

# EM1024

## interface RF module

### Technical description

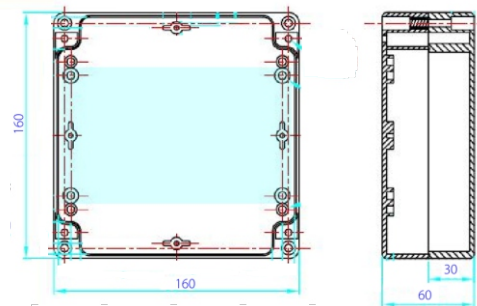
The EM1024 RF transmission module is designed for interfacing various metering devices and automation equipment via standard communication interfaces (RS232, RS485, CAN), as well as for receiving discrete signals from alarm systems. The EM1024 is an electronic unit equipped with a microcontroller and an integrated RF transceiver. The microcontroller collects required data from connected devices and transmits it via a radio channel to the system.

In addition to protocol-based data acquisition, the EM1024 features dedicated digital inputs for connecting sensors, enabling execution of various alarm functions (e.g., water leakage detection, unauthorized access, etc.).

The integrated parameter archiving system enables remote (radio channel) retrieval of stored archive values from metering devices upon user request. Archived data can be provided for any selected period in the form of cumulative (total), hourly, or daily values.



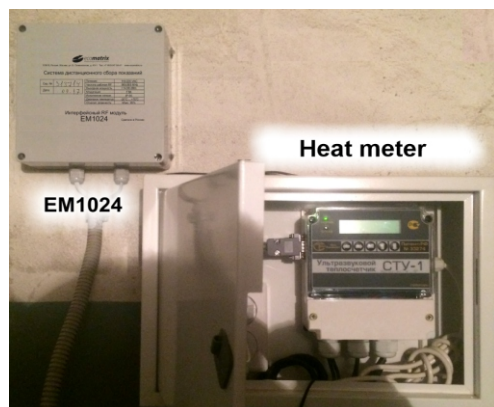
### Main dimensions EM1024:



Terminals connecting input signals

### Technical specifications:

<b>Description</b>	Interface RF unit EM1024
<b>Input Connection Types</b>	3 digital inputs from the liquid level switch (sensor flooding), 1 input from security or fire alarm sensors, serial RS232/RS485/CAN interfaces
<b>Inputs Specification</b>	Digital inputs: dry contact or open collector transistor. Maximum input cable length: digital inputs - 10 meters, RS232 - 50 m, RS485 - 600 m, CAN - 200 m
<b>Box Size</b>	160x160x60mm
<b>Unit Weight</b>	800 g
<b>Power Supply</b>	220/110 VAC, 120 mA
<b>RF Transmit Bitrate</b>	10.0 kbps
<b>RF frequencies (ranges)</b>	FSK 430/860/900 MHz
<b>Configuration Storage</b>	Non-volatile memory
<b>Operating Temperatures</b>	-20° C to +60° C
<b>Environmental</b>	IP-65
<b>Humidity</b>	Max. 90%



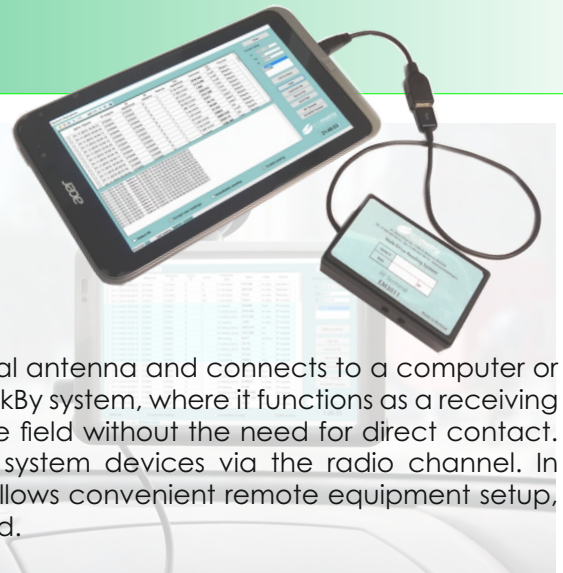
### Input terminal assignment:

<b>COM</b>	Dinput	Digital Input from Alarm systems	
<b>Dinput</b>	Ground	Protective grounding of the unit	
<b>GND</b>			
<b>+V</b>			
<b>COM</b>	RS232	To devices with RS232 interface	
<b>RX</b>			
<b>TX</b>			
<b>COM</b>	RS485	To devices with RS485 interface	
<b>B</b>			
<b>A</b>			
<b>+</b>			
<b>L</b>	CAN	To devices with CAN interface	
<b>H</b>			
<b>GND</b>			
<b>L1</b>	Dinput	3 inputs for liquid level switch	
<b>L2</b>			
<b>L3</b>			

## Data reading from the EM1024

Data and archive of EM1024 module reading, is carried out via radio channel using the RF Terminal device (EM3011) and specialized software.

The Terminal is a transceiver equipped with a built-in or external antenna and connects to a computer or tablet via a USB cable. This device is designed for use in the WalkBy system, where it functions as a receiving module, enabling data collection from devices located in the field without the need for direct contact. Additionally, the RF Terminal is used for configuring various system devices via the radio channel. In combination with the appropriate software, the RF Terminal allows convenient remote equipment setup, significantly simplifying system maintenance processes in the field.



The "Data Collection Terminal" program – data reading and mode settings:

Data reading terminal (Ver.6.3)

Filter All

	Date / Time	Module ID	Parameter ID	Factor	Parameter type	Value	Units	Source	Repeater
<input type="checkbox"/>	28-07-2016 5:00	243460	243465	1	V heating return	5.1600	m cube	Repeater 1	0
<input type="checkbox"/>	28-07-2016 5:00	243460	243466	1	P heating direct	0.7000	Bar	Repeater 1	0
<input type="checkbox"/>	28-07-2016 5:00	243460	243467	1	P heating return	0.5000	Bar	Repeater 1	0
<input type="checkbox"/>	28-07-2016 5:00	243460	243468	1	Q heating	0.0770	Gcal	Repeater 1	0
<input type="checkbox"/>	28-07-2016 5:00	243460	243470	1	T operating	1.0000	hour	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243460	1	t* heating direct	67.6640	°C	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243461	1	t* heating return	63.9160	°C	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243462	1	M heating direct	5.7190	ton	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243463	1	M heating return	5.5590	ton	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243464	1	V heating direct	5.8390	m cube	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243465	1	V heating return	5.6650	m cube	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243466	1	P heating direct	0.7000	Bar	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243467	1	P heating return	0.5000	Bar	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243468	1	Q heating	0.0890	Gcal	Repeater 1	0
<input type="checkbox"/>	28-07-2016 6:00	243460	243470	1	T operating	1.0000	hour	Repeater 1	0
<input type="checkbox"/>	28-07-2016 7:00	243460	243460	1	t* heating direct	67.4130	°C	Repeater 1	0
<input type="checkbox"/>	28-07-2016 7:00	243460	243461	1	t* heating return	66.1780	°C	Repeater 1	0
<input type="checkbox"/>	28-07-2016 7:00	243460	243462	1	M heating direct	6.0040	ton	Repeater 1	0
<input type="checkbox"/>	28-07-2016 7:00	243460	243463	1	M heating return	5.8320	ton	Repeater 1	0
<input type="checkbox"/>	28-07-2016 7:00	243460	243464	1	V heating direct	6.1290	m cube	Repeater 1	0
<input type="checkbox"/>	28-07-2016 7:00	243460	243465	1	V heating return	5.9500	m cube	Repeater 1	0
<input type="checkbox"/>	28-07-2016 7:00	243460	243466	1	P heating direct	0.7000	Bar	Repeater 1	0
<input type="checkbox"/>	28-07-2016 7:00	243460	243467	1	P heating return	0.5000	Bar	Repeater 1	0

Connection settings

IP: 189.23.14.205

Port: 3209

ID: 5371428

Open Save

☐ COM68

☒ COM48

COM port settings

Clear list

Load from file

Save to file

Export to Excel

Send data

RF Terminal

RF/GPRS Terminal

Select all Accept new readings Update old values Immediately sending Enable pooling

Retrieved 36 Last value: 243470 - 21:06:11

5:05:45

The "Archive Collection Terminal" program – retrieval of archived data:

The screenshot displays the ecomatrix software interface. At the top, a status bar shows 'Data reading terminal (Ver.5.0)' and a date/time of 'APR 22 16:11'. Below this is a table with columns: Date / Time, Module ID, Parameter ID, Factor, Parameter type, Value, Units, Source, and Percent. The table contains multiple rows of data, including values like '19 729.8900', '19 731.0900', '19 732.1800', '19 733.5000', and '19 734.3400'. A modal window titled 'Archive request' is open, showing 'Module ID 2220600' and 'Channel 0'. It has radio buttons for 'Summary', 'Hourly archive' (selected), and 'Daily archive'. There are fields for 'Initial date' and 'Final date', and checkboxes for 'Mobile device' and 'OK'/'Cancel' buttons. To the right of the table, there are 'Connection settings' (IP: 189.23.14.205, Port: 3209, ID: 5371428) and 'COM port settings' (COM4 selected). Below these are buttons for 'Clear list', 'Load from file', 'Save to file', 'Export to Excel', 'Send data', and 'Archive'. At the bottom, there are checkboxes for 'Select all', 'Accept new readings', 'Update old values', 'Immediately sending', and 'Enable pooling'. The ecomatrix logo and 'measuring control systems' text are visible in the bottom right corner, along with a digital clock showing '19:45:39'.

	Date / Time	Module ID	Parameter ID	Factor	Parameter type	Value	Units	Source	Percent
<input type="checkbox"/>	30-06-2016 19:00:00	7371171	7371171	10	V cold water (h...	19 729.8900	m cube	RF Module	0
<input type="checkbox"/>	30-06-2016 20:00:00	7371171	7371171	10	V cold water (h...	19 731.0900	m cube	RF Module	0
<input type="checkbox"/>	30-06-2016 21:00:00	7371171	7371171	10	V cold water (h...	19 732.1800	m cube	RF Module	0
<input type="checkbox"/>	30-06-2016 22:00:00	7371171	7371171	10	V cold water (h...	19 733.5000	m cube	RF Module	0
<input type="checkbox"/>	30-06-2016 23:00:00	7371171	7371171	10	V cold water (h...	19 734.3400	m cube	RF Module	0
<input type="checkbox"/>	01-07-2016 0:00:00	7371171	7371171	10	A data request for ID=2220600			Module	0
<input type="checkbox"/>	01-07-2016 1:00:00	7371171	7371171	10	Module ID 2220600 Channel 0			Module	0
<input type="checkbox"/>	01-07-2016 2:00:00	7371171	7371171	10	<input type="radio"/> Summary			Module	0
<input type="checkbox"/>	01-07-2016 3:00:00	7371171	7371171	10	<input checked="" type="radio"/> Hourly archive <input type="radio"/> Daily archive			Module	0
<input type="checkbox"/>	01-07-2016 4:00:00	7371171	7371171	10	Initial date			Module	0
<input type="checkbox"/>	01-07-2016 5:00:00	7371171	7371171	10	Final date			Module	0
<input type="checkbox"/>	01-07-2016 6:00:00	7371171	7371171	10	<input type="checkbox"/> Mobile device			Module	0
<input type="checkbox"/>	01-07-2016 7:00:00	7371171	7371171	10	OK Cancel			Module	0
<input type="checkbox"/>	01-07-2016 8:00:00	7371171	7371171	10				Module	0
<input type="checkbox"/>	01-07-2016 9:00:00	7371171	7371171	10				Module	0
<input type="checkbox"/>	01-07-2016 10:00:00	7371171	7371171	10				Module	0
<input type="checkbox"/>	01-07-2016 11:00:00	7371171	7371171	10				Module	0
<input type="checkbox"/>	01-07-2016 12:00:00	7371171	7371171	10	V cold water (h...	19 743.0100	m cube	RF Module	0
<input type="checkbox"/>	01-07-2016 13:00:00	7371171	7371171	10	V cold water (h...	19 743.9100	m cube	RF Module	0
<input type="checkbox"/>	01-07-2016 14:00:00	7371171	7371171	10	V cold water (h...	19 744.7000	m cube	RF Module	0
<input type="checkbox"/>	01-07-2016 15:00:00	7371171	7371171	10	V cold water (h...	19 745.3300	m cube	RF Module	0
<input type="checkbox"/>	01-07-2016 16:00:00	7371171	7371171	10	V cold water (h...	19 746.3700	m cube	RF Module	0
<input type="checkbox"/>	01-07-2016 17:00:00	7371171	7371171	10	V cold water (h...	19 747.5900	m cube	RF Module	0

Connection settings

IP: 189.23.14.205  
Port: 3209  
ID: 5371428  
Open Save  
☒ COM4  
☐ COM7

COM port settings

Clear list  
Load from file  
Save to file  
Export to Excel  
Send data

Archive

19:45:39