The RetroTrip 3 Classique (BR10C)

The Retrotrip 3 is a natural evolution of the ever-popular Retrotrip 2 and has all the same features, including accurate one-in-a-thousand push-digit calibration and clicking electromechanical readouts, which has made the Retrotrip 2 eligible for historic type rallies throughout the world.

BRANTZ
Rallymeters

Where the Retrotrip 3 differs from the Retrotrip 2 is that it contains two completely separate and independent tripmeters in the same box.

One tripmeter drives the two main counters on the left hand side of the box.

- The 2 counters labelled: ***i*** for Intermediate distances, and ***t*** for Total distances.
- A Switch allows one of these two counters to be disconnected to hold a reading for 'whatever' purpose.
- The Calibration switches and the On-Off switch on the left control this tripmeter.

A second tripmeter, with its own calibration switches, drives a third readout marked as ***V*** on the right. This tripmeter can also be switched On or Off independently.

Additional Features:

- The whole instrument can be switched On or Off by the horizontal power switch on the bottom right face of the unit.
- The counter output socket can be used to drive an external counter (Driver Display Unit - Available from Brantz) The default setting duplicates the reading of the right hand counter.
- One or more of the internal counters can be removed from the instrument to comply with various rally organisers rules.
- Both tripmeters are fed from the same single sensor fitted to either the speedometer cable or road wheel.
- The push buttons on the front face zero each counter independently.

A unique design feature of the BR10C is that it can be modified internally to suit various requirements:

- To open up the instrument disconnect totally from the power source and remove the top lighting cowl.
- Remove the four corner screws on the face of the instrument. The counters, rocker switches and counter output socket are connected to the control board via spring loaded connectors. **(Make changes only if you are competent in electrical matters or damage could result.)**
- The position of each counter can be changed to suit your own taste.
- The external Driver Display Unit can be set to run in parallel with any of the three internal counters by selecting which terminals it is connected up to.

Wiring:

- The Black cable is the power feed. Connect the Brown wire to +12volts and the Green/Yellow is connected to the -12volts.
- Connect straight to the vehicles battery posts **via a 2 Amp fuse** (Available from Brantz) on the live (+12V) wire. (Note: with Positively earthed vehicles it is customary to fuse the NON-Earthed side i.e. The Green/Yellow wire.
- Wiring must be taken directly from the vehicle's battery terminals and not from the chassis or existing vehicle wiring.
- Cars which have a 6 volt or 12 volt dynamo system (ie not a negatively earthed alternator type charger) must use the Brantz Power Conditioner (BR21).
- The Grey cable connects to the Brantz Sensor as indicated on the sheet supplied with the Specific Brantz Sensor.
- Assemble and test your Retrotrip on the bench with a spare battery BEFORE fitting to the car so that you know everything is OK prior to installation.

Calibration for Main (Left-Hand) Tripmeter:

- Calibration for the two distance counters on the left is as normal and should be done accurately.
- Zero the counters and set the calibration digits to 100 and drive a measured kilometre (or mile if working in miles and miles per hour).
- At the start of an accurately measured Kilometre/Mile, press the Zero button to ensure the counter reads 000.00.
- Drive the measured distance **- DO NOT exceed 20mph/30kph for Calibration (This will not be a problem once calibrated)** and stop accurately at the end of the distance – Note the figure that is shown on the readout. **(This is the Calibration Figure for this particular vehicle)**
- Enter this figure into the calibration push-wheel switches on the base of the Retrotrip. e.g. If the readout is 00567 set the push-wheel switches to 567. N.B. If the readout is greater than 00999 a **Pre-Scaling Interface (BR5)/Dividing Pre-Scaler (BR5-2A)** is required – please contact us on 0044 (0) 1625 669366 or Email: sales@brantz.co.uk
- The accuracy can be confirmed by re-running the measured distance after zeroing the readout, the meter should read exactly 01.00 Enter this figure onto the calibration push-wheel switches.

- N.B. A more accurate figure can be obtained by driving a measured two kilometres and dividing the readouts by two.
- An alternative way of calibrating is if the organisers have given you an accurate route of say 3.26 km, is to enter 326 onto the Push-wheel switches, zero the Left hand counters and drive the known distance. The figure which has accumulated on either of left hand counters is the figure to enter onto the left hand Push-wheel Calibration switches.
- If several wheel sizes and gearings are available for the vehicle; repeat the calibration procedure for each combination and note down the different calibration figures.

The Second tripmeter can be calibrated to achieve an indication of AVERAGE SPEED, this can be done by calibrating the second tripmeter to a different figure so that the number indicted on the right counter numerically equals the SECONDS ELAPSED. If it doesn't match, drive faster or slower until it does match.

This is derived from the Bath Formula shown below.

Calibration of the Second (Right-Hand) Tripmeter:

The Bath Formula: The calibration figure for the second tripmeter *(Cal'V')* is the Calibration figure for the Main tripmeter *(Cal'TI')* multiplied by the speed which the event organisers wish you to average, divided by 36.

[(Cal'TI') x (Desired Average Seed)] / 36

For example, if your Main tripmeter calibration figure *(Cal'TI')* is **678** and the desired average is **41.9** KPH, then the second calibration figure *(Cal'V')* is **789**.

[678 x 41.9] / 36 = 789

Note: *(Cal'TI') / 36* is a constant for *your* vehicle, so for the above example this constant would be **18.8333.**

678 / 36 = 18.8333

With the above note in mind if the desired average speed changes you need then only multiply this constant by the new speed to give your new calibration figures for the second tripmeter.

For example, if the new average speed changes to **27.5kph**, then the second calibration figure would be **518.**

18.8333 x 27.5 = 518

Using the Second Tripmeter:
At the start of the timed section - start a stopwatch and travel at the speed which makes the second tripmeter give the same number as the seconds on the stopwatch. i.e. at 34 seconds the tripmeter reads 000.34, and at one minute and 12 seconds, the trip reads 000.72. **Note:** Brantz Rally Clocks (BR32) contain a simple 'seconds counter' which goes 0-9 on all digits to facilitate the above comparison so at 1 minute 12 seconds the Brantz rally clock can show 0072 seconds.

Official Measured Distances and Calibration

If the rally organiser has laid out an 'official distance' or you wish to make your tripmeter read the same as the rally organisers distances then the following instructions apply for calibration:

- Enter **100 (C)** into the push-wheel calibration digits (N.B. If the official measured distance is greater than 20 miles you would need to enter a much higher figure for **C** e.g. between 399-999).

- With the Total and Intermediate Displays showing Zero drive the total official measured distance i.e. **4.8 (D)** miles and note down the readings i.e. **21.98 (T)** (this should be identical on both Intermediate and Total Displays)

- Now use the following formula:

  (T/D) x C

  e.g.
  (21.98/4.8) x 100
  =>4.579 x 100
  =>457.91

  So enter **458** into your calibration push-wheel switches.

  To confirm the figure, re-drive the measured distance and your displays should show the official distance e.g. 4.8 miles.

Trouble-Shooting:

Self test if you are experiencing problems :

- Connect the Retrotrip to charged battery (not battery charger). Ignore the sensor cable.
- Set the calibration push-wheel switches to **000.**
- Turn on the Power - the readouts may take half a step.
- Within 8 seconds of turning the power on change the calibration push-wheel switches to **888.**
- After a few seconds the counters will start to self-step themselves in groups of 8 for as long as the power remains on.
- If the above functions properly the problem is likely to be something other than the meter itself.

Ensure :

- You have earthed to the battery terminal itself not the chassis.
- You have checked for Interference from HT Leads/Pumps/Horn/Wipers/Dynamo/Alternator (See our online trouble shooting guide).
- You have checked and double checked your connections.
- Wire the Retrotrip to a 12V Battery away from your car and with a low calibration figure i.e. 009 manually turn the sensor to see if the counters click up. If this works – again this suggests a problem within your vehicle.
- If you vehicle has a 6 volt electric system or is just a less reliable 12 volt system use a **Brantz Power Conditioner (BR21).**
- Prevent Excessive Vibration – this can cause the counters to disagree with each other.

If you are still having problems please see our Trouble-Shooting guide available at www.brantz.co.uk, contact your supplier or Phone us on: 0044 (0) 1625 669366.

Retrotrip Accessories (available from Brantz):

Essential Extras:

- BRANTZ Sensor
- In-Line Fuse Kit

Recommended Extras :

- Power Conditioner (for vehicles without a consistent 12V power supply) (BR21)

Optional Extras:

- Plug Kit (BR43)
- Dual Sensor Switch (BR49)
- Average Speedtable (BR19)
- Sensor Extension Cable (BR2X)
- Driver Display Unit (Ask for details)

YOUR NOTES:

BRANTZ
Rallymeters

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