

Driveshaft Speed Sensors

Installation, wiring and setup guide for all Online Motorsports driveshaft speed sensors

Covers these sensors

Sensor	SKU	Thread	Triggered by
5/16 Driveshaft Speed Sensor	OM-5/16-SPEED	5/16" x 24 UNF	Ferrous metal (steel teeth)
5/16 Driveshaft Speed Sensor Magnetic Pickup	OM-5/16-SPEED-MAG	5/16" x 24 UNF	Magnets
3/8 Driveshaft Speed Sensor	OM-3/8-HALL	3/8" x 24 UNF	Ferrous metal (steel teeth)
M12 Driveshaft Speed Sensor	OM-M12-SPEED	M12 x 1.0	Ferrous metal (steel teeth)
Lowdoller 5/16 Hall Effect Speed Sensor Positive Output (PNP)	OM-HALL-516-PN	5/16" x 24 UNF	Ferrous metal (steel teeth)

Common to all: fully threaded stainless steel body, built-in LED, 10-30V supply, normally open output, 3-wire cable with the same wire colours. The 5/16" sensors fit Strange Ultra Case housings with no modifications and suit the 5/16 Driveshaft Sensor Mount Bracket.

Output type: all our sensors switch the signal to ground (NPN), except the Lowdoller PNP sensor, which outputs positive voltage (+V) on the signal wire when triggered. Use the PNP sensor only where your logger or ECU needs a positive-going signal. If you are not sure which your input needs, check its manual or contact us.

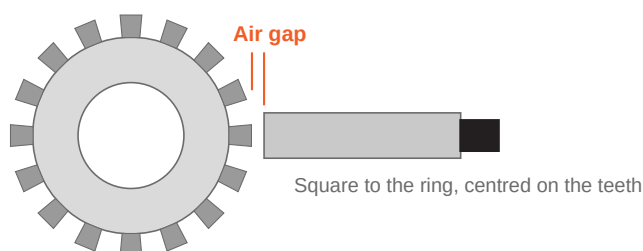
Before you start

- Match the sensor to your trigger. The ferrous sensors need a steel reluctor ring (MAD Pro-Series, Lowdoller 16 or 32 tooth). The magnetic pickup needs magnets on the driveshaft or yoke. A ferrous sensor will not read magnets on an aluminium part, and the magnetic pickup will not read steel teeth.
- Make sure the reluctor ring is the right size for your driveshaft or yoke and is clamped on tight and running true.
- Disconnect the battery or turn the master switch off before wiring.

1. Mount the sensor

- Fit the reluctor ring (or magnets) to the driveshaft or pinion yoke. Tighten the collar screws evenly and check it spins without wobble.
- Mount the sensor in the Strange housing, the 5/16 mount bracket or your own bracket. The sensor must be rigid. Any flex or vibration causes dropouts and false readings.
- Point the sensor straight at the ring, square to the teeth and centred across the tooth width. Keep it clear of the shaft at full suspension travel and any driveshaft loop.
- Screw the sensor in to set the air gap (next section), then lock it with the jam nuts. A drop of medium-strength thread locker on the nuts is recommended.

2. Set the air gap



Check the gap on the tooth tip, not the valley.

Rotate the shaft slowly by hand:

LED ON as each tooth (or magnet) passes

LED OFF between teeth

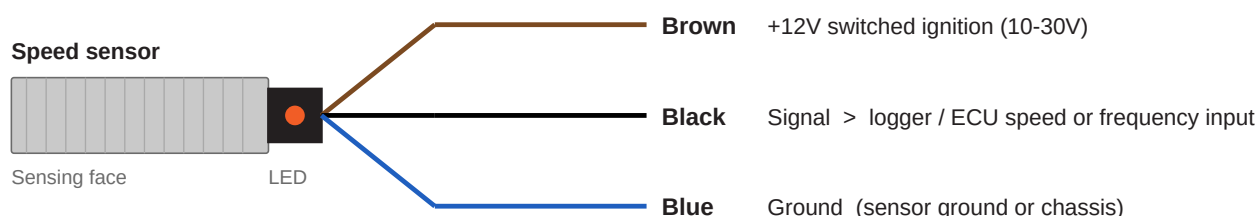
If the LED stays on, the gap is too small.

If it never lights, the gap is too big.

Sensor	Air gap	How to set it
5/16", 3/8" and M12 ferrous	0.5 - 1.0mm	Measure with a feeler gauge on a tooth tip, or screw the sensor in until it just touches a tooth, then back it out 1/2 to 1 full turn.
5/16" magnetic pickup	Start at 0.5 - 1.0mm	Confirm with the LED. Stronger magnets can run a bigger gap. If the LED will not light, turn the magnet over (the sensor may need the opposite pole facing it).

Use the LED to confirm. Power the sensor (ignition on) and turn the driveshaft slowly by hand. The LED must switch on and off cleanly for every tooth or magnet all the way around. If it misses any, close the gap slightly or check the ring runout.

3. Wire the sensor



Wire	Connect to
Brown	+12V switched ignition power (10-30V). Fuse the supply.
Black	Signal to a speed, frequency or digital input on your data logger or ECU.
Blue	Ground. Use the logger/ECU sensor ground where one is provided, otherwise a clean chassis ground.

- Route the cable away from ignition leads, coil wires and hot exhaust, and secure it so it cannot touch the spinning driveshaft.
- If the logger sees no signal but the LED is flashing, the input may need a pull-up resistor. Most loggers and ECUs have this built in or selectable in software. Otherwise fit a 4.7k ohm resistor between the Black signal wire and the input's reference voltage (+5V or +12V as your logger specifies).
- PNP sensor:** do not fit a pull-up resistor. If your input needs one, set it to pull-down in the software, or fit a 4.7k ohm resistor between the Black signal wire and ground.

Fitting our Deutsch DTM 3 pin connector kit

Our Deutsch DTM 3 pin connector kit (OM-DTM-3) gives you a waterproof plug so the sensor can be removed for servicing. Each kit comes with solid contacts and a heat shrink strain relief back shell. Wire both halves the same way:

DTM cavity	Sensor wire	Function
1	Brown	+12V switched power (10-30V)
2	Blue	Ground
3	Black	Signal

- Trim the sensor cable to length, allowing enough slack for suspension and driveshaft movement.
- Slide the heat shrink back shell over the cable before you crimp anything.

3. Strip each wire about 4mm and crimp on a solid contact with a closed-barrel crimp tool. Give each wire a firm tug to check the crimp.
4. Push each contact into its cavity (numbers are moulded on the rear of the connector) until it clicks and locks. Tug gently to confirm it is seated.
5. Fit the orange wedgelock into the front of the connector. It should sit flush. If it will not go in, a contact is not fully seated.
6. Slide the back shell up against the connector and shrink it with a heat gun to seal the cable entry.
7. Wire the harness side to the same cavity numbers, plug the two halves together until the latch clicks, and cable-tie the connector clear of the driveshaft.

4. Set up your logger or ECU

1. Assign the input as driveshaft speed (or frequency / RPM).
2. **Pulses per revolution:** enter the number of teeth on your reluctor ring (for example 16 or 32), or the number of magnets for the magnetic pickup.
3. Trigger edge: set to falling edge if your software asks. If the reading is unstable, try rising edge.
4. For road speed, enter your rear gear ratio and tyre diameter (or rollout) in the software.
5. Check the reading: idle in gear with the wheels off the ground, or do a slow roll. Driveshaft RPM should match engine RPM divided by the transmission gear ratio.

Works with all major data loggers and ECUs, including Racepak, Holley EFI, FuelTech and MoTeC.

Troubleshooting

Problem	Check
LED never lights	Power and ground at Brown and Blue (10-30V). Air gap too large. Wrong trigger type (ferrous sensor on magnets or the reverse). Magnet pole facing the wrong way.
LED stays on	Air gap too small, or the sensor is seeing the collar body or a bracket instead of just the teeth.
LED flashes but no reading	Black signal wire to the correct input. Input enabled and set to speed/frequency. Pull-up resistor setting (pull-down for the PNP sensor). Sensor ground shared with the logger. Correct sensor type (NPN or PNP) for the input.
Spikes or dropouts	Sensor or bracket moving. Ring runout. Cable routed near ignition leads. Loose connector pins.
Reading doubled or halved	Pulses per revolution setting does not match the ring tooth count or number of magnets.

Need help?

Email info@onlinemotorsports.com.au or call **0405 154 628**. Warranty: 12 months from the date of purchase for the original purchaser with proof of purchase. See our Warranty Policy at onlinemotorsports.com.au/warranty for full details. For off-road and competition use only.