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RAS3 Radar Sensor

NAVTECH RAS3 Radar Sensor User Manual

Contents

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Product Information

Specifications

- Model: RAS3 Radar Sensor
- Manufacturer: Navtech Radar Limited
- Working Distance: 20cm from the radome
- Mounting Holes: 4x M8 tapped holes with 4 PCD arrangement
- Fixing Tightening: 20 Nm
- Output Centreline: Approximately 175mm above the base

Product Usage Instructions

- All RAS family radars have 4x M8 tapped holes in a 4 PCD arrangement.
- Carefully select fixing lengths and tighten to 20 Nm.
- Ensure radar is mounted level for consistent view.
- Refer to the cable diagram and terminations provided in the manual for connecting power and network cables to the radar.
- Recycle the coin cell contained in the product through a battery recycling center or collection point instead of regular trash disposal.

Introduction

- This is the quick start manual for the RAS3 Radar Sensor.
- The smaller and shorter range sensor within the Navtech Robust Automation Sensor family (RAS) is available in a variety of configurations as shown in the infographic at the bottom of the page
- The "DEV" variants of the RAS3 radar expose a wider range of configurable options to the end user via the radar's web user interface.
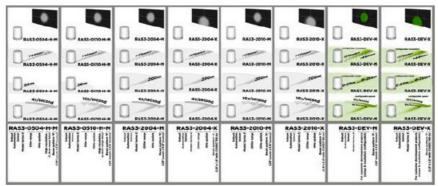
Figure 1 - RAS6 & RAS3 Models

Figure 2 - Example Configurations

- The product datasheet can be found at the Navtech Radar website: **Sensors – Navtech Radar**
- The safe working distance for the RAS3 radar is 20cm from the radome for normal operation.

Product Notices

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

FCC Part 15.21 statement

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Radar Mounting

- All variants in the RAS family of robust radars have 4x M8 tapped holes in the underside, in a 4" PCD arrangement.
- The RAS3 radar fixing holes are 11mm deep: care should be taken in the selection of fixing lengths.
- 4" PCD dictates hole centres with a 71.84mm spacing.

Figure 3 - RAS3 mounting holes

- Every radar is supplied with a stainless steel M8 fixings pack.
- It is recommended that these are tightened to 20 Nm, and that the fixing selected allows for ≥8mm thread engagement within the base of the radar.

Figure 4 - Fixings kit provided with RAS3 radar unit containing 2 sets of M8 fixings.

- It is recommended to orient the radar with the connector panel facing "down","back", "South" or "in".
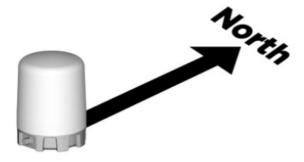- The radar presents its' output referenced to a 0° or North point directly opposite to the connectors.

Figure 5 - Radar North

- Be sure to mount the radar level, to ensure that it presents a consistent view of its's surroundings in every direction.

- When designing a mounting bracket for a specific application, it can sometimes be helpful to add in the opportunity for adjustment in each of the mounting angles to aid easy commissioning
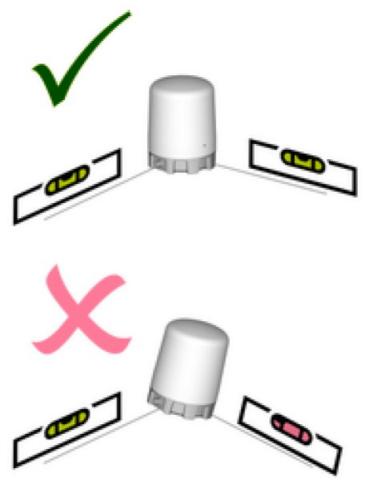

Figure 6 - Radar Levelling

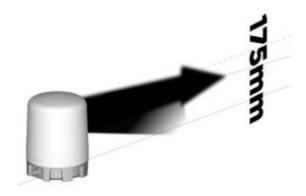- The centreline of the RAS3 radar's output is approximately 175mm above the base of the unit.
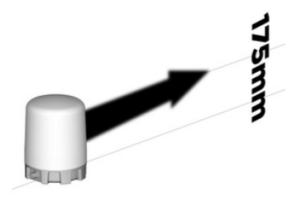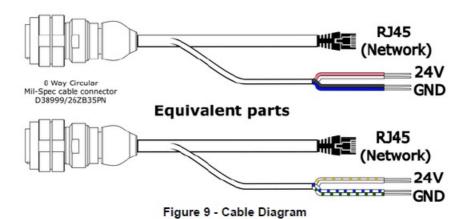

Figure 7 - Beam Centre for -X model

Figure 8 - Beam Centre for -M Model

Power & Network Connection

- RAS3 radars are fitted with a single D38999 (Mil.Spec) connector for a combined power and network cable, part number WIR0159, as illustrated below. Part WIR0141 is an alternative connection cable, rated for operation down to -40°C.
- RAS3-DEV-M and RAS3-DEV-X Radars are supplied, as standard, with a 5m power cable as illustrated in the drawing below. Other cable lengths are available to special order – contact Navtech Radar for details.
- Unless otherwise requested at time of order the radar will be delivered with a standard IP address of 192.168.0.1.
- Note that the radar's IP (ingress protection) rating is only achieved when the external connection cable is fitted and secured.
- (Part D38999/52Z35R is the part number for a sealing plug that can be used if required.)

Scroll down the page for photographs of connector and cable termination details.

Figure 9 - Cable Diagram

D38999 Connector	Cable	RJ45 connector
1	White/Orange	1
2	Orange	2
3	White/Green	3
4	Blue	4
5	White/Blue	5
6	Green	6
7	White/Brown	7
8	Brown	8

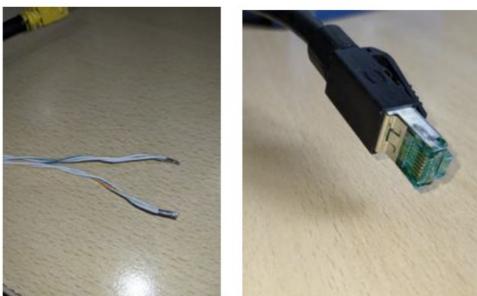| D38999 Connector	Cable	Power connection
9	White	+24v
	Red	
10	White/Orange	+24v
	White	
11	White/Blue	0v
	Blue	
12	White/Green	0v
	Black	

Figure 10 – Connector Pinout

Figure 11 - Cable Terminations

Photographs of connector and cable terminations

Figure 12 - Radar Connection

Support

- Navtech Radar Ltd offers comprehensive support services both pre and post radar commissioning to ensure you get the best performance and support for your radar installation.
- We have a dedicated Customer Services Support Centre that can offer 1st and 2nd line technical support for both hardware and software queries. The centre is staffed by a highly skilled technical team who can advise

and offer support with any technical questions both pre and post commissioning. In the event a fault cannot be diagnosed remotely or a repair is required, the team can arrange for your radar to be returned to base for further diagnostic tests or repair.

- We also offer a number of support plan options during the lifetime of your radar, offering peace of mind for your installation.
- For further information on the support plan options or any technical questions please contact the Customer Services Support Centre on +44 (0) 1235 832419, or email **support@navtechradar.com**

The product contains a coin cell, and this should be recycled through a battery recycling centre or collection point and not in regular or domestic trash collection.

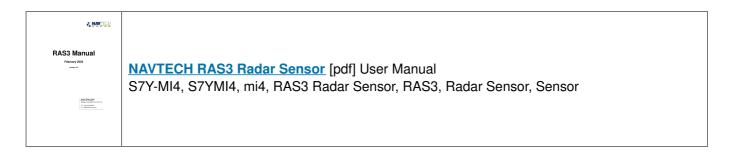**Note:** This equipment is not suitable for use in locations where children are likely to be present.

CONTACT

- Navtech Radar Limited
- Home Farm, Ardington,
- Wantage, Oxfordshire, OX12 8PD, UK
- +44(0)1235 832419
- **info@navtechradar.com**

FAQ

- **Q: What should I do if the radar is not detecting objects within the specified working distance?**
    - **A:** Check if the radar is mounted level and at the correct height. Ensure there are no obstructions blocking the radar's view.
- **Q: Can I adjust the radar's mounting angles?**
    - **A:** Yes, when designing a mounting bracket, consider adding adjustment options for each mounting angle to aid in easy commissioning.

Documents / Resources

NAVTECH RAS3 Radar Sensor [pdf] User Manual
S7Y-MI4, S7YMI4, mi4, RAS3 Radar Sensor, RAS3, Radar Sensor, Sensor

References

- **User Manual**