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# Sensor

## KITAS 2171-20

The intelligent KITAS sensors form a new generation of speed sensors. With the innovative crypto-graphical IC the gear-box signals can be transmitted tamper-proof without an armoured cable for the first time.

A statically operated hall-effect IC is utilised as the sensor. This element converts the revolution of an impulse- or gearwheel into electrical signals. In parallel to the encrypted revolution data the conventional real-time signal is also available. Through a comparison of these two sources the tachograph can detect data manipulations safely. Therefore the KITAS sensor and the tachograph form an authorised system.

A link between the serial numbers of the KITAS sensor and the tachograph enhances the security even further.

Harness flexibility will be increased by using the intelligent KITAS sensor.

### Features

- Conform with Regulation VO (EG) No. 1360/2002
- Certificate through BSI according to ITSEC, level E 3 High, as per supplement 1B
- Full fills the Generic Security Target's as per supplement 1B
- Integrated in the gearbox
- Data security by cryptological procedure (TRIPLES DES)
- Non-contact measuring system (Hall IC)
- Sealing possibility
- Replace the steel armoured cable
- Interface according to ISO 16844-3
- Standard plug according to ISO 15170
- Comparison of the real-time signal with the encoded signal
- Power-On reset function
- Storage of additional facts (identification, installation)

### Use

- Only for use in the new tachograph generation MTCO 1324 (Modular Tachograph) and DTCO 1381 (Digital Tachograph)

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## Technical Information

Operating voltage	6,5 ... 9 V	Dimensions	approx. 19,8 / 25 / 35 / 63,2 /
Power consumption	max. 15 mA	(L in mm)	90 / 136,8
Operating temperature A	- 30 °C ... + 135 °C	Weight	approx. 100 to 180 g
	B - 30 °C ... + 145 °C	Resistance to vibration	30 g
Storage temperature	A - 40 °C ... + 150 °C	Shock resistance	1000 g
Connection	unearthed	Tightness	0,5 bar oil, 120 °C, 100 h
Signal shape (Pin 3)	rectangular	Material of pulse wheel	ST 4 LG RP
Frequency range	1 Hz - 2000 Hz	Thickness of pulse wheel	2 mm
Output signal (Pin 3)	Real-time signal	Segment gap (typ.)	1,5 .... 2 x Segment width
	$U_L \text{ max} = 800 \text{ mV}$	Segment length (typ.)	16 mm
	(@I = 250 $\mu\text{A}$ )	Air gap Sensor/pulse wheel	1,4 mm
	$U_H \text{ min} = UE - 1,5 \text{ V}$	(typ.)	
	(@I = - 150 $\mu\text{A}$ )	Not to be used in cases of	
Output short-circuit	28 V, 1 min	extraneous magnetic fields	> 2 mT
Output signal Pin 4	Bidirectional interface	Connection of sensor	standard plug according to
Protection against		to sensor lead	ISO 15170
voltage interference	DIN 40 839	Connection of sensor to	
Interference protection	DIN 40 839	vehicle gearbox	via thread M 18 x 1,5
Protection	EH 60 529 IP 67 / IP 69K	Torque	50 Nm $\pm$ 10 Nm
		(wrench size)	(WS 27)

