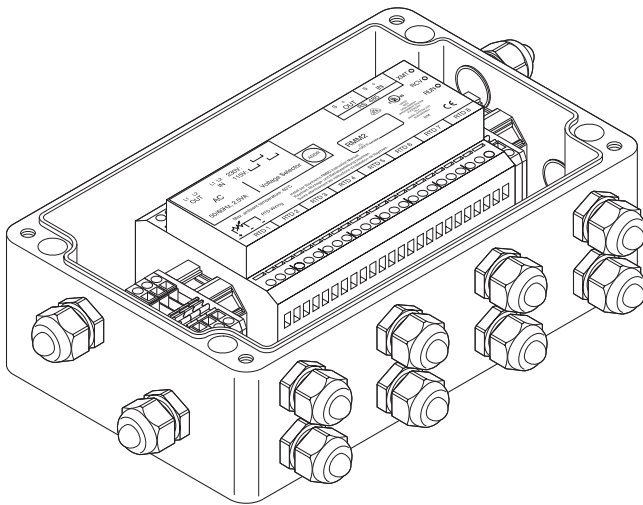# RMM2-E

Heat-tracing remote monitoring module

PRODUCT OVERVIEW

The Remote Monitoring Modules (RMM2) provide temperature monitoring capability for nVent RAYCHEM NGC controller family. The RMM2 accepts inputs from up to eight Pt 100 temperature sensors that measure pipe or ambient temperatures in a heat-tracing system. Multiple RMM2 units communicate with a single nVent RAYCHEM NGC User Interface Terminal (nVent RAYCHEM NGC-UIT) providing centralised monitoring of temperatures.

A single, twisted pair RS-485 cable connects up to 16 RMMs for a total monitoring capacity of 128 temperatures per nVent RAYCHEM NGC controller network.

Control and monitoring

A nVent RAYCHEM NGC network controls up to 260 circuits of heat-tracing per system based on ambient or pipe temperatures. The RMM2 may be used to collect both ambient and pipe temperatures for control or for extensive monitoring of the heat-tracing system. The RMM2 units are placed near desired monitoring locations, even in hazardous areas (Zone 2). Multiple temperature sensor inputs are networked over a single cable, significantly reducing installation cost for temperature monitoring.
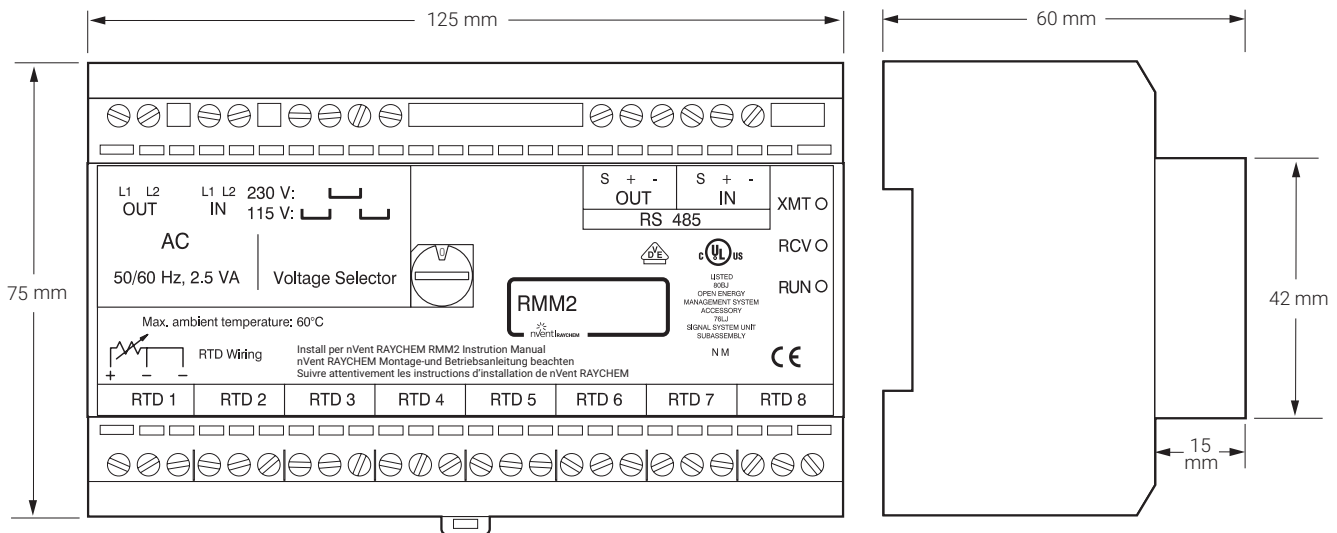
Alarms

Low and high temperature alarms may be set for sensors connected to the nVent RAYCHEM NGC controllers via the RMM2. Alarm limits are set and alarm conditions are reported to the user. Additional alarms are triggered for failed temperature sensors and communication errors. Alarms may be reported remotely through an alarm relay in the nVent RAYCHEM NGC-UIT or via nVent RAYCHEM Supervisor.

Configurations

The RMM2 is an electronic device that clips to a DIN 35 rail. The complete kit for ordinary and hazardous areas (Zone 2) include an RMM2 mounted in a rugged polyester enclosure with appropriate terminals and cable glands. For other installation options, contact nVent.

PRODUCT SPECIFICATIONS

Dimensions (in mm)

Technical details

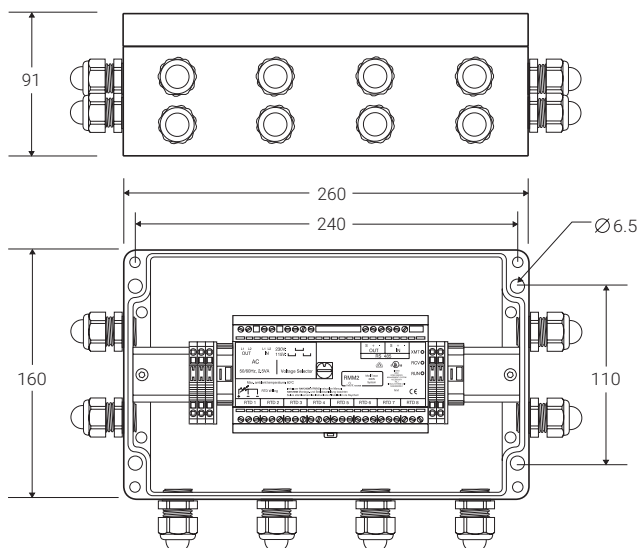|	
Ambient operating temperature range	−40°C to +60°C
Ambient storage temperature range	−51°C to +60°C
Relative humidity	max. 95%, noncondensing
Supply voltage (nominal)	115/230 Vac +10% −10% 50/60 Hz (jumper selectable)
Internal power consumption	3 VA

RMM2 Hazardous Area Enclosure	nVent RAYCHEM MONI-RMM2-EX-E
Protection	IP66
Base and lid	Material: glassfibre-reinforced polyester, lid seal: silicone
Colour	Black
Ambient temperature range	−20°C to +60°C
Lid fixing	4 x M6, cheese-head, captive, stainless steel
Entries	12 x M20 for cable diameters ranging from 6 to 12 mm
Glands provided (EEx e)	12 x M20 with integral stopping plugs
Mounting	Surface mounting with 4 fixing holes on 240 x 110 mm centres hole diameter: 5 mm

Temperature sensors

Type	3 wire Pt 100, temperature coefficient per IEC 751-1983
Quantity to be connected	Up to 8 Pt 100 per RMM2 The sensor cable may be extended with a 3 (+PE)-wire signal cable adding 20 Ohms lead resistance maximum. When using 1.5 mm² cable this equals to ±150 m of cable. When the sensor cable is laid in cable ducts or in the vicinity of highvoltage carrying cables the sensor extension cable should be shielded. The shield of the extension cable should be grounded at the controller end only.
Area of use	Use sensors with the appropriate approvals required for the area of use

Enclosure details - Hazardous area enclosure RMM2-EX-E

Dimensions (in mm)

Communication to NGC-30-UIT nVent RAYCHEM NGC controllers

Type	RS-485
Cable	1 shielded twisted pair
Length	1200 m max.
Quantity	Up to 16 RMM2 UIT per nVent RAYCHEM NGC network
Address	Switch-selectable on RMM2

Connection terminals

Supply (in-out)	4 terminals for cables 0.2 mm^2 to 4 mm^2
Earth	10 terminals for cables up to 4 mm^2 aside the RMM2 unit
PT100 connections	8 x 3 terminals for cables 0.2 mm^2 to 2.5 mm^2
RS485 connection	2 x 3 terminals for cables 0.2 mm^2 to 2.5 mm^2

Electromagnetic compatibility

Immunity	Complies with EN 50 082-2 (heavy industrial)
Emissions	Complies with EN 50 081-1 (light industrial)

APPROVALS

RMM2-E and RMM2-EX-E
For use in ordinary and hazardous area Zone 2 (Gas), Zone 21 and Zone 22 (Dust)
RMM2-E panel mount
For use in ordinary area

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING INFORMATION

RMM2	Part Descriptions	Product Number	Weight
No enclosure, internal electronics module only	RMM2-E	307988-000	1.2 kg
With hazardous area enclosure	RMM2-EX-E	676040-000	3.2 kg

Accessories

Pipe temperature sensors (Pt 100)			
PT100 temperature sensor for Zone 1	MONI-PT100-EXE	967094-000	0.6 kg
PT100 temperature sensor for ordinary areas	MONI-PT100-NH	140910-000	0.2 kg

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