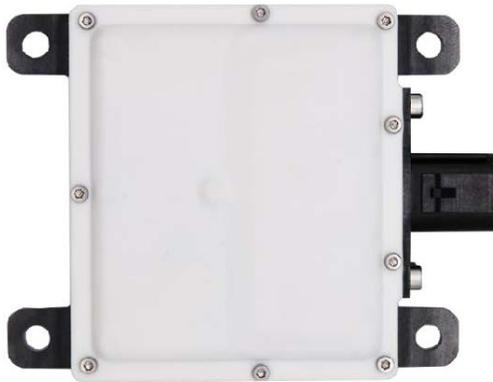
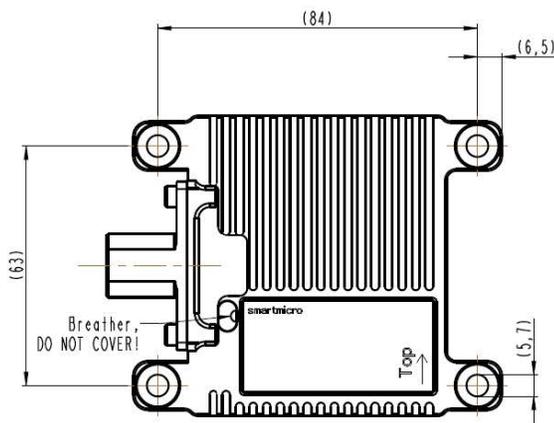


smartmicro UMRR-96 Type 153 Automotive Sensor

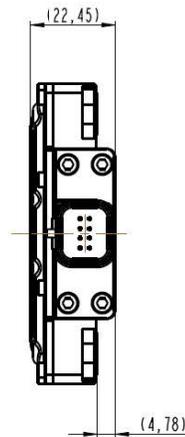


Sensor dimensions

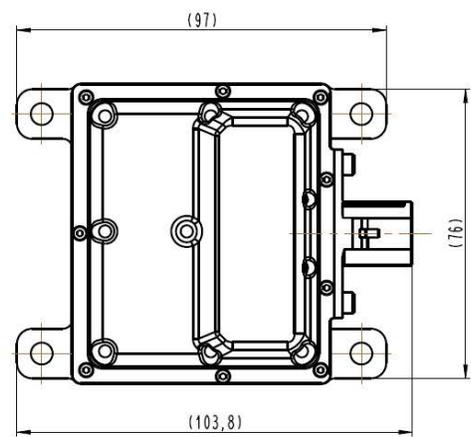
All values are given in mm.



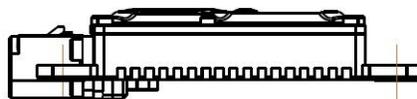
Sensor rear side



Left side



Sensor front side



Top side

General Performance Data

Parameter		Long-Range Mode	Medium-Range Mode	Short-Range Mode
Operating Frequency		77...81GHz 3 center frequencies (bands)	77...81GHz 3 center frequencies (bands)	77...81GHz 3 center frequencies (bands)
Range	Min./Max. ¹	0.8m/120m 2.6ft/394ft	0.4m/55m 1.3ft/180ft	0.15m/19.3m 0.5ft/63ft
	Separation	< 1.2m < 3.9ft	< 0.6m < 2.0ft	0.15m/19.3m 0.5ft/63ft
	Accuracy	< 0.5m < 1.64ft or 1% (bigger of)	< 0.3m < 1.0ft or 1% (bigger of)	< 0.15m < 0.5ft or 1% (bigger of)
Speed	Min./Max.	-340...+140km/h -211...+87mph	-340...+140km/h -211...+87mph	-400...+140km/h -249...+87mph
	Separation	< 0.3m/s	< 0.3m/s	< 0.3m/s
	Accuracy	< 0.15m/s	< 0.15m/s	< 0.15m/s
Angle	Field of View: Azimuth ²	-50...+50° (squint beam)	-65...+65° (straight beam)	-65...+65° (straight beam)
	Field of View: Elevation ²	-7.5...+7.5°		
	Separation: Azimuth	~30° (optional)		
	Accuracy: Azimuth ³	≤ 1° (at <50° from bore sight)		
	Accuracy: Elevation ³	≤ 2° (at <10° from bore sight)		
Mechanical Details				
Weight		≤ 153g (≤ 5.4oz)		
Dimension (H × W × D)		97 × 76 × 17.7 mm (3.8 × 2.99 × 0.7 in) (plus connector)		
Further Information				
Initialization Time		< 4s		
Update Cycle Time ⁴		≤ 55ms		
Processing Latency		2-4 cycles		
Operating Voltage ⁵		8...24V		
Power Consumption ⁶		3.75...5W		
Bandwidth		< 2000MHz		
Max. Transmit Power (EIRP)		≤ 31dBm		
Operation & Storage Temperature		-40...+85°C (-40...+185°F)		
Interfaces ⁷		Ethernet 100Mbit (2-wire); 2xCAN V2.0b (passive)		
Connector		TE 1411001-1 series		
Shock / Vibration		100g _{rms} / 14g _{rms}		
Relative Humidity		0...95% (non-condensing)		
IP		67		
Pressure or Transport Altitude		0...10000m (0...32800ft)		

¹ Typical values; all values given for bore sight; they may vary depending on the clutter environment. Please note that the radar system can neither achieve a detection probability of 100% nor a false alarm rate equal to zero.

² The total field of view is an angle interval in which reflectors can be detected; 3dB field of view is narrower.

³ Typical value; measured at target output level at bore sight, for a point reflector showing >23dB SNR. Error may increase towards larger angles. In addition to this angle error, angle may drift over temperature, typically -0.5deg to +0.5deg over specified operation temperature interval.

⁴ Typical value; may be longer depending on the number of detected radar targets.

⁵ Measured at the connector.

⁶ Depending on supply voltage and temperature; power consumption increases with supply voltage and with temperature.

⁷ Both CAN interfaces are capable of CAN(FD) by hardware (2 and 5Mbit/s), one of them is also sleep mode capable. It is recommended to use an external surge protection for power, CAN, RS485, Ethernet and other interface ports.

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For the most recent details of this product visit autonomoustuff.com

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