

PART # TEN990001
TMS Oil Temperature Sensor Flange



The TMS Oil Temperature Sensor Flange was designed to get your oil temperature from the best possible location: the sump. There are adapters used to fit temperature sensors on engines in many locations, and both the TMS Engineering department and testing on and off the track have shown that this is the best solution. We accomplish this by removing the factory oil level sensor if equipped or block off plate and using the existing hole and bolt pattern on the oil pan with no modifications. Most factory and aftermarket temperature sensors are located after the oil pump, which does not give you an accurate temperature reading of the oil that is actually lubricating the engine. At the stock location the sensor picks up heat not only from the oil stream, but also from the oil pump and housing which will skew the reading. By relocating the sensor it also reduces clutter and sits flush against the bottom of the oil pan to avoid potential clearance issues. Any sensor with an M12 x 1.50mm thread can be used.

**Note: If your car is equipped with a factory oil level sensor, the warning light may stay illuminated. Make sure you have a socket deep enough to fit over the sensor and get to the hex on the sensor.*

This is a great item for:

- E30 M3 M50 conversions: This allows the original sensor and gauge in the instrument cluster to be used.
- Most cars do not have temperature sensors which are absolutely necessary for race cars, and this is the simplest way to add a sensor and position it in the best possible location.
- If you currently have an aftermarket temperature gauge and the temperature sensor is located in the oil drain plug, this product can save you time and money because most 12x1.5mm sensors have a very thin wall and can break easily when changing your oil. This then leaves you either looking for a new sensor or your original drain plug. This flange will allow you to install the sensor and not have to worry about how to keep oil in the engine.

When would it be a good time to perform this work on my car?

- The best time to install the product is when you do your next oil change. Even if all you do is get the flange and sensor installed, you can still do the wiring at a later date.

Approximate change in *oil pan volume* when installed:

- Going from block off plate 11 13 1 726 357 And 11 13 1 311 510: decreases 0.046L
- Going from sensor 12 61 1 748 193: increases 0.061L
- Going from sensor 12 61 7 508 003 and 12 61 1 406 609 decreases 0.031L



Application Chart

- 3 Series E30** (M3)
- 3 Series E36** (ECE M3 3.0, ECE M3 3.2)
- 3 Series E46** (All)
- 5 Series E34** (525i, 525iM50)
- 5 Series E39** (525i, 528i, 530i, 540i, 540iP, M5)
- 5 Series E60** (525, 530i)
- 7 Series E38**
- Z3** (2.5, 2.5i, 2.8, 3.0i, M3.2 S54)
- Z4** (2.5, 3.0)
- Z8** (All)
- X5** (3.0i, 4.4, 4.6)

Parts list for kit:

1. TMS Oil Temp Sensor Flange
2. O-ring BMW part # 12 61 1 277 129
3. 2 Crush washers

Install time: 1 Hour



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Directions:

1. Properly lift and support the car to access the oil pan
2. Drain the oil from the engine. This also would be a good time to change your oil filter.
3. Some applications: Unplug oil level sensor and on some models remove the 5mm bolt that holds the sensor plug to the oil pan
4. Remove the three nuts or bolts from the oil level sensor or block off plate and remove from oil pan.
5. Clean mounting surface.
6. Install new o-ring on TMS temperature sensor flange. Do not use sealant.
7. Install flange in oil pan. **NOTE:** The bolt pattern is not equally spaced, so you will need to line up all the holes before bolting in.
8. Install oil temperature sensor with a new crush washer (if you are using a Bosch style sensor make sure you have socket deep enough to go over the plug end of the sensor and reach the hex on the sensor).
9. Fill engine with oil.
10. Start engine and check for oil leaks.

Wiring

11. Extend your wire from you temperature gauge to the new sensor location.
12. Plugs
 - Spade terminal type sensor: Bend the spade terminal so that it will fit up into the body of the flange, then slide the terminal on to the sensor with needle nose pliers.
 - Bosch sensor plug: You may need to grind a little off the sides and end of the plug so that it will fit in the body of the flange. If you need to remove enough material from the end of the plug that the weather seal is gone, use some epoxy or RTV silicone to seal the end of the plug.
13. Secure the wire so that it is tight to the oil pan and does not hang down.
14. Lower car and test drive car. Check that your gauge works and that there are no oil leaks.

Pictures on page 4.

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Turner Motorsport Inc. 207 Elm Street, Amesbury, MA 01913
978-388-7769 / www.turnermotorsport.com

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