Which Sensor?

Brantz Tripmeters require a sensor to send distance 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 that the tripmeter is being installed into:

1. **Ease of Fitting – Do you prefer mechanical or electrical**
2. **Accuracy - Which sensor will be most accurate for your vehicle**
3. **Positioning – E.g. You don't want the sensor knocked off by flying debris on a rough course**
4. **Cost Considerations - Remember to account for the time taken to fit the sensor as well as the price**

The first choice is the screw-on gearbox sensor, which is the fastest and easiest to fit. It has great reliability as it is not near high heat sources or in the path of flying under-car debris. The two most common types are:

- **BR3: (Japanese) M22 Gearbox Sensor:** This sensor fits many Japanese cars which have the M22x1.5mm gearbox threaded speedo output fitting (the rotating drive pin is round with a single 'lug' pinched onto one side). We also stock the **BR3-HG-2: (Japanese) High Grade M22 Gearbox Sensor with Dual Fitting** and the **BR3-SQ: (Japanese) M22 Gearbox Sensor with Square Drive Pin.**
- **BR4: European Gearbox Sensor:** This sensor fits many European cars, and also a significant number of Ford vehicles, which have a M18x1.5mm thread. The drive pin is a square section and is also reversible to accommodate different drive pin length requirements.

If you have a different variation of gearbox thread than the standard fittings above, please feel free to contact us with the thread, pitch and drive pin shape of your speedo-cable feed as we can provide alternative sizes on special order.

If the vehicle has a mechanically driven speedometer but is not suitable for a gearbox sensor, e.g. if space is limited or on older British cars with imperial gearbox thread, then choose the **BR1: Universal Speedometer Cable Sensor**, which fits 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 (NOT the inner cable), which is a little more effort, but is an excellent and common choice.

An alternative to a cable or Gearbox sensor is the **BRM12: (Smiths/Jaeger) M12 Sensor with Square Drive Pin**. This sensor has a M12x1mm fitting with a 2.7mm square pin drive and will fit most Smith & Jaeger Speedometers.

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 in to the transmission chain. They are three-wire devices; one wire being ground, one wire being +12v power when the ignition key is ON, and the one wire we are interested in, which has a digital signal on it. For these vehicles a good option would be a **BR5: Electronic Speedo Interface**. Connect the third 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 damaging each other. Very quick and easy to fit. Additionally, the BR5 can be used to divide down a very high pulse rate source to a reasonable pulse rate so that our tripmeters can calibrate in the normal range.

Rally cars competing on loose surfaces can generate 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**. For hot climates and runs with increased amounts of braking we would recommend a **BR2A-HT: High Temperature Wheel Sensor**, which will cope with temperatures up to 120°C. Both these sensors have a 1mm sensing distance, minimising the likelihood of debris becoming lodged between the sensor and its pick-up. For situations where there is likely to be movement between the sensor and pick-ups, such as at the extremities of

the wheel, we would recommend our **BR2A-4mm: Wheel Sensor**, which has a slightly larger sensing distance of 4mm.

An alternative positioning for our BR2A range of sensors is to pick up on flying tabs (minimum of 2 positioned 180° apart) fasted on the bolt heads of the prop shaft's Universal Joint.

We would recommend fitting a backup sensor (possibly of a different type, or two wheels sensors fitted onto different wheels) to cover for damage. In order to connect your 2x sensors up to the one tripmeter you will need our **BR49: Dual Sensor Switch**, which allows you to quickly and easily switch to your back up sensor without having to get out of your vehicle.

For vehicles which cannot use any of the above sensors, such as modern vehicles with ABS systems which only generate pulses above 7kph for their own speedometers, 4WD type vehicles and also Pre-War vehicles whose speedometer cable is particularly large or sealed to the outer sleeving, we would recommend the **BRH2: Drive/Prop Shaft Sensor**. These are straightforward to fit, but care should be taken to fit them in a location which does not suffer from flying debris or moves out of alignment with the suspension etc.

Some modern vehicles have a CANBUS system, usually vehicles newer than 2005, where you can tap in to the in the CAN HI & CAN LO wires using the **BR56: CANBUS Interface**, either directly or via our **BRCCR: Contactless CAN Reader.** N.B. Please check before purchasing that your vehicles speed pulse is fed into the CANBUS system.

An alternative for the above system is the **BR57-58: CANBUS Interface**. These plug directly into your diagnostic OBDII socket (usually located in the drivers foot-well) and are extremely easy to fit and remove without any mechanical or electrical effort. Simply Plug & Go. There are two different types of Plug & Go Interfaces for different vehicle configurations. Please refer to our CANBUS Compatibility guide - but please note this is not a definitive list, there will always be exceptions to the rule particularly with crossover years of manufacture. Please consult your vehicle manufacturer for more information.

Another non-mechanical sensor is the **BRGPS: Satellite Seeker**. This can come as part of the International Plug & Go Bundles, which does not require any additional wiring just mount it on the dash by the windscreen. Alternatively, this can be retro-fitted to any existing Brantz Tripmeter to convert it to a GNSS trip. The GPS bundle is great for rally recces in your modern vehicle or hire car and 4WD drive events where there is likely to be a lot of wheel spin on all wheels.

Too Few Pulses:
If your sensor set up results in a particularly low calibration figure – under 499 -- we would advise fitting a **BR52: Pulse Doubler** in between the sensor and the tripmeter to raise the calibration figure, which in turn increases the tripmeter accuracy.

Too Many Pulses:
If your sensor set up results in too high a calibration figure to enter on your tripmeter – over 999 -- you will need to fit a **BR5-2A: Pulse Reducer** between your BR2A: Brantz Wheel Sensor and the tripmeter.
If you are getting too many pulses from a sensor other than the Wheel Sensor, you would need to use the **BR5** as a Pulse Reducer.