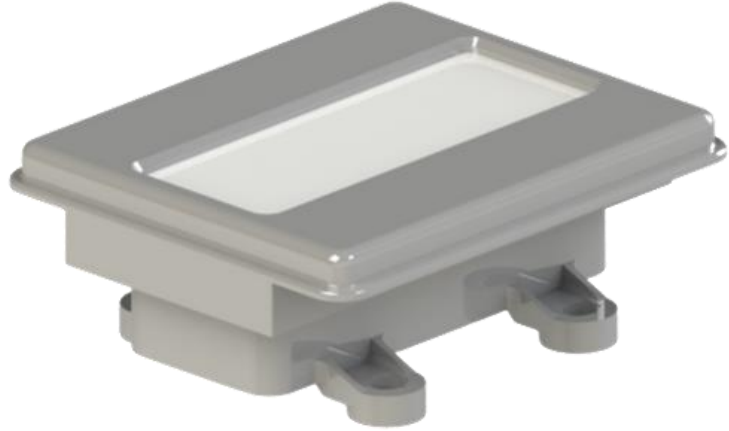


RadOR510, Radar Altimeter provides real-time altitude information of the aircraft over the terrain being flown.

The system ensures reliable measurements at high altitudes up to 1000m, which provides even greater precision required by industrial and military UAVs.

References Projects: TAI ANKA & ANKA-III & AKSUNGUR



RadOR510 Specification

- The ability to accurately measure and analyze altitude information.
- Provides continuous data by detecting sudden changes in altitude.
- Resilience to extreme environmental conditions
- High-resolution digital signal processing.
- LPD/LPI models are available upon request.
- Optional on board flight data logging up to 1500hr.

Advantages

RadOR510 is suitable for defense and transportation applications, especially for UAVs.

- Fully tested and qualified for military standards
- Small size and compact design
- Reliable very precise accuracy
- Low power requirement
- High reliability and low maintenance
- Accuracy at low altitudes



Product Specifications

PERFORMANCE	
Working Principle	Frequency Modulated Continuous Wave (FMCW)
Frequency	K – Band
Altitude Range	0 to 3000ft (0 – 1000m)
Accuracy	1ft or 2%
Resolution	0.01m
Maneuver Angles (Roll/Pitch)	±20°
Update Rate	50Hz




PHYSICAL	
Weight	300g
Dimensions	150 (w) x 80 (h) x 20 (d) mm
Product Material	Aluminum & Teflon

POWER	
DC	24VDC (9 to 32VDC)
Power Consumption	Less than 2W

INTERFACE
RS-485

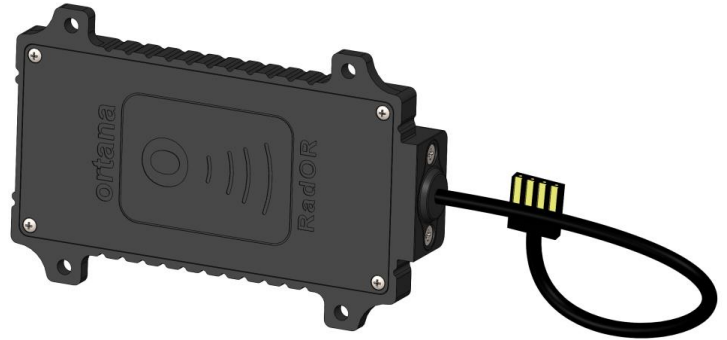
ENVIRONMENTAL					
Temperature		-45°C to +70°C			
Protection Class		IP66 (EN / IEC 60529)			
MTBF		Available upon request			
MIL-STD-810G		MIL-STD-461G	MIL-HDBK-704F-8		
501.5, Procedure-I, +70°C Temperature Test	501.5, Procedure-II, +50°C Functional Test	CE106, Conducted Emissions, Antenna Terminal/RE103 Radiated Emissions,	LDC102	LDC103	
502.5, Procedure-I, Procedure-II, -40°C Functional Test	502.5, Procedure-I, Procedure-II, -63°C Storage Test	CS114, Conducted Susceptibility, Bulk Cable Injection	LDC104	LDC105	
516.6, Procedure-I, (20g, 11ms) Shock Test	507.5, Procedure-II, Humidity Test	CS115, Conducted Susceptibility, Bulk Cable Injection, Impulse Exciation	LDC301	LDC302	
506.5, Procedure-I, Rain Test	509.5, Salt Spray Test	RE102, Radiated Emissions, Electric Fields	LDC401	LDC501	
500.5, Procedure-I, 45000ft Functional Test	513.6, Procedure-I, Procedure-II Acceleration Test	CS116, Damped Sinusoidal Transients, Cable and Power Leads	LDC201	LDC601	
508.6, Fungus Test	514.6, Procedure-I, Vibration Test	RTCA/DO-160G, CS 118 Personnel Borne Electrostatic Discharge	LDC602		

ACCESSORIES	
Connector Type	CON CIRCULAR 4-PIN SF812B/P4 (Male)

STANDARDS		
<div>MIL-STD-810G</div>	<div>MIL-STD-461G</div>	<div>MIL-HDBK-704F-8</div>

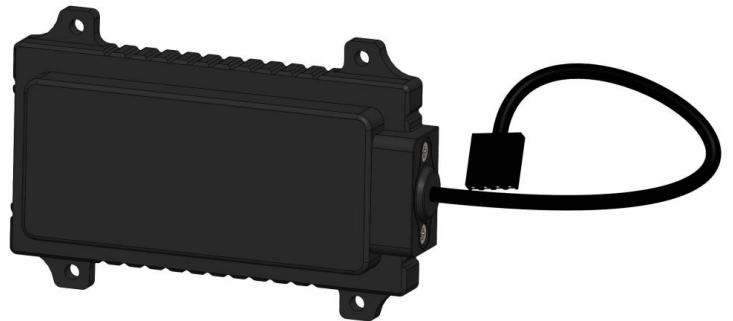
RadOR518 & RadOR519, Radar Altimeter provides real-time altitude information of the aircraft over the terrain being flown.

The system ensures reliable measurements at high altitudes up to 100m, which provides even greater precision required by industrial and high-end hobby drones.



RadOR518 & RadOR519 Specification

- The ability to accurately measure and analyze altitude information.
- Provides continuous data by detecting sudden changes in altitude.
- Resilience to extreme environmental conditions
- High-resolution digital signal processing.



Advantages

RadOR518 & RadOR519 is suitable for propeller drone applications.

- Small size and compact design
- Reliable very precise accuracy
- Low power requirement
- High reliability and low maintenance
- Accuracy at low altitudes
- Easy integration to flight computer



Product Specifications

PERFORMANCE		
	RadOR518	RadOR519
Working Principle	Frequency Modulated Continuous Wave (FMCW)	
Frequency	K-Band	
Altitude Range	0 to 100m	0 to 50m
Accuracy	0.5m	0.5m
Resolution	0.01m	0.01m
Maneuver Angles (Roll/Pitch)	± 15°	
Update Rate	50Hz	

PHYSICAL	
Weight	100g
Dimensions	132 (w) x 50 (h) x 20 (d) mm
Product Material	Industrial Plastic

POWER	
DC	5VDC (Optional 9 to 32VDC)
Power Consumption	2W max.

INTERFACE	
TTL Serial (Optional RS-485 or CANBus)	

ENVIRONMENTAL	
Temperature	-45°C to +85°C
Protection Class	IP66 (EN / IEC 60529)
MTBF	Available upon request

ACCESSORIES	
Connector Type	Cable 0.5m 4 Wire Dupont Connector (Female)



RadOR528, Initial Speed Measurement Radar measures the initial velocity of munitions.

The system increases the first round hit probability, and also provides operational flexibility.

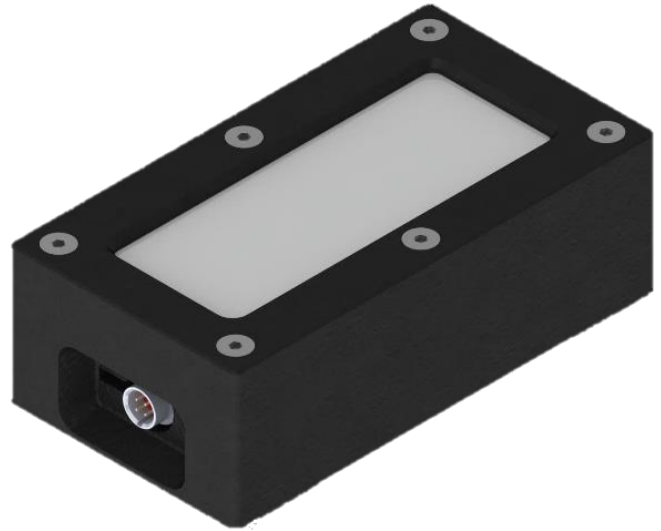
The radar can be integrated into different platforms with suitable mechanical interfaces.

RadOR528 Specification

- The ability to accurately measure and analyze muzzle velocity.
- Support serial shots.
- Automatic activation upon gun firing with no need for man-in-the-loop.
- Applicable for all ammunition types and calibers.
- Environmental protection class is rated IP67.
- ContOR300M (*Multi-Purpose Integrated Controller*) can be used with RadOR528 as an in-vehicle display monitor.

Advantages

- Qualified for military standards
- Small size and compact design
- Reliable very precise accuracy
- Low power requirement
- User friendly
- Integrated with mechanical interfaces suitable for different platforms.



Product Specifications

PERFORMANCE	
Working Principle	Doppler, FMCW
Frequency	K – Band
Velocity Range	150 to 2000m/s
Accuracy	±1%
Serial Shots Rate	Up to 55 shots in 1s
Munition Size	Tested for 7.62mm to 155mm

PHYSICAL	
Weight	563.2g
Dimensions	119.7 (w) x 64.7 (h) x 39 (d) mm
Product Material	Aluminum & Teflon

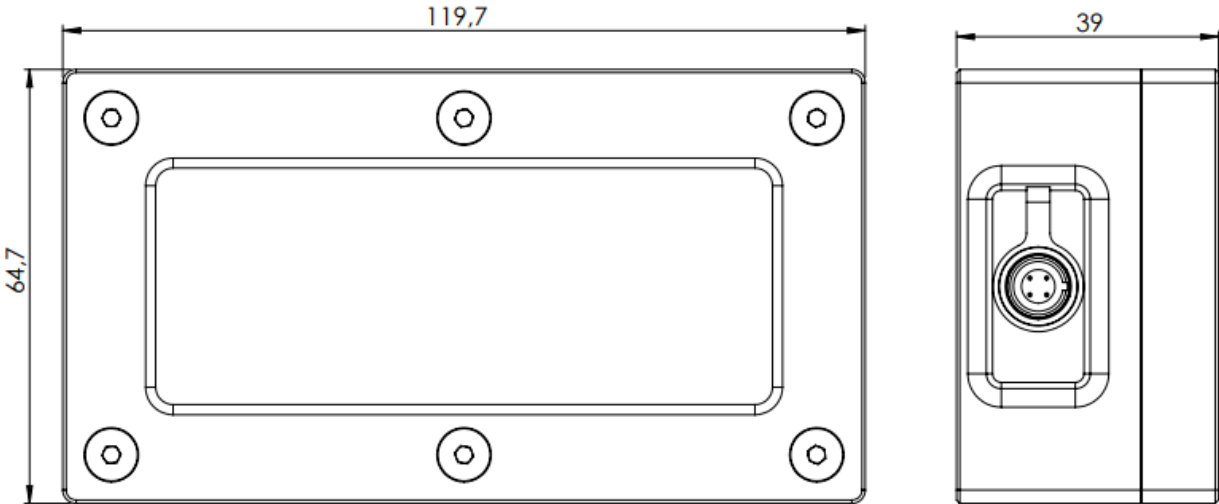
POWER	
DC	24VDC (9 to 30VDC±10%)
Power Consumption	2W

INTERFACE	
RS-485	

ENVIRONMENTAL	
Operating Temperature	-40°C to +85°C
Operational Shock	> 1000G
Protection Class	IP67 (EN / IEC 60529)
MTBF	Available upon request

ACCESSORIES	
Connector Type	CON CIRCULAR 4-PIN SF812B/P4 (Male)
Optional Connector Type	20 W B 35 PN (Male)

STANDARDS	
<div><div>MIL-STD-810G</div></div>	<div><div>MIL-STD-464</div></div>



RadOR560 is a SWaP-Ce (small size, low weight, low power and cost effective) 4D radar solution for Drone Surveillance and Interception. It is suitable for both Ground or Airborne applications. It is customizable for different Mission Requirements and also supports Network Centric Multi-Node Area Coverage.

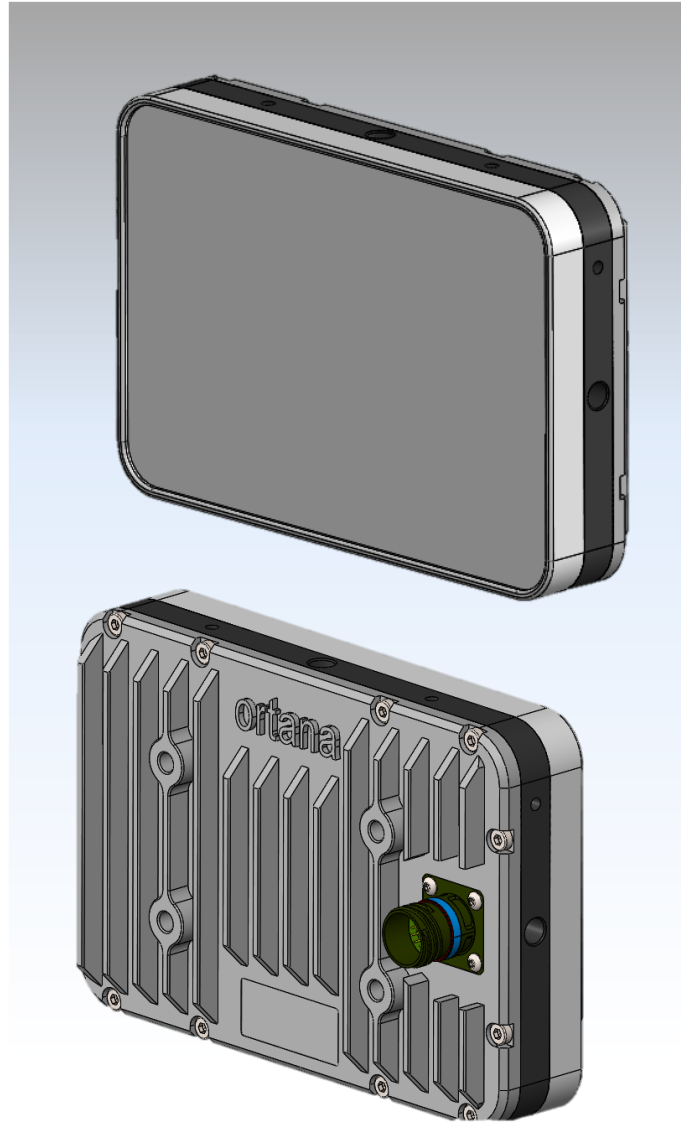
RadOR560 detects FPV Drones with RCS as low as $0.01m^2$ from a target distance of 750m, giving operators critical time to assess, engage and naturalize threats.

RadOR560 Specification

- Ability to accurately measure speed, range, azimuth and elevation angles of targets
- Provides Range-Velocity Maps for complete scanned area within field of view ($90^\circ \times 60^\circ$)
- Provides target tracks with 10Hz update rate
- Gigabit Ethernet Communication to host systems for Net-Centric Missions

Advantages

- Latest MIMO Radar Architecture
- Low RF Power Emission
- Frequency Hopping, LPI & LPD (future option)
- Low Power Consumption



Product Specifications

PERFORMANCE	
Working Principle	MIMO, FMCW
Frequency	K – Band
RF Output Power	20dBm
Detection Range (for clutter free targets and stationary radar position)	750m for 0.01m ² RCS
	1250m for 0.1m ² RCS
	2250m for 1m ² RCS
Instrumental Range	5m to 2500m
Field of View (FoV)	90° horizontal x 60° vertical
Update Rate	10 Hz
Maximum Number of Tracks	10
Range Resolution after Tracking	±2.5m
Angular Resolution after Tracking	1.5° azimuth and 2° elevation
PHYSICAL	
Weight	Less than 1000gr
Dimensions	190 (w) x 130 (h) x 45 (d) mm
Product Material	Aluminum
INTERFACE	
Gigabit Ethernet	
POWER	
DC	12V to 32VDC
Power Consumption	< 25W
ENVIRONMENTAL	
Operating Temperature	-40°C ve +85°C
Protection Class	IP67 (EN / IEC 60529)
MTBF	Available upon request
ACCESSORIES	
Connector Type	20 W B 35 PN (Male)
STANDARDS	

MeteOS115, Integrated Meteorology Sensor measures air temperature, air pressure, relative humidity as well as wind speed and direction by using the time difference of ultrasonic propagation in the air.

Compact structure makes the volume smaller and the appearance elegant. All aluminum alloy shell makes the structure stronger.

Military grade system design allows equipment to work in harsh and extreme weather environment as well as series shock, dry and sunny desert, marine sea salty and vibrating platforms.

MeteOS115 Specification

- Wind Speed and Direction measurement with ultrasonic sensor
- Air temperature, humidity and pressure.
- Aluminum cast mechanical housing
- The environmental protection class is rated IP66.
- Integrated and compact design
- It has no moving parts and no regular service requirement other than regular cleaning, making it a very reliable “fit and forget” sensor.

Advantages

- Special design for military and civilian applications
- Accurate measurements with low error margins
- High mechanical strength
- Low maintenance requirements and costs
- Compact design
- Easy installation and maintenance
- Integrated solution that supports many different communication protocols (all in one) and does not require different ordering options



Product Specifications

PERFORMANCE					
	Wind Speed	Wind Direction	Temperature	Relative Humidity	Air Pressure
Measuring Principle	Ultrasonic	Ultrasonic	MEMS	MEMS Capacitive	MEMS Capacitive
Measuring Range	0m/s to 75m/s	0° to 360°	-50°C to +80°C	0%RH to 100%RH	300hPa to 1100hPa
Resolution	0.1m/s	0.1°	0.05°C	0.01%RH	0.01hPa
Accuracy	%2	±1°	0.2°C	1.5% (%10-%90) 2% (%90-%100)	0.02hPa (0°C to +40°C) (700 to 1100hPa)

ENVIRONMENTAL		PHYSICAL		POWER	
Temperature	-45°C to +85°C	Weight	2002.3g	DC	24VDC (18...32VDC)
Protection Class	IP66 (EN / IEC 60529)	Dimensions	Ø150/350mm	Power Consumption	1W
		Body Material	Aluminum (Black Anodized Coating)		

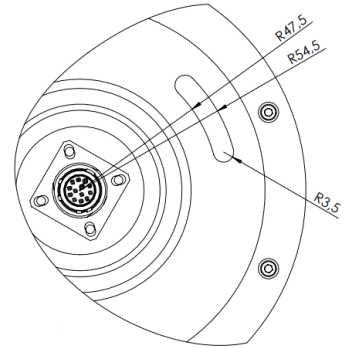
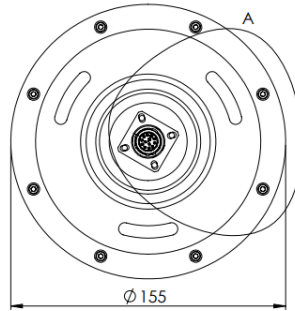
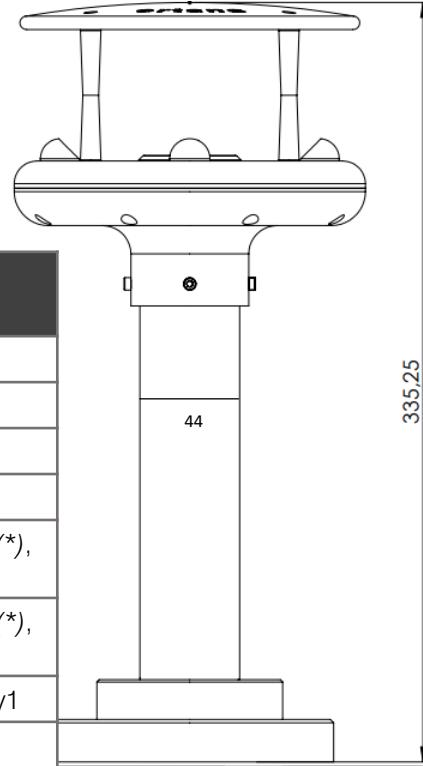
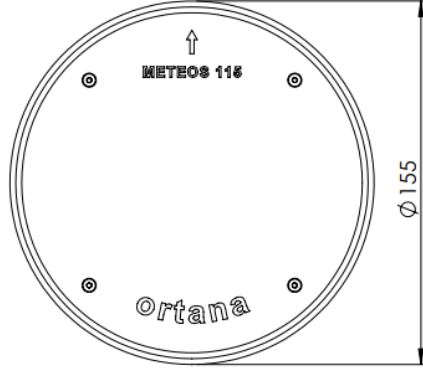
OUTPUTS	
PORT 1	RS485, UMB Protocol
	RS485, MODBUS over Serial Line
	CANBus (*)
	Diagnostic Relay Output
PORT 2	RS485, NMEA-0183 Protocol
	4-20mA DC
	0-10V DC
	Diagnostic Relay Output
PORT 3	RS485, Service and Calibration
	Diagnostic Relay Output
Alternative output types using the same port can be set in the field using DIP-SWITCHES.	
* Future Option	

ACCESSORIES	
Connection Cable with Connector (Optional)	20 W B 35 PN (Male)
Pipe Mounting (Optional)	195.25mm

STANDARDS		
	EN / IEC 60529	
	EN / IEC 61326-1: 2020	
		
		EN / IEC 55011



TECHNICAL DRAWING



OUTPUT CONNECTOR PIN DEFINITIONS (20W B 35 PN Male)

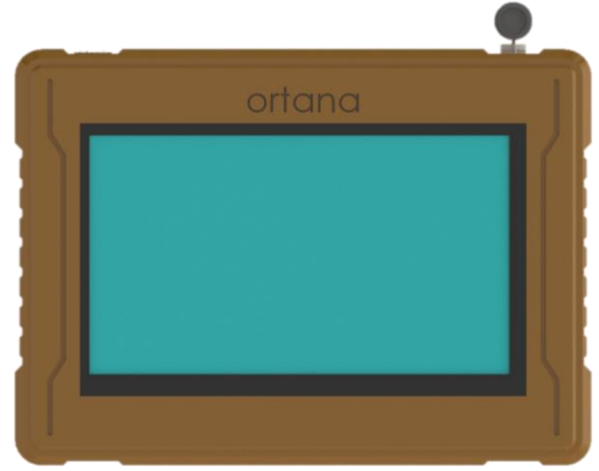
1	Power (24VDC)
2	Power (24VDC)
3	GND
4	GND
5	RS485A / UMB, ModBus, CanBus (*), Relay1
6	RS485B / UMB, ModBus, CanBus (*), Relay2
7	RS485A / NMEA, 4-20mA (*), Relay1
8	RS485B / NMEA, 0-10V (*), Relay2
9	RS485A / Service and Calibration, Relay1
10	RS485B / Service and Calibration, Relay2
11	N/C
12	N/C
13	Shield
(*) Optional	

* Drawing includes optional pipe mounting accessory.

ContOR300M family of integrated CPU is developed for multi purpose applications to be used in military and transport industry.

It is designed to work in harsh conditions with a prolonged mean time between failure (MTBF) rate.

Multiple ContOR300M can be configured to work in a fail-safe redundant configuration.



ContOR300M Specification

- Front Colour 7" LCD Panel provides an easy user interface for configuring in the field.
- HTTPS support facilitates easy remote management.
- ARM Cortex A8 main processor.

Advantages

- Multipurpose Use
- High Reliability
- Fail-Safe Redundant Configuration Support
- User Friendly Interface
- Easy Remote Management



Product Specifications

PERFORMANCE	
Main Processor	ARM Cortex A8 1GHz 32-Bit RISC
	NEON Coprocessor
Operating System	Linux 3.2.0
	Dual ContOR300M Configurable for Redundant/Fail Safe Operation <i>(Optional)</i>
Memory	RAM 512MB DDR3
	Flash 512MB NAND
	SD Cart Socket

PHYSICAL	
Weight	1100g
Dimensions	215 (w) x 157 (h) x 33,5 (d) mm
Display	7" 800 x 480px 16-Bit RGB Color LCD
	16 x 9 Aspect Ratio
	Capacitive Touch Pad
	250 cd/m² Brightness, Anti-Glare




POWER	
Power Input	15V – 36V
	PoE+
	Redundant Power Supply Support
	Optional Li-Po Battery
Power Consumption	8W

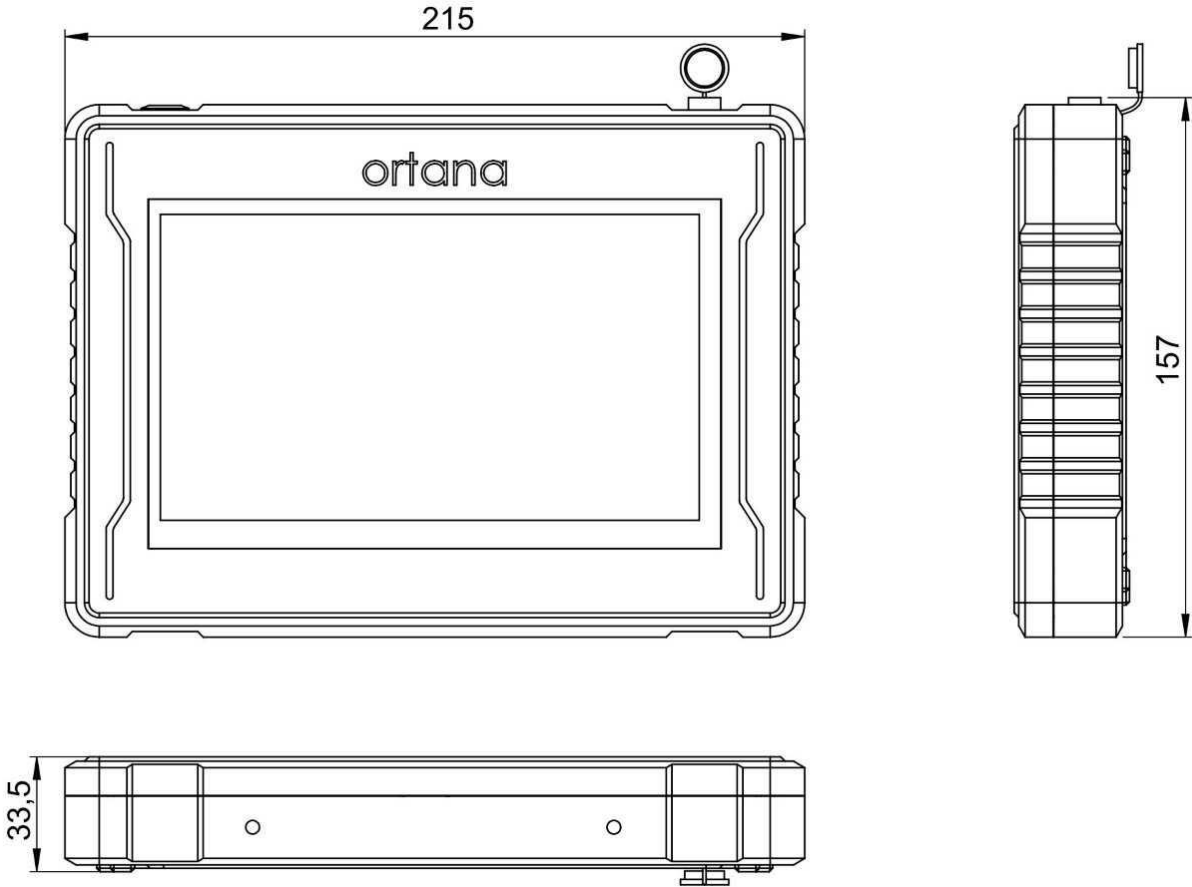
ENVIRONMENTAL	
Temperature	-45°C ve +85°C <i>(Working Temperature)</i>
	-20°C ve +70°C <i>(LCD Operational)</i>
	-30°C ve +80°C <i>(LCD Storage)</i>
	-50°C ve +100°C <i>(LCD Environmental Specs)</i>
Humidity	%0 RH to %95 RH
Protection Class	IP56 <i>(EN / IEC 60529)</i>
Product Material	Aluminum <i>(Different Colours Option Available)</i>

SUPPORTED INDUSTRIAL COMMUNICATION PROTOCOLS		
NTCIP v3	SNMP v3	OPC
ModBUS TCP	HTTPS	NTP
RSMP	Profibus	



Product Specifications

HOST COMMUNICATION		
10 / 100 / 1000Mbps Ethernet, PoE		
SERIAL COMMUNICATION INTERFACES		
1 x RS-485		
INTEGRATED INSTRUMENTS		
On Board Temperature & Humidity Sensor <i>(Optional)</i>	Power Reset Input <i>(Optional)</i>	
GPS Receiver with Antenna Input <i>(Optional)</i>	System Reset Input <i>(Optional)</i>	
RTC with Integrated Battery <i>(CR2477)</i> with 5000Hour Time Keeping or External Battery <i>(ER26500)</i> with up to 45.000 Hours Time Keeping <i>(Optional)</i>		
STANDARDS		
<div></div> <p>EN12966-1 ROAD VERTICAL SIGNS - VARIABLE MESSAGE TRAFFIC SIGNS</p>	<div></div> <p>NTCIP1203 V3 COMMUNICATION PROTOCOL</p>	<div></div> <p>PROFIBUS</p>

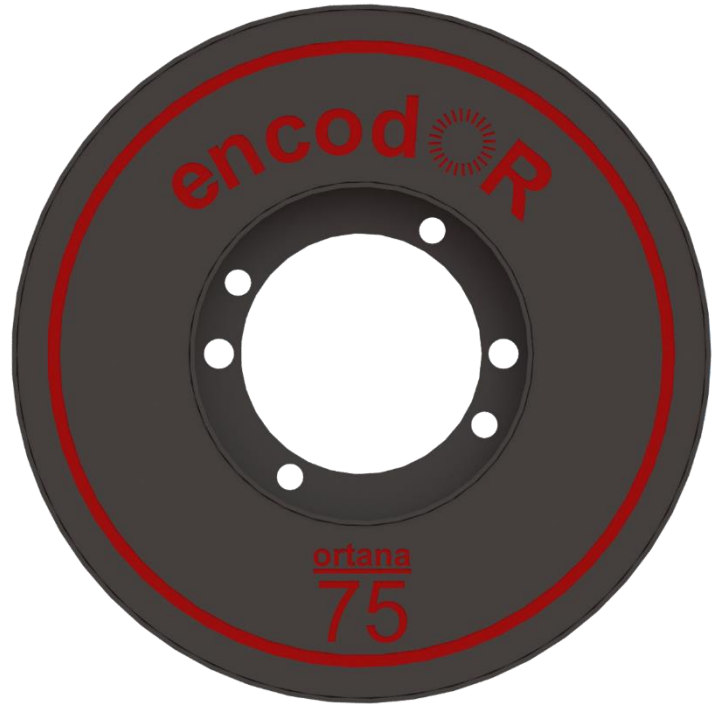


EncodOR75 Sensor is used for precise absolute angle measurement (speed and angular position determination).

EncodOR75 consists of a precisely calibrated matched Rotor and Stator pair.

EncodOR75 Specification

- Absolute angle measurement
- 21-bit and above high sensitivity
- Due to the principle of contactless working, it can work in high speed moving equipments.
- Each Rotor/Stator pair is calibrated separately.
- SSI-7 Communication Protocol



Advantages

EncodOR75 is suitable for many industrial applications, especially in the defense, and robotic sectors.

- Qualified for military standards.
- Due to its high measurement speed, it is suitable for applications above 10.000RPM.
- Very high static accuracy over 360° special accuracy models are available upon customer requirements.
- Higher measurement speeds are available upon customer request.
- Higher accuracy models are available upon customer request.



Product Specifications

PERFORMANCE	
Working Principle	Inductive, Absolute
Measurement Speed	10KHz
SSI Clock Rate	100KHz ... 2MHz
Resolution	21 Bits
Static Accuracy over 360°	< 100arcsec

OUTPUT	
SSI-7	
SSI-6 (Optional)	
SSI-2 (Optional)	
RS-485 (Service & Calibration)	



MEASUREMENT	
Measurement Range	360°
Maximum Physical Speed	> 10.000 RPM

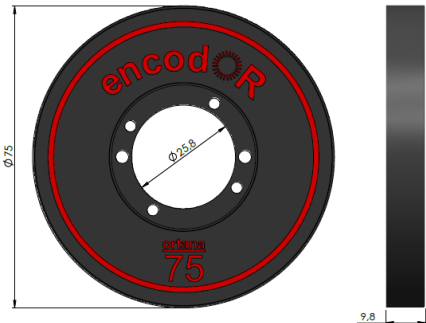
ACCESSORIES	
Accessories	2m Cable (Optional)
Connector Type	CON SMD 10 PIN 2mm MALE (HARWIN M80-5021022)

PHYSICAL	
Weight	100g (Pair)
Dimensions	Ø75mm
Product Material	Aluminum (Black Anodized Coating)

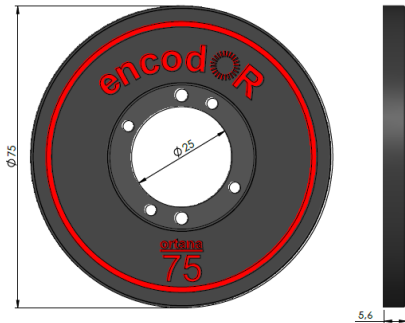
POWER	
DC	5V or 24V (9-32 VDC)
Power Consumption	1.5W

ENVIRONMENTAL	
Temperature	-45°C ve +85°C
Protection Class	IP68 (EN / IEC 60529)

STANDARDS			
	MIL-STD-810H		MIL-STD-461G
			MIL-STD-464A



STATOR



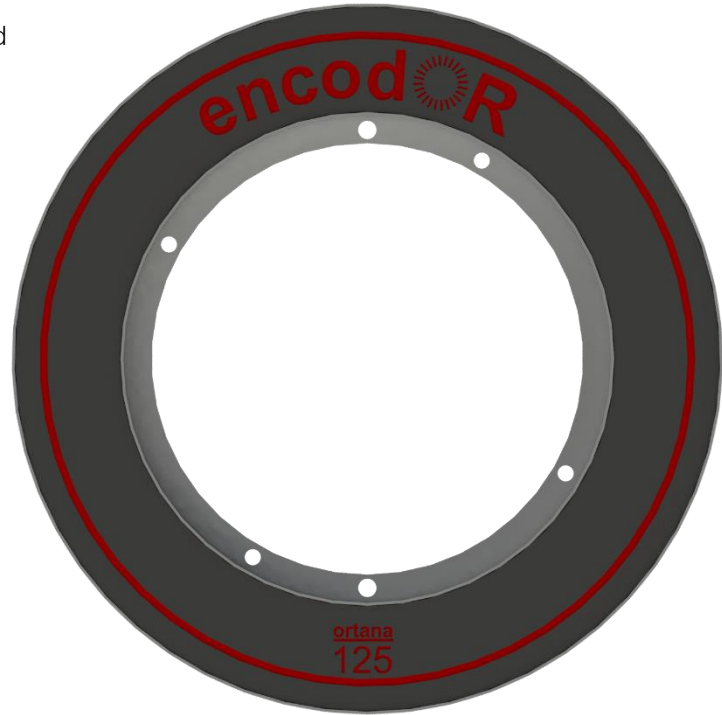
ROTOR

EncodOR125 Sensor is used for precise absolute angle measurement (speed and angular position determination).

EncodOR125 consists of a precisely calibrated matched Rotor and Stator pair.

EncodOR125 Specification

- Absolute angle measurement
- 21-bit and above high sensitivity
- Due to the principle of contactless working, it can work in high speed moving equipments.
- Each Rotor/Stator pair is calibrated separately.
- SSI-7 Communication Protocol



Advantages

EncodOR125 is suitable for many industrial applications, especially in the defense, and robotic sectors.

- Qualified for military standards.
- Due to its high measurement speed, it is suitable for applications above 10.000RPM.
- Very high static accuracy over 360° special accuracy models are available upon customer requirements.
- Higher measurement speeds are available upon customer request.
- Higher accuracy models are available upon customer request.



Product Specifications

PERFORMANCE

Working Principle	Inductive, Absolute
Measurement Speed	10KHz
SSI Clock Rate	100KHz ... 2MHz
Resolution	21 Bits
Static Accuracy over 360°	<50arcsec

OUTPUT

SSI-7
SSI-6 (Optional)
SSI-2 (Optional)
RS-485 (Service & Calibration)

MEASUREMENT

Measurement Range	360°
Maximum Physical Speed	> 10.000 RPM

ACCESSORIES

Accessories	2m Cable (Optional)
Connector Type	CON SMD 10 PIN 2mm MALE (HARWIN M80-5021022)

PHYSICAL

Weight	200g (Pair)
Dimensions	Ø125mm
Product Material	Aluminum (Black Anodized Coating)




POWER

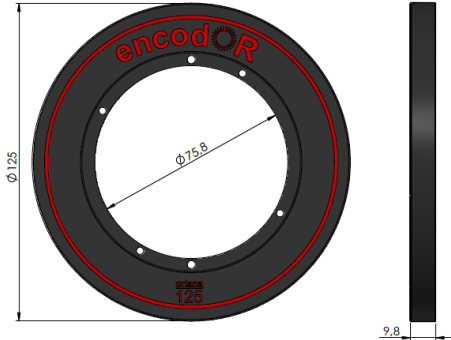
DC	5V or 24V (9-32VDC)
Power Consumption	1.5W

ENVIRONMENTAL

Temperature	-45°C ve +85°C
Protection Class	IP68 (EN / IEC 60529)

STANDARDS

<div><div>MIL-STD-810H</div></div>	<div><div>MIL-STD-461G</div></div>	<div><div>MIL-STD-464A</div></div>
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Ø125

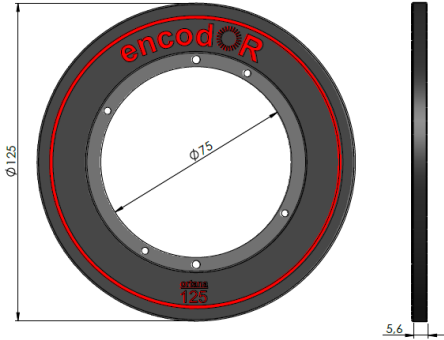
Ø75.8

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encodOR

125

ROTOR



Ø125


Ø75


5.6


encodOR

125

STATOR


 (0312) 592 9100 (ISDN)

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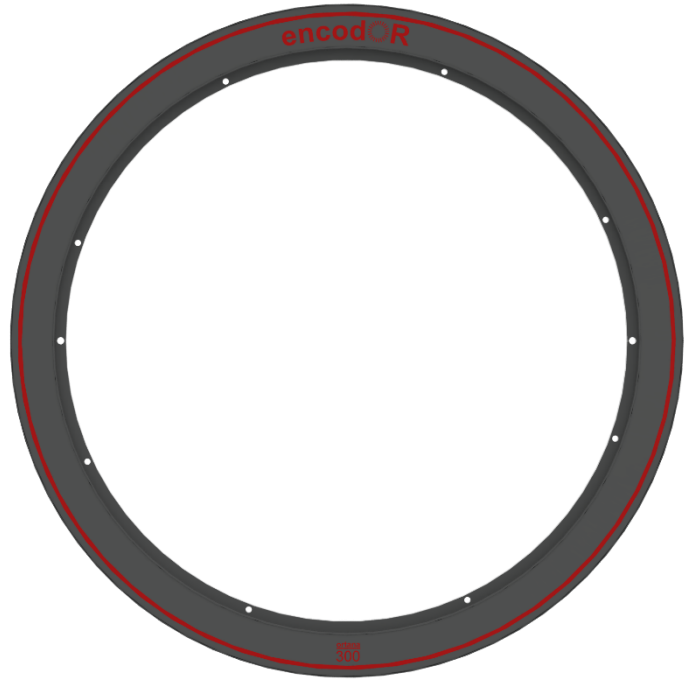


EncodOR300 Sensor is used for precise absolute angle measurement (speed and angular position determination).

EncodOR300 consists of a precisely calibrated matched Rotor and Stator pair.

EncodOR300 Specification

- Absolute angle measurement
- 22-bit and above high sensitivity
- Due to the principle of contactless working, it can work in high speed moving equipments.
- Each Rotor/Stator pair is calibrated separately.
- SSI-6 Communication Protocol






Advantages

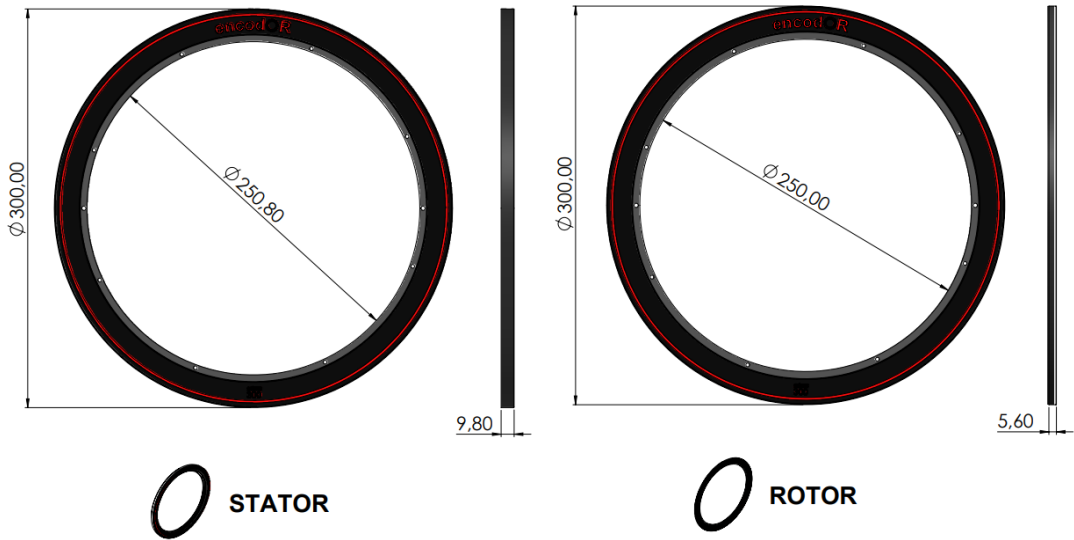
EncodOR300 is suitable for many industrial applications, especially in the defense, robotic sectors.

- Qualified for military standards.
- Due to its high measurement speed, it is suitable for applications above 10.000RPM.
- Very high static accuracy over 360° special accuracy models are available upon customer requirements.
- Higher measurement speeds are available upon customer request.
- Higher accuracy models are available upon customer request.



Product Specifications

PERFORMANCE		
Working Principle	Inductive, Absolute	
Measurement Speed	10KHz	
SSI Clock Rate	100KHz ... 2MHz	
Resolution	22 Bits	
Static Accuracy over 360°	<35arcsec	
OUTPUT		
SSI-6		
SSI-7 <i>(Optional)</i>		
SSI-2 <i>(Optional)</i>		
RS-485 <i>(Service & Calibration)</i>		
MEASUREMENT		
Measurement Range	360°	
Maximum Physical Speed	> 10.000 RPM	
ACCESSORIES		
Accessories	2m Cable <i>(Optional)</i>	
Connector Type	CON SMD 10 PIN 2mm MALE <i>(HARWIN M80-5021022)</i>	
STANDARDS		
 MIL-STD-810H	 MIL-STD-461G	 MIL-STD-464A



STATOR

ROTOR

ortana

Ali İhsan ASLAN

Elektrik-Elektronik Müh.

Savunma Prj.

İş Geliştirme Müdürü



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