

## TIDE GAUGE-ROV INTERFACE REQUIREMENTS

There are two components to the autonomous acoustic modem tide gauge. The stand alone Part I is completely self-contained and only needs to be placed on the ocean bottom site. It communicates acoustically with Part II which is a LinkQuest Model UWM2000 acoustic modem mounted on the ROV and requires power and RS232 lines from the ROV.

### **LinkQuest Acoustic Modem Model UWM2000**

**Operating Frequency: 26.775 KHz – 44.635 KHz**

**Center Frequency: 35.7 KHz**

### **I. Overall Dimensions for Autonomous Acoustic Modem Tide Gauge frame**

(stand alone part to be placed on the ocean bottom)

Diameter: 33.0 cm (13")  
Height: 38.1 cm (15")  
Weight in air: 23.6 kg (52.0 lbs)  
Weight in water: 9.2 kg (20.2 lbs)

### **II. Overall Dimensions for ROV mounted LinkQuest Acoustic Modem**

(this part mounts on the ROV with transducer up & unobstructed)

Diameter: 8.7 to 12.6 cm (3.4 to 5.0")  
Height: 25.0 cm (9.8")  
Weight in air: 4.8 kg (10.6 lbs)  
Weight in water: 2.6 kg (5.7 lbs)

### **Electrical Power Requirements for ROV mounted LinkQuest Acoustic Modem**

24 VDC (12-24 VDC absolute maximum ratings)

0.8 Watts receive, 8 Watts transmit

Peak Current = 1.25 A at 12 VDC

The maximum allow voltage is 24 VDC +10% (26.4 VDC)

The +10% is the tolerance. Do not set actual voltage above 24 VDC.

### **Telemetry Requirements for ROV mounted LinkQuest Acoustic Modem**

The LinkQuest Acoustic Modem requires one channel of bi-directional RS-232 at 9600 baud, 8 bit, 1 stop bit, no parity, no handshaking. Denoted at 9600, 8, 1, N.

The ROV power and serial communications (9600, 8, 1, N) required are the same as for the ROVDOGS. There is an adaptor cable that mates with the LinkQuest cable and the ROVDOG test box to allow testing and diagnostics.

### **Electrical Connector Requirements for ROV mounted LinkQuest Acoustic Modem**

The LinkQuest acoustic modem requires one cable of rubber molded 8 conductor cable, 18 AWG stranded. The cables from the ROV to the LinkQuest modem are terminated at the LinkQuest modem end with a SubConn Micro 8 MCIL8F connector (8 pin female) with a MCDLSF locking sleeve; the ROV end may be terminated for the specific ROV connector. We can also supply cables terminated at one end with SubConn MCIL8F connectors, un-terminated at the other end, length 5 meters overall.

For a 4 wire connection, combine the power & RS-232 commons (4 & 7)

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SubConn MCIL8F Pin number	Assignment	DB9 Pin Number (for testing)
1	RS-232 Receive, dataflow from ROV to LinkQuest (downlink)	3
2	RS-232 Transmit, dataflow from LinkQuest to ROV (uplink)	2
3	Power Supply Positive Voltage 24VDC nominal (12-24 VDC absolute max)	NA
4	RS-232 Common	5
5	Reserved	NA
6	Reserved	NA
7	Power Supply Common	NA
8	Reserved	NA

Notes:

1. SubConn MCIL8F Pin 1 is the offset center pin, and when the **male** connector is viewed looking at pins, pin numbers increase clockwise (i.e., Pin 2 to the right & Pin 8 to the left).
2. Max voltage is 24 VDC +10% (26.4 VDC) The +10% is the tolerance. Do not set actual voltage above 24 VDC.
3. The ROV power and serial communications (9600, 8, 1, N) required are the same as for the ROVDOGS. There is an adaptor cable that mates with the LinkQuest cable and the ROVDOG test box to allow testing and diagnostics.

Figure 1: TG09 stand alone Part I

Figure 2: Actual TG09 photo. Not shown are two 1.5” rubber hose bumpers. One encircles the bottom plate and the other encircles everything at the lifting cross piece level.

Not shown: ROV mounted Part II is just the orange cylinder with black top

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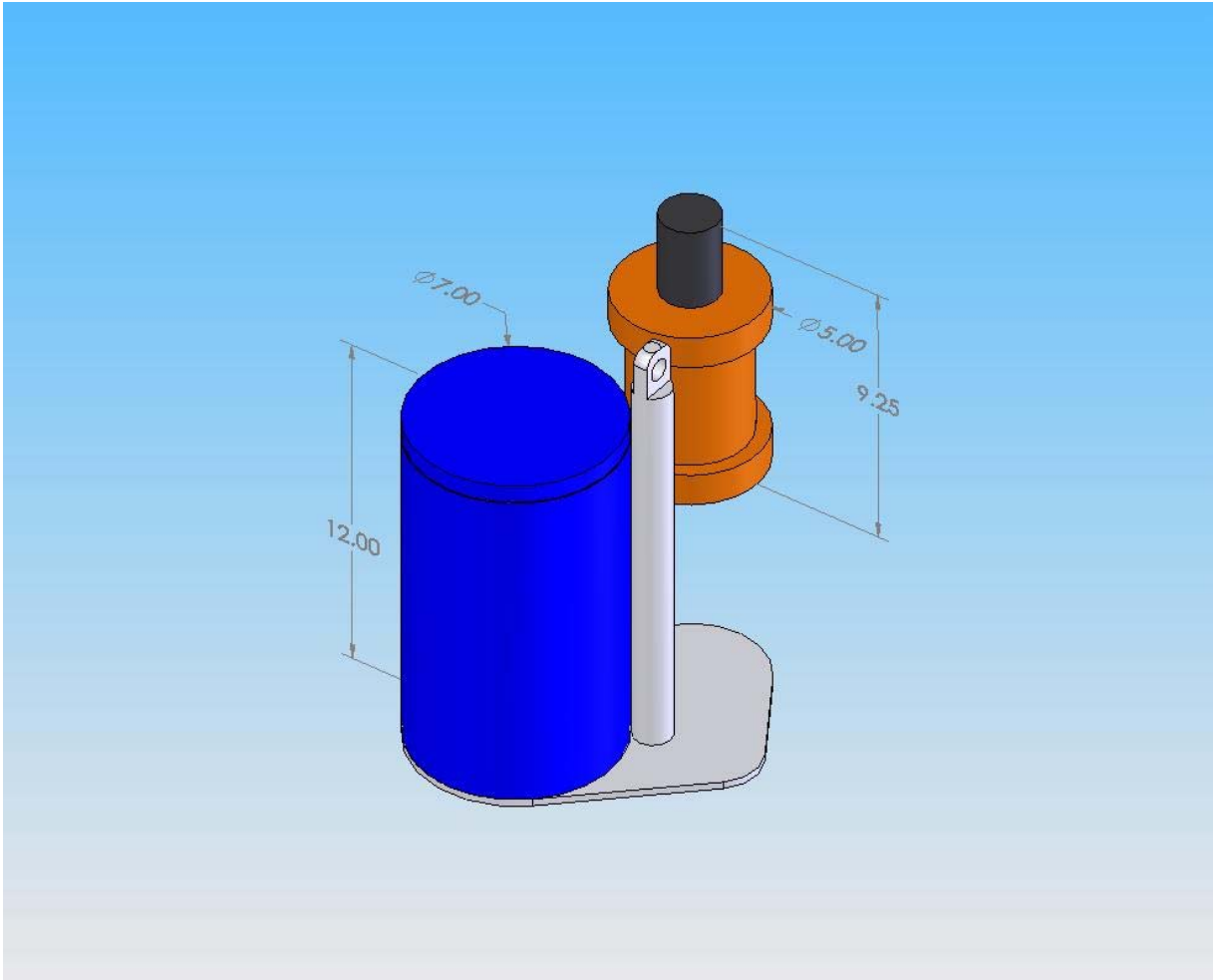


Figure 1 Tide Gauge 2009 (dimensions in inches)

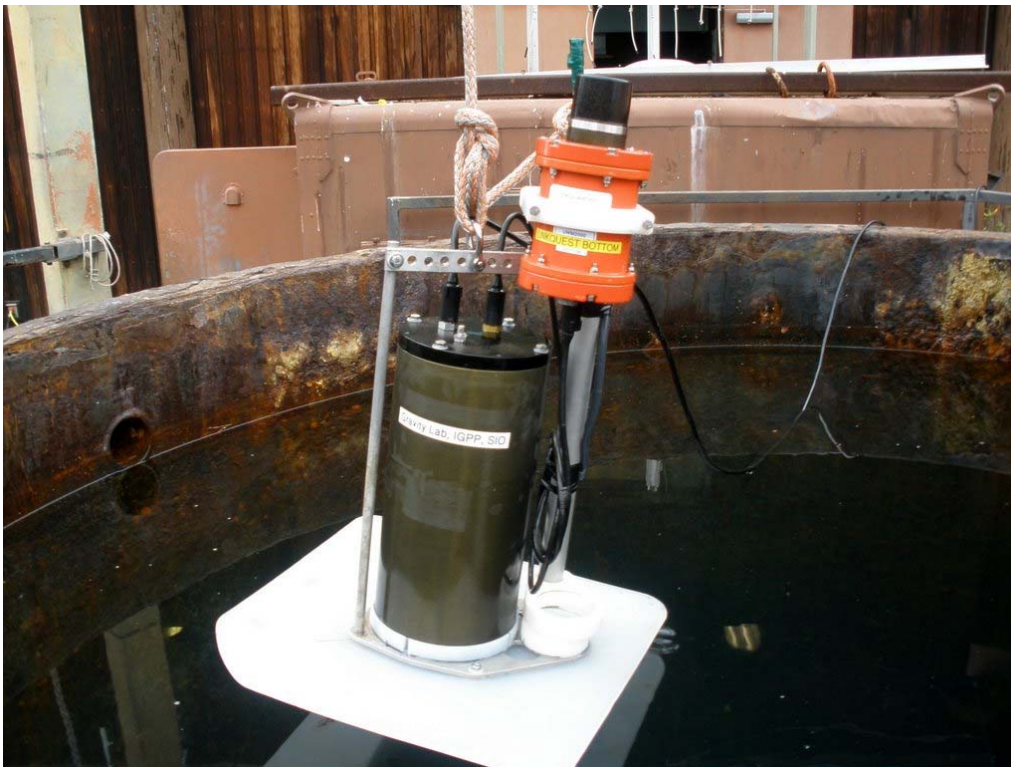


Figure 2 TG09 complete except bumpers