



DESCRIPTION USER MANUAL

LoRaWan

for

IFV M4 E2



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DECODING THE PAYLOAD

The size of the device's payload can vary depending on the type of measuring device. All VIF data are sending through Port 100.

By default, information of the *Heating energy metering device* will always be shown in the order indicated in the following table.

Order	Number of bytes	Description
1	4	Date and time
2	1	Status code
3	4	Energy for heating
4	4	Volume
5	4	Energy for heating of the past period 1
6	4	Volume of the past period 1
7	4	Energy for heating of the past period 2
8	4	Volume of the past period 2
9	4	Energy for heating of the past period 3
10	4	Volume of the past period 3
11	4	Period between past values

EXPLANATION OF THE PAYLOAD

UNIX hexadecimal timestamp, when data was updated from the meter. Example:

0x5AE46015 means Saturday, April 28, 2018 11:50:45 AM (GTM).

Status of the metering device indicated in following table.

Status \ Bit No.	0	1	2	3	4	5	6	7
Low battery			X					
Permanent				X				
Temporary					X			

Energy for heating in kWh. Example: 0x240E0000 means 9230 kWh. Bytes in the payload are swapped

(the sequence is little-endian) – least significant byte is on the left of the byte sequence.

Volume is multiplied by 0.001 m³. Example: 0xB0620100 means 90.8 m³. Byte sequence is little-endian.

The next values in the payload are historical. They are presented in the same dimensions as actual values in previous registers. Historical data is updated whenever relevant values are recorded to the payload. For example actual values of *Heating metering device* updating every hour so at that moment all registers is rolled to the right by eight bytes and the last eight bytes are consumed.

Period between past values indicates time offset between present values and values given in past periods. By default this period is provided in seconds.

CONFIGURATION PARAMETERS

Through Port number 101 configurations of parameters are transmitted in the form of extended payload. Configuration is transmitted every tenth telegrams. These telegrams are extended by DIF values and every DIF value is inserted before every VIF value.

DIF values means length of data (code of data format) transited in the payload.

32 bits integer, i.e. 0x04,

16 bits integer, i.e. 0x02,

8 bits / 1 byte, i.e. 0x01.

VIF values mean type of data (code of data units) in the payload.

Date and time, Type F, i.e. 0x6D,

Status code, i.e. 0xFD17,

Volume, liters or 0.001 m³, i.e. 0x13,

Energy for heating, kWh, i.e. 0x863B,

Period between past values, sec., i.e. 0xFD2C.

Example of payload for *Heating energy metering device* through port number 101 explained in the following table.

Order	Number of bytes	Description	Example
1	1	DIF – 32 bits integer	0x04
2	1	VIF – Date and time, Type F	0x6D
3	1	DIF – 8 bits / 1 byte	0x01
4	2	VIF – Status code	0xFD17
5	1	DIF – 32 bits integer	0x04

6	2	VIF – Energy for heating, kWh	0x86 3B
7	1	DIF – 32 bits integer	0x04
8	1	VIF – Volume, l	0x13
9	1	DIF – 32 bits integer	0x04
10	2	VIF – Energy for heating of the past period 1, kWh	0x86 3B
11	1	DIF – 32 bits integer	0x04
12	1	VIF – Volume of the past period 1, l	0x13
13	1	DIF – 32 bits integer	0x04
14	2	VIF – Energy for heating of the past period 2, kWh	0x86 3B
15	1	DIF – 32 bits integer	0x04
16	1	VIF – Volume of the past period 2, l	0x13
17	1	DIF – 32 bits integer	0x04
18	2	VIF – Energy for heating of the past period 3, kWh	0x86 3B
19	1	DIF – 32 bits integer	0x04
20	1	VIF – Volume of the past period 3, l	0x13
19	1	DIF – 32 bits integer	0x04
20	2	VIF – Period between past values, sec.	0xFD 2C

READ AND SEND PERIODS SETTINGS

There are possibilities to modify read and send periods of the module through Port 102. The command to set period then data should be transmitted from the module described below.

Order	Number of bytes	Description and meaning	Example
1	1	DIF value – 32 bit signed integer	0x04
2	4	VIF value – exact command	0xFF898 500
3	4	Data send period (LSB), i.e. 116 sec.	0x7400 0000

The reset command of the send period to default is explained below.

Order	Number of bytes	Description	Example
1	1	DIF value – no data to send	0x00
2	4	VIF value – exact command	0xFF898507

The command to set period then data should be collected from the measurement device described below.

Order	Number of bytes	Description	Example
1	1	DIF value – 32 bit signed integer	0x04
2	4	VIF value – exact command	0xFF898C00
3	4	Data read period (LSB), i.e. 116 sec.	0x74000000

The reset command of the read period to default is in the table below.

Order	Number of bytes	Description	Example
1	1	DIF value – no data to send	0x00
2	4	VIF value – exact command	0xFF898C07

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