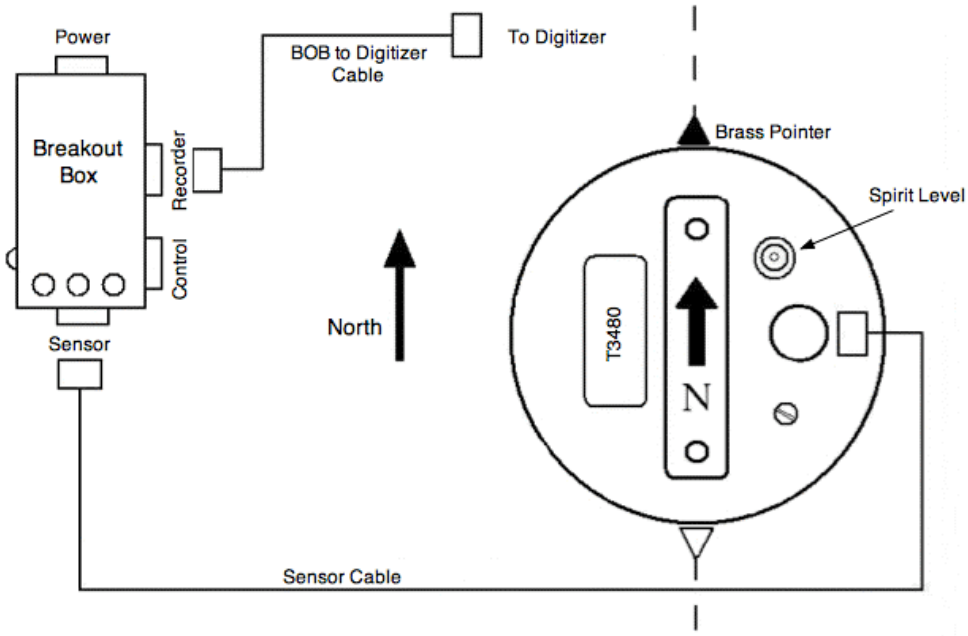
Summary Sheet for PASSCAL Sensor
Guralp CMG-3T



Channel Order:
(Positive voltage on digitizer channel means ground moved in given direction.)
1 Up
2 North
3 East

Sensitivity:
1500 Volts/meter/second

Step Calibration:
If needed in the field, consult the PIC Calibration Guide

Physical Characteristics:
Size: cylinder 16.8 cm diameter, 38 cm height
Weight: 14 kg
Shipping Weight: 29.5 kg **Shipping Box Size:** 33x33x61 cm
Power Consumption: 100 mA @ 12VDC
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 + 0.037ι
-0.037 - 0.037ι

Installation Tips: (See also the Guralp Field Note. Below are TIPS not instructions.)

1. The sensor pad should be within 5º of level, marked with a line oriented North/South. Construction of the sensor enclosure is critical to data quality. See Field Note on Broadband Vault Construction.
2. Align the sensor using small the small pointers extending from the base. Double check that the N mark stamped on the sensor base corresponds to the brass pointer, align this to North. The silver pointer aligns to South. Level the sensor by adjusting the feet until the bubble in the spirit level lies entirely within the inner circle. When level, twist the foot lock ring down (clockwise) onto the sensor base to lock the foot and keep it from turning.
3. Attach the sensor cable (26 soc to 26 soc cable). Secure the sensor cable so that tugs on it (inadvertent or otherwise) do not budge the sensor and it does not wiggle around near the sensor or touch the sensor enclosure.
4. Connect the sensor cable (26-socket to 26-socket) to the Guralp breakout box (BOB). Once the digitizer is powered, connect the digitizer to the BOB with the either 19-pin to 26-socket cable (for RT130) or 26-pin to 26-socket cable (for Q330). Power is supplied to the CMG-3T directly through the digitizer to BOB cable. However, for unlocking and locking the 3T you may need to connect to external power for the Q330. The extra power cable is the10socket to rings or jumper clips for connection directly to a 12VDC battery. Remove this extra cable after the unlocking or locking procedure.
5. Unlock the sensor masses by pressing the “enable” and “unlock” buttons on the breakout box for ~7 sec until the Busy LED is illuminated. One centering attempt will follow automatically. Make sure the sensor is attempting to center before proceeding to the next step.
6. Note the serial number of the sensor. Cover the sensor with insulation. Insulate the vault and close the vault.
7. When the area is secure and quiet, send the CMG-3T another centering pulse. This is accomplished via the “enable” and “centre” buttons on the BOB (press and hold for ~7 sec until the Busy LED is illuminated) or via the handheld controller connected to the digitizer. The voltage should be +/-1.5V. Wait 120 seconds between centering attempts. If after more than 3 attempts an element has not come within the specified range, consult the Guralp Field Note for further instructions and contact PIC staff.

Contents of a Guralp CMG-3T Shipping Box:

1. CMG-3T sensor
2. A Guralp 3T BOB with 3 function buttons on top and an enable button on the side.
3. Guralp sensor to BOB cable (both connector ends are 26-socket)
4. BOB to digitizer cable (either 19-pin to 26-socket for RT130 digitizer or 26-pin to 26-socket for Q330 digitizer)