

## International Tripmeter Range - Trouble-Shooting

### Electrical Interference – Please read this first

Electrical interference (EMI) coming from your car can affect your Brantz equipment in a variety of ways, although we are constantly updating our products to guard against this, some interference is too strong to guard against in the equipment itself and must be suppressed within your vehicle.

Symptoms such as;

- **number randomly changing (mismatching displays)**
- **numbers jumping about or increasing inaccurately**
- **displays zeroing themselves (particularly the intermediate display)**
- **self-stepping when the engine is running but not moving**
- **freezing of the entire unit**

are all typical of EMI (Electrical Magnetic interference) most likely coming from your electronic ignition.

You will need to fit suppression to remove the EMI that is attacking your Brantz Tripmeter. If you have copper cored plug leads fitted you need to start with these and fit suppressed leads (Like the Magnacor E/Sport 7 or 8mm).

Generally we would advise investigating most likely sources of interference such as:

- Plug Leads (we would always advise suppressed plug leads other than on magneto driven cars) – mentioned above
- The Generator (Alternator/Dynamo/Magneto)
- The Coil
- Fuel Pump

Suppressors for each of these items are readily available.

### Test for Interference:

This is particularly common when home-made HT spark-plug leads have been used, but can come from damaged alternators or fuel pumps/horn/wipers etc.

If interference is present it is always too powerful to defend against and should be fixed at source by suppressors or new silicon leads etc.

- Take a portable radio, select the AM band (important) and tune into a quiet spot between stations.
- Turn up the volume and start the vehicle.
- Listen for loud clicks. That's interference!!
- Compare the vehicle with a normal road car as a guide to what is acceptable. Try other vehicle accessories to locate intermittent sources of trouble. You are also welcome to send you unit in for a upgrade to the newest specification which may help; however it is best to resolve the problem with the car.

### Sensor Check:

Before fitting any type of sensor to a vehicle; connect the sensor up to the Brantz meter and check its correct operation:

1. Connect your sensor to a Brantz tripmeter via the Grey Cable. Make absolutely sure that sensors are correctly connected before turning on the meter as they will be destroyed by reverse current.
2. Set the Tripmeter to a low calibration figure i.e. 009
3. Turn on the tripmeter and simulate the sensor via one of the following methods (depending on your sensor type):
  - Rotating the inner of Speedometer Cable Sensor (BR1)
  - Rotating the inner of the Gearbox Sensor (BR3/BR4)
  - Repeated touching of Wheel Sensor (BR2A) to a metal object
  - Repeated touching of the Drive/Prop Shaft Sensor (BRH2) to a Magnet

If it is suspected that either a Wheel Sensor (BR2A) or Speedometer Sensor (BR1) has been damaged whilst in use (i.e. tripmeter does not increment on the road) then the output from the sensor can be tested with a voltmeter which has the negative lead connected to ground and for the wheel sensor voltage varies as wheel is rotated 2.0 volts to 4 volts approximately or the speedo cable sensors blue connection varies 0v to 5v as internals are rotated.

4. The readouts should increment. If the readouts do not increment there is a problem which should be investigated – first refer to **Tripmeter Check** below.

### Tripmeter Check:

If the sensor check does not work you can check the tripmeter itself by the following test which must be carried out strictly in the order described:

1. Switch off the meter.
2. Pull off the three push-on connectors from the grey cable to the sensor.
3. Ease back the insulating sleeves from the Blue and Green wires of the grey cable described above. Keep these away from contact with anything else.
4. Select calibration 009 on the tripmeter.
5. Switch on the tripmeter.
6. Press all the zeroing buttons.
7. Tap the above Blue and Green wire connectors together electrically many times.
8. The tripmeter should increment.

If the tripmeter increments in this test but not during the sensor check it suggests that the sensor is faulty/been damaged.

If the tripmeter does not increment during this test it suggests there is a problem with the tripmeter itself and should be returned to Brantz for a Service

## International 2S Pro (BR7) – Calibration Self-Test

- If you are having trouble calibrating your unit and you have checked the Sensor and the Tripmeter independently – there is an additional self-test that can be performed on the International 2S Pro to check that the calibration switches are functioning correctly.
  - With the Tripmeter turned OFF – Hold the 'Speed/Ave Speed/Start Average' toggle switch over to the right and simultaneously turn the meter ON.
  - This puts the Meter in Test Mode
  - The Speed display (and on later models the Total display) will reflect the calibration figures.
  - The Intermediate display will show the firmware version.
  - Rotate the 3 push-wheel switches and check the figures on the Speed display alter accordingly
  - The meter will stay in test mode until it is turned OFF and ON again.

## Frequently Asked Questions:

- **There is no power when I switch the ON/OFF switch to ON:**
  - Disconnect the Black Power cable from the base of the tripmeter and connect it directly to a spare 12v battery out of the vehicle – **NOTE: A battery charger is not a suitable power source as the current is not smoothed**
  - Connect up the Brown Core (+12V) and the Yellow/Green Core (-12v) – if a blue core is present it is NOT Used.
  - Check that none of the Cables or Wire Cores have been cut into, or frayed.
  - **Triple Check your Connections** – Poorly fitted customer crimped connections make up the majority of faults here.
  - If the meter still does not light up it is advisable to send the unit back to Brantz for a Service/Repair.
- **When I switch the tripmeter ON only some of the display lights up:**
  - It is likely your tripmeter is damaged inside and needs to be returned to Brantz for a Service/Repair
- **The Tripmeter Readings randomly Zero, Jump about or Mis-match between the total and Intermediate:**
  - This is most likely Electrical Interference – See Electrical Interference information opposite
  - Ensure:
    - You have the unit connected directly to the battery terminals not the chassis, ignition or cigarette lighter.
    - You have checked for Interference from HT Leads / Pumps / Horn / Wipers / Dynamo / Alternator
    - You have tested the Tripmeter away from the vehicle on a separate battery (i.e. on a work bench) - this is a good indicator as to whether the vehicle is interfering with the electronics of the unit.
- **The Tripmeter readings increment on their own with no vehicle movement:**
  - This is most likely Electrical Interference – See Electrical Interference information opposite
  - Ensure:
    - You have the unit connected directly to the battery terminals not the chassis, ignition or cigarette lighter.
    - You have checked for Interference from HT Leads / Pumps / Horn / Wipers / Dynamo / Alternator
    - You have tested the Tripmeter away from the vehicle on a separate battery (i.e. on a work bench) - this is a good indicator as to whether the vehicle is interfering with the electronics of the unit.
- **The Tripmeter randomly stops collecting pulses:**
  - Test the Sensor – See **Sensor Check** above.
  - Test the Tripmeter – See **Tripmeter Check** above
  - CHECK your connections
- **The Tripmeter randomly loses power:**
  - You have checked and double checked ALL your connections.
  - Check all the wires to ensure good connections and that there are no cut into or frayed Cable or wire Cores.
- **My Tripmeter and my Wheel Sensor check out OK independently, but do not work properly on the vehicle:**
  - Check the sensor is close enough to the bolt heads to pick them up
  - Perform the Sensor Check described opposite & Check all connections.
- **My Tripmeter and my sensor work OK independently, but do not work when on the vehicle:**
  - Check all your connections and everything is wired correctly.
- **My Tripmeter is counting backwards, is my sensor fitted the wrong way round?**
  - The Brantz mechanical sensors work either way round so it is more likely that the **Count + / Count –** toggle switch has been moved into the 'count down' position.
- **The Average Speed display on my 2S Pro is jumping about all over the place:**
  - In the early models the average speed jumped about randomly to signify it had not been initialised – flick the average speed toggle switch to the right once to initialise the beginning of the average speed calculation.
- **The Top Display only is counting much faster than the Bottom display:**
  - Ensure the stepper knob is in the fully clicked into off position
  - Check for Interference
- **How do I do minor adjustments in calibration:**
  - If the distance reading is too HIGH - INCREASE the calibration figures
  - If the distance reading is too LOW - DECREASE the calibration figures
- **I get a different figure each time I try and calibrate on a measured distance?**
  - This is most likely Electrical Interference – See Electrical Interference information opposite
  - Or if you have a Wheel Sensor fitted – ensure the sensor is picking up every stud on rotation and not just occasionally