

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 / 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

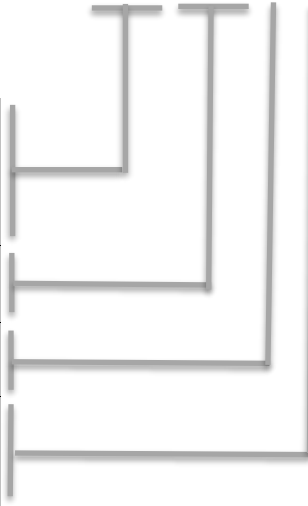
Technical data

	OMS Race180	OMS Race240	OMS Race260	OMS Race300	
Speed					
Measuring range	250 / 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		≈0.6		mm
Working distance	180 ±60	240 ±60	260 ±50	300 ±150	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			< 16	W
Environmental conditions					
Storage / Operation	-40 ... 85 / -25 ... 50				°C
Shock / Vibration (Sensor)	Tested with profiles from F1 Teams				
Dimensions					
Sensor	75x44x28	83x44x28		95x65x40	mm
ECU	121 x 84 x 22				mm
Weight					
Sensor	140	155		390	g
ECU	270				g
Protection class					
Sensor (cable plugged)	IP67			IP68	
ECU (cable plugged)	IP67				
Illumination	IR				
Wavelength	850				nm
CAN Interface	FD / 2.0B (galv. isolated)				
Number of individual nodes	1				
Baudrate	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□□□-□□□.□.□

Working distance [mm]	180* 240 260 300
Speed range [km/h]	250 400*
Orientation sensor	L: longitudinal*
CAN Resistor	S: Switchable* P: Permanently R: Removed



*) Standard: OMS Race180-400.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

Optional accessories OMS Race180/240/260

Side Mount S2	MT0000381
Side Mount M2	MT0000382

Towing Lug Mount T2	MT0000380

Optional accessories OMS Race300

Side Mount S2	MT0000210
Side Mount M2	MT0000211

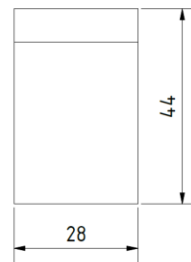
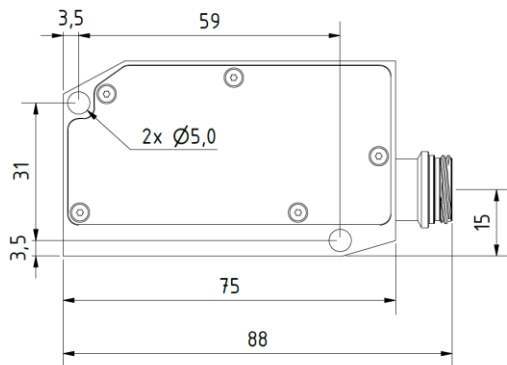
Towing Lug Mount T2	MT0000209
Wheel Mount W1	MT0000300

Additional Information:

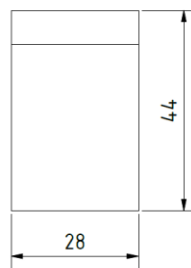
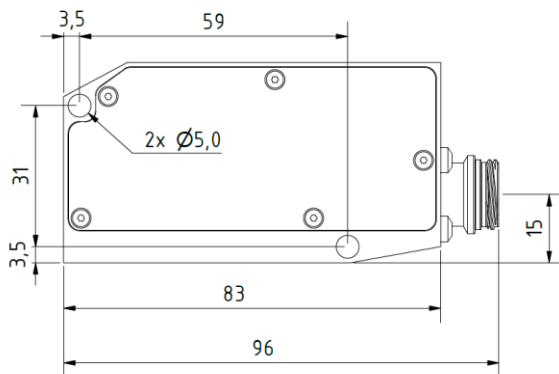
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Drawings

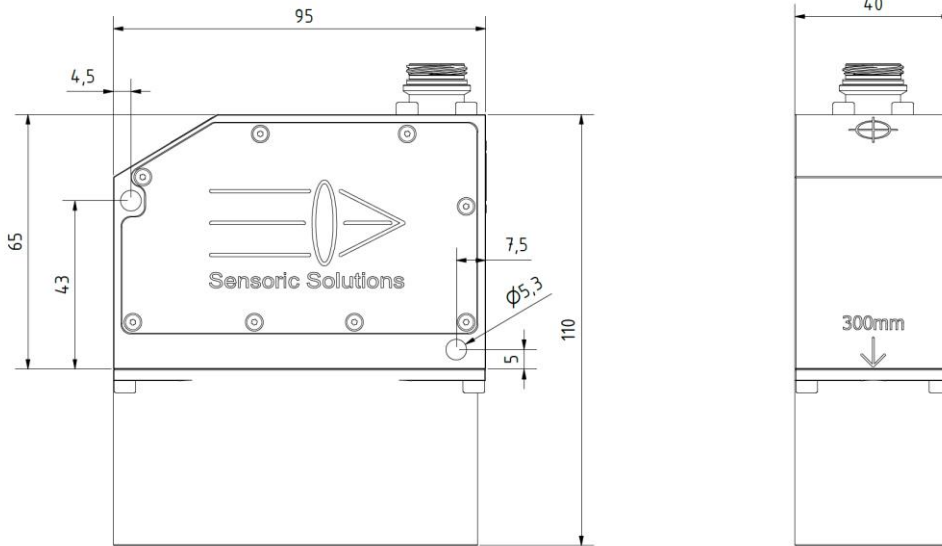
Sensor OMS Race 80



Sensor OMS Race240/260



Sensor OMS Race300



ECU

