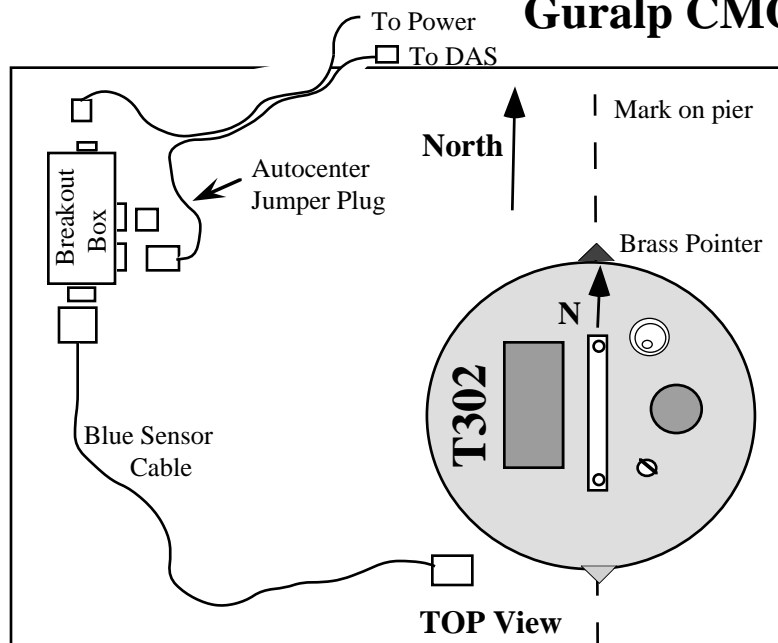


**Appendix B**  
**Summary Sheet for PASSCAL Sensor**

**Guralp CMG-3 T**



**Channel Order**  
(positive voltage on DAS channel means ground moved in given direction)

- 1 Up
- 2 North
- 3 East

**Sensitivity**

1500 Volts / meter / second

**Calibration constant**

1 volt input ~ 1 volt output

**Typical DAS parameters:**

**Gain 1**

**Cal Amplitude** 0.10 Volts

**Cal Interval** 200

**Cal Step Size** 201

**Physical Characteristics:**

**Size** cylinder 16.8 cm diameter, 38 cm height

**Weight** 14 kg.

**Shipping Weight** 65 lbs.    **Size** 13x13x24 inches

**Power consumption** (Gbox)

100 mA @ 12 VDC

pulses of 400 mA required for centering and locking

**Frequency Response:**

**Natural Freq.** 0.0083 Hz. (120 seconds)

**Damping** 0.707 critical

**Zeros** two at zero

**Poles**  $-0.037 + 0.037i$

$-0.037 - 0.037i$

**Installation Tips:** (See also the Field Note on Guralps. These are tips, not complete instructions)

1. The sensor pad should be within 5° of level, marked with line oriented north. Construction of the sensor enclosure is critical to data quality. See Field Note on Broadband Vault Construction.
2. Align the sensor using small pointers extending from the base, the brass one points north. Level the sensor by adjusting the feet to center the bubble level on top. When level, twist the foot lock ring down (clockwise) onto the bottom of the slot to lock the foot from turning.
3. Attach the sensor cable. Secure the sensor cable so that tugs on it (inadvertent or otherwise) do not budge the sensor and that it does not wiggle around near the sensor.
4. Cover the sensor with insulation. Insulate the vault and close the vault.
5. Connect the sensor cable to the Guralp breakout box. Attach one of the grey cables to the breakout box at the "recorder" port, leave the power cable laying near the power port. Attach the other end of the grey cables to the PASSCAL Powerboard (white +, black -) and to the REF TEK DAS. Check the polarity is correct on the power and plug power cable into Guralp breakout box. Connect the Guralp Control Box to the control port and set the meter to 1 volt range.
6. Unlock the sensor masses by pressing the "enable" and "lock" buttons on the breakout box. One centering attempt will follow automatically. Additional centering, if necessary, is accomplished via the "enable" and "centre" buttons. The voltage should be within one volt of zero. If after more than 3 attempts an element mass position voltage still has not crossed zero, consult the Guralp Field Note for further instruction.

**Cabling Notes:**

Two cable assemblies and a breakout box are included with a sensor.

1) A 4 meter blue sensor cable with the same connector (PTO6F-16-26S) on each end. A yellow or grey cable (made for CMG-3ESP) will not operate the Lock/Unlock functions.

2) A 4 meter pair of cables (tied together) to connect the breakout box to power and DAS. There is a jumper plug for autocentering tied to the breakout box end.

3) Guralp breakout box with "lock", "centre" functions.