

NASNet® VRx MkII

ROV RECEIVER SYSTEM

Overview

The NASNet® VRx is an ROV mounted passive receiver system designed to provide accurate positioning for ROVs throughout the water column, from seabed to surface, using ranges received from a seabed array of NASNet® Stations.

NASNet® Operating Principle

NASNet® is an advanced subsea positioning system with a concept similar to GPS. Using advanced Nautronix Acoustic Digital Spread Spectrum (ADS2) signalling technology NASNet® employs a broadcast technique to determine accurate range measurements between the calibrated NASNet® array and the passive receivers on tracked targets. The positions of the targets can then be determined with ranges from a minimum of 3 NASNet® Stations.

This approach successfully overcomes the limitations of conventional Long Baseline (LBL) systems and provides a true multi-user system able to simultaneously position unlimited objects at fast update rates and with no acoustic interference.

NASNet® VRx

The NASNet® VRx is designed to provide fast and stable position updates for ROV operations. The multi-user capability of NASNet® means that multiple ROVs and structures can simultaneously be accurately positioned using a common positioning system with no risk of interference or reduction in position update rate.

The VRx system passively detects range pulse signals from an array of NASNet® Stations and relays the range data, via the ROV umbilical, to the NASNet® DCU. The accurate position of the VRx hydrophone is then calculated. The one-way ranging technique employed provides data with minimal latency and optimises the accuracy of positioning.

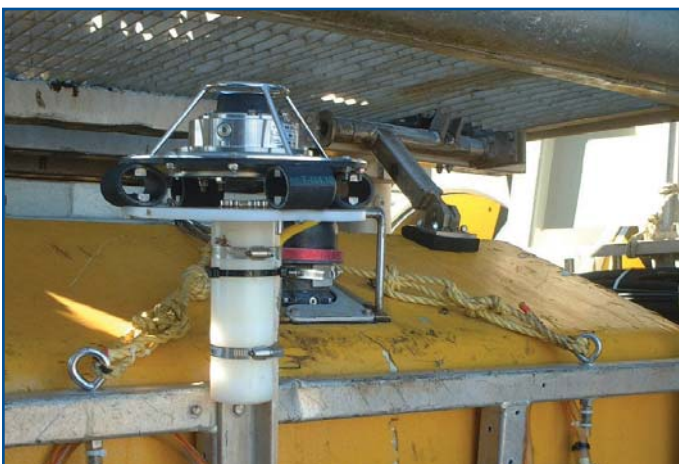
The NASNet® VRx is designed for easy installation on a wide range of ROV systems. The hydrophone is mounted on the ROV and connected to a subsea bottle which is linked to the NASNet® DCU topsides via the ROV fibre umbilical. A 24V power supply is required from the ROV to run the VRx system. For maximum performance the VRx hydrophone is mounted on top of the ROV in order that surrounding NASNet® Stations are acoustically visible. The hydrophone can be configured for mounting on a hydraulic deployment ram which provides clear reception during use and additional protection from damage during ROV launch and recovery.

Key benefits of NASNet® VRx

- Long range capability
- Fast update rate¹ in any water depths
- True multi-user capability
- No frequency management issues
- Reliable communications due to advanced digital signalling techniques
- No interference to other ROV sensors
- Hydrophone can be configured for installation on hydraulic deployment ram

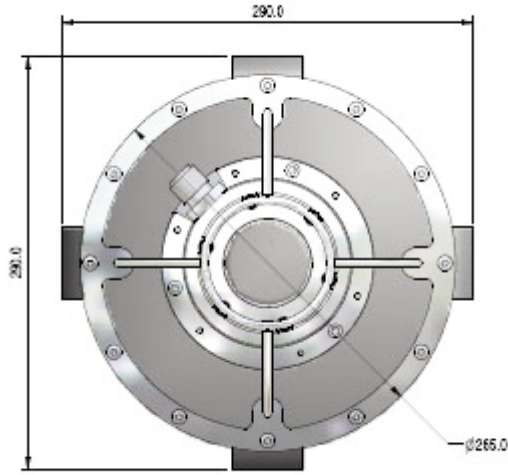
Typical applications of NASNet® VRx

- Subsea ROV positioning for deepwater subsea construction activities
- Positioning of objects with a physical data communication link and power supply

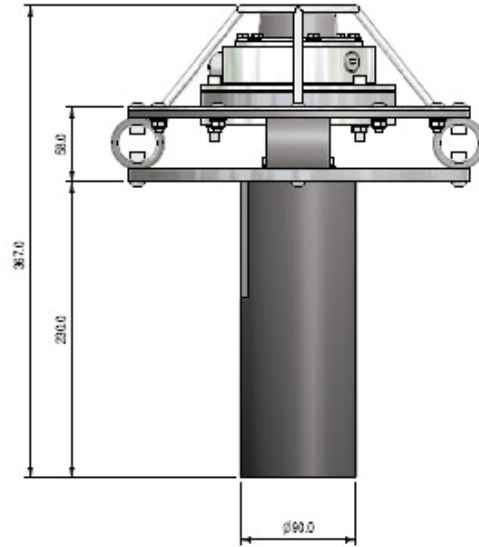


NASNet® VRx mounted on an ROV

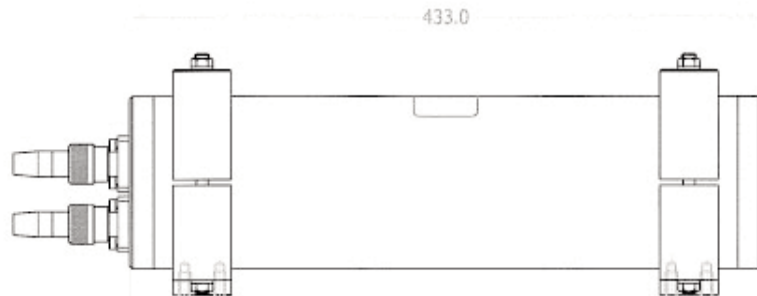
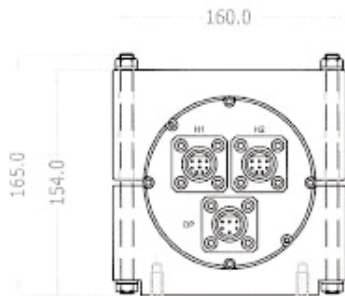
¹ Update rate typically 1Hz for all positioned targets



NASNet® VRx Mk II hydrophone (plan)



NASNet® VRx Mk II hydrophone (elevation)



NASNet® VRx Subsea Electronics Bottle

NASNet® VRx hydrophone specifications:

Receive Beamwidth	210 degrees
Depth Rating	3,500 msw
Housing	316 stainless steel
Mounting clamp	Delrin c/w rubber mount
Interface	8 pin burton connector with 6m cable
Weight	7.5kg

NASNet® VRx electronics bottle specifications:

Depth Rating	3,500 msw
Input voltage	24 VDC
Input current	1 Amp
Output (single mode)	1570 nm +/- 2 nm
Housing	Titanium
Interface	4m tail 5/8" UNF
Weight	10kg

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