Network node Q node 5.5

The network node Q node 5.5 forms the basis of remote meter reading within the QAMR system. It receives the consumption data from the meters and distributes them within the network.

The network node works extremely well in more complex building environments and ideally supports the migration of generation 5.5 walk-by systems for remote reading.

The network node Q node 5.5 is available as battery operated (type RNN5-000M-0x) as well as mains operated (type RNN5-000M-1x).

The Q node 5.5 supports the transmission of AES encrypted data telegrams for C-mode metering devices.

Functions

❱ Reception and storage of data from the consumption metering devices
❱ For S-Mode devices the Q node 5.5 stores the month end values as statistical values (max. 18).
❱ For C-Mode devices, the historical month end values can be formed in the Q SMP or by the customer in a billing software.
❱ Automatic set-up of a network comprising up to 12 x network nodes (up to max. 500 consumption metering devices)
❱ Distribution of consumption values to all network nodes within a network
❱ Backward compatible:
   Consumption meters in S-Mode:
   - mixed network with Q node 5.5, Q node 5 and WTx16 possible
   - Readout with gateways WTX16.IP, WTX16.GSM or Q gateway 5
❱ Upward compatible:
   Consumption meters in mixed mode S and C mode or only in C mode:
   - all Q node 5 of the network must be updated to Q node 5.5 functionality via firmware update
   - Network nodes WTx16 are to be replaced by Q node 5.5.
   - Readout with Gateway Q gateway 5
❱ Protected installation mode to connect only devices with their own plant identification to the network
❱ Copy mode to transfer data (device list / user list and statistic values) of a node within a network to a new node
❱ Delete mode to remove devices to be replaced from the system list
❱ IrDA teach and delete function to add or remove new devices to or from a system and to synchronise the devices.
❱ Firmware update via USB adapter and Q node 5 / 5.5 Update Tool

Voltage supply: Battery for RNN5-000M-0x Mains adapter for RNN5-000M-1x		
Transmitter / receiver for Q AMR networks	Memory 500 metering devices	M-Bus (Slave)
		IrDA (optical)
		RS232 (RNN5-000M-1x)
Backup battery		

The network node Q node 5.5 consists of the following components:

Receivers and transmitters are used for to receive consumption metering devices and forwarding these to other network nodes in the same network.

The data memory contains the measuring data from the consumption metering devices. It is protected against temporary power failure, for instance during mains power failure or replacement of the main battery, by the backup battery.

Type summary

The network node Q node 5.5 is part of the Q AMR system and can only be used with this.

Typ	Power supply
RNN5-000M-0x	Battery
RNN5-000M-1x	Mains power

Accessories	
WTZ.RM	PC-Radio Modul
WFZ.MBM-USB	M-Bus Mini Master, USB Interface
RNNP-H001-0010	USB programming adapter
RNNP-H002-0010	M-bus adapter plug for WFZ.MBM-USB
WFZ.PS	Triggering tool for radio telegrams
WTZ.BAT	Main battery
FBR0018	Backup battery
U12102-2003	Seals

Further notes

Further notes about the Network node Q node 5.5 can be found in the installation and operating manual as well as in the Q AMR system manual.

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Wired interface

M-Bus connection
At each network node, the M-Bus can be permanently connected to an M-Bus master. An additional plug connector is available for short-term connections (e.g. for service purposes or to connect an M-Bus mini master WFZ.MBM-USB). The plug is included in the scope of delivery.

8-pin interface
An additional plug connector is available for short-term connections (e.g. service or for connecting an M-BUS master). For service purposes, the USB programming adapter RNNP-H001-0010 can be connected to the 8-pin connector provided for this purpose.

Optical IrDA interface

Every network node Q node 5.5 is equipped with an IrDA interface. This is permanently active and used for servicing with commissioning tools or for data exchange with other IrDA-capable QUNDIS products.

Technical data

Norms

CE	Hereby, QUNDIS GmbH declares that the radio equipment type Q node 5.5 is in compliance with Directive 2014/53/EU and 2011/65/EU. The full text of the EU declaration of conformity is available at the following internet address: www.qundis.com

Ambient conditions

Protection rating		IP20 acc. to EN 60529
Safety class	RNN5-000M-0x	III acc. to EN 61140
	RNN5-000M-1x	II acc. to EN 61140
Storage		-5 °C to +45 °C, < 95 % r.H. (without condensation) acc. to EN 60721-3-1
Transport		-25 °C to +70 °C, < 95 % r.H. (without condensation) acc. to EN 60721-3-2
Use		-5 °C to +55 °C, < 95 % r.H. (without condensation) acc. to EN 60721-3-3

Radio

Radio protocol		Wireless M-Bus acc. to EN 13757-4
Wireless M-Bus supported mode		S-Mode and C-Mode
AES encryption		supported
Frequency band	S-Mode	(868,3 +/- 0,3) MHz
	C-Mode	(868,95 +/- 0,25) MHz
Transmission power	S-Mode	max. 14 dBm / typ. 12,5 dBm
	C-Mode	none
Duty cycle	S-Mode	< 1 %
	C-Mode	n.a.
Sensitivity	S-Mode	min. -100 dBm / typ. -105 dBm
	C-Mode	min. -100 dBm / typ. -105 dBm

M-Bus interface

Current drawn	1 M-Bus load
Adressing	Q node 5.5 itself: primary or secondary Stored devices in Q node 5.5: secondary
Baud rate	auto detection (300, 2400 or 9600 Baud)
Max. permissible readout frequency	typical 1 times a day
Protocol	acc. to EN 13757-2/-3, EN 1434-3

Technical data

Norms

Interference immunity and emission	EN 301489-1, EN 301489-3
Safety	EN 62 368-1

Power supply typ RNN5-000M-0x

Battery type		Lithium metal
Operating voltage		DC 3,6 V
Battery life	Main battery	typically 5 years (in standard application*, plugged in during operation); changeable
	Backup battery	typically 10 years in standard operation plus 1 year in active storage or backup mode; changeable

Power supply typ RNN5-000M-1x

| Rated voltage		AC 100..240 V 50/60 Hz
Battery life	Backup battery	typically 10 years in standard operation plus 1 year in active storage or backup mode; changeable

Material

Dimensions (WxHxD)		200 mm x 200 mm x 57 mm
Device weight	RNN5-000M-0x	gross: 0,76 kg, net: 0,65 kg
	RNN5-000M-1x	gross: 0,75 kg, net: 0,63 kg
Housing material		PC/ABS
Housing colours		RAL9016, verkehrsweiß

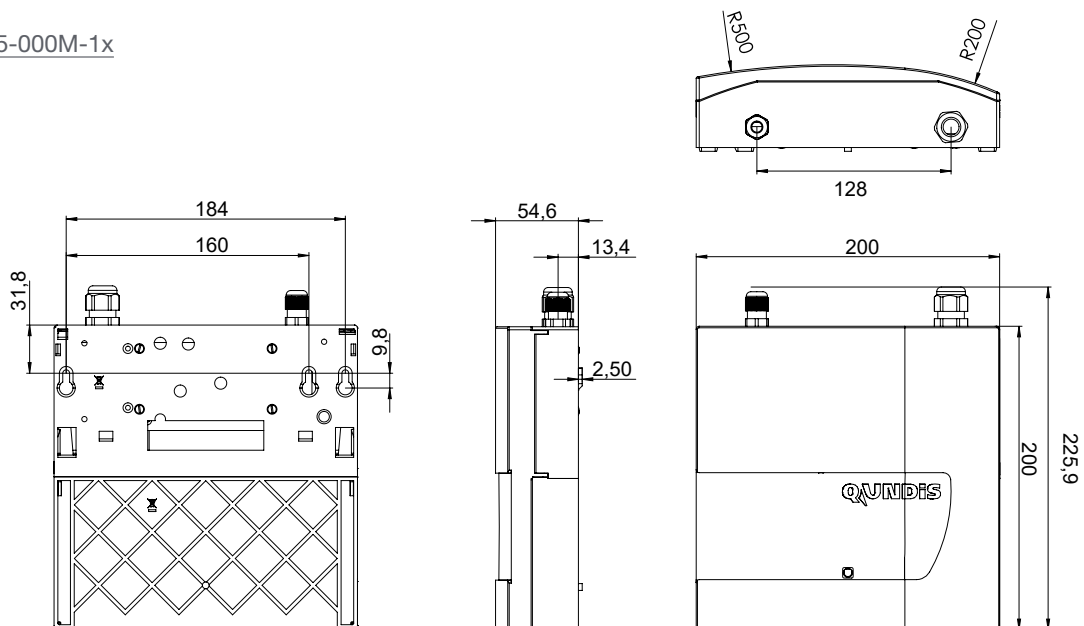| Mounting material	2 dowels S6
	2 **Torx 20** screws 4,0 mm x 40 mm
	1 seal
Accessories package	1 jumper
	1 M-Bus plug (green)
*) Standard application: Readout 2x monthly with Q gateway 5, for further details and use cases see Download Center in the QUNDIS Portal.	

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Dimensional drawing

RNN5-000M-0x
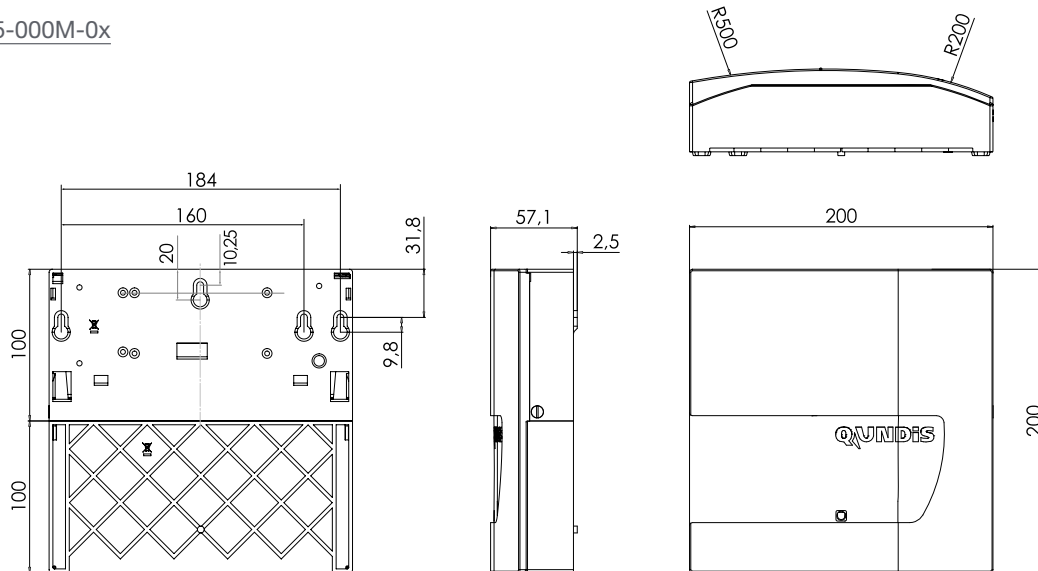
RNN5-000M-1x

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