



RMS III – User manual

Safety information

The device complies with regulations and industrial standards in force in the Czech Republic and the European Union. The device has been tested and is supplied in working order. To keep the device in this condition, it is necessary to adhere to the following safety and maintenance instructions.

Never remove the device cover if the relay terminals are connected to the electrical network!

Using the device in a manner other than prescribed by the manufacturer may cause its safeguards to fail!

The power supply outlet or disconnection point must be freely accessible.

The device must not be used in particular under any of the following conditions:

- The device is noticeably damaged.
- The device does not function properly.
- Unfastened parts can move inside the device.
- The device has been exposed to moisture or rain.
- The device has been serviced by unauthorized personnel.
- The power adapter or power supply cable are noticeably damaged.
- If the device is used in a manner other than designed for, the protection provided by the device may fail.
- The local electrical system must include a power switch or a circuit breaker and overcurrent protection.

The manufacturer warrants the device only if it is powered by the supplied power adapter or an approved power supply.

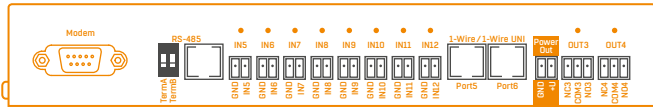
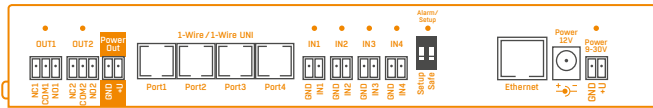
If you have any problems with installing or operating the device, please contact your reseller.

When contacting technical support, please keep at hand the exact type of your device (at the type plate) and, if possible, the firmware version (see later in this manual).

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Schematic Drawing



Basic Features

	RMS III
Ethernet	100 Mbps
VLAN	future
HTTP	✓
HTTPS	✓
DHCP	✓
SNMP v1	✓
SNMP v3	✓
SNMP trap	✓
Trap destinations	5
SNTP	✓
SMTP	✓
SMTP TLS	✓
E-mail destinations	5
SMS / Local RS-232	✓
SMS / netGSM	✓
SMS destinations	5
Logger	✓
Logger records	250 000
IPv6	✓
Comm monitor	✓
DO Local conditions	✓
1-Wire sensors	16
1-Wire UNI support	✓
RS-485 support	✓
RS-485 sensors	24
M-Bus meters	✗
Modbus / TCP	✓
E-mail alarm reminder	✓
E-mail periodical status	✓
Power Input 1	9–30 V
Power Input 2	✗
DI (Digital inputs)	12
DO (Digital outputs)	4
DO max. load	50 V / 1 A
Operating temperature	-30..85 °C

Connectors

Ethernet

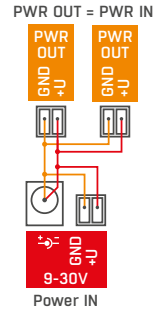
Ethernet 100Base-T (10/100Mbit). When connected, the green “Link” LED at the connector lights up to indicate proper connection. When communicating, the yellow „Activity” LED flashes.

Power

The green LED indicates that the device is powered. The power is always in the range of 9–30V. PoE (Power over Ethernet) modules can be added on a per-project basis.

PowerOut

Used to power sensors and accessories. Power Out is directly connected to the 9-30V input. For units featuring 48V or PoE power input, this output can source 12V / 300mA.



1-Wire/1-Wire UNI

Used to connect 1-Wire / 1-Wire UNI sensors. Each port can be directly connected to a bus with max. 60 m in length and max. 2 sensors (type 1-Wire / UNI). For details, see *Connecting the sensors*.

RS-485

Used to connect RS-485 sensors. The TermA and TermB switches control line termination. For details, see *Connecting the sensors*.

Inputs

INx – Dry Contact inputs. Inputs always share a common ground (GND). The corresponding green LED indicates a closed contact. There is a pulse counter at each input.

Outputs

OUTx – Relay outputs with NO/NC contacts. When idle, NCx (Normally Closed) + COMx (Common) are connected. When activated, NOx (Normally Open) + COMx are connected. Yellow LEDs indicate activated outputs.

Alarm/Setup LED

The red LED indicates device state: continuously on means Alarm (a sensor or an input outside of the safe range), flashing means TCP or Serial Setup mode.

DIP1/DIP2 switches

DIP1 – activates Serial Setup mode / restores factory defaults. To restore factory defaults, quickly toggle the switch 3× within the first 5 seconds after powering up the device.

DIP2 – Safe mode – activates HW protection of configuration settings. No settings can be changed.

Setting up

First steps

1. Connecting the cables

- Turn the unit and note its MAC address that is printed on the label on the side.
- Set the switches: **DIP1=Off**, **DIP2=Off**.
- Connect RMS III to the Ethernet (with a patch cable to a switch, cross-over cable to a PC), RJ-45 port.
- Plug the power adapter into a mains outlet and connect it to the RMS III power jack.
- The green **POWER** LED lights up.
- If the Ethernet connection works properly, the green **LINK** LED lights up after a short while, and then flashes whenever data is transferred (activity indication).

2. Configuring the IP address – Vertiv Config

Vertiv Config utility – root directory of the supplied CD (Windows and Linux versions).

- Click the icon to launch **Vertiv Config**. The program automatically looks for connected devices.
- Automatic device discovery works only in the local network.
- To identify a particular RMS III unit, look at the MAC address on the label at the bottom of the unit.
- Double-click a MAC address to open a basic device configuration dialog.

HWg-Config 1.1.1 for HW group products (www.hw-group.com)

Version: 1.1.1 HW group, s.r.o. www.hw-group.com
Config utility for the HW group devices

Your PC network settings
IP address: 192.168.100.154
Netmask: 255.255.252.0
Gateway: 192.168.100.1

Buttons: About... Find Devices

Device list:

MAC	Name	IP	* Device type	Port	Parameters
00:0A:59:04:F1:F5	RMS3 Compact	192.168.100.196	RMS3 model Compact	80	TCP setup=N, DHCP=Y

Click for details

Searching modules... 46 device(s) found on network, 1 device(s) filtered and displayed Filter: RMS3 model Compact

3. Configuring network parameters

- IP address / HTTP port (80 by default)
- Network mask
- Gateway IP address for your network
- Device name (optional)

Click **Apply Changes** to save the settings.

Details [X]

Name: Poseidon2 4002 **IP address:** 192.168.100.63 [DHCP] **Port:** 80

Open in WEB Browser

Enable DHCP

Mask: 255.255.255.0 (DHCP) **MAC:** 00:0A:59:04:A1:4E

Gateway: 192.168.100.1 (DHCP) **FW version:** 3.3.3

Enable IP access filter **Device type:** Poseidon2 model 4002 (68)

IP filter value: 0.0.0.0 **DHCP:** Supported

IP filter mask: 0.0.0.0

Default values

Load defaults

Enable NVT **Enable TCP setup** Open

Enable TEA authorisation

Check if new IP address is empty

Cancel Apply changes

Ready

! Important

- To reset the device to factory defaults, toggle DIP1 several times within 5 seconds after powering up the device.
- No configuration changes can be stored while DIP2=0n.
To change the IP address, set DIP2=0f.

4. WWW interface of the device

- **To open the WWW interface of the device:**
 - Enter the device IP address in a web browser.
 - Click the IP address in **Vertiv Config**.
 - Click the underlined IP address in SETUP.
- The WWW page displays current states of devices and sensors.

The screenshot shows the HWg-Config 1.1.1 application window. The title bar reads "HWg-Config 1.1.1 for HW group products (www.hw-group.com)". The interface includes a logo for HW group, version information (1.1.1), and the company name (HW group, s.r.o.). It also displays the user's PC network settings: IP address: 192.168.100.154, Netmask: 255.255.252.0, and Gateway: 192.168.100.1. A "Find Devices" button is visible.

The "Device list:" section contains a table with the following data:

MAC	Name	IP	* Device type	Port	Parameters
00:0A:59:04:F1:F5	RMS3 Compact	192.168.100.196	RMS3 model Compact	80	TCP setup=N, DHCP=Y

A context menu is open over the first row of the table, with the following options:

- Show detail settings of device...
- Open in WEB Browser (port 80)
- Open TCP Setup (port 99)
- Download device configuration...
- Upload device configuration...
- Load default values
- Export Devices...

At the bottom of the window, a status bar indicates: "Searching modules... 46 device(s) found on network, 1 device(s) filtered and displayed". A filter dropdown is set to "RMS3 model Compact".

Web interface

<i>General:</i>	overview of the readings
<i>General Setup:</i>	IP address, DNS
<i>Security:</i>	IP filter, security (username/password), HTTPS certificates
<i>SNMP:</i>	SNMP/SNMP Trap configuration (ports and alarm recipients)
<i>Email:</i>	configuration and test
<i>GSM:</i>	configuration and test when working with a remote SMS-GW
<i>Log & Time:</i>	time configuration, NTP server
<i>Portal:</i>	connection to a remote portal
<i>MQTT</i>	configuration of the MQTT protocol for IoT services
<i>Inputs:</i>	control of inputs, setting alarm parameters
<i>Outputs:</i>	control of outputs, setting their parameters
<i>Virtual Outputs:</i>	control of outputs from another compatible devices (B2B)
<i>System:</i>	firmware upgrade, save/restore configuration, etc.

General



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RMS3 Compact

GENERAL

Sensors

Name	ID	Current Value	Safe Range	Hysteresis	Alarm Alert
Sensor 240	22277	30.9 %RH	10.0 .. 60.0	0.0	Disabled
Sensor 241	16137	25.1 °C	10.0 .. 60.0	0.0	Disabled
Sensor 242	24814	23.8 °C	10.0 .. 60.0	0.0	Disabled

Digital Inputs (DI)

Name	ID	Current Value	Alarm Alert
Binary 1	1	0(Off)	Disabled
Binary 2	2	0(Off)	Disabled
Binary 3	3	0(Off)	Disabled
Binary 4	4	0(Off)	Disabled
Binary 5	5	0(Off)	Disabled
Binary 6	6	0(Off)	Disabled
Binary 7	7	0(Off)	Disabled
Binary 8	8	0(Off)	Disabled
Binary 9	9	0(Off)	Disabled
Binary 10	10	0(Off)	Disabled
Binary 11	11	0(Off)	Disabled
Binary 12	12	0(Off)	Disabled
Binary Logic 13	13	0(Off)	Disabled
Binary Logic 14	14	0(Off)	Disabled
Binary Logic 15	15	0(Off)	Disabled
Binary Logic 16	16	0(Off)	Disabled
Comm Monitor 1	123	0(Off)	Disabled

Digital Outputs (DO)

Name	ID	Current Value	Mode
BinOut 1	151	0(Off)	Manual
BinOut 2	152	0(Off)	Manual
BinOut 3	153	0(Off)	Manual
BinOut 4	154	0(Off)	Manual

Download

SNMP MIB: [MIB](#)
SNMP Object Identifier: [OID](#)
XML Schema Definition: [XSD](#)

Terminal Config (TCP Setup)

Connect with telnet to: [192.168.100.53](#) Port: [99](#)

For more information try <http://www.netvoo.com/>

- 1 User-defined DI names
- 2 Alarm thresholds
- 3 Action when value out of range
- 4 MIB file for SNMP software

Note: For more information, see the detailed web interface description (2nd half of the manual).

General Setup



General

General setup

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GSM

Log & Time

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Apply Changes

1 Device name, e.g.
"First floor 1"

Note: For more information, see the detailed web interface description (2nd half of the manual).



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Apply Changes

RMS3 Compact
SECURITY

IP Access Filter

IP Address Value	IP Mask Range	HTTP	SNMP
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>

User Passwords

	User Name	Password
Read Only:	<input type="text"/>	<input type="text"/>
Read Only + Outputs:	<input type="text"/>	<input type="text"/>
Read and Write:	<input type="text"/>	<input type="text"/>

HTTPS Server Certificate files

Name	Value
Type: SSLCertificateFile Description: Public key certificate file, ext. *.crt Filename: *.crt Import file: <input type="text" value="Procházet..."/> Soubor nabybrán. <input type="button" value="Upload"/> Edit File: <input type="button" value="Delete File"/>	
Type: SSLCertificateKeyFile Description: Secret key file, ext. *.key Filename: *.key Import file: <input type="text" value="Procházet"/> Soubor nabybrán. <input type="button" value="Upload"/> Edit File: <input type="button" value="Delete File"/>	
Type: SSLCACertificateFile Description: CA certificate file, ext. *.pem Filename: *.pem Import file: <input type="text" value="Procházet"/> Soubor nabybrán. <input type="button" value="Upload"/> Edit File: <input type="button" value="Delete File"/>	

Generate a private SSL key and selfsigned certificate for closed networks or testing purposes. The generated certificate is selfsigned and will be displayed as untrusted. Please add the certificate to the list of exceptions or use a certificate signed by a trusted certification authority. Please note that the generated data will replace the SSLCertificateFile and the SSLCertificateKeyFile. Generating the key can take up to 10minutes. Do not restart the device and do not search for sensors. Otherwise the key generation will be interrupted.

For more information try <http://www.vertiv.com/>

1 Filters for IP addresses which may access the device

2 Configuration of usernames and passwords for accessing the device

3 HTTPS certificates

Note: For more information, see the detailed web interface description (2nd half of the manual).

SNMP



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SNMP

General SNMP Settings

Name	Value
SNMP Port:	161
SNMP Port Listener:	162
SNMP Version:	1

SNMP Access

Community	Read	Write
---- Disabled ----	<input checked="" type="checkbox"/>	<input type="checkbox"/>
---- Disabled ----	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

SNMP Trap Destinations

Destination	Community	IP Address	Port
A.	---- Disabled ----	192.168.1.39	162
B.	---- Disabled ----		
C.	---- Disabled ----		
D.	---- Disabled ----		
E.	---- Disabled ----		

SNMP Communities

Community

MIB II System Group

Name	Value
SysContact:	support@HWgroup.cz
SysName:	RMS3 Compact
SysLocation:	

For more information by <http://www.vertiv.com/>

1 Selects SNMP protocol versions

2 5 destinations for SNMP Traps

Note: For more information, see the detailed web interface description (2nd half of the manual).

Email



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EMAIL

Email Settings

Name	Value
SMTP Server:	<input type="text" value="some.smtp.server"/> [IP Address or DNS Name]
SMTP port:	<input type="text" value="25"/>
Email Sender Address:	<input type="text" value="user@domain.com"/>
Authentication:	<input type="checkbox"/>
Secure TLS mode:	<input type="checkbox"/>
Name/Password:	<input type="text" value="User login name"/> / <input type="text"/>
Email Subject text:	<input type="text" value="Subject 0"/>

Email Destinations

Name	Value
Alarm Email Recipient:	<input type="text" value="To0@domain.com"/>
Alarm Email Copy:	<input type="text" value="To1@domain.com"/>
Alarm Email Copy:	<input type="text" value="To2@domain.com"/>
Alarm Email Copy:	<input type="text" value="To3@domain.com"/>
Alarm Email Copy:	<input type="text" value="To4@domain.com"/>
Periodic Log Recipient:	<input type="text" value="To5@domain.com"/>

Test Email

Name	Value
State:	<input type="text"/>

Periodic Status Settings

Name	Value
Periodical Status:	<input type="checkbox"/>
Period:	<input type="text" value="60"/> [minutes]
Alarm reminder:	<input type="checkbox"/>
Period:	<input type="text" value="5"/> [minutes]

For more information by <http://www.vertiv.com/>

- 1 Inserted at the beginning of the e-mail subject line
- 2 Up to 5 recipients of alarm e-mails
- 3 E-mail test result
- 4 Sends a test e-mail



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GSM

Serial Port Settings

Name	Value
Port Function:	GSM Modem

Remote SMS gateway

Name	Value
Enable:	<input checked="" type="checkbox"/>
IP Address or DNS Name:	192.168.100.129
Link/Path:	service.xml
Port:	80
Username:	
Password:	

GSM SMS Interface

Name	Value
GSM Function:	Remote
SMS + Ring When Alarm:	<input type="checkbox"/>

GSM SMS Recipients

Name	Value	Test
Alarm SMS Recipient 1:	734271366	<div style="margin-bottom: 10px;">Send Test SMS</div> <div>Ringout Test</div>
Alarm SMS Recipient 2:		
Alarm SMS Recipient 3:		
Alarm SMS Recipient 4:		
Alarm SMS Recipient 5:		

For more information by <http://www.vertiv.com/>

- 1 IP address of the Remote SMS gateway to use for sending text messages
- 2 Recipients' phone numbers

Log & Time



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LOG AND TIME

Date and Time

Name	Value	Description
Current Date:	16.11.2017	[dd.mm.yyyy]
Current Time:	08:59:24	[24 hour format]

Time Synchronization

Name	Value	Description
SNTP Server:	time.nist.gov	[IP Address or DNS Name]
Time zone:	+1hour : 0 min	
Interval:	10 hour	Sync period: 1h/10h/24h
Daylight saving time:	<input type="checkbox"/> Central European	last Sun March 2:00 - last Sun October 3:00

Synchronize Time

Device Logger Settings

Name	Value	Description
Log period:	300 [s]	
Logfile capacity:	86days, 20hours and 20minutes	
Report Log Period:	1 [h]	
Erase log after e-mail:	<input checked="" type="checkbox"/>	

Open log File Clear log File

For more information try <http://www.vertivco.com/>

- 1 Click to manually synchronize time with the specified server
- 2 Interval for logging measured values
- 3 Expected size of recorded data

Portal



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Portal Message

Value: Portal disabled

Portal

Name	Value
Portal Enable:	<input type="checkbox"/>
Server Address:	www.sensdesk.com/portal.php
IP Port:	80 Default 80
User Name:	
Password:	
Current Push Timer:	0
Current Log Timer:	0
Current Check Timer:	0
Cur. Autopush block Timer:	0
Retransmit number:	0
Manual Push:	<input type="button" value="Manual Push"/>

Digital Inputs (DI) autopush config

Name	ID	Current Value	Autopush
Binary 1	1	0(Off)	<input type="checkbox"/>
Binary 2	2	0(Off)	<input type="checkbox"/>
Binary 3	3	0(Off)	<input type="checkbox"/>
Binary 4	4	0(Off)	<input type="checkbox"/>
Binary 5	5	0(Off)	<input type="checkbox"/>
Binary 6	6	0(Off)	<input type="checkbox"/>
Binary 7	7	0(Off)	<input type="checkbox"/>
Binary 8	8	0(Off)	<input type="checkbox"/>
Binary 9	9	0(Off)	<input type="checkbox"/>
Binary 10	10	0(Off)	<input type="checkbox"/>
Binary 11	11	0(Off)	<input type="checkbox"/>
Binary 12	12	0(Off)	<input type="checkbox"/>
Binary Logic 13	13	0(Closed)	<input type="checkbox"/>
Binary Logic 14	14	0(Closed)	<input type="checkbox"/>
Binary Logic 15	15	0(Closed)	<input type="checkbox"/>
Binary Logic 16	16	0(Closed)	<input type="checkbox"/>
Comm Monitor 1	123	0(Off)	<input type="checkbox"/>

For more information try <http://www.vertivco.com/>

- 1 Message from the portal
- 2 Enables connection to the remote portal
- 3 Click to connect to the portal
- 4 AutoPush configuration

Configures the communication with the portal using the HWg-Push protocol. RMS III is the active side and establishes the connection periodically and/or whenever a change in a sensor value exceeds the configured AutoPush value.

Connection parameters for the www.SensDesk.com portal are pre-filled.

AutoPush configuration

RMS III connects to the portal and notifies a DI state change whenever the input state changes (in case of sensors, the change must exceed the configured AutoPush value).

This configuration only applies to the communication between RMS III and the online portal. Local alarm values are configured in the portal.

For portal connection, check:

1. Correct **Gateway IP** address
2. **DNS server** in the network settings
3. Correct **Server Address** of the portal



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MQTT

MQTT Settings

Name	Value	Description
MQTT Enable:	<input type="checkbox"/>	Enable/Disable MQTT Client services.
Server:	int.eclipse.org	[IP Address or DNS Name]
Port:	1883	Default 1883 or 8883 for SSL.
Username:	<input type="text"/>	
Password:	<input type="password"/>	
Secure SSL mode:	<input type="checkbox"/>	
Client ID:	<input type="text"/>	
Publish Period:	60	
Topic Prefix Name:	<input type="text"/>	

Sensors Topic

Name	ID	Publish	Topic Name = value
Sensor 240	22277	<input type="checkbox"/>	22277/Value = 30.9 %RH 22277/State = 0
Sensor 241	16137	<input checked="" type="checkbox"/>	16137/Value = 25.1 °C 16137/State = 0
Sensor 242	24814	<input type="checkbox"/>	24814/Value = 23.9 °C 24814/State = 0

Inputs Topic

Name	ID	Publish	Topic Name = value
<input type="checkbox"/>	1/Value = 0		
<input type="checkbox"/>	1/State = 0		
<input type="checkbox"/>	2/Value = 0		
<input type="checkbox"/>	2/State = 0		
<input type="checkbox"/>	3/Value = 0		
<input type="checkbox"/>	3/State = 0		
<input type="checkbox"/>	4/Value = 0		
<input type="checkbox"/>	4/State = 0		
<input type="checkbox"/>	5/Value = 0		
<input type="checkbox"/>	5/State = 0		
<input type="checkbox"/>	6/Value = 0		
<input type="checkbox"/>	6/State = 0		
<input type="checkbox"/>	7/Value = 0		
<input type="checkbox"/>	7/State = 0		
<input type="checkbox"/>	8/Value = 0		
<input type="checkbox"/>	8/State = 0		
<input type="checkbox"/>	9/Value = 0		
<input type="checkbox"/>	9/State = 0		
<input type="checkbox"/>	10/Value = 0		
<input type="checkbox"/>	10/State = 0		
<input type="checkbox"/>	11/Value = 0		
<input type="checkbox"/>	11/State = 0		
<input type="checkbox"/>	12/Value = 0		
<input type="checkbox"/>	12/State = 0		

- 1 Enables connection to the remote broker
- 2 Enables SSL for MQTT
- 3 Selects the messages to send

Configures the communication of RMS III unit with the MQTT broker. The device periodically establishes a connection to the broker, as defined by the Publish Period, and sends the messages that are selected in the **Publish** section.

Sensors



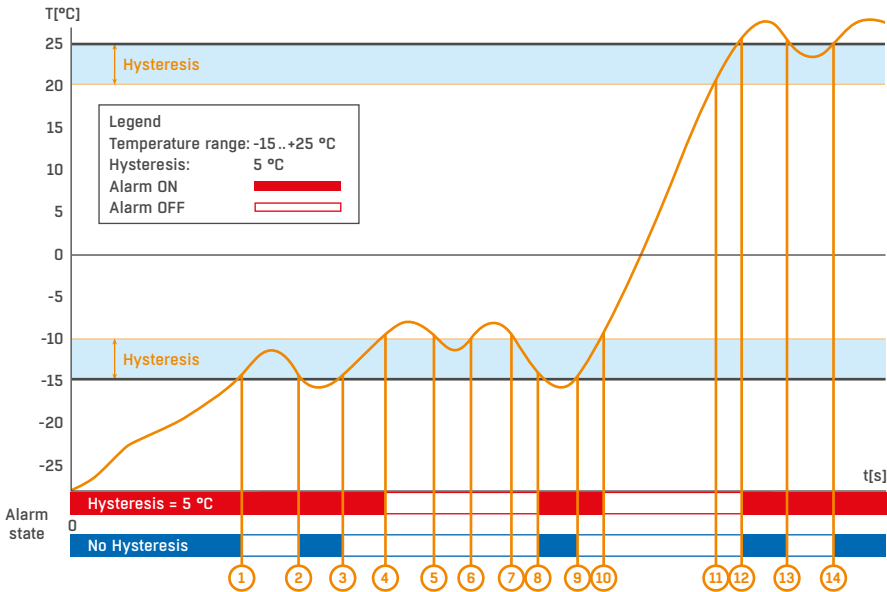
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 - Sensors**
 - Inputs
 - Inputs Logic
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 - System
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- 1 Sensor name will be shown in e-mails, text messages, or SNMP traps.
- 2 Range of allowed values. If exceeded, alarm is signaled.
- 3 Sends a **SNMP Trap** if the "Safe Range" for this sensor is exceeded.
- 4 Sends an **e-mail** if the "Safe Range" for this sensor is exceeded.
- 5 Sends a **text message (SMS)** if the "Safe Range" for this sensor is exceeded.
- 6 Sends a **SYSLOG** message if the "Safe Range" for this sensor is exceeded.
- 7 Scans connected sensors and displays detected sensors.

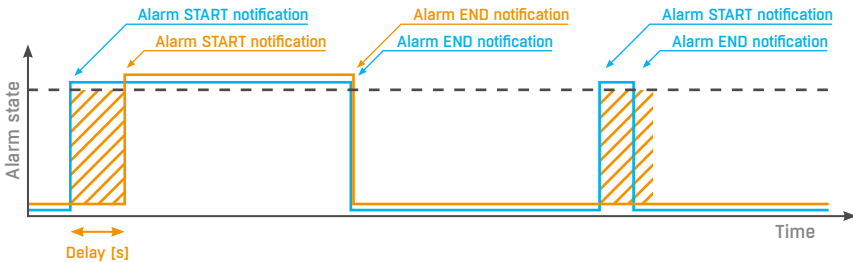
After connecting sensors or changing RJ11 connections, sensors need to be detected again.

To avoid numerous false alerts (by e-mail or SMS) whenever the reading fluctuates around the threshold, you can use:

1) **Hysteresis Idle Range** – tolerance band around the “Safe Range”. Prevents multiple alarm alerts.



2) **Delay [s]** – delays the information about alarm beginning and alarm end by a specified time. Can be used for dry contacts, too.



Alarm status notification based on a Delay value:

- **Blue:** Delay = 0
- **Yellow:** Delay is non-zero

CAUTION: Configuration changes must be confirmed by clicking the Apply Changes button.

Inputs



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Apply Changes

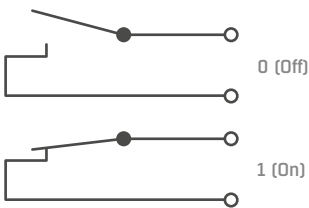
RMS3 Compact
INPUTS

Digital Inputs (DI)

Name	ID	Current Value	Alarm State	Delay[s]	SNMP Trap	Email	SMS	Syslog
Binary 1	1	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 2	2	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 3	3	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 4	4	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 5	5	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 6	6	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 7	7	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 8	8	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 9	9	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 10	10	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 11	11	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 12	12	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 13	13	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 14	14	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 15	15	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 16	16	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm Monitor 1	123	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For more information try <http://www.vertiv.com/>

- 1 Enter a DI name to show in e-mails, text messages or SNMP traps
- 2 **Alarm state of a contact:**
 - **Active if On**
alarm when the contact is **closed** (1 = On)
 - **Active if Off**
alarm when the contact is **open** (0 = Off)
 - **Disabled**
no alarm
- 3 **Reaction to DI inputs:**
 - **Disabled**
 - **Send a SNMP Trap**
 - **Send an e-mail**
 - **Send a SMS**
 - **Send a SYSLOG message**



Connecting the inputs

Frequently asked questions:

- RMS III informs about alarm activation and deactivation for each Digital Input and/or sensor.
- E-mail format cannot be changed but sensors may have custom names.
- Yellow background of the line with a sensor or an input means that the safe range is exceeded but alarm notification is off.

CAUTION: Configuration changes must be confirmed by clicking the Apply Changes button.



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DIGITAL INPUTS LOGIC (DIL)

Digital Inputs Logic (DIL)

Binary Logic 13

Source Alarm	Source Inversion	Current State	Logic function	Delay ON Sec	Delay OFF Sec	Output Inversion
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0	OR	0	0	<input type="checkbox"/>
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				

Binary Logic 14

Source Alarm	Source Inversion	Current State	Logic function	Delay ON Sec	Delay OFF Sec	Output Inversion
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0	OR	0	0	<input type="checkbox"/>
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				

Binary Logic 15

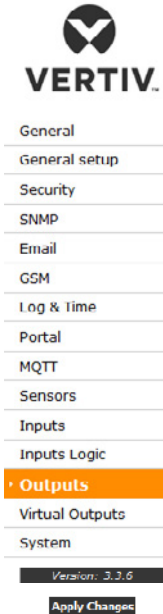
Source Alarm	Source Inversion	Current State	Logic function	Delay ON Sec	Delay OFF Sec	Output Inversion
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0	OR	0	0	<input type="checkbox"/>
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				

Binary Logic 16

Source Alarm	Source Inversion	Current State	Logic function	Delay ON Sec	Delay OFF Sec	Output Inversion
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0	OR	0	0	<input type="checkbox"/>
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				

For more information try <http://www.vertiv.com/>

Outputs



- 1 Choose the output control mode:
Manual mode: Output controlled over the WEB or M2M protocols
Local Condition mode: Controls the output according to the specified sensor
- 2 Enter a DO name to show in e-mails, text messages or SNMP traps
- 3 **Pulse output timer [s].**
By default, **Pulse Timer = 0** for standard output behavior

Pulse Timer – when set, the output is activated only for a specified duration. Pulse Timer = 0 disables this function. For details, see the *WEB interface* manual.

Output Control mode:

- A) **Manual** – the output can be controlled using the web interface or externally using M2M protocols. The output cannot be used in “thermostat” mode (local condition).
- B) **Local Condition** – the output cannot be controlled over the Web, it is controlled by a local condition. The output is read-only for all M2M protocols. Hysteresis in the sensor settings is used. In the **Local Condition** mode, outputs cannot be controlled over the WEB or using M2M protocols.
- **On if any alarm** – the output is active if at least one input or sensor is in alarm.
 - **On if value equal to Trigger** – the output is active if the selected sensor reading is equal to the “Target Value”.
 - **On if value higher than Trigger** – the output is active if the selected sensor reading is greater than the “Target Value”.
 - **On if value lower than Trigger** – the output is active if the selected sensor reading is less than the “Target Value”.
 - **On if Alarm On** – the output is active when a particular sensor or input is in the Alarm state.
 - **Dependent On** – sensor / input to which the condition applies.

Virtual outputs



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Apply Changes

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VIRTUAL OUTPUTS

Virtual Digital Outputs (VDO)

ID	Virtual Type	Basic parameters	
		Name	VirtBinOut 1
		Remote device address	
		Port	80
1151	Disabled	Remote port ID	0
		Username	
		Password	
		Name	VirtBinOut 2
		Remote device address	
		Port	80
1152	Disabled	Remote port ID	0
		Username	
		Password	
		Name	VirtBinOut 3
		Remote device address	
		Port	80
1153	Disabled	Remote port ID	0
		Username	
		Password	
		Name	VirtBinOut 4
		Remote device address	
		Port	80
1154	Disabled	Remote port ID	0
		Username	
		Password	
		Name	VirtBinOut 5
		Remote device address	
		Port	80
1155	Disabled	Remote port ID	0
		Username	
		Password	

For more information try <http://www.vertiv.com/>

- 1 Enter a VDO name to show in e-mails, text messages or SNMP traps.
- 2 IP Address and HTTP Port of the remote RMS III where the outputs will be controlled
- 3 Remote output ID
- 4 VDO type
 - Disabled – inactive
 - Network Output – accessible over HTTP (XML)

Virtual outputs of RMS III units allow the use of outputs of other compatible devices (Box2Box). It is similar to the previous mode that was based on SNMP Traps. However, Virtual Outputs use periodical (every 60 s), secure and more reliable communication over the TCP/IP protocol and support all the functions, conditions and properties as the physical outputs.



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SYSTEM

Communication Monitor

Name	Value	Description
Modbus:	<input type="checkbox"/>	Monitors communication with a device based on all selected protocols. Virtual Input "Comm Monitor 1(123)" sets to 0 in case there was any traffic using all selected protocols within the defined time.
XML/HTTP:	<input type="checkbox"/>	
SNMP:	<input type="checkbox"/>	
Time:	0 [s]	

Configuration

Name	Value	Description
Load Configuration:	Procházet... Soubor nerybrán.	<input type="button" value="Upload"/>
Save Configuration:		<input type="button" value="Download"/>

System

Name	Value	Description
Product Name:	RMS3 model Compact	
Serial Number:	7002020005	
MAC Address:	00:0A:59:04:A1:E8	
Build:	2696	
Compiled time:	Sep 18 2017, 11:54:39	
Uptime: 0days,18hours, 4minutes		<input type="button" value="Restart Device"/>
Factory Default:		<input style="border: 1px solid orange; border-radius: 50%;" type="button" value="Set Default Config"/>
Device FirmWare:	3.3.6	<input style="border: 1px solid orange; border-radius: 50%;" type="button" value="Update FW"/>

For more information try <http://www.vertiv.com/>

- 1 Restores factory defaults
- 2 Uploads new firmware from the PC

Communication Monitor

This function is useful e.g. to send a warning e-mail whenever RMS III ceases to be periodically monitored over SNMP or SCADA.

This function controls a virtual Digital Input that is available in *Inputs* as "Com Monitor 1" with the ID of 123. If no communication took place in the specified time using the selected protocols, it sets "Com Monitor 1" = 0 (Off).

When three protocols are enabled (checked), all three must function in the "OK" status.

Configuration

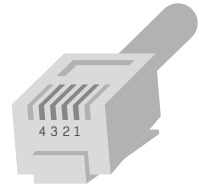
- **Upload** – restore the configuration from the PC to the device.
- **Download** – save the configuration from the device to the PC.

CAUTION: Configuration changes must be confirmed by clicking the *Apply Changes* button.

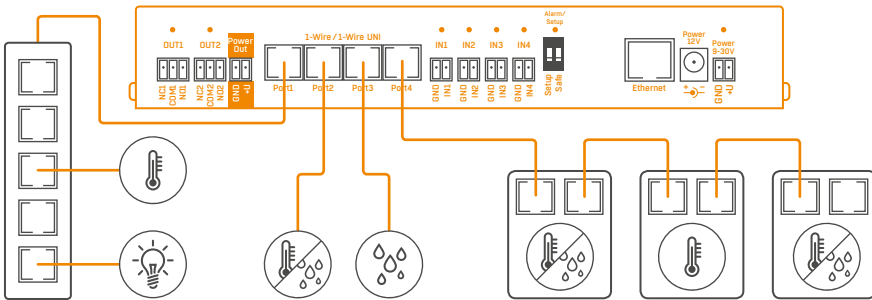
Connecting the sensors

1-Wire Bus (RJ11) sensors

- Connect the sensor before powering up the RMS III – **the connector must click in**.
- **Max. distance per active port is 60 m.**
- Sensors can be daisy chained.
- Sensors can be also connected using a star topology with the T-Box (TBox2) hub.
- If there is a change in the connected sensors, the sensors must be detected again (WWW interface > Sensors > **Autodetect sensors**).



RJ11 (4P6C)

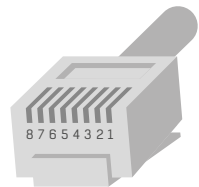


Maximum total length of all cables connected to a single port is 60 m.

RS-485 (RJ45) sensors

Industrial bus for connecting sensors over longer distances.

- Connect the sensors before powering up the unit.
- Sensors can be daisy chained, or connected to a virtual star using the “S-Hub” unit.
- **Terminate the RS485 line** with a 120Ω to 470Ω terminator. Some sensors contain a built-in, jumper- or DIP-controlled terminator. See the sensor manual.
- Check or set the sensor address. Each sensor on the RS-485 bus must have **a unique address**. The address (ID) is expressed as a letter (A..Z/a..z) or a number (65..122). The number corresponds to the ASCII code of the given letter: A=65, Z=90, a=97, z=122. For details about setting the address, see the sensor manual.
- If there is a change in the connected sensors, the sensors must be detected again (WWW interface > Sensors > **Autodetect sensors**).



RJ45 (8P8C)

Sensors are shipped with non-conflicting addresses whenever possible. The preconfigured address is written on the label.

Note: A particular sensor is identified by its RS-485 address. Sensors with the same address can be swapped without the need for a new detection.

Common features of the RMS III

Displayed readings

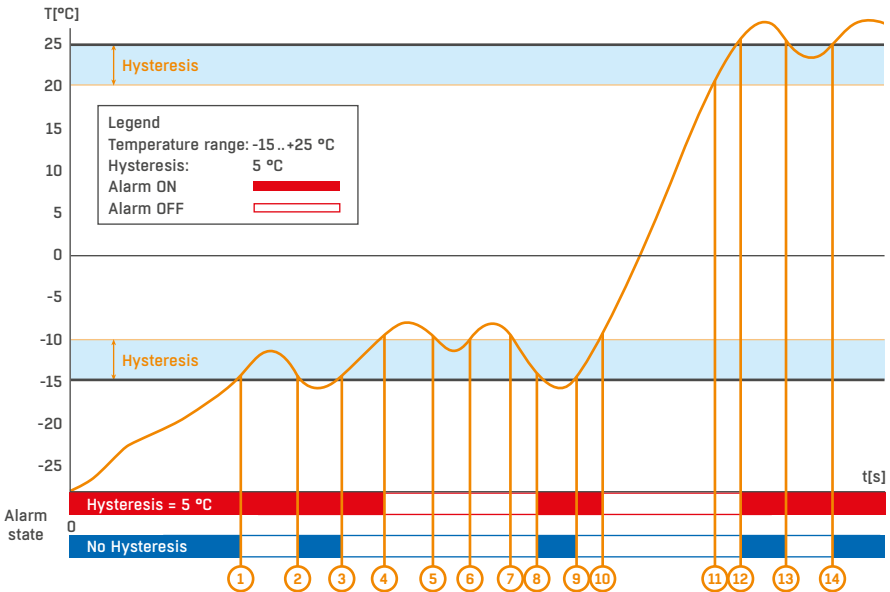
- RMS III displays current readings from all connected sensors.
- Dry contact inputs are scanned approximately every 20ms and feature pulse counters. In order to signal an alarm, the respective digital input must remain in the Alarm state for at least 900ms.
- Values from all sensors on both buses (RS-485 and 1W bus) are read in a single loop that repeats once per second; however, the actual time needed to read all sensors may vary from 1 to 30 seconds.
- All values are in the “integer / 10” format. The range is ± 999.9 .
- **A value of 999.9** is out of range for all supported sensors and indicates that the sensor was not found.
 - If you have disconnected or replaced a sensor, run sensor autodetection, or remove the sensor from the list.
 - When the RMS III unit is overloaded with network requests (as is sometimes the case, for example, with our public online demo), -999.9 can sometimes appear even though the sensor works properly. This is due to limited computing performance of the unit. Try to reduce the number of direct requests.
- Measurement units are assigned to values automatically according to the detected sensor type. Supported units include:
 - Temperature: °C, °K, °F (please note that Safe Range thresholds can be set in °C only)
 - Humidity: %RH
 - Voltage: V, current: A or mA
 - Other units: %, and more...

Input / sensor in alarm state

- Alarm state can be set independently for every input (contact)/ sensor.
- For a sensor, “Alarm” occurs whenever the reading is outside of the specified Safe Range, as long as alarm alerting is enabled for at least one notification method (SNMP / e-mail & SMS).
- **Response to a sensor being disconnected:**
 - -999.9 is displayed.
 - The value evaluates as an “Alarm” (reading out of the specified Safe Range). If alarm alerting is enabled for the given sensor, e-mail or SNMP trap is sent.

Sensor hysteresis

The Hysteresis setting defines a tolerance band for alarm alerts. This feature prevents multiple alarm alerts if the reading oscillates around the specified threshold. See the graph for an explanation.



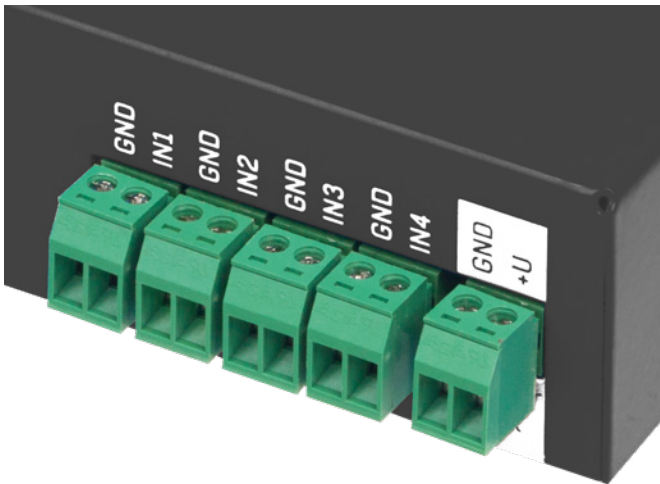
Without a hysteresis of 5°C, the alarm raised at point 8 would end at point 9. With the hysteresis function, the alarm continues until the temperature rises above the tolerance band (point 10), that is, 5 °C + (-15 °C) = -10 °C.

- **Hysteresis = 5 °C:** The unit sends **3 e-mails (SMS)**
Alarm at points **0..4, 8..10, 12 and after**
- **No hysteresis = 0 °C:** The unit sends **8 e-mails (SMS)**
Alarm at points **0..1, 2..3, 8..9, 12..13, 14 and after**

Dry contact inputs

Dry (voltage-free) contacts can be connected to the terminals. For example door contacts. The inputs are electrically connected to the power supply.

- Unconnected inputs read as **"0 (Off)"**.
- Activated inputs (closed contacts) read as **"1 (On)"**, resistance against the Common pin must not exceed 500Ω.
- RMS III inputs feature pulse counters; this can be used for example to read energy consumption from meters with a pulse output (SO). Counters are incremented whenever the input is closed. The pulse must be longer than 20 ms to be registered.



Specifications:

- **Maximum cable length:** 50 m.
- **Supported sensors:** any contact without external voltage (dry contact).
- **Alarm settings for each DI:**
 - Alarm inactive.
 - Alarm when the contact is closed.
 - Alarm when the contact is open.
- **Possible Alarm responses:** (Common setting for all inputs).
 - No response.
 - Alarm alert sent as a SNMP trap.
 - Alarm alert sent by e-mail or text message (SMS).
 - Alarm alert sent as a SNMP trap as well as by e-mail or SMS.
- **Input polling period for alarms:** approx. 900 ms.
- **Input polling period for pulse counting:** approx. 20 ms.
- **Range of sensor IDs:** inputs use ID addresses from 1 to 9.
- **Sensor names:** sensors can be named using up to 12 characters.
- **Disconnected sensor detection:** none, disconnected sensor reads as **"0 (Off)"**.

RJ11 – 1-Wire bus

Digital bus used by Dallas Semiconductors. Each sensor has a unique ID.

We recommend to keep the total wiring length under **60 m**, although functionality has been achieved over tens to hundreds of meters in experimental settings.

If the wiring connected to one connector of the RMS III unit is longer than approximately 60 m, we **cannot guarantee error-free operation**, as it greatly depends on the actual wiring implementation, topology and environment.

Active / Passive 1W port

An **active port** is the RJ11 jack at the RMS III unit. It supports the full maximum cable length and provides power for all 1-Wire UNI/1-Wire sensors.

When a sensor connected to one active port is moved to another one, it will appear disconnected. It is necessary to run the sensor auto-detection again.

A **passive port** is a RJ11 jack at a T-Hub or a RJ11 jack at a sensor (when daisy chaining). It cannot guarantee full cable length support and power for subsequent sensors. Sufficient power can be ensured with a 1-Wire hub Power unit.

1-Wire UNI (RJ11)

1-Wire **UNI** is a software extension of the 1-Wire bus.

• 1-Wire UNI sensors:

- Illumination sensor
- 4–20 mA current sensor
- 0–60 V (-48 V DC) voltage sensor
- 0–30 A AC current sensor

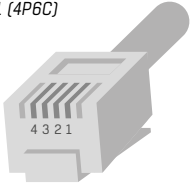
- **Maximum wiring length:** 60 m total length per active RJ11 port.

Note: The maximum length can be reduced when certain 1-Wire UNI sensors or multiple RJ11 male-female connectors are used.

- **Power to sensors:** 5 V / 20 mA from the RJ11 jack (can be boosted by a “1-Wire hub Power”).

Other parameters are identical to 1-Wire.



RJ11		
RJ11 (4P6C)		
		
1	-	Not used
2	Data	Transmit Data
3	GND	Ground
4	+5V	Power

1-Wire (UNI) bus

- **Supported sensors:** only sensors supplied by HW group.
- **1-Wire UNI:** the “UNI” software extension enables support for other than temperature and humidity sensors.
- **Communication cable:** 4-wire telephony cable.
- **Polling period:** 800 ms to 10 s.
- **Sensor address assignment:** automatic, each sensor has a unique address.
- **Disconnected sensor detection:** yes, disconnected sensor reads as “-999.9”.
- **Alarm if sensor is disconnected:** if the sensor is set to alarm whenever its reading is outside of the safe range, disconnection triggers the alarm.



RJ11 (4P6C)

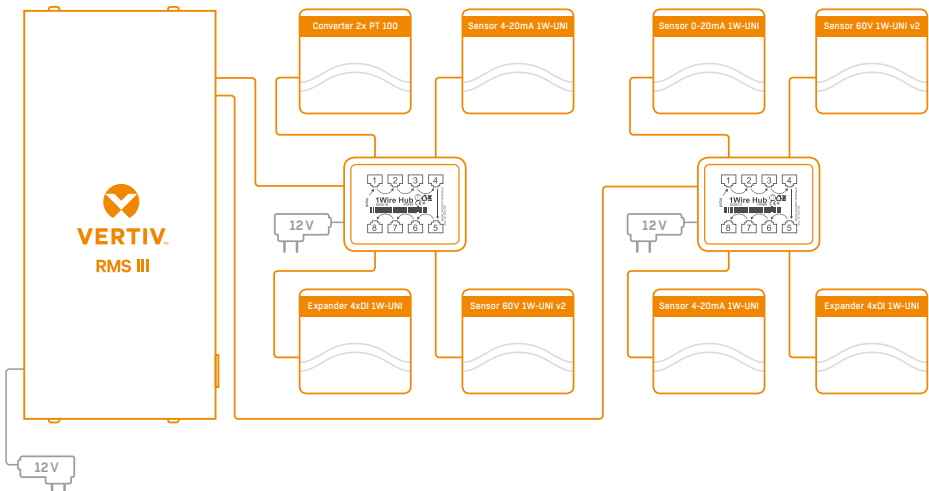
1-Wire bus accessories

- **T-Box** – 5-way hub for 1-Wire/1-Wire UNI sensors
- **1-Wire hub Power** – 8-way hub + power booster for 1-Wire/1-Wire UNI sensors
- **T-Box2** – 2-way hub for 1-Wire/1-Wire UNI sensors

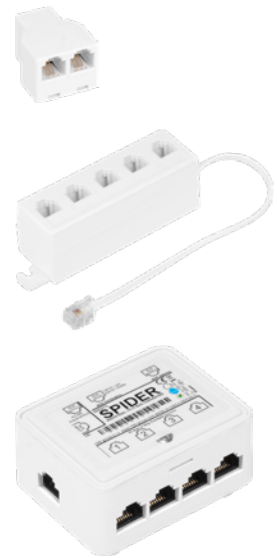
Remember: All 1-Wire bus sensors have their unique serial numbers. These are stored with sensor names during autodetection and expressed using the sensor IDs. If you change the sensors on the bus, you must re-run **Autodetection** in the Flash SETUP.

Special accessories for the 1-Wire bus

- **1-Wire hub Power** – power booster + hub for 8 sensors
 - **1× input:** 1-Wire bus
 - **1× input:** 12 V DC power
 - **8× output:** 1-Wire bus
 - **Compatible with 1-Wire** and **1-Wire UNI** bus



- **T-Box2** – hub for 2 sensors
 - **Cable length:** 1m
 - **Maximum number of connected sensors:** 2
 - **Connectors:** RJ11
 - **Bus type:** 1-Wire bus
- **T-Box** – hub for 5 sensors
 - **Cable length:** 10cm
 - **Maximum number of connected sensors:** 5
 - **Connectors:** RJ11
 - **Bus type:** 1-Wire bus
- **Spider** – bridges 1-Wire bus to RS-485
 - The Spider unit connects to RMS III over the RS-485 bus.
 - 4 sensors for the 1-Wire bus can be connected to the Spider unit.
 - Spider ONLY supports temperature, humidity, and dry contact state sensors.
 - Each sensor is connected to a separate connector and may be located up to 25m away.
 - Maximum number of connected sensors: 4× 1-Wire.
 - Sensor types: 1-Wire bus (1-Wire) (does NOT support 1-Wire UNI).
 - Connects to: RS-485.



Caution: The RMS III unit warranty explicitly excludes failures caused by connecting sensors made by other manufacturers or with excessively long wiring.

RJ45 – RS-485

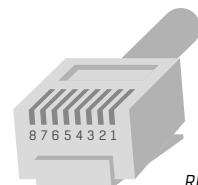
The RS-485 bus can be used to connect up to 31 sensors over up to 1000 m, even in industrial environments. For convenience and ease of use, TP cables and RJ45 modular jacks are used to wire the RS485 industrial bus.

The **RS-485 bus** uses the **blue pair** of wires (pins 4 and 5), labeled A and B. The **brown pair** (pins 7, 8) carries 12V to **power** the sensors.

If you use the S-Hub unit and the B-Cable module, the **green pair** of wires (pins 3, 6) is used for the **return RS-485 connection**. The green pair of wires is not connected at the RMS III unit.

- **Maximum wiring length:** up to 1000 m in total.
- **Supported sensors:** temperature, humidity, current, voltage and other sensors.
- **Number of sensors on the RS-485 bus:** Up to 31 physical sensors.

Port 1 – RJ45		
		1 8
1		Not used
2		Not used
3		485 B return
4		RS-485
5		
6		485 A return
7		Ground
8		Power



RJ45 (8P8C)

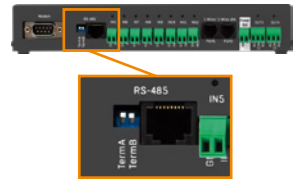
- **Power:** 12 V / 120 mA, available at the RJ45 jack. Power supplied by the bus is sufficient for up to 3 external sensors, an **S-Hub** can be added to power more sensors.
- **Communication cable:** UTP, in some cases 4-wire phone cable.
- **Alarm settings:** checking the reading against its Safe Range.
- **Polling period:** 800 ms to 10 s (depending on the number of sensors, 10 seconds for 41 sensors).
- **Sensor address assignment:** manual, each sensor must have a unique address (see the *Manual for the particular sensor*).
- **Range of sensor IDs:** sensors use IDs from 48 to 122, the address corresponds to the ASCII code of 0..9, A..Z, a..z characters.
- **Disconnected sensor detection:** yes, disconnected sensor reads as “-999.9”.
- **Alarm if sensor is disconnected:** if the sensor is set to alarm whenever its reading is outside of the safe range, disconnection triggers the alarm.

General RS-485 characteristics

- Maximum wiring length 1000 m.
- Up to 32 devices on the bus (RMS III unit + 31 sensors).
- High resistance to noise in industrial environments.
- Daisy chain topology is necessary (as opposed to star topology).
- Each device must have a unique address.
- Wire polarity must be respected.
- Line must be terminated at the beginning and at the end.



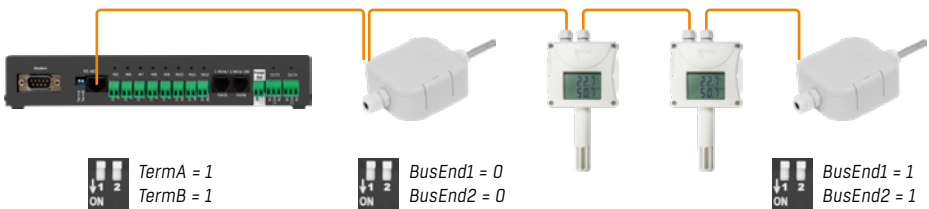
Line (daisy chain) RS-485 topology



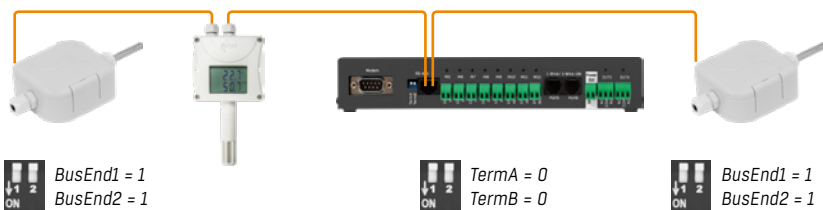
RS-485 termination at the RMS III side

RMS III includes two DIP switches, labeled TermA and TermB, to activate RS-485 termination.

RMS III at the beginning of the RS-485 bus



RMS III in the middle of the RS-485 line



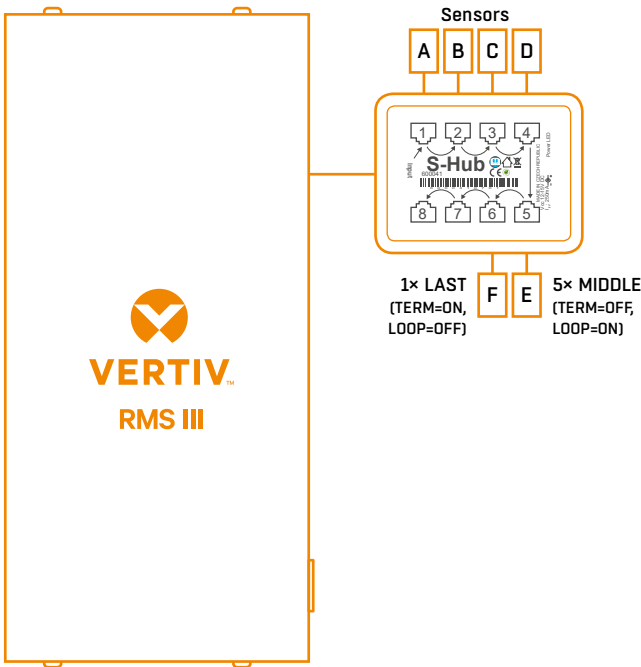
RS-485 termination

The RS-485 bus must be terminated at its end. The following options are available:

- **DIP switch** or **jumper** in certain sensors (jumper labeled TERM, TERMINATOR or BusEnd) – for example Temp-485 or HTemp-485.
- If the **B-Cable adaptor** is used, set the switches to the “LAST” configuration.
- **External resistor** for sensors without a jumper or a DIP switch (Temp-485-Pt100). Terminate the end of the RS-485 bus at the last sensor with an external resistor (connected between the A and B terminals of the last sensor).

The resistance of this resistor should be 120Ω . For a short wiring, up to 470Ω can be used to reduce the current consumption of the sensors.

Note: A disadvantage is that it is necessary to have **a wiring topology with a single beginning and a single, terminated end**, as opposed to the popular star topology with a single interconnection point.

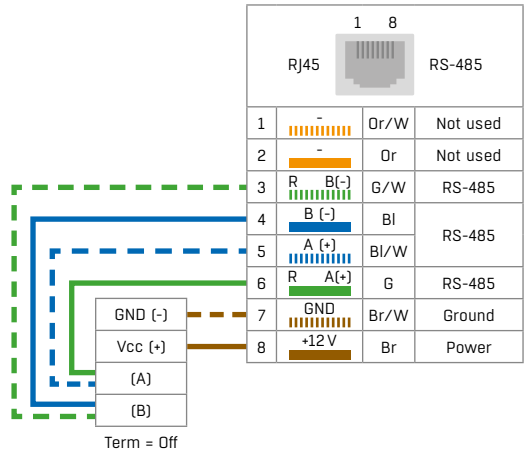


Sensor RJ45 MIDDLE cable

RS-485 cable, 0.5m, RJ45/4 pins. Connects 4 terminals (A, B, +, -) to a RJ45 jack (3 pairs).

This cable is used to connect all sensors except for the last one in the chain.

Sensors connected with this cable **must not terminate** the RS-485 bus.



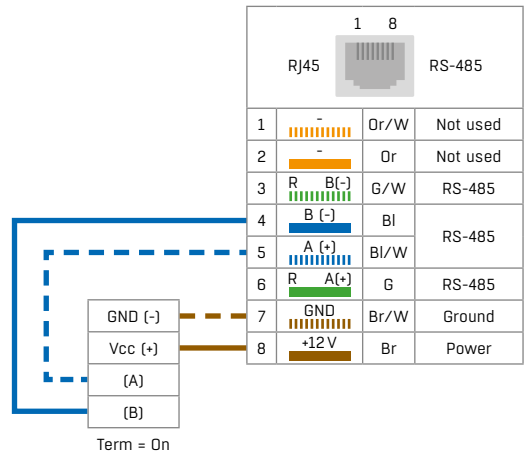
Sensor RJ45 LAST cable

RS-485 cable, 0.5m, RJ45/4 pins. Connects 4 terminals (A, B, +, -) to a RJ45 jack (2 pairs only).

This cable is used to connect the last sensor in the chain.

The sensor connected with this cable **must terminate** the RS-485 bus in one of the following ways:

- External 120Ω termination resistor.
- Jumper or DIP switch at the sensor set to TERM=ON.
- For other options, see the sensor manual.



Spider

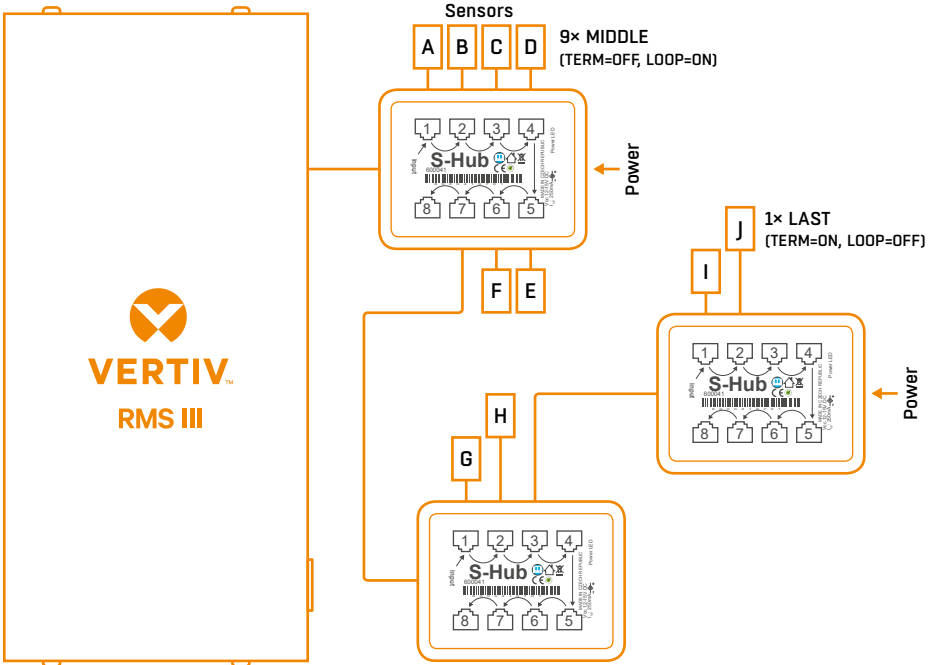
A converter to connect four 1-Wire bus sensors to the RS-485 bus. Each 1-Wire bus sensor connects to a separate connector. The Spider allows to connect RMS III with 1-Wire sensors at a greater distance (up to 1000 m between the RMS III and Spider, as defined by the RS-485 bus specification).



S-Hub – 8× RJ45 TP hub.

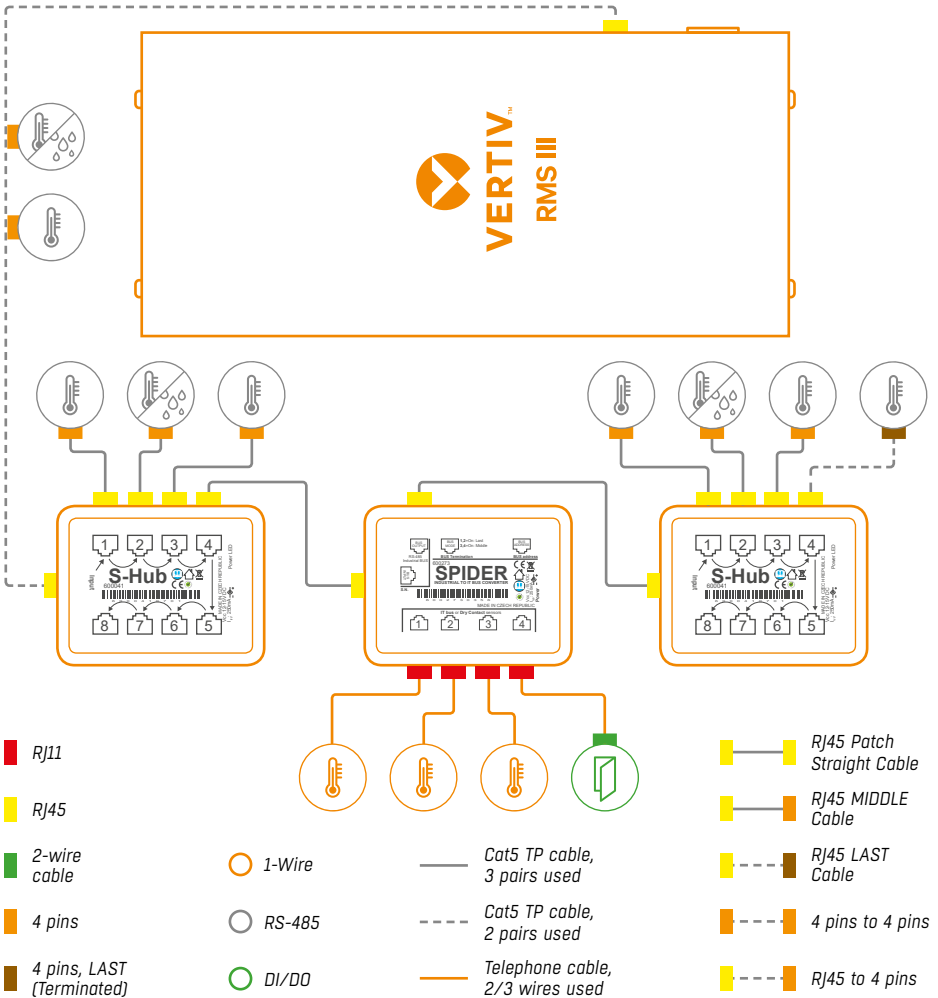
The S-Hub unit with one input and 8 output ports is used to connect up to eight RS-485 sensors with TP cables.

- Makes it possible to connect sensors in a star topology (sensors must be connected using TP cables).
- Simpler and faster connection of sensors.
- Makes expanding an installation easier.
- Easier way of powering the sensors. A standard power adapter connects directly to the S-Hub unit.



Note: It is possible to mix the star / daisy chain topologies with S-Hub, see the examples in the following chapter.

RS-485 bus wiring example



- The bus leads via a 4-wire connection from a RMS III unit to two daisy chained sensors, **Temp-485** and **HTemp-485**. Two twisted pairs are used for the connection.
- An **S-Hub** unit is daisy chained via the RJ45 jack to the second **HTemp-485** sensor using a 4-wire connection. The brown pair carries power, the blue pair is used for data.
- **Temp-485** and **HTemp-485** sensors are connected to S-Hub connectors 1 through 3 using 6-wire connections (brown pair for power, blue pair leads the bus to the device, green pair back from the device).
- Connector 4 of the first **S-Hub** unit is used to connect a **Spider** converter with a patch cable. The Spider is used to connect three **Temp-1Wire 10m** sensors and one door contact (the contact is connected to the blue RJ45 pair).

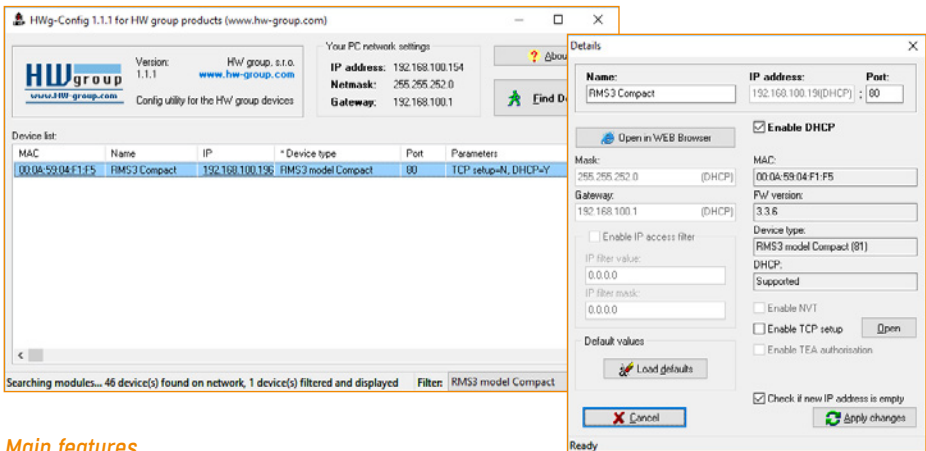
- The second **S-Hub** unit is connected with a patch cable to the **Spider** output.
- **Temp-485** and **HTemp-485** sensors are connected to S-Hub connectors 1 through 3 using 6-wire connections (brown pair for power, blue pair leads the bus to the device, green pair back from the device).
- Connector 4 connects a **Temp-485** sensor with a 4-wire connection (brown pair to power the sensor, blue pair for the A/B signals of the bus). The **Temp-485** sensor is configured to terminate the bus using the **TERM** jumper.

User interface

Vertiv Config

Vertiv Config is a freeware utility for assigning IP addresses and changing network settings over the Ethernet.

- Windows and Linux version.
- IP address is assigned to a product with a specific MAC address.
- No installation is necessary, simply run the EXE file.
- Provides a clear overview of device names and parameters.



Main features

- Concise graphical environment.
- Device name, type, MAC address, IP address and communication port is displayed after a device is found.
- Windows and Linux versions available.
- Displays current network settings of your computer.
- Checks if the IP address is in use before assigning it.
- Single-click access to the device web page.
- Ability to open a Telnet session for TCP Setup.
- Ability to restore "factory-default" settings.

WEB interface

Main communication interface.

RMS III offers a simple and user-friendly graphical WWW interface. Besides displaying current readings, the interface provides access to complete device configuration and management, including network settings, sensor configuration and alarm responses (SNMP traps).

To access the web interface, enter the RMS III IP address into the URL field of your browser.

General

The main page with the overview of sensor and input readings automatically reloads at configurable intervals (by default every 10 seconds, can be changed easily).

VERTIV™

RMS3 Compact GENERAL

Sensors

Name	ID	Current Value	Safe Range	Hysteresis	Alarm Alert
Sensor 240	28679	36.8 %RH	10.0 .. 60.0	0.0	Disabled
Sensor 242	24814	24.7 °C	10.0 .. 25.0	0.0	Email

Digital Inputs (DI)

Name	ID	Current Value	Alarm Alert
Binary 1	1	0(Off)	Alarm & Mail
Binary 2	2	0(Off)	Disabled
Binary 3	3	0(Off)	Disabled
Binary 4	4	0(Off)	Disabled
Binary 5	5	0(Off)	Alarm & Mail
Binary 6	6	0(Off)	Disabled
Binary 7	7	0(Off)	Disabled
Binary 8	8	0(Off)	Disabled
Binary 9	9	0(Off)	Disabled
Binary 10	10	0(Off)	Disabled
Binary 11	11	0(Off)	Disabled
Binary 12	12	0(Off)	Disabled
Binary Logic 13	13	0(Off)	Disabled
Binary Logic 14	14	0(Off)	Disabled
Binary Logic 15	15	0(Off)	Disabled
Binary Logic 16	16	0(Off)	Disabled
Comm Monitor 1	123	0(Off)	Disabled

Digital Outputs (DO)

Name	ID	Current Value	Mode
BinOut 1	151	0(Off)	Manual
BinOut 2	152	0(Off)	Manual
BinOut 3	153	0(Off)	Manual
BinOut 4	154	0(Off)	Manual

Download

SNMP MIB: MIB
SNMP Object Identifier: OID
XML Schema Definition: XSD

Terminal Config (TCP Setup)

Connect with telnet to: 192.168.100.53 Port 99

Version: 3.3.6

For more information try <http://www.vertivco.com/>

Sensors

The Sensors table displays information (valid at the time of the last refresh) about detected and activated sensors, including their states.

- **Name** – textual name of the input, assigned by user at the **Sensors** tab.
- **ID** – 16-bit ID of the sensor, unique within a particular device.
- **Current Value** – current sensor reading, including the measurement unit.
Note: *If a sensor is not connected, -999.9 is displayed.*
- **Safe Range** – as long as the reading stays within this range, alarm is inactive for the sensor.
- **Hysteresis** – sets the hysteresis to prevent repeated alarms when the reading fluctuates near a Safe Range threshold. For more details, see *Sensor hysteresis*.
- **Alarm Alert** – list of alarm settings for each sensor (alarm is triggered by reading out of the safe range).
- Line background color:
 - **White / no color** = input is not in alarm.
 - **Red** = input is in alarm.
 - **Yellow** = alarm is disabled for this input but the value is out of the safe range.

Digital Inputs (DI)

This section displays current states of dry contact inputs, including alarm states and settings. Active alarm is indicated by a red background of the corresponding line.

- **Name** – textual name of the input, assigned by user at the **Inputs** tab.
- **ID** – unique input ID number, as marked on the unit.
- **Current Value**
 - **0 (Off)** – open contact.
 - **1 (On)** – closed contact.
- **Alarm Alert** – list of alarm settings for each input (triggered by values out of safe range).
- **Counter** – RMS III inputs feature pulse counters; this can be used for example to read energy consumption from meters with a pulse output (SO). Counters are incremented whenever the input is closed. The pulse must be longer than 20ms to be registered.
- Line background color:
 - **Default color** = input is not in alarm.
 - **Red** = input is in alarm.

Digital Outputs

Displays current output states, including their modes.

- **Name** – textual name of the output, assigned by user at the **Outputs** tab.
- **ID** – unique output ID number, as marked on the unit.
- **Current Value**
 - **0 (Off)** – output is idle (open, COM + NO connected).
 - **1 (On)** – output is active (closed, COM + NC connected).
- **Mode** – output mode, configured at the **Outputs** tab.

Other information

- **MIB** – links to the SNMP definition file (right-click the link and select “Save Target as...” to save the file to disk).
- **OID** (SNMP Object Identifier) – provides a list of the most frequent SNMP OIDs (right-click the link and select “Save Target as...” to save the file to disk).
- **XSD** – links to the XML definition file for the values.xml file (right-click the link and select “Save Target as...” to save the file to disk).

- **Terminal Config (TCP Setup)** – link containing the IP address and the port to open a terminal session for TCP Setup.

Note: The design of the main page can be only customized after consulting the manufacturer, under our “Customization” program. For more information, contact your distributor.

General Setup

Network settings of the device: Network parameters, trusted IP address range, temperature units, output states, etc.

VERTIV™

General
General setup
 Security
 SNMP
 Email
 GSM
 Log & Time
 Portal
 MQTT
 Sensors
 Inputs
 Inputs Logic
 Outputs
 Virtual Outputs
 System

Version: 3.3.6

Apply Changes

RMS3 Compact GENERAL SETUP

Device

Name	Value
Device Name:	RMS3 Compact

Network Settings

Name	Value
IP Address:	192.168.100.53
Submask:	255.255.255.0
Gateway:	192.168.100.1
Primary DNS:	192.168.100.237
Secondary DNS:	192.168.100.250
HTTP Port:	80 0=dis, def 80
HTTPS Port:	443 0=dis, def 443
TCP Telnet Setup:	0 0=dis, def 99
Modbus TCP Port:	502 0=dis, def 502
DHCP Client:	<input checked="" type="checkbox"/>

IPV6

Name	Value
enable IPv6:	<input type="checkbox"/>
Autoconfig IP parameters:	
Link Local Address:	
IP Address / Prefix length:	
Gateway:	
Primary DNS:	
Secondary DNS:	

Other settings and information

Name	Value
Syslog IP Address:	0.0.0.0
HW Security Protection:	Disabled

For more information try <http://www.vertivco.com/>

Device name

Name assigned to this particular device. This name is shown in all overviews along with the IP address (**Vertiv Config**); it is also used as the sysname variable in SNMP.

Network Settings

This block configures the main network parameters for Ethernet communication:

- **IP address** – IP address of the unit. After a change, the device needs to be restarted.
- **Submask** – local network mask. After a change, the device needs to be restarted.
- **Gateway** – default gateway. After a change, the device needs to be restarted.
- **Primary DNS/Secondary DNS** – primary and secondary DNS server settings. Gateway needs to be set correctly for correct operation. A DNS server is necessary for converting domain names to IP addresses. Without a correctly configured DNS server, the following functions will not work:
 - Time sync (SNTP), used in e-mails and SNMP traps to timestamp events.
 - E-mailing (SMTP).
 - Logging of values with timestamps.
- **HTTP port** – port for communication using the HTTP protocol. Default is 80.
- **HTTPS port** – port for communication using the HTTPS protocol. Default is 443.
- **TCP Telnet Setup** – port for the terminal telnet setup mode. Default is 99.
- **Modbus TCP Port** – port for communication using the Modbus/TCP protocol. Default is 502.
- **DHCP Client** – activates automatic network configuration using a DHCP server. Enabled by default.

IPV6

This block groups options for operation in networks that support IPv6.

- **Enable IPV6** – enables IPv6 support.
- **Autoconfig IP parameters** – enables automatic network configuration using SLAAC.
- **Link Local Address** – link address of the device; only visible from the local network.
- **IP Address/Prefix length** – global (public) IP address and network prefix. Consists of the link address and the network prefix.
- **Gateway** – default gateway. After a change, the device needs to be restarted.
- **Primary DNS/Secondary DNS** – primary and secondary DNS server settings. Gateway needs to be set correctly for correct operation.

Other Settings and Information

- **Display Temperature In** – specifies the temperature measurement unit (C – Celsius / centigrade, F – Fahrenheit, K – Kelvin). The setting only applies to the WWW interface. All other interfaces and protocols use °C, unless specified otherwise in the interface description.
- **System temperature in** – specifies the temperature measurement unit for communication protocols and logs. Available options are degrees Celsius (default due to backward compatibility) or “by Display temp”, which uses the unit selected in the “Display temperature in” field.
- **Syslog IP Address** – IP address of the SYSLOG server for log messages.
- **HW Security Protection** – mechanical jumper can prevent any changes in the device configuration.
 - **Outputs:** Values of outputs can be changed.
 - **Configuration:** No changes to the device settings are permitted.

The protection status is displayed in the bottom left-hand corner. When the HW Protection is active, any configuration changes, including changes of the output states, are ignored. This mode is useful when connecting the RMS III to a publicly accessible network.

Note: Any changes must be confirmed by clicking the *Apply Changes* button. A successful change is indicated by an animation in the status bar next to the *Apply Changes* button.

Counters

Resets the counter states at all device inputs – see *Inputs*. Resetting the device also resets the counters.

Security

Security

Security settings. Restrictions in individual modes are shown in the following table. The rows indicate the method of accessing the device over IP, the columns specify the restrictions resulting from the respective security settings.

	No restrictions (default)	HW protection DIP = On	User Password			IP Access filter		SNMP Communities	
			Read only	Read + Outputs	Read & Write	HTTP	SNMP	Comun1	Comun2
Web index (General)	✓	✓	✓	✓	✓	filtered	✗	✗	✗
Other pages	R/W	R	R	R/W**	R/W	filtered	✗	✗	✗
Values.xml	R	R	R	R	R	filtered	✗	✗	✗
Setup.xml	R/W	R	R	R/W**	R/W	filtered	✗	✗	✗
SNMP get (next)	R	R	✗	✗	✗	✗	filtered	R*	R*
SNMP set	W	✗	✗	✗	✗	✗	filtered	[R*/]W*	[R*/]W*
Modbus/TCP	R/W	R	✗	✗	✗	✗	✗	✗	✗
TCP setup	✓	✗	✗	✗	✓	✗	✗	✗	✗
Vertiv Config	R/W	R	✗	✗	✗	✗	✗	✗	✗
FW update	✓	✗	✗	✗	✓	filtered	✗	✗	✗
M2M outputs	R/W	R/W	R	R/W	R/W	✗	✗	✗	✗

* R and/or W must be enabled on the **SNMP Setup** tab by checking appropriate boxes.

** Only outputs can be changed, nothing else. Even the output mode cannot be changed.

Note: The "No restrictions" column reflects the default configuration (also shown in the screenshots). That is, HW protection DIP=Off, no password set, IP Access filter set to 0.0.0.0/0.0.0.0.

IP Access Filter

IP Address Value	IP Mask Range	HTTP	SNMP
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>
0.0.0.0	0.0.0.0	<input type="checkbox"/>	<input type="checkbox"/>

User Passwords

User Name	Password
Read Only:	<input type="text"/>
Read Only + Outputs:	<input type="text"/>
Read and Write:	<input type="text"/>

HTTPS Server Certificate files

Name	Value
Type: SSLCertificateFile Description: Public key certificate file, ext. *.ct Filename: *.ct Import file: <input type="button" value="Procházet..."/> Soubor nevybrán. <input type="button" value="Upload"/> Edit File: <input type="button" value="Delete File"/>	
Type: SSLCertificateKeyFile Description: Secret key file, ext. *.key Filename: *.key Import file: <input type="button" value="Procházet..."/> Soubor nevybrán. <input type="button" value="Upload"/> Edit File: <input type="button" value="Delete File"/>	
Type: SSLCACertificateFile Description: CA certificate file, ext. *.pem Filename: *.pem Import file: <input type="button" value="Procházet..."/> Soubor nevybrán. <input type="button" value="Upload"/> Edit File: <input type="button" value="Delete File"/>	
Generate: Generate a private SSL key and selfsigned certificate for closed networks or testing purposes. The generated certificate is selfsigned and will be displayed as untrusted. Please add the certificate to the list of exceptions or use a certificate signed by a trusted certification authority. Please note that the generated data will replace the SSLCertificateFile and the SSLCertificateKeyFile. Generating the key can take up to 10minutes. Do not restart the device and do not search for sensors. Otherwise the key generation will be interrupted.	<input type="button" value="Generate the SSL key and certificate"/>

For more information try <http://www.vertiv.com/>

IP Access Filter

Allows defining a range of trusted IP addresses that are allowed to access the RMS III over HTTP and SNMP. The IP range is configured separately for each protocol.

To set up the filter, specify the base IP address and the mask that define the trusted range according to the formula below (AND is bitwise multiplication). Access is granted if the condition is true.

$$(IP \text{ trying to access AND Mask Value}) = IP \text{ Address Value}$$

IP Filter settings		Access granted to from .. to	Note
IP Address Value	Mask Value		
192.168.1.2	192.168.1.2	192.168.1.2	Only one IP allowed
192.168.1.87	192.168.1.87	192.168.1.87	Only one IP allowed
192.168.1.0	192.168.1.224	192.168.1.0..192.168.1.31	32 allowed addresses
192.168.1.0	192.168.1.0	192.168.1.0..192.168.1.255	All 192.168.1.x addresses (256) allowed
192.168.0.2	192.168.254.255	192.168.0.2 and 192.168.1.2	Only 1 address but on two networks
192.168.0.0	192.168.252.240	192.168.0.0..192.168.0.15 192.168.1.0..192.168.1.15 192.168.2.0..192.168.2.15 192.168.3.0..192.168.3.15	4× 16 addresses allowed

User Passwords

Three separate user accounts (username and password) can be set up for SNMP and HTTP access.

- Account types:
 - **Read Only** – can only read values and configuration settings.
 - **Read Only + Outputs** – can read values and set outputs, cannot change configuration settings (not even input names).
 - **Read & Write** – can perform any changes.
- The “Read Only” account has only read access to values, cannot perform any configuration changes. The “Read&Write” account can change configuration settings.
- After setting up a username and a password, you will be asked to log in every time you try to open the Web interface.
- Passwords also apply to access to /values.xml and /setup.xml – see the table.

In case of “Read Only” user for HTTP access, you will no longer be able to change configuration settings in the web interface.

What to do if you forget your password

- Restore the factory-default configuration of the device by one of the following methods:
 - Use the **Vertiv Config** utility (on a PC in the same LAN).
Right-click the line corresponding to the device and select “**Load to defaults**” from the pop-up menu.
 - Use the **DIP Load default** function.
Toggle DIP1 several times during the first 5 seconds after powering up the device.

HTTPS Server Certificate files

Used to manage certificates needed for the HTTPS server. Allows you to upload or delete a public key, a private key, or a certificate of the certificate authority (CA) that has issued the public key certificate.

Generate the SSL key and certificate

Generate a private SSL key and self-signed certificate for closed networks or testing purposes. The generated certificate is self-signed and will be displayed as untrusted. Please add the certificate to the list of exceptions or use a certificate signed by a trusted certification authority. Please note that the generated data will replace the SSLCertificateFile and the SSLCertificateKeyFile. Generating the key can take up to 10 minutes. Do not restart the device and do not search for sensors. Otherwise the key generation will be interrupted.

SNMP

The SNMP tab allows to configure the settings for communication with RMS III using the SNMP protocol. The page content is slightly different for SNMPv1 and SNMPv3. See the next sections for details.

SNMPv1

VERTIV

General
General setup
Security
SNMP
Email
GSM
Log & Time
Portal
MQTT
Sensors
Inputs
Inputs Logic
Outputs
Virtual Outputs
System

Version: 3.3.6

Apply Changes

RMS3 Compact

SNMP

General SNMP Settings

Name	Value
SNMP Port:	161
SNMP Port Listener:	162
SNMP Version:	1

SNMP Access

Community	Read	Write
Public	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Private	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

SNMP Trap Destinations

Destination	Community	IP Address	Port
A.	Public	192.168.1.39	162
B.	---- Disabled ----		
C.	---- Disabled ----		
D.	---- Disabled ----		
E.	---- Disabled ----		

SNMP Communities

Community
Public
Private

MIB II System Group

Name	Value
SysContact:	
SysName:	RMS3 Compact
SysLocation:	

For more information try <http://www.vertivco.com/>

General SNMP Settings

- **SNMP port** – communication port to use for the SNMP protocol **[161]**.
- **SNMP Port Listener** – port for receiving SNMP traps from RMS III devices in Box2Box communication mode **[162]**.
- **SNMP Version** – configures SNMP protocol version **[1]**.

SNMP Access

Defines names and access rights for user groups that can work with the RMS III unit.

- **Community** – textual name of the authorized group (by default **Public** and **Private**).
 - **Read** – the community is authorized to read variables over SNMP.
 - **Write** – the community is authorized to write values to variables over SNMP.

SNMP Trap Destination

Destinations for sending SNMP Traps.

- **Community** – textual name of the group for the SNMP trap being sent.
- **IP address** – destination address where the SNMP traps are sent.
- **Port** – destination port where the SNMP traps are sent.

SNMP Communities

- **Community** – textual name of the security group.

MIB II System Group

User-defined data in the standard SNMP header.

- **SysContact** – contact information of the system administrator, e.g. an e-mail address.
- **SysName** – same as the device name.
- **SysLocation** – location of the unit, e.g. "IT room, floor 2".

Note: Any changes must be confirmed by clicking the Apply Changes button. A successful change is indicated by an animation in the status bar next to the Apply Changes button.

SNMPv3

VERTIV

RMS3 Compact SNMP

General SNMP Settings

Name	Value
SNMP Port:	161
SNMP Port Listener:	162
SNMP Version:	3

SNMP Access

User name	Read	Write
Public	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Private	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

SNMP Trap Destinations

Destination	User name	IP Address	Port
A.	Public	192.168.1.39	162
B.	---- Disabled ----		
C.	---- Disabled ----		
D.	---- Disabled ----		
E.	---- Disabled ----		

SNMP Users

User name	Auth. Type	Auth. Password	Privacy Type	Privacy Password
Public	MDS	****	DES	****
Private	SHA	****	AES	****
	None		None	
	None		None	
	None		None	

MIB II System Group

Name	Value
SysContact:	support@HWgroup.cz
SysName:	RMS3 Compact
SysLocation:	

For more information try <http://www.vertivco.com/>

Version: 3.3.6

Apply Changes

General SNMP Settings

- **SNMP port** – communication port to use for the SNMP protocol **[161]**.
- **SNMP Port Listener** – port for receiving SNMP traps from RMS III devices in Box2Box communication mode **[162]**.
- **SNMP Version** – configures SNMP protocol version **[1]**.

SNMP Access

Defines names and access rights for user groups that can work with the RMS III unit.

- **User name** – textual name of the authorized group (by default **Public** and **Private**).
 - **Read** – the community is authorized to read variables over SNMP.
 - **Write** – the community is authorized to write values to variables over SNMP.

SNMP Trap Destination

Destinations for sending SNMP Traps.

- **User name** – textual name of the group for the SNMP trap being sent.
- **IP address** – destination address where the SNMP traps are sent.
- **Port** – destination port where the SNMP traps are sent.

SNMP Users

User names and passwords for SNMPv3 communication.

- **User name** – user name.
- **Auth. Type** – cipher type for user authentication. Available options are MD5 and SHA.
- **Auth. Password** – password for user authentication.
- **Privacy Type** – cipher type for encrypting the communication. Available options are DES and AES.
- **Privacy Password** – password (key) for encrypting the communication.

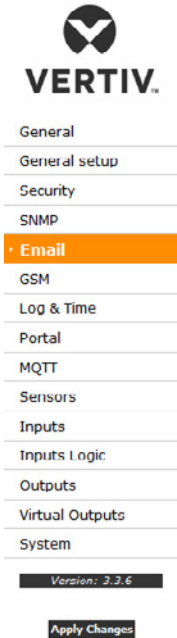
MIB II System Group

User-defined data in the standard SNMP header.

- **SysContact** – contact information of the system administrator, e.g. an e-mail address.
- **SysName** – same as the device name.
- **SysLocation** – location of the unit, e.g. "IT room, floor 2".

Note: Any changes must be confirmed by clicking the *Apply Changes* button. A successful change is indicated by an animation in the status bar next to the *Apply Changes* button.

Email



- **SMTP Server** – host name or IP address of the SMTP server.
- **SMTP Port** – port for communication with the SMTP server (**25** by default).
- **Email Sender Address** – e-mail address that will be shown in the “From” field.
- **Authentication** – enables username/password authentication if the SMTP server requires it.
- **Secure TLS mode** – activates SSL/TLS authentication (e.g. for gmail).
- **Name** – username for authentication with the SMTP server.
- **Password** – password for authentication with the SMTP server.
- **Email Subject Text** – subject of the e-mails sent, followed by the default e-mail text (see e-mail format).
- **Alarm Email Recipient** – e-mail address of the main recipient (To).
- **Alarm Email Copy** – e-mail address of the carbon-copy recipient (Cc).
- **Periodic Log Recipient** – e-mail address of the recipient for periodically e-mailed logs.
- **Send Test Email** button – sends a test e-mail.

Periodic Status Settings

- **Periodical Status** – when enabled, sends an e-mail with device status at the specified intervals. For example every 24 hours (1440 minutes).
- **Alarm reminder** – when active, sends periodic reminders that the device is in the Alarm state. For example every 15 minutes.

To send e-mail, check:

1. Correct **Gateway IP** address
2. **DNS server** in the network settings
3. **SMTP server** and port
4. **Authentication** enabled, correct **username** and **password**
5. **Spam filter** for your mailbox is disabled

Tip: It is not always necessary to configure a **SMTP Server** in order to send e-mails. RMS III can work as SMTP server itself and deliver the e-mails directly to the user's mailbox. However, always test this mode in your particular environment – the e-mails sent in this mode are often blocked by various spam filters due to missing reverse MX records. RMS III can only send e-mails, it cannot receive them.

Received e-mail example

This e-mail is sent upon every alarm activation and deactivation.

```
DATE           TIME           Device_NAME     Device_IP
10.10.2005     15:04:27      Server_room1    192.168.1.20

Email initiated: 48245         T-Room          Alarm ACTIVATED

-----
ID      SENSOR_Name     VALUE  UNIT   Safe_RANGE  ALARM
-----
ALARM state:
-----
48245  T-Room          25.30  °C    -45.0 .. 22.0  Enabled
1      C-water         OFF                    if OFF

Sensors list:
-----
48245  T-Room          25.30  °C    -45.0 .. 22.0  Enabled
1559  H-Room          53.00  %RH   30.0 .. 80.0   Enabled
  48  T-Srv01         -27.30  °C    -49.0 .. -25.1  Disabled
 257  ABCDEFGHIJKLMNO -109.30  °C    -150.0 .. -105.0 Enabled
    1  C-water         OFF                    if OFF
    2  C-AirFl         OFF                    if ON
    3  C-Door1         OFF                    Disabled

-----
Server_room1:      http://192.168.1.20      00:0A:59:00:00:00
-----
```

Tip: For detailed description of the e-mail format, see the “Using RMS III units in your programs”.

Sending a test e-mail

Multiple systems need to be configured correctly in order to send e-mails from the device successfully. Therefore, it is advisable to double-check the following parameters:

- **Gateway** in the network settings.
- **DNS server** in the network settings.
- **SMTP server** and port.
- **Authentication** enabled, correct **username** and **password**.
- **Spam filter** for your mailbox is disabled.

GSM

The screenshot displays the VERTIV RMS3 Compact web interface for GSM configuration. On the left is a navigation menu with options: General, General setup, Security, SNMP, Email, **GSM** (highlighted), Log & Time, Portal, MQTT, Sensors, Inputs, Inputs Logic, Outputs, Virtual Outputs, and System. Below the menu, it shows 'Version: 3.3.6' and an 'Apply Changes' button.

The main content area is titled 'RMS3 Compact' and 'GSM'. It contains three sections:

- Serial Port Settings:** A table with columns 'Name' and 'Value'. The 'Port Function' is set to 'Disabled'.
- Remote SMS gateway:** A table with columns 'Name' and 'Value'. The 'Enable' checkbox is checked. The 'IP Address or DNS Name' is '192.168.100.129', 'Link/Path' is 'service.xml', and 'Port' is '80'. 'Username' and 'Password' fields are empty.
- GSM SMS Interface:** A table with columns 'Name' and 'Value'. The 'GSM Function' is 'Remote' and the 'SMS + Ring When Alarm' checkbox is checked.

Below these is the **GSM SMS Recipients** section, which is a table with columns 'Name', 'Value', and 'Test'. It lists five 'Alarm SMS Recipient' entries. The first recipient has the value '734271366'. There are 'Send Test SMS' and 'Ringout Test' buttons to the right of the table.

At the bottom, it says: 'For more information try <http://www.vertivco.com/>'

Serial Port Settings

Port Function – sets the serial port function (only for models with a serial port and the netGSM server side feature). 2 options are available:

- **Disabled** – serial port is off. Only if no modem is connected and the device works as the client side.
- **GSM modem** – a GSM modem is connected, and RMS III also acts as a netGSM server.

Remote SMS gateway

Configures the IP address, HTTP port and path to the service for sending SMS requests. **For RMS III, the path is always service.xml.**

GSM SMS interface

Configures the parameters for sending text messages.

Name	Value
------	-------

Port Function: GSM Modem

Name	Value
------	-------

GSM Function: Local

SMS + Ring When Alarm:

RS-232 GSM Module: Not enabled

SMS Center Number:

- **GSM Function** – selects whether SMS are sent through a local modem (only available if the serial port is in GSM Modem mode).
- **SMS+Ring when Alarm** – enables sending a SMS and then dialing the number.
- **RS-232 GSM module** – indicates if the GSM modem is ready.
 - **Not Enabled** – inactive. Shown after changing RS-232 port configuration but before saving it.
 - **Not Found** – RMS III is configured for a locally-connected GSM modem but the modem was not found.
 - **Waiting for modem** – looking for the modem.
 - **Initializing** – the modem is being initialized.
 - **Ready** – the modem is ready.
- **SMS center Number** (only for RMS III with a RS-232 modem connected) – provider's SMS center number, as read from the SIM card. If the number has not been read, it is not possible to send SMS.

GSM SMS recipients

Configures the numbers of SMS recipients, regardless of the mode of operation (local/remote modem).

- **Send Test SMS** – sends a test SMS to all configured numbers.
- **RingOut Test** – dials all configured numbers.

Example of a received SMS:

- Device name: **RMS III**
- Sensors in Alarm:
 - Rack11 = 48.5°C, threshold is 40°C
 - T-Room = 48.3°C, threshold is 35°C
 - H-Room = 10% RH, threshold is 45% RH

RMS III ALARM: Rack11(48,5), T-Room(48,3), H-Room(10)

Tip: For detailed description of the SMS format, see the “Using RMS III units in your programs”.

Note: Any changes must be confirmed by clicking the Apply Changes button. A successful change is indicated by an animation in the status bar next to the Apply Changes button.

Log & Time

This tab lets you configure the date, time, and logging options.

The screenshot shows the 'Log & Time' configuration page in the RMS3 Compact WEB interface. The interface has a dark header with 'RMS3 Compact' and 'LOG AND TIME'. On the left is a navigation menu with 'Log & Time' highlighted. The main content area is divided into three sections: 'Date and Time', 'Time Synchronization', and 'Device Logger Settings'. Each section contains a table with columns for Name, Value, and Description.

VERTIV.

General
General setup
Security
SNMP
Email
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Log & Time
Portal
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Sensors
Inputs
Inputs Logic
Outputs
Virtual Outputs
System

Version: 3.3.6

Apply Changes

RMS3 Compact

LOG AND TIME

Date and Time

Name	Value	Description
Current Date:	16.11.2017	[dd.mm.yyyy]
Current Time:	08:59:24	[24 hour format]

Time Synchronization

Name	Value	Description
SNTP Server:	time.nist.gov	[IP Address or DNS Name]
Time zone:	+1hour : 0 min	
Interval:	10 hour	Sync period: 1h/10h/24h
Daylight saving time:	<input type="checkbox"/> Central European	last Sun March 2:00 - last Sun October 3:00

Synchronize Time

Device Logger Settings

Name	Value	Description
Log period:	300 [s]	
Logfile capacity:	86days, 20hours and 20minutes	
Report Log Period:	1 [h]	
Erase log after e-mail:	<input checked="" type="checkbox"/>	

Open log File Clear log File

For more information try <http://www.vertivco.com/>

Date and Time

Current date and time settings.

- **Current Date** – date in the [dd.mm.yyyy] format, for example: **04.10.2017**.
- **Current Time** – current time in the 24-hour [hh:mm:ss] format, for example: **14:28:39**. The time increases automatically while the browser window is open.

Time Synchronization

SNTP server settings for time synchronization. If the time is not set (the date 1. 1. 1970 is displayed), the device attempts to synchronize the time approximately once per hour until successful.

- **SNTP Server** – IP address or host name of the SNTP server to synchronize the time with. Preconfigured server is *ntp1.sth.netnod.se*.

Note: *The clock does not run when RMS III is powered off. The unit contains no battery. After a power failure, the time will be synchronized with the SNTP server.*

Data Logger Settings

Configuration parameters for logging values to a circular buffer within the internal flash memory. When the buffer is full, the oldest values are overwritten with the newest ones.

- **Log Period** – period of logging into the logfile for all values.
- **Logfile capacity** – the capacity estimate is given in days, hours and minutes. RMS III calculates the capacity based on the number of sensors detected.
Caution: *When the circular buffer is full, the remaining capacity shown will be zero. Clear the buffer to find out the total capacity.*
- **Report Log Period** – period for e-mailing the log.
- **Erase log after e-mail** – the log is cleared after it is e-mailed. This reduces attachment size and can speed up data transfer.
- **Open log File** – stores the current logfile to disk by invoking the external **/spilog.txt** file.
- **Clear log File** – clears all values from the logfile by calling the external **/spilog.del** file.

Note: *Any changes must be confirmed by clicking the Apply Changes button. A successful change is indicated by an animation in the status bar next to the Apply Changes button.*

Portal

Configures the communication with the portal using the HWg-Push protocol. RMS III is the active side and establishes the connection periodically and/or whenever a change in a sensor value exceeds the configured AutoPush value.

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Version: 3.3.6

Apply Changes

RMS3 Compact

PORTAL

Portal Message

Value
Portal disabled

Portal

Name	Value
Portal Enable:	<input type="checkbox"/>
Server Address:	<input type="text" value="www.sensdesk.com/portal.php"/>
IP Port:	<input type="text" value="00"/> Default 00
User Name:	<input type="text"/>
Password:	<input type="password"/>
Current Push Timer:	0
Current Log Timer:	0
Current Check Timer:	0
Cur. Autopush Block Timer:	0
Retransmit number:	0
Manual Push:	<input type="button" value="Manual Push"/>

Digital Inputs (DI) autopush config

Name	ID	Current Value	Autopush
Binary 1	1	0(Off)	<input type="checkbox"/>
Binary 2	2	0(Off)	<input type="checkbox"/>
Binary 3	3	0(Off)	<input type="checkbox"/>
Binary 4	4	0(Off)	<input type="checkbox"/>
Binary 5	5	0(Off)	<input type="checkbox"/>
Binary 6	6	0(Off)	<input type="checkbox"/>
Binary 7	7	0(Off)	<input type="checkbox"/>
Binary 8	8	0(Off)	<input type="checkbox"/>
Binary 9	9	0(Off)	<input type="checkbox"/>
Binary 10	10	0(Off)	<input type="checkbox"/>
Binary 11	11	0(Off)	<input type="checkbox"/>
Binary 12	12	0(Off)	<input type="checkbox"/>
Binary Logic 13	13	0(Closed)	<input type="checkbox"/>
Binary Logic 14	14	0(Closed)	<input type="checkbox"/>
Binary Logic 15	15	0(Closed)	<input type="checkbox"/>
Binary Logic 16	16	0(Closed)	<input type="checkbox"/>
Comm Monitor 1	123	0(Off)	<input type="checkbox"/>

For more information try <http://www.vertivco.com/>

Connection parameters for the www.SensDesk.com portal are pre-filled.

Portal Message

Information from the portal, such as links to graphs. Depends on the portal type.

Portal

- **Portal enable** – turns this feature on or off.
- **Server Address** – complete URL of the remote server.
- **IP Port** – port where the portal listens.
- **User Name** – user name for assigning to a user. You will receive it from your portal administrator.
- **Password** – password for assigning to a user. You will receive it from your portal administrator.
- **Current Push Timer** – indicates the remaining time before the next periodic data upload.
- **Current Log Timer** – indicates the remaining time before the next caching of data.
- **Current Autopush Block Timer** – indicates the delay from one AutoPush upload to the next. The period is configured from the portal.
- **Retransmit number** – number of retransmissions if a Push fails.
- **Manual Push** – button for immediate manual upload of data to the portal.

AutoPush configuration

RMS III connects to the portal immediately and notifies a value change whenever a change in the sensor reading exceeds the configured AutoPush value.


This configuration only applies to the communication between RMS III and the online portal. Local alarm values are configured in the portal.

For portal connection, check:

1. Correct **Gateway IP** address
2. **DNS server** in the network settings
3. Correct **Server Address** of the portal

MQTT

Used to connect RMS III to an IoT network using the MQTT protocol.



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- Log & Time
- Portal
- MQTT**
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- Virtual Outputs
- System

Version: 3.3.6

Apply Changes

RMS3 Compact

MQTT

MQTT Settings

Name	Value	Description
MQTT Enable:	<input type="checkbox"/>	Enable/Disable MQTT Client services.
Server:	<input type="text" value="iot.eclipse.org"/>	[IP Address or DNS Name]
Port:	<input type="text" value="1883"/>	Default 1883 or 8883 for SSL.
Username:	<input type="text"/>	
Password:	<input type="password"/>	
Secure SSL mode:	<input type="checkbox"/>	
Client ID:	<input type="text"/>	
Publish Period:	<input type="text" value="60"/>	
Topic Prefix Name:	<input type="text"/>	

Sensors Topic

Name	ID	Publish	Topic Name = value
Sensor 240	22277	<input type="checkbox"/>	22277/Value = 30.9 %RH 22277/State = 0
Sensor 241	16137	<input type="checkbox"/>	16137/Value = 25.1 °C 16137/State = 0
Sensor 242	24814	<input type="checkbox"/>	24814/Value = 23.9 °C 24014/State = 0

Inputs Topic

Name	ID	Publish	Topic Name = value
<input type="checkbox"/>	1/Value = 0		
<input type="checkbox"/>	1/State = 0		
<input type="checkbox"/>	2/Value = 0		
<input type="checkbox"/>	2/State = 0		
<input type="checkbox"/>	3/Value = 0		
<input type="checkbox"/>	3/State = 0		
<input type="checkbox"/>	4/Value = 0		
<input type="checkbox"/>	4/State = 0		
<input type="checkbox"/>	5/Value = 0		

Outputs Topic

Name	ID	Publish	Topic Name = value
BinOut 1	151	<input type="checkbox"/>	151/Value = 0
BinOut 2	152	<input type="checkbox"/>	152/Value = 0
BinOut 3	153	<input type="checkbox"/>	153/Value = 0
BinOut 4	154	<input type="checkbox"/>	154/Value = 0

User Topic

Name	Value
User Topic Enable:	<input type="checkbox"/>
Topic Name:	<input type="text"/>
Topic Value:	<input type="text"/>
Topic Test:	<input type="text"/>

Test User Topic

For more information try <http://www.vertivco.com/>

MQTT Settings

- **MQTT Enable** – enables or disables data transfer using the MQTT protocol.
- **Server** – IP address or domain name of the MQTT broker server.
- **Port** – TCP port where the MQTT broker listens (default is 1883, or 8883 for SSL).
- **Username** – user name for logging in to the MQTT broker.
- **Password** – password for logging in to the MQTT broker.
- **Secure SSL mode** – enables or disables SSL support when communicating with the MQTT broker.
- **Client ID** – device ID in the MQTT network.
- **Publish Period** – frequency of sending data to the MQTT broker.
- **Topic Prefix Name** – MQTT Topic (address) prefix.

Sensors Topic

- **Name** – corresponds to the **Name** at the **Sensors** tab.
- **ID** – corresponds to the **ID** at the **Sensors** tab.
- **Publish** – enables or disables the sending of information about a particular sensor.
- **Topic Name = value** – complete Topic after the prefix:
 - **x/Value** – current sensor value.
 - **x/State** – current sensor state.

Inputs Topic

- **Name** – corresponds to the **Name** at the **Inputs** tab.
- **ID** – corresponds to the **ID** at the **Inputs** tab.
- **Publish** – enables or disables the sending of information about a particular input.
- **Topic Name = value** – complete Topic after the prefix:
 - **x/Value** – current input value.
 - **x/State** – current input status.
 - **x/Counter** – current counter status.

Outputs Topic

- **Name** – corresponds to the **Name** at the **Outputs** tab.
- **ID** – corresponds to the **ID** at the **Outputs** tab.
- **Publish** – enables or disables the sending of information about a particular output.
- **Topic Name = value** – complete Topic after the prefix:
 - **x/Value** – current output value.

User Topic

User Topic can be used to create a user topic (message) with data needed by a custom application. To do that, the macro commands described below are available.

- **User Topic Enable** – enables the user topic (message).
- **Topic Name** – message name.
- **Topic Value** – user message template.
- **Topic Test** – preview of the resulting messages after the macros are processed.

Macros:

%ID_IN_*	- Start of sequence of the inputs with firmly defined ID's
%ID_IN_END%	- End of the fixed sequence of the inputs
%LOOP_IN%	- Beginning of the sequence of the inputs that passes all ID's
%LOOP_IN_END%	- End of the complete sequence of the inputs
%ID_OUT_*	- Start sequence of the outputs with firmly defined ID's
%ID_OUT_END%	- End of fixed sequence of the outputs
%LOOP_OUT%	- Start sequence outputs that passes all ID's
%LOOP_OUT_END%	- End of the complete sequence of the outputs
%ID_SENSOR_*	- Start sequence with sensors firmly defined ID's
%ID_SENSOR_END%	- End of fixed sequence sensors
%LOOP_SENSOR%	- Start sequence of sensors that passes all ID's
%LOOP_SENSOR_END%	- End of the complete sequence of sensors
%VAL_ID%	- Variable ID item %VAL_NAME% variable name item
%VAL_VALUE%	- Variable values of the item
%VAL_STATE%	- State variables of the item

Sensors

This tab configures the parameters for all sensors on both buses.

VERTIV

RMS3 Compact SENSORS

Sensors

Name	Safe Range	Hysteresis	Delay (s)	SNMP Trap	Email	GSM	Syslog
ID: 22277 Code: 2657054e02289093 Port: 6 Value: 30.9 %RH Sensor 240	10.0	60.0	0.0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ID: 16137 Code: 383f024e022806e45 Port: 6 Value: 25.1 °C Sensor 241	10.0	60.0	0.0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ID: 24814 Code: 2860ee4e07000024 Port: 3 Value: 23.9 °C Sensor 242	10.0	60.0	0.0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Find 1Wire + RS485 sensors **Find 1Wire sensors**

Version: 3.3.6
Apply Changes

For more information try <http://www.vertiv.com/>

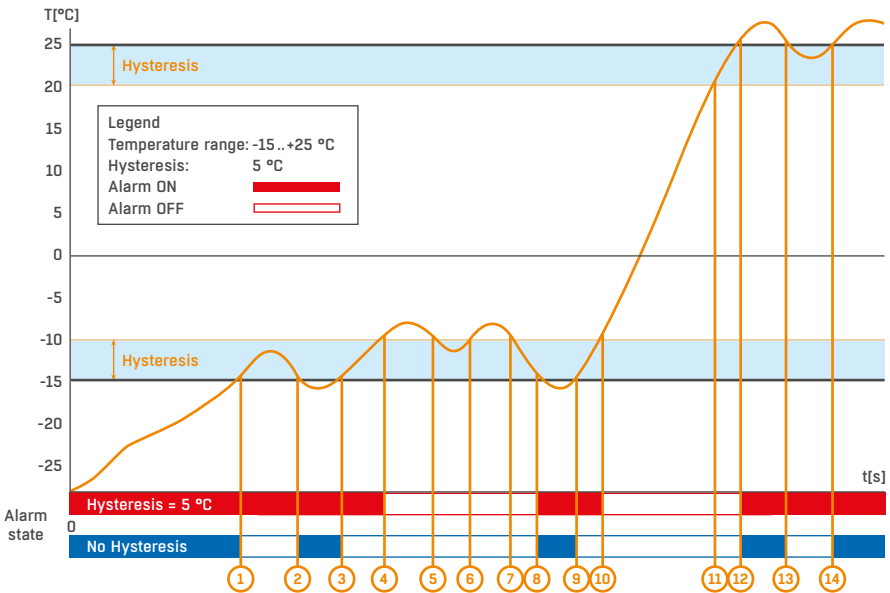
Find 1Wire + RS485 sensors and Find 1Wire sensors

Buttons to start the automatic detection of connected sensors. When the button is clicked, all other activity stops and the autodetection starts. The process can take a long time, even 2 minutes. When the detection completes, a dialog informs about the results. After a successful autodetection, all sensors are ready to measure.

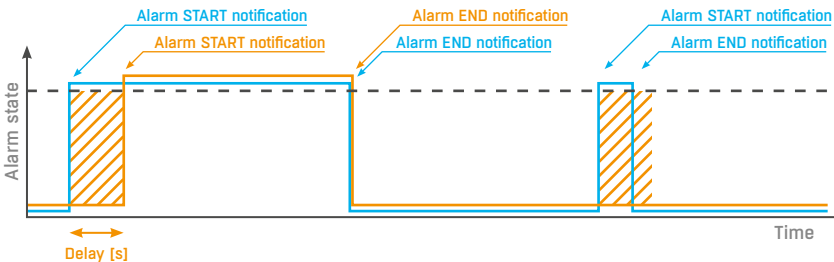
Note: For a faster autodetection with a more detailed output, see the TCP Setup section.

The sensors must be with auto-detected after every change.

- **Name** – name of the input, up to 12 chars (e.g. “above door”, “area1 humid”).
- **ID** – unique sensor identifier, specifies its address on the bus. The range for sensors is **[65..150]** and **[256..65535]**.
- **Code** – full ID of the 1-Wire sensor.
- **Port** – number of the 1-Wire port (connector) at the device where the sensor is connected.
- **Value** – current sensor reading. Sensors that are not found or not working read as **-999.99**.
- **Safe Range** – range of values which are considered OK. When exceeded, alarm is raised. When configured to **15.0..35.0**, an e-mail is sent for values below **14.9** and above **35.1**.
- **Hysteresis** – defines a **tolerance band** when exceeding a threshold in order to avoid raising multiple alarms when the reading fluctuates near the threshold.



- **Delay [s]** – delays the sending of information about the beginning of the alarm.



Alarm status notification based on a Delay value:

- **Blue:** Delay = 0
- **Yellow:** Delay is non-zero

- **SNMP Trap** – enables the sending of a SNMP trap upon alarm activation/deactivation.
- **Email** – enables the sending of an e-mail upon alarm activation/deactivation.
- **SMS** – enables the sending of a SMS upon alarm activation/deactivation.
- **Syslog** – enables the sending of SYSLOG messages.

Note: SMS (text messages) are sent through a GSM modem connected directly to the RMS III unit via RS-232.

Inputs

Parameters for DI (Dry Contact Inputs).

VERTIV

RMS3 Compact **INPUTS**

Digital Inputs (DI)

Name	ID	Current Value	Alarm State	Delay[s]	SNMP Trap	Email	SMS	Syslog
Binary 1	1	0(Off)	Active if on ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 2	2	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 3	3	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 4	4	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 5	5	1(On)	Active if on ▼	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 6	6	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 7	7	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 8	8	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 9	9	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 10	10	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 11	11	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 12	12	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 13	13	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 14	14	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 15	15	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 16	16	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm Monitor 1	123	0(Off)	Disabled ▼	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

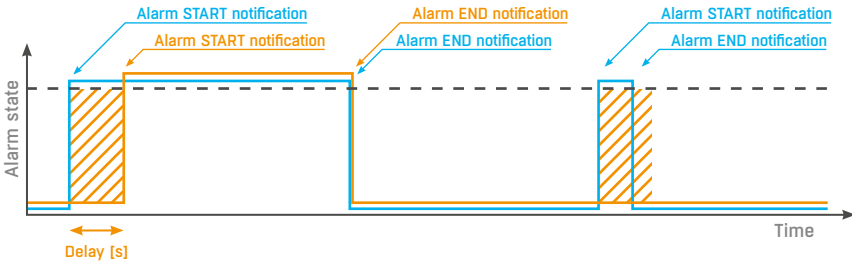
Version: 3.3.6

Apply Changes

For more information try <http://www.vertivco.com/>

- **Name** – name of the input, up to 12 chars (e.g. “2f left door”, “smoke sect 1”).
- **ID** – unique ID of the input variable within the device [1 .. 32].
- **Current Value** – current state of the input (“0 (Off)” / “1 (On)”).
- **Alarm State** – alarm state definition for each input.
 - **Active if On** – alarm is active whenever the input is in 1 (On).
 - **Active if Off** – alarm is active whenever the input is in 0 (Off).
 - **Disabled** – input has no alarm state defined.

- **Delay [s]** – delays the sending of information about the beginning of the alarm.



Alarm status notification based on a Delay value:

- **Blue:** Delay = 0
- **Yellow:** Delay is non-zero

- **SNMP Trap** – enables the sending of a SNMP trap upon alarm activation/deactivation.
- **Email** – enables the sending of an e-mail upon alarm activation/deactivation.
- **SMS** – enables the sending of a SMS upon alarm activation/deactivation.
- **Syslog** – enables the sending of SYSLOG messages.

Note: SMS (text messages) are sent through a GSM modem connected directly to the RMS III unit via the RS-232 interface.

Digital Inputs Logic (DIL)

The virtual input system on the RMS III allows to create simple logical operations above the connected inputs and sensors. You can use OR, AND and with inversion also NOR and NAND. The Virtual Inputs have their own delay value for alarm start and end. All the inputs logic are tied to the ALARM functions. **This means that you MUST have at least one alarm function (SNMP Trap, Email, SMS, Syslog) activated on the corresponding input or sensor to use the Virtual inputs with it.** If no option is selected, the ALARM state can never occur and cannot be used in the Digital Inputs Logic. **You also have to select the Alarm State value:**

Digital Inputs (DI)

Name	ID	Current Value	Alarm State	Delay[s]	SNMP Trap	Email	SMS	Syslog
Binary 1	1	0(Off)	Active if on	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Binary 2	2	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 3	3	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 4	4	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 5	5	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 6	6	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 7	7	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 8	8	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 9	9	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 10	10	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 11	11	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary 12	12	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 13	13	1(On)	Active if on	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Binary Logic 14	14	1(On)	Active if on	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 15	15	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Logic 16	16	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm Monitor 1	123	0(Off)	Disabled	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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For more information try <http://www.vertivco.com/>

Sensors

Name	Safe Range	Hysteresis	Delay [s]	SNMP Trap	Email	SMS	Syslog
ID: 61964 Code: 26f20e270820088e Port: 3 Value: 16.6 %RH	Humidity60	10.0 .. 60.0	0.5	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ID: 65834 Code: 46a1077932968e Port: 3 Value: 24.0 °C	Temperature22	10.0 .. 22.0	0.5	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Find 1Wire + RS485 sensors

Find 1Wire sensors

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For more information try <http://www.vertivco.com/>

Then you can use the Inputs Logic page to set the logical function parameters:

RMS3 Compact DIGITAL INPUTS LOGIC (DIL)

Digital Inputs Logic (DIL)

Binary Logic 13

Source Alarm	Source Inversion	Current State	Logic function	Delay ON Sec	Delay OFF Sec	Output Inversion
Temperature22(55824)	<input type="checkbox"/>	1				
Binary 1(1)	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0	AND	1	1	<input checked="" type="checkbox"/>
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				

Binary Logic 14

Source Alarm	Source Inversion	Current State	Logic function	Delay ON Sec	Delay OFF Sec	Output Inversion
Binary 1(1)	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0	OR	2	10	<input checked="" type="checkbox"/>
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				
none	<input type="checkbox"/>	0				

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Apply Changes

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The final value can now be applied to physical or virtual outputs on the Outputs page:

RMS3 Compact OUTPUTS

Digital Outputs (DO)

ID	Current Value	Basic parameters		Output Control
151	1(On)	Name	BinOut 1	<input type="radio"/> Manual
		ON (Closed) Name	On	<input checked="" type="radio"/> LocalCondition On if alarm on
		OFF (Open) Name	Off	
		Pulse Timer	0 Sec	Dependent on Binary Logic 13(13)
152	1(On)	Name	BinOut 2	<input type="radio"/> Manual
		ON (Closed) Name	On	<input checked="" type="radio"/> LocalCondition On if value equal to Trigger
		OFF (Open) Name	Off	Trigger Value 1.0
		Pulse Timer	0 Sec	Dependent on Binary Logic 14(14)
153	0(Off)	Name	BinOut 3	<input checked="" type="radio"/> Manual Change to On
		ON (Closed) Name	On	<input type="radio"/> LocalCondition
		OFF (Open) Name	Off	
		Pulse Timer	0 Sec	
154	0(Off)	Name	BinOut 4	<input type="radio"/> Manual Change to On
		ON (Closed) Name	On	<input type="radio"/> LocalCondition
		OFF (Open) Name	Off	
		Pulse Timer	0 Sec	

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Outputs

Controls the outputs and configures their modes.

VERTIV

RMS3 Compact **OUTPUTS**

Digital Outputs (DO)

ID	Current Value	Basic parameters	Output Control
151	0(Off)	Name: BinOut 1 ON (Closed) Name: On OFF (Open) Name: Off Pulse Timer: 0 Sec	<input checked="" type="radio"/> Manual <input type="radio"/> LocalCondition Change to On
152	0(Off)	Name: BinOut 2 ON (Closed) Name: On OFF (Open) Name: Off Pulse Timer: 0 Sec	<input checked="" type="radio"/> Manual <input type="radio"/> LocalCondition Change to On
153	0(Off)	Name: BinOut 3 ON (Closed) Name: On OFF (Open) Name: Off Pulse Timer: 0 Sec	<input checked="" type="radio"/> Manual <input type="radio"/> LocalCondition Change to On
154	0(Off)	Name: BinOut 4 ON (Closed) Name: On OFF (Open) Name: Off Pulse Timer: 0 Sec	<input checked="" type="radio"/> Manual <input type="radio"/> LocalCondition Change to On

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Apply Changes

For more information try <http://www.vertivco.com/>

Basic parameters

- **ID** – unique ID of the output within the device [151 .. 215].
- **Current Value** – current state of the input (“0 (Off)” / “1 (On)”).
- **Name** – name of the output, up to 12 chars (e.g. “top fan”, “Door rack 4”).
- **ON (Closed) Name** – name of the “1 (On)” state – e.g. “closed”, “flooded”, “activated” etc.
- **OFF (Open) Name** – name of the “0 (Off)” state – e.g. “open”, “inactive” etc.
- **Pulse timer** – activates the input (switches to 1 (On) state) only for the defined period. To reverse the function, use the NO/NC relay output. When Pulse Timer = 0, the pulse function is disabled (default).

The pulse also applies to the local condition. The pulse width applies from the beginning of the local condition (safe value exceeded). There is only one pulse per satisfaction of the condition.

Output Control

- **Manual** – output controlled over the web or M2M protocols (XML, SNMP, ...).
 - **Change to On/Off** – change output state (after confirming with **Apply Changes**).
- **Local Condition** – output is controlled using a condition and a sensor. The output state is read-only for M2M protocols (output cannot be controlled). The control is linked to the Target Value, hysteresis is used (IDLE Range) as configured for the sensor.
 - **On if any alarm** – the output is closed if at least one of the inputs or sensors is in alarm.
Caution: *This condition also takes into account the DELAY and HYSTERESIS settings for individual active sensors and inputs.*
 - **On if alarm on** – the output is closed whenever there is an Alarm at the selected sensor (input).
 - **On if value equal to Trigger** – the output is closed if the value matches the Target Value setting.
 - **On if value higher than Trigger** – the output is closed if the Current Value is greater than the Target Value setting.
 - **On if value lower than Trigger** – the output is closed if the Current Value is less than the Target Value setting.
- **Trigger Value** – trigger threshold for the condition (e.g. output is activated if the value is higher than the Trigger Value).
- **Dependent On** – selection of a sensor to which the condition applies.

Virtual Outputs (VDO)

Virtual Outputs allow the use of outputs of other compatible devices (Box2Box). The communication uses the TCP protocol and updates take place every 60 seconds.

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RMS3 Compact VIRTUAL OUTPUTS

Virtual Digital Outputs (VDO)

ID	Virtual Type	Basic parameters	
1151	Disabled	Name	VirtBinOut 1
		Remote device address	
		Port	80
		Remote port ID	0
		Username	
		Password	
1152	Disabled	Name	VirtBinOut 2
		Remote device address	
		Port	80
		Remote port ID	0
		Username	
		Password	
1153	Disabled	Name	VirtBinOut 3
		Remote device address	
		Port	80
		Remote port ID	0
		Username	
		Password	
1154	Disabled	Name	VirtBinOut 4
		Remote device address	
		Port	80
		Remote port ID	0
		Username	
		Password	

For more information try <http://www.vertiv.com/>

- **ID** – unique ID of the output within the device [1151 ..1158].
- **Virtual Type** – enables the virtual output functions.
- **Name** – name of the output, up to 12 chars (e.g. “top fan”, “Door rack 4”).
- **Remote device address** – IP address of the remote side where the output is controlled.
- **Port** – TCP port where the remote side listens.
- **Remote port ID** – output ID at the remote side. Corresponds to the ID at the **Outputs** tab at the remote side.
- **Username/Password** – if the remote side uses SW protection against unauthorized use, enter the **Read & Write** or the **Read & Outputs** password.



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SYSTEM

Communication Monitor

Name	Value	Description
Modbus:	<input type="checkbox"/>	Monitors communication with a device based on all selected protocols. Virtual Input "Comm Monitor 1(123)" sets to 0 in case there was any traffic using all selected protocols within the defined time.
XML/HTTP:	<input type="checkbox"/>	
SNMP:	<input type="checkbox"/>	
Time:	0 [s]	

Configuration

Name	Value	Description
Load Configuration:	Procházet...	Soubor nevybrán. Upload
Save Configuration:		Download

System

Name	Value	Description
Product Name:	RMS3 model Compact	
Serial Number:	7002020005	
MAC Address:	00:0A:59:04:A1:E8	
Build:	2696	
Compiled time:	Sep 18 2017, 11:54:29	
Uptime:	0days,18hours, 4minutes	Restart Device
Factory Default:		Set Default Config
Device FirmWare:	3.3.6	Update FW

For more information by <http://www.vertiv.com/>

Communication Monitor

Monitors whether communication with RMS III over selected protocols takes place, and if it doesn't within the specified time, a virtual **Comm monitor** input is activated.

Configuration

- **Upload** – uploads a XML file with the configuration from your PC.
- **Download** – stores the setup.xml file with device configuration to your HDD.

System

- **Uptime** – time of uninterrupted device operation (since last restart).
- **Restart device** – restarts the device.
- **Set Default Config** – restore factory-default settings.



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