

OMS Race



Description

The OMS Race is a robust and lightweight non-contact optical sensor integrated with inertial measurement technology. Building on the technology known from the OMS 7, it has been miniaturized to an unprecedented form, with a focus on weight savings.

The sensor incorporates the proven spatial filter principle, enhanced with an Inertial Measurement Unit (IMU) and a novel signal processing approach. The combination results in improved accuracy and lower noise levels compared to similar products in the market.

The OMS Race sensor is particularly well-suited for motorsport applications, including elite racing series.

Features

- Proven spatial filter principle
- Highest dynamics due to 1kHz update rate
- Parameterizable sensor fusion
- CAN FD output
- Diagnostic data via CAN
- Sensor / ECU exchangeable
- Long-life IR-LED lighting
- Easy handling
- Precise optics / optomechanics

Applications

- Innovative motorsport series
- Motor racing
- Longitudinal and lateral dynamics
- Tire and brake performance
- Indoor testing
- Land Survey
- ADAS testing
- Mobile machines
- Motorcycle
- Parking tests
- Industrial Applications

Technical data

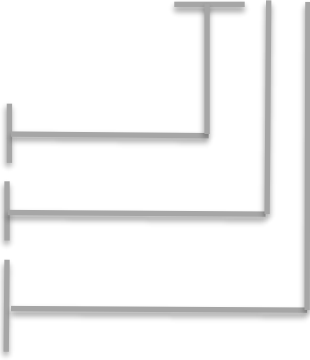
Speed		
Measuring range	400	km/h
Nonlinearity	< ±0.2	%FS
Angle		
Measuring range	±30	°
Measuring accuracy ±10°	< 0.1	°
Measuring accuracy ±30°	< 0.2	°
Optical resolution	≈0.5	mm
Working distance	180 ±60	mm
Angular Rates		
Measurement range	±500	°/s
Accelerations		
Measurement range	±20	g
Measurement frequency	1000	Hz
Signal delay	3.75	ms
Sensor fusion	Balanced / Optical prio / No fusion (Change by parameter)	
Supply	Galv. isolated	
Voltage	10 ... 36	V
Power consumption (at 12 V)	< 15	W
Environmental conditions		
Storage / Operation	-40 ... 85 / -25 ... 50	°C
Shock / Vibration (Sensor)	Tested with profiles from F1 Teams	
Dimensions		
Sensor	88 x 44x 28	mm
ECU	121 x 84 x 22	mm
Weight		
Sensor	140	g
ECU	270	g
Protection class		
Sensor (cable plugged)	IP67	
ECU (cable plugged)	IP67	
Illumination	IR	
Wavelength	850	nm
CAN Interface	FD / 2.0B (galv. isolated)	
Number of individual nodes	1	
Speed	125 / 250 / 500 / 1000 FD Data: up to 8	kBaud Mbit
Terminating resistor	Switchable or Fixed (user definable)	
Ethernet Interface	Galvanically insulated	
Parameterization	Webinterface	
Measurement data	TCPIP (protocol on request)	
I/O Interface	Digital In / Digital Out (TTL; galv. isolated)	



Ordering Code

OMS Race-□□□.□.□

Speed range [km/h]	250 400*
Orientation sensor	L: longitudinal* T: transversal
CAN Resistor	S: Switchable* P: Permanently R: Removed



*) Standard: OMS Race-400.L.S

Scope of delivery

Sensor	
Sensor cable 2m	MT0000372
Power cable	MT0000374
CAN Cable	MT0000376
ETH Cable	MT0000377

Transport Case	
USB Stick	MT0000212
Set of screws	
Screwdriver	MT0000214

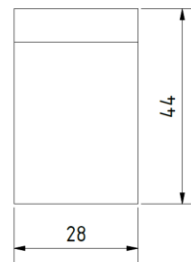
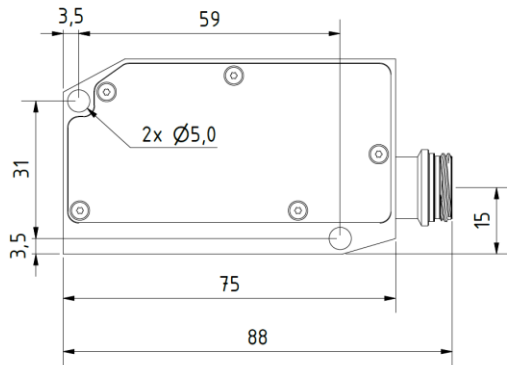
Customized cable on request

Additional Information:

State of origin: Germany, Tariff Code: 90318020

Drawings

Sensor



ECU

