



PRODUCT INFORMATION

Oil Level Sensors

- Continual measurement of the level of motor oil in the static and dynamic range
- Compact sensor architecture with a multi-chip module
- Integrated temperature sensor
- Immediate measurement after switch-on

PRODUCT FEATURES

Description/customer benefits

Oil sensors in vehicles ensure that the engine cannot run with too little oil without this being noticed. The tried-and-trusted technology of ultrasonic sensors works on the running-time principle and records the filling level continuously during the trip.

When the engine is running (dynamic measuring range), the filling level is significantly lower than the filling level when the engine is at a standstill (static measuring range). A dipstick records the oil level of a mobile engine only in the static range. This oil level sensor can measure the oil level continuously, i.e. both in the dynamic and in the static range. It thus provides information about the oil level all the time the engine is running.

The sensor monitors the oil level continuously while the engine is running, which makes it possible to prevent the oil level falling below the minimum level, so ensuring that the oil film is not interrupted (which would damage the engine). Marginal influences such as an inclined position of the vehicle and lateral and longitudinal acceleration are compensated by an averaging out in the vehicle's electronic control unit.

BASIC DESIGN AND FUNCTION

The sensor architecture of the PULS (Packed Ultrasonic Level Sensor) oil level sensor consists of one single multi-chip module that integrates the ultrasonic sensor, the temperature sensor and an ASIC (Application Specific Integrated Circuit).

The compactness of our sensors increases their impact and vibration resistance compared with sensors that are fitted with numerous electronic components.

The ultrasonic sensor integrated into the multi-chip module emits a signal that is reflected by the interface between the engine oil and the air. The time taken by the signal is measured and the filling level is then calculated using the speed of sound in the medium.

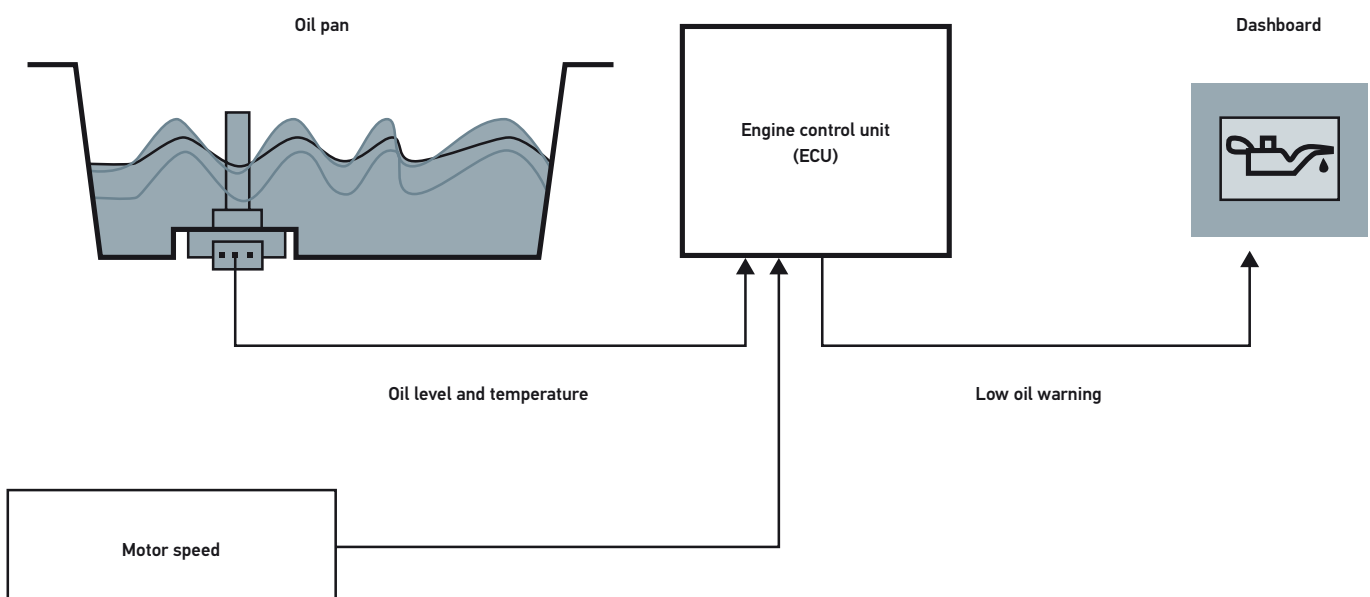
The attenuation cup attached above the multi-chip module serves to calm the medium (particularly) in the dynamic measuring range.

The damping cap has openings at the base and at the tip, which allow permanent oil flow.



OPERATING PRINCIPLE

The oil level sensor PULS continuously measures the level and temperature of the oil (in the static and dynamic range). The digital PWM output signal conveys the measured oil level and temperature to the engine control unit (ECU). This evaluates the signal and the engine speed and can warn the driver (e.g. on the dashboard) in the event of the oil level becoming critical.



HELLA OIL LEVEL SENSORS

PRODUCT RANGE

PART NUMBER	PRODUCT IMAGE	YEAR	MAKE	MODEL	COUNTRY OF ORIGIN
013680191		2017-2023	Alfa Romeo	Giulia Stelvio	DE
013680011		2014-2015	Audi	TT Quattro	DE
013680021		2010-2012	Audi	A3	DE
013680061		2015-2015	Audi	A8 Quattro	DE
013680051		2014-2018	Audi Porsche Volkswagen	A6 Quattro A7 Quattro A8 Quattro Cayenne CC Panamera Passat Q5 Q7 SQ5 Touareg	DE
008079041		1998-2009	Audi Seat Volkswagen	A4 A4 Quattro A6 A6 Quattro A8 Quattro Alhambra Allroad Quattro Beetle Bora Golf Jetta Passat Phaeton S4 S6 Sharan Touareg	DE
013680031		2016-2023	Audi Volkswagen	A3 Crafter	DE
013680041		2014-2017	Audi Volkswagen	A4 A4 Quattro A5 A5 Quattro A6 A6 Quattro A7 Quattro A8 Quattro allroad Jetta Q5 Q7 RS5 Touareg	CN
013680071		2016-2021	Audi Volkswagen	A3 Sportback e-tron Golf Jetta	DE
013680091		2015-2024	Audi Volkswagen	A3 Beetle Golf Golf SportWagen Jetta Passat RS3 TT RS Quattro	DE
013680101		2014-2017	Audi Volkswagen	A8 Quattro Touareg	DE
007868031		1995-2011	BMW	320i 323Ci 323i 325Ci 325i 325xi 328Ci 328i 330Ci 330xi 335d 525i 528i 530i 540i 740i 740iL 750iL M3 M5 X3 X5 Z3 Z4 Z8	DE

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008324101		2014-2016	BMW	X1 Z4	DE
013680131		2014-2018	BMW	228i 228i xDrive 320i 320i xDrive 328i 328i GT xDrive 328i xDrive 335i 335i xDrive 428i 428i Gran Coupe 428i xDrive 428i xDrive Gran Coupe 528i 528i xDrive ActiveHybrid 3 X3 X4 X5	DE
013680141		2016-2024	BMW	230i 230i xDrive 330e 330i 330i GT xDrive 330i xDrive 340i 340i GT xDrive 340i xDrive 430i 430i Gran Coupe 430i xDrive 430i xDrive Gran Coupe 440i 440i Gran Coupe 440i xDrive 440i xDrive Gran Coupe 530e 530e xDrive 530i 530i xDrive 540d xDrive 540i 740e xDrive 740i 760i xDrive Alpina XB7 M2 M240i M240i xDrive M4 M5 M760i xDrive M8 M8 Gran Coupe X3 X4 X5 X6 X7 XM	DE
010497721		2014-2024	BMW Mini	750i 750i xDrive Alpina B7 Alpina B8 Gran Coupe Cooper Cooper Clubman Cooper Countryman i8 M550i xDrive M850i xDrive M850i xDrive Gran Coupe X1 X2 X5 X6 X7	DE
013680161		2014-2024	Jaguar Land Rover	Defender 110 Defender 130 Defender 90 Discovery F-Pace F-Type LR4 Range Rover Range Rover Sport Range Rover Velar XE XF XFR XFR-S XJ XJR XJR575 XK XKR XKR-S	DE
NEW! 016269001		2021-2024	Hyundai Kia	Carnival K5 Kona Niro Sorento Sportage Tucson	
NEW! 011544031		2019-2024	Mazda	3 CX-30 CX-5 CX-50 CX-9	
004269031		1985-1997	Mercedes-Benz	400SEL 420SEL 500SEC 500SEL 560SEC 560SEL 560SL 600SEC 600SEL E420 E500	DE
NEW! 012056701		2016-2024	Mercedes-Benz	AMG GT AMG GT 43 AMG GT 53 AMG GT 63 AMG GT 63 S AMG GT Black Series AMG GT C AMG GT R AMG GT R Pro AMG GT S C300 C63 AMG C63 AMG S CLA45 AMG CLS450 CLS53 AMG E350 E450 E53 AMG E63 AMG S G550 G550 4x4 G63 AMG GLA45 AMG GLC300 GLC63 AMG GLC63 AMG S GLE350 GLE450 GLE53 AMG GLE580 GLE63 AMG S GLS450 GLS580 GLS63 AMG Maybach GLS600 Maybach S560 Maybach S580 Maybach S680 S500 S560 S580 S580e S63 AMG SL55 AMG SL63 AMG Sprinter 2500 Sprinter 3500 Sprinter 3500XD	

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004592021		1984-2004	Mercedes-Benz	190D 190E 260E 300CE 300D 300E 300SD 300SDL 300SE 300SEL 300SL 300TD 300TE 350SDL C220 C230 C280 C36 AMG E300 E320 S320 S350 SL320 SLK320	DE
008891011		2014-2023	Mercedes-Benz	C300 C350 C350e C400 C43 AMG C450 AMG CL550 CLS400 CLS550 E250 E300 E350 E400 E43 AMG E450 E550 G550 GL350 GL450 GL550 GLC300 GLC350e GLC43 AMG GLE300d GLE350 GLE400 GLE450 AMG GLE550e GLK250 GLK350 GLS350d GLS450 GLS550 Maybach S550 Metris ML250 ML350 ML400 ML550 S450 S550 S550e S560e S63 AMG SL400 SL450 SL550 SLC300 SLC43 AMG SLK300 SLK350 Sprinter 1500 Sprinter 2500	RO
013680201		2015-2018	Mercedes-Benz	C63 AMG C63 AMG S	DE
012056701		2016-2024	Mercedes-Benz	AMG GT AMG GT 43 AMG GT 53 AMG GT 63 AMG GT 63 S AMG GT Black Series AMG GT C AMG GT R AMG GT R Pro AMG GT S C300 C63 AMG C63 AMG S CLA45 AMG CLS450 CLS53 AMG E350 E450 E53 AMG E63 AMG S G550 G550 4x4 G63 AMG GLA45 AMG GLC300 GLC63 AMG GLC63 AMG S GLE350 GLE450 GLE53 AMG GLE580 GLE63 AMG S GLS450 GLS580 GLS63 AMG Maybach GLS600 Maybach S560 Maybach S580 Maybach S680 S500 S560 S580 S580e S63 AMG SL55 AMG SL63 AMG Sprinter 2500 Sprinter 3500 Sprinter 3500XD	DE
008134101		2010-2015	Seat	Ibiza	DE
012525701		2022-2024	Volkswagen	Taos	DE
013680081		2018-2023	Volkswagen	Atlas Atlas Cross Sport	DE



Product features, specifications and availability are subject to change without notice.

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