

How to Select a Sensor

Brantz rally tripmeters (and precision Survmaster odometers) require a sensor to send travel information up to the instrument so that it can calculate and display just how far the vehicle has travelled.

The most suitable sensor is chosen from a few key factors pertaining to the vehicle the tripmeter is being installed into.

The criteria are:

1. **Positioning** - The tripmeter will be of no use if the sensor gets destroyed
2. **Accuracy** - Different bits of the vehicle travel different distances when rallying
3. **Ease of Fitting** - Do you prefer mechanical or electrical
4. **Cost Considerations** - Remember the cost includes fitting time and servicing time.

The first choice is the screw-on gearbox sensor which is the fastest to fit and the cheapest. It has great reliability as it is not near high heat sources or in the path of flying under-car debris. We offer two types; one of which fits many Japanese cars which have the M20x1.5 gearbox threaded speedo output fitting (the rotating drive pin is round with a single 'lug' pinched onto one side. The pin is reversible for different length pin requirements) **Part BR3: Japanese Gearbox sensor**.

The other gearbox type sensor is threaded M18x1.5 for many European cars which had a speedometer cable drive for their original speedometer. The drive pin is a square section and is also reversible to accommodate different drive pin length requirements. **Part BR4: European Gearbox sensor**

If the vehicle has a mechanically driven speedometer but not suitable for the BR3 or BR4 such as many older British cars with imperial thread, then choose the **Part BR1: Universal Speedometer Cable sensor** which fits somewhere in the length of the existing speedometer cable. This choice will require the removal of the speedo cable and cutting of the speedo cable sleeving, which is a little more effort, but is an excellent choice.

The first generation of cars which had an electronically driven speedometer (i.e. there was no mechanical cable) generated pulses from a device screwed onto the gearbox where the old cable once went, or from a dedicated sender built into the transmission chain somewhere. They are three-wire devices; one wire being ground, one wire being +12v power when the ignition key is ON, and one wire we are interested in which has a digital signal on it. The voltage on this wire if viewed by a voltmeter will go up to 12volts and down to ground a few times per revolution of the transmission. For these vehicles the part required would be a **BR5: Dividing Pre-scaler**. Connect this wire to the single terminal end of our BR5 interface. The other end of the interface goes to the tripmeter. The BR5 will prevent the car and the tripmeter from hurting each other. The incidental feature of the BR5 (such as for some Astra cars) allows a very high pulse rate source to be divided down to a reasonable pulse rate so that our tripmeters can calibrate in the normal range. Very quick and easy to fit.

Rally cars competing on loose surfaces use a lot of wheel spin at the driven wheels. This scenario dictates that an accurate tripmeter will need to pick up from a non-driven wheel using the **BR2a Wheel sensor**. There is an expectation that this type of sensor will not have a long life due to heat from brakes and flying debris damage.

Customers may wish to fit a backup sensor (possibly of a different type, or maybe the same type fitted onto a different wheel) to cover for damage. The brake heat generated on competitive tarmac events would make this choice of sensor 'optimistic'. In order to connect your 2 sensors up to the one tripmeter we recommend our **Dual Sensor Switch BR49** which allows you to quickly and easily switch to your back up sensor without having to get out of your vehicle.

Vehicles which can not use any of the above sensors (and particularly modern vehicles which generate pulses from ABS systems only above 7kph for their own speedometers, and also most 4wd types) should use the **BRH2: Drive/Prop Shaft sensor**. These are straightforward to fit, but for extreme use, care should be taken to fit them in a location which does not suffer from flying debris etc.

If the choice of sensor results in a particularly low calibration figure; the customer may wish to fit a **BR52: Pulse Doubler** in between the sensor and the tripmeter to raise the calibration figure which in turn increases the tripmeter accuracy.