



# OPTIMAL®

Your profit



Technical tip: 01/2018

The right diagnostic method is critical

## Differences in the testing of active and passive sensors

The multitude of different sensors in modern motor vehicles often presents workshop specialists with problems when diagnosing faults, because it is not always clear whether an active or a passive sensor is present. However, there are some criteria for differentiation, which we have listed below.

### Distinguishing features of active and passive sensors:

	Active sensor	Passive sensor
Signal	Square	Sine curve
Resistance	do not measure	approx. 1 - 1.6 kOhm
Generated voltages	_____	a few mV to >100 V (speed-dependent)
Supply voltage	depending on manufacturer	_____
Ground wire	Yes	_____
Consumer, is measured via the supply line	6 - 14 mA, as PWM signal with rotating wheel	_____
Magnetic sensor	Yes, for some car types, such as BMW E39 (see OE No.: 34 52 1 165 536; OPTIMAL No.: 06-S008)	Yes



**OPTIMAL®**  
Your profit

OPTIMAL AG & Co. KG  
Alfred-Kuehne-Strasse 3  
85416 Langenbach / Germany  
Munich Airport Logistics Park

Tel.: +49 (0) 8761 72 06 - 0  
Fax: +49 (0) 8761 72 06 - 121  
www.optimal-germany.com  
info@optimal-germany.com



GERMANY  
SPAIN  
BELGIUM  
ENGLAND  
FRANCE  
POLAND  
TURKEY  
ECUADOR  
ASIA



# OPTIMAL®

Your profit



## Tip:

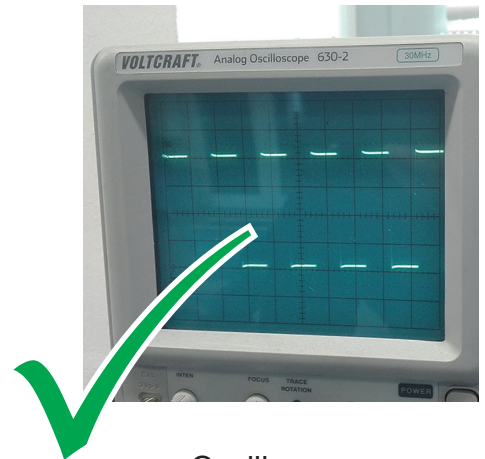
Since the exact sensor type cannot be diagnosed externally (design, number of pins, magnetism, etc.), the OPTIMAL technology experts therefore recommend the use of an oscilloscope or a sensor test device. Caution: When using an ohmmeter you can destroy certain sensors.



Multimeter  
(with ohmmeter  
resistance measurement)



Sensor test device



Oscilloscope

It should also be noted that the use of a 2-pin assignment does not automatically mean: inductive sensor = passive sensor. Active sensors can also have only 2 connections.

These and other useful technical tips are available when you attend a technical training course at our international training academy or online on our website.

Stay informed the OPTIMAL way – your technical team!

Good Luck!

## OPTIMAL - Your profit:

Why not take advantage of our training programme?

### Further information:

[www.optimal-germany.com/media-center/downloads/trainingsprogramm](http://www.optimal-germany.com/media-center/downloads/trainingsprogramm)  
[training@optimal-germany.com](mailto:training@optimal-germany.com)



**OPTIMAL®**  
Your profit

OPTIMAL AG & Co. KG  
Alfred-Kuehne-Strasse 3  
85416 Langenbach / Germany  
Munich Airport Logistics Park

Tel.: +49 (0) 8761 72 06 - 0  
Fax: +49 (0) 8761 72 06 - 121  
[www.optimal-germany.com](http://www.optimal-germany.com)  
[info@optimal-germany.com](mailto:info@optimal-germany.com)



GERMANY  
SPAIN  
BELGIUM  
ENGLAND  
FRANCE  
POLAND  
TURKEY  
ECUADOR  
ASIA