OMS 7 Race

Description

The OMS 7 Race combines the proven sensor technology of the OMS 7 with the powerful ECU of the OMS Race to create a high-precision, compact and lightweight solution. This fusion results in an innovative optical sensor with integrated inertial measurement technology that offers maximum measurement accuracy with a large operating range and low weight.

The sensor is based on the proven spatial filter principle, which is supplemented by an inertial measurement unit (IMU) and a novel signal processing approach. This combination results in improved accuracy and lower noise compared to similar products on the market.

The OMS 7 Race is ideal for use in motorsport and wherever a compact and lightweight ECU is required in conjunction with the large operating range of the OMS 7.

Features

- Proven spatial filter principle
- Highest dynamics thanks 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
- Connection of up to 4 WPS (wheel encoders) and output via CAN (WP variant)

Applications

- Innovative motorsport series
- Racing involving extreme vibrations and acceleration (HG variant)
- Longitudinal and dynamics
- Tire and brake performance
- Indoor testing
- Land Survey
- ADAS testing
- Mobile machines
- Motorcycles
- Parking maneuvers
- Industrial applications

Sensoric Solutions Optic and Motion GmbH
Gießener Street 13
35582 Wetzlar-Dutenhofen

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Technical data

	OMS 7 Race	OMS 7 Race HG	OMS 7 Race WP	
Velocity				
Measuring range	250 / 400			km/h
Non-linearity	< ±0.1			%FS
Angle				
Measuring range	±30			°
Measuring accuracy ±10°	< 0.1			°
Measuring accuracy ±30°	< 0.2			°
Optical resolution	≈ 0.6			mm
Working distance	300 ±150			mm
Angular rates				
Measuring range	±500			°/s
Accelerations				
Measuring range	±20	±128	±20	g
Measuring frequency	1000			Hz
Signal delay	3.75			ms
Sensor fusion	Balanced / Optical priority / No fusion (adjustable)			
Supply	Galvanically isolated			
Voltage	10 ... 36			V
Consumption (at 12 V)	< 16		< 16 (without WPS)	W
Ambient conditions				
Storage / Operation	-40 ... 85 / -25 ... 50			°C
Shock / Vibration (sensor)	Tested with profiles from F1 teams			
Dimensions				
Sensor (without plug)	95x65x40			mm
ECU	121 x 84 x 22		121 x 124 x 22	mm
Weight				
Sensor	390			g
ECU	270		360	g
Protection class				
Sensor (cable plugged in)	IP68			
ECU	IP67			
Lighting	IR			
	850			nm
CAN interface	FD / 2.0B (galvanically isolated)			
Number of individual nodes	1			
Baud rate	125 / 250 / 500 / 1000 FD Data: up to 8			kBaud Mbit
Terminating resistor	Switchable			
Ethernet interface	Galvanically isolated			
Parameterization	Web interface			
Measurement data	TCP/IP or UDP(protocol on request)			
I/O interface	Digital In / Digital Out (TTL; galvanically isolated)			
Wheel pulse transducer input	-		4	count

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Order code

OMS7Race *AA-BBB.C.D.E*

AA	Version	*Without*: Standard* HG: High-G WP: Wheel pulse
BBB	Velocity [km/h]	250 400*
C	Sensor alignment	L: longitudinal* T: transversal
D	Plug alignment	H: horizontal V: vertical*
E	Sensor cable length [m]	5*

*) Standard: OMS7Race-400.L.V.5

Scope of delivery

Sensor	
Sensor cable 5m	
Power cable	MT0000374
CAN cable	MT0000376
ETH cable	MT0000377

Case	MT0000207
USB stick	MT0000212
Screw set	MT0000213
Hex key L-wrenches	MT0000214
Measuring tape	MT0000208

Customized cable assembly on request

Optional accessories OMS 7 Race

Side holder S1	MT0000210
Side holder M1	MT0000211

Towing eye holder T1	MT0000209
Wheel holder W1	MT0000330

Additional product information:

Country of origin: Germany, Goods tariff: 90318020

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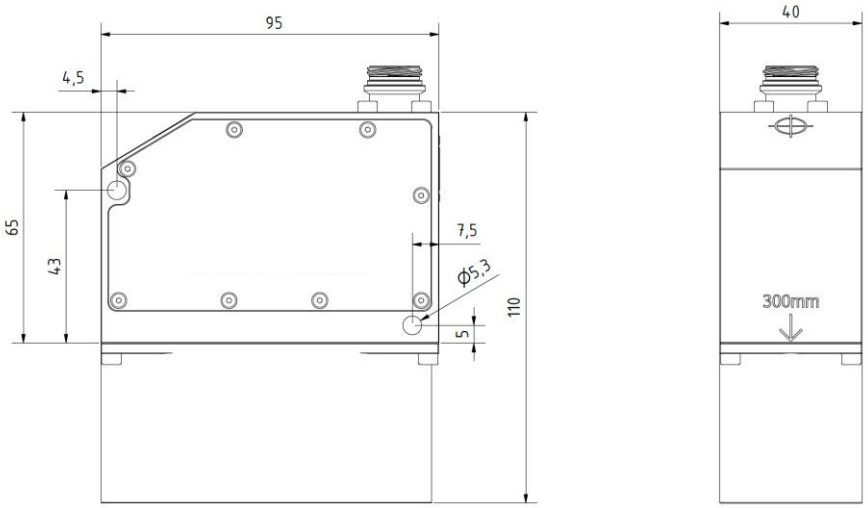
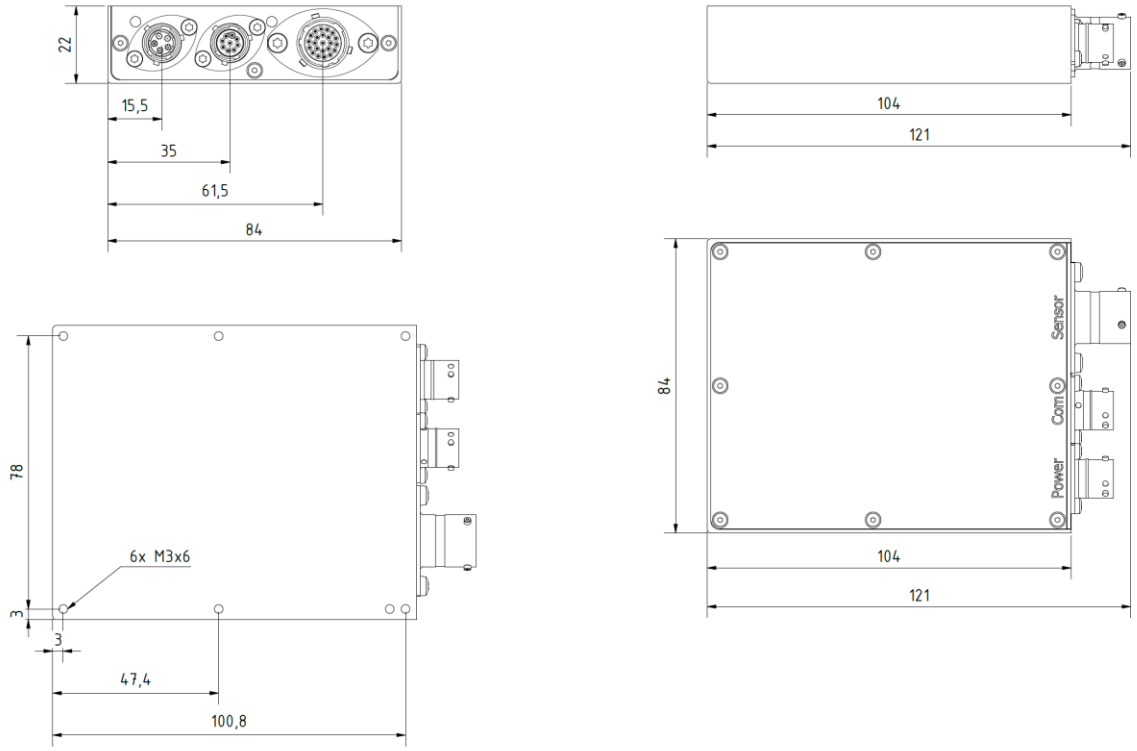
Drawings

Sensor OMS 7 Race



ECU



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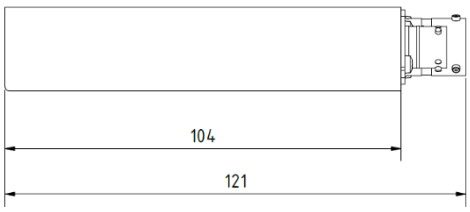
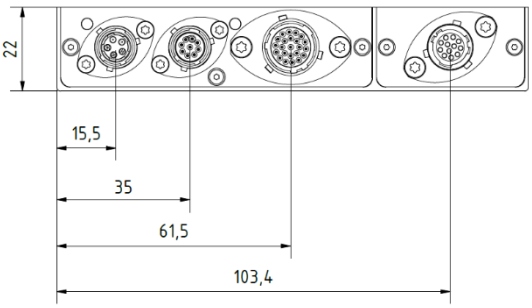
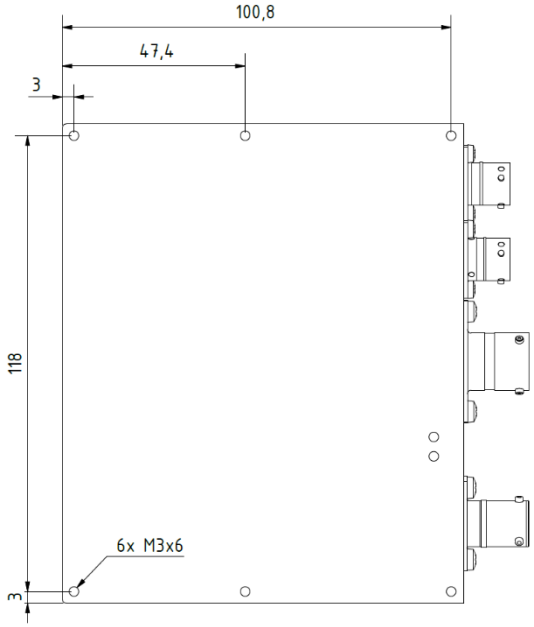
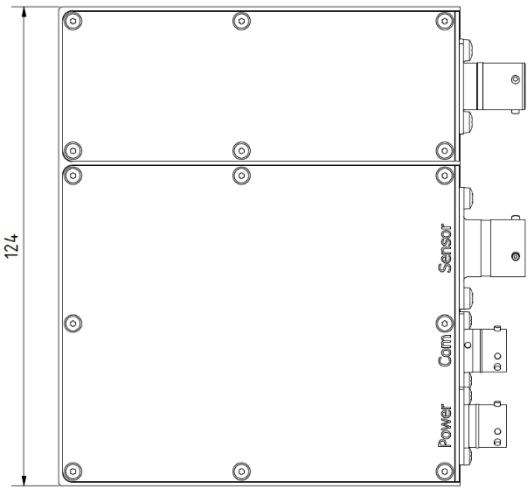
ECU (WP Version)









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