



DATASHEET
Environment
Monitoring
System
RAMOS Micro

ENVIRONMENT MONITORING SYSTEMS

The **RAMOS monitoring system** is used to control the state of the indoor and outdoor environment (temperature, humidity, water leakage, smoke,...) in large data centers, server rooms, or individual racks. It allows you to easily integrate and subsequently monitor other components, such as intelligent power distribution units (PDUs), backup power supplies (UPS), AC units, etc. The system supports remote control.

RAMOS consists of hardware components and software—the CONTEG Pro Server application. Hardware comes in 4 different versions of main monitoring units, which are differentiated by their functionality levels. Each version has different features, a different number of sensors as well as different inputs and outputs. A wide range of accessories is available for the units, such as detectors, sensors, sirens, magnetic door contacts, expansion modules, etc.

The CONTEG Pro Server application has a user-friendly web interface for sensor configuration, data collection, settings for transmitting information about monitored parameters in different ways (SNMP, e-mails, SMS, MMS, SMTP, ...) and extensive graphical display of values.

	RAMOS Ultra/Ultra ACS	RAMOS Optimax/ Optimax GSM	RAMOS Plus/Plus GSM	RAMOS Micro
Suitable for	DC and server rooms	Multiple racks/cabinets or server room	Single or few racks/cabinets	Single racks/cabinets
Sensors	8×/2× intelligent ports (expandable up to 500 sensors)	8× intelligent ports and 10× digital inputs (expandable up to 150 sensors)	4× intelligent port	Up to 5 sensors (Temperature, Humidity, Pressure, CO ₂ , leakage...) via 2× universal ports and 2× digital inputs
Virtual sensors	80× open	10× open (can be licensed up to 80)	5× open (can be licensed up to 40)	—
Communication	LAN: SNMP v1, v2 and v3, VPN Modbus TCP and RTU GSM: with plug-in USB GSM modem Serial: RS485 (Modbus only)	LAN: SNMP v1, v2 and v3 Modbus TCP, Modbus RTU via external adapter GSM: GSM version only	LAN: SNMP v1, v2 and v3 Modbus TCP GSM: GSM version only	LAN and Wi-Fi 802.11 bgn SNMP v1 and XML
Notifications	E-mails, SNMP traps SMS *, MMS *, Call *, Speech Skype call and SMS Relay control *, Door control * Server restart/shutdown/ wake-up	E-mails SNMP traps Siren and strobe * Relay *, El. latch SMS variant with built-in GSM modem	E-mails SNMP traps Siren and strobe * Relay *, El. latch SMS variant with built-in GSM modem	E-mails
Integration to CONTEG Pro Server	Free for up to 4 units—additional are licensed			Licensed
Advantages	Intelligent ports variability Expandable solution Monitoring of 3rd-party devices Sensor mapping	Intelligent ports variability Expandable solution Variant with built-in GSM modem Monitoring of 3rd-party devices Rack thermal mapping	Intelligent ports variability Variant with built-in GSM modem Monitoring of 3rd-party devices Rack thermal mapping	Small and simple Wi-Fi, PoE, SSL
Dimensions H × W × D	46 × 216 × 138 mm	44 × 432 × 50 mm (19" × 1U)	32 × 115 × 64 mm	30 × 103 × 68 mm
Voltage	7.5 V DC/12 V DC	5 V DC	5 V DC	5 V DC (PoE or via external power adapter)

* Requires appropriate accessories.



Intelligent ports

Connected by LAN cables, automatically detects and powers the accessories.



Virtual sensors

They allow monitoring of other devices, reading of log parameters, PING, etc. It is possible to integrate 3rd party devices (PDU, UPS, cooling, etc.).



Notifications

Email, commands via logs, voice messages, SMS, etc.



Easy expandability

Using the expander for RAMOS Optimax and RAMOS Ultra.



Remote control

Setup and remote control of the device using the CONTEG Pro Server software application.

RAMOS MICRO AND ACCESSORIES

RAMOS Micro



RAMOS Micro is a simple small solution for monitoring the environment of IT racks. With two new universal ports it can monitor up to 5 sensors (temperature, humidity, flood, pressure, CO₂, etc.) and with 2 binary inputs it can detect other possible parameters such as door contacts, smoke, motion, flood detectors, etc. It supports PoE power supply and WiFi communication.

With the new universal ports, new accessories can be connected, such as point flood detection and flood rope, or a special sensor for pressure and CO₂ measurement.

Technical information:

- 2 universal RJ12 ports through which up to 5 parameters can be monitored.
- 2 input contacts for connecting detectors or contacts
- Power supply: PoE or external 5V power supply (optional accessory RMS-PW-05)
- Protocols: SNMP, XML
- Communication: LAN and WiFi
- Dimensions: 30 × 103 × 68 mm
- Built-in webserver

Included: RAMOS Micro, brackets, temperature sensor with 3 m cable.

Code	Description
RAMOS Micro	Main monitoring unit

Temperature Sensor



Dimensions: 40 × 40 × 20 mm
 Resolution: 0,1 °C
 Range: -30 to +70 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-STB	Temperature sensor in a box with a 3 m cable.

Temperature and Humidity Sensor



Dimensions: 40 × 40 × 20 mm
 Resolution: 0,1 °C/0,1 % RH
 Range: -30 to +70 °C/0-100 % RH

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-STHB	Temperature and humidity sensor in a box with a 3 m cable.

Air-Quality Sensor



Measures temperature, humidity, atmospheric pressure and the content of volatile substances in the air.

Dimensions: 40 × 40 × 20 mm

Resolution: 0,1 °C/0,1 % RH/10 Pa/1–32 ppb

Range: –30 to +70 °C/0–100 % RH/30–110 kPa/0–60 000 ppb

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-SQAB	Air-quality sensor in a box with a 3 m cable

Temperature, Humidity and CO₂ Sensor



Measures temperature, humidity and CO₂ content in the air.

Dimensions: 60 × 60 × 20 mm

Resolution: 0,1 °C/0,1 % RH/1–32 ppm

Range: –30 to +70 °C/0–100 % RH/300–40 000 ppm

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-STHCOB	Temperature, Humidity and CO ₂ Sensor in a box with a 3 m cable

Spot Water Sensor



Does not require an external power supply and plugs into the sensor ports. For indoor and outdoor use.

Dimensions: 47 × 37 × 22 mm

IP protection: IP67

Mounting hole: Ø 4 mm

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-DE-07	Spot water sensor with a 3 m cable

Rope Water Sensor



Flood detection rope with relay output and port for connection to sensor ports.

Power supply via adapter (included), via terminals or via sensor port.

The connection cable for the detection rope (RMS-DE-06-D2) is 2 m long (included).

The basic detection rope (RMS-DE-06-EXT2) 2m long is included in the kit and can be extended with 10m extensions (RMS-DE-06-EXT10), 50m extensions (RMS-DE-06-EXT50) and 5 m connecting parts (RMS-DE-06-C5) up to a maximum length of 185 m.

Code	Description
RMS-DE-06	Rope water sensor



Temperature Sensor



Temperature sensor with a 3m cable.

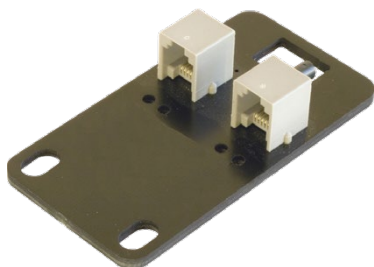
Resolution: 0,1 °C

Range: -10 to +80 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-ST-02	Temperature sensor 1-Wire, 3 m cable with RJ12 connector

Temperature Sensor on Mounting Bracket



Temperature sensor on mounting bracket for connection in series with a 3 m cable.

Dimensions: 83 × 33 × 18 mm

Resolution: 0,1 °C

Range: -10 to +80 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-ST-04	Temperature sensor on mounting bracket 1-Wire, 3 m cable with two RJ12 connectors

Outdoor Temperature Sensor



Outdoor temperature sensor 1-Wire with 3 m cable with RJ12 connector.

Resolution: 0,5 °C

Range: -50 to +125 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-ST-05	Outdoor temperature sensor 1-Wire with 3 m cable with RJ12 connector

Humidity Sensor



Humidity sensor 1-Wire with 3 m cable with RJ12 connector.

Accuracy: 2 % RH (při 25 °C)

Resolution: 0,5 °C

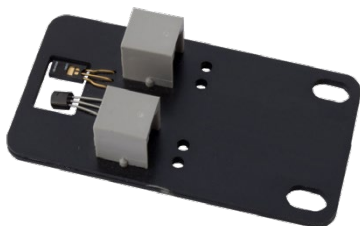
Measurement range: 0–100 % RH

Operational range: -40 to +85 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-SH-02	Humidity sensor 1-Wire with 3 m cable with RJ12 connector.

Temperature and humidity sensor



Temperature and humidity sensor 1-Wire, mounting bracket, 3 m cable, 2× RJ12 connector for series connection.

Dimensions: 83 × 33 × 18 mm

Operational range: -40 to +85 °C

Measurement range: -10 to +80 °C/0–100 % RH

Resolution: 0,1 °C/0,1 % RH

Package includes: 3 m long cable for sensor connection, 2× RJ12 connector, mounting bracket.

Code	Description
RMS-STH-02	Temperature and humidity sensor 1-Wire, mounting bracket, 3 m cable, 2× RJ12 connector

Optical Smoke Detector



Optical smoke detector with relay output and dual detection — optical and temperature, equipped with siren for local warning with a volume of at least 85 db at a distance of 3 m from the device.

Dimensions:	Ø 126 mm, výška 65 mm
Operational range:	-10 to +70 °C
Alarm temperature:	+60 to +70 °C
Supply voltage:	9–15 VDC
Consumption at standard operation:	2,5 mA
Consumption during an alarm:	100 mA
Sensitivity:	0,11–0,13 db/m

The optical smoke detector with relay output does not include a connecting cable and voltage source. The optical smoke detector requires a voltage source, e.g. RMS-PW-12.

Code	Description
RMS-DE-01	Optical smoke detector with relay output. Power supply is required (e.g. RMS-PW-12). Does not include connecting cables.

Motion Detector



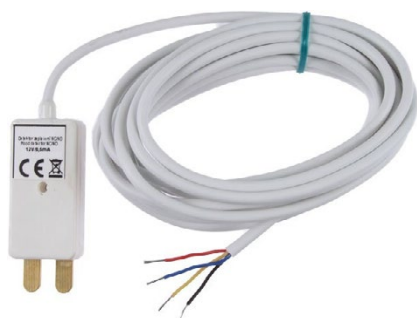
PIR motion detector serves as a security element for securing the area and monitoring the movement of people in the selected zone.

Detection angle:	120°
Engagement length:	12 m
Operational range:	-10 to +55 °C
Supply voltage:	12 VDC
Consumption at standard operation:	10 mA
Consumption during an alarm	35 mA

The PIR motion detector does not include a connection cable and voltage source. The motion detector requires a voltage source, e.g. RMS-PW-12.

Code	Description
RMS-DE-02	PIR motion detector. Power supply is required (e.g. RMS-PW-12). Does not include connection cables.

Spot Flood Sensor



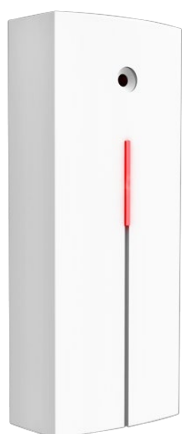
The flood detector is used to indicate water flooding that may endanger the functionality of the equipment. The sensing takes place at the electrodes of the detector, where the decisive factor is the water connecting the electrodes.

Supply voltage:	12 VDC ±15 %
Consumption:	2 mA
Supply cable:	2,5 m
Operational range:	-10 to +40 °C

The flood detector does not contain a voltage source. It requires a voltage source, e.g. RMS-PW-12.

Code	Description
RMS-DE-04	Flood detector. Power supply is required (e.g. RMS-PW-12).

Duální detektor rozbití skla



The glass break detector is used to guard glass surfaces and detect their destruction. It uses a dual method of detection in which slight changes in air pressure in the room (impact on the glass filling) and subsequent sounds of glass breaking are evaluated. This solution is characterised by a high reliability of response when the glass filling is broken. The sensitivity of the detector can be easily adjusted according to the distance and dimensions of the windows to be protected. In addition, the glass break detector is equipped with an optional memory indication.

Supply voltage:	12 VDC ± 25 %	Detection range: up to 9 m
Standby consumption (without LED):	max 10 mA	Minimum area of window filling: 0,6 m × 0,6 m
Max consumption (with LED):	max 35 mA	Operational range: -10 to +40 °C
Relay output:	60 V/50 mA	Stabilisation time after switching on: max 60 s
Internal resistance:	max. 30 Ohm	

The glass break detector does not contain a voltage source. It requires a voltage source, e.g. RMS-PW-12.

Code	Description
RMS-DE-05	Optical smoke detector with relay output. Power supply is required (e.g. RMS-PW-12). Does not include connecting cables.

Magnetic Contact



The magnetic door contact with mounting bracket serves as a monitoring element that monitors the opening of the rack.

Package includes: a 2.5 m long cable, mounting bracket and fasteners.

Code	Description
RMS-MK-01	Magnetic contact, Mounting bracket (universal mounting) including fasteners, VdS G, 2.5m

Hub for Connecting 2 Sensors to a 1-Wire Bus



The 2× RJ-12 > 1× RF-12 hub for temperature and humidity sensors allows the connection of two sensors (with RJ-12 connector) to one 1-Wire bus (sensor port).

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-CON-04	Hub for connecting 2 sensors to 1-Wire bus (for RAMOS Micro)

PowerBox



The PowerBox is designed to detect and control 110/230VAC voltage by turning on or off. The PowerBox can be controlled both voltage and voltage free. Suitable for remote server restart, controlling additional cooling or fan and many other functions.

Output control: 110/230 VAC, max 8A

Sockets: input C13/output C13

Control via relay or voltage: 3–15 VDC

Operational range: -20 to +80 °C

Dimensions: 88 × 65 × 50 mm

The PowerBox does not include cables and connecting wires/wires.

Code	Description
RMS-PWR-01	PowerBox, voltage detection function (only for RAMOS Mini)

Universal Power Adapter



Universal power adapter 5 VDC for RAMOS Micro.

3 adapters: EU, UK, US/JAP

DC Source: 5V

Cable: 1 m

Code	Description
RMS-PW-05	Universal power adapter 5 V/0.5 A

Power adapter for accessories



Power adapter for RAMOS Micro accessories.

12 V / 0,5 A, cables without connector

Code	Description
RMS-PW-12	Power adapter for accessories, 12 V/0.5 A, cables without connector



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