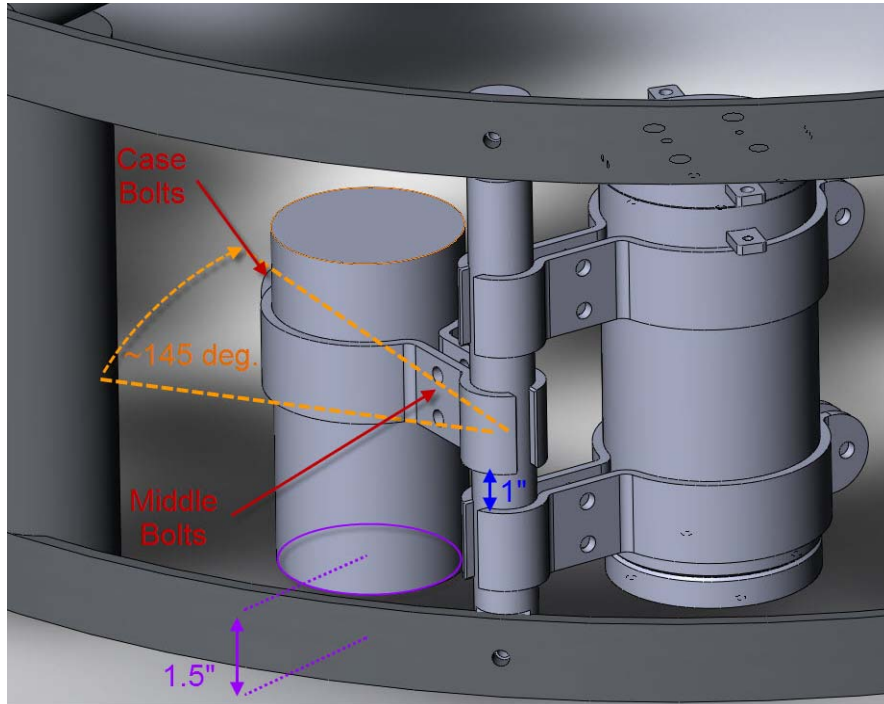


Figure 9: Placement of altimeter.

- Connect AG206-FS between open Auxiliary Sensor Connection on CTD (Figure 10) and AG306-BCL on battery case, securing extra cable to rosette as needed. Inspect, clean and slightly grease all underwater connectors prior to installation.

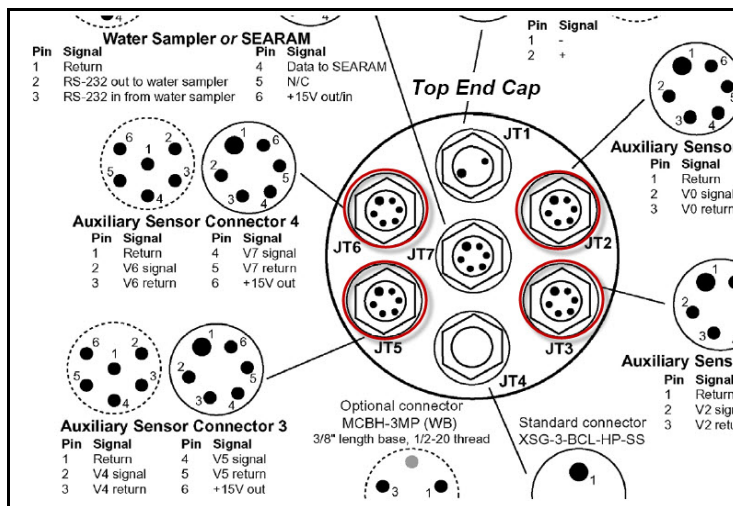


Figure 10: Auxiliary Sensor Connections on SBE.



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- 6) Connect MCIL-6-MP to MCBH6F-Ti connector on battery case. Route cable to altimeter, securing extra cable as needed. Inspect, clean and slightly grease all underwater connectors prior to installation. **NOTE: Altimeter will start pinging as soon as it is connected. Only connect RMG-6-FS to XSG-6-BCL on altimeter when ready to deploy. Unplug and dummy off after use.**

## Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

### Charging Altimeter Battery

- 1) Verify the altimeter is disconnected from the battery case and dummy off the XSG-6-BCL connector.
- 2) Connect battery charger to AC power (100-240VAC, 50-60Hz) and turn on the charger via the On/OFF toggle switch (Figure 4 above). The Power Status light should illuminate **red** and the Charge Status should be **green**.
- 3) Connect the MCIL-4-FS battery charger cable to MCBH4M-Ti on battery case. When charger is connected to battery, the Charge Status light will turn **red** indicating unit is charging.
- 4) When Charge Status light turns **green** charging is complete. Charger will stop preventing overcharge of battery. If light does not turn green, battery may be faulty.
- 5) Chargers may get warm during normal charging.

**NOTE: Always place the charger in well-ventilated, dry environment and indoor use only. Connect AC power (step 2) BEFORE connecting to battery (step 3), otherwise system will not charge. Charger will turn off if not connected to battery for more than three minutes (cycle power, via AC plug, to reset). Battery will take approximately 5-6 hours to charge depending on level of depletion. A fully charged battery will last for approximately 50 hours.**

## Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

### Configuration of SBE Seasave for Altimeter

- 1) Open Seasave.exe
- 2) Open configuration file (Figure 11):
  1. Select Configure Inputs from menu bar.
  2. Under the Instrument Configuration Tab, select Open.
  3. Browse to desired configuration file XXXXXX.xmlcon and select Open.

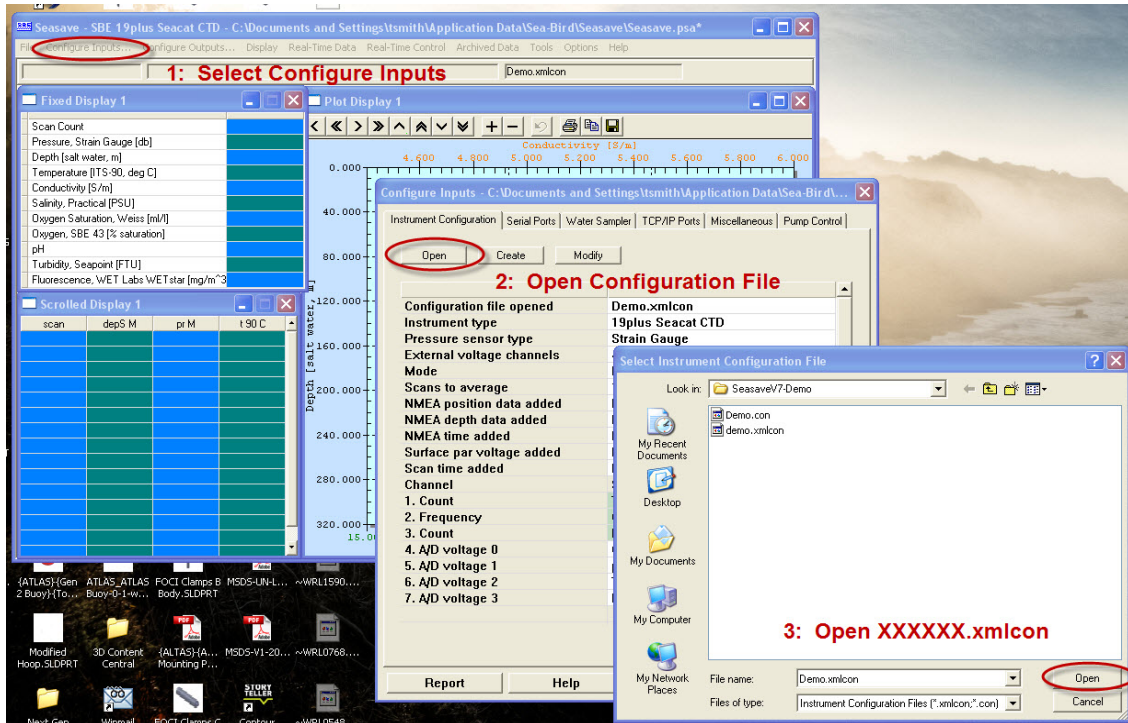


Figure 11: Opening configuration file.

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### 3) Designate altimeter channel (Figure 12):

1. Select Modify from Instrument Configuration tab.
2. Double-click on channel corresponding with pin 2 for selected auxiliary connector.
3. Select Altimeter as New Voltage Sensor and enter scale factor of 7.5 (Figure 13).

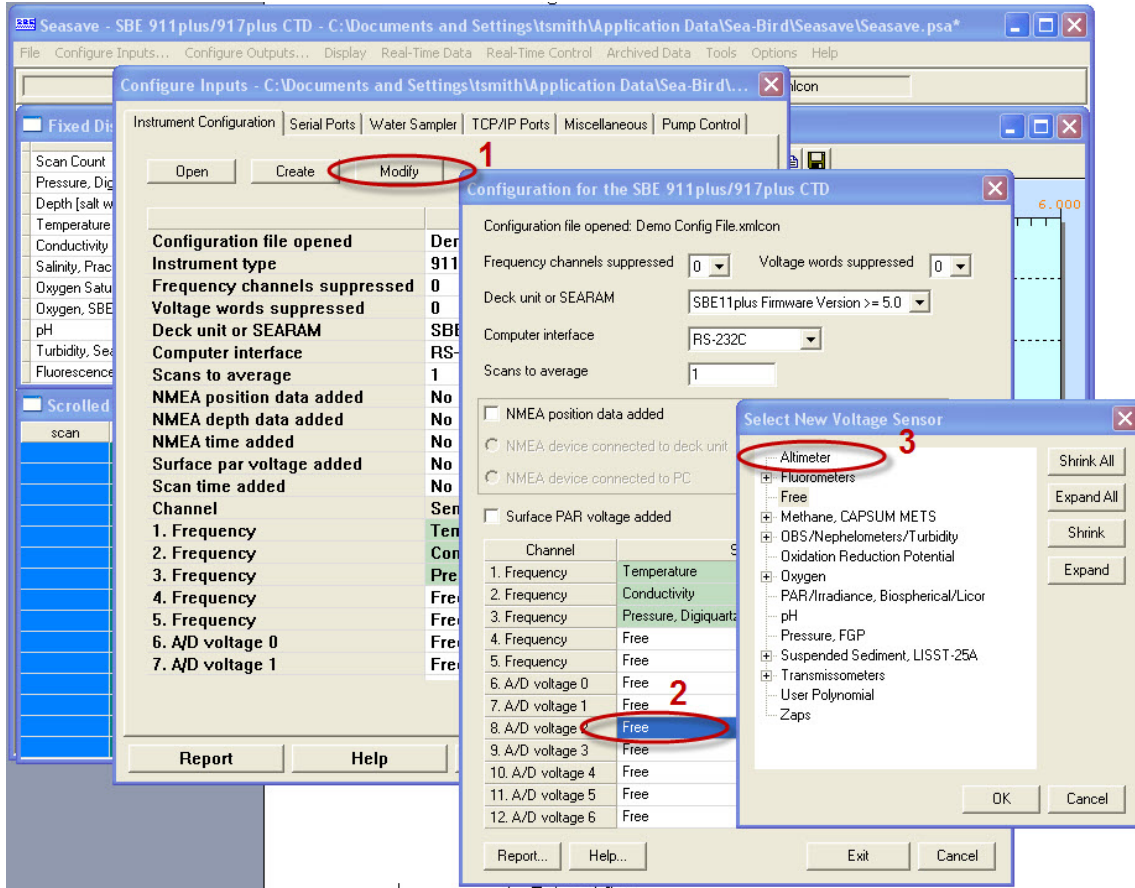


Figure 12: Designating altimeter channel.

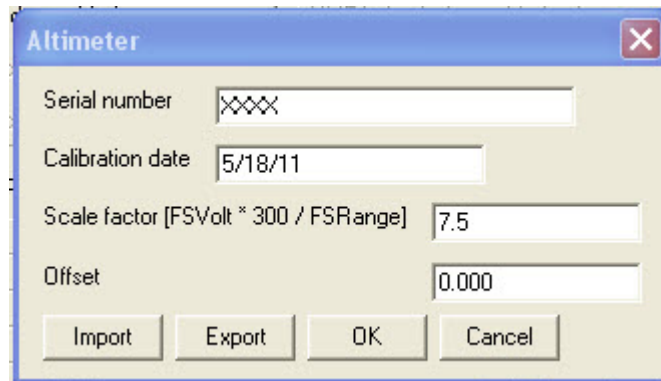


Figure 13: Altimeter parameters.

Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

4. Exit and Save.

**NOTE: On deck or in waters greater than 200m (no signal return), altimeter will read full depth (200m). A depleted battery will cause altimeter to return 0m.**

## Setup Instructions: PMEL Real-Time Altimeter for Seabird 9/11 CTD

### Additional Info/Notes

- Kongsberg 1007 Altimeter settings have been pre-configured. Do not attempt to alter settings without first consulting PMEL/EDD.
- Altimeter and Battery cases have been pre-wrapped with polymer adhesive for isolation.
- Installation described above is suggested layout. Modifications are possible with consultation from PMEL/EDD.
- Engineering drawings for battery case and mounts can be found in Appendix A
- Specs for Altimeter and battery (MSDS), battery charger, and pressure relief valve (set to 10psi) can be found in Appendix B.
- For reference (not to be used without consulting PMEL/EDD), the configuration manual for the Kongsberg 1007 Series Altimeters is included in Appendix C.

**APPENDIX**

**APPENDIX A**



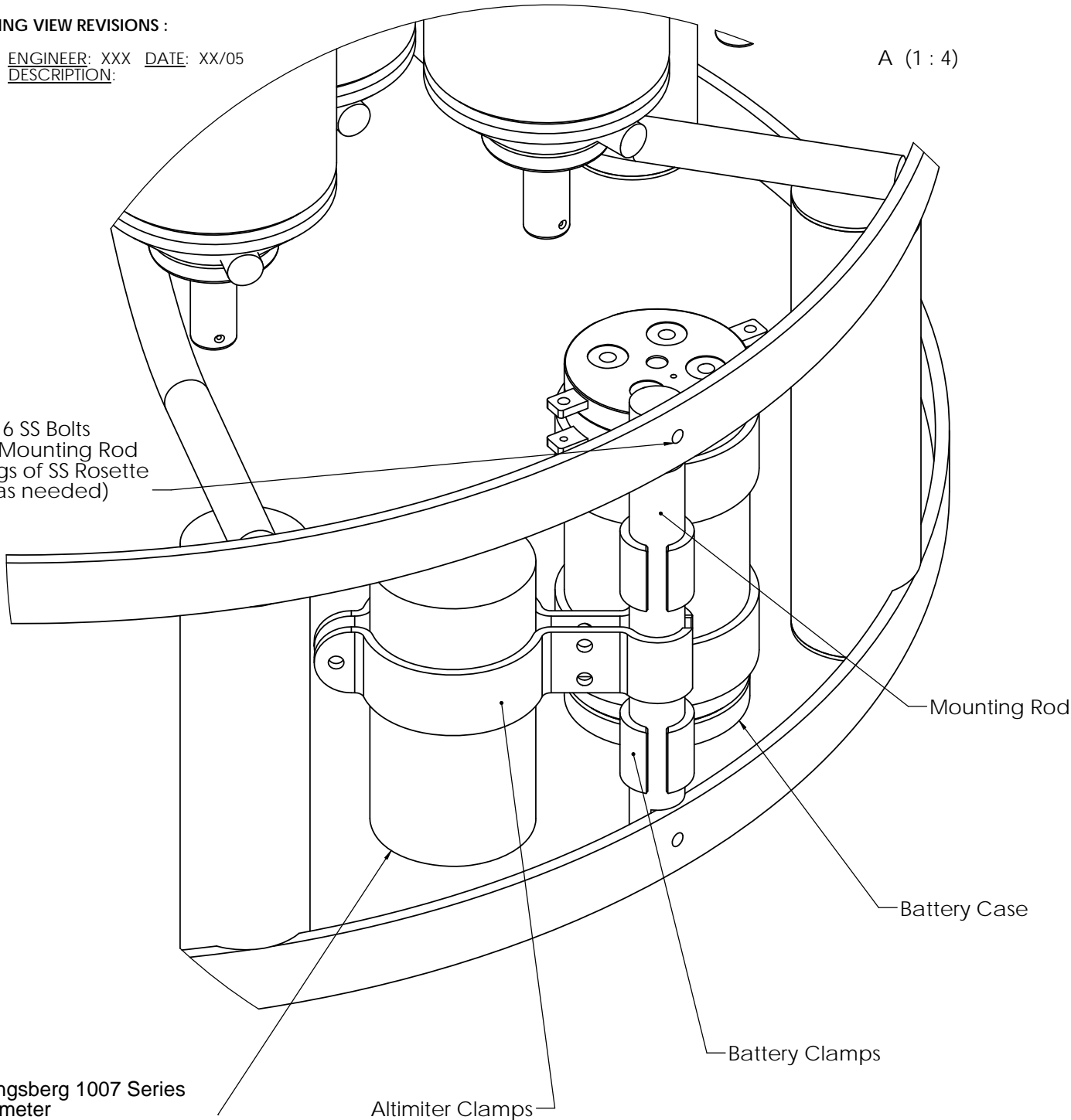
**PART NAME: 24+ CTD Altimeter Mount**

**DRAWING VIEW REVISIONS :**

A. ENGINEER: XXX DATE: XX/05  
DESCRIPTION:

A (1 : 4)

3/8"-16 SS Bolts  
Hold Mounting Rod  
to rings of SS Rosette  
(Drill as needed)



\* Mounting Rod only needed on CTD stands without similar leg to mount clamps

**Notes:**

1. Qty Needed: /Assembly
2. Smooth and deburr all sharp corners and edges.
3. Solid model available upon request.
4. Surface finish:

Vendor Must adhere to all dimensions and to the specified quality of construction. No Substitution of specified materials will be accepted, unless reviewed and approved by NOAA engineers.

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
TOLERANCES ARE:  
FRACTIONS  $\pm 1/16$  ANGLES  $\pm 1^\circ$   
DECIMALS  
.X  $\pm 0.05$   
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DO NOT SCALE DRAWING

CAD GENERATED DRAWING,  
DO NOT MANUALLY UPDATE

APPROVALS

DRAWN	TS	CHECKED	XX
DATE	3/11	SIZE:	A



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Engineering Division

7600 Sand Point Wy NE  
Seattle, WA 98115  
206-526-6175

PROJECT:

VENTS

CAD FILE: {Vents}{Rosette Stand}{Altimeter Assembly Drawing}{3}

SCALE:  
NTS

SHEET NAME:  
Assembly

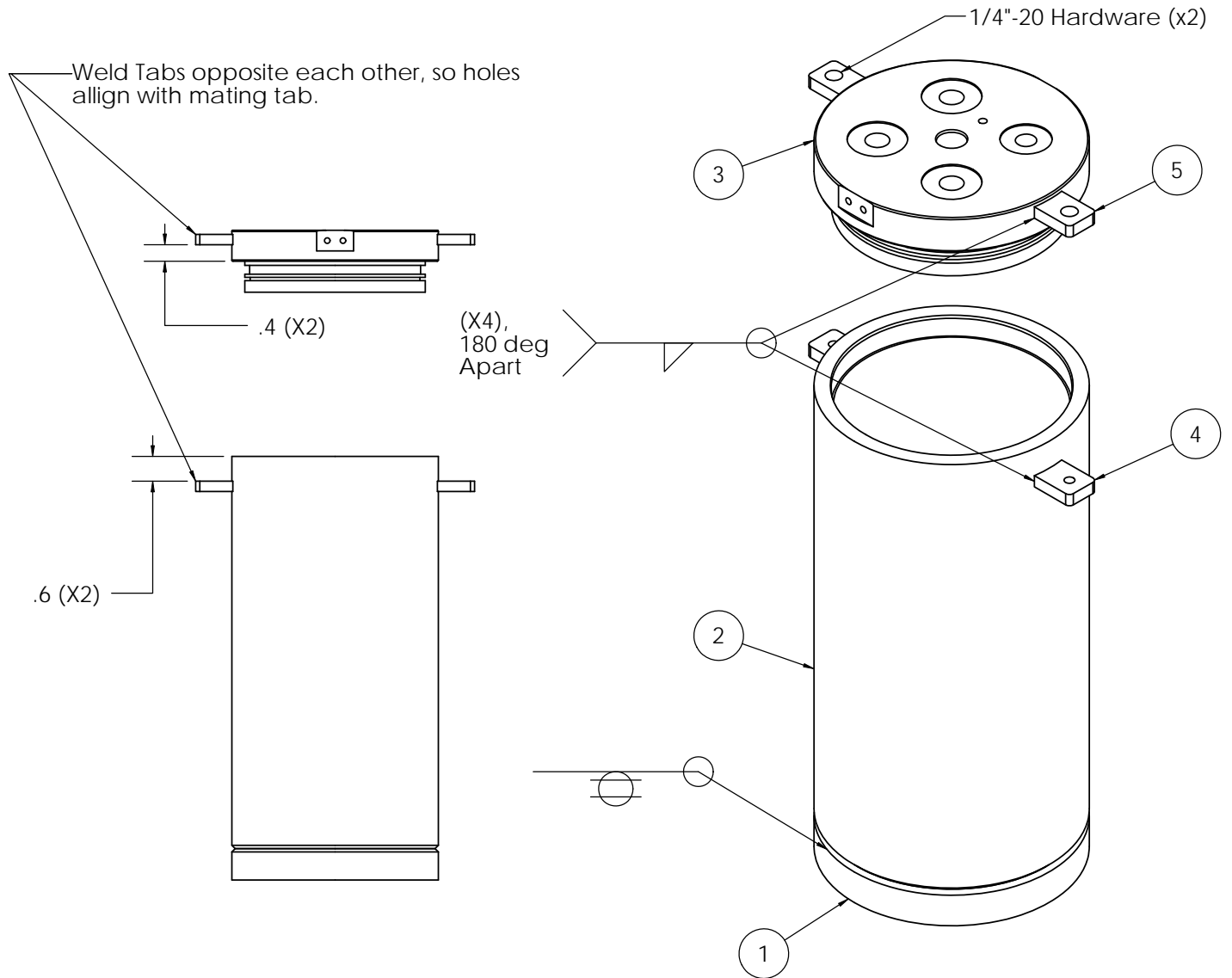
SHEET:  
1 OF 5

**PART NAME: 24+ CTD Altimeter Mount: Battery Case**

**DRAWING VIEW REVISIONS :**

A. ENGINEER: XXX DATE: XX/05  
DESCRIPTION:

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	{VENTS}{CTD}{Altimeter}{Battery Case Bottom}{0}		1
2	{VENTS}{CTD}{Altimeter}{Battery Case Tube}{0}		1
3	{VENTS}{CTD}{Altimeter}{Battery Case Top}{1}		1
4	{VENTS}{CTD}{Altimeter}{Battery Case Tabs}{0}		2
5	{VENTS}{CTD}{Altimeter}{Battery Case Top Tabs}{0}		2



**Notes:**

- Qty Needed: /Assembly
- Smooth and deburr all sharp corners and edges.
- Solid model available upon request.
- Surface finish:

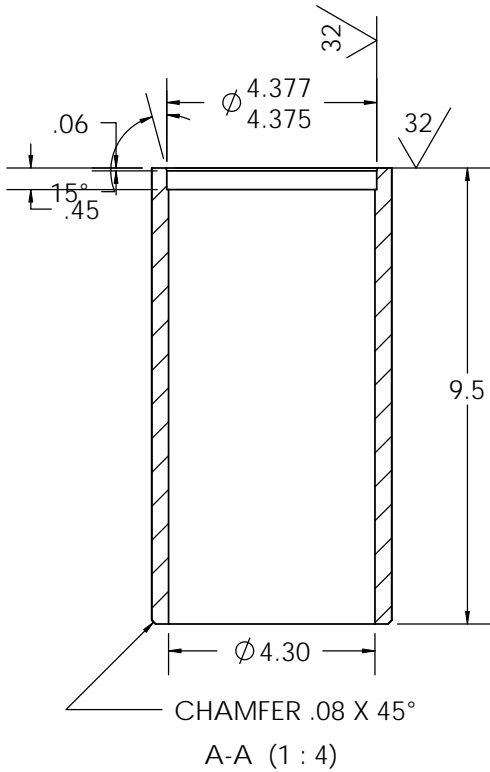
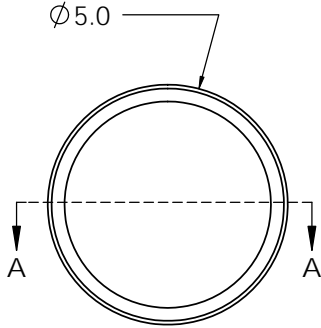
Vendor Must adhere to all dimensions and to the specified quality of construction. No Substitution of specified materials will be accepted, unless reviewed and approved by NOAA engineers.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS $\pm 1/16$ ANGLES $\pm 1^\circ$ DECIMALS .X $\pm 0.05$ .XX $\pm 0.02$ .XXX $\pm 0.002$ DO NOT SCALE DRAWING		CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE		 7600 Sand Point Wy NE Seattle, WA 98115 206-526-6175	
APPROVALS					
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DATE	2/11	SIZE:	A		
CAD FILE: {Vents}{Rosette Stand}{Altimeter Assembly Drawing}{3}					
SCALE:	NTS	SHEET NAME:	Battery Case		SHEET: 2 of 5

**PART NAME: Battery Case - Tube**

**DRAWING VIEW REVISIONS :**

A. ENGINEER: XXX DATE: XX/05  
DESCRIPTION:



**Notes:**

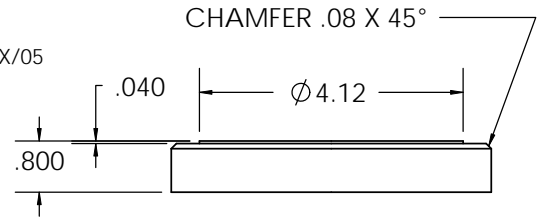
1. Qty Needed: 1/Assembly
2. Material is: 6AL-4V Ti
3. Tube is Trepanned to 4.0" ID
4. Smooth and deburr all sharp corners and edges.
5. Solid model available upon request.
6. Surface finish:

Vendor Must adhere to all dimensions and to the specified quality of construction. No Substitution of specified materials will be accepted, unless reviewed and approved by NOAA engineers.

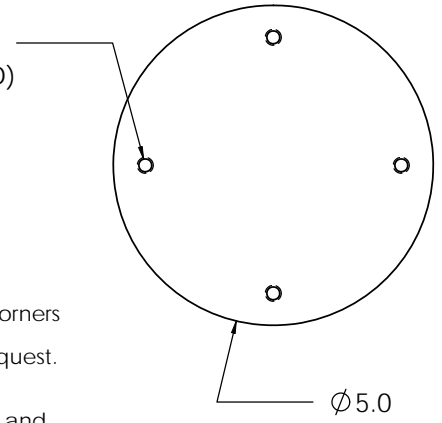
**PART NAME: Battery Case - Bottom**

**DRAWING VIEW REVISIONS :**

A. ENGINEER: XXX DATE: XX/05  
DESCRIPTION:



4X  $\phi$  .201  $\nabla$  .600  
1/4-20 UNC - 2B  $\nabla$  .350  
(X4, Evenly spaced on 4.00 BCD)



**Notes:**

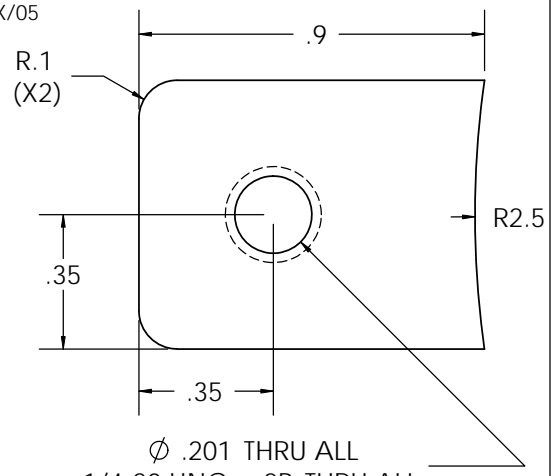
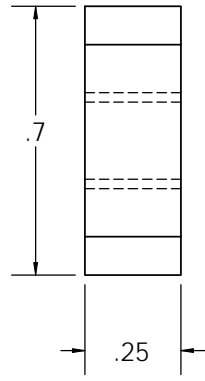
1. Qty Needed: 1/Assembly
2. Material is: 6AL-4V Ti
3. Smooth and deburr all sharp corners and edges.
4. Solid model available upon request.
5. Surface finish:

Vendor Must adhere to all dimensions and to the specified quality of construction. No Substitution of specified materials will be accepted, unless reviewed and approved by NOAA engineers.

**PART NAME: Battery Case Tabs**

**DRAWING VIEW REVISIONS :**

A. ENGINEER: XXX DATE: XX/05  
DESCRIPTION:



**Notes:**

1. Qty Needed: 2/Assembly
2. Material is: 6AL-4V Ti
3. Smooth and deburr all sharp corners and edges.
4. Solid model available upon request.
5. Surface finish:

Vendor Must adhere to all dimensions and to the specified quality of construction. No Substitution of specified materials will be accepted, unless reviewed and approved by NOAA engineers.

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DIMENSIONS ARE IN INCHES  
TOLERANCES ARE:  
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DECIMALS  
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CAD FILE: {Vents}{Rosette Stand}{Altimiter Assembly Drawing}{3}	
SCALE: NTS	SHEET NAME: Battery Case Parts

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PROJECT:  
VENTS

SHEET:  
3 OF 5



**PART NAME: Battery Case Clamps**

**DRAWING VIEW REVISIONS :**

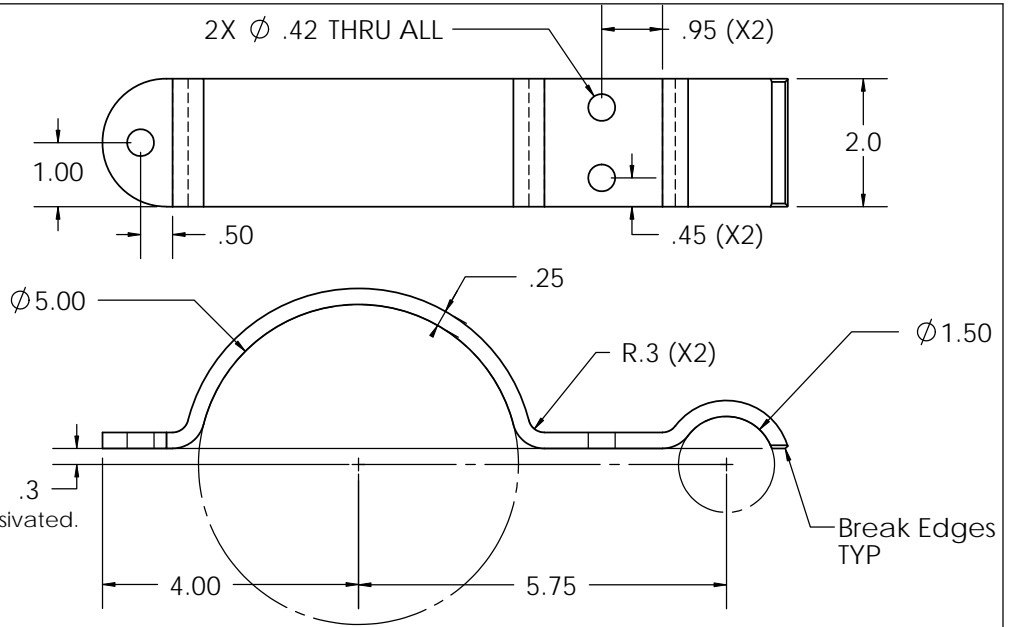
A. ENGINEER: TMS DATE: 03/11  
DESCRIPTION: Added pipe note.  
 Updated finish.

Note: Cut pipe welded to flats and ground smooth is acceptable.

**Notes:**

1. Qty Needed: 4/Assembly
2. Material is: 316 SS
3. Smooth and deburr all sharp corners and edges.
4. Solid model available upon request.
5. Surface finish: Electropolished and Passivated.

Vendor Must adhere to all dimensions and to the specified quality of construction. No Substitution of specified materials will be accepted, unless reviewed and approved by NOAA engineers.



**PART NAME: Altimeter Clamps**

**DRAWING VIEW REVISIONS :**

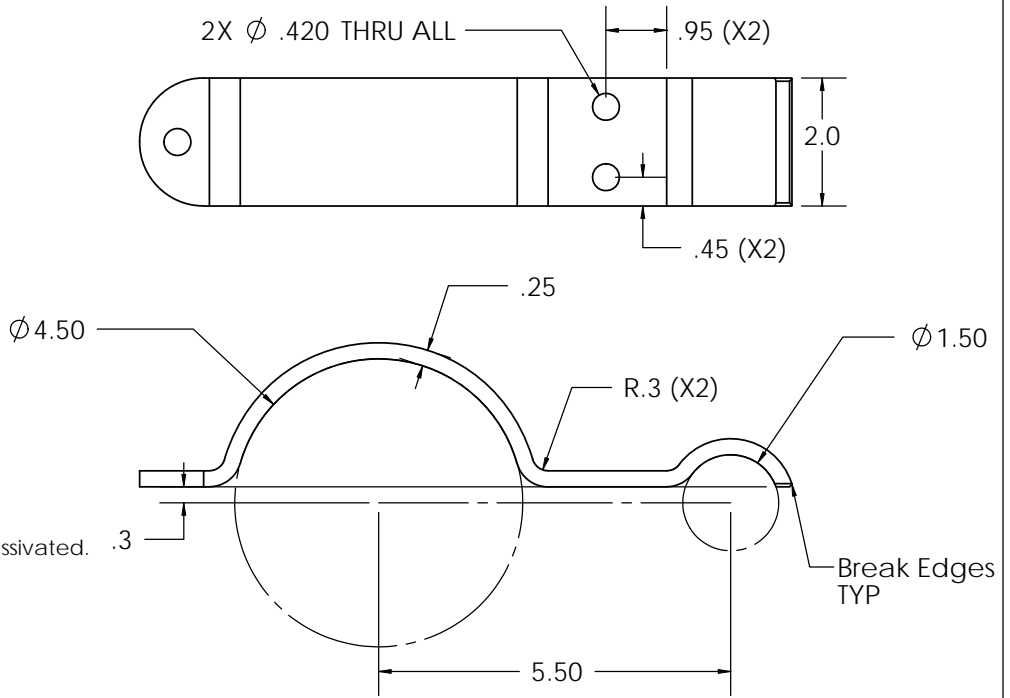
A. ENGINEER: TMS DATE: 03/11  
DESCRIPTION: Added pipe note.  
 Updated Finish.

Note: Cut pipe welded to flats and ground smooth is acceptable.

**Notes:**

1. Qty Needed: 2/Assembly
2. Material is: 316 SS
3. Smooth and deburr all sharp corners and edges.
4. Solid model available upon request.
5. Surface finish: Electropolished and Passivated.

Vendor Must adhere to all dimensions and to the specified quality of construction. No Substitution of specified materials will be accepted, unless reviewed and approved by NOAA engineers.

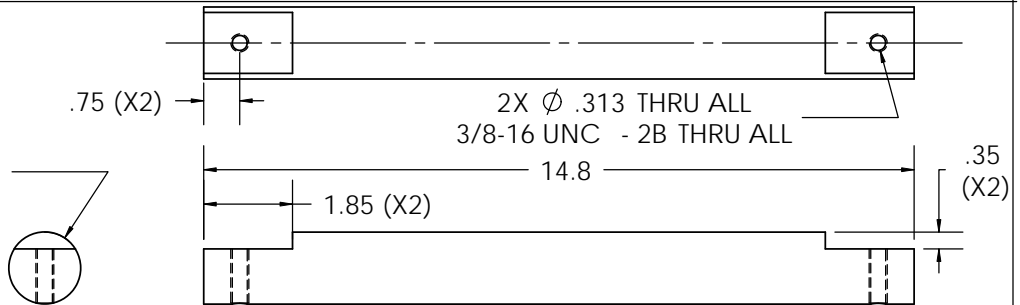


**PART NAME: Mounting Rod**

**DRAWING VIEW REVISIONS :**

A. ENGINEER: XXX DATE: XX/05  
DESCRIPTION:

Ø 1.50



**Notes:**

1. Qty Needed: 1/Assembly\*
2. Material is: 316 SS
3. Smooth and deburr all sharp corners and edges.
4. Solid model available upon request.
5. Surface finish:

Vendor Must adhere to all dimensions and to the specified quality of construction. No Substitution of specified materials will be accepted, unless reviewed and approved by NOAA engineers.

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 DIMENSIONS ARE IN INCHES  
 TOLERANCES ARE:  
 FRACTIONS ANGLES  
 $\pm 1/16$   $\pm 1^\circ$   
 DECIMALS  
 $.X \pm 0.05$   
 $.XX \pm 0.02$   
 $.XXX \pm 0.002$   
 DO NOT SCALE DRAWING

CAD GENERATED DRAWING,  
 DO NOT MANUALLY UPDATE

APPROVALS

DRAWN	TS	CHECKED	XX
DATE	2/11	SIZE:	A



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PROJECT:

VENTS

CAD FILE:

{Vents}{Rosette Stand}{Altimeter Assembly Drawing}{3}

SCALE:

NTS

SHEET NAME:

Clamps

SHEET:

5 of 5

**APPENDIX B**

# 1007 Series Altimeter

P/N 974-70230000



KONGSBERG

The 1007 digital altimeters are small, light weight and designed for deep ocean applications, where dimensions and weight are key equipment selection factors.

The 1007 altimeter is ideally suited to applications such as: positioning, berthing, height above seabed, and below surface monitoring.

Operating Frequency:	200 kHz
Beam Width:	10° nominal
Minimum Range: <sup>2</sup>	Adjustable, limited by pulse length
Maximum Range: <sup>2</sup>	Adjustable, < 500 M, 300 M usable
Output Resolution: <sup>2</sup>	Adjustable, > 2.4mm
Transmit Pulse Widths: <sup>2</sup>	Adjustable, 20 to 1000 µS
Repetition Rate:	limited by range and resolution
Assumed speed of sound: <sup>2</sup>	Adjustable, 1400 to 1600 M/S
Receive Bandwidth:	20 kHz max
Operating Mode: <sup>1</sup>	Configurable, 807, 809 or MS1000
Serial Interface: <sup>2 3 4</sup>	RS232C or RS485
Downlink Baud Rate:	9600 bps
Uplink Baud Rate:	9600 bps, adjustable in MS1000 mode
Hold-off	Via serial command
Synchronization:	
Aux. Analog Output: <sup>1</sup>	Configurable, 0-5V or 0-10V

Power Requirement: +22 to +26 Vdc @ 1.8A startup, 250 mA continuous

Temperature Range: -10 to +50°C operating  
-30 to +50°C storage

Operating Depth: 6000m

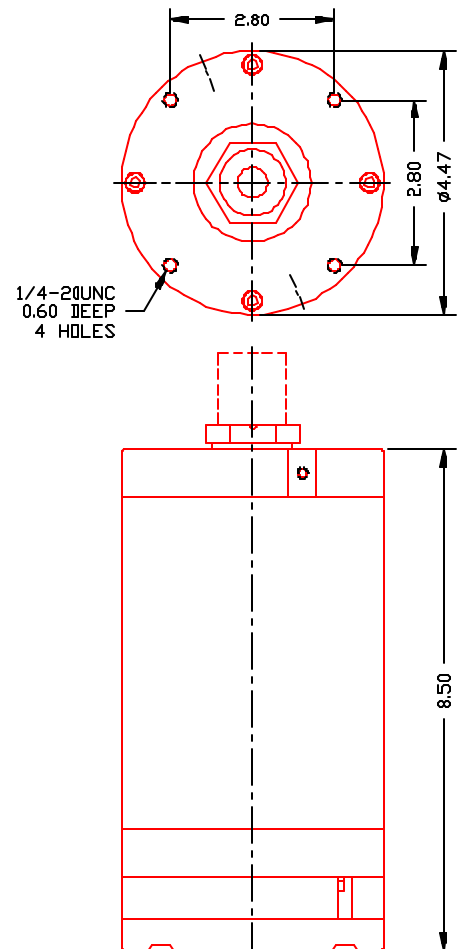
Connector: Seacon XSG-6-BCL

Materials: Alum 6061-T6, 300 Series S.S., PVC, Epoxy

Finish: Anodize, Black MIL-A-8625 type II

Dimensions: (3000m) Length 8.50"/216mm (excludes connector)  
Diameter 4.47"/114mm

(Est.) Weight: Air 11.0 lbs./5.0 kg  
Water 6.0 lbs/2.7 kg



<sup>1</sup> configurable

<sup>2</sup> configurable in 807 mode

<sup>3</sup> configurable in 809 mode

Specifications subject to change without notice

974-70237901 Iss 1.0

KONGSBERG MESOTECH LTD. 1598 Kebet Way, Port Coquitlam B.C. Canada V3C 5M5

Tel: (604) 464 8144 Fax: (604) 941 5423

- <sup>4</sup> auto-detect in MS1000 mode
- configurable settings require ALTCONFIG software

Specifications subject to change without notice  
974-70237901 Iss 1.0

**KONGSBERG MESOTECH LTD. 1598 Kebet Way, Port Coquitlam B.C. Canada V3C 5M5**  
**Tel: (604) 464 8144 Fax: (604) 941 5423**



**Total solution for Portable Power since 1995**  
**Products are designed , assembled**  
**& Quality Controlled in USA**

Items in your Cart: 0  
 Current Subtotal: \$0.00


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How To Choose Battery  
 What's New !!!

Li-Ion Single Cell  
 Li-Ion Packs 3.7- 89V  
 Hi-Power Li-Po Packs  
 LiFePO4 Cells / Packs  
 LiMnNi Cells/Packs  
 LiNiCoMn Cells/Packs  
 PCB/BMS/CMB

Nimh Batteries & Packs  
 NiCd Batteries & Packs  
 Lead Acid Batteries  
 Primary Cells

Hobby Batteries

Battery Chargers  
 Battery Equipments  
 #####  
 Barcode Scanner Batts  
 Battery Holders/ Racks  
 Bike Lights / Batteries  
 Camping/Hunting Lights  
 Dive light Batteries  
 E-Bikes Kit & Batteries  
 Emergency Light Batts  
 External Battery Bank  
 EV&Storage Batteries  
 Flashlight / Batteries  
 GPS Batteries  
 Hearing Aid Batteries  
 HID / Halogen Lamps  
 iPod Batteries  
 Keyless Door Batteries  
 LED Lights / Display  
 Mobile Electronics  
 Portable DVD Batteries  
 Razor / Shaver Batts  
 Robot Batteries  
 Security/Alarm Batts  
 Solar Power / Batteries  
 Two-Way Radio Batts  
 UPS & Batteries  
 Video Light Batteries

AC-DC-AC Convertor  
 Components  
 DC Motors

Clearance


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 Shipping & Cost  
 FAQ's  
 Warranty/Return  
 Battery Specifications  
 Battery Terminology  
 Testimonials  
 Visit Our Plant  
 Career Opportunity  
 Battery Knowledge  
 Purchase Order

Home > E-Bikes Kit & Batteries > Low Cost LiMnNi Battery Packs from 25.9V-37V > LiMnNi 26650 Battery: 25.9V 12 Ah ( 310.8Wh, 40A rate ) with PCM (25.2)

## LiMnNi 26650 Battery: 25.9V 12 Ah ( 310.8Wh, 40A rate ) with PCM (25.2)



Sale Price: **\$349.95**

**In Stock**

Part Number: **LMN-25.9V12Ah-26650**

Product ID # 5176

Quantity: 1

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### Quantity Discounts

Quantity	Amount
5 to 20	\$339.45
21 to 50	\$332.45
51 to 100	\$325.45
101 to 500	\$314.96

<b>Packing</b>	<ul style="list-style-type: none"> <li>25.9 V 12 Ah LiMnNi rechargeable battery Module is made of 21 pcs hi-power <a href="#">LiMnNi 4000 mAh cylindrical 26650 cell</a> in 7S3P (3Rx7C) configuration with heavy duty shrink wrapped</li> </ul>
<b>Voltage</b>	Voltage: 25.9 V (working) 29.4 V (peak) 19.25V ( cut-off)
<b>Capacity</b>	12 Ah (310.8 Wh)
<b>Cycle life</b>	> 1000 cycles at 1 C rate
<b>Protection</b>	<ul style="list-style-type: none"> <li>One <a href="#">PCM (40A limited)</a> installed with the battery pack and protects the battery from               <ul style="list-style-type: none"> <li>Overcharge (&gt; 29.4 V)</li> <li>Over discharge (&lt;19.25 V)</li> <li>Over drain ( &gt;40Amp)</li> <li>Short circuits</li> <li>Must wait min of 30 minutes after battery is fully charged to allow the pcm to perform balance function on all the cells within the pack.</li> </ul> </li> </ul>
<b>Prewired</b>	<ul style="list-style-type: none"> <li>Discharge terminal: 6" long 12 AWG open end wire</li> <li>Charge terminal: 6" long 18 AWG open end wire</li> </ul>
<b>Charging rate</b>	12 A Max
<b>Max. Discharge Rate</b>	<ul style="list-style-type: none"> <li>10 Amp ( continuous )</li> <li>40 Amp ( &lt; 30 seconds )</li> </ul>
<b>Dimensions (LxWxH)</b>	<ul style="list-style-type: none"> <li>190mm(7.5") x 84mm (3.3") x 84 mm(3.3")</li> </ul>

Privacy Policy  
Export restrictions

<b>Weight</b>	<ul style="list-style-type: none"> <li>• 2150 grams (4.7Lb)             <ul style="list-style-type: none"> <li>◦ Capacity is 30% more than LiFePO4 pack of <a href="#">25.6V 10.2Ah (261.12Wh, 5.9Lb)</a></li> <li>◦ Weight 20.39% less than <a href="#">25.6V 10.2Ah (261.12Wh, 5.9Lb)</a>, and 37.33% less than <a href="#">24V 10Ah ( 240Wh, 7.5Lbs) NiMH pack</a>,</li> </ul> </li> </ul>
<b>Smart Tips</b>	<ul style="list-style-type: none"> <li>• You may choose our chargers below.             <ul style="list-style-type: none"> <li>◦ <a href="#">Smart Charger (6.0A) for 25.9V Li-ion/Polymer Rechargeable Battery Pack + the connector adaptor</a> . The estimated charging time is 3.15 hours or</li> <li>◦ <a href="#">Smart Charger (3.0A) for 25.9V Li-ion/Polymer Rechargeable Battery Pack ( Standard Female Tamiya Plug) 100- 240V</a> . The estimated charging time is 6.3 hours</li> </ul> </li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>• E-Bike for replacing 24V Lead acid, 24V NiMH battery and 25.9V10Ah Li-Ion battery with longer cycle life and lower cost</li> </ul>
<b>Warning</b>	<ul style="list-style-type: none"> <li>• 25.9V LiMnNi battery pack shall be cut-off at <math>\leq 29.4V</math> ( <math>\leq 4.2V/cell</math> ) during charging and <math>\geq 14.0V</math> ( <math>\geq 2.0V/cell</math> ) during discharging</li> <li>• We are not responsible for any damages or losses caused by misuse (included but not limited to: improper charging/discharging, any changes of this battery pack, miss-assembling battery packs)</li> <li>• Always pay attention when charging the battery pack. Battery shall put in a place or container with fire - proof to avoid any accident</li> <li>• Please always check battery polarity before connection to device. Never make wrong polarity connection</li> <li>• <a href="#">For safety warning please see the link here</a></li> <li>• </li> </ul>

## Related Products



LiMnNi 26650 Battery: 25.9V 8Ah (207.2 Wh, 40A rate) with PCM (16.8)

**Sale Price: \$299.95**



Smart Charger (3.0A) for 25.9V Li-ion/Polymer Rechargeable Battery Pack ( Standard Female Tamiya Plug) 100- 240V

**Sale Price: \$49.95**



LiMnNi 26650 Battery: 37V 12Ah ( 444 Wh, 30A rate ) with PCM for E-Bike (36.0)

**Sale Price: \$395.95**



LiMnNi 26650 Battery: 37V 16Ah ( 592Wh, 30A rate, Ebike Terminal) with PCM for E-Bike -- 19.70% lighter than LiFePO4 (48.0)

**Sale Price: \$596.95**



Connector/Adaptor: From 4 Pin male Cannon plug to Clips

**Sale Price: \$9.99**

## Product Reviews

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**Report No.: 0905272-231**

Report Date: 2009-06-04

# **MSDS Report**

# +Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

**Sample Name: Polymer Lithium Battery**

## Section 2 – Composition, Information on Ingredients

Chemical Name	Percent (by weight)	CAS No.	EINECS
Lithium Manganese Oxide	50%	12057-17-9	Unlisted
Graphite	10%	7782-42-5	231-955-3
Polypropylene	5%	9003-07-0	Unlisted
Poly(vinylidene fluoride)	2%	24937-79-9	Unlisted
Polythene	5%	9002-88-4	Unlisted
Sodium carboxymethylcellulose	0.5%	9004-32-4	Unlisted
Lithium hexafluorophosphate	S%	213 24-40-3	244-334-7
Ethylene Carbonate	5%	96-49-1	202-510-0
Dimethyl Carbonate	5%	616-38-6	210-478-4
Nickel	2.5%	7440-02-0	231-111-4
Copper	5%	7440-50-8	231-159-6
Aluminum	S%	7429-90-5	231-072-3

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## Section 3 – Hazards Identification

### EMERGENCY OVERVIEW

Caution! The battery pack and enclosed cells should not be opened, disassembled, crushed, burned, or exposed to high temperatures. It is safe under normal use. If the battery pack is broken, exposure to the ingredients contained within the battery pack could be harmful under some circumstances. Do not use organic solvents or other chemical cleaners on battery. Fires involving these types of battery packs are extinguished with class D-Dry chemical powder, sand is suitable, NO water use

Target Organs: None.

Hazard Sorts: 9

Potential Health Effects:

- Eye: In normal use, no special risk. If battery is broken, it may cause severe irritation or chemical burn.
- Skin: In normal user no special risk. If battery is broken, cause skin irritation or chemical burn.
- Ingestion: Harmful if swallow. If battery is broken, it may cause severe chemical burn to mouth, esophagus and gastrointestinal system.
- Inhalation: In normal use, no special risk. If battery is broken, cause respiratory irritation, inhale fume and dust cause upper respiratory irritation and lung irritation.
- Other risk: On some bad using conditions (high over charge, inverse charge, external short circuit...) and in case of a bad functioning, some electrolyte can be removed from the cell by the security vent. In these cases the risk is the caustic nature of electrolyte. The toxic properties of the electrode materials are hazardous only if the materials are released by damaging the cell or if exposed to fire.

## Section 4 – First Aid Measures

Caution! No effect under routine handling and use. If exposure to internal materials within cell due to damaged, the following actions are recommended.

- Eyes: Rinse immediately with plenty of water during at least 15-30 minutes. Get medical aid immediately.
- Skin: In case of contact, immediately flush skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid.
- Inhalation: If inhaled, remove from exposure and move to fresh air immediately. Rinse mouth and nose with water. Get medical aid.
- Ingestion: If the injured is fully conscious: plenty of water or milk. Do not induce vomiting. Get medical aid immediately.

## Section 5 – Fire Fighting Measures

### General Information:

Cells can be overheated by an external source or by internal shorting. Toxic vapor may release in case of fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, and full protective gear.

### Special fire fighting procedures:

If batteries are on charge, turn off power. Ventilate area well.

### Extinguishing Media:

Class D-Dry chemical powder, sand is suitable. Do NOT use water.

## Section 6 – Accidental Release Measures

### General Information:

Use proper personal protective equipment as indicated in Section 8.

### Spills/Leaks:

Keep unnecessary people away. Remove heat and sources of ignition. Avoid shake and physical damage. Collect, then place into a suitable container for disposal or reuses.

## Section 7 – Handling and Storage

### Storage:

If longtime storage, the battery must keep under 40-60% state of charge. Store in cool, dry and lee area. High temperature may damage the performance of the battery, cause leaking or rusting. Avoid contacting with open flame. Keep away from moisture.

### Handling:

Avoid excessive shaking. Avoid short circuit, however, accident short circuit for a short time will not cause severe influence to the battery. Short circuit for a long time cause energy losing, producing large quantity of heat which may burn skin, even cause fire or explosion. Battery bulk container, coins, metal jewelry, metal worktable, metal belt or other equipment for assembly battery may be the source for short circuit. Use effective anti short circuit measures. Do not disassembly or decompose. Avoid damage. Transport under 10-50% state of charge. Avoid contacting with water, avoid straight sunlight.

## Section 8 – Exposure controls, Personal Protection

### Exposure Limit:

Composition: CAS# 12057-17-9

PEL-TWA 5 mg/m<sup>3</sup> (OSHA, as Mn)

TLV-TWA 0.2 mg/m<sup>3</sup> (ACGIH as dust)

Composition: CAS# 7782-42-5

PEL-TWA 5 mg/m<sup>3</sup> (NIOSH, total)

REL-TWA 2.5 mg/m<sup>3</sup> (NIOSH, respiration)

PEL-TWA 15 mg/m<sup>3</sup> (OSHA)

Composition: CAS# 9003-07-0

TLV-TWA 10 mg/m<sup>3</sup> (ACGIH, total)

PEL-TWA 15 mg/m<sup>3</sup> (OSHA, total)

PEL-TWA 5 mg/m<sup>3</sup> (OSHA, respiration)

Composition: CAS# 7440-02-0

TLV-TWA 1.5 mg/m<sup>3</sup> (ACGIH)

PEL-TWA 1 mg/m<sup>3</sup> (OSHA)

Composition: CAS# 7440-50-8 (as Copper Powder)

PEL-TWA 1 mg/m<sup>3</sup> (NIOSH)

PEL-TWA 1 mg/m<sup>3</sup> (OSHA)

Composition: CAS# 7429-90-5 (as Aluminum Powder)

TLV-TWA 10 mg/m<sup>3</sup> (NIOSH, total)

PEL-TWA 5 mg/m<sup>3</sup> (NIOSH, respiration)

PEL-TWA 15 mg/m<sup>3</sup> (OSHA, total)

PEL-TWA 5 mg/m<sup>3</sup> (OSHA respiration)

Monitoring Methods: No information found.

### Engineering Controls:

General room ventilation is sufficient during normal use and handling. Do not install these batteries in sealed, unventilated areas. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

### Work/Hygienic Practices:

Remove jewelry, rings, watches and any other metallic objects while working on battery. All tools should insulate to avoid the possibility of shorting connections. DO NOT lay tools on top of the battery. Be sure to electricity from tools and individual person by touching a grounded surface in the vicinity of the battery, but are heavy. Serious injury can result from improper lifting or installation. DO KEEP a fire extinguisher and emergency communications the work area.

### Personal Protective Equipment:

- Eye: Under normal condition of use and handling no special protection is required for sealed battery.
- Skin: Under normal condition of use and handling no special protection is required for sealed battery.
- Clothing: Under normal condition of use and handling no special protection is

required for sealed battery.

- Respirators: Under normal condition of use and handling no special protection is required for sealed battery.

Personal Protective Equipment (In the Event of Battery Case Breakage):

Always wear appropriate safety glasses with side shields or full face shield. Use appropriate gloves. Wear appropriate boots, apron or clothing. Use appropriate respirator.

Other Protection:

No smoking or eating scene work. To maintain good health habits. Wash hands thoroughly after working with battery and before eating, drinking or smoking.

## Section 9 – Physical and Chemical Properties

Physical State: White solid

Odor: Odorless

Voltage: 2.75-48 V

Capacitance: 100-40000 mAh

Weight: 10-4000 g

Chemical Uses: Electrical source

## Section 10 – Stability and reactivity

Chemical Stability: Stable under normal use.

Conditions to Avoid:

When a battery cell is exposed to an external short-circuit, crushed, modification, high temperature above 100 °C, low temperature -10 °C, it will be the cause of heat generation. and ignition. Direct sunlight and high humidity.

Incompatibilities with Other Materials:

Conductive materials, water, seawater, strong oxidizers and acids. Hazardous Decomposition Products: Harmful gas is emitted during fire.

Hazardous Polymerization: Will not occur.

## Section 11 – Toxicological Information

Toxicological Information:

Composition: CAS# 12057-17-9

- RTECS# Unlisted
- LD50: 9000 mg/kg (Oral, Guinea pig, as Mn )

Composition: CAS# 7782-42-5

- RTECS# MD9659600



- LD50r LC50: Unlisted

Composition: CAS# 9003-07-0

- RTECS# UD1842000

- LD50:>110 mg/kg (Intraperitoneal, rat)

- LD50:>99 mg/kg (Intravenous, rat)

Composition: CAS# 24937-79-9

RTECS# Unlisted

- LD50, LC50: Unlisted

Composition: CAS# 9002-88-4

- RTECS# KX3270000 TQ3325000

- LD50: >2000 mg/kg (Oral, rat)

- LC50: 12 g/m<sup>3</sup>/30M (Inhalation, mouse)

Composition: CAS# 9004-32-4

- RTECS# FJ5950000

- LC50:≥5800 mg/m<sup>3</sup>/4h (Inhalation, rat)

- LD50: 27000 mg/kg (Oral, rat)

- LD50:≥27 g/kg (Oral, mouse)

- LD50:≥27 g/kg (Oral, rabbit)

- LD50:≥2 g/kg (Skin, rabbit)

Composition: CAS# 21324-40-3

- RTECS# Unlisted

- LD50: >1702 mg/kg (Oral, rat)

Composition: CAS# 96-49-1

- RTECS# FF9550000

- LD50: >10000 mg/kg (Oral, rat)

- LD50: >3000 mg/kg (Skin, rabbit)

Composition: CAS# 616-38-6

- RTECS# FG0450000

- LD50: >6000 mg/kg (Oral, mouse)

- LD50: >13000 mg/kg (Oral, rat)

- LD50: ; 5 g/kg (Skin, rabbit)

Composition: CAS# 7440-02-0

- RTECS# QR5950000 QR6126100 QR6555000 QR7120000

- LD50: >2 g/kg (Skin, rabbit)

Composition: CAS# 7440-50-8

- RTECS# GL5325000 GL4400000 GL7590000

- LD50: >1124 mg/kg (Oral, rat)

- LD50: >2058 mg/kg (Oral, rabbit)

- LC50: 1303 mg/m<sup>3</sup> (Inhalation, rabbit)

Composition: CAS# 7429-90-5

- RTECS# BD0330000 BD1020000

- LD50, LC50: Unlisted

Carcinogenicity:

Composition: CAS# 9003-07-0

- IARC: Group 3-Not classifiable as to carcinogenicity to humans.

- Not listed by ACGIH, NTP, or CA Prop 65.

Composition: CAS# 9002-88-4

- IARC: Group 3-Not classifiable as to carcinogenicity to humans.
- Not listed by ACGIH, NTP, or CA Prop 65.

Composition: CAS# 7440-02-0

- ACGIH: A5-Not suspected as a human carcinogen.
- California: carcinogen; initial date 10/1/89.
- OSHA: Possible Select carcinogen
- IARC: Group 28 carcinogen-Possibly carcinogenic to humans
- NTP: Listed as Nickel Compounds and Metallic Nickel

Other compositions of this product are not listed by ACGIH, IARC, NTP, or CA Prop 65.

Sensitization Rate: Not available.

Teratogenicity: Not available.

## Section 12 – Ecological Information

Ecological Toxicity: Not available.

Ecological Degradation: Not available.

Biology Degradation: Not available.

Other Information: If the battery is discarded into the environment, the harmful contents inside may be dangerous.

## Section 13 – Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

## Section 14 – transport Information

Regulated as a hazardous material for transportation. (IATA DGR)

UN: 3480

Classification :

Packaging Sign:



Shipping Name: LITHIUM BATTERIES

Transport: Fashion: Cargo by air

Packaging Category: 11

Packaging Method: N/A

Other Information: Packing instruction 968

Regulated as a hazardous material for transportation. (IMDG CODE)

UN: 3480

Classification: 9

Packaging Sign:



Shipping Name: LITHIUM BATTERIES

Transport Fashion: Cargo by sea

Packaging Category: II

Packaging Method: N/A

Other Information: Special provisions 188, 230, 310, and 957.

## Section 15 – Regulatory Information

Regulatory Information:

Reference to the local, national, US and EU / international regulations.

TSCA: All of the chemicals in this product are listed.

DSL or NDSL: All of the chemicals in this product are listed  
Except CAS#12057-17-9.

OSHA: CAS# 7440-02-0 is listed.  
CAS# 7440-50-8 is listed.  
CAS# 7429-90-5 is listed.

California Prop 65: CAS# 7440-02-0 is listed.

Chemical Name	CAS No.	Hazard Symbols	Risk Description	Safety Description
Lithium Manganese Oxide	12057-17-9	Xi	R 36/37	S22
Graphite	7782-42-5	Xi	R 36/37	S 22-26-37/39.
Polypropylene	9003-07-0	N/A	N/A	S 24/25
Poly(vinylidene fluoride)	24937-79-9	N/A	N/A	S 22-24/25
Polythene	9002-88-4	N/A	N/A	S 24/25- 28A-37-45

(Continued)

Chemical Name	CAS No.	Hazard Symbols	Risk Description	Safety Description
Sodium carboxymethylcellulose	9004-32-4	N/A	N/A	N/A
Lithium hexafluorophosphate	21324-40-3	C, Xn	R 20/21/22 -24-34	S 22-26 -27-28A -36/37/39 -45
Ethylene Carbonate	96-49 — i	Xi	R 36/37/38 -41	S 26-36/39
Dimethyl Carbonate	616-38-6	F	R 11	S 2-9-16
Nickel	7440-02-0	F (Powder) Xn	R 10-17 -36/37/38 -40-42-43	s 16-22-26-36
Copper	7440-50-8	F (Powder)	R11	S16
Aluminum	7429-90-5	F (Powder)	R 15-17	S 7/8-43

Hazard Symbols:

F: Flammable.

Xi: Irritant.

Xn: Harmful.

C: Corrosive.

Risk Description:

R 10: Flammable.

R 11: Highly flammable.

R 15: Contact with water liberates extremely flammable gases.

R 17: Spontaneously flammable in air.

R 20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

R 24: Toxic in contact with skin.

R 34: Causes burns.

R 36/37/38: Irritating to eyes, respiratory system and skin.

R 40: Limited evidence of a carcinogenic effect.

R 41: Risk of serious damage to eyes.

R 42: May cause sensitization by inhalation.

R 43: May cause sensitization by skin contact.

Safety Description:

S 2: Keep out of reach of children.

S 7/8: Keep container tightly closed and dry.

S 9: Keep container in a well-ventilated place.

S 16: Keep away from sources of ignition - No smoking.

S 22: Do not breathe dust.

S 24/25: Avoid contact with skin and eyes.

S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 27: Take off immediately all contaminated clothing.

S 28A: After contact with skin, wash immediately with plenty of water.

S 36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

S 43: In case of fire, use: foam dry powder, carbon dioxide (CO<sub>2</sub>), sand to extinguish. (Do NOT use water).

S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).



Issue Time: 2009-06-04

Issue Department: Technical department

Data review unit:

Modification record:

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Other Information:

ACGIH: (American Conference of Governmental Industrial Hygienists); CAS: (Chemical Abstracts Service); DOT: (Department of Transportation); DSL: (Domestic Substances List); EINECS: (European Inventory of Existing Commercial Substances); IATA: (International Air Transport Association); IMDG: (International Maritime Dangerous Goods); LD50: (.Lethal dose, 50 percent kill); NIOSH: (National Institute for Occupational Safety and Health); NTP: (National Toxicology Program); OSHA: (Occupational Safety and Health); PEL: (Permissible Exposure Level); REL: (Recommended Exposure Limit); STEL: (Short Term Exposure Limit); TDG: (Transportation of Dangerous Goods); TSCA: (Toxic Substances Control Act); TWA: (Time Weighted Average); TLV: (Threshold Limit Value)

Contact information: AA Portable Power Corp

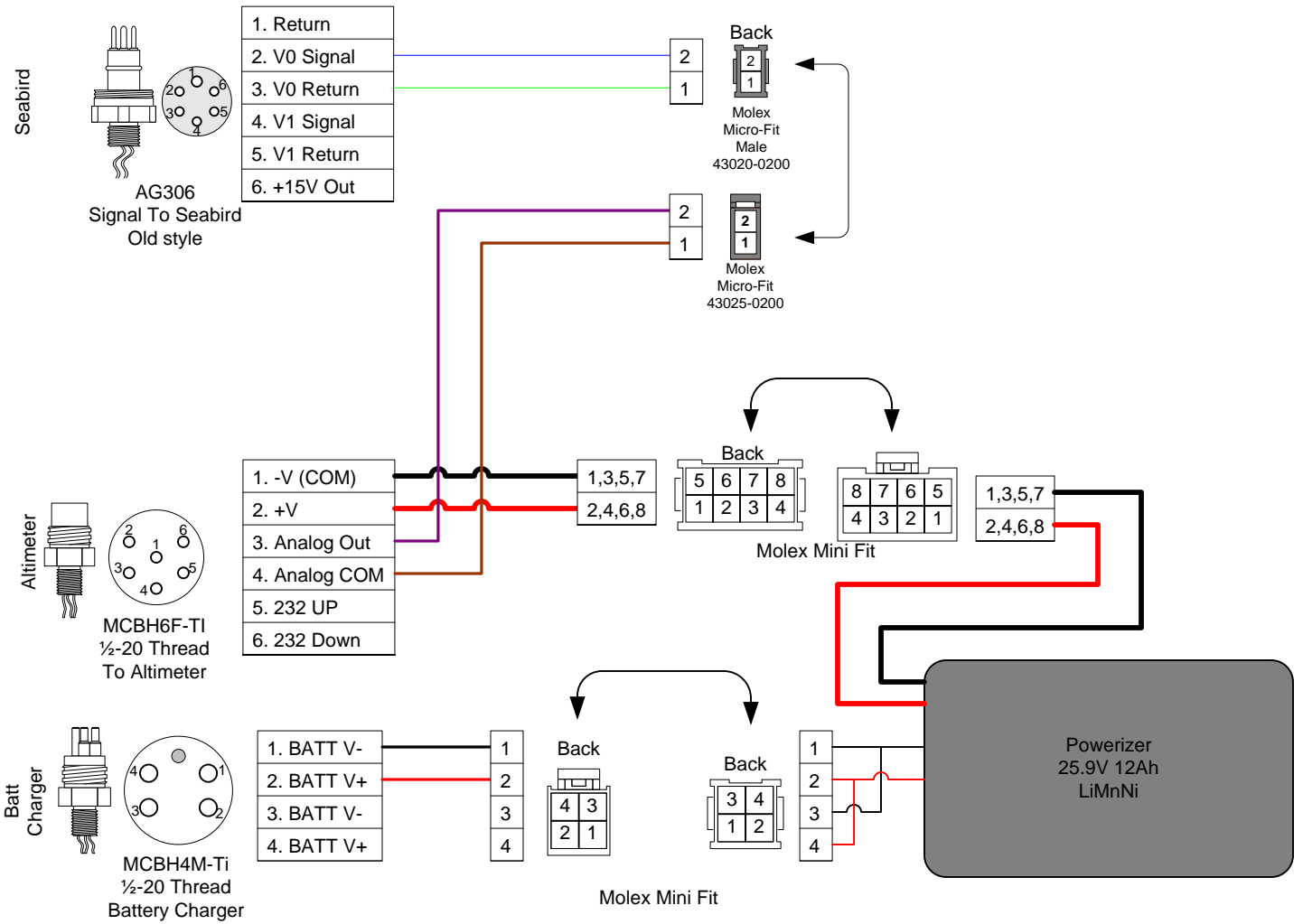
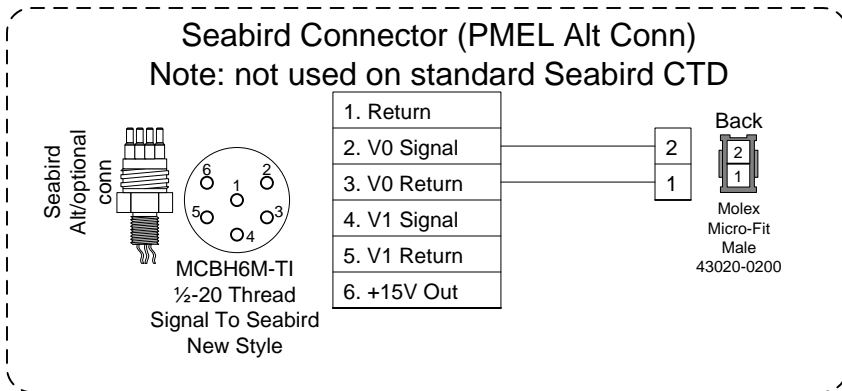
860S 19th St, UnitA

Richmond, CA, 94804, USA

Tel: 510-525-2328, Fax: 510-439-2808

Website: <http://www.batteryspace.com>

# Kongsberg Altimeter Battery Case Wiring Diagram



Note:  
All connectors have 1/2-20 Thread

# PRODUCT MANUAL

## JL SERIES LiFePO4/Li-Ion (Polymer) BATTERY CHARGER

(For a 8 cells LiFePO4 battery pack or a 6 cells Li-Ion (Polymer) battery pack)

*Please read this before using!*

### A. Features:

1. Auto detect to support 100-240Vac input
2. Short Circuit Protection - Charger output cut-off when short circuit is detected.
3. Overload Protection: Charger output current is limited when overload is detected.
4. Reverse Polarity Protection: Charger output cut-off when battery polarity is reversed.
5. Use CC CV method to charge. Shut-off after fully charge.
6. 2 LED Displays: LED 1 = Red (power ON); LED 2 = Red (charging); Green (fully charged).

### B. Operations:

1. Connect the charger to the AC wall socket.
2. LED 1 = Red (AC power on, remain on during the whole operation) and LED 2 = Green.
3. Connect the DC output cord to battery terminals, LED 2 will turn Red indicating charging (Red = V+, Black = V-).
  - a. Charging terminals: Pin # 1&2 = Negative and Pin # 3&4 = Positive
4. When LED 2 turns GREEN, the battery pack is fully charged.



### C. Notices:

1. JL Series charger is designed to charge a 8 cells LiFePO4 battery pack or a 6 cells Li-Ion pack with capacity >6800mAh.
2. Charger will turn off automatically if it was not connected to battery pack within 3 minutes after power on. To “reset” charger, unplug AC power cord and plug in again.
3. The battery maybe faulty if LED 2 cannot change to Green after a long time.
4. Always place the charger in well-ventilated, dry environment and indoor use only.
5. The charger is designed with aluminum housing as heat sink; do not cover the case to avoid over heating when charging.
6. Subject to change without prior notice, please feel free to contact us for latest information.

# Pressure Relief Valve

- 6km or 11 km Depth Rated
- Ultra-small
- Easily Adjustable 2-15 PSI Differential
- Also Functions as Vacuum Port



**DEEPCORP**  
POWER & LIGHT®



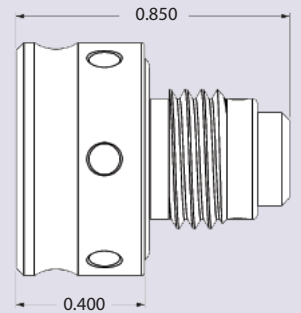
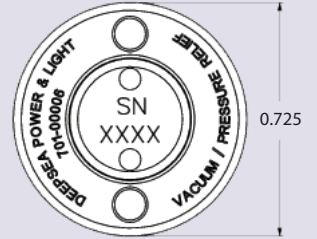
# Pressure Relief Valve Specifications

SPEC REV A 3/31/10

DeepSea's versatile pressure relief valve can be used on instrument housings, battery packs, and other applications requiring venting. Only 1.85 cm (0.725 in.) diameter by 1.91 cm (0.75 in.) overall length, this valve is rated 6,000m (Anodized Aluminum or 316 SS) or 11,000m (Ti6AL4V). The valve's release pressure can be easily adjusted and can also serve as a vacuum port. A dry spring design is used.

Pressure Relief Valve Specifications	
<b>MECHANICAL</b>	
Material:	Ti 6AL-4V, 6061-T 6 Al or 316SS (passivated)
Diameter:	1.85 cm (0.725 in.)
Length:	1.91 cm (0.75 in.)
Weight in Air:	11.7 g (0.42 oz.)
Threads:	7/16"-20, with O-ring face seal
<b>ENVIRONMENTAL</b>	
Depth:	11 km (Ti); 6 km (Al, SS)
Temperature:	-20° C to 200C (-4° F to 392° F) (Optional to 500° F)

## DIMENSIONS



## CRACKING PRESSURE CHART

Setable 2 psi to 15 psi (or closed)

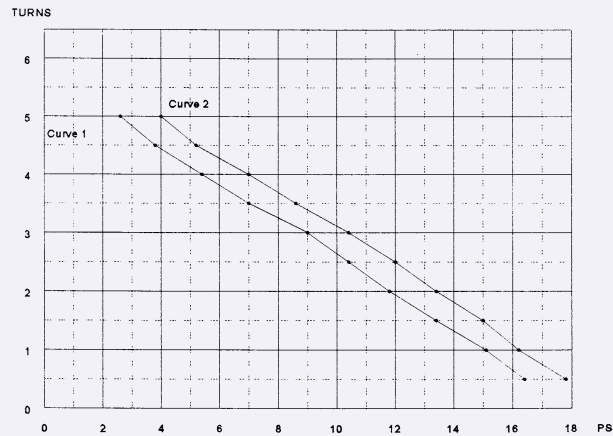
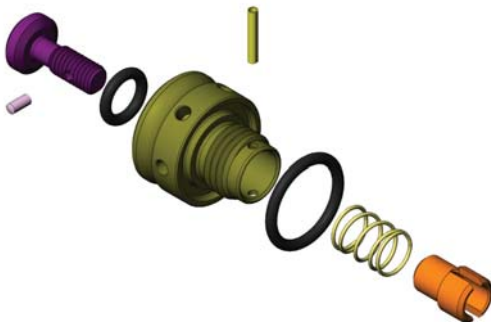
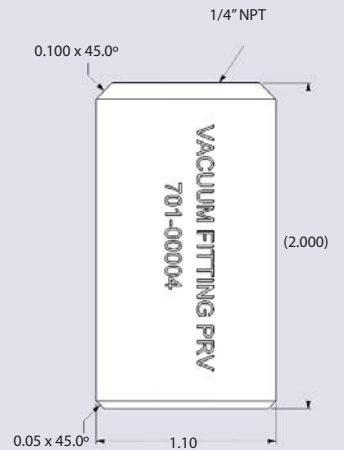


Chart shows pressure for # turns away from closed position and indicates the increase in setting from testing in Air (curve 1) to testing in Water (curve 2).

## EXPANDED VIEW



## ACCESSORIES



VACUUM FITTING  
701-0004

UNIVERSAL INSTALL TOOL  
701-00020

*Specifications subject to change without notice.*



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Power & Light®

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info@deepsea.com  
fax: (858)576-0219

DSPL ENG 701-000

**APPENDIX C**

# Operator manual



KONGSBERG

## **ALTCONFIG**

Configuration Software for the  
Model 1007 Altimeter

# ALTCONFIG

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## Technical Editor

*...Gary Mochizuki...*



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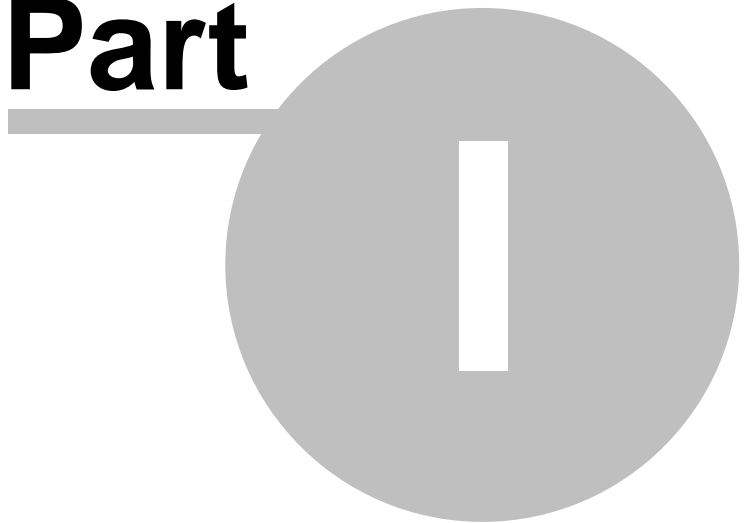
# Table of Contents

Foreword	0
<b>Part I Contents</b>	<b>3</b>
<b>Part II Introduction</b>	<b>5</b>
1 General Description .....	5
2 Model 1007 Altimeter .....	5
3 Theory of Operation .....	6
<b>Part III Installation</b>	<b>8</b>
1 System Requirements .....	8
2 Installation .....	8
<b>Part IV Usage</b>	<b>10</b>
1 Configuration Sequence .....	10
2 Altimeter Configuration .....	10
3 Configuration Files .....	12
4 Troubleshooting .....	13
<b>Part V Reference</b>	<b>16</b>
1 File Menu .....	16
2 View Menu .....	16
3 Initialize Menu .....	16
4 Configure Menu .....	16
5 Help Menu .....	17
<b>Part VI Appendix</b>	<b>19</b>
1 Appendix .....	19
2 MS1000 software .....	19
3 Model MS1000 Power Supply/Interface Box .....	19
4 Contacting Us .....	20
5 Glossary .....	20
<b>Index</b>	<b>22</b>

# Contents

ALTCONFIG Operator's Manual

## Part



# 1 Contents

[General Description](#)

[Model 1007 Altimeter](#)

[Theory of Operation](#)

[System Requirements](#)

[Installation](#)

[Configuration Files](#)

[Configuration Sequence](#)

[Altimeter Configuration Dialog Box](#)

[Troubleshooting](#)

[File Menu](#)

[View Menu](#)

[Initialize Menu](#)

[Configure Menu](#)

[Help Menu](#)

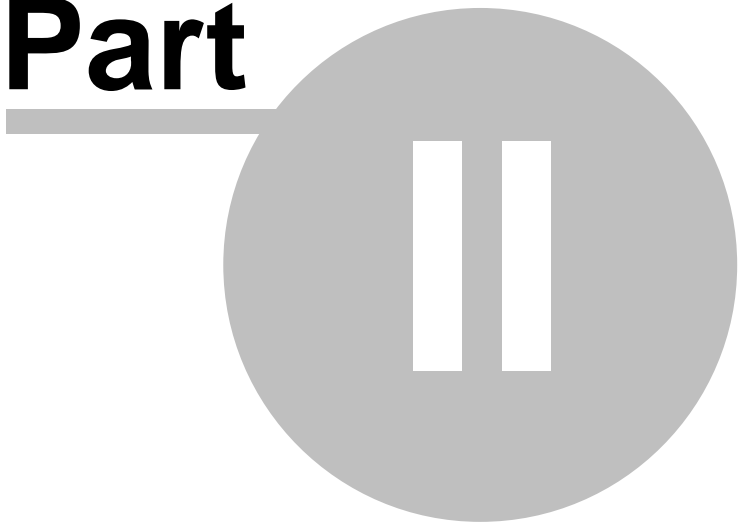
[Appendix](#)



# Introduction

ALTCONFIG Operator's Manual

# Part



## 2 Introduction

### 2.1 General Description

ALTCONFIG is a utility for the configuration of various default operating parameters of the Kongsberg Mesotech (KM) [Model 1007 Altimeters](#). ALTCONFIG is ideal for those deploying their 1007 as a fixed range standalone instrument who occasionally require modifications to some of its default operating characteristics, such as:

- [Operating Mode](#) (807, 809, or MS1000)
- minimum and maximum range
- range resolution and window size
- assumed sound velocity
- analog output scaling (if available)
- serial interface type (RS232C or RS485)

The collection of these parameters comprise a configuration which is stored in the altimeter's internal non-volatile memory, and read on power-up during its internal initialization sequence.

ALTCONFIG works with 1007 altimeters equipped with an RS485/RS232C serial interface with the reconfiguration feature enabled.

### 2.2 Model 1007 Altimeter

The Model 1007 altimeters are small, rugged, light-weight instruments for deep ocean applications such as altitude monitoring, positioning, berthing, and water depth estimation. Several configurations and options are available, including:

- Configurable RS232C or RS485 serial interface
- Configurable Analog output voltage linearly scaled as a function of detected range.
- Configurable [Operating Modes](#): 807, 809, or MS1000
- External Synchronization
- Optional Auxiliary serial output for vehicle control (when operating in MS1000 mode)

User reconfiguration is only supported on 1007 altimeters with both a serial interface and the reconfiguration feature enabled. Contact [KM](#) for details.

The following parameters are either configurable defaults and/or settings that can be programmed on-the-fly using a host computer, depending on the operating mode:

- operating mode
- minimum, maximum range
- range window and resolution
- assumed sound velocity
- transmit pulse width
- level detection threshold
- analog output scaling
- auxiliary serial output parameters (RS232/485, baud rate, etc).

The standard 1007 Altimeter operates at an acoustic frequency of 200kHz. Contact [KM](#) for other

frequencies. Refer to the 1007 Altimeter Specifications Sheet and Operators Manual for more information.

## Operating Modes

### ***807 mode***

All parameters in the altimeter are fixed (e.g. range, resolution, window, etc.) during operation, therefore cannot be changed on-the-fly via serial commands. This mode is typically used with 1007 altimeters with the analog output option in applications that only require the altimeter to output altitude measurements in analog (voltage) form as a standalone instrument.

### ***809 mode***

A standalone mode backward-compatible with the [KM](#) Model 809 Programmable Digital Echo Sounder outputting data via serial interface (RS232 or RS485) to a host computer or data logger. Normally used in applications with a PC host used as a terminal emulator or running a custom, application-specific software. On-the-fly programmable parameters (e.g. range, resolution, window, etc.) via serial commands from a host computer.

### ***MS1000 mode***

For connection via serial interface (RS232 or RS485) to a host computer running the [KM MS1000 software](#) application. This is a slave-oriented mode i.e. every ping is initiated by the host computer. Provides the ultimate in control and flexibility.

## 2.3 Theory of Operation

ALTCONFIG works by overriding the current/default operating mode of the target 1007 Altimeter by issuing commands via serial interface using [KM's](#) proprietary protocol.

Configuration data is then read directly non-volatile memory inside the altimeter and displayed in an "[Altimeter Configuration](#)" dialog box in a summarized form. Some of the configuration settings can then be user-modified in the dialog box, or the entire configuration can be replaced entirely by any one of the configuration files included with this utility.

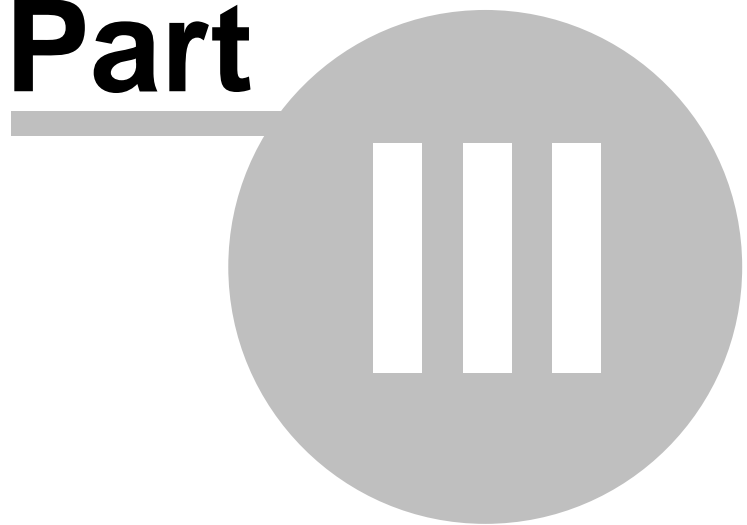
The new and/or modified settings can then be downloaded to update the altimeter's internal non-volatile memory. The altimeter is then automatically reset (via command) and the configuration data is reread and logged to a text file for diagnostic purposes.

The reconfigured altimeter is then ready to use, requiring only that altimeter be powered off prior to first use.

# Installation

ALTCONFIG Operator's Manual

## Part



## 3 Installation

### 3.1 System Requirements

ALTCONFIG requires a PC with an available COM port and running either Windows 9x, Me, NT, or 2000. Preferably, the same PC will be used to with the 1007 altimeter if using a digital serial interface.

1007 altimeters can only be reconfigured if they have a digital serial interface (RS232 or RS485) and have the user reconfiguration feature enabled. Therefore, analog-output altimeters cannot be reconfigured. Contact [KM](#) regarding user reconfigurability.

### 3.2 Installation

No special installation procedure of ALTCONFIG is required. Simply copy all the files in the ALTCONFIG software package to a dedicated directory (e.g. "*c:\altconfig*") in the host PC. A shortcut to "*altconfig.exe*" should then be created on the desktop for convenience.

ALTCONFIG supports only single head operation per COM port. Disconnect all other devices connected to the same COM port as the altimeter of interest.

# Usage

ALTCONFIG Operator's Manual

## Part

IV



## 4 Usage

### 4.1 Configuration Sequence

1007 Altimeter reconfiguration is a two-part procedure. Before commencing, make sure there are no other PC applications currently running that require access to serial ports (e.g. [MS1000](#), *HyperTerminal*, *WinFax*, etc).

#### Initialization

1. Start ALTCONFIG.
2. Select "[Initialize...Port](#)" and specify the serial (COM) port used to connect the PC to the targeted altimeter. This needs to be done only once each time ALTCONFIG is started, or if another serial port needs to be selected.
3. With the altimeter turned **OFF**, select "[Initialize...Altimeter](#)". An mode-overriding serial transmission sequence will be continuously issued to the altimeter while a "*Altimeter Initialization*" pop-up box will be displayed. **Do not click on the "OK" button yet.**
4. Turn **ON** the altimeter, then wait approximately 5 seconds after power is applied.
5. Click on the "OK" button in the "*Altimeter Initialization*" pop-up box to terminate transmission. The altimeter should now be ready for configuration operations.

#### Configuration

1. Select "[Configure...1007 Altimeter](#)" to establish communications with the altimeter and read the current configuration parameters from the altimeter's non-volatile memory. The main display area displays the messaging sequence involved. If successful, an "[Altimeter Configuration](#)" dialog box will be displayed, summarizing the configuration information read from the altimeter. The configuration read is also saved in the text report file "*altimeter.rep*" for diagnostic reference.
2. Edit the parameters as required for [809](#) or [MS1000](#) mode, OR select/load a new [configuration file](#) by clicking on the "[Load from File](#)" button.
3. Click on "[Write to Head](#)" button to write the configuration information to the altimeter's non-volatile memory, reset the altimeter, and read back the configuration information. The main display logs the messaging sequence involved, which can be saved later in a "[.ACL](#)" text file. Configuration information is logged to a text report file "*altimeterw.rep*" for diagnostic purposes.
4. The configuration information is then read back to update both the "[Altimeter Configuration](#)" dialog box and the text report file "*altimeter.rep*" for diagnostic comparison with "*altimeterw.rep*".
5. Turn **OFF** altimeter power. The altimeter is now ready to use with the new configuration.

### 4.2 Altimeter Configuration

The "*Altimeter Configuration*" pop-up dialog box summarizes the configuration parameters read from the altimeter, along with controls and adjustments to allow the user to modify them. This dialog box

consists of three parameter sections and a set of operations buttons, as shown in the following example:

Basic Settings		807 Parameters	
Altimeter Mode	807	Resolution (m)	0.00762
Max Range Analog Output Voltage (mv)	11000	Min Range (m)	0.610
Over-Range Analog Output Voltage (mv)	10240	Max Range (m)	30.480
808/809 Telemetry Mode	RS232	Range Window (m)	0.610
Initial Profile Min Threshold	51	Transmit Pulse (us)	100
		Assumed Sound Velocity (m/sec)	1478

File

Name: N/A

N/A

Buttons: Load from File, Save to File, Write to Head, Close

This dialog box is first updated when configuration data is first read from the altimeter i.e. when it is first opened, when a new [configuration file](#) is loaded, and after a read-back of configuration data just written to the altimeter.

## Basic Settings

These are adjustable settings that common to all altimeter modes:

### **Altimeter Mode**

The basic [operating mode](#) (807, 809, or MS1000)

### **Max Range Analog Output Voltage**

Analog output in millivolts corresponding to maximum range (0...10240mV). Applicable only to altimeters with analog output option. Typical value is 10000.

### **Over-Range Analog Output Voltage**

Analog output in millivolts if an acoustic return is not detected (0...10240mV). Applicable only to altimeters with analog output option. Typical value is 10240.

### **808/809 Telemetry Mode**

[809 mode](#) default serial interface type (RS232, RS485). Typical value is RS232, but this depend on your cabling, and interfacing requirements.

### **Initial Profile Min Threshold**

Acoustic return level detection threshold (0..255). Typical values are in the 26...51 range (10...20% of full scale).

## 807 Parameters



These are parameters specific to [807 mode](#) only, summarized from a number of settings not displayed or accessible in this dialog box and cannot be modified.

**Resolution**

Range resolution in millimeters.

**Min Range**

Minimum measured range in meters. This is set to start after the end of the transmit pulse plus post-pulse transducer ringing.

**Max Range**

Maximum measured range in meters.

**Range Window**

Maximum allowed difference between range readings. Used to filter out large range changes due to noise or interference.

**Transmit Pulse**

Transmit pulse length in microseconds.

**Assumed Velocity of Sound**

Velocity of sound used to estimate range in meters per second.

## File

Displays the [configuration file](#) name and specifications banner stored in it and cannot be modified. Not applicable to configuration data read from the altimeter.

## Buttons

**Load from File**

Reads and displays configuration information from a user-selected [configuration file](#).

**Save to File**

Saves the currently displayed configuration information to a user-selected [configuration file](#).

**Write to Head**

Writes the displayed configuration information to the altimeter's non-volatile memory and generates a text report file "*altimeterw.rep*". ALTCONFIG then resets the altimeter and reads back the configuration information, updates the displayed parameters, and updates the file "*altimeter.rep*" for diagnostic comparison with "*altimeterw.rep*". The main display area logs the messaging sequence involved, which can be saved later in a "[ACL](#)" text file.

**Close**

Closes the "[Altimeter Configuration](#)" dialog box.

## 4.3 Configuration Files

ALTCONFIG includes several ".CFG" text files which represent several configurations covering most of the typical 1007 applications. These configurations can be split into two major classes: fixed-range operation and programmable operation. The ".CFG" files are by default stored in the same directory as ALTCONFIG, along with "*README.TXT*", which summarizes their attributes.

Configuration files are used in a manner similar to Windows ".INI" files with many interdependent parameters and therefore must **\*NOT\*** be modified in any way! Consult [KM](#) for any specific configuration requirements.

## 4.4 Troubleshooting

1007 Altimeter reconfiguration should be relatively error free if it has been correctly installed and the [Configuration Sequence](#) is correctly followed. For correct operation, ensure that the following prerequisites are met:

- ALTCONFIG is correctly installed in a PC meeting all [System Requirements](#).
- ALTCONFIG supports only 1007 Altimeters with serial interfaces. Analog-only 1007 Altimeters and other devices such as 1071 digital heads are not supported.
- ALTCONFIG only supports re-configuration of 1007 Altimeters that have reconfiguration features enabled. Altimeters without this feature cannot be reconfigured. Contact [KM](#) for details.
- ALTCONFIG supports only single head operation per COM port. Disconnect all other devices connected to the same COM port as the altimeter to be configured.
- Verify that the unit provides a digital serial interface and that the mating cable is correctly wired for the altimeter. Altimeters with an analog-only output are not supported by ALTCONFIG.

If an error message is logged on the main display area, for example:

```
"Head timeout: CommID=..."  
"Altimeter configuration mismatch..."
```

or if the "[Altimeter Configuration](#)" dialog box fails to display, then try the following suggestions before retrying [Configuration Sequence](#):

- Close all other PC applications requiring serial (COM) port access, such as *HyperTerminal*, *WinFax*, [MS1000](#), etc.
- Check all connections/cabling between the host PC, altimeter, and your power source. Verify the COM port selected in ALTCONFIG corresponds to the COM port used for connection to the altimeter.
- Verify power is being supplied to the altimeter within the specified voltage range and current handling capacity. Refer to the Model 1007 Altimeter Specifications Sheet for details.
- Confirm the PC's COM port operation by either connecting to a known working serial port peripheral (such as a mouse) or by a serial loopback test. Alternatively, try another COM port if available.
- If using an [Model MS1000 Power Supply/Interface Box](#), verify the front panel POWER indicator is lit when power is turned ON. Confirm the front panel Tx and Rx indicators momentarily flash after "[Configure...1007 Altimeter](#)" is selected, indicating serial communications with the altimeter.
- In the case of a configuration mismatch error, compare the log files "*altimeterw.rep*" (configuration information written to altimeter) and "*altimeter.rep*" (configuration information read back) to see if there are any differences. Patterns in the mismatch may aid in the diagnosis.

Contact [KM](#) if further assistance is required.

# Reference

ALTCONFIG Operator's Manual

# Part

# V



## 5 Reference

### 5.1 File Menu

#### Clear Log

Clears the main display area, which lists the messages issued to the altimeter.

#### Save Log

Saves the current contents of the main display area to the current text log file for diagnostic purposes. By default, the current log file is initially "*untitled.acf*".

#### Save Log As

Saves the current contents of the main display to a text log file other than the current log file.

#### Exit

Terminates the ALTCONFIG application.

### 5.2 View Menu

#### Status Bar

Enables or disables the status bar immediately below the main display area.

### 5.3 Initialize Menu

#### Port

Selects the serial (COM) port connected to the altimeter. This needs to be selected only once after ALTCONFIG is started, or if another serial port is to be used.

#### Altimeter

Opens the "*Altimeter Initialization*" dialog box and enables the continuous transmission of an initialization sequence to the altimeter for overriding the altimeter's operating mode on power-up. Click on the "OK" button approximately 5 seconds after altimeter power-up to terminate the transmission.

The overriding sequence has no effect on altimeters already powered-up and running in a standalone mode ([807](#) or [809](#)).

### 5.4 Configure Menu

#### 1007 Altimeter

Reads configuration data from the targeted altimeter. If successful, opens up the "[Altimeter Configuration](#)" dialog box for display and modification of configuration data.

## 5.5 Help Menu

### **Contents**

Displays a list of help topics.

### **About**

Displays the ALTCONFIG version.

# Appendix

ALTCONFIG Operator's Manual

## Part

VI



## 6 Appendix

### 6.1 Appendix

[MS1000 software](#)

[Model MS1000 Power Supply/Interface Box](#)

[Contacting Us](#)

[Glossary](#)

### 6.2 MS1000 software

[KM](#)'s Windows-based sonar application. that provides the ultimate in control and flexibility of Model 1007 Altimeters.

Some of the features:

- compatible with a number of KM sonar heads and altimeters
- supports single or multiple head/altimeter operation.
- sonar data recording/playback.
- echo sounder imaging.
- screen capture and printout
- powerful target measurement tools
- flexible display configuration
- accepts external navigation and sensor information for display and/or data logging.
- serial output of optional sensor data.
- for Windows 95/98/ME or NT/2000.

Contact [KM](#) for further details and specifications.

### 6.3 Model MS1000 Power Supply/Interface Box

[KM](#)'s integrated power supply / interface unit for use in systems using the MS1000 host software.

- +24V power for KM digital telemetry heads and altimeters,
- RS485/232 interface conversion between the head/altimeter and PC for multi-drop configurations (single cable/multiple heads).

Contact [KM](#) for further details and specifications.



## 6.4 Contacting Us



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## 6.5 Glossary

### **configuration**

A collection of parameters that specify the operating behavior and measurement properties of the altimeter.

### **fixed range operation**

An operating mode where all parameters (e.g. range, resolution, window, etc.) are fixed during operation, therefore cannot be changed on-the-fly via serial commands. This mode is typically used with 1007 altimeters with the analog output option in applications only require the altimeter to output altitude measurements in analog (voltage) form. The 807 operating mode is an example of a fixed-range operating mode.

### **Operating Mode**

The 1007 Altimeter can operate in several operating modes (807, 808, 809, MS1000) that are further described in the "*1007 Altimeter Operator's Manual*".

### **ping**

A single altitude measurement cycle, consisting of the following sequence:

- a. transmission of an insonifying acoustic tone burst,
- b. receive signal data acquisition interval (duration determined by maximum range),
- c. receive data analysis and altitude estimation.

### **programmable operation**

An operating mode with parameters (e.g. range, resolution, window, etc.) programmable on-the-fly via serial commands from a host computer. This mode is typically used in applications where the altimeter is connected to a host computer for control and data uplink via a serial interface (RS232 or RS485). The 809 and MS1000 operating modes are examples of modes with programmable operation.

### **standalone operation**

Autonomous pinging and output of altitude measurements in digital and/or analog form i.e. does not require host computer control to initiate pinging. The 807 and 809 operating modes are examples of modes catered for standalone operation.

# Index

## - C -

Configuration Files 12  
Configuration Sequence 10  
Configure Menu 16  
    1007 Altimeter 16  
Contacting Us 20  
Contents 3

## - F -

File Menu 16  
    Clear Log 16  
    Exit 16  
    Save Log 16  
    Save Log As 16

## - G -

General Description 5

## - H -

Help 17  
Help Menu 17  
    About 17  
    Index 17

## - I -

Initialize Menu 16  
    Altimeter 16  
    Port 16  
Installation 8

## - M -

Model 1007 Altimeter 5  
MS1000 Power Supply 19

## - O -

operating mode 5, 20  
Operating Modes 5

## - S -

System Requirements 8

## - T -

Theory of Operation 6  
Troubleshooting 13

## - V -

View Menu 16  
    Status Bar 16