

Remia KME

Remia KME communication protocol

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Supported device types and versions

The protocol supports reading data from the Remia KME concentrator. Internal number of REMIA protocol is 206.

The protocol supports reading of instant values as well as 1 and 15 minute archives of measurements from electrometers, which KME obtains:

- via IEC communication
- by measuring pulses

The protocol also supports reading of instant values of binary data and values of 16-bit counters.

The protocol also supports reading of generic instant values (I/O tags with GA address) and reading of records from event log archives (I/O tags with REC NR address).

Communication line configuration

- Communication line category: [TCP/IP-UDP](#).
- Parameters of TCP/IP-UDP line:
 - Host: IP address of KME concentrator
 - Port: UDP port of the concentrator where requests are send (default port is 5001).

Note: The parameters of backup server (Host and Port) are not used in this protocol.

Communication station configuration

- Communication protocol: **Remia KME**.
- Station address is not specified.

Station protocol parameters

[Configuration dialog box](#) of station - the tab "**Protocol parameters**".

Table 1

Key word	Full name	Meaning	Unit	Default value
WT	Wait Timeout	Timeout to receive a response or one of its fragments.	s.ms	1.5 s
FA	Fragme nted answer is expected	The response may consist of several UDP packets (fragments).	-	False
ADOI	Actual Data Object ID	The address of the object (16-bit number) that contains information about the instant values (analog). A value of 0 disables reading of the instant values as well as their 1 and 15-minute archives.	-	8
A15OI	15min Archive Data Object ID	The address of the object (a 16-bit number) that contains information about 15-minute values. A value of 0 disables reading of 15-minute values.	-	5
A1OI	1min Archive Data Object ID	The address of the object (a 16-bit number) that contains information about 1-minute values. A value of 0 disables reading of 1-minute values.	-	9

ABII	Binary data Object ID	The address of the object (a 16-bit number) that contains information about binary values. A value of 0 disables reading of binary values.	-	0
GADOI	Generic Actual Data Object ID	The address of the object (16-bit number) that contains information about the generic instant values (addresses of I/O tags of GA type). A value of 0 disables reading of generic instant values.	-	0
GEOI	Generic Event Object ID	The address of the object (16-bit number) that contains event information from the event log of RemiaKME. A value of 0 disables work with the event log. A specific event is read from the archive by writing to the I/O tag with <i>RECNr</i> address.	-	0
EMNR	Number of EMs	The number of electrometers (1-255) whose instant data from impulse measurement (instant counter value, instant power, average power since the start of the current time interval, validity of the meter's data) are in response to reading the Actual Data Object ID , and whose historical data 1 and The 15-minute minutes (end-of-period counter value,, average power per period) are in response to reading 1min Archive Data Object ID and 15min Archive Data Object ID .	-	41
EINR	Number of EIs	The number of meters (1-255) whose instant data from IEC communication (instant counter value, numbers of last 3 accumulations, counter values for the last 3 accumulations) are in response to reading the Actual Data Object ID , and historical data (last accumulation number, counter value for the last accumulation) are in response to reading 1min Archive Data Object ID and 15min Archive Data Object ID objects.	-	6
EIVR	Number of values in EI	The number of measurements (1-255) in the EI section (data from IEC communication) in response to reading the Actual Data Object ID , 1min Archive Data Object ID a 15min Archive Data Object ID objects.	-	16
WCNR	Number of word counters	The number of 16-bit counters (0-255) whose values are in response to reading the Actual Data Object ID object.	-	0
PBD	Debug Packet Binary Contents	Activates advanced debugging with listing of binary data being sent and received.	YES /NO	YES
FULL_DEBUG	Debug Values	Activates advanced debugging with listing of I/O tag values.	YES /NO	NO

I/O tag configuration

I/O tag types: **Ai, Ci, Qi, Di, TiA, Co.**

The address of I/O tag can have different forms.

For electrometers in the EI structure - i.e. electrometers obtained by IEC communication - it has the form **EI.EiNr.EiInd.EiParam** where:

- *EiNr* - electrometer number in EI structure (1..255). The total number of electrometers that the concentrator sends must be set in the [Number of EIs](#) protocol parameter.
- *EiInd* - measurement index of electrometer within the EI structure (1..255). The total number of measurements for one electrometer that the concentrator sends must be set in the [Number of values in EI](#) protocol parameter.
- *EiParam* - measurement parameter: AV|AV1|AV15|N|N1|N15|VN|1N|1V|2N|2V|3N|3V
 - AV - Instant value of the counter [kWh, kVArh]
 - AV1 - Instant value of the counter at the end of 1-minute interval
 - AV15 - Instant value of the counter at the end of 15-minute interval
 - N - Number of the last accumulation
 - N1 - Number of the last accumulation at the end of 1-minute interval
 - N15 - Number of the last accumulation at the end of 15-minute interval
 - VN - Value of the counter at the last accumulation [kWh, kVArh]
 - 1N - Number of the previous (1-st older) accumulation
 - 1V - Value of the counter at the previous (1st older) accumulation
 - 2N - Number of 2-nd older accumulation
 - 2V - Value of the counter at the 2-nd older accumulation
 - 3N - Number of 3-rd older accumulation
 - 3V - Value of the counter at the 3-rd older accumulation

Examples of addresses:

EI.1.1.AV
EI.3.13.N1

For electrometers in the EM structure - i.e. electrometers obtained by measurement of impulses - it has the form **EM.EmNr.EmParam** where:

- *EmNr* - electrometer number in EM structure (1..255). The total number of electrometers that the concentrator sends must be set in the [Number of EMs](#) protocol parameter.
- *EmParam* - measurement parameter: CA|CA1|CA15|OV|PV|PV1|PV15|PPO
 - CA - Instant value of the counter (0..9_9999_9999)

- **CA1** - Instant value of the counter (0..9_9999_9999) at the end of 1-minute interval
- **CA15** - Instant value of the counter (0..9_9999_9999) at the end of 15-minute interval
- **OV** - Instant power [kW, kVAr]
- **PV** - Average power since the beginning of current 15-minute interval [kW, kVAr]
- **PV1** - Average power at the end of 1-minute interval [kW, kVAr]
- **PV15** - Average power at the end of 15-minute interval [kW, kVAr]
- **PPO** - Electrometer's data validity (a 16-bit number specifying number of seconds)

Examples of addresses:

EM.2.CA15
EM.1.OV
EM.4.CA1
EM.5.CA
EM.40.PV
EM.40.PV1

For binary data - read from the object with address [Binary data Object ID](#) - it has the form **DI.WrNr.BitNr.DiParam** where:

- **WrNr** - ordinal number of word address (1..255) within a response
- **BitNr** - bit number (0..15)
- **DiParam** - parameter **INP|PPO**
 - **INP** - binary value (digital input)
 - **PPO** - data validity (a 16-bit number specifying number of seconds)

Examples of addresses:

DI.2.10.INP
DI.1.0.INP
DI.3.14.PPO

For instant values of 16-bit counters - read from the object with address [Actual Data Object ID](#) - it has the form **EW.EwNr** where:

- **EwNr** - ordinal number of counter (1..255) within a response. The total number of counters that the concentrator sends must be set in the [Number of word counters](#) protocol parameter.

Examples of addresses:

EW.1
EW.47

For generic instant values - read from the object with address [Generic Actual Data Object ID](#) - it has the form **GA.Offset.Type[.BitNr]** where:

- **Offset** - offset of value in the response(0..65535). For multibyte values, this is the offset of the first byte.
 - **Type** - type of value. The following types are supported:
 - **BYTE** - 1-byte unsigned number
 - **SBYTE** - 1-byte signed number
 - **WORD** - 2-byte unsigned number
 - **SWORD** - 1-byte signed number
 - **DWORD** - 4-byte unsigned number
 - **SDWORD** - 4-byte signed number
 - **FLOAT** - 4-byte float number
 - **DFLOAT** - 8-byte float number

Note: if the DFLOAT value type is configured on I/O tag of the TiA type, it is interpreted as a Unix times (number of seconds since January 1, 1970 in UTC)

 - **RTD** - 4-byte timestamp (2 bytes hours/minutes/day, 2 bytes month/year)
- **BitNr** - optional bit number for values of BYTE (0-7) and WORD (0-15) types, if the values are assigned to I/O tags of Di type.

Examples of addresses:

GA.0.FLOAT
GA.4.WORD.15
GA.6.BYTE

An object with a [Generic Event Object ID](#) address is used to access events from the event log. For reading, a **Co** type I/O tag with a **RECNR** address is required. Writing an integer value into it will read the event with the corresponding record number from the event log. The format of the read data is application dependent (depending on the configuration of the Remia KME concentrator). The number of the most recent (or next) record in the event log can usually be obtained by reading a block with generic instant values. Writing of value into I/O tag with a **RECNR** address is finished after the read data have been inserted into defined input I/O tags.

Literature

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Changes and modifications

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Document revisions

- Ver. 1.0 - October 4, 2019 - Creation of document
- Ver. 1.1 - December 6, 2019 - Support for generic instant values and event logs



Related pages:

[Communication protocols](#)