



- Interface between Rototherm Technology products and RotoData portal
- Data is viewed on a secure internet portal
- Powered from 12-24VDC
- Worldwide 4G Mobile communications
- Bluetooth diagnostics
- Allows for remote support, power reset and calibration of field devices
- Modbus RTU connection for client interface to field devices
- Suitable use in hazardous areas
- Digital output for vessel over pressure

GENERAL DESCRIPTION

RotoHub offers customers a competitive edge by providing cost-effective remote level monitoring using a VesselCheck ST1 product. Tank contents information is essential to effectively manage inventory, improve delivery efficiency and ensure there is enough capacity to allow the customer to continue to operate seamlessly.

The RotoHub collects the tanks contents (%Volume), sensor temperature and pressure (where fitted) on a Modbus RTU serial link. The information is collected on the hour and every 15 minutes after, and transmitted along with current GPS Location, temperature and pressure (where fitted) to our secure RotoData portal.




The RotoHub can power up to 4 VesselCheck ST1AD devices. This power source can be remotely switched off and on by a command from the portal. A client connection allows the customer to interrogate the field devices via a Modbus RTU RS485 serial link.

The vessel internal pressure can be interfaced to the RotoHub on the Modbus RTU serial link. The pressure reading can be used to trigger a common digital output to activate an over pressure alarm and fire suppression system. The alarm setpoint is set via the portal.

SAFETY SUMMARY

All safety related regulations, local codes and instructions that appear in the manual or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it.

If equipment is used or installed in a manner not specified by the manufacturer, the warranty on the instrument will be invalidated.

	<p style="text-align: center;">ATTENTION</p> <p style="text-align: center;">Contents Static Sensitive</p>
	<p style="text-align: center;">CAUTION: Electrical Danger</p> <p style="text-align: center;">Read complete instructions prior to</p>
	<p style="text-align: center;">WARNING: Explosion risk</p> <p style="text-align: center;">Do not open when in a flammable atmosphere</p>

SPECIFICATION

Main Power:

- 12-24VDC 1.6A max.

Cellular Communications:

- Worldwide LTE, UMTS/HSPA(+) and GSM/GPRS/EDGE coverage

Material:

- Glass Reinforced Polyester (GRP)

Weight:

- 1.5KG (3.3lb)

Size:

- 160mm (6.25") x 160mm (6.25") x 90mm (3.5")

Operating Temperature Range:

- -20 to 50°C (-4 to 122°F)

Environmental Protection:

- IP67

Entries:

- 3 off M20, supplied with 2 x Glands, 2 x Blanks & 1x Breather (**NOTE:** The Breather must not be removed)

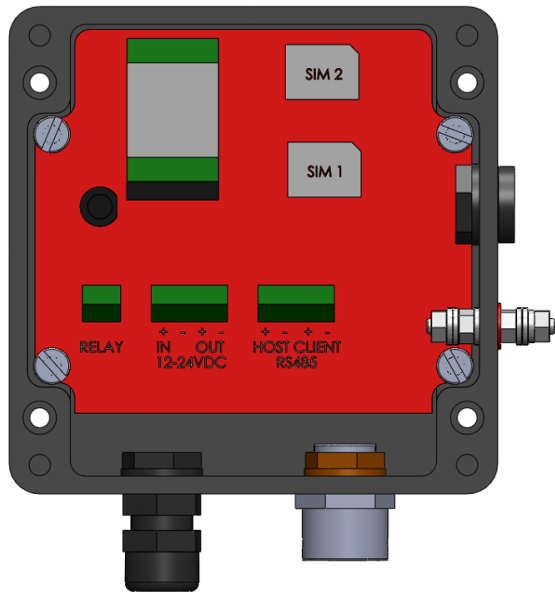
Certification and Compliance:

- EN61326-1:2013 Electrical equipment for measurement, control and laboratory use
- EN 301 489 V2.1.1 Electro Magnetic Compatibility (EMC) standard for radio equipment and services: Part 1 Common Technical Requirements
- Draft EN 301 489-52 V1.1.0 Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 52: Specific conditions for Cellular Communication Mobile and portable (UE) radio and ancillary equipment; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU
- ATEX : ⓂII3G Ex ec IIC T4 Gc (-20°C≤Ta≤+50°C) Baseefa19ATEX0103X
- UKEX: ⓂII3G Ex ec IIC T4 Gc (-20°C≤Ta≤+50°C) BAS21UKEX0010
- IECEx : Ex sc IIC T4 Gc (-20°C≤Ta≤+50°C) IECEx BAS19.0092X

INSTALLATION

Enclosure

A suitable location should be found to mount the unit, away from sources of direct sunlight, electrical interference and excessive vibration.



Power Supply

The RotoHub is protected via a 1.6A 20mm cartridge fuse. The current drawn is dependent on the number of VesselCheck ST1 units connected (maximum 4). It is recommended that a remote switch supply is connected fused at 2 amp.

Cable

To reduce the risk of interference, routes for running all cables should be kept clear of areas of high frequency electronics and high voltages. All cables must enter the enclosure via glands certified for the area of use with an IP66 or greater rating. Cables must have a protective foil or screen, the RS485 data cable requires a twisted pair layup.

Mounting

Remove the enclosure cover to access the 4 off 6.6mm mounting holes. Secure the enclosure with 4 fixings onto a solid vibration free structure. The RotoHub must be located in an area with cellular coverage. The earth post must be on the righthand side to ensure good Global Positioning Statalite (GPS) data. There should be no obstructions above the device

Terminations

Cable tail ends should be fitted with the appropriate bootlace ferrules and tightened to a torque of 0.5 Nm ... 0.6 Nm.

WARNING

The power source should be remotely isolated when connecting or disconnecting. All drain wires should be connected to the 6mm stud, via an eye terminal.

Earthing

An earth (ground) connection should be made to the 6mm stud on the side of the RotoHub, via an eye terminal.

WARNING

To ensure ATEX and IECEx compliance the enclosure must not be drilled, modified or added to.

Cleaning

The product should be cleaned with a damp antistatic cloth.


Connections

Terminal	Description
+ 12-24VDC IN	Positive DC supply 12-24V
- 12-24VDC IN	Negative DC supply 12-24V
+ 12-24VDC OUT	Positive Supply to Field Devices
- 12-24VDC OUT	Negative Supply to Field Devices
Host RS485 +	RS485 + Modbus RTU to Field Devices
Host RS485 -	RS485 - Modbus RTU to Field Devices
Client RS485+	RS485 + Modbus RTU to Client
Client RS485-	RS485 - Modbus RTU to Client
Relay	Normally closed solid state relay contact
Relay	Normally closed solid state relay contact

Start Up

- Test the supply voltage at the source to ensure it is within the specified voltage range.
- Power on the device remotely.
- The red 3V LED in the top right and side of the enclosure will illuminate and the green status LED's will flash.
- Once the system has connected to the portal LED D3 will flash every second and LED D6 will flash every two seconds.

Configuration

- It is recommended that a Smart Phone is used to configure the RotoHub
- Log into the Rototherm Technology portal <https://portal.rotothermtechnology.com/login>
- Select Administration > Company Admin > Register New RotoHub (Button). Click on the QR Code ICON  or enter the systems serial number including all zero's. Click on register Hub and wait for the Hub to register. The RotoHub will appear in Tank Admin on the next system refresh.
- Select Administration > Tank Admin > Add a Tank (Button), enter the tank details as listed and Save.
- Once the data has been saved, a window will appear at the top of the page listing the unattached devices and the connected instruments on the hub. Select the required hub and instrument from the drop down list.
- Select Data Portal> Global Summary to view all tanks. For a detailed view, click on the applicable tank.

TROUBLESHOOTING

- No power 3V LED,
 - o Check the power supply voltage
 - o Test the on board fuse (F1)
- No GSM connection
 - o Ensure the system has been powered for at least 5 minutes to establish a GSM connection
 - o Check the local cellular reception
 - o Check the SIM card is in place
 - o Try resetting the board
 - o Check the antenna on the GSM Module

If for any reason you have trouble operating, connecting, or simply have questions concerning your new RotoHub, contact Rototherm.

sales@Rotothermgroup.com (USA)

sales@rototherm.co.uk (UK)

www.RotothermTechnology.co.uk

US: +1 713 893 7389

UK: +44 1656 740551

ROTOTECHNOLOGY HEAD EUROPEAN OFFICE:

Kenfig Industrial Estate, Margam, Port Talbot, SA13 2PW United Kingdom

T: +44 (0) 1656 740 551 E: sales@rototechnology.com W: www.rototechnology.com

S-368 Rev:A