



Advanced Power Meter

EM235/PM335 PRO

Modbus Communications Protocol

Reference Guide

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Chapter 1 General

This document specifies a subset of the Modbus communications protocol used to transfer data between a master computer station and EM235/PM335 PRO. The document provides the complete information necessary to develop third-party communications software capable of communication with EM235/PM335 PRO. Refer to the EM235/PM335 PRO Installation & Operation Manual for more information on communication connections and configuring communication parameters in your device.

Chapter 2 Modbus Protocol Implementation

For detailed information on the Modbus protocol, message framing and error checking, refer to the Modbus Protocol Reference Guide. It can be downloaded from the Modbus-IDA Website at <http://www.modbus.org/>. The following paragraphs outline some issues concerning the implementation of the Modbus protocol in the EM235/PM335 PRO.

2.1 Transmission Modes

EM235/PM335 PRO can be set up to communicate on a serial Modbus network using either RTU, or ASCII serial transmission mode, and via the Internet using Modbus/TCP mode. Refer to EM235/PM335 PRO Operation Manual for information on selecting the transmission mode in your device.

2.2 Address Field

The address field contains a user assigned address of the instrument (1-247) on a Modbus network. Broadcast mode using address 0 is not supported.

When communicating via the Internet, the address field is not checked and is returned in the response message header.

2.3 Function Field

The Modbus functions implemented in EM235/PM335 PRO are shown in Table 2-1. Function 04 can be used in the same context as function 03.

Table 2-1 Modbus Function Codes

Code (decimal)	Meaning in Modbus	Action
03	Read holding registers	Read multiple registers
04	Read input registers	Read multiple registers
06	Preset single register	Write single register
16	Preset multiple registers	Write multiple registers
22	Mask write	Set or clear individual bits
08 ¹	Loop-back test	Communications test

² EM235/PM335 PRO supports only diagnostic code 0 – return query data.

2.4 Exception Responses

The instrument sends an exception response when an error is detected in the received message. To indicate that the response is notification of an error, the high order bit of the function code is set to 1.

Implemented exception response codes:

- 01-** Illegal function
- 02-** Illegal data address
- 03-** Illegal data value
- 04-** Device failure

When the character framing, parity, or redundancy check detects a communication error, processing of the master's request stops. The instrument will not act on or respond to the message.

2.5 Modbus Register Addresses

EM235/PM335 PRO Modbus registers are numbered in the range of 0 to 65535. From the Modbus applications, EM235/PM335 PRO Modbus registers can be accessed by simulating holding registers of the Modicon 584, 884 or 984 Programmable Controller, using a 5-digit “4XXXX” or 6-digit “4XXXXX” addressing scheme. To map the EM235/PM335 PRO register address to the range of the Modbus holding registers, add a value of 40001 to EM235/PM335 PRO register address. When a register address exceeds 9999, use a 6-digit addressing scheme by adding 400001 to EM235/PM335 PRO register address.

2.6 Data Formats

EM235/PM335 PRO uses three data formats to pass data between a master application and the instrument: 16-bit short integer, 32-bit long integer and 32-bit modulo-10000 formats. Binary values and counters are always transmitted in 32-bit registers, while analog values can be read both in 32-bit and in 16-bit scaled registers.

Analog registers 256 through 308 and 4320 through 10751 contain scaled 16-bit values.

2.6.1 16-bit Scaled Integer Format

16-bit scaled data is transmitted in a single 16-bit Modbus register as unsigned (UINT16) integer (whole) numbers using the linear conversion to accommodate large-scale and fractional numbers to a 16-bit register format. The linear conversion uses two scales to read the raw data from the device and convert it into engineering units: the device original engineering scale and the Modbus conversion scale.

When transmitting measured data, the device scales it into the range of Modbus Low and High conversion scales. To reconstruct data in the original engineering units, perform the reverse conversion according to the following formula:

$$\text{Engineering_Units} = \frac{\text{Raw_Data} \times (\text{ENG_HI} - \text{ENG_LO})}{\text{RAW_HI} - \text{RAW_LO}} + \text{ENG_LO}$$

where:

- ENG_LO and ENG_HI - reading low and high scales in engineering units
- RAW_LO and RAW_HI - raw data low and high scales (by default, 0 and 9999)
- Raw_Data - raw input data in the range of RAW_LO to RAW_HI
- Engineering_Units - true value in engineering units

The default Modbus conversion scales are 0 for the low scale and 9999 for the high scale. This means that the scaled analog data is always transmitted in the range of 0 to 9999. The Modbus conversion scales can be changed through communications via registers 240 and 241.

The engineering scales are separately indicated for each scaled 16-bit register. For data scales and measurement units that depend on the device input scales (such as volts, amps and powers), refer to [Chapter 4](#) “Data Scales and Units”.

Conversion Examples

1. Voltage readings

a) Assume device settings (direct wiring): PT ratio = 1.

Voltage engineering scales (see [Chapter 4](#)):

$$\text{HI_ENG} = V_{\text{max}} = 828.0 \times \text{PT ratio} = 828.0 \times 1 = 828.0\text{V}$$

$$\text{LO_ENG} = 0\text{V}$$

If the raw data reading is 1449 then the voltage reading in engineering units will be as follows:

$$\text{Volts reading} = 1449 \times (828.0 - 0) / (9999 - 0) + 0 = 120.0\text{V}$$

b) Assume device settings (wiring via PT): PT ratio = 14,400V : 120V = 120.

Voltage engineering scales (see [Chapter 4](#)):

$$\text{HI_ENG} = V_{\text{max}} = 828.0 \times \text{PT ratio} = 828 \times 120 = 99,360\text{V}$$

$$\text{LO_ENG} = 0\text{V}$$

If the raw data reading is 1449 then the voltage reading in engineering units will be as follows:

$$\text{Volts reading} = 1449 \times (99360 - 0) / (9999 - 0) + 0 = 14,399\text{V}$$

2. Current readings

Assume device settings: CT primary current = 200A; current input overload = 200% (10A).

Current engineering scales (see [Chapter 4](#)):

$$\text{HI_ENG} = I_{\text{max}} = \text{CT primary current} \times 4 = 800.00\text{A}$$

$$\text{LO_ENG} = 0\text{A}$$

If the raw data reading is 250 then the current reading in engineering units will be as follows:

$$\text{Amps reading} = 250 \times (800.00 - 0) / (9999 - 0) + 0 = 10.00\text{A}$$

3. Power readings

a) Assume device settings (direct wiring): PT = 1; CT primary current = 200A; current input overload = 200% (10A).

Active Power engineering scales (rounded to whole kW, see [Chapter 4](#)):

$$\text{HI_ENG} = P_{\text{max}} = V_{\text{max}} \times I_{\text{max}} \times 2 = (828.0 \times 1) \times (200.00 \times 4) \times 2 = 1,324,800 \text{ W} = 1325 \text{ kW}$$

$$\text{LO_ENG} = -P_{\text{max}} = -1325 \text{ kW}$$

If the raw data reading is 5500 then the power reading in engineering units will be as follows:

$$\text{Watts reading} = 5500 \times (1325 - (-1325)) / (9999 - 0) + (-1325) = 132.6 \text{ kW}$$

If the raw data reading is 500 then the power reading in engineering units will be as follows:

$$\text{Watts reading} = 500 \times (1325 - (-1325)) / (9999 - 0) + (-1325) = -1192.5 \text{ kW}$$

b) Assume device settings (wiring via PT): PT = 120; CT primary current = 200A; current input overload = 400% (20A).

Active Power engineering scales (rounded to whole kW, see [Chapter 4](#)):

$$\text{HI_ENG} = P_{\text{max}} = V_{\text{max}} \times I_{\text{max}} \times 2 = (828 \times 120) \times (200.00 \times 4) \times 2/1000 = 158976 \text{ kW}$$

$$\text{LO_ENG} = -P_{\text{max}} = -158976 \text{ kW}$$

If the raw data reading is 5500 then the power reading in engineering units will be as follows:

$$\text{Watts reading} = 5500 \times (158976 - (-158976))/(9999 - 0) + (-158976) = 15915 \text{ kW}$$

If the raw data reading is 500 then the power reading in engineering units will be as follows:

$$\text{Watts reading} = 500 \times (158976 - (-158976))/(9999 - 0) + (-158976) = -143077 \text{ kW}$$

4. Power Factor readings

Power factor engineering scales (see [Chapter 4](#)):

$$\text{HI_ENG} = 1.000.$$

$$\text{LO_ENG} = -1.000.$$

If the raw data reading is 8900 then the power factor in engineering units will be as follows:

$$\text{Power factor reading} = 8900 \times (1.000 - (-1.000))/(9999 - 0) + (-1.000) = 0.78$$

2.6.2 32-bit Long Integer Format

32-bit long integer data is transmitted in two adjacent 16-bit Modbus registers as unsigned (UINT32) or signed (INT32) whole numbers. The first register contains the low-order word (lower 16 bits) and the second register contains the high order word (higher 16 bits). The low-order word always starts at an even Modbus address. The value range for unsigned data is 0 to 4,294,967,295; for signed data the range is -2,147,483,648 to 2,147,483,647.

If your Modbus driver does not support a 32-bit long integer format, you can read the two 16-bit registers separately, and then convert them into a 32-bit value as follows (using C notation):

$$\text{32-bit value} = (\text{signed short})\text{high_order_register} \times 65536L + (\text{unsigned short})\text{low_order_register}$$

Examples

1. Unsigned 32-bit Values

If you read unsigned Voltage V1 of 69,000V from registers 13952-13953, then the register readings will be as follows:

$$(13952) = 3464$$

$$(13953) = 1$$

The 32-bit value is $(1 \times 65536 + 3464) = 69000V$.

2. Signed 32-bit Values

If you read signed kW of -789kW from registers 14336-14337, then the register readings will be:

(14336) = 64747 (unsigned)
(14337) = 65535 (unsigned) or -1(signed value).

To take the high order register as a signed value, compare it with 32767. If the value is less or equal to 32767, use it as is. If it is greater than 32767, then this is a negative number in a two's complement code (like in our example) – just subtract it from 65536 to get the original negative value.

The 32-bit reading is $(-1 \times 65536 + 64747) = -789\text{kW}$.

Fractional 32-bit data is transmitted using decimal scaling to pass fractional numbers in integer format. Fractional numbers are pre-multiplied by 10 to the power N, where N is the number of digits in the fractional part. For example, the frequency reading of 50.01 Hz is transmitted as 5001, having been pre-multiplied by 100.

Whenever a data register contains a fractional number, the register measurement unit is given with a multiplier $\times 0.1$, $\times 0.01$ or $\times 0.001$, showing the weight of the least significant decimal digit. To get an actual fractional number with specified precision, multiply the register value by the given multiplier. To write a fractional number into the register, divide the number by the given multiplier.

2.6.3 32-bit Modulo-10000 Format

Energy counters 287-294 and 301-302 are read in two contiguous 16-bit registers in a modulo-10000 format. The first (low order) register contains the value mod 10000, and the second (high order) register contains the value/10000. To get the true energy reading, the high order register value should be multiplied by 10,000 and added to the low order register.

2.7 User Assignable Registers

EM235/PM335 PRO provides 120 user assignable registers in the address range of 0 to 119. You can re-map any register available in the device to any assignable register so that Modbus registers that reside at different locations may be simply accessed using a single request by re-mapping them to adjacent addresses.

The actual addresses of the assignable registers, which are accessed via addresses 0 through 119, are specified in the register map (registers 120 through 239), where register 120 contains the actual address of the register accessed via register 0, register 121 contains the actual address of the register accessed via register 1, and so on. The assignable registers and the map registers themselves may not be re-mapped.

Initially these registers are reserved and none of them points to an actual register address. To build your own register map, write to map registers 120 to 239 the actual addresses you want to read from or write to via the assignable area (registers 0 to 119). 32-bit long registers should always be aligned at even addresses. For example, to read registers 4672 (1-second V1 voltage, scaled short integer) and 14720-14721 (kWh Import, long integer) via registers 0-2, do the following:

- write 14720 to register 120
- write 14721 to register 121
- write 4672 to register 122

Reading from registers 0-2 will return the kWh reading in registers 0 (low 16 bits) and 1 (high 16 bits), and the voltage reading in register 2.

2.8 Password Protection

EM235/PM335 PRO has a password protection for setups, cumulative registers and log files from being changed or cleared via communications. Refer to EM235/PM335 EM235/PM335 PRO Operation Manual for details.

A user password must be written into the 32-bit device authorization register (44378-44379) before another write request is issued. If the correct password is not supplied, the meter will respond to all write requests directed to the meter setup and reset registers with the exception code 01 (illegal operation). It is recommended to clear the authorization register after you have completed your changes in order to activate password protection.

2.9 Data Recording and File Transfers

2.9.1 Log File Organization

Historical files are stored in flash memory. Memory space is allocated for each file statically when you set up your files and will not change unless you re-organize files.

Data records in a file are arranged in the order of their recording. Each record has a unique 16-bit sequence number that is incremented modulo 65536 with each new record. The sequence number can be used to point to a particular record in the file, or to check the sequence of records when uploading files from the device.

Each file has a write position pointer that indicates the place where the next record will be recorded, and a read position pointer that indicates the place from where the current record will be read. Both pointers show sequence numbers of the records they point to rather than record offsets in the file.

After acknowledging a record you have read, the read pointer automatically advances to the next record in the file. When the read pointer gets to the record to which the file write pointer points, the end-of-file (EOF) flag is set. It is automatically cleared when a new record is added to the file, or when you explicitly move the read pointer to any record within a file.

If a file has a wrap-around attribute (circular file), the most recent records can overwrite the oldest records. When this happens at the current read position, the read pointer automatically advances forward in order to point to the oldest record in the file.

EM235/PM335 PRO keeps a separate read pointer for each communication port so that access to the same file through a different port will not affect current active sessions for other ports.

Multi-section Files

Log files can have one or more (up to 32) sections for multi-channel recording. An ordinal file consists of a single section. Some files, such as TOU profile log files and waveform log files, are arranged as multi-section files.

A multi-section file is subdivided into multiple sections of the same structure, one section per recording channel. The number of sections in each file is defined at the time you set up your files and may not change unless you re-organize the file. Sections within a multi-section file can be addressed by a section number, or by a section channel ID.

A multi-section file has a single write position pointer for all sections and stores data in all sections simultaneously. This means that records with the same sequence number in all sections are associated with the same event. A multi-section file has also a single read position pointer for all sections.

Data Log Files

Conventional data log files can store up to 16 measured parameters per a record. Any data measured by the device can be stored in the log file. The number of parameters that each record will hold and the list of parameters you want to be recorded in the file can be selected through the Data log setup registers for a particular file.

Recording data to data log files can be triggered through the setpoints, either on a time basis, or upon any event detected by the setpoints.

TOU Profile Log Files

Data log files #15 and #16 can be configured for monthly and daily profile logs of the energy usage and maximum demand registers. A profile log file is organized as a multi-section file that has a separate section for each energy and maximum demand register. See Section [3.12](#) for more information on the file record structure. A file record stores all tariff data for each configured Billing/TOU register.

The number of sections is taken automatically from the Billing/TOU Registers setup. In order to correctly allocate memory space, configure your TOU registers before you set up TOU profile files.

Since each Billing/TOU energy register has a shadow maximum demand register, the number of sections in the file will be twice the number of the allocated Billing/TOU registers.

Power Quality Statistics Log Files

Data log files #9 and #10 are configured to store the power quality statistics data on a daily or weekly basis. They are organized as multi-section files. See Sections [3.10-3.12](#) for more information on the file record structure. You can review the list of parameters recorded to the files through the file info request/response blocks using info requests with variation 2 (see Section [3.9](#)).

Waveform Log Files

Waveform log files are organized as multi-section files that store data for each recording channel in a separate section. A waveform log file can record up to 11 channels simultaneously: eight AC channels (four voltages and four currents), and 3x16 digital inputs DI1:16, DI17:32, DI33:48 that are recorded as three 16-bit analog channels. In devices with a fast AI option, a file can additionally record 16 analog input channels.

The number of sections, or channels, that a file can store, is defined in the file setup. The waveform log setup allows selecting channels that a file will record. All selected channels are recorded in successive file sections.

A waveform file has a single read pointer for all sections, so that data from all channels of a single record can be read together without repositioning the file pointer. When you point to a particular file record, data from all sections related to the same event are all available for a read. Moreover, EM235/PM335 PRO takes all channel data for the currently accessed record to a separate buffer, so that even when the record is overwritten at the time of reading, you are still prevented from receiving partially updated data. You can also read a file in a common sequential manner section-by-section.

A single waveform record for a channel can contain up to 512 points of the sampled input signal. DI and AI channels are sampled at different rates than AC channels and may contain fewer points than the corresponding AC records. Refer to the sampling rate field in the channel records to correctly set up the time scale for the DI and AI waveforms. If the record contains less than 512 points, the value of unused points is unpredictable.

If a waveform log is configured to record more samples per event than a single record can hold, the waveform recorder will store as many records per event as required to record the entire event. All waveform records related to the event are merged in a series and have the same series number, so that they can all be plotted together. Each record within a series has a unique serial number that allows tracking the sequence of records in the series. A single waveform series can hold up to 347,136 points (10,848 cycles at a rate of 32 samples per cycle) of a sampled AC signal.

2.9.2 File Transfers

File transfer protocol provides both data transfer and information services. File transfer is performed through two blocks of registers: a 32-word master request block and a 1792-word read-only file response block. After a master application has written the request into the file request block, the requested data is available for a read through the file response block registers. File transfer functions allow changing the file or section position in order to point to the desired record.

The information service uses separate 8-word file info request and 200-word file info response blocks. The extended file information is available including current file pointers' positions, file contents, the number of records in the file, allocated file size, time of file creation, time of the last file update and reset, and more.

Common File Transfer

Log files can be read either in a sequence record-by-record, or in a random order. Each Read-File request fills the file response block with the data of the record pointed to by the file (or section) read pointer. If you want to begin reading a file from a particular record, which sequence number is known, you can change the pointer position by issuing the Set-File-Position request with the desired sequence number. If you want to read a file from the beginning, send the Reset-File-Position request that moves the pointer to the oldest file record. If you do not change the file position, then you will continue reading the file from the record following the one you have read the last time you accessed the file.

You need not explicitly move the file position to the following record if you want to continue reading a file in sequence after you have uploaded the current record. Instead, issue an acknowledgment request that automatically advances the file pointer to the next record, and then read the record data through the file response block.

The file response block can contain more than one record. The number of records available in the block and the file record size in words are always reported in the block heading. There are no special rules on how to read records from the file transfer block. You can read a single record or all records together, or begin reading from the last record and end with the first record. However, you should remember: 1) after an acknowledgment, the file position moves to the record following the last one you have accessed in the file transfer block; and 2) data in the file transfer block does not change until you either issue an acknowledgment, or explicitly change the file position by the Set-File-Position or Reset-File-Position requests.

The file transfer is completed after you have read the last record of the file. Before storing a file record to your database, always check bit 9 in the record status word, which contains the end-of-file (EOF) flag. This bit set to 1 indicates that the file read pointer does not point to any record within the file, and you should not store any record that has this bit set. The EOF flag is set only after you have acknowledged the last record of the file, so that testing for end-of-file requires one extra read. If you wish to stop the transfer just after storing the last file record, acknowledge the record and check bit 0 in the record status word. Bit 0 is set to 1 only once when you read the last record of the file.

The following gives a summary of steps you should do to read an ordinal log file:

1. If you want to begin reading a file from a particular record or from the first record, use either the Set-File-Position request with the desired record sequence number, or the Reset-File-Position request. Preset a section number and channel ID to zero.
2. Write the Read-File request with a section number and channel ID set to zero.
3. Read the record data from the file response block.
4. Write an acknowledgment for the file. You need not fill all the request fields: only the file function is required. The file pointer will be moved to the next file record.

Repeat steps 3-4 until all the file records are read.

Reading Multi-section Data Log Files

In a multi-section data log file, all user requests including an acknowledgment, the Read-File, Set-File-Position and Reset-File-Position requests, relate to a particular file section rather than to the file itself. The only request that affects the entire file is the Erase-File that clears all the file sections together.

A file section can be requested either by a section number, or by a section channel ID. If you use a channel ID, preset the section number field to 0xFFFF. If a section number is specified, the channel ID field will not be checked. The device returns both fields in the response block heading, so you can always identify what channel data is being read from the present file section. If you want to know which channels are recorded to the file sections, check the file channel mask in the file info block. This is a bitmap that contains one in a bit position if a channel with an ID equal to the bit number is recorded to the file, and contains zero if it is not.

The following gives a summary of steps for reading a multi-section data log file:

1. If you wish to begin reading a file section from a particular record or from the first record, use either the Set-File-Position request with the desired record sequence number, or the Reset-File-Position request. Specify either a section number, or the channel ID for the section from where you want to read data. If you use a channel ID, preset the section number field to 0xFFFF.
2. Write the Read-File request with the section number and channel ID as shown in the previous step.
3. Read the record data from the file response block.
4. Write an acknowledgment for the file. The file section pointer will be moved to the next record.

Repeat steps 3-4 until all the section records are read.

Reading Multi-section Waveform Files

Waveform files can be read as conventional multi-section files in the order described above. Another way is to take advantage of the fact that waveform files have a single read pointer for all file sections, so you can read records of all the channels related to the same event at once without repositioning the file pointer. The following gives a summary of steps for reading waveform files:

1. If you want to begin reading a file from a particular record or from the first record, use either the Set-File-Position request with the desired record sequence number, or the Reset-File-Position request. Preset the section field to zero.
2. Write the Read-File request. Address your request to the first file section (its number is always zero), or to the first file channel (if you know channel's ID). If you use a channel ID, preset the section number field to 0xFFFF.
3. Read the channel's data from the file response block. Store the received record's sequence number.
4. Write the Read-File request for the next file section or channel using the stored record sequence number. The file response block will be refilled with the data for the requested channel that is related to the record with the same sequence number.
5. Repeat steps 3, 4 until all the channel records with the current sequence number are read.
6. Write an acknowledgment. The file pointer will be moved to the next record.

Repeat steps 2-6 until all the file records are read.

Reading Real-time Waveforms

Real-time waveforms are accessed through the same transfer blocks just like the waveform log files by addressing file 128. Writing the Read-File request for file 128 provides a simultaneous capture of 6 real-time waveform records – three voltage and three current waveforms – into a communication buffer that can be read through the common file response block. The following gives a summary of steps for reading real-time waveforms:

1. Write the Read-File request for file 128. Address you request to the first file section (its number is always zero), or to the first file channel (if you know channel's ID). If you use a channel ID, preset the section number field to 0xFFFF.
2. Read the channel's data from the file response block.
3. Write the Read-File request for the next file section or channel. The file response block will be refilled with the data for the requested channel.
4. Repeat steps 3, 4 until all the channel records are read.

Write an acknowledgment to release the buffer.

2.10 TCP Notification Client

The TCP notification client can establish connections with a remote Modbus/TCP server and send notification messages either on events, or periodically on a time basis.

Notification messages are sent via a block of 24 Modbus registers using write function 16. The following table shows the message exchange structure.

Modbus Register Offset	Description	Type	Comment
+0-1	Device serial number	UINT32	
+2-4	Device MAC address	CHAR6	
+5	Device address	UINT16	1 for Ethernet, COM5 port address for GPRS
+6-7	Device IP address	UINT32	Network byte order
+8	Event type	UINT16	See F22 in Chapter 5
+9	Event sequence number	UINT16	
+10-11	Start event timestamp, seconds	UINT32	Local time since Jan 1, 1970
+12-13	Start event timestamp, seconds fraction, in microseconds	UINT32	
+14-15	End event timestamp, seconds	UINT32	Local time since Jan 1, 1970
+16-17	End event timestamp, seconds fraction, in microseconds	UINT32	
+18	Not used	UINT16	Written as 0
+19	Critical trigger ID	UINT16	See Table below
+20-21	Critical trigger value	UINT32	See Table below
+22-23	Reserved	UINT32	Written as 0

The reported trigger type and value depend on the event source and are described in the following table.

Event Source	Trigger Type	Trigger Value
Setpoint events	Critical Setpoint trigger caused Setpoint operation or release	Trigger entering or return value
PQ events	PQ event trigger. For Polyphase events, the worst phase is reported (see Generic Data in Section 3.4)	Maximum fault magnitude on the reported phase
Fault events	Current phase with highest recorded fault current (see Generic Data in Section 3.4)	Maximum fault current magnitude on the reported phase

After receiving a write acknowledgement from a server, a TCP connection is still open for 10 seconds (20 seconds via GPRS) to give the server an opportunity to access meter registers through an open socket. It may help you access the meter from outside your local network when the server is located on another network, or when using wireless GPRS communications. The notification client will respond to all server requests as if it were a regular incoming connection.

In case a client connection is not used for following data transfers, it is recommended for the server to close the connection immediately after sending a write acknowledgement; otherwise there will be a 10-second delay before the next notification may be sent.

If there is no activity on the connection socket, it will be closed in 10 seconds. In the event a connection attempt was unsuccessful, the notification client retries two more times before announcing a connection failure.

The server’s IP address, port number and starting Modbus register address are programmable in the meter. To configure and enable the notification client in your meter via PAS, select Communication Setup in the Meter Setup menu, and click on the TCP Notification Client Setup tab.

Client connections are triggered via programmable setpoints. To send event notifications to a server, configure a Setpoint to respond to desired triggers or to periodic time events and add the “Send notification” action to the end of the Setpoint actions list.

Setpoint operation events triggered by regular analog and digital triggers are reported twice – when the event starts and when it ends, except of the pulsed events and time triggers that will be reported once. In the start notification message, the event end timestamp is zeroed, and the critical trigger value indicates its entering value, while the second notification message gives both the event start and end time and shows the trigger return value.

In case of triggering notifications with events generated by the PQ and Fault recorders, like the PQ EVENT, FAULT EVENT, EXTERNAL TRIGGER or FAULT DETECTED triggers, the recorded power quality or/and corresponding fault events are reported instead of Setpoint-triggered notifications. Notification messages contain the fault event start and end time, a critical phase and the maximum fault magnitude on the reported phase. If regular triggers are added to the Setpoint triggers list, then the Setpoint operation events will also be reported.

Chapter 3 Modbus Register Map

3.1 Modbus Setup Registers

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
Modbus Assignable Registers							
0-119							
+0		Register 0 contents	0-65535		UINT16	R/W	
+1		Register 1 contents	0-65535		UINT16	R/W	
		...					
+119		Register 119 contents	0-65535		UINT16	R/W	
Assignable Registers Map							
120-239							
+0		Register 0 address	0-65535		UINT16	R/W	
+1		Register 1 address	0-65535		UINT16	R/W	
+119		Register 119 address	0-65535		UINT16	R/W	
Modbus Conversion Scales							
240		Low raw scale	0-65535 (default 0)		UINT16	R/W	
241		High raw scale	1023-65535 (default 9999)		UINT16	R/W	
242		Voltage scale, secondary volts	60-828 (default 828V)	1V	UINT16	R/W	
243		Current scale, secondary amps	10-200 (default CT secondary current x Current Overload)	×0.1A	UINT16	R/W	

3.2 16-bit Scaled Analog Values – Basic Register Set

Address	Point ID	Description	Low and High Scales ²	Units ²	Type	R/W	Notes
256-308		1-Second Values					
+0	0x1100	V1/V12 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+1	0x1101	V2/V23 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+2	0x1102	V3/V31 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+3	0x1103	I1 current	0-Imax	U2	UINT16	R	DC-applicable
+4	0x1104	I2 current	0-Imax	U2	UINT16	R	DC-applicable
+5	0x1105	I3 current	0-Imax	U2	UINT16	R	DC-applicable
+6	0x1106	kW L1	-Pmax-Pmax	U3	INT16	R	DC-applicable
+7	0x1107	kW L2	-Pmax-Pmax	U3	INT16	R	DC-applicable
+8	0x1108	kW L3	-Pmax-Pmax	U3	INT16	R	DC-applicable
+9	0x1109	kvar L1	-Pmax-Pmax	U3	INT16	R	
+10	0x110A	kvar L2	-Pmax-Pmax	U3	INT16	R	
+11	0x110B	kvar L3	-Pmax-Pmax	U3	INT16	R	
+12	0x110C	kVA L1	-Pmax-Pmax	U3	UINT16	R	
+13	0x110D	kVA L2	-Pmax-Pmax	U3	UINT16	R	
+14	0x110E	kVA L3	-Pmax-Pmax	U3	UINT16	R	
+15	0x110F	Power factor L1	-1.000-1.000	0.001	INT16	R	
+16	0x1110	Power factor L2	-1.000-1.000	0.001	INT16	R	
+17	0x1111	Power factor L3	-1.000-1.000	0.001	INT16	R	
+18	0x1403	Total PF	-1.000-1.000	0.001	INT16	R	
+19	0x1400	Total kW	-Pmax-Pmax	U3	INT16	R	
+20	0x1401	Total kvar	-Pmax-Pmax	U3	INT16	R	
+21	0x1402	Total kVA	-Pmax-Pmax	U3	UINT16	R	
+22	0x1501	In current	0-Imax	U2	UINT16	R	
+23	0x1502	Frequency	45.00-65.00	0.01Hz	UINT16	R	
+24	0x3709	Maximum kW import sliding window demand	-Pmax-Pmax	U3	UINT16	R	
+25	0x160F	kW import accumulated demand	-Pmax-Pmax	U3	UINT16	R	

Address	Point ID	Description	Low and High Scales ²	Units ²	Type	R/W	Notes
+26	0x370B	Maximum kVA sliding window demand	-Pmax-Pmax	U3	UINT16	R	
+27	0x1611	kVA accumulated demand	-Pmax-Pmax	U3	UINT16	R	
+28	0x3703	I1 Maximum ampere demand	0-lmax	U2	UINT16	R	
+29	0x3704	I2 Maximum ampere demand	0-lmax	U2	UINT16	R	
+30	0x3705	I3 Maximum ampere demand	0-lmax	U2	UINT16	R	
+31		kWh import (low)	0-9999	U5	UINT16	R	⁶ , DC-applicable
+32		kWh import (high)	0-9999	U5×10,000	UINT16	R	⁶ , DC-applicable
+33		kWh export (low)	0-9999	U5	UINT16	R	⁶ , DC-applicable
+34		kWh export (high)	0-9999	U5×10,000	UINT16	R	⁶ , DC-applicable
+35		+kvarh net (low)	0-9999	U5	UINT16	R	^{4, 6}
+36		+kvarh net (high)	0-9999	U5×10,000	UINT16	R	^{4, 6}
+37		-kvarh net (low)	0-9999	U5	UINT16	R	^{5, 6}
+38		-kvarh net (high)	0-9999	U5×10,000	UINT16	R	^{5, 6}
+39	0x1112	V1/V12 voltage THD	0-999.9	0.1%	UINT16	R	³ , DC-applicable
+40	0x1113	V2/V23 voltage THD	0-999.9	0.1%	UINT16	R	³ , DC-applicable
+41	0x1114	V3/V31 voltage THD	0-999.9	0.1%	UINT16	R	³ , DC-applicable
+42	0x1115	I1 current THD	0-999.9	0.1%	UINT16	R	³ , DC-applicable
+43	0x1116	I2 current THD	0-999.9	0.1%	UINT16	R	³ , DC-applicable
+44	0x1117	I3 current THD	0-999.9	0.1%	UINT16	R	³ , DC-applicable
+45		kVAh (low)	0-9999	U5	UINT16	R	⁶
+46		kVAh (high)	0-9999	U5×10,000	UINT16	R	⁶
+47	0x1609	Present kW import sliding window demand	-Pmax-Pmax	U3	UINT16	R	DC-applicable
+48	0x160B	Present kVA sliding window demand	-Pmax-Pmax	U3	UINT16	R	
+49	0x1615	PF (import) at Max. kVA sliding window demand	0-1.000	0.001	UINT16	R	
+50	0x111B	I1 current TDD	0-100.0	0.1%	UINT16	R	³
+51	0x111C	I2 current TDD	0-100.0	0.1%	UINT16	R	³
+52	0x111D	I3 current TDD	0-100.0	0.1%	UINT16	R	³

NOTES:

¹When the 4LN3, 3LN3 or 3BLN3 wiring mode is selected, the voltages will be line-to-neutral; for any other wiring mode, they will be line-to-line voltages.

²For volts, amps and power scales refer to [Chapter 4](#) "Data Scales and Units".

³On a 3-s interval.

⁴Positive readings of kvarh net

⁵Negative readings of kvarh net

⁶If you use these energy registers instead of 32-bit registers, limit the energy roll value to 8 digits (see Advanced Device Setup) to avoid early overflow.

3.3 16-bit Scaled Analog Values

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
4320-4347		1/2-Cycle Values					
+0	0x0B80	V1 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+1	0x0B81	V2 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+2	0x0B82	V3 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+3	0x0B83	Not used	0	0	UINT16	R	
+4	0x0B84	V12 voltage	0-Vmax	U1	UINT16	R	
+5	0x0B85	V23 voltage	0-Vmax	U1	UINT16	R	
+6	0x0B86	V31 voltage	0-Vmax	U1	UINT16	R	
+7	0x0B87	I1 current	0-I _{max}	U2	UINT16	R	DC-applicable
+8	0x0B88	I2 current	0-I _{max}	U2	UINT16	R	DC-applicable
+9	0x0B89	I3 current	0-I _{max}	U2	UINT16	R	DC-applicable
+10	0x0B8A	I4 current	0-I _{4max}	U2	UINT16	R	DC-applicable
+11	0x0B8B	I _n current	0-I _{max}	U2	UINT16	R	
+12	0x0B97	Not used	0	0	UINT16	R	
+13	0x0B97	Not used	0	0	UINT16	R	
+14	0x0B97	Not used	0	0	UINT16	R	
+15	0x0B97	Not used	0	0	UINT16	R	
+16	0x0B97	Not used	0	0	UINT16	R	
+17	0x0B91	Zero-sequence voltage	0-Vmax	U1	UINT16	R	
+18	0x0B92	Zero-sequence current	0-I _{max}	U2	UINT16	R	
+19	0x0B93	I _x Zero-sequence current	0-I _{xmax}	U2	UINT16	R	
+20	0x0B94	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+21	0x0B95	Current unbalance	0-300.0	0.1%	UINT16	R	
+22	0x0B96	I _x current unbalance	0-300.0	0.1%	UINT16	R	
+23	0x0B97	Not used	0	0	UINT16	R	
+24	0x0B98	Frequency (1-cycle)	0-100.00	0.01Hz	UINT16	R	
+25	0x0B99	Not used	0	0	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+26	0x0B9A	Not used	0	0	UINT16	R	
+27	0x0B9B	I leakage current	0-I _{max}	U2	UINT16	R	
4352-4387		1-Cycle Phase Values					
+0	0x0C00	V1 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+1	0x0C01	V2 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+2	0x0C02	V3 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+3	0x0C03	I1 current	0-I _{max}	U2	UINT16	R	DC-applicable
+4	0x0C04	I2 current	0-I _{max}	U2	UINT16	R	DC-applicable
+5	0x0C05	I3 current	0-I _{max}	U2	UINT16	R	DC-applicable
+6	0x0C06	kW L1	-P _{max} -P _{max}	U3	INT16	R	DC-applicable
+7	0x0C07	kW L2	-P _{max} -P _{max}	U3	INT16	R	DC-applicable
+8	0x0C08	kW L3	-P _{max} -P _{max}	U3	INT16	R	DC-applicable
+9	0x0C09	kvar L1	-P _{max} -P _{max}	U3	INT16	R	
+10	0x0C0A	kvar L2	-P _{max} -P _{max}	U3	INT16	R	
+11	0x0C0B	kvar L3	-P _{max} -P _{max}	U3	INT16	R	
+12	0x0C0C	kVA L1	0-P _{max}	U3	UINT16	R	
+13	0x0C0D	kVA L2	0-P _{max}	U3	UINT16	R	
+14	0x0C0E	kVA L3	0-P _{max}	U3	UINT16	R	
+15	0x0C0F	Power factor L1	-1.000-1.000	0.001	INT16	R	
+16	0x0C10	Power factor L2	-1.000-1.000	0.001	INT16	R	
+17	0x0C11	Power factor L3	-1.000-1.000	0.001	INT16	R	
+18	0x0C12	V1 voltage THD	0-999.9	0.1%	UINT16	R	^{2,4}
+19	0x0C13	V2 voltage THD	0-999.9	0.1%	UINT16	R	^{2,4}
+20	0x0C14	V3 voltage THD	0-999.9	0.1%	UINT16	R	^{2,4}
+21	0x0C15	I1 current THD	0-999.9	0.1%	UINT16	R	⁴
+22	0x0C16	I2 current THD	0-999.9	0.1%	UINT16	R	⁴
+23	0x0C17	I3 current THD	0-999.9	0.1%	UINT16	R	⁴
+24	0x0C18	I1 K-Factor	1.0-999.9	0.1	UINT16	R	⁴
+25	0x0C19	I2 K-Factor	1.0-999.9	0.1	UINT16	R	⁴

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+26	0x0C1A	I3 K-Factor	1.0-999.9	0.1	UINT16	R	⁴
+27	0x0C1B	I1 current TDD	0-100.0	0.1%	UINT16	R	⁴
+28	0x0C1C	I2 current TDD	0-100.0	0.1%	UINT16	R	⁴
+29	0x0C1D	I3 current TDD	0-100.0	0.1%	UINT16	R	⁴
+30	0x0C1E	V12 voltage	0-Vmax	U1	UINT16	R	
+31	0x0C1F	V23 voltage	0-Vmax	U1	UINT16	R	
+32	0x0C20	V31 voltage	0-Vmax	U1	UINT16	R	
+33	0x0C21	Not used	0	0	UINT16	R	
+34	0x0C22	Not used	0	0	UINT16	R	
+35	0x0C23	Not used	0	0	UINT16	R	
4416-4429		1-Cycle Low Phase Values					
+0	0x0D00	Low L-N voltage	0-Vmax	U1	UINT16	R	
+1	0x0D01	Low current	0-I _{max}	U2	UINT16	R	
+2	0x0D02	Low kW	-P _{max} -P _{max}	U3	INT16	R	DC-applicable
+3	0x0D03	Low kvar	-P _{max} -P _{max}	U3	INT16	R	
+4	0x0D04	Low kVA	0-P _{max}	U3	UINT16	R	
+5	0x0D05	Low PF Lag	0-1.000	0.001	UINT16	R	
+6	0x0D06	Low PF Lead	0-1.000	0.001	UINT16	R	
+7	0x0D07	Low voltage THD	0-999.9	0.1%	UINT16	R	^{2,4}
+8	0x0D08	Low current THD	0-999.9	0.1%	UINT16	R	⁴
+9	0x0D09	Low K-Factor	1.0-999.9	0.1	UINT16	R	⁴
+10	0x0D0A	Low current TDD	0-100.0	0.1%	UINT16	R	⁴
+11	0x0D0B	Low L-L voltage	0-Vmax	U1	UINT16	R	
+12	0x0D0C	Low voltage interharmonics THD	0-999.9	0.1%	UINT16	R	^{2,4}
+13	0x0D0D	Low current interharmonics THD	0-999.9	0.1%	UINT16	R	⁴
4448-4463		1/2-Cycle Analog Inputs					
+0	0x0D80	Analog input AI1	AI1min-AI1max		UINT16	R	
+1	0x0D81	Analog input AI2	AI2min-AI2max		UINT16	R	
		...					

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+15	0x0D8F	Analog input AI16	AI16min-AI16max		UINT16	R	
4480-4493		1-Cycle High Phase Values					
+0	0x0E00	High L-N voltage	0-Vmax	U1	UINT16	R	
+1	0x0E01	High current	0-I _{max}	U2	UINT16	R	
+2	0x0E02	High kW	-P _{max} -P _{max}	U3	INT16	R	DC-applicable
+3	0x0E03	High kvar	-P _{max} -P _{max}	U3	INT16	R	
+4	0x0E04	High kVA	0-P _{max}	U3	UINT16	R	
+5	0x0E05	High PF Lag	0-1.000	0.001	UINT16	R	
+6	0x0E06	High PF Lead	0-1.000	0.001	UINT16	R	
+7	0x0E07	High voltage THD	0-999.9	0.1%	UINT16	R	^{2, 4}
+8	0x0E08	High current THD	0-999.9	0.1%	UINT16	R	⁴
+9	0x0E09	High K-Factor	1.0-999.9	0.1	UINT16	R	⁴
+10	0x0E0A	High current TDD	0-100.0	0.1%	UINT16	R	⁴
+11	0x0E0B	High L-L voltage	0-Vmax	U1	UINT16	R	
+12	0x0E0C	High voltage interharmonics THD	0-999.9	0.1%	UINT16	R	^{2, 4}
+13	0x0E0D	High current interharmonics THD	0-999.9	0.1%	UINT16	R	⁴
4512-4527		1-Second Analog Inputs					
+0	0x0E80	Analog input AI1	AI1min-AI1max		UINT16	R	
+1	0x0E81	Analog input AI2	AI2min-AI2max		UINT16	R	
		...					
+15	0x0E8F	Analog input AI16	AI16min-AI16max		UINT16	R	
4544-4557		1-Cycle Total Values					
+0	0x0F00	Total kW	-P _{max} -P _{max}	U3	INT16	R	DC-applicable
+1	0x0F01	Total kvar	-P _{max} -P _{max}	U3	INT16	R	
+2	0x0F02	Total kVA	0-P _{max}	U3	UINT16	R	
+3	0x0F03	Total PF	-1.000-1.000	0.001	INT16	R	
+4	0x0F04	Total PF lag	0-1.000	0.001	UINT16	R	
+5	0x0F05	Total PF lead	0-1.000	0.001	UINT16		
+6	0x0F06	Total kW import	0-P _{max}	U3	UINT16		DC-applicable

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+7	0x0F07	Total kW export	0-Pmax	U3	UINT16	R	DC-applicable
+8	0x0F08	Total kvar import	0-Pmax	U3	UINT16	R	
+9	0x0F09	Total kvar export	0-Pmax	U3	UINT16	R	
+10	0x0F0A	3-phase average L-N voltage	0-Vmax	U1	UINT16	R	
+11	0x0F0B	3-phase average L-L voltage	0-Vmax	U1	UINT16	R	
+12	0x0F0C	3-phase average current	0-Imax	U2	UINT16	R	
+13	0x0F0D	Not used	0	0	UINT16	R	
4608-4618		1-Cycle Auxiliary Values					
+0	0x1000	I4 current	0-I4max	U2	UINT16	R	DC-applicable
+1	0x1001	In current	0-Imax	U2	UINT16	R	
+2	0x1002	Frequency	0-100.00	0.01Hz	UINT16	R	
+3	0x1003	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+4	0x1004	Current unbalance	0-300.0	0.1%	UINT16	R	
+5	0x1005	Not used			UINT16	R	
+6	0x1006	Not used	0	0	UINT16	R	
+7	0x1007	Not used	0	0	UINT16	R	
+8	0x1008	Frequency (3 decimals)	0-100.000	0.001Hz	UINT16	R	
+9	0x1009	Not used					
+10	0x100A	I leakage current	0-Imax	U2	UINT16	R	
+11	0x100B	Frequency over 4 cycles (3 decimals)	0-100.000	0.001Hz	UINT16	R	
+12	0x100C	Frequency (4 decimals)	0-100.0000	0.001Hz	UINT16	R	
4640-4663		Fundamental Phasor Values					
+0	0x1080	V1 voltage magnitude	0-Vmax	U1	UINT16	R	²
+1	0x1081	V2 voltage magnitude	0-Vmax	U1	UINT16	R	²
+2	0x1082	V3 voltage magnitude	0-Vmax	U1	UINT16	R	²
+3	0x1083	Not used	0	0	UINT16	R	
+4	0x1084	I1 current magnitude	0-Imax	U2	UINT16	R	
+5	0x1085	I2 current magnitude	0-Imax	U2	UINT16	R	
+6	0x1086	I3 current magnitude	0-Imax	U2	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+7	0x1087	I4 current magnitude	0-I _{max}	U2	UINT16	R	
+8	0x1088	V1 voltage angle	-180.0-180.0	0.1°	INT16	R	²
+9	0x1089	V2 voltage angle	-180.0-180.0	0.1°	INT16	R	²
+10	0x108A	V3 voltage angle	-180.0-180.0	0.1°	INT16	R	²
+11	0x108B	Not used	0	0	UINT16	R	
+12	0x108C	I1 current angle	-180.0-180.0	0.1°	INT16	R	
+13	0x108D	I2 current angle	-180.0-180.0	0.1°	INT16	R	
+14	0x108E	I3 current angle	-180.0-180.0	0.1°	INT16	R	
+15	0x108F	I4 current angle	-180.0-180.0	0.1°	INT16	R	
+16	0x1090	Not used	0	0	UINT16	R	
+17	0x1091	Not used	0	0	UINT16	R	
+18	0x1092	Not used	0	0	UINT16	R	
+19	0x1093	Not used	0	0	UINT16	R	
+20	0x1094	Not used	0	0	UINT16	R	
+21	0x1095	Not used	0	0	UINT16	R	
+22	0x1096	Not used	0	0	UINT16	R	
+23	0x1097	Not used	0	0	UINT16	R	
4672-4710		1-Second Phase Values					
+0	0x1100	V1 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+1	0x1101	V2 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+2	0x1102	V3 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+3	0x1103	I1 current	0-I _{max}	U2	UINT16	R	DC-applicable
+4	0x1104	I2 current	0-I _{max}	U2	UINT16	R	DC-applicable
+5	0x1105	I3 current	0-I _{max}	U2	UINT16	R	DC-applicable
+6	0x1106	kW L1	-P _{max} -P _{max}	U3	INT16	R	DC-applicable
+7	0x1107	kW L2	-P _{max} -P _{max}	U3	INT16	R	DC-applicable
+8	0x1108	kW L3	-P _{max} -P _{max}	U3	INT16	R	DC-applicable
+9	0x1109	kvar L1	-P _{max} -P _{max}	U3	INT16	R	
+10	0x110A	kvar L2	-P _{max} -P _{max}	U3	INT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+11	0x110B	kvar L3	-Pmax-Pmax	U3	INT16	R	
+12	0x110C	kVA L1	0-Pmax	U3	UINT16	R	
+13	0x110D	kVA L2	0-Pmax	U3	UINT16	R	
+14	0x110E	kVA L3	0-Pmax	U3	UINT16	R	
+15	0x110F	Power factor L1	-1.000-1.000	0.001	INT16	R	
+16	0x1110	Power factor L2	-1.000-1.000	0.001	INT16	R	
+17	0x1111	Power factor L3	-1.000-1.000	0.001	INT16	R	
+18	0x1112	V1 voltage THD	0-999.9	0.1%	UINT16	R	2, 5
+19	0x1113	V2 voltage THD	0-999.9	0.1%	UINT16	R	2, 5
+20	0x1114	V3 voltage THD	0-999.9	0.1%	UINT16	R	2, 5
+21	0x1115	I1 current THD	0-999.9	0.1%	UINT16	R	5
+22	0x1116	I2 current THD	0-999.9	0.1%	UINT16	R	5
+23	0x1117	I3 current THD	0-999.9	0.1%	UINT16	R	5
+24	0x1118	I1 K-Factor	1.0-999.9	0.1	UINT16	R	5
+25	0x1119	I2 K-Factor	1.0-999.9	0.1	UINT16	R	5
+26	0x111A	I3 K-Factor	1.0-999.9	0.1	UINT16	R	5
+27	0x111B	I1 current TDD	0-100.0	0.1%	UINT16	R	5
+28	0x111C	I2 current TDD	0-100.0	0.1%	UINT16	R	5
+29	0x111D	I3 current TDD	0-100.0	0.1%	UINT16	R	5
+30	0x111E	V12 voltage	0-Vmax	U1	UINT16	R	
+31	0x111F	V23 voltage	0-Vmax	U1	UINT16	R	
+32	0x1120	V31 voltage	0-Vmax	U1	UINT16	R	
+33	0x1121	Not used	0	0	UINT16	R	
+34	0x1122	Not used	0	0	UINT16	R	
+35	0x1123	Not used	0	0	UINT16	R	
+36	0x1124	Not used	0	0	UINT16	R	
+37	0x1125	Not used	0	0	UINT16	R	
+38	0x1126	Not used	0	0	UINT16	R	
4736-4749		1-Second Low Phase Values					

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+0	0x1200	Low L-N voltage	0-Vmax	U1	UINT16	R	
+1	0x1201	Low current	0-Imax	U2	UINT16	R	
+2	0x1202	Low kW	-Pmax-Pmax	U3	INT16	R	DC-applicable
+3	0x1203	Low kvar	-Pmax-Pmax	U3	INT16	R	
+4	0x1204	Low kVA	0-Pmax	U3	UINT16	R	
+5	0x1205	Low PF Lag	0-1.000	0.001	UINT16	R	
+6	0x1206	Low PF Lead	0-1.000	0.001	UINT16	R	
+7	0x1207	Low voltage THD	0-999.9	0.1%	UINT16	R	2, 5
+8	0x1208	Low current THD	0-999.9	0.1%	UINT16	R	5
+9	0x1209	Low K-Factor	1.0-999.9	0.1	UINT16	R	5
+10	0x120A	Low current TDD	0-100.0	0.1%	UINT16	R	5
+11	0x120B	Low L-L voltage	0-Vmax	U1	UINT16	R	
+12	0x120C	Low voltage interharmonics THD	0-999.9	0.1%	UINT16	R	2, 5
+13	0x120D	Low current interharmonics THD	0-999.9	0.1%	UINT16	R	5
4768-4783		3-Second Powers					
+0	0x1280	kW L1	-Pmax-Pmax	U3	INT16	R	DC-applicable
+1	0x1281	kW L2	-Pmax-Pmax	U3	INT16	R	DC-applicable
+2	0x1282	kW L3	-Pmax-Pmax	U3	INT16	R	DC-applicable
+3	0x1283	kvar L1	-Pmax-Pmax	U3	INT16	R	
+4	0x1284	kvar L2	-Pmax-Pmax	U3	INT16	R	
+5	0x1285	kvar L3	-Pmax-Pmax	U3	INT16	R	
+6	0x1286	kVA L1	0-Pmax	U3	UINT16	R	
+7	0x1287	kVA L2	0-Pmax	U3	UINT16	R	
+8	0x1288	kVA L3	0-Pmax	U3	UINT16	R	
+9	0x1289	Power factor L1	-1.000-1.000	0.001	INT16	R	
+10	0x128A	Power factor L2	-1.000-1.000	0.001	INT16	R	
+11	0x128B	Power factor L3	-1.000-1.000	0.001	INT16	R	
+12	0x128C	Total kW	-Pmax-Pmax	U3	INT16	R	DC-applicable
+13	0x128D	Total kvar	-Pmax-Pmax	U3	INT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+14	0x128E	Total kVA	0-Pmax	U3	UINT16	R	
+15	0x128F	Total PF	-1.000-1.000	0.001	INT16	R	
4800-4813		1-Second High Phase Values					
+0	0x1300	High L-N voltage	0-Vmax	U1	UINT16	R	
+1	0x1301	High current	0-Imax	U2	UINT16	R	
+2	0x1302	High kW	-Pmax-Pmax	U3	INT16	R	DC-applicable
+3	0x1303	High kvar	-Pmax-Pmax	U3	INT16	R	
+4	0x1304	High kVA	0-Pmax	U3	UINT16	R	
+5	0x1305	High PF Lag	0-1.000	0.001	UINT16	R	
+6	0x1306	High PF Lead	0-1.000	0.001	UINT16	R	
+7	0x1307	High voltage THD	0-999.9	0.1%	UINT16	R	^{2, 5}
+8	0x1308	High current THD	0-999.9	0.1%	UINT16	R	⁵
+9	0x1309	High K-Factor	1.0-999.9	0.1	UINT16	R	⁵
+10	0x130A	High current TDD	0-100.0	0.1%	UINT16	R	⁵
+11	0x130B	High L-L voltage	0-Vmax	U1	UINT16	R	
+12	0x130C	High voltage interharmonics THD	0-999.9	0.1%	UINT16	R	^{2, 5}
+13	0x130D	High current interharmonics THD	0-999.9	0.1%	UINT16	R	⁵
4864-4877		1-Second Total Values					
+0	0x1400	Total kW	-Pmax-Pmax	U3	INT16	R	DC-applicable
+1	0x1401	Total kvar	-Pmax-Pmax	U3	INT16	R	
+2	0x1402	Total kVA	0-Pmax	U3	UINT16	R	
+3	0x1403	Total PF	-1.000-1.000	0.001	INT16	R	
+4	0x1404	Total PF lag	0-1.000	0.001	UINT16	R	
+5	0x1405	Total PF lead	0-1.000	0.001	UINT16		
+6	0x1406	Total kW import	0-Pmax	U3	UINT16		DC-applicable
+7	0x1407	Total kW export	0-Pmax	U3	UINT16	R	DC-applicable
+8	0x1408	Total kvar import	0-Pmax	U3	UINT16	R	
+9	0x1409	Total kvar export	0-Pmax	U3	UINT16	R	
+10	0x140A	3-phase average L-N voltage	0-Vmax	U1	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+11	0x140B	3-phase average L-L voltage	0-Vmax	U1	UINT16	R	
+12	0x140C	3-phase average current	0-Imax	U2	UINT16	R	
+13	0x140D	Not used	0	0	UINT16	R	
4928-4943		1-Second Auxiliary Values					
+0	0x1500	I4 current	0-I4max	U2	UINT16	R	DC-applicable
+1	0x1501	In current	0-Imax	U2	UINT16	R	
+2	0x1502	Frequency	0-100.00	0.01Hz	UINT16	R	
+3	0x1503	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+4	0x1504	Current unbalance	0-300.0	0.1%	UINT16	R	
+5	0x1505	Not used			UINT16	R	
+6	0x1506	Not used	0	0	UINT16	R	
+7	0x1507	Not used	0	0	UINT16	R	
+8	0x1508	Not used	0	0	UINT16	R	
+9	0x1509	Internal temperature	-200.0 to 200.0	0.1°C	UINT16	R	
+10	0x150A	Frequency (3 decimals)	0-100.000	0.001Hz	UINT16	R	
+11	0x150B	Vbatt	0-3.5V	0.001V	UINT16	R	
+12	0x150C	Internal temperature	-200.0 to 200.0	0.1°C	UINT16	R	
+13	0x150D	Frequency (4 decimals)	0-100.000	0.0001Hz	UINT16	R	
+14	0x150E	I leakage current	0-Imax	U2	UINT16	R	
+15	0x150F	V3xI4kW	-Pmax-Pmax	U3	INT16	R	DC-applicable
4960-4971		Present Harmonic Demands					
+0	0x1580	V1 THD demand	0-999.9	0.1%	UINT16	R	²
+1	0x1581	V2 THD demand	0-999.9	0.1%	UINT16	R	²
+2	0x1582	V3 THD demand	0-999.9	0.1%	UINT16	R	²
+3	0x1583	Not used	0	0	UINT16	R	
+4	0x1584	I1 THD demand	0-999.9	0.1%	UINT16	R	
+5	0x1585	I2 THD demand	0-999.9	0.1%	UINT16	R	
+6	0x1586	I3 THD demand	0-999.9	0.1%	UINT16	R	
+7	0x1587	I4 THD demand	0-999.9	0.1%	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+8	0x1588	I1 TDD demand	0-100.0	0.1%	UINT16	R	
+9	0x1589	I2 TDD demand	0-100.0	0.1%	UINT16	R	
+10	0x158A	I3 TDD demand	0-100.0	0.1%	UINT16	R	
+11	0x158B	I4 TDD demand	0-100.0	0.1%	UINT16	R	
4992-5026		Present Demands					
+0	0x1600	V1 Volt demand	0-Vmax	U1	UINT16	R	² , DC-applicable
+1	0x1601	V2 Volt demand	0-Vmax	U1	UINT16	R	² , DC-applicable
+2	0x1602	V3 Volt demand	0-Vmax	U1	UINT16	R	² , DC-applicable
+3	0x1603	I1 Ampere demand	0-Imax	U2	UINT16	R	DC-applicable
+4	0x1604	I2 Ampere demand	0-Imax	U2	UINT16	R	DC-applicable
+5	0x1605	I3 Ampere demand	0-Imax	U2	UINT16	R	DC-applicable
+6	0x1606	kW import block demand	0-Pmax	U3	UINT16	R	DC-applicable
+7	0x1607	kvar import block demand	0-Pmax	U3	UINT16	R	
+8	0x1608	kVA block demand	0-Pmax	U3	UINT16	R	
+9	0x1609	kW import sliding window demand	0-Pmax	U3	UINT16	R	DC-applicable
+10	0x160A	kvar import sliding window demand	0-Pmax	U3	UINT16	R	
+11	0x160B	kVA sliding window demand	0-Pmax	U3	UINT16	R	
+12	0x160C	Not used	0		UINT16	R	
+13	0x160D	Not used	0		UINT16	R	
+14	0x160E	Not used	0		UINT16	R	
+15	0x160F	kW import accumulated demand	0-Pmax	U3	UINT16	R	DC-applicable
+16	0x1610	kvar import accumulated demand	0-Pmax	U3	UINT16	R	
+17	0x1611	kVA accumulated demand	0-Pmax	U3	UINT16	R	
+18	0x1612	kW import predicted sliding window demand	0-Pmax	U3	UINT16	R	DC-applicable
+19	0x1613	kvar import predicted sliding window demand	0-Pmax	U3	UINT16	R	
+20	0x1614	kVA predicted sliding window demand	0-Pmax	U3	UINT16	R	
+21	0x1615	PF (import) at Max. kVA sliding window demand	0-1.000	0.001	UINT16	R	
+22	0x1616	kW export block demand	0-Pmax	U3	UINT16	R	DC-applicable
+23	0x1617	kvar export block demand	0-Pmax	U3	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+24	0x1618	kW export sliding window demand	0-Pmax	U3	UINT16	R	DC-applicable
+25	0x1619	kvar export sliding window demand	0-Pmax	U3	UINT16	R	
+26	0x161A	kW export accumulated demand	0-Pmax	U3	UINT16	R	DC-applicable
+27	0x161B	kvar export accumulated demand	0-Pmax	U3	UINT16	R	
+28	0x161C	kW export predicted sliding window demand	0-Pmax	U3	UINT16	R	DC-applicable
+29	0x161D	kvar export predicted sliding window demand	0-Pmax	U3	UINT16	R	
+30	0x161E	Not used	0		UINT16	R	
+31	0x161F	Not used	0		UINT16	R	
+32	0x1620	Not used	0	0	UINT16	R	
+33	0x1621	I4 ampere demand	0-I _{max}	U2	UINT16	R	DC-applicable
+34	0x1622	I _n ampere demand	0-I _{max}	U2	UINT16	R	
5152-5161		Symmetrical Components					
+0	0x1880	Positive-sequence voltage	0-V _{max}	U1	UINT16	R	
+1	0x1881	Negative-sequence voltage	0-V _{max}	U1	UINT16	R	
+2	0x1882	Zero-sequence voltage	0-V _{max}	U1	UINT16	R	
+3	0x1883	Negative-sequence voltage unbalance	0-300.0	0.1%	UINT16	R	
+4	0x1884	Zero-sequence voltage unbalance	0-300.0	0.1%	UINT16	R	
+5	0x1885	Positive-sequence current	0-I _{max}	U2	UINT16	R	
+6	0x1886	Negative-sequence current	0-I _{max}	U2	UINT16	R	
+7	0x1887	Zero-sequence current	0-I _{max}	U2	UINT16	R	
+8	0x1888	Negative-sequence current unbalance	0-300.0	0.1%	UINT16	R	
+9	0x1889	Zero-sequence current unbalance	0-300.0	0.1%	UINT16	R	
5184-5246		V1 Harmonics					2, 7
+0	0x1900	H01 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
+1	0x1901	H02 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
		...					
+62	0x193E	H63 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
5248-5310		V2 Harmonics					2, 7
+0	0x1A00	H01 Harmonic magnitude	0-100.00	0.01%	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+1	0x1A01	H02 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
		...					
+62	0x1A3E	H63 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
5312-5374		V3 Harmonics					2, 7
+0	0x1B00	H01 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
+1	0x1B01	H02 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
		...					
+62	0x1B3E	H63 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
6144-6206		Not used	0	0	UINT16	R	7
+0	0x2800	Not used	0	0	UINT16	R	
+1	0x2801	Not used	0	0	UINT16	R	
		...					
+62	0x283E	Not used	0	0	UINT16	R	
5376-5438		I1 Harmonics					7
+0	0x1C00	H01 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
+1	0x1C01	H02 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
		...					
+62	0x1C3E	H63 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
5440-5502		I2 Harmonics					7
+0	0x1D00	H01 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
+1	0x1D01	H02 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
		...					
+62	0x1D3E	H63 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
5504-5566		I3 Harmonics					7
+0	0x1E00	H01 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
+1	0x1E01	H02 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
		...					
+62	0x1E3E	H63 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
6336-6398		I4 Harmonics					7

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+0	0x2B00	H01 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
+1	0x2B01	H02 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
		...					
+62	0x2B3E	H63 Harmonic magnitude	0-100.00	0.01%	UINT16	R	
5568-5599		V1 Harmonic Voltages (odd harmonics)					²
+0	0x1F00	H01 Harmonic voltage	0-Vmax	U1	UINT16	R	
+1	0x1F01	H03 Harmonic voltage	0-Vmax	U1	UINT16	R	
		...					
+31	0x1F1E	H63 Harmonic voltage	0-Vmax	U1	UINT16	R	
5632-5663		V2 Harmonic Voltages (odd harmonics)					²
+0	0x2000	H01 Harmonic voltage	0-Vmax	U1	UINT16	R	
+1	0x2001	H03 Harmonic voltage	0-Vmax	U1	UINT16	R	
		...					
+31	0x201E	H63 Harmonic voltage	0-Vmax	U1	UINT16	R	
5696-5727		V3 Harmonic Voltages (odd harmonics)					²
+0	0x2100	H01 Harmonic voltage	0-Vmax	U1	UINT16	R	
+1	0x2101	H03 Harmonic voltage	0-Vmax	U1	UINT16	R	
		...					
+31	0x211E	H63 Harmonic voltage	0-Vmax	U1	UINT16	R	
6720-6782		Not used	0	0	UINT16	R	
+0	0x3100	Not used	0	0	UINT16	R	
+1	0x3101	Not used	0	0	UINT16	R	
		...					
+62	0x313E	Not used	0	0	UINT16	R	
5760-5791		I1 Harmonic Currents (odd harmonics)					
+0	0x2200	H01 Harmonic current	0-Imax	U2	UINT16	R	
+1	0x2201	H03 Harmonic current	0-Imax	U2	UINT16	R	
		...					
+31	0x221E	H63 Harmonic current	0-Imax	U2	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
5824-5855		I2 Harmonic Currents (odd harmonics)					
+0	0x2300	H01 Harmonic current	0-lmax	U2	UINT16	R	
+1	0x2301	H03 Harmonic current	0-lmax	U2	UINT16	R	
		...					
+31	0x231E	H63 Harmonic current	0-lmax	U2	UINT16	R	
5888-5919		I3 Harmonic Currents (odd harmonics)					
+0	0x2400	H01 Harmonic current	0-lmax	U2	UINT16	R	
+1	0x2401	H03 Harmonic current	0-lmax	U2	UINT16	R	
		...					
+31	0x241E	H63 Harmonic current	0-lmax	U2	UINT16	R	
6784-6815		I4 Harmonic Currents (odd harmonics)					
+0	0x3200	H01 Harmonic current	0-lmax	U2	UINT16	R	
+1	0x3201	H03 Harmonic current	0-lmax	U2	UINT16	R	
		...					
+31	0x321E	H63 Harmonic current	0-lmax	U2	UINT16	R	
5952-5983		Total Harmonic kW (odd harmonics)					
+0	0x2500	H01 Harmonic kW	-Pmax –Pmax	U3	INT16	R	
+1	0x2501	H03 Harmonic kW	-Pmax –Pmax	U3	INT16	R	
		...					
+31	0x251E	H63 Harmonic kW	-Pmax –Pmax	U3	INT16	R	
6016-6047		Total Harmonic kvar (odd harmonics)					
+0	0x2600	H01 Harmonic kvar	-Pmax –Pmax	U3	INT16	R	
+1	0x2601	H03 Harmonic kvar	-Pmax –Pmax	U3	INT16	R	
		...					
+31	0x261E	H63 Harmonic kvar	-Pmax –Pmax	U3	INT16	R	
6080-6111		Total Harmonic Power Factor (odd harmonics)					
+0	0x2700	H01 Harmonic PF	-1.000-1.000	0.001	INT16	R	
+1	0x2701	H03 Harmonic PF	-1.000-1.000	0.001	INT16	R	
		...					

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+31	0x271E	H63 Harmonic PF	-1.000-1.000	0.001	INT16	R	
6240-6245		Not used	0	0	UINT16	R	Phase II
+0	0x2980	Not used	0	0	UINT16	R	²
+1	0x2981	Not used	0	0	UINT16	R	²
+2	0x2982	Not used	0	0	UINT16	R	²
+3	0x2983	Not used	0	0	UINT16	R	²
+4	0x2984	Not used	0	0	UINT16	R	²
+5	0x2985	Not used	0	0	UINT16	R	²
6400-6435		Minimum 1-Cycle Phase Values					
+0	0x2C00	V1 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+1	0x2C01	V2 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+2	0x2C02	V3 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+3	0x2C03	I1 current	0-Imax	U2	UINT16	R	DC-applicable
+4	0x2C04	I2 current	0-Imax	U2	UINT16	R	DC-applicable
+5	0x2C05	I3 current	0-Imax	U2	UINT16	R	DC-applicable
+6	0x2C06	kW L1	-Pmax-Pmax	U3	INT16	R	DC-applicable
+7	0x2C07	kW L2	-Pmax-Pmax	U3	INT16	R	DC-applicable
+8	0x2C08	kW L3	-Pmax-Pmax	U3	INT16	R	DC-applicable
+9	0x2C09	kvar L1	-Pmax-Pmax	U3	INT16	R	
+10	0x2C0A	kvar L2	-Pmax-Pmax	U3	INT16	R	
+11	0x2C0B	kvar L3	-Pmax-Pmax	U3	INT16	R	
+12	0x2C0C	kVA L1	0-Pmax	U3	UINT16	R	
+13	0x2C0D	kVA L2	0-Pmax	U3	UINT16	R	
+14	0x2C0E	kVA L3	0-Pmax	U3	UINT16	R	
+15	0x2C0F	Power factor L1	0-1.000	0.001	UINT16	R	Absolute value
+16	0x2C10	Power factor L2	0-1.000	0.001	UINT16	R	Absolute value
+17	0x2C11	Power factor L3	0-1.000	0.001	UINT16	R	Absolute value
+18	0x2C12	V1 voltage THD	0-9999	0.1%	UINT16	R	^{2, 4}
+19	0x2C13	V2 voltage THD	0-9999	0.1%	UINT16	R	^{2, 4}

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+20	0x2C14	V3 voltage THD	0-999.9	0.1%	UINT16	R	2, 4
+21	0x2C15	I1 current THD	0-999.9	0.1%	UINT16	R	4
+22	0x2C16	I2 current THD	0-999.9	0.1%	UINT16	R	4
+23	0x2C17	I3 current THD	0-999.9	0.1%	UINT16	R	4
+24	0x2C18	I1 K-Factor	1.0-999.9	0.1	UINT16	R	4
+25	0x2C19	I2 K-Factor	1.0-999.9	0.1	UINT16	R	4
+26	0x2C1A	I3 K-Factor	1.0-999.9	0.1	UINT16	R	4
+27	0x2C1B	I1 current TDD	0-100.0	0.1%	UINT16	R	4
+28	0x2C1C	I2 current TDD	0-100.0	0.1%	UINT16	R	4
+29	0x2C1D	I3 current TDD	0-100.0	0.1%	UINT16	R	4
+30	0x2C1E	V12 voltage	0-Vmax	U1	UINT16	R	
+31	0x2C1F	V23 voltage	0-Vmax	U1	UINT16	R	
+32	0x2C20	V31 voltage	0-Vmax	U1	UINT16	R	
+33	0x2C21	Not used	0	0	UINT16	R	
+34	0x2C22	Not used	0	0	UINT16	R	
+35	0x2C23	Not used	0	0	UINT16	R	
6464-6469		Minimum 1-Cycle Total Values					
+0	0x2D00	Total kW	-Pmax-Pmax	U3	INT16	R	DC-applicable
+1	0x2D01	Total kvar	-Pmax-Pmax	U3	INT16	R	
+2	0x2D02	Total kVA	0-Pmax	U3	UINT16	R	
+3	0x2D03	Total PF	0-1.000	0.001	UINT16	R	Absolute value
+4	0x2D04	Total PF lag	0-1.000	0.001	UINT16	R	
+5	0x2D05	Total PF lead	0-1.000	0.001	UINT16	R	
6528-6538		Minimum 1-Cycle Auxiliary Values					
+0	0x2E00	I4 current	0-I4max	U2	UINT16	R	DC-applicable
+1	0x2E01	In current	0-Imax	U2	UINT16	R	
+2	0x2E02	Frequency	0-100.00	0.01Hz	UINT16	R	
+3	0x2E03	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+4	0x2E04	Current unbalance	0-300.0	0.1%	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+5	0x2E05	Not used			UINT16	R	
+6	0x2E06	Not used	0	0	UINT16	R	
+7	0x2E07	Not used	0	0	UINT16	R	
+8	0x2E08	Not used	0	0	UINT16	R	
+9	0x2E09	Not used	0	0	UINT16	R	
+10	0x2E0A	Not used	0	0	UINT16	R	
6560-6575		Minimum Analog Inputs					
+0	0x2E80	Analog input AI1	AI1min-AI1max		UINT16	R	
+1	0x2E81	Analog input AI2	AI2min-AI2max		UINT16	R	
		...					
+15	0x2E8F	Analog input AI16	AI16min-AI16max		UINT16	R	
6656-6671		Programmable Min/Max Minimum Values					
+0	0x3000	Min/Max Register #1			UINT16	R	
+1	0x3001	Min/Max Register #2			UINT16	R	
		...					
+15	0x300F	Min/Max Register #16			UINT16	R	
6912-6947		Maximum 1-Cycle Phase Values					
+0	0x3400	V1 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+1	0x3401	V2 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+2	0x3402	V3 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+3	0x3403	I1 current	0-I _{max}	U2	UINT16	R	DC-applicable
+4	0x3404	I2 current	0-I _{max}	U2	UINT16	R	DC-applicable
+5	0x3405	I3 current	0-I _{max}	U2	UINT16	R	DC-applicable
+6	0x3406	kW L1	-Pmax-Pmax	U3	INT16	R	DC-applicable
+7	0x3407	kW L2	-Pmax-Pmax	U3	INT16	R	DC-applicable
+8	0x3408	kW L3	-Pmax-Pmax	U3	INT16	R	DC-applicable
+9	0x3409	kvar L1	-Pmax-Pmax	U3	INT16	R	
+10	0x340A	kvar L2	-Pmax-Pmax	U3	INT16	R	
+11	0x340B	kvar L3	-Pmax-Pmax	U3	INT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+12	0x340C	kVA L1	0-Pmax	U3	UINT16	R	
+13	0x340D	kVA L2	0-Pmax	U3	UINT16	R	
+14	0x340E	kVA L3	0-Pmax	U3	UINT16	R	
+15	0x340F	Power factor L1	0-1.000	0.001	UINT16	R	Absolute value
+16	0x3410	Power factor L2	0-1.000	0.001	UINT16	R	Absolute value
+17	0x3411	Power factor L3	0-1.000	0.001	UINT16	R	Absolute value
+18	0x3412	V1 voltage THD	0-999.9	0.1%	UINT16	R	^{2,4}
+19	0x3413	V2 voltage THD	0-999.9	0.1%	UINT16	R	^{2,4}
+20	0x3414	V3 voltage THD	0-999.9	0.1%	UINT16	R	^{2,4}
+21	0x3415	I1 current THD	0-999.9	0.1%	UINT16	R	⁴
+22	0x3416	I2 current THD	0-999.9	0.1%	UINT16	R	⁴
+23	0x3417	I3 current THD	0-999.9	0.1%	UINT16	R	⁴
+24	0x3418	I1 K-Factor	1.0-999.9	0.1	UINT16	R	⁴
+25	0x3419	I2 K-Factor	1.0-999.9	0.1	UINT16	R	⁴
+26	0x341A	I3 K-Factor	1.0-999.9	0.1	UINT16	R	⁴
+27	0x341B	I1 current TDD	0-100.0	0.1%	UINT16	R	⁴
+28	0x341C	I2 current TDD	0-100.0	0.1%	UINT16	R	⁴
+29	0x341D	I3 current TDD	0-100.0	0.1%	UINT16	R	⁴
+30	0x341E	V12 voltage	0-Vmax	U1	UINT16	R	
+31	0x341F	V23 voltage	0-Vmax	U1	UINT16	R	
+32	0x3420	V31 voltage	0-Vmax	U1	UINT16	R	
+33	0x3421	Not used	0	0	UINT16	R	
+34	0x3422	Not used	0	0	UINT16	R	
+35	0x3423	Not used	0	0	UINT16	R	
6976-6981		Maximum 1-Cycle Total Values					
+0	0x3500	Total kW	-Pmax-Pmax	U3	INT16	R	DC-applicable
+1	0x3501	Total kvar	-Pmax-Pmax	U3	INT16	R	
+2	0x3502	Total kVA	0-Pmax	U3	UINT16	R	
+3	0x3503	Total PF	0-1.000	0.001	UINT16	R	Absolute value

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+4	0x3504	Total PF lag	0-1.000	0.001	UINT16	R	
+5	0x3505	Total PF lead	0-1.000	0.001	UINT16	R	
7040-7050		Maximum 1-Cycle Auxiliary Values					
+0	0x3600	I4 current	0-I4max	U2	UINT16	R	DC-applicable
+1	0x3601	In current	0-I _{max}	U2	UINT16	R	
+2	0x3602	Frequency	0-100.00	0.01Hz	UINT16	R	
+3	0x3603	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+4	0x3604	Current unbalance	0-300.0	0.1%	UINT16	R	
+5	0x3605	Not used			UINT16	R	
+6	0x3606	Not used	0	0	UINT16	R	
+7	0x3607	Not used	0	0	UINT16	R	
+8	0x3608	Not used	0	0	UINT16	R	
+9	0x3609	Not used	0	0	UINT16	R	
+10	0x360A	Not used	0	0	UINT16	R	
7072-7087		Maximum Analog Inputs					
+0	0x3680	Analog input AI1	AI1min-AI1max		UINT16	R	
+1	0x3681	Analog input AI2	AI2min-AI2max		UINT16	R	
		...					
+15	0x368F	Analog input AI16	AI16min-AI16max		UINT16	R	
7104-7125		Maximum Demands					
+0	0x3700	V1 Maximum volt demand	0-V _{max}	U1	UINT16	R	² , DC-applicable
+1	0x3701	V2 Maximum volt demand	0-V _{max}	U1	UINT16	R	² , DC-applicable
+2	0x3702	V3 Maximum volt demand	0-V _{max}	U1	UINT16	R	² , DC-applicable
+3	0x3703	I1 Maximum ampere demand	0-I _{max}	U2	UINT16	R	DC-applicable
+4	0x3704	I2 Maximum ampere demand	0-I _{max}	U2	UINT16	R	DC-applicable
+5	0x3705	I3 Maximum ampere demand	0-I _{max}	U2	UINT16	R	DC-applicable
+6	0x3706	Not used	0		UINT16	R	
+7	0x3707	Not used	0		UINT16	R	
+8	0x3708	Not used	0		UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+9	0x3709	Maximum kW import sliding window demand	0-Pmax	U3	UINT16	R	DC-applicable
+10	0x370A	Maximum kvar import sliding window demand	0-Pmax	U3	UINT16	R	
+11	0x370B	Maximum kVA sliding window demand	0-Pmax	U3	UINT16	R	
+12	0x370C	Not used	0		UINT16	R	
+13	0x370D	Not used	0		UINT16	R	
+14	0x370E	Not used	0		UINT16	R	
+15	0x370F	Maximum kW export sliding window demand	0-Pmax	U3	UINT16	R	DC-applicable
+16	0x3710	Maximum kvar export sliding window demand	0-Pmax	U3	UINT16	R	
+17	0x3711	Not used	0		UINT16	R	
+18	0x3712	Not used	0		UINT16	R	
+19	0x3713	Not used	0	0	UINT16	R	
+20	0x3714	I4 Maximum ampere demand	0-I4max	U2	UINT16	R	DC-applicable
+21	0x3715	In Maximum ampere demand	0-Imax	U2	UINT16	R	
7168-7183		Programmable Min/Max Maximum Values					
+0	0x3800	Min/Max Register #1			UINT16	R	
+1	0x3801	Min/Max Register #2			UINT16	R	
		...					
+15	0x380F	Min/Max Register #16			UINT16	R	
7200-7211		Maximum Harmonic Demands					
+0	0x3880	V1 THD demand	0-999.9	0.1%	UINT16	R	²
+1	0x3881	V2 THD demand	0-999.9	0.1%	UINT16	R	²
+2	0x3882	V3 THD demand	0-999.9	0.1%	UINT16	R	²
+3	0x3883	Not used	0	0	UINT16	R	
+4	0x3884	I1 THD demand	0-999.9	0.1%	UINT16	R	
+5	0x3885	I2 THD demand	0-999.9	0.1%	UINT16	R	
+6	0x3886	I3 THD demand	0-999.9	0.1%	UINT16	R	
+7	0x3887	I4 THD demand	0-999.9	0.1%	UINT16	R	
+8	0x3888	I1 TDD demand	0-100.0	0.1%	UINT16	R	
+9	0x3889	I2 TDD demand	0-100.0	0.1%	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+10	0x388A	I3 TDD demand	0-100.0	0.1%	UINT16	R	
+11	0x388B	I4 TDD demand	0-100.0	0.1%	UINT16	R	
7232-7263		Maximum Analog Input Demands					
+0	0x3900	Analog input AI1+	AI1min-AI1max		UINT16	R	Positive AI readings demand
+1	0x3901	Analog input AI2+	AI2min-AI2max		UINT16	R	
		...					
+15	0x390F	Analog input AI16+	AI16min-AI16max		UINT16	R	
+16	0x3910	Analog input AI1-	AI1min-AI1max		UINT16	R	Negative AI readings demand
+17	0x3911	Analog input AI2-	AI2min-AI2max		UINT16	R	
		...					
+31	0x391F	Analog input AI16-	AI16min-AI16max		UINT16	R	
7296-7327		Present Analog Input Demands					
+0	0x3A00	Analog input AI1+	AI1min-AI1max		UINT16	R	Positive AI readings demand
+1	0x3A01	Analog input AI2+	AI2min-AI2max		UINT16	R	
		...					
+15	0x3A0F	Analog input AI16+	AI16min-AI16max		UINT16	R	
+16	0x3A10	Analog input AI1-	AI1min-AI1max		UINT16	R	Negative AI readings demand
+17	0x3A11	Analog input AI2-	AI2min-AI2max		UINT16	R	
		...					
+31	0x3A1F	Analog input AI16-	AI16min-AI16max		UINT16	R	
7360-7375		1-Cycle Analog Inputs					
+0	0x3B00	Analog input AI1	AI1min-AI1max		UINT16	R	
+1	0x3B01	Analog input AI2	AI2min-AI2max		UINT16	R	
		...					
+15	0x3B0F	Analog input AI16	AI16min-AI16max		UINT16	R	
7392-7407		Raw Analog Inputs					
+0	0x3B80	Analog input AI1	0-4095		UINT16	R	
+1	0x3B81	Analog input AI2	0-4095		UINT16	R	
		...					

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+15	0x3B8F	Analog input AI16	0-4095		UINT16	R	
7456-7471		Scaled Analog Outputs					
+0	0x3C80	Analog input AO1	0-4095		UINT16	R/W	
+1	0x3C81	Analog input AO2	0-4095		UINT16	R/W	
		...					
+15	0x3C8F	Analog input AO16	0-4095		UINT16	R/W	
8000-8015		Billing Summary Accumulated Demands					
+0	0x4500	Summary register #1	0-Pmax	U3	UINT16	R	
+1	0x4501	Summary register #2	0-Pmax	U3	UINT16	R	
		...					
+15	0x450F	Summary register #16	0-Pmax	U3	UINT16	R	
8032-8047		Billing Summary Block Demands					
+0	0x4580	Summary register #1	0-Pmax	U3	UINT16	R	
+1	0x4581	Summary register #2	0-Pmax	U3	UINT16	R	
		...					
+15	0x458F	Summary register #16	0-Pmax	U3	UINT16	R	
8064-8079		Billing Summary Sliding Window Demands					
+0	0x4600	Summary register #1	0-Pmax	U3	UINT16	R	
+1	0x4601	Summary register #2	0-Pmax	U3	UINT16	R	
		...					
+15	0x460F	Summary register #16	0-Pmax	U3	UINT16	R	
8160-8175		Billing Summary Maximum Demands					
+0	0x4780	Summary register #1	0-Pmax	U3	UINT16	R	
+1	0x4781	Summary register #2	0-Pmax	U3	UINT16	R	
		...					
+15	0x478F	Summary register #16	0-Pmax	U3	UINT16	R	
8192-8207		Billing TOU Maximum Demand Register #1					
+0	0x4800	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x4801	Tariff #2 register	0-Pmax	U3	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
		...				R	
+15	0x480F	Tariff #16 register	0-Pmax	U3	UINT16	R	
8256-8271		Billing TOU Maximum Demand Register #2					
+0	0x4900	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x4901	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x490F	Tariff #16 register	0-Pmax	U3	UINT16	R	
8320-8335		Billing TOU Maximum Demand Register #3					
+0	0x4A00	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x4A01	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x4A0F	Tariff #16 register	0-Pmax	U3	UINT16	R	
8224-8239		Billing TOU Maximum Demand Register #4					
+0	0x4880	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x4881	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x488F	Tariff #16 register	0-Pmax	U3	UINT16	R	
8288-8303		Billing TOU Maximum Demand Register #5					
+0	0x4980	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x4981	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x498F	Tariff #16 register	0-Pmax	U3	UINT16	R	
8352-8367		Billing TOU Maximum Demand Register #6					
+0	0x4A80	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x4A81	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x4A8F	Tariff #16 register	0-Pmax	U3	UINT16	R	
8896-8911		Billing TOU Maximum Demand Register #7					
+0	0x5300	Tariff #1 register	0-Pmax	U3	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+1	0x5301	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x530F	Tariff #16 register	0-Pmax	U3	UINT16	R	
8928-8943		Billing TOU Maximum Demand Register #8					
+0	0x5380	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x5381	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x538F	Tariff #16 register	0-Pmax	U3	UINT16	R	
8960-8975		Billing TOU Maximum Demand Register #9					
+0	0x5400	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x5401	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x540F	Tariff #16 register	0-Pmax	U3	UINT16	R	
8992-9007		Billing TOU Maximum Demand Register #10					
+0	0x5480	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x5481	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x548F	Tariff #16 register	0-Pmax	U3	UINT16	R	
9024-9039		Billing TOU Maximum Demand Register #11					
+0	0x5500	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x5501	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x550F	Tariff #16 register	0-Pmax	U3	UINT16	R	
9056-9071		Billing TOU Maximum Demand Register #12					
+0	0x5580	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x5581	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x558F	Tariff #16 register	0-Pmax	U3	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
9088-9103		Billing TOU Maximum Demand Register #13					
+0	0x5600	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x5601	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x560F	Tariff #16 register	0-Pmax	U3	UINT16	R	
9120-9135		Billing TOU Maximum Demand Register #14					
+0	0x5680	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x5681	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x568F	Tariff #16 register	0-Pmax	U3	UINT16	R	
9152-9167		Billing TOU Maximum Demand Register #15					
+0	0x5700	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x5701	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x570F	Tariff #16 register	0-Pmax	U3	UINT16	R	
9184-9199		Billing TOU Maximum Demand Register #16					
+0	0x5780	Tariff #1 register	0-Pmax	U3	UINT16	R	
+1	0x5781	Tariff #2 register	0-Pmax	U3	UINT16	R	
		...				R	
+15	0x578F	Tariff #16 register	0-Pmax	U3	UINT16	R	
9984-10046		V1/V12 Harmonic Angles					2, 4, 6
+0	0x6400	H01 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
+1	0x6401	H02 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
		...					
+62	0x643E	H63 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
10048-10110		V2/V23 Harmonic Angles					2, 4, 6
+0	0x6500	H01 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
+1	0x6501	H02 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
		...					

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+62	0x653E	H63 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
10112-10174		V3/V31 Harmonic Angles					2, 4, 6
+0	0x6600	H01 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
+1	0x6601	H02 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
		...					
+62	0x663E	H63 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
10176-10238		V4 Harmonic Angles					
+0	0x6700	Not used	0	0	UINT16	R	
+1	0x6701	Not used	0	0	UINT16	R	
		...					
+62	0x673E	Not used	0	0	UINT16	R	
10240-10302		I1 Harmonic Angles					
+0	0x6800	H01 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
+1	0x6801	H02 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
		...					
+62	0x683E	H63 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
10304-10366		I2 Harmonic Angles					4, 6
+0	0x6900	H01 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
+1	0x6901	H02 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
		...					
+62	0x693E	H63 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
10368-10430		I3 Harmonic Angles					4, 6
+0	0x6A00	H01 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
+1	0x6A01	H02 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
		...					
+62	0x6A3E	H63 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
10432-10494		I4 Harmonic Angles					4, 6
+0	0x6B00	H01 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
+1	0x6B01	H02 Harmonic angle	-180.0-180.0	0.1°	INT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
		...					
+62	0x6B3E	H63 Harmonic angle	-180.0-180.0	0.1°	INT16	R	
10496-10523		0.2-Second RMS and Auxiliary Values					
+0	0x6C00	V1 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+1	0x6C01	V2 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+2	0x6C02	V3 voltage	0-Vmax	U1	UINT16	R	¹ , DC-applicable
+3	0x6C03	Not used	0	0	UINT16	R	
+4	0x6C04	V12 voltage	0-Vmax	U1	UINT16	R	
+5	0x6C05	V23 voltage	0-Vmax	U1	UINT16	R	
+6	0x6C06	V31 voltage	0-Vmax	U1	UINT16	R	
+7	0x6C07	I1 current	0-I _{max}	U2	UINT16	R	DC-applicable
+8	0x6C08	I2 current	0-I _{max}	U2	UINT16	R	DC-applicable
+9	0x6C09	I3 current	0-I _{max}	U2	UINT16	R	DC-applicable
+10	0x6C0A	I4 current	0-I _{4max}	U2	UINT16	R	DC-applicable
+11	0x6C0B	I _n current	0-I _{max}	U2	UINT16	R	
+12	0x6C0C	Not used	0	0	UINT16	R	
+13	0x6C0D	Not used	0	0	UINT16	R	
+14	0x6C0E	Not used	0	0	UINT16	R	
+15	0x6C0F	Not used	0	0	UINT16	R	
+16	0x6C10	I _x current	0-I _{xmax}	U2	UINT16	R	
+17	0x6C11	Zero-sequence voltage	0-Vmax	U1	UINT16	R	
+18	0x6C12	Zero-sequence current	0-I _{max}	U2	UINT16	R	
+19	0x6C13	I _x Zero-sequence current	0-I _{xmax}	U2	UINT16	R	
+20	0x6C14	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+21	0x6C15	Current unbalance	0-300.0	0.1%	UINT16	R	
+22	0x6C16	I _x current unbalance	0-300.0	0.1%	UINT16	R	
+23	0x6C17	Not used			UINT16	R	
+24	0x6C18	Frequency	0-100.00	0.01Hz	UINT16	R	
+25	0x6C19	Positive-sequence voltage	0-Vmax	U1	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+26	0x6C1A	Zero-sequence voltage unbalance	0-300.0	0.1%	UINT16	R	
+27	0x6C1B	I leakage current	0-I _{max}	U2	UINT16	R	
10528-10555		3-Second RMS and Auxiliary Values					
+0	0x6C80	V1 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+1	0x6C81	V2 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+2	0x6C82	V3 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+3	0x6C83	Not used	0	0	UINT16	R	
+4	0x6C84	V12 voltage	0-V _{max}	U1	UINT16	R	
+5	0x6C85	V23 voltage	0-V _{max}	U1	UINT16	R	
+6	0x6C86	V31 voltage	0-V _{max}	U1	UINT16	R	
+7	0x6C87	I1 current	0-I _{max}	U2	UINT16	R	DC-applicable
+8	0x6C88	I2 current	0-I _{max}	U2	UINT16	R	DC-applicable
+9	0x6C89	I3 current	0-I _{max}	U2	UINT16	R	DC-applicable
+10	0x6C8A	I4 current	0-I _{4max}	U2	UINT16	R	DC-applicable
+11	0x6C8B	I _n current	0-I _{max}	U2	UINT16	R	
+12	0x6C8C	Not used	0	0	UINT16	R	
+13	0x6C8D	Not used	0	0	UINT16	R	
+14	0x6C8E	Not used	0	0	UINT16	R	
+15	0x6C8F	Not used	0	0	UINT16	R	
+16	0x6C90	I _{nX} current	0-I _{Xmax}	U2	UINT16	R	
+17	0x6C91	Zero-sequence voltage	0-V _{max}	U1	UINT16	R	
+18	0x6C92	Zero-sequence current	0-I _{max}	U2	UINT16	R	
+19	0x6C93	I _X Zero-sequence current	0-I _{Xmax}	U2	UINT16	R	
+20	0x6C94	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+21	0x6C95	Current unbalance	0-300.0	0.1%	UINT16	R	
+22	0x6C96	I _X current unbalance	0-300.0	0.1%	UINT16	R	
+23	0x6C97	Not used			UINT16	R	
+24	0x6C98	Frequency	0-100.00	0.01Hz	UINT16	R	
+25	0x6C99	Positive-sequence voltage	0-V _{max}	U1	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+26	0x6C9A	Zero-sequence voltage unbalance	0-300.0	0.1%	UINT16	R	
+27	0x6C9B	I leakage current	0-I _{max}	U2	UINT16	R	
11136-11163		1-Minute RMS and Auxiliary Values					
+0	0x7600	V1 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+1	0x7601	V2 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+2	0x7602	V3 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+3	0x7603	Not used	0	0	UINT16	R	
+4	0x7604	V12 voltage	0-V _{max}	U1	UINT16	R	
+5	0x7605	V23 voltage	0-V _{max}	U1	UINT16	R	
+6	0x7606	V31 voltage	0-V _{max}	U1	UINT16	R	
+7	0x7607	I1 current	0-I _{max}	U2	UINT16	R	DC-applicable
+8	0x7608	I2 current	0-I _{max}	U2	UINT16	R	DC-applicable
+9	0x7609	I3 current	0-I _{max}	U2	UINT16	R	DC-applicable
+10	0x760A	I4 current	0-I _{4max}	U2	UINT16	R	DC-applicable
+11	0x760B	I _n current	0-I _{max}	U2	UINT16	R	
+12	0x760C	Not used	0	0	UINT16	R	
+13	0x760D	Not used	0	0	UINT16	R	
+14	0x760E	Not used	0	0	UINT16	R	
+15	0x760F	Not used	0	0	UINT16	R	
+16	0x7610	Not used	0	0	UINT16	R	
+17	0x7611	Zero-sequence voltage	0-V _{max}	U1	UINT16	R	
+18	0x7612	Zero-sequence current	0-I _{max}	U2	UINT16	R	
+19	0x7613	I _x Zero-sequence current	0-I _{xmax}	U2	UINT16	R	
+20	0x7614	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+21	0x7615	Current unbalance	0-300.0	0.1%	UINT16	R	
+22	0x7616	I _x current unbalance	0-300.0	0.1%	UINT16	R	
+23	0x7617	Reserved	0		UINT16	R	
+24	0x7618	Frequency	0-100.00	0.01Hz	UINT16	R	
+25	0x7619	Positive-sequence voltage	0-V _{max}	U1	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+26	0x761A	Zero-sequence voltage unbalance	0-300.0	0.1%	UINT16	R	
+27	0x761B	I leakage current	0-I _{max}	U2	UINT16	R	
10560-10587		10-Minute RMS and Auxiliary Values					
+0	0x6D00	V1 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+1	0x6D01	V2 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+2	0x6D02	V3 voltage	0-V _{max}	U1	UINT16	R	¹ , DC-applicable
+3	0x6D03	Not used	0	0	UINT16	R	
+4	0x6D04	V12 voltage	0-V _{max}	U1	UINT16	R	
+5	0x6D05	V23 voltage	0-V _{max}	U1	UINT16	R	
+6	0x6D06	V31 voltage	0-V _{max}	U1	UINT16	R	
+7	0x6D07	I1 current	0-I _{max}	U2	UINT16	R	DC-applicable
+8	0x6D08	I2 current	0-I _{max}	U2	UINT16	R	DC-applicable
+9	0x6D09	I3 current	0-I _{max}	U2	UINT16	R	DC-applicable
+10	0x6D0A	I4 current	0-I _{4max}	U2	UINT16	R	DC-applicable
+11	0x6D0B	I _n current	0-I _{max}	U2	UINT16	R	
+12	0x6D0C	Not used	0	0	UINT16	R	
+13	0x6D0D	Not used	0	0	UINT16	R	
+14	0x6D0E	Not used	0	0	UINT16	R	
+15	0x6D0F	Not used	0	0	UINT16	R	
+16	0x6D10	Not used	0	0	UINT16	R	
+17	0x6D11	Zero-sequence voltage	0-V _{max}	U1	UINT16	R	
+18	0x6D12	Zero-sequence current	0-I _{max}	U2	UINT16	R	
+19	0x6D13	I _x Zero-sequence current	0-I _{xmax}	U2	UINT16	R	
+20	0x6D14	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+21	0x6D15	Current unbalance	0-300.0	0.1%	UINT16	R	
+22	0x6D16	I _x current unbalance	0-300.0	0.1%	UINT16	R	
+23	0x6D17	Not used			UINT16	R	
+24	0x6D18	Frequency	0-100.00	0.01Hz	UINT16	R	
+25	0x6D19	Positive-sequence voltage	0-V _{max}	U1	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+26	0x6D1A	Zero-sequence voltage unbalance	0-300.0	0.1%	UINT16	R	
+27	0x6D1B	I leakage current	0-I _{max}	U2	UINT16	R	
10592-10619		2-Hour RMS and Auxiliary Values					
+0	0x6D80	V1 voltage	0-V _{max}	U1	UINT16	R	DC-applicable
+1	0x6D81	V2 voltage	0-V _{max}	U1	UINT16	R	DC-applicable
+2	0x6D82	V3 voltage	0-V _{max}	U1	UINT16	R	DC-applicable
+3	0x6D83	Not used	0		UINT16	R	
+4	0x6D84	V12 voltage	0-V _{max}	U1	UINT16	R	
+5	0x6D85	V23 voltage	0-V _{max}	U1	UINT16	R	
+6	0x6D86	V31 voltage	0-V _{max}	U1	UINT16	R	
+7	0x6D87	I1 current	0-I _{max}	U2	UINT16	R	DC-applicable
+8	0x6D88	I2 current	0-I _{max}	U2	UINT16	R	DC-applicable
+9	0x6D89	I3 current	0-I _{max}	U2	UINT16	R	DC-applicable
+10	0x6D8A	I4 current	0-I _{4max}	U2	UINT16	R	DC-applicable
+11	0x6D8B	I _n current	0-I _{max}	U2	UINT16	R	
+12	0x6D8C	Not used	0	0	UINT16	R	
+13	0x6D8D	Not used	0	0	UINT16	R	
+14	0x6D8E	Not used	0	0	UINT16	R	
+15	0x6D8F	Not used	0	0	UINT16	R	
+16	0x6D90	Not used	0	0	UINT16	R	
+17	0x6D91	Zero-sequence voltage	0-V _{max}	U1	UINT16	R	
+18	0x6D92	Zero-sequence current	0-I _{max}	U2	UINT16	R	
+19	0x6D93	I _x Zero-sequence current	0-I _{xmax}	U2	UINT16	R	
+20	0x6D94	Voltage unbalance	0-300.0	0.1%	UINT16	R	
+21	0x6D95	Current unbalance	0-300.0	0.1%	UINT16	R	
+22	0x6D96	I _x current unbalance	0-300.0	0.1%	UINT16	R	
+23	0x6D97	Not used			UINT16	R	
+24	0x6D98	Frequency	0-100.00	0.01Hz	UINT16	R	
+25	0x6D99	Positive-sequence voltage	0-V _{max}	U1	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+26	0x6D9A	Zero-sequence voltage unbalance	0-300.0	0.1%	UINT16	R	
+27	0x6D9B	I leakage current	0-I _{max}	U2	UINT16	R	
10624-10655		0.2-Second Harmonics					
+0	0x6E00	V1 THD	0-999.9	0.1%	UINT16	R	
+1	0x6E01	V2 THD	0-999.9	0.1%	UINT16	R	
+2	0x6E02	V3 THD	0-999.9	0.1%	UINT16	R	
+3	0x6E03	Not used	0	0	UINT16	R	
+4	0x6E04	I1 THD	0-999.9	0.1%	UINT16	R	
+5	0x6E05	I2 THD	0-999.9	0.1%	UINT16	R	
+6	0x6E06	I3 THD	0-999.9	0.1%	UINT16	R	
+7	0x6E07	I4 THD	0-999.9	0.1%	UINT16	R	
+8	0x6E08	V1 interharmonics THD	0-999.9	0.1%	UINT16	R	
+9	0x6E09	V2 interharmonics THD	0-999.9	0.1%	UINT16	R	
+10	0x6E0A	V3 interharmonics THD	0-999.9	0.1%	UINT16	R	
+11	0x6E0B	Not used	0	0	UINT16	R	
+12	0x6E0C	I1 interharmonics THD	0-999.9	0.1%	UINT16	R	
+13	0x6E0D	I2 interharmonics THD	0-999.9	0.1%	UINT16	R	
+14	0x6E0E	I3 interharmonics THD	0-999.9	0.1%	UINT16	R	
+15	0x6E0F	I4 interharmonics THD	0-999.9	0.1%	UINT16	R	
+16	0x6E10	I1 TDD	0-100.0	0.1%	UINT16	R	
+17	0x6E11	I2 TDD	0-100.0	0.1%	UINT16	R	
+18	0x6E12	I3 TDD	0-100.0	0.1%	UINT16	R	
+19	0x6E13	I4 TDD	0-100.0	0.1%	UINT16	R	
+20	0x6E14	I1 K-Factor	1.0-999.9	0.1	UINT16	R	
+21	0x6E15	I2 K-Factor	1.0-999.9	0.1	UINT16	R	
+22	0x6E16	I3 K-Factor	1.0-999.9	0.1	UINT16	R	
+23	0x6E17	I4 K-Factor	1.0-999.9	0.1	UINT16	R	
+24	0x6E18	V1 Crest Factor	0-100.00	0.01	UINT16	R	²
+25	0x6E19	V2 Crest Factor	0-100.00	0.01	UINT16	R	²

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+26	0x6E1A	V3 Crest Factor	0-100.00	0.01	UINT16	R	²
+27	0x6E1B	Not used	0	0	UINT16	R	
+28	0x6E1C	I1 Crest Factor	0-100.00	0.01	UINT16	R	
+29	0x6E1D	I2 Crest Factor	0-100.00	0.01	UINT16	R	
+30	0x6E1E	I3 Crest Factor	0-100.00	0.01	UINT16	R	
+31	0x6E1F	I4 Crest Factor	0-100.00	0.01	UINT16	R	
10656-10687		3-Second Harmonics					
+0	0x6E80	V1 THD	0-999.9	0.1%	UINT16	R	²
+1	0x6E81	V2 THD	0-999.9	0.1%	UINT16	R	²
+2	0x6E82	V3 THD	0-999.9	0.1%	UINT16	R	²
+3	0x6E83	Not used	0	0	UINT16	R	
+4	0x6E84	I1 THD	0-999.9	0.1%	UINT16	R	
+5	0x6E85	I2 THD	0-999.9	0.1%	UINT16	R	
+6	0x6E86	I3 THD	0-999.9	0.1%	UINT16	R	
+7	0x6E87	I4 THD	0-999.9	0.1%	UINT16	R	
+8	0x6E88	V1 interharmonics THD	0-999.9	0.1%	UINT16	R	²
+9	0x6E89	V2 interharmonics THD	0-999.9	0.1%	UINT16	R	²
+10	0x6E8A	V3 interharmonics THD	0-999.9	0.1%	UINT16	R	²
+11	0x6E8B	Not used	0	0	UINT16	R	
+12	0x6E6E	I1 interharmonics THD	0-999.9	0.1%	UINT16	R	
+13	0x6E8D	I2 interharmonics THD	0-999.9	0.1%	UINT16	R	
+14	0x6E8E	I3 interharmonics THD	0-999.9	0.1%	UINT16	R	
+15	0x6E8F	I4 interharmonics THD	0-999.9	0.1%	UINT16	R	
+16	0x6E90	I1 TDD	0-100.0	0.1%	UINT16	R	
+17	0x6E91	I2 TDD	0-100.0	0.1%	UINT16	R	
+18	0x6E92	I3 TDD	0-100.0	0.1%	UINT16	R	
+19	0x6E93	I4 TDD	0-100.0	0.1%	UINT16	R	
+20	0x6E94	I1 K-Factor	1.0-999.9	0.1	UINT16	R	
+21	0x6E95	I2 K-Factor	1.0-999.9	0.1	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+22	0x6E96	I3 K-Factor	1.0-999.9	0.1	UINT16	R	
+23	0x6E97	I4 K-Factor	1.0-999.9	0.1	UINT16	R	
+24	0x6E98	V1 Crest Factor	0-100.00	0.01	UINT16	R	²
+25	0x6E99	V2 Crest Factor	0-100.00	0.01	UINT16	R	²
+26	0x6E9A	V3 Crest Factor	0-100.00	0.01	UINT16	R	²
+27	0x6E9B	Not used	0	0	UINT16	R	
+28	0x6E9C	I1 Crest Factor	0-100.00	0.01	UINT16	R	
+29	0x6E9D	I2 Crest Factor	0-100.00	0.01	UINT16	R	
+30	0x6E9E	I3 Crest Factor	0-100.00	0.01	UINT16	R	
+31	0x6E9F	I4 Crest Factor	0-100.00	0.01	UINT16	R	
10688-10719		10-Minute Harmonics					
+0	0x6F00	V1 THD	0-999.9	0.1%	UINT16	R	²
+1	0x6F01	V2 THD	0-999.9	0.1%	UINT16	R	²
+2	0x6F02	V3 THD	0-999.9	0.1%	UINT16	R	²
+3	0x6F03	Not used	0	0	UINT16	R	
+4	0x6F04	I1 THD	0-999.9	0.1%	UINT16	R	
+5	0x6F05	I2 THD	0-999.9	0.1%	UINT16	R	
+6	0x6F06	I3 THD	0-999.9	0.1%	UINT16	R	
+7	0x6F07	I4 THD	0-999.9	0.1%	UINT16	R	
+8	0x6F08	V1 interharmonics THD	0-999.9	0.1%	UINT16	R	²
+9	0x6F09	V2 interharmonics THD	0-999.9	0.1%	UINT16	R	²
+10	0x6F0A	V3 interharmonics THD	0-999.9	0.1%	UINT16	R	²
+11	0x6F0B	Not used	0	0	UINT16	R	
+12	0x6F0C	I1 interharmonics THD	0-999.9	0.1%	UINT16	R	
+13	0x6F0D	I2 interharmonics THD	0-999.9	0.1%	UINT16	R	
+14	0x6F0E	I3 interharmonics THD	0-999.9	0.1%	UINT16	R	
+15	0x6F0F	I4 interharmonics THD	0-999.9	0.1%	UINT16	R	
+16	0x6F10	I1 TDD	0-100.0	0.1%	UINT16	R	
+17	0x6F11	I2 TDD	0-100.0	0.1%	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+18	0x6F12	I3 TDD	0-100.0	0.1%	UINT16	R	
+19	0x6F13	I4 TDD	0-100.0	0.1%	UINT16	R	
+20	0x6F14	I1 K-Factor	1.0-999.9	0.1	UINT16	R	
+21	0x6F15	I2 K-Factor	1.0-999.9	0.1	UINT16	R	
+22	0x6F16	I3 K-Factor	1.0-999.9	0.1	UINT16	R	
+23	0x6F17	I4 K-Factor	1.0-999.9	0.1	UINT16	R	
+24	0x6F18	V1 Crest Factor	0-100.00	0.01	UINT16	R	²
+25	0x6F19	V2 Crest Factor	0-100.00	0.01	UINT16	R	²
+26	0x6F1A	V3 Crest Factor	0-100.00	0.01	UINT16	R	²
+27	0x6F1B	V4 Crest Factor	0-100.00	0.01	UINT16	R	
+28	0x6F1C	I1 Crest Factor	0-100.00	0.01	UINT16	R	
+29	0x6F1D	I2 Crest Factor	0-100.00	0.01	UINT16	R	
+30	0x6F1E	I3 Crest Factor	0-100.00	0.01	UINT16	R	
+31	0x6F1F	I4 Crest Factor	0-100.00	0.01	UINT16	R	
10720-10751		2-Hour Harmonics					
+0	0x6F80	V1 THD	0-999.9	0.1%	UINT16	R	²
+1	0x6F81	V2 THD	0-999.9	0.1%	UINT16	R	
+2	0x6F82	V3 THD	0-999.9	0.1%	UINT16	R	
+3	0x6F83	Not used	0	0	UINT16	R	
+4	0x6F84	I1 THD	0-999.9	0.1%	UINT16	R	
+5	0x6F85	I2 THD	0-999.9	0.1%	UINT16	R	
+6	0x6F86	I3 THD	0-999.9	0.1%	UINT16	R	
+7	0x6F87	I4 THD	0-999.9	0.1%	UINT16	R	
+8	0x6F88	V1 interharmonics THD	0-999.9	0.1%	UINT16	R	
+9	0x6F89	V2 interharmonics THD	0-999.9	0.1%	UINT16	R	
+10	0x6F8A	V3 interharmonics THD	0-999.9	0.1%	UINT16	R	
+11	0x6F8B	Not used	0	0	UINT16	R	
+12	0x6F8C	I1 interharmonics THD	0-999.9	0.1%	UINT16	R	
+13	0x6F8D	I2 interharmonics THD	0-999.9	0.1%	UINT16	R	

Address	Point ID	Description	Low and High Scales ³	Units ³	Type	R/W	Notes
+14	0x6F8E	I3 interharmonics THD	0-999.9	0.1%	UINT16	R	
+15	0x6F8F	I4 interharmonics THD	0-999.9	0.1%	UINT16	R	
+16	0x6F90	I1 TDD	0-100.0	0.1%	UINT16	R	
+17	0x6F91	I2 TDD	0-100.0	0.1%	UINT16	R	
+18	0x6F92	I3 TDD	0-100.0	0.1%	UINT16	R	
+19	0x6F93	I4 TDD	0-100.0	0.1%	UINT16	R	
+20	0x6F94	I1 K-Factor	1.0-999.9	0.1	UINT16	R	
+21	0x6F95	I2 K-Factor	1.0-999.9	0.1	UINT16	R	
+22	0x6F96	I3 K-Factor	1.0-999.9	0.1	UINT16	R	
+23	0x6F97	I4 K-Factor	1.0-999.9	0.1	UINT16	R	
+24	0x6F98	V1 Crest Factor	0-100.00	0.01	UINT16	R	²
+25	0x6F99	V2 Crest Factor	0-100.00	0.01	UINT16	R	²
+26	0x6F9A	V3 Crest Factor	0-100.00	0.01	UINT16	R	²
+27	0x6F9B	Not used	0	0	UINT16	R	
+28	0x6F9C	I1 Crest Factor	0-100.00	0.01	UINT16	R	
+29	0x6F9D	I2 Crest Factor	0-100.00	0.01	UINT16	R	
+30	0x6F9E	I3 Crest Factor	0-100.00	0.01	UINT16	R	
+31	0x6F9F	I4 Crest Factor	0-100.00	0.01	UINT16	R	

NOTES:

¹When the 4LN3, 4LL3, 3LN3, 3LL3, 3BLN3 or 3BLL3 wiring mode is selected, the voltages will be line-to-neutral; for any other wiring mode, they will be line-to-line.

²When the 4LN3, 3LN3 or 3BLN3 wiring mode is selected, the voltages will be line-to-neutral; for any other wiring mode, they will be line-to-line voltages.

³For volts, amps, power and frequency scales and units, refer to [Chapter 4](#), “Data Scales and Units”.

⁴0.2-s (10/12-cycle) interval

⁵3-s (150/180-cycle) interval.

⁶Harmonic angles are referenced to the fundamental voltage harmonic H01 on phase L1.

⁷0.2-s (10/12-cycle) interval for EN 50160, programmable 0.2-s (10/12-cycle), 3-s (150/180-cycle), 10-min, EN 50160:2022.

3.4 32-bit Binary and Analog Values

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
11776-11777	0x0000	None	0		UINT32	R	
		Setpoint Status					
11840-11841		Setpoints 1-32 (alias)	0x00000000 – 0xFFFFFFFF		UINT32	R	
27648-27649		Setpoints 1-32	0x00000000 – 0xFFFFFFFF		UINT32	R	
27712-27713		Setpoints 33-64	0x00000000 – 0xFFFFFFFF		UINT32	R	
	0x0080	Setpoint #1	0/1			TRG	
	0x0081	Setpoint #2	0/1			TRG	
		...					
	0x00BF	Setpoint #64	0/1			TRG	
11904-11907		Special Inputs					
+0,1	0x0100	Voltage disturbance	0-100	%	UINT32	R	
+2,3	0x0101	Phase rotation order	0 = error, 1 = positive (ABC), 2 = negative (CBA)		UINT32	R	
		Event Flags					
12160-12161		Event flags 1-32	0x00000000 – 0xFFFFFFFF		UINT32	R	
12224-12225		Event flags 33-64	0x00000000 – 0xFFFFFFFF		UINT32	R	
	0x0300	Event flag #1	0/1			TRG	
	0x0301	Event flag #2	0/1			TRG	
		...					
	0x033F	Event flag #64	0/1			TRG	
		Internal Pulsed Events					
	0x0400	kWh Import pulse	0/1			TRG	
	0x0401	kWh Export pulse	0/1			TRG	
	0x0402	kWh Total pulse	0/1			TRG	
	0x0403	kvarh Import pulse	0/1			TRG	
	0x0404	kvarh Export pulse	0/1			TRG	
	0x0405	kvarh Total pulse	0/1			TRG	
	0x0406	kVAh pulse	0/1			TRG	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
	0x0407	Start of power demand interval pulse	0/1			TRG	
	0x0408	Start of tariff interval pulse	0/1			TRG	
	0x0409	Start of ampere demand interval pulse	0/1			TRG	
	0x040A	Start of sliding power demand interval pulse	0/1			TRG	
	0x040B	New month pulse	0/1			TRG	
		External Triggers (UDP)					
	0x0480	External trigger #1	0/1			TRG	
	0x0481	External trigger #2	0/1			TRG	
		...					
	0x048F	External trigger #16	0/1			TRG	
		Periodic Timers					
	0x0500	Timer #1	0/1			TRG	
	0x0501	Timer #2	0/1			TRG	
		...					
	0x050F	Timer #16	0/1			TRG	
		Digital Inputs					⁸
12544-12545		Digital inputs DI1–DI26	0x00000000 – 0xFFFFFFFF		UINT32	R	
12608-12609		Not used	0	0	UINT32	R	
12672-12673		Not used	0	0	UINT32	R	
12736-12737		Not used	0	0	UINT32	R	
	0x0600	Digital input DI1	0/1			TRG	
	0x0601	Digital input DI2	0/1			TRG	
		...					
	0x067F	Digital input DI126	0/1			TRG	
		Pulse Inputs					⁹
	0x0700	Digital input DI1	0/1			TRG	
	0x0701	Digital input DI2	0/1			TRG	
		...					
	0x077F	Digital input DI126	0/1			TRG	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
		Relay Outputs					
12800-12801		Relay outputs RO1–RO7	0x00000000 – 0xFFFFFFFF		UINT32	R	
12864-12865		Not used	0	0	UINT32	R	
	0x0800	Relay output RO1	0/1			TRG	
	0x0801	Relay output RO2	0/1			TRG	
		...					
	0x0806	Relay output RO7	0/1			TRG	
		Static Event Flags					
12928-12929		Static event flags: Bit 0: Phase order error Bit 1: Positive phase order Bit 2: Negative phase order Bit 3: PQ event Bit 4: General fault event Bit 5: Fault detected Bit 6: External fault trigger Bit 7: Device fault (non-critical error) Bit 8: No voltage Bit 9: Remote control	0x00000000 – 0xFFFFFFFF		UINT32	R	
	0x0900	Phase order error	0/1			TRG	
	0x0901	Positive phase order	0/1			TRG	
	0x0902	Negative phase order	0/1			TRG	
	0x0903	PQ event	0/1			TRG	
	0x0904	General fault event	0/1			TRG	
	0x0905	Fault detected	0/1			TRG	
	0x0906	External fault trigger	0/1			TRG	
	0x0907	Device fault (non-critical error)	0/1			TRG	
	0x0908	No voltage	0/1			TRG	
	0x0909	Remote control	0/1			TRG	
13056-13119		Counters					

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+0,1	0x0A00	Counter #1	0 – 999,999,999		UINT32	R/W	
+2,3	0x0A01	Counter #2	0 – 999,999,999		UINT32	R/W	
		...					
+62,63	0x0A1F	Counter #32	0 – 999,999,999		UINT32	R/W	
13184-13205		Time/Date					
+0,1	0x0B00	Packed date	YYMMDD		UINT32	TRG,R	
+2,3	0x0B01	Packed time	hhmmss		UINT32	TRG,R	
+4,5	0x0B02	Day of week	1-7, 1 = Sun, 7 = Sat		UINT32	TRG,R	
+6,7	0x0B03	Year	0-99		UINT32	TRG,R	
+8,9	0x0B04	Month	1-12		UINT32	TRG,R	
+10,11	0x0B05	Day of month	1-31		UINT32	TRG,R	
+12,13	0x0B06	Hours	0-23		UINT32	TRG,R	
+14,15	0x0B07	Minutes	0-59		UINT32	TRG,R	
+16,17	0x0B08	Seconds	0-59		UINT32	TRG,R	
+18,19	0x0B09	Minute interval	1-5,10,15,20,30,60 (triggers)		UINT32	TRG,R	Reads present minutes
+20,21	0x0B0A	Timestamp	F1		UINT32	R	
13248-13297		1/2-Cycle Values					
+0,1	0x0B80	V1 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+2,3	0x0B81	V2 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+4,5	0x0B82	V3 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+6,7	0x0B83	Not used	0	0	UINT32	R	
+8,9	0x0B84	V12 voltage	0-Vmax	U1	UINT32	R	
+10,11	0x0B85	V23 voltage	0-Vmax	U1	UINT32	R	
+12,13	0x0B86	V31 voltage	0-Vmax	U1	UINT32	R	
+14,15	0x0B87	I1 current	0-I _{max}	U2	UINT32	R	DC-applicable
+16,17	0x0B88	I2 current	0-I _{max}	U2	UINT32	R	DC-applicable
+18,19	0x0B89	I3 current	0-I _{max}	U2	UINT32	R	DC-applicable
+20,21	0x0B8A	I4 current	0-I _{4max}	U2	UINT32	R	DC-applicable
+22,23	0x0B8B	I _n current	0-I _{max}	U2	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+24,25	0x0B8C	Not used	0	0	UINT32	R	
+26,27	0x0B8D	Not used	0	0	UINT32	R	
+28,29	0x0B8E	Not used	0	0	UINT32	R	
+30,31	0x0B8F	Not used	0	0	UINT32	R	
+32,33	0x0B90	Not used	0	0	UINT32	R	
+34,35	0x0B91	Zero-sequence voltage	0-Vmax	U1	UINT32	R	
+36,37	0x0B92	Zero-sequence current	0-Imax	U2	UINT32	R	
+38,39	0x0B93	Ix Zero-sequence current	0-Ixmax	U2	UINT32	R	
+40,41	0x0B94	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+42,43	0x0B95	Current unbalance	0-3000	×0.1%	UINT32	R	
+44,45	0x0B96	Ix current unbalance	0-3000	×0.1%	UINT32	R	
+46,47	0x0B97	Not used			UINT32	R	
+48,49	0x0B98	Frequency (1-cycle)	0-10000	×0.01Hz	UINT32	R	
+50,51	0x0B99	Not used	0	0	UINT32		
+52,53	0x0B9A	Not used	0	0	UINT32		
+54,55	0x0B9B	I leakage current	0-Imax	U2	UINT32		
13312-13394		1-Cycle Phase Values					
+0,1	0x0C00	V1 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+2,3	0x0C01	V2 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+4,5	0x0C02	V3 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+6,7	0x0C03	I1 current	0-Imax	U2	UINT32	R	DC-applicable
+8,9	0x0C04	I2 current	0-Imax	U2	UINT32	R	DC-applicable
+10,11	0x0C05	I3 current	0-Imax	U2	UINT32	R	DC-applicable
+12,13	0x0C06	kW L1	-Pmax-Pmax	U3	INT32	R	DC-applicable
+14,15	0x0C07	kW L2	-Pmax-Pmax	U3	INT32	R	DC-applicable
+16,17	0x0C08	kW L3	-Pmax-Pmax	U3	INT32	R	DC-applicable
+18,19	0x0C09	kvar L1	-Pmax-Pmax	U3	INT32	R	
+20,21	0x0C0A	kvar L2	-Pmax-Pmax	U3	INT32	R	
+22,23	0x0C0B	kvar L3	-Pmax-Pmax	U3	INT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+24,25	0x0C0C	kVA L1	0-Pmax	U3	UINT32	R	
+26,27	0x0C0D	kVA L2	0-Pmax	U3	UINT32	R	
+28,29	0x0C0E	kVA L3	0-Pmax	U3	UINT32	R	
+30,31	0x0C0F	Power factor L1	-1000-1000	×0.001	INT32	R	
+32,33	0x0C10	Power factor L2	-1000-1000	×0.001	INT32	R	
+34,35	0x0C11	Power factor L3	-1000-1000	×0.001	INT32	R	
+36,37	0x0C12	V1 voltage THD	0-9999	×0.1%	UINT32	R	2,4
+38,39	0x0C13	V2 voltage THD	0-9999	×0.1%	UINT32	R	2,4
+40,41	0x0C14	V3 voltage THD	0-9999	×0.1%	UINT32	R	2,4
+42,43	0x0C15	I1 current THD	0-9999	×0.1%	UINT32	R	4
+44,45	0x0C16	I2 current THD	0-9999	×0.1%	UINT32	R	4
+46,47	0x0C17	I3 current THD	0-9999	×0.1%	UINT32	R	4
+48,49	0x0C18	I1 K-Factor	10-9999	×0.1	UINT32	R	4
+50,51	0x0C19	I2 K-Factor	10-9999	×0.1	UINT32	R	4
+52,53	0x0C1A	I3 K-Factor	10-9999	×0.1	UINT32	R	4
+54,55	0x0C1B	I1 current TDD	0-1000	×0.1%	UINT32	R	4
+56,57	0x0C1C	I2 current TDD	0-1000	×0.1%	UINT32	R	4
+58,59	0x0C1D	I3 current TDD	0-1000	×0.1%	UINT32	R	4
+60,61	0x0C1E	V12 voltage	0-Vmax	U1	UINT32	R	
+62,63	0x0C1F	V23 voltage	0-Vmax	U1	UINT32	R	
+64,65	0x0C20	V31 voltage	0-Vmax	U1	UINT32	R	
+66,67	0x0C21	Not used	0	0	UINT32	R	
+68,69	0x0C22	Not used	0	0	UINT32	R	
+70,71	0x0C23	Not used	0	0	UINT32	R	
+71,72	0x0C24	V1 average	0-Vmax	U1	UINT32	R	DC-applicable
+73,74	0x0C25	V2 average	0-Vmax	U1	UINT32	R	DC-applicable
+75,76	0x0C26	V3 average	0-Vmax	U1	UINT32	R	DC-applicable
+77,78	0x0C27	I1 average	0-Imax	U1	UINT32	R	DC-applicable

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+79,80	0x0C28	I2 average	0-I _{max}	U1	UINT32	R	DC-applicable
+81,82	0x0C29	I3 average	0-I _{max}	U1	UINT32	R	DC-applicable
13440-13467		1-Cycle Low Phase Values					
+0,1	0x0D00	Low L-N voltage	0-V _{max}	U1	UINT32	R	
+2,3	0x0D01	Low current	0-I _{max}	U2	UINT32	R	
+4,5	0x0D02	Low kW	-P _{max} -P _{max}	U3	INT32	R	DC-applicable
+6,7	0x0D03	Low kvar	-P _{max} -P _{max}	U3	INT32	R	
+8,9	0x0D04	Low kVA	0-P _{max}	U3	UINT32	R	
+10,11	0x0D05	Low PF Lag	0-1000	×0.001	UINT32	R	
+12,13	0x0D06	Low PF Lead	0-1000	×0.001	UINT32	R	
+14,15	0x0D07	Low voltage THD	0-9999	×0.1%	UINT32	R	^{2,4}
+16,17	0x0D08	Low current THD	0-9999	×0.1%	UINT32	R	⁴
+18,19	0x0D09	Low K-Factor	10-9999	×0.1	UINT32	R	⁴
+20,21	0x0D0A	Low current TDD	0-1000	×0.1%	UINT32	R	⁴
+22,23	0x0D0B	Low L-L voltage	0-V _{max}	U1	UINT32	R	
+24,25	0x0D0C	Low voltage interharmonics THD	0-9999	×0.1%	UINT32	R	^{2,4}
+26,27	0x0D0D	Low current interharmonics THD	0-9999	×0.1%	UINT32	R	⁴
13504-13535		1/2-Cycle Analog Inputs					
+0,1	0x0D80	Analog input AI1	AI1min-AI1max		INT32	R	
+2,3	0x0D81	Analog input AI2	AI2min-AI2max		INT32	R	
		...					
+30,31	0x0D8F	Analog input AI16	AI16min-AI16max		INT32	R	
13568-13595		1-Cycle High Phase Values					
+0,1	0x0E00	High L-N voltage	0-V _{max}	U1	UINT32	R	
+2,3	0x0E01	High current	0-I _{max}	U2	UINT32	R	
+4,5	0x0E02	High kW	-P _{max} -P _{max}	U3	INT32	R	DC-applicable
+6,7	0x0E03	High kvar	-P _{max} -P _{max}	U3	INT32	R	
+8,9	0x0E04	High kVA	0-P _{max}	U3	UINT32	R	
+10,11	0x0E05	High PF Lag	0-1000	×0.001	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+12,13	0x0E06	High PF Lead	0-1000	×0.001	UINT32	R	
+14,15	0x0E07	High voltage THD	0-9999	×0.1%	UINT32	R	2,4
+16,17	0x0E08	High current THD	0-9999	×0.1%	UINT32	R	4
+18,19	0x0E09	High K-Factor	10-9999	×0.1	UINT32	R	4
+20,21	0x0E0A	High current TDD	0-1000	×0.1%	UINT32	R	4
+22,23	0x0E0B	High L-L voltage	0-Vmax	U1	UINT32	R	
+24,25	0x0E0C	High voltage interharmonics THD	0-9999	×0.1%	UINT32	R	2,4
+26,27	0x0E0D	High current interharmonics THD	0-9999	×0.1%	UINT32	R	4
13632-13663		1-Second Analog Inputs					
+0,1	0x0E80	Analog input AI1	AI1min-AI1max		INT32	R	
+2,3	0x0E81	Analog input AI2	AI2min-AI2max		INT32	R	
		...					
+30,31	0x0E8F	Analog input AI16	AI16min-AI16max		INT32	R	
13696-13723		1-Cycle Total Values					
+0,1	0x0F00	Total kW	-Pmax-Pmax	U3	INT32	R	DC-applicable
+2,3	0x0F01	Total kvar	-Pmax-Pmax	U3	INT32	R	
+4,5	0x0F02	Total kVA	0-Pmax	U3	UINT32	R	
+6,7	0x0F03	Total PF	-1000-1000	×0.001	INT32	R	
+8,9	0x0F04	Total PF lag	0-1000	×0.001	UINT32	R	
+10,11	0x0F05	Total PF lead	0-1000	×0.001	UINT32		
+12,13	0x0F06	Total kW import	0-Pmax	U3	UINT32		DC-applicable
+14,15	0x0F07	Total kW export	0-Pmax	U3	UINT32	R	DC-applicable
+16,17	0x0F08	Total kvar import	0-Pmax	U3	UINT32	R	
+18,19	0x0F09	Total kvar export	0-Pmax	U3	UINT32	R	
+20,21	0x0F0A	3-phase average L-N voltage	0-Vmax	U1	UINT32	R	
+22,23	0x0F0B	3-phase average L-L voltage	0-Vmax	U1	UINT32	R	
+24,25	0x0F0C	3-phase average current	0-Imax	U2	UINT32	R	
+26,27	0x0F0D	Not used	0	0	UINT32	R	
13824-13841		1-Cycle Auxiliary Values					

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+0,1	0x1000	I4 current	0-I _{max}	U2	UINT32	R	DC-applicable
+2,3	0x1001	I _n current	0-I _{max}	U2	UINT32	R	
+4,5	0x1002	Frequency	0-10000	×0.01Hz	UINT32	R	
+6,7	0x1003	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+8,9	0x1004	Current unbalance	0-3000	×0.1%	UINT32	R	
+10,11	0x1005	Not used			UINT32	R	
+12,13	0x1006	Not used	0	0	UINT32	R	
+14,15	0x1007	Not used	0	0	UINT32	R	
+16,17	0x1008	Frequency (3 decimals)	0-100000	×0.001Hz	UINT32	R	
+18,19	0x1009	Not used					
+20,21	0x100A	I leakage current	0-I _{max}	U2	UINT32	R	
+22,23	0x100B	Frequency over 4 cycles (3 decimals)	0-100.000	0.001Hz	UINT32	R	
+24,25	0x100C	Frequency (4 decimals)	0-100.0000	×0.0001Hz	UINT32	R	
13888-13935		Fundamental Phasor Values					
+0,1	0x1080	V1 voltage magnitude	0-V _{max}	U1	UINT32	R	² , DC-applicable
+2,3	0x1081	V2 voltage magnitude	0-V _{max}	U1	UINT32	R	² , DC-applicable
+4,5	0x1082	V3 voltage magnitude	0-V _{max}	U1	UINT32	R	² , DC-applicable
+6,7	0x1083	Not used	0	0	UINT32	R	
+8,9	0x1084	I1 current magnitude	0-I _{max}	U2	UINT32	R	DC-applicable
+10,11	0x1085	I2 current magnitude	0-I _{max}	U2	UINT32	R	DC-applicable
+12,13	0x1086	I3 current magnitude	0-I _{max}	U2	UINT32	R	DC-applicable
+14,15	0x1087	I4 current magnitude	0-I _{max}	U2	UINT32	R	DC-applicable
+16,17	0x1088	V1 voltage angle	-1800-1800	×0.1°	INT32	R	²
+18,19	0x1089	V2 voltage angle	-1800-1800	×0.1°	INT32	R	²
+20,21	0x108A	V3 voltage angle	-1800-1800	×0.1°	INT32	R	²
+22,23	0x108B	Not used	0	0	UINT32	R	
+24,25	0x108C	I1 current angle	-1800-1800	×0.1°	INT32	R	
+26,27	0x108D	I2 current angle	-1800-1800	×0.1°	INT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+28,29	0x108E	I3 current angle	-1800-1800	×0.1°	INT32	R	
+30,31	0x108F	I4 current angle	-1800-1800	×0.1°	INT32	R	
+32,33	0x1090	Not used	0	0	UINT32	R	
+34,35	0x1091	Not used	0	0	UINT32	R	
+36,37	0x1092	Not used	0	0	UINT32	R	
+38,39	0x1093	Not used	0	0	UINT32	R	
+40,41	0x1094	Not used	0	0	UINT32	R	
+42,43	0x1095	Not used	0	0	UINT32	R	
+44,45	0x1096	Not used	0	0	UINT32	R	
+46,47	0x1097	Not used	0	0	UINT32	R	
13952-14029		1-Second Phase Values					
+0,1	0x1100	V1 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+2,3	0x1101	V2 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+4,5	0x1102	V3 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+6,7	0x1103	I1 current	0-I _{max}	U2	UINT32	R	DC-applicable
+8,9	0x1104	I2 current	0-I _{max}	U2	UINT32	R	DC-applicable
+10,11	0x1105	I3 current	0-I _{max}	U2	UINT32	R	DC-applicable
+12,13	0x1106	kW L1	-P _{max} -P _{max}	U3	INT32	R	DC-applicable
+14,15	0x1107	kW L2	-P _{max} -P _{max}	U3	INT32	R	DC-applicable
+16,17	0x1108	kW L3	-P _{max} -P _{max}	U3	INT32	R	DC-applicable
+18,19	0x1109	kvar L1	-P _{max} -P _{max}	U3	INT32	R	
+20,21	0x110A	kvar L2	-P _{max} -P _{max}	U3	INT32	R	
+22,23	0x110B	kvar L3	-P _{max} -P _{max}	U3	INT32	R	
+24,25	0x110C	kVA L1	0-P _{max}	U3	UINT32	R	
+26,27	0x110D	kVA L2	0-P _{max}	U3	UINT32	R	
+28,29	0x110E	kVA L3	0-P _{max}	U3	UINT32	R	
+30,31	0x110F	Power factor L1	-1000-1000	×0.001	INT32	R	
+32,33	0x1110	Power factor L2	-1000-1000	×0.001	INT32	R	
+34,35	0x1111	Power factor L3	-1000-1000	×0.001	INT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+36,37	0x1112	V1 voltage THD	0-9999	×0.1%	UINT32	R	2, 5
+38,39	0x1113	V2 voltage THD	0-9999	×0.1%	UINT32	R	2, 5
+40,41	0x1114	V3 voltage THD	0-9999	×0.1%	UINT32	R	2, 5
+42,43	0x1115	I1 current THD	0-9999	×0.1%	UINT32	R	5
+44,45	0x1116	I2 current THD	0-9999	×0.1%	UINT32	R	5
+46,47	0x1117	I3 current THD	0-9999	×0.1%	UINT32	R	5
+48,49	0x1118	I1 K-Factor	10-9999	×0.1	UINT32	R	5
+50,51	0x1119	I2 K-Factor	10-9999	×0.1	UINT32	R	5
+52,53	0x111A	I3 K-Factor	10-9999	×0.1	UINT32	R	5
+54,55	0x111B	I1 current TDD	0-1000	×0.1%	UINT32	R	5
+56,57	0x111C	I2 current TDD	0-1000	×0.1%	UINT32	R	5
+58,59	0x111D	I3 current TDD	0-1000	×0.1%	UINT32	R	5
+60,61	0x111E	V12 voltage	0-Vmax	U1	UINT32	R	
+62,63	0x111F	V23 voltage	0-Vmax	U1	UINT32	R	
+64,65	0x1120	V31 voltage	0-Vmax	U1	UINT32	R	
+66,67	0x1121	Not used	0	0	UINT32	R	
+68,69	0x1122	Not used	0	0	UINT32	R	
+70,71	0x1123	Not used	0	0	UINT32	R	
+72,73	0x1124	Not used	0	0	UINT32	R	
+74,75	0x1125	Not used	0	0	UINT32	R	
+76,77	0x1126	Not used	0	0	UINT32	R	
14080-14107		1-Second Low Phase Values					
+0,1	0x1200	Low L-N voltage	0-Vmax	U1	UINT32	R	
+2,3	0x1201	Low current	0-Imax	U2	UINT32	R	
+4,5	0x1202	Low kW	-Pmax-Pmax	U3	INT32	R	DC-applicable
+6,7	0x1203	Low kvar	-Pmax-Pmax	U3	INT32	R	
+8,9	0x1204	Low kVA	0-Pmax	U3	UINT32	R	
+10,11	0x1205	Low PF Lag	0-1000	×0.001	UINT32	R	
+12,13	0x1206	Low PF Lead	0-1000	×0.001	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+14,15	0x1207	Low voltage THD	0-9999	×0.1%	UINT32	R	2, 5
+16,17	0x1208	Low current THD	0-9999	×0.1%	UINT32	R	5
+18,19	0x1209	Low K-Factor	10-9999	×0.1	UINT32	R	5
+20,21	0x120A	Low current TDD	0-1000	×0.1%	UINT32	R	5
+22,23	0x120B	Low L-L voltage	0-Vmax	U1	UINT32	R	
+24,25	0x120C	Low voltage interharmonics THD	0-9999	×0.1%	UINT32	R	2, 5
+26,27	0x120D	Low current interharmonics THD	0-9999	×0.1%	UINT32	R	5
14144-14175		3-Second Powers					
+0,1	0x1280	kW L1	-Pmax-Pmax	U3	INT32	R	DC-applicable
+2,3	0x1281	kW L2	-Pmax-Pmax	U3	INT32	R	DC-applicable
+4,5	0x1282	kW L3	-Pmax-Pmax	U3	INT32	R	DC-applicable
+6,7	0x1283	kvar L1	-Pmax-Pmax	U3	INT32	R	
+8,9	0x1284	kvar L2	-Pmax-Pmax	U3	INT32	R	
+10,11	0x1285	kvar L3	-Pmax-Pmax	U3	INT32	R	
+12,13	0x1286	kVA L1	0-Pmax	U3	UINT32	R	
+14,15	0x1287	kVA L2	0-Pmax	U3	UINT32	R	
+16,17	0x1288	kVA L3	0-Pmax	U3	UINT32	R	
+18,19	0x1289	Power factor L1	-1000-1000	×0.001	INT32	R	
+20,21	0x128A	Power factor L2	-1000-1000	×0.001	INT32	R	
+22,23	0x128B	Power factor L3	-1000-1000	×0.001	INT32	R	
+24,25	0x128C	Total kW	-Pmax-Pmax	U3	INT32	R	DC-applicable
+26,27	0x128D	Total kvar	-Pmax-Pmax	U3	INT32	R	
+28,29	0x128E	Total kVA	0-Pmax	U3	UINT32	R	
+30,31	0x128F	Total PF	-1000-1000	×0.001	INT32	R	
14208-14235		1-Second High Phase Values					
+0,1	0x1300	High L-N voltage	0-Vmax	U1	UINT32	R	
+2,3	0x1301	High current	0-Imax	U2	UINT32	R	
+4,5	0x1302	High kW	-Pmax-Pmax	U3	INT32	R	DC-applicable
+6,7	0x1303	High kvar	-Pmax-Pmax	U3	INT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+8,9	0x1304	High kVA	0-Pmax	U3	UINT32	R	
+10,11	0x1305	High PF Lag	0-1000	×0.001	UINT32	R	
+12,13	0x1306	High PF Lead	0-1000	×0.001	UINT32	R	
+14,15	0x1307	High voltage THD	0-9999	×0.1%	UINT32	R	^{2,5}
+16,17	0x1308	High current THD	0-9999	×0.1%	UINT32	R	⁵
+18,19	0x1309	High K-Factor	10-9999	×0.1	UINT32	R	⁵
+20,21	0x130A	High current TDD	0-1000	×0.1%	UINT32	R	⁵
+22,23	0x130B	High L-L voltage	0-Vmax	U1	UINT32	R	
+24,25	0x130C	High voltage interharmonics THD	0-9999	×0.1%	UINT32	R	^{2,5}
+26,27	0x130D	High current interharmonics THD	0-9999	×0.1%	UINT32	R	⁵
14336-14363		1-Second Total Values					
+0,1	0x1400	Total kW	-Pmax-Pmax	U3	INT32	R	DC-applicable
+2,3	0x1401	Total kvar	-Pmax-Pmax	U3	INT32	R	
+4,5	0x1402	Total kVA	0-Pmax	U3	UINT32	R	
+6,7	0x1403	Total PF	-1000-1000	×0.001	INT32	R	
+8,9	0x1404	Total PF lag	0-1000	×0.001	UINT32	R	
+10,11	0x1405	Total PF lead	0-1000	×0.001	UINT32		
+12,13	0x1406	Total kW import	0-Pmax	U3	UINT32		DC-applicable
+14,15	0x1407	Total kW export	0-Pmax	U3	UINT32	R	DC-applicable
+16,17	0x1408	Total kvar import	0-Pmax	U3	UINT32	R	
+18,19	0x1409	Total kvar export	0-Pmax	U3	UINT32	R	
+20,21	0x140A	3-phase average L-N voltage	0-Vmax	U1	UINT32	R	
+22,23	0x140B	3-phase average L-L voltage	0-Vmax	U1	UINT32	R	
+24,25	0x140C	3-phase average current	0-Imax	U2	UINT32	R	
+26,27	0x140D	Not used	0	0	UINT32	R	
14464-14495		1-Second Auxiliary Values					
+0,1	0x1500	I4 current	0-Imax	U2	UINT32	R	DC-applicable
+2,3	0x1501	In current	0-Imax	U2	UINT32	R	
+4,5	0x1502	Frequency	0-10000	×0.01Hz	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+6,7	0x1503	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+8,9	0x1504	Current unbalance	0-3000	×0.1%	UINT32	R	
+10,11	0x1505	Not used			UINT32	R	
+12,13	0x1506	Not used	0	0	UINT32	R	
+14,15	0x1507	Not used	0	0	UINT32	R	
+16,17	0x1508	Not used	0	0	UINT32	R	
+18,19	0x1509	Internal temperature	-2000 to 2000	×0.1°C	INT32	R	
+20,21	0x150A	Frequency (3 decimals)	0-100000	×0.001Hz	UINT32	R	
+22,23	0x150B	Vbatt	0-3.5V	×0.001V	UINT32	R	
+24,25	0x150C	Internal temperature	-2000 to 2000	×0.1°C	INT32	R	
+26,27	0x150D	Frequency (4 decimals)	0-1000000	×0.0001Hz	UINT32	R	
+28,29	0x150E	I leakage current	0-I _{max}	U2	UINT32	R	
+30,31	0x150F	V3xI4kW	-P _{max} -P _{max}	U3	INT32	R	DC-applicable
14528-14551		Present Harmonic Demands					
+0,1	0x1580	V1 THD demand	0-9999	×0.1%	UINT32	R	²
+2,3	0x1581	V2 THD demand	0-9999	×0.1%	UINT32	R	²
+4,5	0x1582	V3 THD demand	0-9999	×0.1%	UINT32	R	²
+6,7	0x1583	Not used	0	0	UINT32	R	
+8,9	0x1584	I1 THD demand	0-9999	×0.1%	UINT32	R	
+10,11	0x1585	I2 THD demand	0-9999	×0.1%	UINT32	R	
+12,13	0x1586	I3 THD demand	0-9999	×0.1%	UINT32	R	
+14,15	0x1587	I4 THD demand	0-9999	×0.1%	UINT32	R	
+16,17	0x1588	I1 TDD demand	0-1000	×0.1%	UINT32	R	
+18,19	0x1589	I2 TDD demand	0-1000	×0.1%	UINT32	R	
+20,21	0x158A	I3 TDD demand	0-1000	×0.1%	UINT32	R	
+22,23	0x158B	I4 TDD demand	0-1000	×0.1%	UINT32	R	
14592-14661		Present Demands					
+0,1	0x1600	V1 volt demand	0-V _{max}	U1	UINT32	R	² , DC-applicable

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+2,3	0x1601	V2 volt demand	0-Vmax	U1	UINT32	R	² , DC-applicable
+4,5	0x1602	V3 volt demand	0-Vmax	U1	UINT32	R	² , DC-applicable
+6,7	0x1603	I1 ampere demand	0-I _{max}	U2	UINT32	R	DC-applicable
+8,9	0x1604	I2 ampere demand	0-I _{max}	U2	UINT32	R	DC-applicable
+10,11	0x1605	I3 ampere demand	0-I _{max}	U2	UINT32	R	DC-applicable
+12,13	0x1606	kW import block demand	0-P _{max}	U3	UINT32	R	DC-applicable
+14,15	0x1607	kvar import block demand	0-P _{max}	U3	UINT32	R	
+16,17	0x1608	kVA block demand	0-P _{max}	U3	UINT32	R	
+18,19	0x1609	kW import sliding window demand	0-P _{max}	U3	UINT32	R	DC-applicable
+20,21	0x160A	kvar import sliding window demand	0-P _{max}	U3	UINT32	R	
+22,23	0x160B	kVA sliding window demand	0-P _{max}	U3	UINT32	R	
+24,25	0x160C	Not used	0		UINT32	R	
+26,27	0x160D	Not used	0		UINT32	R	
+28,29	0x160E	Not used	0		UINT32	R	
+30,31	0x160F	kW import accumulated demand	0-P _{max}	U3	UINT32	R	DC-applicable
+32,33	0x1610	kvar import accumulated demand	0-P _{max}	U3	UINT32	R	
+34,35	0x1611	kVA accumulated demand	0-P _{max}	U3	UINT32	R	
+36,37	0x1612	kW import predicted sliding window demand	0-P _{max}	U3	UINT32	R	DC-applicable
+38,39	0x1613	kvar import predicted sliding window demand	0-P _{max}	U3	UINT32	R	
+40,41	0x1614	kVA predicted sliding window demand	0-P _{max}	U3	UINT32	R	
+42,43	0x1615	PF (import) at Max. kVA sliding window demand	0-1000	×0.001	UINT32	R	
+44,45	0x1616	kW export block demand	0-P _{max}	U3	UINT32	R	DC-applicable
+46,47	0x1617	kvar export block demand	0-P _{max}	U3	UINT32	R	
+48,49	0x1618	kW export sliding window demand	0-P _{max}	U3	UINT32	R	DC-applicable
+50,51	0x1619	kvar export sliding window demand	0-P _{max}	U3	UINT32	R	
+52,53	0x161A	kW export accumulated demand	0-P _{max}	U3	UINT32	R	DC-applicable
+54,55	0x161B	kvar export accumulated demand	0-P _{max}	U3	UINT32	R	
+56,57	0x161C	kW export predicted sliding window demand	0-P _{max}	U3	UINT32	R	DC-applicable
+58,59	0x161D	kvar export predicted sliding window demand	0-P _{max}	U3	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+60,61	0x161E	Not used	0		UINT32	R	
+62,63	0x161F	Not used	0		UINT32	R	
+64,65	0x1620	Not used	0	0	UINT32	R	
+66,67	0x1621	I4 ampere demand	0-I _{max}	U2	UINT32	R	DC-applicable
+68,69	0x1622	In ampere demand	0-I _{max}	U2	UINT32	R	
14720-14763		Total Energies					
+0,1	0x1700	kWh import	0-999,999,999	U5	UINT32	R	DC-applicable
+2,3	0x1701	kWh export	0-999,999,999	U5	UINT32	R	DC-applicable
+4,5	0x1702	kWh net	-999,999,999-999,999,999	U5	INT32	R	DC-applicable
+6,7	0x1703	kWh total	0-999,999,999	U5	UINT32	R	DC-applicable
+8,9	0x1704	kvarh import	0-999,999,999	U5	UINT32	R	
+10,11	0x1705	kvarh export	0-999,999,999	U5	UINT32	R	
+12,13	0x1706	kvarh net	-999,999,999-999,999,999	U5	INT32	R	
+14,15	0x1707	kvarh total	0-999,999,999	U5	UINT32	R	
+16,17	0x1708	kVAh total	0-999,999,999	U5	UINT32	R	
+18,19	0x1709	Vh total	0-999,999,999	1 Vh	UINT32	R	
+20,21	0x170A	Ah total	0-999,999,999	1 Ah	UINT32	R	
+22,23	0x170B	kVAh import	0-999,999,999	U5	UINT32	R	
+24,25	0x170C	kVAh export	0-999,999,999	U5	UINT32	R	
+26,27	0x170D	Not used			UINT32	R	
+28,29	0x170E	Not used			UINT32	R	
+30,31	0x170F	Not used			UINT32	R	
+32,33	0x1710	Not used			UINT32	R	
+34,35	0x1711	Not used			UINT32	R	
+36,37	0x1712	kvarh Q1	0-999,999,999	U5	UINT32	R	
+38,39	0x1713	kvarh Q2	0-999,999,999	U5	UINT32	R	
+40,41	0x1714	kvarh Q3	0-999,999,999	U5	UINT32	R	
+42,43	0x1715	kvarh Q4	0-999,999,999	U5	UINT32	R	
14784-14815		Billing Summary Registers					

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+0,1	0x1780	Summary energy register #1	0-999,999,999	U5	UINT32	R	
+2,3	0x1781	Summary energy register #2	0-999,999,999	U5	UINT32	R	
		...					
+30,31	0x178F	Summary energy register #16	0-999,999,999	U5	UINT32	R	
14848-14869		Phase Energies					
+0,1	0x1800	kWh import L1	0-999,999,999	U5	UINT32	R	DC-applicable
+2,3	0x1801	kWh import L2	0-999,999,999	U5	UINT32	R	DC-applicable
+4,5	0x1802	kWh import L3	0-999,999,999	U5	UINT32	R	DC-applicable
+6,7	0x1803	kvarh import L1	0-999,999,999	U5	UINT32	R	
+8,9	0x1804	kvarh import L2	0-999,999,999	U5	UINT32	R	
+10,11	0x1805	kvarh import L3	0-999,999,999	U5	UINT32	R	
+12,13	0x1806	kVAh total L1	0-999,999,999	U5	UINT32	R	
+14,15	0x1807	kVAh total L2	0-999,999,999	U5	UINT32	R	
+16,17	0x1808	kVAh total L3	0-999,999,999	U5	UINT32	R	
+18,19	0x1809	kWh export L1	0-999,999,999	U5	UINT32	R	DC-applicable
+20,21	0x180A	kWh export L2	0-999,999,999	U5	UINT32	R	DC-applicable
+22,23	0x180B	kWh export L3	0-999,999,999	U5	UINT32	R	DC-applicable
+24,25	0x180C	kvarh export L1	0-999,999,999	U5	UINT32	R	
+26,27	0x180D	kvarh export L2	0-999,999,999	U5	UINT32	R	
+28,29	0x180E	kvarh export L3	0-999,999,999	U5	UINT32	R	
14912-14931		Symmetrical Components					
+0, 1	0x1880	Positive-sequence voltage	0-Vmax	U1	UINT32	R	
+2, 3	0x1881	Negative-sequence voltage	0-Vmax	U1	UINT32	R	
+4, 5	0x1882	Zero-sequence voltage	0-Vmax	U1	UINT32	R	
+6, 7	0x1883	Negative-sequence voltage unbalance	0-3000	×0.1%	UINT32	R	
+8, 9	0x1884	Zero-sequence voltage unbalance	0-3000	×0.1%	UINT32	R	
+10, 11	0x1885	Positive-sequence current	0-Imax	U2	UINT32	R	
+12, 13	0x1886	Negative-sequence current	0-Imax	U2	UINT32	R	
+14, 15	0x1887	Zero-sequence current	0-Imax	U2	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+16, 17	0x1888	Negative-sequence current unbalance	0-3000	×0.1%	UINT32	R	
+18, 19	0x1889	Zero-sequence current unbalance	0-3000	×0.1%	UINT32	R	
14976-15101		V1 Harmonics					2, 7
+0, 1	0x1900	H01 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
+2, 3	0x1901	H02 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
		...					
+124, 125	0x193E	H63 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
15104-15229		V2 Harmonics					2, 7
+0, 1	0x1A00	H01 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
+2, 3	0x1A01	H02 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
		...					
+124, 125	0x1A3E	H63 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
15232-15357		V3 Harmonics					2, 7
+0, 1	0x1B00	H01 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
+2, 3	0x1B01	H02 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
		...					
+124, 125	0x1B3E	H63 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
16896-17021		V4 Harmonics					7
+0, 1	0x2800	Not used	0	0	UINT32	R	
+2, 3	0x2801	Not used	0	0	UINT32	R	
		...					
+124, 125	0x283E	Not used	0	0	UINT32	R	
15360-15485		I1 Harmonics					7
+0, 1	0x1C00	H01 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
+2, 3	0x1C01	H02 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
		...					
+124, 125	0x1C3E	H63 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
15488-15613		I2 Harmonics					7
+0, 1	0x1D00	H01 Harmonic magnitude	0-10000	×0.01%	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+2, 3	0x1D01	H02 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
		...					
+124, 125	0x1D3E	H63 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
15616-15741		I3 Harmonics					7
+0, 1	0x1E00	H01 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
+2, 3	0x1E01	H02 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
		...					
+124, 125	0x1E3E	H63 Harmonic magnitude	0-10000	×0.01%	UINT32	R	
17280-17405		I4 Harmonics					7
+0, 1	0x2B00	H01 Harmonic magnitude	0-10000	0.01%	UINT32	R	
+2, 3	0x2B01	H02 Harmonic magnitude	0-10000	0.01%	UINT32	R	
		...					
+124, 125	0x2B3E	H63 Harmonic magnitude	0-10000	0.01%	UINT32	R	
15744-15807		V1 Harmonic Voltages (odd numbers)					2, 4
+0, 1	0x1F00	H01 Harmonic voltage	0-Vmax	U1	UINT32	R	
+2, 3	0x1F01	H03 Harmonic voltage	0-Vmax	U1	UINT32	R	
		...					
+62, 63	0x1F3E	H63 Harmonic voltage	0-Vmax	U1	UINT32	R	
15872-15935		V2 Harmonic Voltages (odd numbers)					2, 4
+0, 1	0x2000	H01 Harmonic voltage	0-Vmax	U1	UINT32	R	
+2, 3	0x2001	H03 Harmonic voltage	0-Vmax	U1	UINT32	R	
		...					
+62, 63	0x203E	H63 Harmonic voltage	0-Vmax	U1	UINT32	R	
16000-16063		V3 Harmonic Voltages (odd numbers)					2, 4
+0, 1	0x2100	H01 Harmonic voltage	0-Vmax	U1	UINT32	R	
+2, 3	0x2101	H03 Harmonic voltage	0-Vmax	U1	UINT32	R	
		...					
+62, 63	0x213E	H63 Harmonic voltage	0-Vmax	U1	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
18048-18111		V4 Harmonic Voltages (odd numbers)					⁴
+0, 1	0x3100	Not used	0	0	UINT32	R	
+2, 3	0x3101	Not used	0	0	UINT32	R	
		...					
+62, 63	0x313E	Not used	0	0	UINT32	R	
16128-16191		I1 Harmonic Currents (odd numbers)					⁴
+0, 1	0x2200	H01 Harmonic current	0-I _{max}	U2	UINT32	R	
+2, 3	0x2201	H03 Harmonic current	0-I _{max}	U2	UINT32	R	
		...					
+62, 63	0x223E	H63 Harmonic current	0-I _{max}	U2	UINT32	R	
16256-16319		I2 Harmonic Currents (odd numbers)					⁴
+0, 1	0x2300	H01 Harmonic current	0-I _{max}	U2	UINT32	R	
+2, 3	0x2301	H03 Harmonic current	0-I _{max}	U2	UINT32	R	
		...					
+62, 63	0x233E	H63 Harmonic current	0-I _{max}	U2	UINT32	R	
16384-16447		I3 Harmonic Currents (odd numbers)					⁴
+0, 1	0x2400	H01 Harmonic current	0-I _{max}	U2	UINT32	R	
+2, 3	0x2401	H03 Harmonic current	0-I _{max}	U2	UINT32	R	
		...					
+62, 63	0x243E	H63 Harmonic current	0-I _{max}	U2	UINT32	R	
18176-18239		I4 Harmonic Currents (odd numbers)					⁴
+0, 1	0x3200	H01 Harmonic current	0-I _{max}	U2	UINT32	R	
+2, 3	0x3201	H03 Harmonic current	0-I _{max}	U2	UINT32	R	
		...					
+62, 63	0x323E	H63 Harmonic current	0-I _{max}	U2	UINT32	R	
16512-16575		Total Harmonic kW (odd numbers)					⁴
+0, 1	0x2500	H01 Harmonic kW	-P _{max} –P _{max}	U3	INT32	R	
+2, 3	0x2501	H03 Harmonic kW	-P _{max} –P _{max}	U3	INT32	R	
		...					

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+62, 63	0x253E	H63 Harmonic kW	-Pmax –Pmax	U3	INT32	R	
16640-16703		Total Harmonic kvar (odd numbers)					
+0, 1	0x2600	H01 Harmonic kvar	-Pmax –Pmax	U3	INT32	R	⁴
+2, 3	0x2601	H03 Harmonic kvar	-Pmax –Pmax	U3	INT32	R	
		...					
+62, 63	0x263E	H63 Harmonic kvar	-Pmax –Pmax	U3	INT32	R	
16768-16831		Total Harmonic Power Factor (odd numbers)					⁴
+0, 1	0x2700	H01 Harmonic PF	-1000-1000	×0.001	INT32	R	
+2, 3	0x2701	H03 Harmonic PF	-1000-1000	×0.001	INT32	R	
		...					
+62, 63	0x273E	H63 Harmonic PF	-1000-1000	×0.001	INT32	R	
17088-17105		Flicker					
+0,1	0x2980	V1 Pst	0	0	UINT32	R	
+2,3	0x2981	V2 Pst	0	0	UINT32	R	
+4,5	0x2982	V3 Pst	0	0	UINT32	R	
+6,7	0x2983	V1 Plt	0	0	UINT32	R	
+8,9	0x2984	V2 Plt	0	0	UINT32	R	
+10,11	0x2985	V3 Plt	0	0	UINT32	R	
+12,13	0x2986	V1 Pinst	0	0	UINT32	R	
+14,15	0x2987	V2 Pinst	0	0	UINT32	R	
+16,17	0x2988	V3 Pinst	0	0	UINT32	R	
17408-17479		Minimum 1-Cycle Phase Values					
+0, 1	0x2C00	V1 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+2, 3	0x2C01	V2 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+4, 5	0x2C02	V3 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+6, 7	0x2C03	I1 current	0-Imax	U2	UINT32	R	DC-applicable
+8, 9	0x2C04	I2 current	0-Imax	U2	UINT32	R	DC-applicable
+10, 11	0x2C05	I3 current	0-Imax	U2	UINT32	R	DC-applicable
+12, 13	0x2C06	kW L1	-Pmax-Pmax	U3	INT32	R	DC-applicable

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+14, 15	0x2C07	kW L2	-Pmax-Pmax	U3	INT32	R	DC-applicable
+16, 17	0x2C08	kW L3	-Pmax-Pmax	U3	INT32	R	DC-applicable
+18, 19	0x2C09	kvar L1	-Pmax-Pmax	U3	INT32	R	
+20, 21	0x2C0A	kvar L2	-Pmax-Pmax	U3	INT32	R	
+22, 23	0x2C0B	kvar L3	-Pmax-Pmax	U3	INT32	R	
+24, 25	0x2C0C	kVA L1	0-Pmax	U3	UINT32	R	
+26, 27	0x2C0D	kVA L2	0-Pmax	U3	UINT32	R	
+28, 29	0x2C0E	kVA L3	0-Pmax	U3	UINT32	R	
+30, 31	0x2C0F	Power factor L1	0-1000	×0.001	UINT32	R	Absolute value
+32, 33	0x2C10	Power factor L2	0-1000	×0.001	UINT32	R	Absolute value
+34, 35	0x2C11	Power factor L3	0-1000	×0.001	UINT32	R	Absolute value
+36, 37	0x2C12	V1 voltage THD	0-9999	×0.1%	UINT32	R	^{2, 4}
+38, 39	0x2C13	V2 voltage THD	0-9999	×0.1%	UINT32	R	^{2, 4}
+40, 41	0x2C14	V3 voltage THD	0-9999	×0.1%	UINT32	R	^{2, 4}
+42, 43	0x2C15	I1 current THD	0-9999	×0.1%	UINT32	R	⁴
+44, 45	0x2C16	I2 current THD	0-9999	×0.1%	UINT32	R	⁴
+46, 47	0x2C17	I3 current THD	0-9999	×0.1%	UINT32	R	⁴
+48, 49	0x2C18	I1 K-Factor	10-9999	×0.1	UINT32	R	⁴
+50, 51	0x2C19	I2 K-Factor	10-9999	×0.1	UINT32	R	⁴
+52, 53	0x2C1A	I3 K-Factor	10-9999	×0.1	UINT32	R	⁴
+54, 55	0x2C1B	I1 current TDD	0-1000	×0.1%	UINT32	R	⁴
+56, 57	0x2C1C	I2 current TDD	0-1000	×0.1%	UINT32	R	⁴
+58, 59	0x2C1D	I3 current TDD	0-1000	×0.1%	UINT32	R	⁴
+60, 61	0x2C1E	V12 voltage	0-Vmax	U1	UINT32	R	
+62, 63	0x2C1F	V23 voltage	0-Vmax	U1	UINT32	R	
+64, 65	0x2C20	V31 voltage	0-Vmax	U1	UINT32	R	
+66, 67	0x2C21	Not used	0	0	UINT32	R	
+68, 69	0x2C22	Not used	0	0	UINT32	R	
+70, 71	0x2C23	Not used	0	0	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
17536-17547		Minimum 1-Cycle Total Values					
+0, 1	0x2D00	Total kW	-Pmax-Pmax	U3	INT32	R	DC-applicable
+2, 3	0x2D01	Total kvar	-Pmax-Pmax	U3	INT32	R	
+4, 5	0x2D02	Total kVA	0-Pmax	U3	UINT32	R	
+6, 7	0x2D03	Total PF	0-1000	×0.001	UINT32	R	Absolute value
+8, 9	0x2D04	Total PF lag	0-1000	×0.001	UINT32	R	
+10, 11	0x2D05	Total PF lead	0-1000	×0.001	UINT32	R	
17664-17685		Minimum 1-Cycle Auxiliary Values					
+0, 1	0x2E00	I4 current	0-I _{max}	U2	UINT32	R	DC-applicable
+2, 3	0x2E01	In current	0-I _{max}	U2	UINT32	R	
+4, 5	0x2E02	Frequency	0-10000	×0.01Hz	UINT32	R	
+6, 7	0x2E03	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+8, 9	0x2E04	Current unbalance	0-3000	×0.1%	UINT32	R	
+10, 11	0x2E05	Not used			UINT32	R	
+12, 13	0x2E06	Not used	0	0	UINT32	R	
+14, 15	0x2E07	Not used	0	0	UINT32	R	
+16, 17	0x2E08	Not used	0	0	UINT32	R	⁴
+18, 19	0x2E09	Not used	0	0	UINT32	R	⁴
+20, 21	0x2E0A	Not used	0	0	UINT32	R	⁴
17728-17759		Minimum Analog Inputs					
+0,1	0x2E80	Analog input AI1	AI1min-AI1max		INT32	R	
+2,3	0x2E81	Analog input AI2	AI2min-AI2max		INT32	R	
		...					
+30,31	0x2E8F	Analog input AI16	AI16min-AI16max		INT32	R	
17920-17951		Programmable Min/Max Minimum Values					
+0, 1	0x3000	Min/Max Register #1			UINT32	R	
+2, 3	0x3001	Min/Max Register #2			UINT32	R	
		...					
+30, 31	0x300F	Min/Max Register #16			UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
18432-18503		Maximum 1-Cycle Phase Values					
+0, 1	0x3400	V1 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+2, 3	0x3401	V2 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+4, 5	0x3402	V3 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+6, 7	0x3403	I1 current	0-Imax	U2	UINT32	R	DC-applicable
+8, 9	0x3404	I2 current	0-Imax	U2	UINT32	R	DC-applicable
+10, 11	0x3405	I3 current	0-Imax	U2	UINT32	R	DC-applicable
+12, 13	0x3406	kW L1	-Pmax-Pmax	U3	INT32	R	DC-applicable
+14, 15	0x3407	kW L2	-Pmax-Pmax	U3	INT32	R	DC-applicable
+16, 17	0x3408	kW L3	-Pmax-Pmax	U3	INT32	R	DC-applicable
+18, 19	0x3409	kvar L1	-Pmax-Pmax	U3	INT32	R	
+20, 21	0x340A	kvar L2	-Pmax-Pmax	U3	INT32	R	
+22, 23	0x340B	kvar L3	-Pmax-Pmax	U3	INT32	R	
+24, 25	0x340C	kVA L1	0-Pmax	U3	UINT32	R	
+26, 27	0x340D	kVA L2	0-Pmax	U3	UINT32	R	
+28, 29	0x340E	kVA L3	0-Pmax	U3	UINT32	R	
+30, 31	0x340F	Power factor L1	0-1000	×0.001	UINT32	R	Absolute value
+32, 33	0x3410	Power factor L2	0-1000	×0.001	UINT32	R	Absolute value
+34, 35	0x3411	Power factor L3	0-1000	×0.001	UINT32	R	Absolute value
+36, 37	0x3412	V1 voltage THD	0-9999	×0.1%	UINT32	R	^{2, 4}
+38, 39	0x3413	V2 voltage THD	0-9999	×0.1%	UINT32	R	^{2, 4}
+40, 41	0x3414	V3 voltage THD	0-9999	×0.1%	UINT32	R	^{2, 4}
+42, 43	0x3415	I1 current THD	0-9999	×0.1%	UINT32	R	⁴
+44, 45	0x3416	I2 current THD	0-9999	×0.1%	UINT32	R	⁴
+46, 47	0x3417	I3 current THD	0-9999	×0.1%	UINT32	R	⁴
+48, 49	0x3418	I1 K-Factor	10-9999	×0.1	UINT32	R	⁴
+50, 51	0x3419	I2 K-Factor	10-9999	×0.1	UINT32	R	⁴
+52, 53	0x341A	I3 K-Factor	10-9999	×0.1	UINT32	R	⁴

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+54, 55	0x341B	I1 current TDD	0-1000	×0.1%	UINT32	R	⁴
+56, 57	0x341C	I2 current TDD	0-1000	×0.1%	UINT32	R	⁴
+58, 59	0x341D	I3 current TDD	0-1000	×0.1%	UINT32	R	⁴
+60, 61	0x341E	V12 voltage	0-Vmax	U1	UINT32	R	
+62, 63	0x341F	V23 voltage	0-Vmax	U1	UINT32	R	
+64, 65	0x3420	V31 voltage	0-Vmax	U1	UINT32	R	
+66, 67	0x3421	Not used	0	0	UINT32	R	
+68, 69	0x3422	Not used	0	0	UINT32	R	
+70, 71	0x3423	Not used	0	0	UINT32	R	
18560-18571		Maximum 1-Cycle Total Values					
+0, 1	0x3500	Total kW	-Pmax-Pmax	U3	INT32	R	DC-applicable
+2, 3	0x3501	Total kvar	-Pmax-Pmax	U3	INT32	R	
+4, 5	0x3502	Total kVA	0-Pmax	U3	UINT32	R	
+6, 7	0x3503	Total PF	0-1000	×0.001	UINT32	R	Absolute value
+8, 9	0x3504	Total PF lag	0-1000	×0.001	UINT32	R	
+10, 11	0x3505	Total PF lead	0-1000	×0.001	UINT32	R	
18668-18709		Maximum 1-Cycle Auxiliary Values					
+0, 1	0x3600	I4 current	0-I _{max}	U2	UINT32	R	DC-applicable
+2, 3	0x3601	I _n current	0-I _{max}	U2	UINT32	R	
+4, 5	0x3602	Frequency	0-10000	×0.01Hz	UINT32	R	
+6, 7	0x3603	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+8, 9	0x3604	Current unbalance	0-3000	×0.1%	UINT32	R	
+10, 11	0x3605	Not used			UINT32	R	
+12, 13	0x3606	Not used	0	0	UINT32	R	
+14, 15	0x3607	Not used	0	0	UINT32	R	
+16, 17	0x3608	Not used	0	0	UINT32	R	
+18, 19	0x3609	Not used	0	0	UINT32	R	
+20, 21	0x360A	Not used	0	0	UINT32	R	
18732-18795		Maximum Analog Inputs					

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+0,1	0x3680	Analog input AI1	AI1min-AI1max		INT32	R	
+2,3	0x3681	Analog input AI2	AI2min-AI2max		INT32	R	
		...					
+30,31	0x368F	Analog input AI16	AI16min-AI16max		INT32	R	
18816-18859		Maximum Demands					
+0, 1	0x3700	V1 Maximum volt demand	0-Vmax	U1	UINT32	R	DC-applicable
+2, 3	0x3701	V2 Maximum volt demand	0-Vmax	U1	UINT32	R	DC-applicable
+4, 5	0x3702	V3 Maximum volt demand	0-Vmax	U1	UINT32	R	DC-applicable
+6, 7	0x3703	I1 Maximum ampere demand	0-I _{max}	U2	UINT32	R	DC-applicable
+8, 9	0x3704	I2 Maximum ampere demand	0-I _{max}	U2	UINT32	R	DC-applicable
+10, 11	0x3705	I3 Maximum ampere demand	0-I _{max}	U2	UINT32	R	DC-applicable
+12, 13	0x3706	Not used	0		UINT32	R	
+14, 15	0x3707	Not used	0		UINT32	R	
+16, 17	0x3708	Not used	0		UINT32	R	
+18, 19	0x3709	Maximum kW import sliding window demand	0-P _{max}	U3	UINT32	R	DC-applicable
+20, 21	0x370A	Maximum kvar import sliding window demand	0-P _{max}	U3	UINT32	R	
+22, 23	0x370B	Maximum kVA sliding window demand	0-P _{max}	U3	UINT32	R	
+24, 25	0x3737	Not used	0		UINT32	R	
+26, 27	0x370D	Not used	0		UINT32	R	
+28, 29	0x370E	Not used	0		UINT32	R	
+30, 31	0x370F	Maximum kW export sliding window demand	0-P _{max}	U3	UINT32	R	DC-applicable
+32, 33	0x3710	Maximum kvar export sliding window demand	0-P _{max}	U3	UINT32	R	
+34, 35	0x3737	Not used	0		UINT32	R	
+36, 37	0x3712	Not used	0		UINT32	R	
+38, 39	0x3713	Not used	0	0	UINT32	R	
+40, 41	0x3714	I4 Maximum ampere demand	0-I _{4max}	U2	UINT32	R	DC-applicable
+42, 43	0x3715	I _n Maximum ampere demand	0-I _{max}	U2	UINT32	R	
18944-18975		Programmable Min/Max Maximum Values					
+0, 1	0x3800	Min/Max Register #1			UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+2, 3	0x3801	Min/Max Register #2			UINT32	R	
		...					
+30, 31	0x380F	Min/Max Register #16			UINT32	R	
19008-19031		Maximum Harmonic Demands					
+0, 1	0x3880	V1 THD demand	0-9999	×0.1%	UINT32	R	²
+2, 3	0x3881	V2 THD demand	0-9999	×0.1%	UINT32	R	²
+4, 5	0x3882	V3 THD demand	0-9999	×0.1%	UINT32	R	²
+6, 7	0x3883	Not used	0	0	UINT32	R	
+8, 9	0x3884	I1 THD demand	0-9999	×0.1%	UINT32	R	
+10, 11	0x3885	I2 THD demand	0-9999	×0.1%	UINT32	R	
+12, 13	0x3886	I3 THD demand	0-9999	×0.1%	UINT32	R	
+14, 15	0x3887	I4 THD demand	0-9999	×0.1%	UINT32	R	
+16, 17	0x3888	I1 TDD demand	0-1000	×0.1%	UINT32	R	
+18, 19	0x3889	I2 TDD demand	0-1000	×0.1%	UINT32	R	
+20, 21	0x388A	I3 TDD demand	0-1000	×0.1%	UINT32	R	
+22, 23	0x388B	I4 TDD demand	0-1000	×0.1%	UINT32	R	
19072-19135		Maximum Analog Input Demands					
+0,1	0x3900	Analog input AI1+	AI1min-AI1max		UINT32	R	Positive AI readings demand
+2,3	0x3901	Analog input AI2+	AI2min-AI2max		UINT32	R	
		...					
+30,31	0x390F	Analog input AI16+	AI16min-AI16max		UINT32	R	
+32,33	0x3910	Analog input AI1-	AI1min-AI1max		UINT32	R	Negative AI readings demand
+34,35	0x3911	Analog input AI2-	AI2min-AI2max		UINT32	R	
		...					
+62,63	0x391F	Analog input AI16-	AI16min-AI16max		UINT32	R	
19200-19263		Present Analog Input Demands					
+0,1	0x3A00	Analog input AI1+	AI1min-AI1max		UINT32	R	Positive AI readings demand
+2,3	0x3A01	Analog input AI2+	AI2min-AI2max		UINT32	R	
		...					

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+30,31	0x3A0F	Analog input AI16+	AI16min-AI16max		UINT32	R	
+32,33	0x3A10	Analog input AI1-	AI1min-AI1max		UINT32	R	Negative AI readings demand
+34,35	0x3A11	Analog input AI2-	AI2min-AI2max		UINT32	R	
		...					
+62,63	0x3A1F	Analog input AI16-	AI16min-AI16max		UINT32	R	
19328-19359		1-Cycle Analog Inputs					
+0,1	0x3B00	Analog input AI1	AI1min-AI1max		INT32	R	
+2,3	0x3B01	Analog input AI2	AI2min-AI2max		INT32	R	
		...					
+30,31	0x3B0F	Analog input AI16	AI16min-AI16max		INT32	R	
19392-19423		Raw Analog Inputs					
+0, 1	0x3B80	Analog input AI1	0-4095		UINT32	R	
+2, 3	0x3B81	Analog input AI2	0-4095		UINT32	R	
		...					
+30, 31	0x3B8F	Analog input AI16	0-4095		UINT32	R	
19456-19459		TOU Parameters					
+0, 1	0x3C00	Active tariff	0-15 = Tariff 1-16		UINT32	R/W	
+2, 3	0x3C01	Active profile	0-15 = Profile 1-16		UINT32	R	
19520-19551		Scaled Analog Outputs					
+0, 1	0x3C80	Analog Output AO1	0-4095		UINT32	R/W	
+2, 3	0x3C81	Analog Output AO2	0-4095		UINT32	R/W	
		...					
+30, 31	0x3C8F	Analog Output AO16	0-4095		UINT32	R/W	
19584-19615		Billing TOU Register #1					
+0, 1	0x3D00	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x3D01	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x3D0F	Tariff #16 register	0-999,999,999	U5	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
19712-19743		Billing TOU Register #2					
+0, 1	0x3E00	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x3E01	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x3E0F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
19840-19871		Billing TOU Register #3					
+0, 1	0x3F00	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x3F01	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x3F0F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
19968-19999		Billing TOU Register #4					
+0, 1	0x4000	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4001	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x400F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
20096-20127		Billing TOU Register #5					
+0, 1	0x4100	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4101	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x410F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
20224-20255		Billing TOU Register #6					
+0, 1	0x4200	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4201	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x420F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
20352-20383		Billing TOU Register #7					
+0, 1	0x4300	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4301	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+30, 31	0x430F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
20480-20511		Billing TOU Register #8					
+0, 1	0x4400	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4401	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x440F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
21376-21407		Billing TOU Register #9					
+0, 1	0x4B00	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4B01	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x4B0F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
21504-21535		Billing TOU Register #10					
+0, 1	0x4C00	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4C01	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x4C0F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
21632-21663		Billing TOU Register #11					
+0, 1	0x4D00	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4D01	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x4D0F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
21760-21791		Billing TOU Register #12					
+0, 1	0x4E00	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4E01	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x4E0F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
21888-21919		Billing TOU Register #13					
+0, 1	0x4F00	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x4F01	Tariff #2 register	0-999,999,999	U5	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
		...				R	
+30, 31	0x4F0F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
22016-22047		Billing TOU Register #14					
+0, 1	0x5000	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x5001	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x500F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
22144-22175		Billing TOU Register #15					
+0, 1	0x5100	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x5101	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x510F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
22272-22303		Billing TOU Register #16					
+0, 1	0x5200	Tariff #1 register	0-999,999,999	U5	UINT32	R	
+2, 3	0x5201	Tariff #2 register	0-999,999,999	U5	UINT32	R	
		...				R	
+30, 31	0x520F	Tariff #16 register	0-999,999,999	U5	UINT32	R	
20608-20639		Billing Summary Accumulated Demands					
+0, 1	0x4500	Summary register #1	0-Pmax	U3	UINT32	R	
+2, 3	0x4501	Summary register #2	0-Pmax	U3	UINT32	R	
		...					
+30, 31	0x450F	Summary register #16	0-Pmax	U3	UINT32	R	
20672-20703		Billing Summary Block Demands					
+0, 1	0x4580	Summary register #1	0-Pmax	U3	UINT32	R	
+2, 3	0x4581	Summary register #2	0-Pmax	U3	UINT32	R	
		...					
+30, 31	0x458F	Summary register #16	0-Pmax	U3	UINT32	R	
20736-20767		Billing Summary Sliding Window Demands					
+0, 1	0x4600	Summary register #1	0-Pmax	U3	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+2, 3	0x4601	Summary register #2	0-Pmax	U3	UINT32	R	
		...					
+30, 31	0x460F	Summary register #16	0-Pmax	U3	UINT32	R	
20800-20817		Interval Energies					
+0,1	0x4680	kWh import	0-999,999,999	U5	UINT32	R	DC-applicable
+2,3	0x4681	kWh export	0-999,999,999	U5	UINT32	R	DC-applicable
+4,5	0x4682	kvarh import	0-999,999,999	U5	UINT32	R	
+6,7	0x4683	kvarh export	0-999,999,999	U5	UINT32	R	
+8,9	0x4684	kVAh total	0-999,999,999	U5	UINT32	R	
+10,11	0x4685	kvarh Q1	0-999,999,999	U5	UINT32	R	
+12,13	0x4686	kvarh Q2	0-999,999,999	U5	UINT32	R	
+14,15	0x4687	kvarh Q3	0-999,999,999	U5	UINT32	R	
+16,17	0x4688	kvarh Q4	0-999,999,999	U5	UINT32	R	
20928-20959		Billing Summary Maximum Demands					
+0, 1	0x4780	Summary register #1	0-Pmax	U3	UINT32	R	
+2, 3	0x4781	Summary register #2	0-Pmax	U3	UINT32	R	
		...					
+30, 31	0x478F	Summary register #16	0-Pmax	U3	UINT32	R	
20992-21023		Billing TOU Maximum Demand Register #1					
+0, 1	0x4800	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x4801	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x480F	Tariff #16 register	0-Pmax	U3	UINT32	R	
21120-21151		Billing TOU Maximum Demand Register #2					
+0, 1	0x4900	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x4901	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x490F	Tariff #16 register	0-Pmax	U3	UINT32	R	
21248-21279		Billing TOU Maximum Demand Register #3					

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+0, 1	0x4A00	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x4A01	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x4A0F	Tariff #16 register	0-Pmax	U3	UINT32	R	
21056-21087		Billing TOU Maximum Demand Register #4					
+0, 1	0x4880	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x4881	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x488F	Tariff #16 register	0-Pmax	U3	UINT32	R	
21184-21215		Billing TOU Maximum Demand Register #5					
+0, 1	0x4980	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x4981	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x498F	Tariff #16 register	0-Pmax	U3	UINT32	R	
21312-21343		Billing TOU Maximum Demand Register #6					
+0, 1	0x4A80	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x4A81	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x4A8F	Tariff #16 register	0-Pmax	U3	UINT32	R	
22400-22431		Billing TOU Maximum Demand Register #7					
+0, 1	0x5300	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5301	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x530F	Tariff #16 register	0-Pmax	U3	UINT32	R	
22464-22495		Billing TOU Maximum Demand Register #8					
+0, 1	0x5380	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5381	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x538F	Tariff #16 register	0-Pmax	U3	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
22528-22559		Billing TOU Maximum Demand Register #9					
+0, 1	0x5400	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5401	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x540F	Tariff #16 register	0-Pmax	U3	UINT32	R	
22592-22623		Billing TOU Maximum Demand Register #10					
+0, 1	0x5480	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5481	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x548F	Tariff #16 register	0-Pmax	U3	UINT32	R	
22656-22687		Billing TOU Maximum Demand Register #11					
+0, 1	0x5500	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5501	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x550F	Tariff #16 register	0-Pmax	U3	UINT32	R	
22720-22751		Billing TOU Maximum Demand Register #12					
+0, 1	0x5580	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5581	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x558F	Tariff #16 register	0-Pmax	U3	UINT32	R	
22784-22815		Billing TOU Maximum Demand Register #13					
+0, 1	0x5600	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5601	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x560F	Tariff #16 register	0-Pmax	U3	UINT32	R	
22848-22879		Billing TOU Maximum Demand Register #14					
+0, 1	0x5680	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5681	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+30, 31	0x568F	Tariff #16 register	0-Pmax	U3	UINT32	R	
22912-22943		Billing TOU Maximum Demand Register #15					
+0, 1	0x5700	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5701	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x570F	Tariff #16 register	0-Pmax	U3	UINT32	R	
22976-23007		Billing TOU Maximum Demand Register #16					
+0, 1	0x5780	Tariff #1 register	0-Pmax	U3	UINT32	R	
+2, 3	0x5781	Tariff #2 register	0-Pmax	U3	UINT32	R	
		...				R	
+30, 31	0x578F	Tariff #16 register	0-Pmax	U3	UINT32	R	
24576-24701		V1/V12 Harmonic Angles					
+0,1	0x6400	H01 Harmonic angle	-1800-1800	×0.1°	INT32	R	
+2,3	0x6401	H02 Harmonic angle	-1800-1800	×0.1°	INT32	R	
		...					
+124,125	0x643E	H63 Harmonic angle	-1800-1800	×0.1°	INT32	R	
24704-24829		V2/V23 Harmonic Angles					
+0,1	0x6500	H01 Harmonic angle	-1800-1800	×0.1°	INT32	R	
+2,3	0x6501	H02 Harmonic angle	-1800-1800	×0.1°	INT32	R	
		...					
+124,125	0x653E	H63 Harmonic angle	-1800-1800	×0.1°	INT32	R	
24832-24957		V3/V31 Harmonic Angles					
+0,1	0x6600	H01 Harmonic angle	-1800-1800	×0.1°	INT32	R	
+2,3	0x6601	H02 Harmonic angle	-1800-1800	×0.1°	INT32	R	
		...					
+124,125	0x663E	H63 Harmonic angle	-1800-1800	×0.1°	INT32	R	
24960-25085		V4 Harmonic Angles					
+0,1	0x6700	Not used	0	0	UINT32	R	
+2,3	0x6701	Not used	0	0	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
		...					
+124,125	0x673E	Not used	0	0	UINT32	R	
25088-25213		I1 Harmonic Angles					
+0,1	0x6800	H01 Harmonic angle	-1800-1800	×0.1°	INT32	R	
+2,3	0x6801	H02 Harmonic angle	-1800-1800	×0.1°	INT32	R	
		...					
+124,125	0x683E	H63 Harmonic angle	-1800-1800	×0.1°	INT32	R	
25216-25341		I2 Harmonic Angles					
+0,1	0x6900	H01 Harmonic angle	-1800-1800	×0.1°	INT32	R	
+2,3	0x6901	H02 Harmonic angle	-1800-1800	×0.1°	INT32	R	
		...					
+124,125	0x693E	H63 Harmonic angle	-1800-1800	×0.1°	INT32	R	
25344-25469		I3 Harmonic Angles					
+0,1	0x6A00	H01 Harmonic angle	-1800-1800	×0.1°	INT32	R	
+2,3	0x6A01	H02 Harmonic angle	-1800-1800	×0.1°	INT32	R	
		...					
+124,125	0x6A3E	H63 Harmonic angle	-1800-1800	×0.1°	INT32	R	
25472-25597		I4 Harmonic Angles					4, 6
+0,1	0x6B00	H01 Harmonic angle	-1800-1800	×0.1°	INT32	R	
+2,3	0x6B01	H02 Harmonic angle	-1800-1800	×0.1°	INT32	R	
		...					
+124,125	0x6B3E	H63 Harmonic angle	-1800-1800	×0.1°	INT32	R	
25600-25655		0.2-Second RMS and Auxiliary Values					
+0, 1	0x6C00	V1 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+2, 3	0x6C01	V2 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+4, 5	0x6C02	V3 voltage	0-Vmax	U1	UINT32	R	1, DC-applicable
+6, 7	0x6C03	Not used	0	0	UINT32	R	
+8, 9	0x6C04	V12 voltage	0-Vmax	U1	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+10, 11	0x6C05	V23 voltage	0-Vmax	U1	UINT32	R	
+12, 13	0x6C06	V31 voltage	0-Vmax	U1	UINT32	R	
+14, 15	0x6C07	I1 current	0-I _{max}	U2	UINT32	R	DC-applicable
+16, 17	0x6C08	I2 current	0-I _{max}	U2	UINT32	R	DC-applicable
+18, 19	0x6C09	I3 current	0-I _{max}	U2	UINT32	R	DC-applicable
+20, 21	0x6C0A	I4 current	0-I _{4max}	U2	UINT32	R	DC-applicable
+22, 23	0x6C0B	I _n current	0-I _{max}	U2	UINT32	R	
+24, 25	0x6C0C	Not used	0	0	UINT32	R	
+26, 27	0x6C0D	Not used	0	0	UINT32	R	
+28, 29	0x6C0E	Not used	0	0	UINT32	R	
+30, 31	0x6C0F	Not used	0	0	UINT32	R	
+32, 33	0x6C10	Not used	0	0	UINT32	R	
+34, 35	0x6C11	Zero-sequence voltage	0-Vmax	U1	UINT32	R	
+36, 37	0x6C12	Zero-sequence current	0-I _{max}	U2	UINT32	R	
+38, 39	0x6C13	I _x Zero-sequence current	0-I _{xmax}	U2	UINT32	R	
+40, 41	0x6C14	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+42, 43	0x6C15	Current unbalance	0-3000	×0.1%	UINT32	R	
+44, 45	0x6C16	I _x current unbalance	0-3000	×0.1%	UINT32	R	
+46, 47	0x6C17	Not used			UINT32	R	
+48, 49	0x6C18	Frequency	0-10000	×0.01Hz	UINT32	R	
+50, 51	0x6C19	Positive-sequence voltage	0-Vmax	U1	UINT32	R	
+52, 53	0x6C1A	Zero-sequence voltage unbalance	0-300.0	×0.1%	UINT32	R	
+54, 55	0x6C1B	I leakage current	0-I _{max}	U2	UINT32	R	
25664-25719		3-Second RMS and Auxiliary Values					
+0, 1	0x6C80	V1 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+2, 3	0x6C81	V2 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+4, 5	0x6C82	V3 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+6, 7	0x6C83	Not used	0	0	UINT32	R	
+8, 9	0x6C84	V12 voltage	0-Vmax	U1	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+10, 11	0x6C85	V23 voltage	0-Vmax	U1	UINT32	R	
+12, 13	0x6C86	V31 voltage	0-Vmax	U1	UINT32	R	
+14, 15	0x6C87	I1 current	0-I _{max}	U2	UINT32	R	DC-applicable
+16, 17	0x6C88	I2 current	0-I _{max}	U2	UINT32	R	DC-applicable
+18, 19	0x6C89	I3 current	0-I _{max}	U2	UINT32	R	DC-applicable
+20, 21	0x6C8A	I4 current	0-I _{4max}	U2	UINT32	R	DC-applicable
+22, 23	0x6C8B	I _n current	0-I _{max}	U2	UINT32	R	
+24, 25	0x6C8C	Not used	0	0	UINT32	R	
+26, 27	0x6C8D	Not used	0	0	UINT32	R	
+28, 29	0x6C8E	Not used	0	0	UINT32	R	
+30, 31	0x6C8F	Not used	0	0	UINT32	R	
+32, 33	0x6C90	Not used	0	0	UINT32	R	
+34, 35	0x6C91	Zero-sequence voltage	0-Vmax	U1	UINT32	R	
+36, 37	0x6C92	Zero-sequence current	0-I _{max}	U2	UINT32	R	
+38, 39	0x6C93	I _x Zero-sequence current	0-I _{xmax}	U2	UINT32	R	
+40, 41	0x6C94	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+42, 43	0x6C95	Current unbalance	0-3000	×0.1%	UINT32	R	
+44, 45	0x6C96	I _x current unbalance	0-3000	×0.1%	UINT32	R	
+46, 47	0x6C97	Not used			UINT32	R	
+48, 49	0x6C98	Frequency	0-10000	×0.01Hz	UINT32	R	
+50, 51	0x6C99	Positive-sequence voltage	0-Vmax	U1	UINT32	R	
+52, 53	0x6C9A	Zero-sequence voltage unbalance	0-300.0	×0.1%	UINT32	R	
+54, 55	0x6C9B	I leakage current	0-I _{max}	U2	UINT32	R	
26880-26993		1-Minute RMS and Auxiliary Values					
+0, 1	0x7600	V1 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+2, 3	0x7601	V2 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+4, 5	0x7602	V3 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+6, 7	0x7603	Not used	0	0	UINT32	R	
+8, 9	0x7604	V12 voltage	0-Vmax	U1	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+10, 11	0x7605	V23 voltage	0-Vmax	U1	UINT32	R	
+12, 13	0x7606	V31 voltage	0-Vmax	U1	UINT32	R	
+14, 15	0x7607	I1 current	0-I _{max}	U2	UINT32	R	DC-applicable
+16, 17	0x7608	I2 current	0-I _{max}	U2	UINT32	R	DC-applicable
+18, 19	0x7609	I3 current	0-I _{max}	U2	UINT32	R	DC-applicable
+20, 21	0x760A	I4 current	0-I _{4max}	U2	UINT32	R	DC-applicable
+22, 23	0x760B	I _n current	0-I _{max}	U2	UINT32	R	
+24, 25	0x760C	Not used	0	0	UINT32	R	
+26, 27	0x760D	Not used	0	0	UINT32	R	
+28, 29	0x760E	Not used	0	0	UINT32	R	
+30, 31	0x760F	Not used	0	0	UINT32	R	
+32, 33	0x7610	Not used	0	0	UINT32	R	
+34, 35	0x7611	Zero-sequence voltage	0-Vmax	U1	UINT32	R	
+36, 37	0x7612	Zero-sequence current	0-I _{max}	U2	UINT32	R	
+38, 39	0x7613	I _x Zero-sequence current	0-I _{xmax}	U2	UINT32	R	
+40, 41	0x7614	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+42, 43	0x7615	Current unbalance	0-3000	×0.1%	UINT32	R	
+44, 45	0x7616	I _x current unbalance	0-3000	×0.1%	UINT32	R	
+46, 47	0x7617	DC voltage	0-999900	×0.01V	UINT32	R	
+48, 49	0x7618	Frequency	0-10000	×0.01Hz	UINT32	R	
+50, 51	0x7619	Positive-sequence voltage	0-Vmax	U1	UINT32	R	
+52, 53	0x761A	Zero-sequence voltage unbalance	0-300.0	×0.1%	UINT32	R	
+54, 55	0x761B	I leakage current	0-I _{max}	U2	UINT32	R	
25728-25783		10-Minute RMS and Auxiliary Values					
+0, 1	0x6D00	V1 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+2, 3	0x6D01	V2 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+4, 5	0x6D02	V3 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+6, 7	0x6D03	Not used	0	0	UINT32	R	
+8, 9	0x6D04	V12 voltage	0-Vmax	U1	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+10, 11	0x6D05	V23 voltage	0-Vmax	U1	UINT32	R	
+12, 13	0x6D06	V31 voltage	0-Vmax	U1	UINT32	R	
+14, 15	0x6D07	I1 current	0-I _{max}	U2	UINT32	R	DC-applicable
+16, 17	0x6D08	I2 current	0-I _{max}	U2	UINT32	R	DC-applicable
+18, 19	0x6D09	I3 current	0-I _{max}	U2	UINT32	R	DC-applicable
+20, 21	0x6D0A	I4 current	0-I _{4max}	U2	UINT32	R	DC-applicable
+22, 23	0x6D0B	I _n current	0-I _{max}	U2	UINT32	R	
+24, 25	0x6D0C	Not used	0	0	UINT32	R	
+26, 27	0x6D0D	Not used	0	0	UINT32	R	
+28, 29	0x6D0E	Not used	0	0	UINT32	R	
+30, 31	0x6D0F	Not used	0	0	UINT32	R	
+32, 33	0x6D10	Not used	0	0	UINT32	R	
+34, 35	0x6D11	Zero-sequence voltage	0-Vmax	U1	UINT32	R	
+36, 37	0x6D12	Zero-sequence current	0-I _{max}	U2	UINT32	R	
+38, 39	0x6D13	I _x Zero-sequence current	0-I _{xmax}	U2	UINT32	R	
+40, 41	0x6D14	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+42, 43	0x6D15	Current unbalance	0-3000	×0.1%	UINT32	R	
+44, 45	0x6D16	I _x current unbalance	0-3000	×0.1%	UINT32	R	
+46, 47	0x6D17	Not used			UINT32	R	
+48, 49	0x6D18	Frequency	0-10000	×0.01Hz	UINT32	R	
+50, 51	0x6D19	Positive-sequence voltage	0-Vmax	U1	UINT32	R	
+52, 53	0x6D1A	Zero-sequence voltage unbalance	0-300.0	×0.1%	UINT32	R	
+54, 55	0x6D1B	I leakage current	0-I _{max}	U2	UINT32	R	
25792-25847		2-Hour RMS and Auxiliary Values					
+0, 1	0x6D80	V1 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+2, 3	0x6D81	V2 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+4, 5	0x6D82	V3 voltage	0-Vmax	U1	UINT32	R	¹ , DC-applicable
+6, 7	0x6D83	Not used	0	0	UINT32	R	
+8, 9	0x6D84	V12 voltage	0-Vmax	U1	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+10, 11	0x6D85	V23 voltage	0-Vmax	U1	UINT32	R	
+12, 13	0x6D86	V31 voltage	0-Vmax	U1	UINT32	R	
+14, 15	0x6D87	I1 current	0-I _{max}	U2	UINT32	R	DC-applicable
+16, 17	0x6D88	I2 current	0-I _{max}	U2	UINT32	R	DC-applicable
+18, 19	0x6D89	I3 current	0-I _{max}	U2	UINT32	R	DC-applicable
+20, 21	0x6D8A	I4 current	0-I _{4max}	U2	UINT32	R	DC-applicable
+22, 23	0x6D8B	I _n current	0-I _{max}	U2	UINT32	R	
+24, 25	0x6D8C	Not used	0	0	UINT32	R	
+26, 27	0x6D8D	Not used	0	0	UINT32	R	
+28, 29	0x6D8E	Not used	0	0	UINT32	R	
+30, 31	0x6D8F	Not used	0	0	UINT32	R	
+32, 33	0x6D90	Not used	0	0	UINT32	R	
+34, 35	0x6D91	Zero-sequence voltage	0-Vmax	U1	UINT32	R	
+36, 37	0x6D92	Zero-sequence current	0-I _{max}	U2	UINT32	R	
+38, 39	0x6D93	I _x Zero-sequence current	0-I _{xmax}	U2	UINT32	R	
+40, 41	0x6D94	Voltage unbalance	0-3000	×0.1%	UINT32	R	
+42, 43	0x6D95	Current unbalance	0-3000	×0.1%	UINT32	R	
+44, 45	0x6D96	I _x current unbalance	0-3000	×0.1%	UINT32	R	
+46, 47	0x6D97	Not used			UINT32	R	
+48, 49	0x6D98	Frequency	0-10000	×0.01Hz	UINT32	R	
+50, 51	0x6D99	Positive-sequence voltage	0-Vmax	U1	UINT32	R	
+52, 53	0x6D9A	Zero-sequence voltage unbalance	0-300.0	×0.1%	UINT32	R	
+54, 55	0x6D9B	I leakage current	0-I _{max}	U2	UINT32	R	
25856-25919		0.2-Second Harmonics					
+0, 1	0x6E00	V1 THD	0-9999	×0.1%	UINT32	R	²
+2, 3	0x6E01	V2 THD	0-9999	×0.1%	UINT32	R	²
+4, 5	0x6E02	V3 THD	0-9999	×0.1%	UINT32	R	²
+6, 7	0x6E03	Not used	0	0	UINT32	R	
+8, 9	0x6E04	I1 THD	0-9999	×0.1%	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+10, 11	0x6E05	I2 THD	0-9999	×0.1%	UINT32	R	
+12, 13	0x6E06	I3 THD	0-9999	×0.1%	UINT32	R	
+14, 15	0x6E07	I4 THD	0-9999	×0.1%	UINT32	R	
+16, 17	0x6E08	V1 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+18, 19	0x6E09	V2 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+20, 21	0x6E0A	V3 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+22, 23	0x6E0B	Not used	0	0	UINT32	R	
+24, 25	0x6E0C	I1 interharmonics THD	0-9999	×0.1%	UINT32	R	
+26, 27	0x6E0D	I2 interharmonics THD	0-9999	×0.1%	UINT32	R	
+28, 29	0x6E0E	I3 interharmonics THD	0-9999	×0.1%	UINT32	R	
+30, 31	0x6E0F	I4 interharmonics THD	0-9999	×0.1%	UINT32	R	
+32, 33	0x6E10	I1 TDD	0-1000	×0.1%	UINT32	R	
+34, 35	0x6E11	I2 TDD	0-1000	×0.1%	UINT32	R	
+36, 37	0x6E12	I3 TDD	0-1000	×0.1%	UINT32	R	
+38, 39	0x6E13	I4 TDD	0-1000	×0.1%	UINT32	R	
+40, 41	0x6E14	I1 K-Factor	10-9999	×0.1	UINT32	R	
+42, 43	0x6E15	I2 K-Factor	10-9999	×0.1	UINT32	R	
+44, 45	0x6E16	I3 K-Factor	10-9999	×0.1	UINT32	R	
+46, 47	0x6E17	I4 K-Factor	10-9999	×0.1	UINT32	R	
+48, 49	0x6E18	V1 Crest Factor	0-10000	×0.01	UINT32	R	²
+50, 51	0x6E19	V2 Crest Factor	0-10000	×0.01	UINT32	R	²
+52, 53	0x6E1A	V3 Crest Factor	0-10000	×0.01	UINT32	R	²
+54, 55	0x6E1B	Not used	0	0	UINT32	R	
+56, 57	0x6E1C	I1 Crest Factor	0-10000	×0.01	UINT32	R	
+58, 59	0x6E1D	I2 Crest Factor	0-10000	×0.01	UINT32	R	
+60, 61	0x6E1E	I3 Crest Factor	0-10000	×0.01	UINT32	R	
+62, 63	0x6E1F	I4 Crest Factor	0-10000	×0.01	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
25920-25983		3-Second Harmonics					
+0, 1	0x6E80	V1 THD	0-9999	×0.1%	UINT32	R	²
+2, 3	0x6E81	V2 THD	0-9999	×0.1%	UINT32	R	²
+4, 5	0x6E82	V3 THD	0-9999	×0.1%	UINT32	R	²
+6, 7	0x6E83	Not used	0	0	UINT32	R	
+8, 9	0x6E84	I1 THD	0-9999	×0.1%	UINT32	R	
+10, 11	0x6E85	I2 THD	0-9999	×0.1%	UINT32	R	
+12, 13	0x6E86	I3 THD	0-9999	×0.1%	UINT32	R	
+14, 15	0x6E87	I4 THD	0-9999	×0.1%	UINT32	R	
+16, 17	0x6E88	V1 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+18, 19	0x6E89	V2 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+20, 21	0x6E8A	V3 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+22, 23	0x6E8B	Not used	0	0	UINT32	R	
+24, 25	0x6E6E	I1 interharmonics THD	0-9999	×0.1%	UINT32	R	
+26, 27	0x6E8D	I2 interharmonics THD	0-9999	×0.1%	UINT32	R	
+28, 29	0x6E8E	I3 interharmonics THD	0-9999	×0.1%	UINT32	R	
+30, 31	0x6E8F	I4 interharmonics THD	0-9999	×0.1%	UINT32	R	
+32, 33	0x6E90	I1 TDD	0-1000	×0.1%	UINT32	R	
+34, 35	0x6E91	I2 TDD	0-1000	×0.1%	UINT32	R	
+36, 37	0x6E92	I3 TDD	0-1000	×0.1%	UINT32	R	
+38, 39	0x6E93	I4 TDD	0-1000	×0.1%	UINT32	R	
+40, 41	0x6E94	I1 K-Factor	10-9999	×0.1	UINT32	R	
+42, 43	0x6E95	I2 K-Factor	10-9999	×0.1	UINT32	R	
+44, 45	0x6E96	I3 K-Factor	10-9999	×0.1	UINT32	R	
+46, 47	0x6E97	I4 K-Factor	10-9999	×0.1	UINT32	R	
+48, 49	0x6E98	V1 Crest Factor	0-10000	×0.01	UINT32	R	²
+50, 51	0x6E99	V2 Crest Factor	0-10000	×0.01	UINT32	R	²
+52, 53	0x6E9A	V3 Crest Factor	0-10000	×0.01	UINT32	R	²

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+54, 55	0x6E9B	Not used	0	0	UINT32	R	
+56, 57	0x6E9C	I1 Crest Factor	0-10000	×0.01	UINT32	R	
+58, 59	0x6E9D	I2 Crest Factor	0-10000	×0.01	UINT32	R	
+60, 61	0x6E9E	I3 Crest Factor	0-10000	×0.01	UINT32	R	
+62, 63	0x6E9F	I4 Crest Factor	0-10000	×0.01	UINT32	R	
25984-26047		10-Minute Harmonics					
+0, 1	0x6F00	V1 THD	0-9999	×0.1%	UINT32	R	²
+2, 3	0x6F01	V2 THD	0-9999	×0.1%	UINT32	R	²
+4, 5	0x6F02	V3 THD	0-9999	×0.1%	UINT32	R	²
+6, 7	0x6F03	Not used	0	0	UINT32	R	
+8, 9	0x6F04	I1 THD	0-9999	×0.1%	UINT32	R	
+10, 11	0x6F05	I2 THD	0-9999	×0.1%	UINT32	R	
+12, 13	0x6F06	I3 THD	0-9999	×0.1%	UINT32	R	
+14, 15	0x6F07	I4 THD	0-9999	×0.1%	UINT32	R	
+16, 17	0x6F08	V1 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+18, 19	0x6F09	V2 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+20, 21	0x6F0A	V3 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+22, 23	0x6F0B	Not used	0	0	UINT32	R	
+24, 25	0x6F0C	I1 interharmonics THD	0-9999	×0.1%	UINT32	R	
+26, 27	0x6F0D	I2 interharmonics THD	0-9999	×0.1%	UINT32	R	
+28, 29	0x6F0E	I3 interharmonics THD	0-9999	×0.1%	UINT32	R	
+30, 31	0x6F0F	I4 interharmonics THD	0-9999	×0.1%	UINT32	R	
+32, 33	0x6F10	I1 TDD	0-1000	×0.1%	UINT32	R	
+34, 35	0x6F11	I2 TDD	0-1000	×0.1%	UINT32	R	
+36, 37	0x6F12	I3 TDD	0-1000	×0.1%	UINT32	R	
+38, 39	0x6F13	I4 TDD	0-1000	×0.1%	UINT32	R	
+40, 41	0x6F14	I1 K-Factor	10-9999	×0.1	UINT32	R	
+42, 43	0x6F15	I2 K-Factor	10-9999	×0.1	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+44, 45	0x6F16	I3 K-Factor	10-9999	×0.1	UINT32	R	
+46, 47	0x6F17	I4 K-Factor	10-9999	×0.1	UINT32	R	
+48, 49	0x6F18	V1 Crest Factor	0-10000	×0.01	UINT32	R	²
+50, 51	0x6F19	V2 Crest Factor	0-10000	×0.01	UINT32	R	²
+52, 53	0x6F1A	V3 Crest Factor	0-10000	×0.01	UINT32	R	²
+54, 55	0x6F1B	Not used	0	0	UINT32	R	
+56, 57	0x6F1C	I1 Crest Factor	0-10000	×0.01	UINT32	R	
+58, 59	0x6F1D	I2 Crest Factor	0-10000	×0.01	UINT32	R	
+60, 61	0x6F1E	I3 Crest Factor	0-10000	×0.01	UINT32	R	
+62, 63	0x6F1F	I4 Crest Factor	0-10000	×0.01	UINT32	R	
26046-26109		2-Hour Harmonics					
+0, 1	0x6F80	V1 THD	0-9999	×0.1%	UINT32	R	²
+2, 3	0x6F81	V2 THD	0-9999	×0.1%	UINT32	R	²
+4, 5	0x6F82	V3 THD	0-9999	×0.1%	UINT32	R	²
+6, 7	0x6F83	Not used	0	0	UINT32	R	
+8, 9	0x6F84	I1 THD	0-9999	×0.1%	UINT32	R	
+10, 11	0x6F85	I2 THD	0-9999	×0.1%	UINT32	R	
+12, 13	0x6F86	I3 THD	0-9999	×0.1%	UINT32	R	
+14, 15	0x6F87	I4 THD	0-9999	×0.1%	UINT32	R	
+16, 17	0x6F88	V1 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+18, 19	0x6F89	V2 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+20, 21	0x6F8A	V3 interharmonics THD	0-9999	×0.1%	UINT32	R	²
+22, 23	0x6F8B	Not used	0	0	UINT32	R	
+24, 25	0x6F8C	I1 interharmonics THD	0-9999	×0.1%	UINT32	R	
+26, 27	0x6F8D	I2 interharmonics THD	0-9999	×0.1%	UINT32	R	
+28, 29	0x6F8E	I3 interharmonics THD	0-9999	×0.1%	UINT32	R	
+30, 31	0x6F8F	I4 interharmonics THD	0-9999	×0.1%	UINT32	R	
+32, 33	0x6F90	I1 TDD	0-1000	×0.1%	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+34, 35	0x6F91	I2 TDD	0-1000	×0.1%	UINT32	R	
+36, 37	0x6F92	I3 TDD	0-1000	×0.1%	UINT32	R	
+38, 39	0x6F93	I4 TDD	0-1000	×0.1%	UINT32	R	
+40, 41	0x6F94	I1 K-Factor	10-9999	×0.1	UINT32	R	
+42, 43	0x6F95	I2 K-Factor	10-9999	×0.1	UINT32	R	
+44, 45	0x6F96	I3 K-Factor	10-9999	×0.1	UINT32	R	
+46, 47	0x6F97	I4 K-Factor	10-9999	×0.1	UINT32	R	
+48, 49	0x6F98	V1 Crest Factor	0-10000	×0.01	UINT32	R	²
+50, 51	0x6F99	V2 Crest Factor	0-10000	×0.01	UINT32	R	²
+52, 53	0x6F9A	V3 Crest Factor	0-10000	×0.01	UINT32	R	²
+54, 55	0x6F9B	Not used	0	0	UINT32	R	
+56, 57	0x6F9C	I1 Crest Factor	0-10000	×0.01	UINT32	R	
+58, 59	0x6F9D	I2 Crest Factor	0-10000	×0.01	UINT32	R	
+60, 61	0x6F9E	I3 Crest Factor	0-10000	×0.01	UINT32	R	
+62, 63	0x6F9F	I4 Crest Factor	0-10000	×0.01	UINT32	R	
27136-27327		Present PQ Measurements (EN 50160:2022)					
+0,1	0x7800	V1 voltage variation, +/-%Un		0.0001	INT32	R	Last non-flagged 10-min value
+2,3	0x7801	V2 voltage variation, +/-%Un		0.0001	INT32	R	"
+4,5	0x7802	Voltage variation (δU_y) on phase C/CA, +/-%Un		0.01%	INT32	R	"
+6,7	0x7803	Positive sequence voltage variation (δU_y), +/-%Un		0.01%	INT32	R	"
+8,9	0x7804	Voltage change (δU_t) on phase A/AB, %Un		0.01%	UINT32	R	Last 10-min measurement
+10,11	0x7805	Repetition rate of voltage changes ($F\delta U_t$) A/AB, 1/min		1/min × 0.01	UINT32	R	"
+12,13	0x7806	Voltage change (δU_t) on phase B/BC, %Un		0.01%	UINT32	R	"
+14,15	0x7807	Repetition rate of voltage changes ($F\delta U_t$) B/BC, 1/min		1/min × 0.01	UINT32	R	"
+16,17	0x7808	Voltage change (δU_t) on phase C/CA, %Un		0.01%	UINT32	R	"
+18,19	0x7809	Repetition rate of voltage changes ($F\delta U_t$) C/CA, 1/min		1/min × 0.01	UINT32	R	"
+20,21	0x780A	Voltage Pst on phase A/AB		0.01	UINT32	R	Last 10-min measurement
+22,23	0x780B	Voltage Pst on phase B/BC		0.01	UINT32	R	"

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+24,25	0x780C	Voltage Pst on phase C/CA		0.01	UINT32	R	"
+26,27	0x780D	Voltage Plt on phase A/AB		0.01	UINT32	R	Last 2-hour measurement
+28,29	0x780E	Voltage Plt on phase B/BC		0.01	UINT32	R	"
+30,31	0x780F	Voltage Plt on phase C/CA		0.01	UINT32	R	"
+32,33	0x7810	Voltage THD (KU) on phase A/AB, %		0.1%	UINT32	R	Last 3-s measurement
+34,35	0x7811	Voltage THD (KU) on phase B/BC, %		0.1%	UINT32	R	"
+36,37	0x7812	Voltage THD (KU) on phase C/CA, %		0.1%	UINT32	R	"
+38,39	0x7813	Negative-sequence voltage unbalance (K2u), %		0.1%	UINT32	R	"
+40,41	0x7814	Zero-sequence voltage unbalance (K0u), %		0.1%	UINT32	R	"
+42,43	0x7815	Frequency variation (Δf), +/-Hz		0.01 Hz	INT32	R	Last 20-s measurement
+44,45	0x7816	Not used			UINT32	R	
+46,47	0x7817	Not used			UINT32	R	
+48,49	0x7818	Not used			UINT32	R	
+50,51	0x7819	Not used			UINT32	R	
+52,53	0x781A	Voltage dip, dip depth on phase A/AB, %Un		0.01%	UINT32	R	
+54,55	0x781B	Voltage dip, dip depth on phase B/BC, %Un		0.01%	UINT32	R	
+56,57	0x781C	Voltage dip, dip depth on phase C/CA, %Un		0.01%	UINT32	R	
+58,59	0x781D	Voltage dip, duration of a polyphase dip		ms	UINT32	R	
+60,61	0x781E	Overvoltage, voltage magnitude on phase A/AB, %Un		0.01%	UINT32	R	
+62,63	0x781F	Overvoltage, voltage magnitude on phase B/BC, %Un		0.01%	UINT32	R	
+64,65	0x7820	Overvoltage, voltage magnitude on phase C/CA, %Un		0.01%	UINT32	R	
+66,67	0x7821	Overvoltage, duration of a polyphase overvoltage		ms	UINT32	R	
+68,69	0x7822	Impulsive voltage on phase A/AB, %Un peak		0.01%	UINT32	R	
+70,71	0x7823	Impulsive voltage, impulse duration on phase A/AB		us	UINT32	R	
+72,73	0x7824	Impulsive voltage on phase B/BC, %Un peak		0.01%	UINT32	R	
+74,75	0x7825	Impulsive voltage, impulse duration on phase B/BC		us	UINT32	R	
+76,77	0x7826	Impulsive voltage on phase C/CA, %Un peak		0.01%	UINT32	R	
+78,79	0x7827	Impulsive voltage, impulse duration on phase C/CA		us	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+80,81	0x7828	Not used			UINT32	R	
+82,83	0x7829	V1 rms(1/2), commencing at fundamental zero crossing	0-Vmax	U1	UINT32	R	²
+84,85	0x782A	V2 rms(1/2), commencing at fundamental zero crossing	0-Vmax	U1	UINT32	R	²
+86,87	0x782B	V3 rms(1/2), commencing at fundamental zero crossing	0-Vmax	U1	UINT32	R	²
+88,89	0x782C	V1 rms(1/2) timestamp, seconds	F1	sec	UINT32	R	
+90,91	0x782D	V1 rms(1/2) timestamp, fractional seconds		µsec	UINT32	R	
+92,93	0x782E	V2 rms(1/2) timestamp, seconds	F1	sec	UINT32	R	
+94,95	0x782F	V2 rms(1/2) timestamp, fractional seconds		µsec	UINT32	R	
+96,97	0x7830	V3 rms(1/2) timestamp, seconds	F1	sec	UINT32	R	
+98,99	0x7831	V3 rms(1/2) timestamp, fractional seconds		µsec	UINT32	R	
+100,101	0x7832	I1 rms(1/2) coincident current	0-Ixmax	U2	UINT32	R	
+102,103	0x7833	I2 rms(1/2) coincident current	0-Ixmax	U2	UINT32	R	
+104,105	0x7834	I3 rms(1/2) coincident current	0-Ixmax	U2	UINT32	R	
+106,107	0x7835	10/12-cycle block timestamp, seconds	F1	sec	UINT32	R	
+108,109	0x7836	10/12-cycle block timestamp, fractional seconds		µsec	UINT32	R	
+110,111	0x7837	10/12-cycle block number	1-3000		UINT32	R	
+112,113	0x7838	150/180-cycle block number	1-200		UINT32	R	
+114,115	0x7839	10/12-cycle interval flag	0=valid, 1=flagged		UINT32	R	Last 10/12-cycle measurements
+116,117	0x783A	150/180-cycle interval flag	0=valid, 1=flagged		UINT32	R	Last 150/180-cycle measurements
+118,119	0x783B	10-s interval flag	0=valid, 1=flagged		UINT32	R	Last 10-s measurements
+120,121	0x783C	10-min interval flag	0=valid, 1=flagged		UINT32	R	Last 10-min measurements
+122,123	0x783D	2-hour interval flag	0=valid, 1=flagged		UINT32	R	Last 2-h measurements
+124,125	0x783E	10-min block number	1-12, 0=not recorded yet		UINT32	R	
+126,127	0x783F	2-hour block number	1-65535, 0=not recorded yet		UINT32	R	
+128,129	0x7840	V1 Usr, IEC 6000-4-30 sliding reference voltage	0-Vmax	U1	UINT32	R	²
+130,131	0x7841	V2 Usr, IEC 6000-4-30 sliding reference voltage	0-Vmax	U1	UINT32	R	²
+132,133	0x7842	V3 Usr, IEC 6000-4-30 sliding reference voltage	0-Vmax	U1	UINT32	R	²

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+134,135	0x7843	V1 DV, voltage deviation event (dip/swell), +/--%Usr		0.0001%	INT32	R	
+136,137	0x7844	V2 DV, voltage deviation event (dip/swell), +/--%Usr		0.0001%	INT32	R	
+138,139	0x7845	V3 DV, voltage deviation event (dip/swell), +/--%Usr		0.0001%	INT32	R	
+140,141	0x7846	DV dt, duration of voltage deviation event		0.01 s	UINT32	R	
+142,143	0x7847	DV Tm, voltage deviation event timestamp, seconds	F1	sec	UINT32	R	
+144,145	0x7848	DV Tmms, voltage deviation event timestamp, fractional seconds		μsec	UINT32	R	
+146,147	0x7849	DV EvNo, voltage deviation event number	1-65535, 0=not recorded yet		UINT32	R	
+148,149	0x784A	NI, number of stationary voltage interruptions (less than 10% Un with duration > 1 min) per 10 minutes	0-65535		UINT32	R	Last 10-min measurement
+150,151	0x784B	DI, duration of stationary voltage interruptions per 10 minutes		sec	UINT32	R	"
+152,153	0x784C	NDET, number of stationary voltage deviations (dip/swell with depth/overvoltage > 10% Un and duration > 1 min) per 10 minutes	0-65535		UINT32	R	"
+154,155	0x784D	DDET, duration of stationary voltage deviations per 10 minutes		sec	UINT32	R	"
+156,157	0x784E	V(2)/V(1), negative-sequence voltage unbalance, %		0.0001%	UINT32	R	"
+158,159	0x784F	V1 THD2, V1 Voltage THD, %		0.01%	UINT32	R	"
+160,161	0x7850	V2 THD2, V2 Voltage THD, %		0.01%	UINT32	R	"
+162,163	0x7851	V3 THD2, V3 Voltage THD, %		0.01%	UINT32	R	"
+164,165	0x7852	Voltage variation (δUy) on phase C/CA, +/--%Un		0.01%	INT32	R	"
+166,167	0x7853	Positive sequence voltage variation (δUy), +/--%Un		0.01%	INT32	R	"
+168,169	0x7854	IEEE 519 3-Second V1 THD2		0.01%	UINT32	R	Last 3-sec measurement
+170,171	0x7855	IEEE 519 3-Second V2 THD2		0.01%	UINT32	R	"
+172,173	0x7856	IEEE 519 3-Second V3 THD2		0.01%	UINT32	R	"
+174,175	0x7857	IEEE 519 3-Second I1 TDD2		0.01%	UINT32	R	"
+176,177	0x7858	IEEE 519 3-Second I2 TDD2		0.01%	UINT32	R	"
+178,179	0x7859	IEEE 519 3-Second I3 TDD2		0.01%	UINT32	R	"

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+180,181	0x785A	IEEE 519 10-Minute V1 THD2		0.01%	UINT32	R	Last 10-min measurement
+182,183	0x785B	IEEE 519 10-Minute V2 THD2		0.01%	UINT32	R	"
+184,185	0x785C	IEEE 519 10-Minute V3 THD2		0.01%	UINT32	R	"
+186,187	0x785D	IEEE 519 10-Minute I1 TDD2		0.01%	UINT32	R	"
+188,189	0x785E	IEEE 519 10-Minute I2 TDD2		0.01%	UINT32	R	"
+190,191	0x785F	IEEE 519 10-Minute TDD2		0.01%	UINT32	R	"
28160-28251		External Integer Measured Values					
+0,1	0x8000	ExtiVal1			INT32	R	
+2,3	0x8001	ExtiVal2			INT32	R	
	...	...			INT32	R	
+62,63	0x801F	ExtiVal32			INT32	R	
28288-28321		External Float Measured Values					
+0,1	0x8100	ExtfVal1			FLOAT32	R	
+2,3	0x8101	ExtfVal2			FLOAT32	R	
	...	...			FLOAT32	R	
+62,63	0x801F	ExtfVal32			FLOAT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
		External Indication					
28416-28417		ExtInd1:32 Bit 0: ExtInd1 ... Bit 32: ExtInd32	0x00000000-0xFFFFFFFF Bit Value: 0=OFF, 1=ON		UINT32	R	Bitmap
28480-28481		ExtInd33:64 Bit 0: ExtInd33 ... Bit 32: ExtInd64	0x00000000-0xFFFFFFFF Bit Value: 0=OFF, 1=ON		UINT32	R	Bitmap
28544-28545		ExtInd65:96 Bit 0: ExtInd65 ... Bit 32: ExtInd96	0x00000000-0xFFFFFFFF Bit Value: 0=OFF, 1=ON		UINT32	R	Bitmap
28608-28609		ExtInd97:128 Bit 0: ExtInd97 ... Bit 32: ExtInd128	0x00000000-0xFFFFFFFF Bit Value: 0=OFF, 1=ON		UINT32	R	Bitmap
	0x8200	ExtInd1	0/1		UINT32	TRG	
	0x8201	ExtInd2	0/1		UINT32	TRG	
					
	0x827F	ExtInd128	0/1		UINT32	TRG	
		External Indication (DP)					
	0xBD00	ExtInd 1-2	0-3		UINT32	TRG	
	0xBD01	ExtInd 2-3	0-3		UINT32	TRG	
					
	0xBD7E	ExtInd 127-128	0-3		UINT32	TRG	
		Switch Position Indication					
29440-29471	0x8A00	Not used	0	0	UINT32	R	Not used
	+0,1	0x8A00	Not used	0	UINT32	R	Not used
	+2,3	0x8A01	Not used	0	UINT32	R	Not used
	+4,5	0x8A02	Not used	0	UINT32	R	Not used

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
					
+30,31	0x8A0F	Not used	0	0	UINT32	R	
		Switch Operation-Open Indication					
29568-29569	0x8B00	Not used	0	0	UINT32	R	Bitmap
	0x8B00	Not used	0	0	UINT32	R	
	0x8B01	Not used	0	0	UINT32	R	
	0x8B02	Not used	0	0	UINT32	R	
					
	0x8B0F	Not used	0	0	UINT32	R	
		Switch Operation-Close Indication					
29632-29633	0x8B80	Not used	0	0	UINT32	R	Bitmap
	0x8B80	Not used	0	0	UINT32	R	
	0x8B81	Not used	0	0	UINT32	R	
	0x8B82	Not used	0	0	UINT32	R	
					
	0x8B8F	Not used	0	0	UINT32	R	
29696-29727		Switch Operation Counters (resettable)					
+0,1	0x8C00	Not used	0	0	UINT32	R	
+2,3	0x8C01	Not used	0	0	UINT32	R	
+4,5	0x8C02	Not used	0	0	UINT32	R	
...					
+30,31	0x8C0F	Not used	0	0	UINT32	R	
30080-30093		Distance to fault					
+0,1	0x8F00	Not used	0	0	UINT32	R	
+2,3	0x8F01	Not used	0	0	UINT32	R	
+4,5	0x8F02	Not used	0	0	UINT32	R	
+6,7	0x8F03	Not used	0	0	UINT32	R	
+8,9	0x8F04	Not used	0	0	UINT32	R	
+10,11	0x8F05	Not used	0	0	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+12,13	0x8F06	Not used	0	0	UINT32	R	
30208-30307		V1/V12 Voltage Interharmonics					2, 7
+0,1	0x9000	H01 Interharmonic	0-10000	×0.01%	UINT32	R	
+2,3	0x9001	H02 Interharmonic	0-10000	×0.01%	UINT32	R	
		...					
+98,99	0x9031	H50 Interharmonic	0-10000	×0.01%	UINT32	R	
30336-30435		V2/V23 Voltage Interharmonics					2, 7
+0,1	0x9100	H01 Interharmonic	0-10000	×0.01%	UINT32	R	
+2,3	0x9101	H02 Interharmonic	0-10000	×0.01%	UINT32	R	
		...					
+98,99	0x9131	H50 Interharmonic	0-10000	×0.01%	UINT32	R	
30464-30563		V3/V31 Voltage Interharmonics					2, 7
+0,1	0x9200	H01 Interharmonic	0-10000	×0.01%	UINT32	R	
+2,3	0x9201	H02 Interharmonic	0-10000	×0.01%	UINT32	R	
		...					
+98,99	0x9231	H50 Interharmonic	0-10000	×0.01%	UINT32	R	
30720-30819		I1 Current Interharmonics					7
+0,1	0x9400	H01 Interharmonic	0-10000	×0.01%	UINT32	R	
+2,3	0x9401	H02 Interharmonic	0-10000	×0.01%	UINT32	R	
		...					
+98,99	0x9431	H50 Interharmonic	0-10000	×0.01%	UINT32	R	
30848-30947		I2 Current Interharmonics					7
+0,1	0x9500	H01 Interharmonic	0-10000	×0.01%	UINT32	R	
+2,3	0x9501	H02 Interharmonic	0-10000	×0.01%	UINT32	R	
		...					
+98,99	0x9531	H50 Interharmonic	0-10000	×0.01%	UINT32	R	
30976-31075		I3 Current Interharmonics					7
+0,1	0x9600	H01 Interharmonic	0-10000	×0.01%	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+2,3	0x9601	H02 Interharmonic	0-10000	×0.01%	UINT32	R	
		...					
+98,99	0x9631	H50 Interharmonic	0-10000	×0.01%	UINT32	R	
		Generic TOU Registers					Point references
	0x7000	Tariff #1 register	0-999,999,999	U5	UINT32		
	0x7001	Tariff #2 register	0-999,999,999	U5	UINT32		
		...					
	0x700F	Tariff #16 register	0-999,999,999	U5	UINT32		
		Generic TOU Maximum Demand Registers					Point references
	0x7100	Tariff #1 register	0-Pmax	U3	UINT32		
	0x7101	Tariff #2 register	0-Pmax	U3	UINT32		
		...					
	0x710F	Tariff #16 register	0-Pmax	U3	UINT32		
		Generic Data					Point references
	0x7400	V1 voltage	0-Vmax	U1	UINT32		1, DC-applicable
	0x7401	V2 voltage	0-Vmax	U1	UINT32		1, DC-applicable
	0x7402	V3 voltage	0-Vmax	U1	UINT32		1, DC-applicable
	0x7403	Not used	0	0	UINT32	R	
	0x7404	V12 voltage	0-Vmax	U1	UINT32		
	0x7405	V23 voltage	0-Vmax	U1	UINT32		
	0x7406	V31 voltage	0-Vmax	U1	UINT32		
	0x7407	I1 current	0-I _{max}	U2	UINT32		DC-applicable
	0x7408	I2 current	0-I _{max}	U2	UINT32		DC-applicable
	0x7409	I3 current	0-I _{max}	U2	UINT32		DC-applicable
	0x740A	I4 current	0-I _{4max}	U2	UINT32		DC-applicable
	0x740B	I _n current	0-I _{max}	U2	UINT32		
	0x740C	Not used	0	0	UINT32		
	0x740D	Not used	0	0	UINT32		
	0x740E	Not used	0	0	UINT32		

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
	0x740F	Not used	0	0	UINT32		
	0x7410	Not used	0	0	UINT32		
	0x7411	Zero-sequence voltage	0-Vmax	U1	UINT32		
	0x7412	Zero-sequence current	0-I _{max}	U2	UINT32		
	0x7413	I _x Zero-sequence current	0-I _{xmax}	U2	UINT32		
	0x7414	Voltage unbalance	0-3000	×0.1%	UINT32		
	0x7415	Current unbalance	0-3000	×0.1%	UINT32		
	0x7416	I _x current unbalance	0-3000	×0.1%	UINT32		
	0x7417	Not used			UINT32		
	0x7418	Frequency	0-10000	×0.01Hz	UINT32		
	0x7419	V1 THD	0-9999	×0.1%	UINT32		²
	0x741A	V2 THD	0-9999	×0.1%	UINT32		²
	0x741B	V3 THD	0-9999	×0.1%	UINT32		²
	0x741C	Not used	0	0	UINT32		
	0x741D	I1 THD	0-9999	×0.1%	UINT32		
	0x741E	I2 THD	0-9999	×0.1%	UINT32		
	0x741F	I3 THD	0-9999	×0.1%	UINT32		
	0x7420	I4 THD	0-9999	×0.1%	UINT32		
	0x7421	V1 interharmonics THD	0-9999	×0.1%	UINT32		²
	0x7422	V2 interharmonics THD	0-9999	×0.1%	UINT32		²
	0x7423	V3 interharmonics THD	0-9999	×0.1%	UINT32		²
	0x7424	Not used	0	0	UINT32	R	
	0x7425	I1 interharmonics THD	0-9999	×0.1%	UINT32		
	0x7426	I2 interharmonics THD	0-9999	×0.1%	UINT32		
	0x7427	I3 interharmonics THD	0-9999	×0.1%	UINT32		
	0x7428	I4 interharmonics THD	0-9999	×0.1%	UINT32		
	0x7429	I1 TDD	0-1000	×0.1%	UINT32		
	0x742A	I2 TDD	0-1000	×0.1%	UINT32		

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
	0x742B	I3 TDD	0-1000	×0.1%	UINT32		
	0x742C	I4 TDD	0-1000	×0.1%	UINT32		
	0x742D	I1 K-Factor	10-9999	×0.1	UINT32		
	0x742E	I2 K-Factor	10-9999	×0.1	UINT32		
	0x742F	I3 K-Factor	10-9999	×0.1	UINT32		
	0x7430	I4 K-Factor	10-9999	×0.1	UINT32		
	0x7431	V1 Crest Factor	0-10000	×0.01	UINT32		²
	0x7432	V2 Crest Factor	0-10000	×0.01	UINT32		²
	0x7433	V3 Crest Factor	0-10000	×0.01	UINT32		²
	0x7434	Not used	0	0	UINT32		
	0x7435	I1 Crest Factor	0-10000	×0.01	UINT32		
	0x7436	I2 Crest Factor	0-10000	×0.01	UINT32		
	0x7437	I3 Crest Factor	0-10000	×0.01	UINT32		
	0x7438	I4 Crest Factor	0-10000	×0.01	UINT32		
	0x7439	V1 rms(1/2), commencing at fundamental zero crossing	0-Vmax	U1	UINT32		² EN 50160:2022
	0x743A	V2 rms(1/2), commencing at fundamental zero crossing	0-Vmax	U1	UINT32		² EN 50160:2022
	0x743B	V3 rms(1/2), commencing at fundamental zero crossing	0-Vmax	U1	UINT32		² EN 50160:2022
	0x743C	I1 rms(1/2) coincident current	0-Ixmax	U2	UINT32		EN 50160:2022
	0x743D	I2 rms(1/2) coincident current	0-Ixmax	U2	UINT32		EN 50160:2022
	0x743E	I3 rms(1/2) coincident current	0-Ixmax	U2	UINT32		EN 50160:2022
	0x750A	Positive-sequence voltage	0-Vmax	U1	UINT32		²
	0x750B	Negative-sequence voltage	0-Vmax	U1	UINT32		²
	0x750C	Zero-sequence voltage	0-Vmax	U1	UINT32		²
	0x750D	Negative-sequence voltage unbalance	0-3000	×0.1%	UINT32		²
	0x750E	Zero-sequence voltage unbalance	0-3000	×0.1%	UINT32		²
	0x750F	V1 impulsive voltage	0-Vmax	U1	UINT32		
	0x7510	V2 impulsive voltage	0-Vmax	U1	UINT32		
	0x7511	V3 impulsive voltage	0-Vmax	U1	UINT32		

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
	0x7512	Not used	0	0	UINT32		
	0x7513	V12 impulsive voltage	0-Vmax	U1	UINT32		
	0x7514	V23 impulsive voltage	0-Vmax	U1	UINT32		
	0x7515	V31 impulsive voltage	0-Vmax	U1	UINT32		
	0x7516	Not used	0	0	UINT32		
	0x1900	V1 H01 Harmonic voltage	0-10000	×0.01%	UINT32		²
	0x1901	V1 H02 Harmonic voltage	0-10000	×0.01%	UINT32		²
		...					
	0x1931	V1 H50 Harmonic voltage	0-10000	×0.01%	UINT32		²
	0x1A00	V2 H01 Harmonic voltage	0-10000	×0.01%	UINT32		²
	0x1A01	V2 H02 Harmonic voltage	0-10000	×0.01%	UINT32		²
		...					
	0x1A31	V2 H50 Harmonic voltage	0-10000	×0.01%	UINT32		²
	0x1B00	V3 H01 Harmonic voltage	0-10000	×0.01%	UINT32		²
	0x1B01	V3 H02 Harmonic voltage	0-10000	×0.01%	UINT32		²
		...					
	0x1B31	V3 H50 Harmonic voltage	0-10000	×0.01%	UINT32		²
	0x2980	Not used	0	0	UINT32		²
	0x2981	Not used	0	0	UINT32		²
	0x2982	Not used	0	0	UINT32		²
	0x2983	Not used	0	0	UINT32		²
	0x2984	Not used	0	0	UINT32		²
	0x2985	Not used	0	0	UINT32		²
	0x5B02	Not used	0	0	UINT32		
	0x5B04	Not used	0	0	UINT32		
	0x5B06	Not used	0	0	UINT32		
	0x6005	Not used	0	0	UINT32		
	0x6006	Not used	0	0	UINT32		
	0x6007	Not used	0	0	UINT32		

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
	0x6008	Not used	0	0	UINT32		
	0x600A	Not used	0	0	UINT32		
	0x600B	Not used	0	0	UINT32		
	0x600C	Not used	0	0	UINT32		
	0x600D	Not used	0	0	UINT32		
	0x600F	Not used	0	0	UINT32		
	0x6010	Not used	0	0	UINT32		
	0x6011	Not used	0	0	UINT32		
	0x6012	Not used	0	0	UINT32		
	0xC182	Not used	0	0	UINT32		² EN 50160:2022
	0xC184	Not used	0	0	UINT32		² EN 50160:2022
	0xC186	Not used	0	0	UINT32		² EN 50160:2022
	0x7805	Not used	0	0	UINT32		² EN 50160:2022
	0x7807	Not used	0	0	UINT32		² EN 50160:2022
	0x7809	Not used	0	0	UINT32		² EN 50160:2022
	0xC383	Not used	0	0	UINT32		² EN 50160:2022
	0xC385	Not used	0	0	UINT32		² EN 50160:2022
	0xC387	Not used	0	0	UINT32		² EN 50160:2022
	0xC389	Not used	0	0	UINT32		² EN 50160:2022
	0xC38B	Not used	0	0	UINT32		² EN 50160:2022
	0xC38D	Not used	0	0	UINT32		² EN 50160:2022
	0xC38F	Not used	0	0	UINT32		² EN 50160:2022
	0xC391	Not used	0	0	UINT32		² EN 50160:2022
	0xC393	Not used	0	0	UINT32		² EN 50160:2022
	0xC395	Not used	0	0	UINT32		² EN 50160:2022
	0xC397	Not used	0	0	UINT32		² EN 50160:2022
	0xC399	Not used	0	0	UINT32		² EN 50160:2022
	0xC481	Not used	0	0	UINT32		
	0xC486	Not used	0	0	UINT32		

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
	0xC48B	Not used	0	0	UINT32		
	0xCF02	Not used	0	0	UINT32		
	0xCF04	Not used	0	0	UINT32		
	0xCF06	Not used	0	0	UINT32		
	0xD083	Not used	0	0	UINT32		
	0xD084	Not used	0	0	UINT32		
	0xD085	Not used	0	0	UINT32		
	0xD086	Not used	0	0	UINT32		
	0xD087	Not used	0	0	UINT32		
	0xD088	Not used	0	0	UINT32		
	0xD089	Not used	0	0	UINT32		
	0xD08A	Not used	0	0	UINT32		
	0xD08B	Not used	0	0	UINT32		
	0xD08C	Not used	0	0	UINT32		
	0xD08D	Not used	0	0	UINT32		
	0xD08E	Not used	0	0	UINT32		

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
32000-32099		IEEE 519 3-Second V1 Harmonics					10
+0, 1	0x9E00	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0x9E01	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0x9E31	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
32128-32227		IEEE 519 3-Second V2 Harmonics					10
+0, 1	0x9F00	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0x9F01	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0x9F31	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
32256-32355		IEEE 519 3-Second V3 Harmonics					10
+0, 1	0xA000	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0xA001	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0xA031	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
32512-32611		IEEE 519 3-Second I1 Harmonics					11
+0, 1	0xA100	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0xA101	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0xA131	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
32640-32739		IEEE 519 3-Second I2 Harmonics					11
+0, 1	0xA200	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0xA201	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
+98, 99	0xA231	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
32768-32867		IEEE 519 3-Second I3 Harmonics					¹¹
+0, 1	0xA300	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0xA301	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0xA331	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	

Address	Point ID	Description	Options/Range ³	Units ³	Type	R/W	Notes
33024-33123		IEEE 519 10-minute V1 Harmonics					¹⁰
+0, 1	0xA600	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0xA601	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0xA631	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
33152-33251		IEEE 519 10-minute V2 Harmonics					¹⁰
+0, 1	0xA700	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0xA701	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0xA731	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
33280-33379		IEEE 519 10-minute V3 Harmonics					¹⁰
+0, 1	0xA800	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0xA801	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0xA831	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
33536-33635		IEEE 519 10-minute I1 Harmonics					¹¹
+0, 1	0xAA00	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	

+2, 3	0xAA01	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0xAA31	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
33664-33763		IEEE 519 10-minute I2 Harmonics					¹¹
+0, 1	0xAB00	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0xAB01	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0xAB31	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
33792-33891		IEEE 519 10-minute I3 Harmonics					¹¹
+0, 1	0xAC00	H01 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
+2, 3	0xAC01	H02 Harmonic magnitude	0-10000	x0.01%	UINT32	R	
		...					
+98, 99	0xAC31	H50 Harmonic magnitude	0-10000	x0.01%	UINT32	R	

NOTES:

¹When the 4LN3, 4LL3, 3LN3, 3LL3, 3BLN3 or 3BLL3 wiring mode is selected, the voltages will be line-to-neutral; for any other wiring mode, they will be line-to-line.

²When the 4LN3, 3LN3 or 3BLN3 wiring mode is selected, the voltages will be line-to-neutral; for any other wiring mode, they will be line-to-line voltages.

³For volts, amps, power and frequency scales and units, refer to [Chapter 4](#), "Data Scales and Units".

⁴0.2-s (10/12-cycle) interval.

⁵3-s interval.

⁶Harmonic angles are referenced to the fundamental voltage harmonic H01 on phase L1.

⁷0.2-s (10/12-cycle) interval for EN 50160, 16-cycle interval, programmable 0.2-s (10/12-cycle), 3-s (150/180-cycle), 10-min, 2-h interval for EN 50160:2022.

⁸Digital input registers return the state of the level-sensitive digital inputs in a 32-bit packed format beginning from the nearest lower point number divisible by 32. For example, registers 12544-12545 and 12548-12549 report the same 32-bit value that contains the state of digital inputs DI1:DI32. Bits that reference non-existent points will contain zeros.

⁹Pulse input registers contain the transition status of the edge sensitive digital inputs. A bit value is set to '1' if a pulse edge (either rising, falling, or any of them depending on the input polarity setting) has been detected on the input. Pulse inputs cannot be directly read but can be tested through the setpoints and/or linked to the pulse counters and Summary energy/TOU registers.

¹⁰ Relative to Fundamental Value.

¹¹ Relative to "I maximum demand load current"

3.5 Minimum/Maximum Log Registers

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
35840-35983		Minimum Phase Values					
+0, 1 +2, 3	0x2C00	Min. V1 voltage Timestamp	0-Vmax F1	U1 sec	UINT32 UINT32	R R	1, DC-applicable
+4, 5 +6, 7	0x2C01	Min. V2 voltage Timestamp	0-Vmax F1	U1 sec	UINT32 UINT32	R R	1, DC-applicable
+8, 9 +10, 11	0x2C02	Min. V3 voltage Timestamp	0-Vmax F1	U1 sec	UINT32 UINT32	R R	1, DC-applicable
+12, 13 +14, 15	0x2C03	Min. I1 current Timestamp	0-Imax F1	U2 sec	UINT32 UINT32	R R	DC-applicable
+16, 17 +18, 19	0x2C04	Min. I2 current Timestamp	0-Imax	U2 sec	UINT32 UINT32	R R	DC-applicable
+20, 21 +22, 23	0x2C05	Min. I3 current Timestamp	0-Imax	U2 sec	UINT32 UINT32	R R	DC-applicable
+24, 25 +26, 27	0x2C06	Min. kW L1 Timestamp	-Pmax-Pmax	U3 sec	INT32 INT32	R R	DC-applicable
+28, 29 +30, 31	0x2C07	Min. kW L2 Timestamp	-Pmax-Pmax	U3 sec	INT32 INT32	R R	DC-applicable
+32, 33 +34, 35	0x2C08	Min. kW L3 Timestamp	-Pmax-Pmax	U3 sec	INT32 INT32	R R	DC-applicable
+36, 37 +38, 39	0x2C09	Min. kvar L1 Timestamp	-Pmax-Pmax	U3 sec	INT32 INT32	R R	
+40, 41 +42, 43	0x2C0A	Min. kvar L2 Timestamp	-Pmax-Pmax	U3 sec	INT32 INT32	R R	
+44, 45 +46, 47	0x2C0B	Min. kvar L3 Timestamp	-Pmax-Pmax	U3 sec	INT32 INT32	R R	
+48, 49 +50, 51	0x2C0C	Min. kVA L1 Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+52, 53 +54, 55	0x2C0D	Min. kVA L2 Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+56, 57 +58, 59	0x2C0E	Min. kVA L3 Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+60, 61 +62, 63	0x2C0F	Min. Power factor L1 Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	Absolute value
+64, 65 +66, 67	0x2C10	Min. Power factor L2 Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	Absolute value
+68, 69 +70, 71	0x2C11	Min. Power factor L3 Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	Absolute value
+72, 73 +74, 75	0x2C12	Min. V1 voltage THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	2, 4
+76, 77 +78, 79	0x2C13	Min. V2 voltage THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	2, 4
+80, 81 +82, 83	0x2C14	Min. V3 voltage THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	2, 4
+84, 85 +86, 87	0x2C15	Min. I1 current THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	4
+88, 89 +90, 91	0x2C16	Min. I2 current THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	4
+92, 93 +94, 95	0x2C17	Min. I3 current THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	4
+96, 97 +98, 99	0x2C18	Min. I1 K-Factor Timestamp	10-9999	×0.1 sec	UINT32 UINT32	R R	4
+100, 101 +102, 103	0x2C19	Min. I2 K-Factor Timestamp	10-9999	×0.1 sec	UINT32 UINT32	R R	4
+104, 105 +106, 107	0x2C1A	Min. I3 K-Factor Timestamp	10-9999	×0.1 sec	UINT32 UINT32	R R	4
+108, 109 +110, 111	0x2C1B	Min. I1 current TDD Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	4
+112, 113 +114, 115	0x2C1C	Min. I2 current TDD Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	4

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+116, 117 +118, 119	0x2C1D	Min. I3 current TDD Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	⁴
+120, 121 +122, 123	0x2C1E	Min. V12 voltage Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	
+124, 125 +126, 127	0x2C1F	Min. V23 voltage Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	
+128, 129 +130, 131	0x2C20	Min. V31 voltage Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	
+132, 133 +134, 135	0x2C21	Not used	0	0	UINT32	R	
+136, 137 +138, 139	0x2C22	Not used	0	0	UINT32	R	
+140, 141 +142, 143	0x2C23	Not used	0	0	UINT32	R	
36096-36119		Minimum Total Values					
+0, 1 +2, 3	0x2D00	Min. Total kW Timestamp	-Pmax-Pmax	U3 sec	INT32 UINT32	R R	DC-applicable
+4, 5 +6, 7	0x2D01	Min. Total kvar Timestamp	-Pmax-Pmax	U3 sec	INT32 UINT32	R R	
+8, 9 +10, 11	0x2D02	Min. Total kVA Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+12, 13 +14, 15	0x2D03	Min. Total PF Timestamp	-1000-1000	×0.001 sec	INT32 UINT32	R R	
+16, 17 +18, 19	0x2D04	Min. Total PF lag Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	
+20, 21 +22, 23	0x2D05	Min. Total PF lead Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	
36224-36243		Minimum Analog Inputs					
+0, 1 +2, 3	0x2E80	Min. analog input AI1 Timestamp	AI1min-AI1max		INT32 UINT32	R R	
+4, 5	0x2E81	Min. analog input AI2	AI2min-AI2max		INT32	R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+6, 7		Timestamp			UINT32	R	
		...					
+16, 17 +18, 19	0x2E84	Min. analog input AI5 Timestamp	AI5min-AI5max		INT32 UINT32	R R	
36352-36395		Minimum Auxiliary Values					
+0, 1 +2, 3	0x2E00	Min. I4 current Timestamp	0-I _{max}	U2 sec	UINT32 UINT32	R R	DC-applicable
+4, 5 +6, 7	0x2E01	Min. In current Timestamp	0-I _{max}	U2 sec	UINT32 UINT32	R R	
+8, 9 +10, 11	0x2E02	Min. Frequency Timestamp	0-10000	×0.01Hz sec	UINT32 UINT32	R R	
+12, 13 +14, 15	0x2E03	Min. Voltage unbalance Timestamp	0-3000	×0.1% sec	UINT32 UINT32	R R	
+16, 17 +18, 19	0x2E04	Min. Current unbalance Timestamp	0-3000	×0.1% sec	UINT32 UINT32	R R	
+20, 21 +22, 23	0x2E05	Not used			UINT32 UINT32	R R	
+24, 25 +26, 27	0x2E06	Not used	0	0	UINT32	R	
+28, 29 +30, 31	0x2E07	Not used	0	0	UINT32	R	
+32, 33 +34, 35	0x2E08	Not used	0	0	UINT32	R	⁴
+36, 37 +38, 39	0x2E09	Not used	0	0	UINT32	R	⁴
+40, 41 +42, 43	0x2E0A	Not used	0	0	UINT32	R	⁴
36608-36671		Programmable Min/Max Minimum Values					
+0, 1 +2, 3	0x3000	Min. Min/Max Register #1 Timestamp			UINT32 UINT32	R R	
+4, 5	0x3001	Min. Min/Max Register #2			UINT32	R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+6, 7		Timestamp			UINT32	R	
		...					
+60, 61 +62, 63	0x300F	Min. Min/Max Register #16 Timestamp			UINT32 UINT32	R R	
36736-36755		Maximum Analog Inputs					
+0, 1 +2, 3	0x3680	Max. analog input AI1 Timestamp	AI1min-AI1max		INT32 UINT32	R R	
+4, 5 +6, 7	0x3681	Max. analog input AI2 Timestamp	AI2min-AI2max		INT32 UINT32	R R	
		...					
+16, 17 +18, 19	0x3684	Max. analog input AI5 Timestamp	AI5min-AI5max		INT32 UINT32	R R	
36864-37007		Maximum Phase Values					
+0, 1 +2, 3	0x3400	Max. V1 voltage Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	1, DC-applicable
+4, 5 +6, 7	0x3401	Max. V2 voltage Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	1, DC-applicable
+8, 9 +10, 11	0x3402	Max. V3 voltage Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	1, DC-applicable
+12, 13 +14, 15	0x3403	Max. I1 current Timestamp	0-I _{max}	U2 sec	UINT32 UINT32	R R	DC-applicable
+16, 17 +18, 19	0x3404	Max. I2 current Timestamp	0-I _{max}	U2 sec	UINT32 UINT32	R R	DC-applicable
+20, 21 +22, 23	0x3405	Max. I3 current Timestamp	0-I _{max}	U2 sec	UINT32 UINT32	R R	DC-applicable
+24, 25 +26, 27	0x3406	Max. kW L1 Timestamp	-P _{max} -P _{max}	U3 sec	INT32 INT32	R R	DC-applicable
+28, 29 +30, 31	0x3407	Max. kW L2 Timestamp	-P _{max} -P _{max}	U3 sec	INT32 INT32	R R	DC-applicable
+32, 33 +34, 35	0x3408	Max. kW L3 Timestamp	-P _{max} -P _{max}	U3 sec	INT32 INT32	R R	DC-applicable

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+36, 37 +38, 39	0x3409	Max. kvar L1 Timestamp	-Pmax-Pmax	U3 sec	INT32 INT32	R R	
+40, 41 +42, 43	0x340A	Max. kvar L2 Timestamp	-Pmax-Pmax	U3 sec	INT32 INT32	R R	
+44, 45 +46, 47	0x340B	Max. kvar L3 Timestamp	-Pmax-Pmax	U3 sec	INT32 INT32	R R	
+48, 49 +50, 51	0x340C	Max. kVA L1 Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+52, 53 +54, 55	0x340D	Max. kVA L2 Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+56, 57 +58, 59	0x340E	Max. kVA L3 Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+60, 61 +62, 63	0x340F	Max. Power factor L1 Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	Absolute value
+64, 65 +66, 67	0x3410	Max. Power factor L2 Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	Absolute value
+68, 69 +70, 71	0x3411	Max. Power factor L3 Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	Absolute value
+72, 73 +74, 75	0x3412	Max. V1 voltage THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	2, 4
+76, 77 +78, 79	0x3413	Max. V2 voltage THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	2, 4
+80, 81 +82, 83	0x3414	Max. V3 voltage THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	2, 4
+84, 85 +86, 87	0x3415	Max. I1 current THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	4
+88, 89 +90, 91	0x3416	Max. I2 current THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	4
+92, 93 +94, 95	0x3417	Max. I3 current THD Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	4

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+96, 97 +98, 99	0x3418	Max. I1 K-Factor Timestamp	10-9999	×0.1 sec	UINT32 UINT32	R R	⁴
+100, 101 +102, 103	0x3419	Max. I2 K-Factor Timestamp	10-9999	×0.1 sec	UINT32 UINT32	R R	⁴
+104, 105 +106, 107	0x341A	Max. I3 K-Factor Timestamp	10-9999	×0.1 sec	UINT32 UINT32	R R	⁴
+108, 109 +110, 111	0x341B	Max. I1 current TDD Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	⁴
+112, 113 +114, 115	0x341C	Max. I2 current TDD Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	⁴
+116, 117 +118, 119	0x341D	Max. I3 current TDD Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	⁴
+120, 121 +122, 123	0x341E	Max. V12 voltage Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	
+124, 125 +126, 127	0x341F	Max. V23 voltage Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	
+128, 129 +130, 131	0x3420	Max. V31 voltage Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	
+132, 133 +134, 135	0x3421	Not used	0	0	UINT32	R	
+136, 137 +138, 139	0x3422	Not used	0	0	UINT32	R	
+140, 141 +142, 143	0x3423	Not used	0	0	UINT32	R	
37120-37143		Maximum Total Values					
+0, 1 +2, 3	0x3500	Max. Total kW Timestamp	-Pmax-Pmax	U3 sec	INT32 UINT32	R R	DC-applicable
+4, 5 +6, 7	0x3501	Max. Total kvar Timestamp	-Pmax-Pmax	U3 sec	INT32 UINT32	R R	
+8, 9 +10, 11	0x3502	Max. Total kVA Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+12, 13 +14, 15	0x3503	Max. Total PF Timestamp	-1000-1000	×0.001 sec	INT32 UINT32	R R	
+16, 17 +18, 19	0x3504	Max. Total PF lag Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	
+20, 21 +22, 23	0x3505	Max. Total PF lead Timestamp	0-1000	×0.001 sec	UINT32 UINT32	R R	
37248-37375		Maximum Analog Input Demands					
+0, 1 +2, 3	0x3900	Max. analog input demand AI1+ Timestamp	AI1min-AI1max		UINT32 UINT32	R R	Positive AI readings demand
+4, 5 +6, 7	0x3901	Max. analog input demand AI2+ Timestamp	AI2min-AI2max		UINT32 UINT32	R R	
		...					
+60, 61 +62, 63	0x390F	Max. analog input demand AI16+ Timestamp	AI16min-AI16max		UINT32 UINT32	R R	
+64, 65 +66, 67	0x3910	Max. analog input demand AI1- Timestamp	AI1min-AI1max		UINT32 UINT32	R R	Negative AI readings demand
+68, 69 +70, 71	0x3911	Max. analog input demand AI2- Timestamp	AI2min-AI2max		UINT32 UINT32	R R	
		...					
+124, 125 +126, 127	0x391F	Max. analog input demand AI16- Timestamp	AI16min-AI16max		UINT32 UINT32	R R	
37376-37419		Maximum Auxiliary Values					
+0, 1 +2, 3	0x3600	Max. I4 current Timestamp	0-I _{max}	U2 sec	UINT32 UINT32	R R	DC-applicable
+4, 5 +6, 7	0x3601	Max. I _n current Timestamp	0-I _{max}	U2 sec	UINT32 UINT32	R R	
+8, 9 +10, 11	0x3602	Max. Frequency Timestamp	0-10000	×0.01Hz sec	UINT32 UINT32	R R	
+12, 13 +14, 15	0x3603	Max. Voltage unbalance Timestamp	0-3000	×0.1% sec	UINT32 UINT32	R R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+16, 17 +18, 19	0x3604	Max. Current unbalance Timestamp	0-3000	×0.1% sec	UINT32 UINT32	R R	
+20, 21 +22, 23	0x3605	Not used			UINT32 UINT32	R R	
+24, 25 +26, 27	0x3606	Not used	0	0	UINT32	R	
+28, 29 +30, 31	0x3607	Not used	0	0	UINT32	R	
+32, 33 +34, 35	0x3608	Not used	0	0	UINT32	R	⁴
+36, 37 +38, 39	0x3609	Not used	0	0	UINT32	R	⁴
+40, 41 +42, 43	0x360A	Not used	0	0	UINT32	R	⁴
37504-37567		Billing Summary Maximum Demands					
+0, 1 +2, 3	0x4780	Summary register #1 Maximum Demand Timestamp	0-Pmax	U3	UINT32	R	
+4, 5 +6, 7	0x4781	Summary register #2 Maximum Demand Timestamp	0-Pmax	U3	UINT32	R	
		...					
+60, 61 +62, 63	0x4783	Summary register #16 Maximum Demand Timestamp	0-Pmax	U3	UINT32	R	
37632-37719		Maximum Demands					
+0, 1 +2, 3	0x3700	V1 Maximum volt demand Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	² , DC-applicable
+4, 5 +6, 7	0x3701	V2 Maximum volt demand Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	² , DC-applicable
+8, 9 +10, 11	0x3702	V3 Maximum volt demand Timestamp	0-Vmax	U1 sec	UINT32 UINT32	R R	² , DC-applicable
+12, 13 +14, 15	0x3703	I1 Maximum ampere demand Timestamp	0-Imax	U2 sec	UINT32 UINT32	R R	DC-applicable

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+16, 17 +18, 19	0x3704	I2 Maximum ampere demand Timestamp	0-lmax	U2 sec	UINT32 UINT32	R R	DC-applicable
+20, 21 +22, 23	0x3705	I3 Maximum ampere demand Timestamp	0-lmax	U2 sec	UINT32 UINT32	R R	DC-applicable
+24, 25 +26, 27	0x3706	Not used Timestamp	0		UINT32 UINT32	R R	
+28, 29 +30, 31	0x3707	Not used Timestamp	0		UINT32 UINT32	R R	
+32, 33 +34, 35	0x3708	Not used Timestamp	0		UINT32 UINT32	R R	
+36, 37 +38, 39	0x3709	Maximum kW import sliding window demand Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	DC-applicable
+40, 41 +42, 43	0x370A	Maximum kvar import sliding window demand Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+44, 45 +46, 47	0x370B	Maximum kVA sliding window demand Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+48, 49 +50, 51	0x3737	Not used Timestamp	0		UINT32 UINT32	R R	
+52, 53 +54, 55	0x370D	Not used Timestamp	0		UINT32 UINT32	R R	
+56, 57 +58, 59	0x370E	Not used Timestamp	0		UINT32 UINT32	R R	
+60, 61 +62, 63	0x370F	Maximum kW export sliding window demand Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	DC-applicable
+64, 65 +66, 67	0x3710	Maximum kvar export sliding window demand Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+68, 69 +70, 71	0x3737	Not used Timestamp	0		UINT32 UINT32	R R	
+72, 73 +74, 75	0x3712	Not used Timestamp	0		UINT32 UINT32	R R	
+76, 77	0x3713	Not used	0	0	UINT32	R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+78, 79							
+80, 81 +82, 83	0x3714	I4 Maximum ampere demand Timestamp	0-I4max	U2 sec	UINT32 UINT32	R R	DC-applicable
+84, 85 +86, 87	0x3715	In Maximum ampere demand Timestamp	0-Imax	U2 sec	UINT32 UINT32	R R	
37888-37951		Programmable Min/Max Maximum Values					
+0, 1 +2, 3	0x3800	Max. Min/Max Register #1 Timestamp			UINT32 UINT32	R R	
+4, 5 +6, 7	0x3801	Max. Min/Max Register #2 Timestamp			UINT32 UINT32	R R	
		...					
+60, 61 +62, 63	0x380F	Max. Min/Max Register #16 Timestamp			UINT32 UINT32	R R	
38016-38063		Maximum Harmonic Demands					
+0, 1 +2, 3	0x3880	V1 THD demand Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	²
+4, 5 +6, 7	0x3881	V2 THD demand Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	²
+8, 9 +10, 11	0x3882	V3 THD demand Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	²
+12, 13 +14, 15	0x3883	Not used	0	0	UINT32	R	
+16, 17 +18, 19	0x3884	I1 THD demand Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	
+20, 21 +22, 23	0x3885	I2 THD demand Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	
+24, 25 +26, 27	0x3886	I3 THD demand Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	
+28, 29 +30, 31	0x3887	I4 THD demand Timestamp	0-9999	×0.1% sec	UINT32 UINT32	R R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+32, 33 +34, 35	0x3888	I1 TDD demand Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	
+36, 37 +38, 39	0x3889	I2 TDD demand Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	
+40, 41 +42, 43	0x388A	I3 TDD demand Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	
+44, 45 +46, 47	0x388B	I4 TDD demand Timestamp	0-1000	×0.1% sec	UINT32 UINT32	R R	
38144-38207		Billing TOU Maximum Demand Register #1					
+0, 1 +2, 3	0x4800	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x4801	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x480F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
38400-38463		Billing TOU Maximum Demand Register #2					
+0, 1 +2, 3	0x4900	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x4901	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x490F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
38656-38719		Billing TOU Maximum Demand Register #3					
+0, 1 +2, 3	0x4A00	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x4A01	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+60, 61 +62, 63	0x4A0F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
38272-38335		Billing TOU Maximum Demand Register #4					
+0, 1 +2, 3	0x4880	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x4881	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x488F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
38528-38591		Billing TOU Maximum Demand Register #5					
+0, 1 +2, 3	0x4980	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x4981	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x498F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
38784-38847		Billing TOU Maximum Demand Register #6					
+0, 1 +2, 3	0x4A80	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x4A81	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x4A8F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
38912-38975		Billing TOU Maximum Demand Register #7					
+0, 1 +2, 3	0x5300	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x5301	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
		...				R	
+60, 61 +62, 63	0x530F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
39040-39103		Billing TOU Maximum Demand Register #8					
+0, 1 +2, 3	0x5380	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x5381	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x538F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
39168-39231		Billing TOU Maximum Demand Register #9					
+0, 1 +2, 3	0x5400	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x5401	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x540F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
39296-39359		Billing TOU Maximum Demand Register #10					
+0, 1 +2, 3	0x5480	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x5481	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x548F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
39424-39487		Billing TOU Maximum Demand Register #11					
+0, 1 +2, 3	0x5500	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5	0x5501	Tariff #2 register	0-Pmax	U3	UINT32	R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+6, 7		Timestamp		sec	UINT32	R	
		...				R	
+60, 61 +62, 63	0x550F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
39552-39615		Billing TOU Maximum Demand Register #12					
+0, 1 +2, 3	0x5580	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x5581	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x558F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
39680-39743		Billing TOU Maximum Demand Register #13					
+0, 1 +2, 3	0x5600	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x5601	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x560F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
39808-39871		Billing TOU Maximum Demand Register #14					
+0, 1 +2, 3	0x5680	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x5681	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x568F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
39936-39999		Billing TOU Maximum Demand Register #15					
+0, 1 +2, 3	0x5700	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	

Address	Point ID	Description	Options/Range/Format ³	Units ³	Type	R/W	Notes
+4, 5 +6, 7	0x5701	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x570F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
40064-40127		Billing TOU Maximum Demand Register #16					
+0, 1 +2, 3	0x5780	Tariff #1 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
+4, 5 +6, 7	0x5781	Tariff #2 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	
		...				R	
+60, 61 +62, 63	0x578F	Tariff #16 register Timestamp	0-Pmax	U3 sec	UINT32 UINT32	R R	

NOTES:

¹When the 4LN3, 4LL3, 3LN3, 3LL3, 3BLN3 or 3BLL3 wiring mode is selected, the voltages will be line-to-neutral; for any other wiring mode, they will be line-to-line.

²When the 4LN3, 3LN3 or 3BLN3 wiring mode is selected, the voltages will be line-to-neutral; for any other wiring mode, they will be line-to-line voltages.

³For volts, amps, power and frequency scales and units, refer to [Chapter 4](#), “Data Scales and Units”.

⁴On a 0.2-s (10/12-cycle) interval.

3.6 Device Control and Status Registers

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
Event Flags Registers (bitmap)							
44032-44033		Event flags 1-32 set register (0 = no effect, 1 = set)	0x00000000 – 0xFFFFFFFF		UINT32	W	Read as 0
44034-44035		Event flags 1-32 clear register (0=clear, 1 = no effect)	0x00000000 – 0xFFFFFFFF		UINT32	W	Read as 0
44036-44037		Event flags 1-32 status (0 = cleared, 1 = set)	0x00000000 – 0xFFFFFFFF		UINT32	R	
44238-44241		Event flags 1-64 set register (0 = no effect, 1 = set)	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	W	Read as 0
44242-44245		Reserved			UINT32		Read as 0
44246-44249		Event flags 1-64 clear register (0=clear, 1 = no effect)	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	W	Read as 0
44250-44253		Reserved			UINT32		Read as 0
44254-44257		Event flags 1-64 status (0 = cleared, 1 = set)	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	
44258-44261		Reserved			UINT32		Read as 0
Remote Relay Control Registers (bitmap)							
44038-44045		Reserved			UINT32		
44046-44049		Force relay operate register: 0 = no effect, 1 = operate	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	W	Read as 0
44050-44053		Force relay release register: 0 = no effect, 1 = release	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	W	Read as 0
44054-44057		Locally latched relays status: 0 = unlatched, 1 = locally latched	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	
44058-44061		Remote latched relays status: 0 = unlatched, 1 = remote latched	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	
44062-44065		Direct relay control disable status: 0 = direct control enabled, 1 = direct control disabled	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	Direct relay control is disabled if a relay is under local automation control
44066-44069		Relay status: 0 = open, 1 = closed	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
44070-44073		Latch relays mode: 0 = unlatched mode, 1 = latched mode	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	
44074-44077		Pulse relays mode: 0 = not pulse mode, 1 = pulse mode	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT32	R	
44078-44081		KYZ relays mode: 0 = not KYZ mode, 1 = KYZ mode	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	
44082-44085		Relay polarity mode: 0 = normal mode, 1 = inverting mode	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	
44086-44089		Relay blocking mode: 0 = normal mode, 1 = blocked mode	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	
44090-44093		Blocked relay status: 0 = relay unblocked, 1 = relay blocked	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	Relay control commands are ignored if a relay is blocked
44094-44101		Reserved			UINT32		
Reset/Clear Registers							
44102		Clear energies	0		UINT16	W	
44103		Clear maximum demands	0= clear all maximum demands 1= clear power demands 2= clear volt and ampere demands 3= clear volt demands 4 = clear ampere demands 5 = clear harmonic demands		UINT16	W	
44104		Clear Billing/TOU energy registers	0		UINT16	W	
44105		Clear Billing/TOU maximum demands	0		UINT16	W	
44106		Clear counters	0 = clear all counters, 1-32 = clear counter #1-32		UINT16	W	
44107		Clear Min/Max log	0		UINT16	W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
44108		Clear accumulators/event counters	0 = clear EN50160 PQ counters 1 = clear device diagnostics 6 = clear communication counters 7 = clear switch operation counters 8 = clear IEEE 519 statistics		UINT16	W	
44109-44133		Reserved			UINT16		
Device Mode Control Registers							
44135		Controller/setpoints operation	0 = disabled, 1 = enabled		UINT16		
44136		PQ recorder	0 = disabled, 1 = enabled		UINT16		
44137		Not used	0		UINT16		
44138-44165		Reserved			UINT16		
Operation/Event Counters							
44198-44199		Not used	0	0	UINT32	R	
44200-44201		Not used	0	0	UINT32	R	
44202-44203		Not used	0	0	UINT32	R	
44204-44205		Not used	0	0	UINT32	R	
44206-44207		Not used			UINT32	R	
44208-44209		Not used			UINT32	R	
44210-44211		Not used	0	0	UINT32	R	
44212-44213		Not used	0	0	UINT32	R	
44214-44215		Not used	0	0	UINT32	R	
44216-44261		Reserved			UINT32	R	
UDP Cross-trigger Register							
44166		Appendix A External trigger index	0-15		UINT16	W	
44167		Appendix B Reserved			UINT16		
44168-44237		Appendix C Reserved			UINT16		

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
Memory Status Registers							
44262-44263		Memory size, bytes			UINT32	R	
44264-44265		Free memory, bytes			UINT32	R	
44266-44277		Reserved			UINT32	R	
Log Notification Registers (bitmap)							
44278-44279		Files 0-31 (0 = no new logs, 1 = new record logged)	0x00000000 – 0xFFFFFFFF		UINT32	R	
44280-44293		Reserved			UINT32	R	
Setpoint Status Registers (bitmap)							
44294-44297		Setpoints 1-64 status (0 = released, 1 = operated)	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R	
44298-44309		Reserved			UINT32	R	
Setpoint Alarm Latch Registers (bitmap)							
44310-44313		Setpoints 1-64 alarm status. When read: 0 = no setpoint operations logged, 1 = setpoint has been operated at least once since the last alarm bit reset. When written: 0 = clear setpoint alarm bit, 1 = no effect.	0x00000000 – 0xFFFFFFFF 0x00000000 – 0xFFFFFFFF		UINT64	R/W	
44314-44325		Reserved					
Device Diagnostics Register (bitmap)							
44326-44327		Device self-diagnostics flags. When read: 0 = no faults logged, 1 = a fault bit has been set at least once since the last reset. When written: 0 = clear a fault bit, 1 = no effect.	F23		UINT32	R/W	
44328-44339		Reserved					
GOOSE Subscriber Status Register (bitmap)							
44340-44341		Not used	0		UINT32	R	Bitmap
Port Identification							
44342		Connection port number	0-2 = serial port COM1- COM3, 3 = COM4 IR port, 4 = COM5 modem port, 6 = USB/Modbus port,		UINT16	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
			7-11 = Ethernet/TCP port				
44343		Serial port interface (COM1-COM5)	0 = RS-232, 1 = RS-422, 2 = RS-485, 3 = infrared, 4 = dialup modem, 8 = GSM/GPRS/CDMA2000		UINT16	R	
44344-44345		Reserved					
Network Identification							
44346-44373							
+0,1		Ethernet network IP Address			UINT32	R	Network byte order
+2,3		Ethernet network subnet mask			UINT32	R	Network byte order
+4,5		Ethernet network default gateway			UINT32	R	Network byte order
+6,7		Not used			UINT32	R	
+8,9		Not used			UINT32	R	
+10,11		GPRS network IP Address			UINT32	R	Network byte order
+12,13		GPRS network subnet mask	N/A		UINT32	R	Network byte order
+14,15		GPRS network default gateway	N/A		UINT32	R	Network byte order
+16		Not used			UINT32	R	
+17		Cellular network type	0 = 3GPP network (GSM, UMTS, LTE) 1= 3GPP2 network (CDMA2000)		UINT32	R	
+18-21		Cellular module's mobile equipment identifier: IMEI for 3GPP networks MEID for 3GPP2 networks	IMEI (15 decimal digits): +18,19 – 8 lower digits in binary, +20,21 – 7 higher digits in binary; MEID (14 hex digits): +18,19 – 8 lower digits, +20,21 – 6 higher digits		UINT32	R	
+22,23		Ethernet 2 network IP address			UINT32	R	Network byte order
+24,25		Ethernet 2 network subnet mask			UINT32	R	Network byte order

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+26,27		Ethernet 2 network default gateway			UINT32	R	Network byte order
44374-44377		Reserved					
Device Authorization Register							
44378-44379		When write: 8-digit password. When read: 0 = access permitted, -1 = authorization required.	0 – 99999999 (write) 0/-1 (read)		INT32	R/W	
44380-44385		Reserved					
Communication Status							
44394		RSSI (received signal strength)	0 = not known or not detectable, 51-113 = -51 to -113 dBm		UINT16	R	
44395		GPRS status	0 = not connected, 1 = not registered, 2 = registered		UINT16	R	
44396		RSTP Status	Bit 0: RSTP Running Status bits 1-3: Network1 STP Status bits 4-6: Network1 STP Role bits 7-9: Network2 STP Status bits 10-12: Network2 STP Role bits 13-15: Future Use RSTP Port State: 0 = Disabled 1 = Broken 2 = Blocking 3 = Listening 4 = Learning 5 = Forwarding		UINT16	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
			RSTP Port Role: 0 = Disabled 1 = Root 2 = Designated 3 = Alternate 4 = Backup else = Unknown				
44397-44409		Reserved			UINT16	R	65535 = N/A
Communication Counters							
44410		Successful eXpertPower client connections	0-65534		UINT16	R	
44411		Failed eXpertPower client connections	0-65534		UINT16	R	
44412		Successful TCP notification client connections	0-65534		UINT16	R	
44413		Failed TCP notification client connections	0-65534		UINT16	R	
44414-44441		Reserved			UINT16	R	65535 = N/A
Switch Remote Control Registers							
44458-44459		Not used	0		UINT32	W	Read as 0
44460-44461		Not used	0		UINT32	W	Read as 0
44462-44463		Not used	0		UINT32	W	Read as 0
44464-44465		Not used	0		UINT32	W	Read as 0
44466-44481		Not used	0				
+0		Not used	0		UINT16	R/W	
+1		Not used	0		UINT16	R/W	
+2		Not used	0		UINT16	R/W	
...		Not used	0				
+15		Not used	0		UINT16	R/W	
+16-47		Reserved					
Switch Status Registers							
44514-44515		Not used	0		UINT32	R	
44516-44517		Not used	0		UINT32	R	
44518-44519		Not used	0		UINT32	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
44520-44521		Not used	0		UINT32	R	
44522-44523		Not used	0		UINT32	R	
44524-44525		Not used	0		UINT32	R	
44526-44541		Not used	0		UINT16	R	
+0		Not used	0		UINT16	R	
+1		Not used	0		UINT16	R	
+2		Not used	0		UINT16	R	
...		Not used	0				
+15		Not used	0		UINT16	R	
Factory Diagnostic Registers							
45952-46079		Factory diagnostic registers			UINT32	R	
IEEE 519 Distortion & Harmonic Voltage Limits							
50454-50517							
+0		Weekly 95th 3-sec limit multiplier	100	x0.01	UINT16	R	Const: 100
+1		Reserved			UINT16	R/W	
+2		Reserved			UINT16	R/W	
+3		Daily 99th 3-sec limit multiplier	1-1000	x0.01	UINT16	R/W	Default: 150
+4		THD Limit	10-65535	x0.001%	UINT16	R/W	
+5		H02 limit	10-65535	x0.001%	UINT16	R/W	
+6		H03 limit	10-65535	x0.001%	UINT16	R/W	
		...					
+53		H50 limit	10-65535	x0.001%	UINT16	R/W	
+54-63		Reserved					
IEEE 519 Distortion & Harmonic Current Limits							
50518-50581							
+0		Weekly 95th 10-min limit multiplier	100	x0.01	UINT16	R	Const: 100
+1		Weekly 99th 10-min limit multiplier	1-1000	x0.01	UINT16	R/W	Default: 150
+2		Reserved			UINT16	R/W	
+3		Daily 99th 10-min limit multiplier	1-1000	x0.01	UINT16	R/W	Default: 200

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+4		TDD Limit	10-65535	x0.001%	UINT16	R/W	
+5		H02 limit	10-65535	x0.001%	UINT16	R/W	
+6		H03 limit	10-65535	x0.001%	UINT16	R/W	
		...					
+53		H50 limit	10-65535	x0.001%	UINT16	R/W	
+54-63		Reserved					

3.7 Device Setup Register

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
Device Identification							
46080-46111							
+0,1		Device serial number	1-9999999		UINT32	R	
+2,3		Device model ID	13250 / 13550		UINT32	R	
+4-11		Device model name	"EM235 / PM335"		CHAR16	R	Null-terminated string
+12-13		Device options (bitmap)	F38		UINT32	R	
+14-15		Not used	0	0	UINT32	R	
+16-17		Not used			UINT16	R	
+18		(0-3) 4bits: CPU board hardware revision (4-7) 4bits: CPU version X, Y, Z, V (8-15) 8bits: LCD ID			UINT16	R	
+19		(0-3) 4bits: For future use (4) 1bit: "0" – IO does NOT exist, "1" – IO exists (5) 1bit: "0" – Eth. does NOT exist, "1" – Eth. exists (6) 1bit: "0" (7) 1bit "0" – AA (Anti-Aliasing filter) does NOT exist, "1" – AA exists (8-11) 4bits: Analog board hardware revision (12-15) 4bits: CT Type			UINT16	R	
+20		Device firmware version number	EM: 4001-4099/PM: 4401-4499		UINT16	R	
+21		Device firmware build number	1-99		UINT16	R	
+22		Reserved	0		UINT16	R	
+23		Reserved	0		UINT16	R	
+24		Boot loader version number			UINT16	R	
+25		Boot loader build number			UINT16	R	
+26-31		Reserved			UINT16	R	
Factory Device Settings							
46112-46207							
+0		V1-V3 input range	690	V	UINT16	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+1		V1-V3 input overload	120	%	UINT16	R	
+2		Not used	0	0	UINT16	R	
+3		Not used	0	0	UINT16	R	
+4		I1-I3 input range	1, 5	A	UINT16	R	
+5		I1-I3 input overload	200 (ANSI), 200 (IEC)	%	UINT16	R	
+6		I4 input range	1, 5	A	UINT16	R	
+7		I4 input overload	200 (ANSI), 200 (IEC)	%	UINT16	R	
+8-13		Not used	0	0	UINT16	R	
+115-4		Device production date and time	F1		UINT32	R	
+12-63		Reserved			UINT16	R	
+64		Ethernet MAC address 0-1	0x0500		UINT16	R	
+65		Ethernet MAC address 2-3	0x00F0		UINT16	R	
+66		Ethernet MAC address 4-5	0x0000-0xFFFF		UINT16	R	
+67		Ethernet MAC2 address 0-1	0x0500		UINT16	R	
+68		Ethernet MAC2 address 2-3	0x00F0		UINT16	R	
+69		Ethernet MAC2 address 4-5	0x0000-0xFFFF		UINT16	R	
+70-95		Reserved			UINT16	R	
Basic Setup							
46208-46239							
+0		Wiring mode	F26		UINT16	R/W	
+1		PT ratio (primary to secondary ratio)	10-65000	×0.1	UINT16	R/W	
+2		PT secondary (Line-to-Line)	500-10000	×0.1	UINT16	R/W	
+3		Not used	0	0	UINT16	R/W	
+4		Not used	0	0	UINT16	R/W	
+5		CT primary current	1-30000	A	UINT16	R/W	
+6		CT secondary current			UINT16	R/W	
+7		I4 CT primary current	1-30000	A	UINT16	R/W	
+8		I4 CT secondary current			UINT16	R/W	
+9-16		Reserved			UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+17		Nominal line frequency	50, 60	Hz	UINTEGER16	R/W	
+18		Phase order	0 = ABC, 1 = CBA		UINTEGER16	R/W	
+19-21		Reserved			UINTEGER16	R/W	
+22,23		Short Circuit Current	1-999999999	A	UINTEGER32	R/W	If value = 0, the SW uses the value of "CT"
+24		I maximum demand load current	0-30000	A	UINTEGER16	R/W	
+25		I4 maximum demand load current	0-30000	A	UINTEGER16	R/W	
+26-31		Reserved			UINTEGER16	R/W	
Demands Setup							
46240-46255							
+0		Power demand period (block interval)	1, 2, 3, 5, 10, 15, 30, 60	min	UINTEGER16	R/W	
+1		Number of demand periods in a sliding window	1-15		UINTEGER16	R/W	
+2		Demand synchronization source input	0 = device clock, 1-96 = DI1-DI96		UINTEGER16	R/W	A DI input is considered a pulse or KYZ input. The pulse edge restarts the power demand accumulation interval.
+3-7		Reserved			UINTEGER16	R/W	
+8		Volt demand period	0-9000	sec	UINTEGER16	R/W	
+9		Ampere demand period	0-9000	sec	UINTEGER16	R/W	
+10		Harmonic demand period	0-9000	sec	UINTEGER16	R/W	
+11-15		Reserved			UINTEGER16	R/W	
Device Options Setup							
46256-46399							
+0		Power calculation mode	0 = using reactive power: $S = f(P, Q)$, 1 = using non-active power: $Q = f(S, P)$		UINTEGER16	R/W	
+1		Energy roll value	0 = 1×10^4 , 1 = 1×10^5 , 2 = 1×10^6 , 3 = 1×10^7 , 4 = 1×10^8 , 5 = 1×10^9		UINTEGER16	R/W	
+2		Number of energy decimal places	0-3		UINTEGER16	R/W	Default 0

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+3		Reserved			UINT16	R/W	
+4		Tariff control	0 = via a calendar scheduler, 0x4000 = via communications, 0x0100-0x010F = via tariff inputs DI1-DI16 (bits 0:3 denote the first digital input index used)		UINT16	R/W	
+5		Number of tariffs	1-16 (does not have effect with a calendar tariff control option)		UINT16	R/W	When read with a calendar tariff control option, indicates the actual number of tariffs selected in TOU profiles
+6		Not used	0		UINT16	R/W	
+7		Energy LED test mode	0=disabled, 1=Wh test, 2=varh test		UINT16	R/W	
+8		Test energy LED pulse rate, Wh/varh per pulse (in secondary units)	1-40	×0.01	UINT16	R/W	
+9-11		Reserved			UINT16	R/W	
+12		I1 direction (polarity)	0 = Normal, 1 = Inverse		UINT16	R/W	
+13		I2 direction (polarity)	0 = Normal, 1 = Inverse		UINT16	R/W	
+14		I3 direction (polarity)	0 = Normal, 1 = Inverse		UINT16	R/W	
+15		Not used	0		UINT16	R/W	
+16		Interval energy period, min	5, 10, 15, 20, 30		UINT16	R/W	
+17		PQ option	1 = IEEE 1159 5 = EN 50160:2022		UINT16	R/W	V5.9.4
+18-143		Reserved			UINT16	R/W	
Time/Date Setup							
46400-46415							
+0		Local time offset, min	0-+/-720		INT16	R/W	Offset in minutes from UTC (Universal Coordinated or Greenwich Mean time)
+1		Daylight savings time (DST) option	0=DST disabled (standard time only),		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
			1=DST enabled (fixed switching dates), 2= scheduled DST period (calendar defined switching dates)				
+2		DST start month	1-12		UINT16	R/W	
+3		DST start week of the month	1-4 = 1st, 2nd, 3rd and 4th week, 5=the last week of the month		UINT16	R/W	
+4		DST start weekday	1-7 (1=Sun, 7=Sat)		UINT16	R/W	
+5		DST end month	1-12		UINT16	R/W	
+6		DST end week of the month	1-4 = 1st, 2nd, 3 rd and 4th week, 5=last week of the month		UINT16	R/W	
+7		DST end weekday	1-7 (1=Sun, 7=Sat)		UINT16	R/W	
+8		Clock synchronization source	0 = GPS IRIG-B master clock, 0x7ffd = PTP, 0x7ffe = SNTP, 0x7fff = none		UINT16	R/W	A DI input is considered a pulse or KYZ input. The pulse edge aligns the clock at the nearest whole minute.
+9		Country code	ITU country calling code		UINT16	R/W	
+10		DST start hour	1-6		UINT16	R/W	
+11		DST end hour	1-6		UINT16	R/W	
+12		Date order	0=MM/DD/YY 1=DD/MM/YY 2=YY/MM/DD		UINT16	R/W	
+13-15		Reserved			UINT16	R/W	
Clock Setup and Status							
46416-46447							
+0,1		Local time, in seconds, since Jan 1, 1970	F1	sec	UINT32	R/W	
+2,3		Fractional seconds, µsec		µsec	UINT32	R/W	
+4		Fractional seconds, milliseconds	0-999		UINT16	R/W	
+5		Seconds	0-59		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+6		Minutes	0-59		UINTEGER	R/W	
+7		Hour	0-23		UINTEGER	R/W	
+8		Day of month	1-31		UINTEGER	R/W	
+9		Month	1-12		UINTEGER	R/W	
+10		Year (calendar year minus 2000)	0-99		UINTEGER	R/W	
+11		Weekday	1-7 (1=Sun, 7=Sat)		UINTEGER	R	
+12		Daylight savings time status	0 = standard time, 1 = daylight savings time is active		UINTEGER	R	
+13		IRIG-B status	0, 1 = no signal, 2 = time unlocked, 3 = time locked		UINTEGER	R	
+14-31		Reserved			UINTEGER		
Communication Ports Setup							
46448-46575							
+0		Communication protocol	0 = Modbus RTU, 1 = Modbus ASCII, 2 = DNP3.0, 7=IEC 60870-5		UINTEGER	R/W	
+1		Interface	0 = RS-232, 1 = RS-422, 2 = RS-485, 3 = infrared, 4 = dialup modem, 8 = GSM/GPRS/CDMA2000		UINTEGER	R/W	
+2		Device address	Modbus: 1-247 DNP3.0: 0-65532 IEC 60870-5: 1-254 (1 octet), 1-65532 (2 octets)		UINTEGER	R/W	
+3		Baud rate	1 = 300 bps, 2 = 600 bps, 3 = 1200 bps, 4 = 2400 bps, 5 = 4800 bps, 6 = 9600 bps, 7 = 19200 bps, 8 = 38400 bps,		UINTEGER	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
			9 = 57600 bps, 10 = 115200 bps				
	+4	Data format	0 = 7 bits/even parity, 1 = 8 bits/no parity, 2 = 8 bits/even parity		UINT16	R/W	
	+5	CTS mode	0 = not used, 1 = wait for CTS before sending data		UINT16	R/W	N/A for COM2-COM5 (read as 65535)
	+6	RTS mode	0 = not used, 1 = RTS is asserted during the transmission		UINT16	R/W	N/A for COM2-COM5 (read as 65535)
	+7	Minimum delay before sending data	0-1000 (default = 5)	ms	UINT16	R/W	
	+8	Inter-character timeout	1-1000 (default = 4)	ms	UINT16	R/W	Added to standard 4-character time
	+9	Port direction	0 = slave (default), 1 = master		UINT16	R/W	
	+10	Receive timeout (for a master port only)	500-30000	ms	UINT16	R/W	
	+11-15	Reserved					
46448-46463		COM1 Setup					
46464-46479		COM2 Setup					Only 8 bits/no parity data format
46480-46495		COM3 Setup					
46496-46511		COM4 Setup					
46512-46527		COM5 Setup					
46528-46575		Reserved					
Network 1 Setup							
46576-46607							
	+0,1	Device IP Address	0x01000000-0xFFFFFFFF		UINT32	R/W	Network byte order
	+2,3	Network subnet mask	0x00000001-0xFFFFFFFF		UINT32	R/W	Network byte order
	+4,5	Network default gateway	0x00000000-0xFFFFFFFF		UINT32	R/W	Network byte order
	+6,7	Not used	0		UINT32	R/W	
	+8-31	Reserved				R/W	
Network 2 Setup							

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
46608-46639							
+0,1		Device IP Address	0x01000000-0xFFFFFFFF		UINT32	R/W	Network byte order
+2,3		Network subnet mask	0x00000001-0xFFFFFFFF		UINT32	R/W	Network byte order
+4,5		Network default gateway	0x00000000-0xFFFFFFFF		UINT32	R/W	Network byte order
+6-13		Reserved				R/W	
+14,15		Connection idle timeout	30-300 s		UINT32	R/W	
+16-31		Reserved				R/W	
Dial-up/GPRS Modem Setup							
46640-46671							
+0,1		Device IP Address	0x01000000-0xFFFFFFFF		UINT32	R/W	
+2,3		Network subnet mask	0x00000001-0xFFFFFFFF		UINT32	R/W	
+4,5		Network default gateway	0x00000000-0xFFFFFFFF		UINT32	R/W	
+6,7		Number of dial attempts	0-1000, 0=dial forever		UINT32	R/W	
+8,9		Connection timeout, sec	0-9999		UINT32	R/W	
+10,11		Delay between redials, sec	0-9999		UINT32	R/W	
+12,13		Idle connection timeout, sec	0-9999, 0 = never		UINT32	R/W	
+14,15		Number of rings before answer	0-20, 0 = never answer		UINT32	R/W	
+16-23		Modem init string	"AT&F&D1&C1"		CHAR16	R/W	Null-terminated string
+24,25		Auto-reset period, hours	1-24, 0 = never		UINT32	R/W	
+26-31		Reserved					
Password Setup							
46704-46715							
+0,1		Password 1 (Low level)	0-99999999		UINT32	R/W	Read as 0
+2,3		Password protection (always ON)	1 = enabled		UINT16	R/W	
+4,5		Password 2 (Medium level)	0-99999999		UINT32	R/W	
+6,7		Password 3 (High level)	0-99999999		UINT32	R/W	
+8,9		Not used			UINT32	R/W	
+10,11		Front panel security	Not used		UINT32	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
46716-46761		Reserved					
IEC 61850 License Setup							
46762-46767							
+0,1		License code, first word		Not used	UINT32	R/W	
+2,3		License code, second word		Not used	UINT32	R/W	
+4,5		Current license type	0=no valid license 1-31=temporary license, remaining time in days -1=permanent license -3=temporary license has expired	Not used	UINT32	R	
Expert Power Service Setup							
46768-46783							
+0,1		Expert Power server IP Address	0x01000000-0xFFFFFFFF		UINT32	R/W	Default = 207.232.60.18
+2,3		Expert Power server TCP service port	0-65535		UINT32	R/W	Default = 5001
+4,5		Expert Power client enabled	0=client disabled, 1=client enabled		UINT32	R/W	
+6,7		Time to next session	1-99999	min	UINT32	R/W	
+8,9		Time to next session	1-99999	min	UINT32	R	Same as previous
+10,11		Connection network	0 = Ethernet, 1=GPRS		UINT32	R/W	
+12-15		Reserved					
Internet Service Provider (ISP) account							
46784-46879							
+0-15		Dial string (telephone number)	**99***1#		CHAR32	R/W	GPRS network call by default
+16-31		Login name			CHAR32	R/W	
+32-47		Login password			CHAR32	R/W	
+48-63		Access Point Name (APN)			CHAR32	R/W	
+64-95		Reserved					
SNTP Client Setup							
46880-46895							

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+0,1		SNTP client enabled	0=disabled, 1=enabled		UINT32	R/W	
+2,3		Polling interval	60-86400	s	UINT32	R/W	Default = 600 s
+4-7		Reserved	0		UINT32	R/W	
+8,9		Primary SNTP server IP address	0x01000000-0xFFFFFFFF		UINT32	R/W	Default = 192.36.143.151
+10,11		Secondary SNTP server IP address	0x01000000-0xFFFFFFFF		UINT32	R/W	Default = 130.149.17.21
+12-15		Reserved					
TCP Notification Client Setup							
46896-46991							
+0,1		Client enabled	0=disabled, 1=enabled		UINT32	R/W	
+2,3		Server address	0x01000000-0xFFFFFFFF		UINT32	R/W	
+4,5		Server port	0-65535		UINT32	R/W	
+6,7		Message exchange address	0-65535		UINT32	R/W	
+8,9		Connection network	0 = Ethernet, 1=GPRS		UINT32	R/W	
+10-15		Reserved					
Transformer Correction Setup							
47072-47119							
+0		Ratio correction factor	900-1100	×0.001	UINT16	R/W	
+1		Phase angle error	-6000 to 6000	min	INT16	R/W	
+2,3		Reserved			INT16	R/W	
47072-47075		V1 transformer correction					
47076-47079		V2 transformer correction					
47080-47083		V3 transformer correction					
47084-47087		V4 transformer correction					
47088-47091		I1 transformer correction					
47092-47095		I2 transformer correction					
47096-47099		I3 transformer correction					
47100-47103		I4 transformer correction					
47104-47119		Not used	0				
RSTP Setup							

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
48696- 48725							
+0		RSTP Enabled	0 = Disabled, 1 = Enabled		UJNT16	R/W	
+1		RSTP Bridge Priority	0-61440, in steps of 4096		UJNT16	R/W	Default = 32768
+2		RSTP Hello Time	1-10	Second	UJNT16	R/W	Default = 2
+3		RSTP Forward Delay	4-30	Second	UJNT16	R/W	Default = 15
+4		RSTP TX Hold Count	1-10	BPDU	UJNT16	R/W	Default = 6
+5-9		Reserved			UJNT16	R/W	
+10,11		RSTP Network1 Port Path Cost	0-240, in steps of 16		UJNT32	R/W	Default = 128
+12		RSTP Network1 Port Priority	1-200,000,000		UJNT16	R/W	Default = 200,000 (for 100Mb/s Ethernet connection)
+13,19		Reserved			UJNT16	R/W	
+20,21		RSTP Network2 Port Path Cost	0-240, in steps of 16		UJNT32	R/W	Default = 128
+22		RSTP Network2 Port Priority	1-200,000,000		UJNT16	R/W	Default = 200,000 (for 100Mb/s Ethernet connection)
+23,29		Reserved			UJNT16	R/W	
GOOSE Subscriber Setup							
48726-48833							
+0		Not used	0		UJNT16	R/W	
+1		Not used	0		UJNT16	R/W	
+2		Not used	0		UJNT16	R/W	
+3-35		Not used	0		CHAR66	R/W	
+36,37		Not used	0		UJNT32	R/W	
+38-40		Not used	0		CHAR6	R/W	
+41		Not used	0		UJNT16	R/W	
+42-43		Not used	0		UJNT16	R/W	
		Data Set Entry #1					
+44		Not used	0		UJNT16	R/W	
+45		Not used	0		UJNT16	R/W	
+46		Not used	0		UJNT16	R/W	
+47		Not used	0		UJNT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+48-51		Not used	0				
...		...					
+104-107		Data Set Entry #16					
+108-171		Reserved			UINT16	R/W	
48898-49045		Reserved					
GOOSE Publisher Setup							
49046-49145							
+0		Not used	0		UINT16	R/W	
+1		Not used	0		UINT16	R/W	
+2-34		Not used	0		CHAR66	R	
+35		Not used	0		UINT16	R/W	
+36-51		Not used	0		CHAR34	R	
+53-85		Not used	0		CHAR66	R	
+86-87		Not used	0		UINT32	R/W	
+88		Not used	0		UINT16	R	
+89-91		Not used	0		CHAR6	R/W	
+92		Not used	0		UINT16	R	
+93		Not used	0		UINT16	R	
+94		Not used	0		UINT16	R/W	
+95		Not used	0	ms	UINT16	R/W	
+96-99		Not used	0				
IEC 61850 IED Setup							
49146-49209							
+0-11		Not used	0		CHAR24	R/W	
+12-19		Not used	0		CHAR16	R/W	
+20		Not used	0		UINT16	R/W	
+21		Not used	0		UINT16	R/W	
+22		Not used	0		UINT16	R/W	
+23		Not used	0		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+24		Not used	0		UINT16	R/W	
+25-30		Not used	0		CHAR32	R/W	
+31-63		Not used	0		UINT16	R/W	
IEC 61850 Dataset Setup							
49210-49278							
+0		Not used	0		UINT16	R/W	
+1		Not used	0		UINT16	R/W	
+2-34		Not used	0		CHAR66	R/W	
+35		Not used	0		UINT16	R/W	
+36-68		Not used	0		CHAR66	R/W	
IEC 61850 RCB Setup							
49280-49351							
		Command registers					
+0		Not used	0		UINT16	W	
+1		Not used	0		UINT16	W	
		RCB registers (read/write)			UINT16	R/W	
+0		Not used	0		UINT16	R/W	
+1		Not used	0		UINT16	R/W	
+2-18		Not used	0		CHAR34	R/W	
+19		Not used	0		UINT16	R/W	
+20-52		Not used	0		CHAR66	R/W	
+53		Not used	0		UINT16	R/W	
+54,55		Not used	0		UINT32	R/W	
+56,57		Not used	0		UINT32	R/W	
+58,59		Not used	0		UINT32	R/W	
+60		Not used	0		UINT16	R/W	
+61		Not used	0		UINT16	R/W	
+62,63		Not used	0		UINT32	R/W	
+64		Not used	0		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+65-71		Not used	0		CHAR14	R/W	
		Dataset references list (read)					
+19		Not used	0		UINT16	R	
+20-52		Not used	0		CHAR66	R	
IEC 61850 Report Deadbands							
49396-49444							
+0		Not used	0	×0.001%	UINT16	R/W	
...		Not used	0	×0.001%	UINT16	R/W	
+48		Not used	0	×0.001%	UINT16	R/W	
49445-49459		Reserved					
IEC 60870-5 Options Setup							
49460-49494		Ethernet Interface #1 Setup					
59318-59352		Ethernet Interface #2 Setup					
+0		Maximum length of variable frame, octets	32-255		UINT16	R/W	
+1		Link address length, octets	1-2		UINT16	R/W	
+2		Cause of transmission length, octets	1-2		UINT16	R/W	
+3		Length of common address of ASDU, octets	1-2		UINT16	R/W	
+4		Length of information object address, octets	1-3		UINT16	R/W	
+5		Select-before-operate timeout, s	0-30		UINT16	R/W	
+6		Short pulse duration, ms	100-3000	ms	UINT16	R/W	
+7		Long pulse duration, ms	100-3000	ms	UINT16	R/W	
+8,9		Time synchronization period, s	1-86400, 0=not active	s	UINT32	R/W	
+10		Local counter freeze period, min	1-60, 0=not active	min	UINT16	R/W	
+11		Cyclic data transmission period, ms	100-30000, 0=not active	ms	UINT16	R/W	
+12,13		Redundant connection IP address #1	0-0xFFFFFE, 0=not active		UINT32	R/W	
+14,15		Redundant connection IP address #2	0-0xFFFFFE, 0=not active		UINT32	R/W	
+16,17		Not used	0		UINT32	R/W	
+18		Not used	0		UINT16	R/W	
+19		Respond with class 1 data to class 2 requests	0=disabled, 1=enabled		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+20		Single point start mapped address	1-4095		UINT16	R/W	
+21		Single point default static object type	F30		UINT16	R/W	
+22		Single point default event object type	F31		UINT16	R/W	
+23		Double point start mapped address	1-4095		UINT16	R/W	
+24		Double point default static object type	F32		UINT16	R/W	
+25		Double point default event object type	F33		UINT16	R/W	
+26		Measured value start mapped address	1-4095		UINT16	R/W	
+27		Measured value default static object type	F34		UINT16	R/W	
+28		Measured value default event object type	F35		UINT16	R/W	
+29		Integrated totals start mapped address	1-4095		UINT16	R/W	
+30		Integrated totals default static object type	F36		UINT16	R/W	
+31		Integrated totals default event object type	F37		UINT16	R/W	
+32		Voltage units	0=V, 1=kV		UINT16	R/W	
+33		Current units	0=A, 1=kA		UINT16	R/W	
+34		Power units	0=kW, 1=MW		UINT16	R/W	
IEC 60870-5 Class 2 Data and Counters Setup							
49524-49619		Ethernet Interface #1 Setup					
59382-59477		Ethernet Interface #2 Setup					
+0		Information object type and flags	Bits 0:7 – static object type identification (F30, F32, F34, F36), Bit 8=1 – freeze with reset, Bit 9=1 – local freeze, Bit 10=1 – cyclic data transmission, Bit 11=1 – general interrogation, Bits 12:15 – interrogation group = 0-15 (0=no group assigned)				
+1		Start information object address	1-65535		UINT16	R/W	
+2		Number of elements in the range	1-128		UINT16	R/W	
49524-49526		Object address range #1					

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
49527-49529		Object address range #2					
...		...					
49617-46619		Object address range #32					
IEC 60870-5 Assignable Point Map and Events Setup							
49716-49971		Ethernet Interface #1 Setup					
59574-59829		Ethernet Interface #2 Setup					
+0		Point ID	See Section 3.4		UINT16	R/W	
+1		Information object type and flags	Bits 0:7 – static object type identification (F3, F5, F7), Bits 8:9 – relation (0=delta, 1= more than, 2 = less than) Bit 10=1 – class 1 assignment		UINT16	R/W	
+2,3		Deadband/threshold	See Section 3.4 for the point range and resolution		INT32	R/W	
49716-49719		Mapped static/event point #1					
49720-49723		Mapped static/event point #2					
...		...					
49968-49971		Mapped static/event point #64					
EN 50160:2022 PQ Recorder Setup							
50134-50453							
+0		High normally (percentile-ranked) permissible limit, %	-2000-20000	×0.01%	UINT16	R/W	
+1		Hysteresis, % of threshold	0-500	×0.1%	UINT16	R/W	
+2		Log options, bitmap	Bit 0 – waveform log on event start: 0 = disabled, 1 = enabled; Bit 1 – waveform log on event end: 0 = disabled, 1 = enabled; Bit 2 – PQ log on percentile-based limit: 0 = enabled, 1 = disabled. Bit 3 – PQ log on maximum limit: 0 = enabled, 1 = disabled.		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+3		Waveform log number	0-7 = log #1-#8		UINT16	R/W	
+4		Data/RMS plot option	0 = disabled, 1 = enabled		UINT16	R/W	
+5		Data log number (factory preset)	13 = log #14		UINT16	R/W	
+6		1/2-cycle RMS plot, cycles before event	0-20	cycle	UINT16	R/W	
+7		1/2-cycle RMS plot, cycles after event	0-20	cycle	UINT16	R/W	
+8		1/2-cycle RMS plot duration, cycles	0-10000	cycle	UINT16	R/W	
+9		0.2-sec envelope RMS plot duration, seconds	0-10000	sec	UINT16	R/W	
+10		3-sec envelope RMS plot duration, minutes	0-10000	min	UINT16	R/W	
+11		10-min envelope RMS plot duration, hours	0-10000	hours	UINT16	R/W	
+12		High maximum (100%) permissible limit, %	-2000-20000	×0.01%	UINT16	R/W	
+13		Low normally (percentile-ranked) permissible limit, %	-2000-20000	×0.01%	UINT16	R/W	
+14		Low maximum (100%) permissible limit, %	-2000-20000	×0.01%	UINT16	R/W	
+15		Compliance percentile rank, %	0-1000	×0.1%	UINT16	R/W	
50134-50149		Frequency variation, +/-dF, %Fn					
50150-50165		Voltage variation, +/-dU, %Un					
50166-50181		Rapid voltage changes, +/-dU, %Un					
50182-50197		Flicker, Plt					
50198-50213		Voltage unbalance, %					
50214-50229		Voltage THD, %					
50230-50245		Harmonic voltages, %					
50246-50261		Interharmonic voltages, %					
50262-50277		Signaling voltage, %Un					
50278-50293		Voltage interruptions, %Un					
50294-50309		Voltage dips, %Un					
50310-50325		Voltage swells, %Un					
50326-50341		Transient overvoltages, %Un peak					
50342-50453		Reserved					
EN 50160:2022 Advanced Setup							

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
50838-50879							
		Compliance Statistics					
+0		Evaluation	0=disabled, 1=enabled		UINT16	R/W	
+1		Evaluation period	0=daily, 1=weekly		UINT16	R/W	
+2		First day of the week	1=Sunday, 7=Saturday		UINT16	R/W	
+3		Start time	0-1439	min	UINT16	R/W	
+4-6		Not used			UINT16	R/W	
		Rapid Voltage Changes					
+7		Minimum steady state time	0=3 s, 1=1 s, 2=100/120 ½-cycles		UINT16	R/W	
+8		Maximum repetition rate, per evaluation interval	1-10, 0=any		UINT16	R/W	
+9		Evaluation interval	1-60	min	UINT16	R/W	
		Flicker					
+10		Pst period	1-10	min	UINT16	R/W	
+11		Not used			UINT16	R/W	
		Harmonic Voltage					
+12		THD, up to order	25-50		UINT16	R/W	
+13		Harmonics, up to order	25-50		UINT16	R/W	
+14-15		Not used			UINT16	R/W	
		Interharmonic Voltage					
+16		Evaluation	0=disabled, 1=enabled		UINT16	R/W	
+17		THD, up to order	25-50		UINT16	R/W	
+18		Interharmonics, up to order	25-50		UINT16	R/W	
		Mains Signaling Voltage					
+19		Aggregation interval	0=3 s (150/180 cycles), 1=0.2 s (10/12 cycles)		UINT16	R/W	
+20		Evaluation	0=disabled, 1=enabled		UINT16	R/W	
+21		1st signaling frequency	1100-30000	×0.1Hz	UINT16	R/W	
+22		2nd signaling frequency	1100-30000	×0.1Hz	UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+23		3rd signaling frequency	1100-30000	×0.1Hz	UINT16	R/W	
+24		4th signaling frequency	1100-30000	×0.1Hz	UINT16	R/W	
+25		Not used					
		Voltage Events					
+26		Voltage events aggregation interval	0-180	sec	UINT16	R/W	
+27-28		Not used			UINT16	R/W	
		Recording Options					
+29		Recording flagged data	0=disabled, 1=enabled		UINT16	R/W	
+30		Recording coincident currents	0=disabled, 1=enabled		UINT16	R/W	
+31-34		Disturbance direction	0=disabled, 1=enabled		UINT16	R/W	
		Data Monitoring Options					
+35		Harmonics aggregation interval	0=0.2 s (10/12 cycles), 1=3 s (150/180 cycles, 2=10 min, 3=2 h		UINT16	R/W	
+36-41		Not used			UINT16	R/W	
50880-50901		Reserved			UINT16	R/W	
EN 50160 Harmonic Voltage Limits							
50902-50965							
+0		H02 limit	1-10000	×0.01%	UINT16	R/W	
+1		H03 limit	1-10000	×0.01%	UINT16	R/W	
+2		H04 limit	1-10000	×0.01%	UINT16	R/W	
		...					
+48		H50 limit	1-10000	×0.01%	UINT16	R/W	
+49-63		Reserved					
EN 50160 Interharmonic Voltage Limits							
50966-51029							
+0		H02 limit	1-10000	×0.01%	UINT16	R/W	
+1		H03 limit	1-10000	×0.01%	UINT16	R/W	
+2		H04 limit	1-10000	×0.01%	UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
		...					
+48		H50 limit	1-10000	×0.01%	UINT16	R/W	
+49-63		Reserved					
DNP Options Setup							
51158-51183							
+0		Default Binary Input Static object variation	F24 (default 0)		UINT16	R/W	
+1		Binary Input Change object variation	F24 (default 1)		UINT16	R/W	
+2		Default Binary Counter object variation	F24 (default 3)		UINT16	R/W	
+3		Frozen Binary Counter object variation	F24 (default 4)		UINT16	R/W	
+4		Reserved			UINT16	R/W	
+5		Binary Counter Change Event object variation	F24 (default 2)		UINT16	R/W	
+6		Default Analog Input object variation	F24 (default 3)		UINT16	R/W	
+7		Reserved			UINT16	R/W	
+8		Reserved			UINT16	R/W	
+9		Analog Input Change Event object variation	F24 (default 2)		UINT16	R/W	
+10		Re-mapping static point indices for event objects	0=disabled (default), 1=enabled		UINT16	R/W	
+11		16-bit BC scaling	0=×1 (default), 1=×10, 2=×100, 3=×1000		UINT16	R/W	
+12		16-bit AI scaling	0=disabled, 1=enabled		UINT16	R/W	
+13		Number of Analog Input change event points	0 to 43 (default 43)		UINT16	R/W	
+14		Number of Binary Input change event points	0 to 32 (default 21)		UINT16	R/W	
+15		Number of Binary Counter change event points	0 to 16 (default 0)		UINT16	R/W	
+16		Select/Operate Timeout	2 to 30 seconds (default 10 sec)		UINT16	R/W	
+17		Multi Fragment Interval	50 to 500 ms (default 50 ms)		UINT16	R/W	
+18-21		Reserved	Read as 65535		UINT16	R/W	
+22,23		Time Sync Period	1 to 86400 seconds (default 86400 sec), 0=disable time requests		UINT32	R/W	
+24		Voltage scale, secondary volts	60 to 828V (default 828V)		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+25		Current scale, secondary amps	10 to 200 (default CT secondary × CT overload)	×0.1A	UINTEGER16	R/W	
51184-51189		Reserved					
DNP Events Setup							
51190-51445							
+0,1		Threshold/Deadband	See Section 3.5 for point value limits.		UINTEGER32	R/W	A hysteresis for the point return threshold is 0.05Hz for frequency and 2% of the operating threshold for other points
+2		DNP point number	DNP point number available for the selected object		UINTEGER16	R/W	
+3		Event scan control field (bitmap)	Bits 0-1 - DNP Object: 0=none, 1=AI, 2=BI, 3=BC Bit 2 – Object change event scan: 0= disabled, 1=enabled Bits 5-6 - DNP event poll class: 0=Class 1, 1=Class 2, 2=Class 3 Bit 7 – unused Bits 8-9 – Threshold/Deadband relation: 0=Delta, 1=more than (over threshold), 2=less than (under threshold)		UINTEGER16	R/W	If Event log is enabled, the source of a DNP event will be recorded to the device Event log file as a general Setpoint #17.
51190-51193		DNP Event #1					
51194-51197		DNP Event #2					
		...					
51442-51445		DNP Event #64					
51446-51573		Reserved					
DNP Extended Options Setup							

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
51574-51590							
+0-15		Device location	1-31 ASCII characters		CHAR32	R/W	Null-terminated ASCII string
+16		Maximum file directory entries	10-200		UINT16	R/W	
51591-51701		Reserved					
DNP Class 0 Point Assignment							
51702-51797							
+0		DNP object and variation	F25		UINT16	R/W	
+1		Start point number	Start point number for the selected object		UINT16	R/W	
+2		Number of the points in a range	0-128		UINT16	R/W	
51702-51704		DNP Class 0 Points Range 1					
51705-51707		DNP Class 0 Points Range 2					
		...					
51795-51797		DNP Class 0 Points Range 32					
51798-51893		Reserved					
SOE Log Labels							
51894-52149		Reserved					
Fault Log Triggers Setup							
52150-52277		Reserved					
Fault Log Recording Setup							
52278-52341		Reserved					
IEEE 1159 PQ Log Triggers Setup (IEEE 1159 disturbance categories)							
52342-52597							
+0		Threshold, %	0 – 2000	x 0.1%	UINT16	R/W	
+1		Hysteresis, % of threshold	0 – 500	x 0.1%	UINT16	R/W	
+2		Log options, bitmap	Bit 0 – waveform log on event start: 0 = disabled, 1 = enabled; Bit 1 – waveform log on event end: 0 = disabled, 1 = enabled.		UINT16	R/W	
+3		Waveform log number	0-7 = log #1-8		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+4		Data/RMS plot option	0 = disabled, 1 = enabled		UINT16	R/W	
+5		Data log number (factory preset)	13 = log #14		UINT16	R/W	
+6		1/2-cycle RMS plot, cycles before event	0-20	cycle	UINT16	R/W	
+7		1/2-cycle RMS plot, cycles after event	0-20	cycle	UINT16	R/W	
+8		1/2-cycle RMS plot duration, cycles	0-10000	cycle	UINT16	R/W	
+9		0.2-sec envelope RMS plot duration, seconds	0-10000	sec	UINT16	R/W	
+10		3-sec envelope RMS plot duration, minutes	0-10000	min	UINT16	R/W	
+11		10-min envelope RMS plot duration, hours	0-10000	hours	UINT16	R/W	
+12-15		Reserved	0		UINT16	R/W	
52342-52357		Impulsive					
52358-52373		Sag					
52374-52389		Swell					
52390-52405		Interruption					
52406-52421		Volt Unbalance					
52422-52437		Frequency variation					
52438-52453		Harmonics					
52454-52469		Interharmonics					
52470-52597		Reserved					
File Setup							
52598-53877		Block Heading					
+0		File type	0		UINT16	R/W	
+1		File attributes (bitmap)	F3		UINT16	R/W	
+2		Number of records in the file	0-65535, 0 = delete file		UINT16	R/W	
+3		Number of sections/channels in the file	0-32, 0 = non-partitioned file		UINT16	R/W	
+4		Number of parameters per section record	1-64 for conventional data files, 36 - EN 50160:2022 statistics log, 98 - EN 50160:2022 harmonics log,		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
			456 - IEEE 519 compliance statistics log				
+5		Not Used					
+6		Section record size, bytes (for info only)			UINT16	R	
+7		File record size, bytes (for info only)			UINT16	R	
+8,9		Allocated file size, bytes (for info only)			UINT32	R	
52598-52607		Event Log Setup					
52608-52617		Data Log #1 Setup					
52618-52627		Data Log #2 Setup					
52628-52637		Data Log #3 Setup					
52638-52647		Data Log #4 Setup					
52648-52657		Data Log #5 Setup					
52658-52667		Data Log #6 Setup					
52668-52677		Data Log #7 Setup					
52678-52687		Data Log #8 Setup					
52688-52697		Data Log #9 Setup					EN50160 compliance statistics
52698-52707		Data Log #10 Setup					EN50160 harmonic statistics
52708-52717		Data Log #11 Setup					
52718-52727		Data Log #12 Setup					
52728-52737		Data Log #13 Setup					
52738-52747		Data Log #14 Setup					
52748-52757		Data Log #15 Setup					
52758-52767		Data Log #16 Setup					
52768-52777		Waveform Log #1 Setup					
52778-52787		Waveform Log #2 Setup					
52788-52797		Waveform Log #3 Setup					
52798-52807		Waveform Log #4 Setup					
52808-52817		Waveform Log #5 Setup					

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
52818-52827		Waveform Log #6 Setup					Allocated for the transient recorder if the module is present
52828-52837		Waveform Log #7 Setup					
52838-52847		Waveform Log #8 Setup					
52848-52857		Not used					
52858-52867		PQ Log File Setup					
52868-53877		Not used					
Waveform Recorder Setup							
53878-53949							
	+0	Sampling rate, samples per cycle	Regular waveform: 32, 64, 128, 256		UINT16	R/W	
	+1	Number of cycles per series	16-10848 (32 samples/cycle), 8-5424 (64 samples/cycle), 4-2712 (128 samples/cycle), 2-1356 (256 samples/cycle)		UINT16	R/W	
	+3	Recording time mode and number of post-event cycles in event-controlled mode	Bit 15 – mode: 0=fixed time, 1= event-controlled time Bits 0-9 – post-event cycles: 0-2048		UINT16	R/W	
	+4	Number of cycles before trigger	1-20		UINT16	R/W	
	+4,5	File channel mask (channels 1-32), bitmap	F9		UINT32	R/W	
	+6,7	File channel mask (channels 33-64), bitmap	F9		UINT32	R/W	
53878-53885		Waveform Log #1 Setup					
53886-53893		Waveform Log #2 Setup					
53894-53901		Waveform Log #3 Setup					
53902-53909		Waveform Log #4 Setup					
53910-53917		Waveform Log #5 Setup					
53918-53925		Waveform Log #6 Setup					
53926-53933		Waveform Log #7 Setup					
53934-53941		Waveform Log #8 Setup					

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
53942-53949 not used							
Data Log Setup							
54006-55541							
	+0	Data log parameter #1 ID	0x0000-0xFFFF		UINT16	R/W	
	+1	Data log parameter #2 ID	0x0000-0xFFFF		UINT16	R/W	
	+2	Data log parameter #3 ID	0x0000-0xFFFF		UINT16	R/W	
	+3	Data log parameter #4 ID	0x0000-0xFFFF		UINT16	R/W	
	+4	Data log parameter #5 ID	0x0000-0xFFFF		UINT16	R/W	
	+5	Data log parameter #6 ID	0x0000-0xFFFF		UINT16	R/W	
	+6	Data log parameter #7 ID	0x0000-0xFFFF		UINT16	R/W	
	+7	Data log parameter #8 ID	0x0000-0xFFFF		UINT16	R/W	
	+8	Data log parameter #9 ID	0x0000-0xFFFF		UINT16	R/W	
	+9	Data log parameter #10 ID	0x0000-0xFFFF		UINT16	R/W	
	+10	Data log parameter #11 ID	0x0000-0xFFFF		UINT16	R/W	
	+11	Data log parameter #12 ID	0x0000-0xFFFF		UINT16	R/W	
	+12	Data log parameter #13 ID	0x0000-0xFFFF		UINT16	R/W	
	+13	Data log parameter #14 ID	0x0000-0xFFFF		UINT16	R/W	
	+14	Data log parameter #15 ID	0x0000-0xFFFF		UINT16	R/W	
	+15	Data log parameter #16 ID	0x0000-0xFFFF		UINT16	R/W	
	+16-31	Reserved			UINT16	R/W	
54006-54037		Data log #1 Setup					
54038-54069		Data log #2 Setup					
54070-54101		Data log #3 Setup					
54102-54133		Data log #4 Setup					
54134-54165		Data log #5 Setup					
54166-54197		Data log #6 Setup					
54198-54229		Data log #7 Setup					
54230-54261		Data log #8 Setup					
54262-54293		Data log #9 Setup					

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
54294-54325		Data log #10 Setup					
54326-54357		Data log #11 Setup					
54358-54389		Data log #12 Setup					
54390-54421		Data log #13 Setup					
54422-54453		Data log #14 Setup					
54454-54485		Data log #15 Setup					
54486-54517		Data log #16 Setup					
54518-55541 not used							
TOU Daily Profile Setup							
55574-55701							
	+0	1 st tariff change	F10		UINT16	R/W	
	+1	2 nd tariff change	F10		UINT16	R/W	
	+2	3 rd tariff change	F10		UINT16	R/W	
	+3	4 th tariff change	F10		UINT16	R/W	
	+4	5 th tariff change	F10		UINT16	R/W	
	+5	6 th tariff change	F10		UINT16	R/W	
	+6	7 th tariff change	F10		UINT16	R/W	
	+7	8 th tariff change	F10		UINT16	R/W	
55574-55581		Daily profile #1: Season 1, Day type 1					
55582-55589		Daily profile #2: Season 1, Day type 2					
55590-55597		Daily profile #3: Season 1, Day type 3					
55598-55605		Daily profile #4: Season 1, Day type 4					
55606-55613		Daily profile #5: Season 2, Day type 1					
55614-55621		Daily profile #6: Season 2, Day type 2					
55622-55629		Daily profile #7: Season 2, Day type 3					
55630-55637		Daily profile #8: Season 2, Day type 4					
55638-55645		Daily profile #9: Season 3, Day type 1					
55646-55653		Daily profile #10: Season 3, Day type 2					
55654-55661		Daily profile #11: Season 3, Day type 3					

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
55662-55669		Daily profile #12: Season 3, Day type 4					
55670-55677		Daily profile #13: Season 4, Day type 1					
55678-55685		Daily profile #14: Season 4, Day type 2					
55686-55693		Daily profile #15: Season 4, Day type 3					
55694-55701		Daily profile #16: Season 4, Day type 4					
55702-55711		Not used					
TOU Calendar Setup							
55712-56031							
+0-9		Calendar entry record				R/W	
+0		Daily profile (season/day type)	0 = unused entry 1-4 = season 1, day type 0-3 5-8 = season 2, day type 0-3 9-12 = season 3, day type 0-3 13-16 = season 4, day type 0-3 128 = DST period schedule		UINT16	R/W	
+1		Week of month	0=all, 1=1st, 2=2nd, 3=3 rd , 4=4th, 5=last week of the month		UINT16	R/W	
+2		Weekday	0=all, 1-7 (Sun=1, Sat=7)		UINT16	R/W	
+3		Till Weekday	0=all, 1-7 (Sun=1, Sat=7)		UINT16	R/W	
+4		Month	0=all, 1-12=January - December		UINT16	R/W	
+5		Day of month	0=all, 1-31=day 1-31		UINT16	R/W	
+6		Till Month	0=all, 1-12=January - December		UINT16	R/W	
+7		Till Day of month	0=all, 1-31=day 1-31		UINT16	R/W	
+8		Year	0=all, 1-99		UINT16	R/W	
+9		Not used			UINT16	R/W	
55712-55721		Calendar entry #1					
55722-55731		Calendar entry #2					
55732-55741		Calendar entry #3					
...							

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
56182-56191		Calendar entry #48					
Billing/TOU Registers Setup							
56672-56799							
	+0	Not used	0		UINT16	R/W	
	+1	Units of measurement	0=none, 1=kWh, 2=kvarh, 3=kVAh, 4=m ³ , 5=CF (cubic feet), 6=CCF (hundred cubic feet)		UINT16	R/W	
	+2	Flags (bitmap)	Bit 0=1 - TOU enabled Bit 1=1 – Energy usage profile enabled Bit 2=1 - Max. Demand profile enabled Bit 3=1 - Summary (total) profile enabled		UINT16	R/W	
	+3	Not used	0		UINT16	R/W	
56672-56675		Register #1 Setup					
56676-56679		Register #2 Setup					
56680-56683		Register #3 Setup					
		...					
56732-56735		Register #16 Setup					
56736-56799		Not used					
Billing/TOU Registers Source Setup							
56928-57183							
	+0	Energy source ID	F11		UINT16	R/W	
	+1	Target billing/TOU register number	0-31		UINT16	R/W	
	+2,3	Multiplier	0-1000000	×0.001	INT32	R/W	
56928-56931		Energy Source #1					
56932-56935		Energy Source #2					
56936-56939		Energy Source #3					
		...					

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
57180-57183		Energy Source #64					
Control Setpoints Setup (SP1-SP32)							
57184-59103		Setpoints 1-32					
+0		Condition #1: Trigger parameter ID	F12		UINT16	R/W	
+1		Condition #2: Trigger parameter ID	F12		UINT16	R/W	
+2		Condition #3: Trigger parameter ID	F12		UINT16	R/W	
+3		Condition #4: Trigger parameter ID	F12		UINT16	R/W	
+4		Condition #1: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+5		Condition #2: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+6		Condition #3: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+7		Condition #4: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+8		Condition #1: Relational operator	F13		UINT16	R/W	
+9		Condition #2: Relational operator	F13		UINT16	R/W	
+10		Condition #3: Relational operator	F13		UINT16	R/W	
+11		Condition #4: Relational operator	F13		UINT16	R/W	
+12,13		Condition #1: Operate limit			INT32	R/W	
+14,15		Condition #2: Operate limit			INT32	R/W	
+16,17		Condition #3: Operate limit			INT32	R/W	
+18,19		Condition #4: Operate limit			INT32	R/W	
+20,21		Condition #1: Release limit			INT32	R/W	
+22,23		Condition #2: Release limit			INT32	R/W	
+24,25		Condition #3: Release limit			INT32	R/W	
+26,27		Condition #4: Release limit			INT32	R/W	
+28		Action #1: Action ID	F14		UINT16	R/W	
+29		Action #2: Action ID	F14		UINT16	R/W	
+30		Action #3: Action ID	F14		UINT16	R/W	
+31		Action #4: Action ID	F14		UINT16	R/W	
+32,33		Action #1: Parameter value			INT32	R/W	
+34,35		Action #2: Parameter value			INT32	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+36,37		Action #3: Parameter value			INT32	R/W	
+38,39		Action #4: Parameter value			INT32	R/W	
+40,41		Operate delay	0-10000000	0.001 s	UINT32	R/W	
+42,43		Release delay	0-10000000	0.001 s	UINT32	R/W	
+44-59		Not used			UINT16	R/W	
57184-57243		Setpoint #1					
57244-57303		Setpoint #2					
		...					
59044-59103		Setpoint #32					
Control Setpoints Setup (SP1-SP64)							
59104-59177		Setpoints 1-64					
+0		Setpoint number	0-63		UINT16	R/W	Write a setpoint number first before reading following registers
+1		Variation	8		UINT16	R/W	
+2		Condition #1: Trigger parameter ID	F12		UINT16	R/W	
+3		Condition #2: Trigger parameter ID	F12		UINT16	R/W	
+4		Condition #3: Trigger parameter ID	F12		UINT16	R/W	
+5		Condition #4: Trigger parameter ID	F12		UINT16	R/W	
+6		Condition #5: Trigger parameter ID	F12		UINT16	R/W	
+7		Condition #6: Trigger parameter ID	F12		UINT16	R/W	
+8		Condition #7: Trigger parameter ID	F12		UINT16	R/W	
+9		Condition #8: Trigger parameter ID	F12		UINT16	R/W	
+10		Condition #1: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+11		Condition #2: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+12		Condition #3: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+13		Condition #4: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+14		Condition #5: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+15		Condition #6: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+16		Condition #7: Logical operator	0 = OR, 1 = AND		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+17		Condition #8: Logical operator	0 = OR, 1 = AND		UINT16	R/W	
+18		Condition #1: Relational operator	F13		UINT16	R/W	
+19		Condition #2: Relational operator	F13		UINT16	R/W	
+20		Condition #3: Relational operator	F13		UINT16	R/W	
+21		Condition #4: Relational operator	F13		UINT16	R/W	
+22		Condition #5: Relational operator	F13		UINT16	R/W	
+23		Condition #6: Relational operator	F13		UINT16	R/W	
+24		Condition #7: Relational operator	F13		UINT16	R/W	
+25		Condition #8: Relational operator	F13		UINT16	R/W	
+26,27		Condition #1: Operate limit			INT32	R/W	
+28,29		Condition #2: Operate limit			INT32	R/W	
+30,31		Condition #3: Operate limit			INT32	R/W	
+32,33		Condition #4: Operate limit			INT32	R/W	
+34,35		Condition #5: Operate limit			INT32	R/W	
+36,37		Condition #6: Operate limit			INT32	R/W	
+38,39		Condition #7: Operate limit			INT32	R/W	
+40,41		Condition #8: Operate limit			INT32	R/W	
+42,43		Condition #1: Release limit			INT32	R/W	
+44,45		Condition #2: Release limit			INT32	R/W	
+46,47		Condition #3: Release limit			INT32	R/W	
+48,49		Condition #4: Release limit			INT32	R/W	
+50,51		Condition #5: Release limit			INT32	R/W	
+52,53		Condition #6: Release limit			INT32	R/W	
+54,55		Condition #7: Release limit			INT32	R/W	
+56,57		Condition #8: Release limit			INT32	R/W	
+58		Action #1: Action ID	F14		UINT16	R/W	
+59		Action #2: Action ID	F14		UINT16	R/W	
+60		Action #3: Action ID	F14		UINT16	R/W	
+61		Action #4: Action ID	F14		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+62,63		Action #1: Parameter value			INT32	R/W	
+64,65		Action #2: Parameter value			INT32	R/W	
+66,67		Action #3: Parameter value			INT32	R/W	
+68,69		Action #4: Parameter value			INT32	R/W	
+70,71		Operate delay	0-10000000	0.001 s	UINT32	R/W	
+72,73		Release delay	0-10000000	0.001 s	UINT32	R/W	
59178-59253		Not used					
Switching Device Setup							
59255		Not used	0		UINT16	R/W	
59256-59315		Not used	0				
		General			UINT16	R/W	
+0		Not used	0		UINT16	R/W	
+1-3		Not used	0		CHAR6	R/W	
+4		Not used	0		UINT16	R/W	
+5		Not used	0		UINT16	R/W	
		Position Indication					
+6		Not used	0		UINT16	R/W	
+7		Not used	0		UINT16	R/W	
+8		Not used	0		UINT16	R/W	
+9		Not used	0		UINT16	R/W	
+10		Not used	0		UINT16	R/W	
+11		Not used	0		UINT16	R/W	
		Control					
+12		Not used	0		UINT16	R/W	
+13		Not used	0		UINT16	R/W	
+14		Not used	0		UINT16	R/W	
+15		Not used	0		UINT16	R/W	
+16		Not used	0		UINT16	R/W	
+17		Not used	0		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+18		Not used	0		UINT16	R/W	
+19		Not used	0		UINT16	R/W	
+20,21		Not used	0		UINT32	R/W	
+22,23		Not used	0		UINT32	R/W	
+24,25		Not used	0		UINT32	R/W	
+26,27		Not used	0		UINT32	R/W	
+28,29		Not used	0		UINT32	R/W	
+30,31		Not used	0		UINT32	R/W	
		Interlocking					
+32		Not used	0		UINT16	R/W	
+33		Not used	0		UINT16	R/W	
+34		Not used	0		UINT16	R/W	
+35		Not used	0		UINT16	R/W	
+36-59							
Periodic Timers Setup							
61024-61087							
+0,1		Time interval (positive in seconds, negative in cycles)	-100000000 -100000000	0.001 s/c	UINT32	R/W	
61024-61025		Timer #1 Setup		0.001 s/c	UINT32	R/W	
61026-61027		Timer #2 Setup		0.001 s/c	UINT32	R/W	
		...					
61040-61041		Timer #9 Setup		0.001s/c	UINT32	R/W	
61042-61043		Timer #10 Setup (factory preset)	-500 (half-cycle)	0.001cyc	UINT32	R	
61044-61045		Timer #11 Setup (factory preset)	-1000 (one cycle)	0.001cyc	UINT32	R	
61046-61047		Timer #12 Setup (factory preset)	200 (200 ms = 10/12 cycles)	0.001 s	UINT32	R	
61048-61049		Timer #13 Setup (factory preset)	3000 (3 sec = 150/180 cycles)	0.001 s	UINT32	R	
61050-61051		Timer #14 Setup (factory preset)	10000 (10 sec)	0.001 s	UINT32	R	
61052-61053		Timer #15 Setup (factory preset)	600000 (10 min)	0.001 s	UINT32	R	
61054-61055		Timer #16 Setup (factory preset)	7200000 (2 hours)	0.001 s	UINT32	R	
61056-61087		Not used					

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
Counter Source Setup							
61472-61727							
+0		Pulse source ID	F16		UINT16	R/W	
+1		Target counter number	0-31		UINT16	R/W	
+2,3		Multiplier	+/-1-10000		INT32	R/W	
61472-61475		Counter Source #1					
61476-61479		Counter Source #2					
		...					
61724-61727		Counter Source #64					
Digital Inputs Setup DI1-DI26							
61728-61983							
+0		Pulse mode	0 = pulse, 1 = KYZ		UINT16	R/W	
+1		Polarity	Bit 0 – pulse polarity: 0=normal, 1=inverting Bit 1 – input polarity: 0=normal, 1=inverting		UINT16	R/W	
+2		De-bounce time, ms	1-1000		UINT16	R/W	Note 3
+3		Flags	0		UINT16	R/W	
61728-61731		DI1 Setup					
61732-61735		DI2 Setup					
		...					
61828-61831		DI26 Setup					
61832-61983		Not used					
Digital Inputs Setup DI65-DI128							
62752-63007		Not used					
Relay Outputs Setup							
61984-62367							
+0		Operation Mode	0=unlatched, 1=latched, 2=pulse, 3=KYZ		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+1		Flags	Bit 0 – polarity: 0=normal, 1=inverting Bit 1 - retentive mode: 0=disabled, 1=enabled Bit 2 – blocking: 0=unblocked relay, 1=blocked relay Bit 3 – SOE log on output change: 0=disabled, 1=enabled		UINT16	R/W	A blocked relay can only be unblocked by the “unblock relay” setpoint command
+2		Pulse width, ms	1-3000		UINT16	R/W	
+3		Pulse source ID	F17		UINT16	R/W	
+4,5		kWh units per pulse	1-5000000	×0.1	UINT32	R/W	
61984-61989		RO1 Setup					
61990-61995		RO2 Setup					
		...					
62008-62013		RO5 Setup					
Analog Inputs Setup							
62368-62559							
+0		Input parameter ID	0 = input not assigned		UINT16	R/W	
+1		Number of decimal places	0-3		UINT16	R/W	
+2,3		Zero scale value (0/4 mA, 0V)			INT32	R/W	
+4,5		Full scale value (1/20/50 mA, 10V)			INT32	R/W	
62368-62373		AI1 Setup					
62374-62379		AI2 Setup					
		...					
62392-62397		AI15 Setup					
62398-62559		Reserved					
62458-62463		AI16 Setup					
62464-62559		Reserved					
Analog Outputs Setup							
62560-62751							

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+0		Output parameter ID	F18		UINT16	R/W	
+1		Not used	0		UINT16	R/W	
+2,3		Zero scale value (0/4 mA)			INT32	R/W	
+4,5		Full scale value (20/1 mA)			INT32	R/W	
62560-62565		AO1 Setup					
62566-62571		AO2 Setup					
		...					
62602-62607		AO8 Setup					
62608-62751		Reserved					
Display Setup							
48664-48695							
+0		Contrast	1 - 99		UINT16	R/W	
+1		Backlight time	0 = disabled, 1-30	min	UINT16	R/W	
+2		Language	0 = English, 1 = Russian		UINT16	R/W	
+3		Volts resolution	1-3		UINT16	R/W	
+4		Current resolution	1,2		UINT16	R/W	
+5		Power resolution	1-3		UINT16	R/W	
+6		Load bar scale, A	0=CT, 1-50000		UINT16	R/W	
+7-11		Reserved			UINT16	R/W	
+12-17		Custom ID	ID Characters		UINT16	R/W	
+18-31		Reserved					
Common Data Exchange							
47480-47603							
+0		Setup File Type	16-23		UINT16	R/W	
+1		Setup array offset, words	0-578		UINT16	R/W	
+2		Block length, words	0-120		UINT16	R/W	Read as 0
+3		Last block	0=no, 1=yes		UINT16	R/W	Read as 0
+4-123		Setup data [0...119]	According to File Type		UINT16	R/W	

3.8 Expansion I/O Slots Configuration

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
Expansion I/O Slots Configuration Info							
63008-63071		Expansion I/O Slots Configuration Info					
+0		I/O module type	Bitmap		UINT16	R	Note 2
+1		Number of I/Os on the slot	0-32		UINT16	R	
+2		First I/O number on the slot	0-127		UINT16	R	Note 1
+3		Last I/O number on the slot	0-127		UINT16	R	Note 1
63008-63011		I/O Slot #1 Configuration					
63012-63015		I/O Slot #2 Configuration					
63016-63019		I/O Slot #3 Configuration					
63020-63023		I/O Slot #4 Configuration					
63024-63027		Not used					
63028-63031		Not used					
63032-63035		Not used					
63036-63039		Not used					
63040-63043		Not used					
63044-63047		Not used					
63048-63051		Not used					
63052-63055		Not used					
63056-63059		Not used					
63060-63063		Not used					
63064-63071		Reserved					
On-board AI Configuration Info							
63068-63071		On-board AI Configuration Info					
+0		On-board AI type	Bitmap		UINT16	R/W	Note 4
+1		Number of On-board AIs	0-32		UINT16	R	
+2		First On-board AI number	0-127		UINT16	R	Note 1
+3		Last On-board AI number	0-127		UINT16	R	Note 1
Expansion I/O Modules Type Info							

63072-63119		Expansion I/O Modules Type Info					
+0		Number of I/O modules of this type	0-14		UINT16	R	
+1		Total number of I/O's of this type	0-128		UINT16	R	
+2		Not used			UINT16	R	
+3		Not used	0		UINT16	R	
63072-63075		DI Module Type Info					
63076-63079		RO Module Type Info					
63080-63083		AI Module Type Info					
63084-63087		AO Module Type Info					
63088-63119		Reserved					

NOTES:

1. I/O numbers of expansion I/O modules are automatically assigned in the order of connection. The connection order is counted for each I/O module type separately. If the I/O module position is changed but its order in the chain of the modules of the same type is preserved, then all I/Os on the module will retain their I/O numbers. On the dual AI/AO module, both AI and AO will have same logical I/O range.
2. The type of a module in the corresponding slot position, number of I/Os on the module and their I/O numbers can be read through the I/O Slots Configuration Info registers. I/O module type register contains bit-mapped information on the module type and its options in bits D7:D0 as shown in the Table below.

3.8.1 I/O Module Type

Module	Options	D7	D6	D5	D4	D3	D2	D1	D0
8DI		0	0	0	0	1	0	0	0
4DI/2DO		0	0	0	1	0	0	0	0
4AI	±1 mA	0	0	1	0	1	0	0	0
4AI	0-20 mA	0	0	1	0	1	0	0	1
4AI	4-20 mA	0	0	1	0	1	0	1	0
4AI	0-1 mA	0	0	1	0	1	0	1	1
4AI	0-50 mA	0	0	1	0	1	1	0	0
4AI	±10 V	0	0	1	0	1	1	0	1
4AO	±1 mA	0	0	1	1	0	0	0	0
4AO	0-20 mA	0	0	1	1	0	0	0	1
4AO	4-20 mA	0	0	1	1	0	0	1	0
4AO	0-1 mA	0	0	1	1	0	0	1	1
Universal CT	1 A	0	0	1	1	1	0	0	0
Universal CT	5 A	0	0	1	1	1	0	0	1
Universal CT	EXT.CT	0	0	1	1	1	0	1	0
Universal CT	HACS	0	0	1	1	1	0	1	1
Universal CT	PTS	0	0	1	1	1	1	0	0
Universal CT	CURRENT CLAMP	0	0	1	1	1	1	0	1
Ethernet TX		1	0	0	0	0	0	0	1

Module	Options	D7	D6	D5	D4	D3	D2	D1	D0
Profibus (COM5)		1	0	0	0	0	0	1	0
Wireless WiFi (COM5) + BLE		1	0	0	0	0	0	1	1
Wireless Cellular GSM/GPRS Telit (COM5)		1	0	0	0	0	1	0	0
Wireless Cellular Verizon Telit (COM5)		1	0	0	0	0	1	1	0
IRIG-B + RS-422/485 (COM2)		1	0	0	0	0	1	1	1
CANopen		1	0	0	0	1	0	0	0
Empty slot		1	1	1	1	1	1	1	1

3. The same de-bounce time is used for each group of eight adjacent digital inputs. To assign de-bounce time for a group, write the desired value into the setup register for the first DI in the group, e.g., DI1, DI9, DI17 and so on. The device will assign this value to the following seven inputs automatically. Any attempt to change de-bounce time for an input that is not the first in the group will be ignored. No error will occur.

3.9 File Transfer Blocks

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
File Transfer Control Blocks							
63120-63151		File Request Block					
+0		File function	1 = ACK - acknowledgement 3 = set file position 5 = reset file position 7 = find 11 = read file 127 = erase file		UINT16	R/W	1 - clears the file transfer block 3 - changes the file position 5 - sets the file position at the first (oldest) record 7 - finds a record matching an event or/and time (see Note 3) 11 - opens the file for reading from the present file position
+1		File ID	F2		UINT16	R/W	
+2		Section number (functions 3, 5, 11)	0-31, 0xFFFF = use channel ID		UINT16	R/W	
+3		Section channel ID (functions 3, 5, 11)	F6, F7		UINT16	R/W	
+4		Record sequence number (functions 3, 11)	0-65535		UINT16	R/W	The record sequence number with function 11 does not change the file position (see Note 2).
+5		Request variation (function 11)	0, 4		UINT16	R/W	See file response headings
+6		Find key: Event type	F22		UINT16	R/W	Note 3
+7		Find key: Event number	1 - 65535		UINT16	R/W	Note 3
+8, 9		Find key: Start time, seconds since 1/1/1970	F1	sec	UINT32	R/W	Note 3
+10,11		Find key: Start time, fractional seconds in μ sec		μ sec	UINT32	R/W	Note 3
+12,13		Find key: End time, seconds since 1/1/1970	F1	sec	UINT32	R/W	Note 3
+14,15		Find key: End time, fractional seconds in μ sec		μ sec	UINT32	R/W	Note 3
+16-31		Reserved			UINT16	R/W	
63152-64943		File Response Block					
		Data transfer area [0 – 1791]			UINT16	R	
64944-64951		File Info Request Block					
+0		File function	9 = read file info		UINT16	R/W	
+1		File ID	F2		UINT16	R/W	
+2		Section number	0-31, 0xFFFF = use channel ID		UINT16	R/W	
+3		Section channel ID	F6, F7		UINT16	R/W	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+4		Not used	0		UINT16	R/W	
+5		Request variation	0, 1, 2		UINT16	R/W	
+6-7		Reserved			UINT16	R/W	
64952-65151		File Info Response Block					
		Data transfer area [0 - 199]			UINT16	R	

NOTES:

1. File sections for partitioned (multi-section) files, such as TOU profile log files and waveform log files, can be requested either by a section number, or by a section channel ID. If a section number is set to 0xFFFF, the section channel ID will be used to identify the section. The section number will be returned in the response block. If a section number is written, then the corresponding channel ID will be returned in the file response block.
2. The record sequence number with function 11 (Read-File) does not change the file position and is used only as a reference to track the order of records. The file transfer block will continue to hold the same data until it is acknowledged, or until the file position is explicitly moved to another record. For multi-section Waveform files that use a single read pointer for all file sections, the Read-File request, which addresses a different file section, will refill the transfer block with data of the record from the requested file section with the identical sequence number. After acknowledgment, the file position will be moved to the next record.
3. Function 7 (Find) puts into the file request block the sequence number of the first record in the file that matches the event or/and the time. If the file ID is set to 0xFFFF, the device will search for the desired record in the waveform file that is preset by default for the fault and power quality recorders or a setpoint, depending on the event type. The file ID where a record is found is returned in the file response block header. Any one of the find keys can be omitted by setting it to 0. If one or a number of find keys are omitted, the device will use the remaining keys to locate the matching record. If the record could not be found, the device responds to the write request with the exception code 3 (illegal data). The status of the operation can be read through the file status word in the file info block.

3.10 File Response Blocks

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
File Info Response Block (Variation 0 – File info)							
64952-64959		Block Heading					
+0		File function	9		UINT16	R	
+1		File ID	F2		UINT16	R	
+2		Section number	0-31		UINT16	R	
+3		Section channel ID	F6, F7		UINT16	R	
+4		Number of records in the block	1		UINT16	R	
+5		Record size, words	36		UINT16	R	
+6		Request variation	0		UINT16	R	
+7		Reserved	0		UINT16	R	
64960-64997		File Info					
+0		File type	0		UINT16	R	
+1		File attributes	F3		UINT16	R	
+2		File (section) status	F4		UINT16	R	
+3		Number of sections in the file	0-32		UINT16	R	0 = non-partitioned file
+4,5		File channel mask (channels 1-32), bitmap	F8, F9		UINT32	R	
+6,7		File channel mask (channels 33-64), bitmap	F8, F9		UINT32	R	
+8		Number of records in the file	0-65535		UINT16	R	
+9		Number of records until the end of the file	0-65535		UINT16	R	
+10		Current record (read position) sequence number	0-65535		UINT16	R	
+11		Current write position sequence number	0-65535		UINT16	R	
+12		First (oldest) record sequence number	0-65535		UINT16	R	
+13		Last (newest) record sequence number	0-65535		UINT16	R	
+14,15		Last record time, seconds since 1/1/1970	F1	sec	UINT32	R	
+16,17		Last record time, fractional seconds		µsec	UINT32	R	
+18,19		First record time, seconds since 1/1/1970	F1	sec	UINT32	R	
+20,21		First record time, fractional seconds		µsec	UINT32	R	
+22,23		Creation time, seconds since 1/1/1970	F1	sec	UINT32	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+24,25		Creation time, fractional seconds		µsec	UINT32	R	
+26,27		Reset time, seconds since 1/1/1970	F1	sec	UINT32	R	
+28,29		Reset time, fractional seconds		µsec	UINT32	R	
+30		Maximum number of records	0-65535		UINT16	R	
+31		Number of parameters per data section record	0-52		UINT16	R	
+32		Section record size, bytes		Byte	UINT16	R	
+33		File record size, bytes		Byte	UINT16	R	
+34,35		Allocated file size, bytes		Byte	UINT32	R	
File Info Response Block (Variation 1 – Current record info)							
64952-64959		Block Heading					
+0		File function	9		UINT16	R	
+1		File ID	F2		UINT16	R	
+2		Section number	0-31		UINT16	R	
+3		Section channel ID	F6, F7		UINT16	R	
+4		Number of records in the block	1		UINT16	R	
+5		Record size, words	8		UINT16	R	
+6		Request variation	1		UINT16	R	
+7		Reserved	0		UINT16	R	
64960-64997		File Info					
+0		File (section) status	F4		UINT16	R	
+1		Number of records in the file	0-65535		UINT16	R	
+2		Number of records until the end of the file	0-65535		UINT16	R	
+3		Current record (read position) sequence number	0-65535		UINT16	R	
+4,5		Current record time, seconds since 1/1/1970	F1	sec	UINT32	R	
+6,7		Current record time, fractional seconds		µsec	UINT32	R	
File Info Response Block (Variation 2 – Data log record structure)							
64952-64959		Block Heading					
+0		File function	9		UINT16	R	
+1		File ID	1-16		UINT16	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+2		Section number	0-15		UINT16	R	
+3		Section channel ID	F6, F7		UINT16	R	
+4		Number of records in the block	1		UINT16	R	
+5		Record size, words	2 + Number of parameters		UINT16	R	
+6		Request variation	2		UINT16	R	
+7		Reserved	0		UINT16	R	
64960-65151		File Info					
+0		Not used	0		UINT16	R	
+1		Number of fields in a data record	Regular files: 1-16 Special files: EN 50160:2022 Compliance = 36 EN 50160:2022 Harmonics = 98		UINT16	R	
+2		Field 1 parameter ID	0-0xFFFF		UINT16	R	
+3		Field 2 parameter ID	0-0xFFFF		UINT16	R	
...		...					
Event Log Response Block							
63152-63159		Block Heading					
+0		Last file function	1, 3, 5, 11		UINT16	R	
+1		File ID	0		UINT16	R	
+2		Section number	0		UINT16	R	
+3		Section channel ID	0		UINT16	R	
+4		Number of records in the block	1-32		UINT16	R	
+5		Record size, words	12		UINT16	R	
+6		Request variation	0		UINT16	R	
+7		Reserved	0		UINT16	R	
63160-63543		Event Log Records					
+0		Record status	F5		INT16	R	
+1		Record sequence number	0-65535		UINT16	R	
+2, 3		Trigger time, seconds since 1/1/1970	F1	sec	UINT32	R	
+4, 5		Trigger time, fractional seconds in μ sec		μ sec	UINT32	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
	+6	Event number	1-65535		UINT16	R	
	+7	Event point/source ID	F19		UINT16	R	
	+8	Event effect	F20		UINT16	R	
	+9	Reserved	0		UINT16	R	
	+10,11	Value triggered			INT32	R	
63160-63171		Record #1					
		...					
63532-63543		Record #32					
Data Log Response Block							
63152-63159		Block Heading					
	+0	Last file function	1, 3, 5, 11		UINT16	R	
	+1	File ID	1-16 (F2)		UINT16	R	
	+2	Section number	0-31		UINT16	R	
	+3	Section channel ID	F6		UINT16	R	
	+4	Number of records in the block	1-32		UINT16	R	
	+5	Record size, words	8 + 2×Number of parameters		UINT16	R	
	+6	Request variation	0 = regular log, 4 = EN50160 online statistics (with file ID = 9, 10)		UINT16	R	
	+7	Reserved	0		UINT16	R	
63160-64439		Data Log Records					
	+0	Record status	F5		INT16	R	
	+1	Record sequence number	0-65535		UINT16	R	
	+2,3	Record time, seconds since 1/1/1970	F1	sec	UINT32	R	
	+4,5	Record time, fractional seconds in µsec		µsec	UINT32	R	
	+6	Trigger event type	F22		INT16	R	
	+7	Trigger event number	1-65535		UINT16	R	
	+8,9	Log value #1			INT32	R	
	+10,11	Log value #2			INT32	R	
	...	...				R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
63160-...		Record #1 (variable length)					
		...					
		Record #32 (variable length)					
Waveform Log Response Block							
63152-63159		Block Heading					
+0		Last file function	1, 3, 5, 11		UINT16	R	
+1		File ID	17-24, 128 (F2)		UINT16	R	
+2		Section number	0-27		UINT16	R	
+3		Section channel ID	F7		UINT16	R	
+4		Number of records in the block	1		UINT16	R	
+5		Record size, words	640		UINT16	R	
+6		Request variation	0		UINT16	R	
+7		Reserved	0		UINT16	R	
63160-63799		Waveform Log Record					
+0		Record status	F5		INT16	R	
+1		Record sequence number	0 - 65535		UINT16	R	
+2,3		Start time, seconds since 1/1/1970	F1	sec	UINT32	R	
+4,5		Start time, fractional seconds		µsec	UINT32	R	
+6,7		Trigger time, seconds since 1/1/1970	F1	sec	UINT32	R	
+8,9		Trigger time, fractional seconds		µsec	UINT32	R	
+10		Record series number	1-65535		UINT16	R	
+11		Record serial number in a series	0-65535		UINT16	R	
+12		Trigger event type	F22		UINT16	R	
+13		Trigger event number	1-65535		UINT16	R	
+14		Source point ID (generic)	see Generic Data in Section 3.4		UINT16	R	
+15		Trigger reference sample index	0-511		UINT16	R	
+16		Sampling rate, µsec/sample	600-27000	×0.1µsec	UINT16	R	
+17		Sampling rate, samples/cycle	16, 32, 64, 128, 256		UINT16	R	
+18		Sampling frequency	4500-6500	×0.01Hz	UINT16	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+19		Channel offset, sampling units	+/-32767		INT16	R	
+20,21		Channel multiplier, primary units	see Generic Data in Section 3.4		UINT32	R	
+22		Channel divisor, sampling units	2147-16383		UINT16	R	
+23		Length of a sample series, data points	64-512		UINT16	R	
+24		Channel skew	0-1000	µsec	INT16	R	
+25-127		Not used	0		UINT16	R	
+128		Sample Series					
+128-639		Sample data series points [0...511]	+/-16383		INT16	R	¹
Power Quality (PQ) Log Response Block							
63152-63159		Block Heading					
+0		Last file function	1, 3, 5, 11		UINT16	R	
+1		File ID	26		UINT16	R	
+2		Section number	0		UINT16	R	
+3		Section channel ID	0		UINT16	R	
+4		Number of records in the block	1 -32		UINT16	R	
+5		Record size, words	18		UINT16	R	
+6		Request variation	0		UINT16	R	
+7		Reserved	0		UINT16	R	
63160-63799		PQ Log Records					
+0		Record status	F5		INT16	R	
+1		Record sequence number	0-65535		UINT16	R	
+2,3		Start time, seconds since 1/1/1970	F1	sec	UINT32	R	
+4,5		Start time, fractional seconds in µsec		µsec	UINT32	R	
+6,7		End time, seconds since 1/1/1970	F1	sec	UINT32	R	
+8,9		End time, fractional seconds in µsec		µsec	UINT32	R	
+10		PQ event type	F22		UINT16	R	
+11		PQ event number	1-65535		UINT16	R	
+12		Point ID (generic)	see Generic Data in Section 3.4		UINT16	R	
+13		Reserved	0		UINT16	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+14,15		Value reference (base), primary units	see Generic Data in Section 3.4		INT32	R	
+16,17		Value magnitude, primary units	see Generic Data in Section 3.4		INT32	R	
63160-63179		Record #1					
		...					
63780-63799		Record #32					

To restore the original sampled data in the channel units (e.g., Volts, Amps), the following conversion should be applied:

$$\text{Sampled Data [primary units]} = \frac{(\text{Data Sample} - \text{Channel Offset}) \times \text{Channel Multiplier}}{\text{Channel Divisor}}$$

IEEE 519 Compliance Statistics Log Response Block							
Address	Point ID	Description	Option/Range ¹⁰	Units	Type	R/W	Notes
63152-63159		Block Heading					
+0		Last file function	1, 3, 5, 11		UINT16	R	
+1		File ID	28		UINT16	R	
+2		Section number	0 - 16		UINT16	R	
+3		Section channel ID	0		UINT16	R	
+4		Number of records in the block	1		UINT16	R	
+5		Record size, words	920		UINT16	R	
+6		Request variation	0		UINT16	R	
+7		Reserved	0		UINT16	R	
63160-63799		IEEE 519 Harmonics Statistics Log Record Sections (Section #N of Record #M)					
+0		Record status	F5		INT16	R	
+1		Record sequence number	0-109		UINT16	R	
+2,3		Section trigger time (the last second of the day), Seconds since 1/1/2000	F1	sec	UINT32	R	
+4,5		Section trigger time, fractional seconds in µsec		µsec	UINT32	R	
+6		Trigger event type	0x1001 - IEEE 519 Daily event 0x1002 - IEEE 519 Weekly event		UINT16	R	PQE: IEEE 519 Daily/ Weekly event (F22)
+7		Trigger event number	1-65535		UINT16	R	
+8,9	0xCC00	Number of V1 / I1 (Phase A/AB) non-valid intervals during 1 Time-Period	0-65535		UINT32	R	
+10,11	0xCC01	Number of V1 / I1 (Phase A/AB) valid intervals during 1 Time-Period	0-65535		UINT32	R	
+12,13	0xCC80	Number of V1 / I1 (Phase A/AB) interval THD/TDD values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+14,15	0xCC81	Number of V1 / I1 (Phase A/AB) interval H02 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+16,17	0xCC82	Number of V1 / I1 (Phase A/AB) interval H03 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	

+18,19	0xCC83	Number of V1 / I1 (Phase A/AB) interval H04 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+20,21	0xCC84	Number of V1 / I1 (Phase A/AB) interval H05 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+22,23	0xCC85	Number of V1 / I1 (Phase A/AB) interval H06 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+24,25	0xCC86	Number of V1 / I1 (Phase A/AB) interval H07 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+26,27	0xCC87	Number of V1 / I1 (Phase A/AB) interval H08 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+28,29	0xCC88	Number of V1 / I1 (Phase A/AB) interval H09 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+30,31	0xCC89	Number of V1 / I1 (Phase A/AB) interval H10 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+32,33	0xCC8A	Number of V1 / I1 (Phase A/AB) interval H11 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+34,35	0xCC8B	Number of V1 / I1 (Phase A/AB) interval H12 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+36,37	0xCC8C	Number of V1 / I1 (Phase A/AB) interval H13 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+38,39	0xCC8D	Number of V1 / I1 (Phase A/AB) interval H14 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+40,41	0xCC8E	Number of V1 / I1 (Phase A/AB) interval H15 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+42,43	0xCC8F	Number of V1 / I1 (Phase A/AB) interval H16 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+44,45	0xCC90	Number of V1 / I1 (Phase A/AB) interval H17 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+46,47	0xCC91	Number of V1 / I1 (Phase A/AB) interval H18 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+48,49	0xCC92	Number of V1 / I1 (Phase A/AB) interval H19 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+50,51	0xCC93	Number of V1 / I1 (Phase A/AB) interval H20 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+52,53	0xCC94	Number of V1 / I1 (Phase A/AB) interval H21 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+54,55	0xCC95	Number of V1 / I1 (Phase A/AB) interval H22 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+56,57	0xCC96	Number of V1 / I1 (Phase A/AB) interval H23 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+58,59	0xCC97	Number of V1 / I1 (Phase A/AB) interval H24 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+60,61	0xCC98	Number of V1 / I1 (Phase A/AB) interval H25 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+62,63	0xCC99	Number of V1 / I1 (Phase A/AB) interval H26 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+64,65	0xCC9A	Number of V1 / I1 (Phase A/AB) interval H27 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+66,67	0xCC9B	Number of V1 / I1 (Phase A/AB) interval H28 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+68,69	0xCC9C	Number of V1 / I1 (Phase A/AB) interval H29 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+70,71	0xCC9D	Number of V1 / I1 (Phase A/AB) interval H30 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	

+72,73	0xCC9E	Number of V1 / I1 (Phase A/AB) interval H31 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+74,75	0xCC9F	Number of V1 / I1 (Phase A/AB) interval H32 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+76,77	0xCCA0	Number of V1 / I1 (Phase A/AB) interval H33 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+78,79	0xCCA1	Number of V1 / I1 (Phase A/AB) interval H34 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+80,81	0xCCA2	Number of V1 / I1 (Phase A/AB) interval H35 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+82,83	0xCCA3	Number of V1 / I1 (Phase A/AB) interval H36 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+84,85	0xCCA4	Number of V1 / I1 (Phase A/AB) interval H37 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+86,87	0xCCA5	Number of V1 / I1 (Phase A/AB) interval H38 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+88,89	0xCCA6	Number of V1 / I1 (Phase A/AB) interval H39 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+90,91	0xCCA7	Number of V1 / I1 (Phase A/AB) interval H40 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+92,93	0xCCA8	Number of V1 / I1 (Phase A/AB) interval H41 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+94,95	0xCCA9	Number of V1 / I1 (Phase A/AB) interval H42 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+96,97	0xCCAA	Number of V1 / I1 (Phase A/AB) interval H43 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+98,99	0xCCAB	Number of V1 / I1 (Phase A/AB) interval H44 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+100,101	0xCCAC	Number of V1 / I1 (Phase A/AB) interval H45 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+102,103	0xCCAD	Number of V1 / I1 (Phase A/AB) interval H46 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+104,105	0xCCAE	Number of V1 / I1 (Phase A/AB) interval H47 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+106,107	0xCCAF	Number of V1 / I1 (Phase A/AB) interval H48 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+108,109	0xCCB0	Number of V1 / I1 (Phase A/AB) interval H49 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+110,111	0xCCB1	Number of V1 / I1 (Phase A/AB) interval H50 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+112,113	0xCD80	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval THD/TDD during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+114,115	0xCD81	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H02 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+116,117	0xCD82	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H03 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+118,119	0xCD83	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H04 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+120,121	0xCD84	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H05 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+122,123	0xCD85	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H06 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+124,125	0xCD86	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H07 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	

+126,127	0xCD87	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H08 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+128,129	0xCD88	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H09 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+130,131	0xCD89	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H10 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+132,133	0xCD8A	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H11 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+134,135	0xCD8B	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H12 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+136,137	0xCD8C	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H13 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+138,139	0xCD8D	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H14 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+140,141	0xCD8E	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H15 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+142,143	0xCD8F	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H16 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+144,145	0xCD90	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H17 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+146,147	0xCD91	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H18 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+148,149	0xCD92	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H19 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+150,151	0xCD93	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H20 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+152,153	0xCD94	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H21 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+154,155	0xCD95	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H22 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+156,157	0xCD96	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H23 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+158,159	0xCD97	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H24 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+160,161	0xCD98	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H25 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+162,163	0xCD99	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H26 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+164,165	0xCD9A	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H27 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+166,167	0xCD9B	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H28 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+168,169	0xCD9C	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H29 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+170,171	0xCD9D	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H30 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+172,173	0xCD9E	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H31 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+174,175	0xCD9F	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H32 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+176,177	0xCDA0	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H33 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+178,179	0xCDA1	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H34 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	

+180,181	0xCDA2	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H35 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+182,183	0xCDA3	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H36 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+184,185	0xCDA4	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H37 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+186,187	0xCDA5	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H38 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+188,189	0xCDA6	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H39 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+190,191	0xCDA7	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H40 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+192,193	0xCDA8	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H41 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+194,195	0xCDA9	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H42 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+196,197	0xCDA A	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H43 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+198,199	0xCDAB	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H44 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+200,201	0xCDAC	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H45 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+202,203	0xCDAD	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H46 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+204,205	0xCDAE	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H47 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+206,207	0xCDAF	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H48 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+208,209	0xCDB0	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H49 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+210,211	0xCDB1	9x'th percentile value (Max1) of V1 / I1 (Phase A/AB) interval H50 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+212,213	0xCE80	Maximum (Max2) of V1 / I1 (Phase A/AB) interval THD/TDD during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+214,215	0xCE81	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H02 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+216,217	0xCE82	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H03 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+218,219	0xCE83	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H04 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+220,221	0xCE84	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H05 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+222,223	0xCE85	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H06 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+224,225	0xCE86	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H07 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+226,227	0xCE87	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H08 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+228,229	0xCE88	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H09 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+230,231	0xCE89	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H10 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+232,233	0xCE8A	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H11 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	

+234,235	0xCE8B	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H12 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+236,237	0xCE8C	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H13 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+238,239	0xCE8D	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H14 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+240,241	0xCE8E	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H15 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+242,243	0xCE8F	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H16 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+244,245	0xCE90	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H17 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+246,247	0xCE91	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H18 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+248,249	0xCE92	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H19 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+250,251	0xCE93	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H20 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+252,253	0xCE94	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H21 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+254,255	0xCE95	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H22 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+256,257	0xCE96	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H23 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+258,259	0xCE97	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H24 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+260,261	0xCE98	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H25 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+262,263	0xCE99	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H26 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+264,265	0xCE9A	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H27 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+266,267	0xCE9B	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H28 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+268,269	0xCE9C	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H29 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+270,271	0xCE9D	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H30 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+272,273	0xCE9E	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H31 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+274,275	0xCE9F	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H32 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+276,277	0xCEA0	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H33 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+278,279	0xCEA1	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H34 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+280,281	0xCEA2	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H35 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+282,283	0xCEA3	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H36 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+284,285	0xCEA4	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H37 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+286,287	0xCEA5	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H38 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	

+288,289	0xCEA6	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H39 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+290,291	0xCEA7	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H40 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+292,293	0xCEA8	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H41 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+294,295	0xCEA9	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H42 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+296,297	0xCEAA	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H43 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+298,299	0xCEAB	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H44 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+300,301	0xCEAC	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H45 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+302,303	0xCEAD	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H46 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+304,305	0xCEAE	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H47 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+306,307	0xCEAF	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H48 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+308,309	0xCEB0	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H49 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+310,311	0xCEB1	Maximum (Max2) of V1 / I1 (Phase A/AB) interval H50 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+312,313	0xCC02	Number of V2 / I2 (Phase B/BC) non-valid intervals during 1 Time-Period	0-65535		UINT32	R	
+314,315	0xCC03	Number of V2 / I2 (Phase B/BC) valid intervals during 1 Time-Period	0-65535		UINT32	R	
+316,317	0xCF80	Number of V2 / I2 (Phase B/BC) interval THD/TDD values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+318,319	0xCF81	Number of V2 / I2 (Phase B/BC) interval H02 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+320,321	0xCF82	Number of V2 / I2 (Phase B/BC) interval H03 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+322,323	0xCF83	Number of V2 / I2 (Phase B/BC) interval H04 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+324,325	0xCF84	Number of V2 / I2 (Phase B/BC) interval H05 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+326,327	0xCF85	Number of V2 / I2 (Phase B/BC) interval H06 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+328,329	0xCF86	Number of V2 / I2 (Phase B/BC) interval H07 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+330,331	0xCF87	Number of V2 / I2 (Phase B/BC) interval H08 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	

+332,333	0xCF88	Number of V2 / I2 (Phase B/BC) interval H09 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+334,335	0xCF89	Number of V2 / I2 (Phase B/BC) interval H10 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+336,337	0xCF8A	Number of V2 / I2 (Phase B/BC) interval H11 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+338,339	0xCF8B	Number of V2 / I2 (Phase B/BC) interval H12 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+340,341	0xCF8C	Number of V2 / I2 (Phase B/BC) interval H13 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+342,343	0xCF8D	Number of V2 / I2 (Phase B/BC) interval H14 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+344,345	0xCF8E	Number of V2 / I2 (Phase B/BC) interval H15 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+346,347	0xCF8F	Number of V2 / I2 (Phase B/BC) interval H16 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+348,349	0xCF90	Number of V2 / I2 (Phase B/BC) interval H17 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+350,351	0xCF91	Number of V2 / I2 (Phase B/BC) interval H18 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+352,353	0xCF92	Number of V2 / I2 (Phase B/BC) interval H19 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+354,355	0xCF93	Number of V2 / I2 (Phase B/BC) interval H20 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+356,357	0xCF94	Number of V2 / I2 (Phase B/BC) interval H21 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+358,359	0xCF95	Number of V2 / I2 (Phase B/BC) interval H22 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+360,361	0xCF96	Number of V2 / I2 (Phase B/BC) interval H23 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+362,363	0xCF97	Number of V2 / I2 (Phase B/BC) interval H24 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	

+364,365	0xCF98	Number of V2 / I2 (Phase B/BC) interval H25 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+366,367	0xCF99	Number of V2 / I2 (Phase B/BC) interval H26 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+368,369	0xCF9A	Number of V2 / I2 (Phase B/BC) interval H27 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+370,371	0xCF9B	Number of V2 / I2 (Phase B/BC) interval H28 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+372,373	0xCF9C	Number of V2 / I2 (Phase B/BC) interval H29 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+374,375	0xCF9D	Number of V2 / I2 (Phase B/BC) interval H30 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+376,377	0xCF9E	Number of V2 / I2 (Phase B/BC) interval H31 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+378,379	0xCF9F	Number of V2 / I2 (Phase B/BC) interval H32 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+380,381	0xCFA0	Number of V2 / I2 (Phase B/BC) interval H33 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+382,383	0xCFA1	Number of V2 / I2 (Phase B/BC) interval H34 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+384,385	0xCFA2	Number of V2 / I2 (Phase B/BC) interval H35 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+386,387	0xCFA3	Number of V2 / I2 (Phase B/BC) interval H36 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+388,389	0xCFA4	Number of V2 / I2 (Phase B/BC) interval H37 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+390,391	0xCFA5	Number of V2 / I2 (Phase B/BC) interval H38 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+392,393	0xCFA6	Number of V2 / I2 (Phase B/BC) interval H39 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+394,395	0xCFA7	Number of V2 / I2 (Phase B/BC) interval H40 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	

+396,397	0xCFA8	Number of V2 / I2 (Phase B/BC) interval H41 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+398,399	0xCFA9	Number of V2 / I2 (Phase B/BC) interval H42 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+400,401	0xCFAA	Number of V2 / I2 (Phase B/BC) interval H43 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+402,403	0xCFAB	Number of V2 / I2 (Phase B/BC) interval H44 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+404,405	0xCFAC	Number of V2 / I2 (Phase B/BC) interval H45 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+406,407	0xCFAD	Number of V2 / I2 (Phase B/BC) interval H46 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+408,409	0xCFAE	Number of V2 / I2 (Phase B/BC) interval H47 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+410,411	0xCFAF	Number of V2 / I2 (Phase B/BC) interval H48 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+412,413	0xCFB0	Number of V2 / I2 (Phase B/BC) interval H49 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+414,415	0xCFB1	Number of V2 / I2 (Phase B/BC) interval H50 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+416,417	0xD080	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval THD/TDD during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+418,419	0xD081	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H02 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+420,421	0xD082	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H03 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+422,423	0xD083	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H04 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+424,425	0xD084	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H05 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+426,427	0xD085	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H06 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+428,429	0xD086	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H07 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+430,431	0xD087	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H08 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+432,433	0xD088	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H09 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+434,435	0xD089	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H10 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	

+436,437	0xD08A	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H11 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+438,439	0xD08B	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H12 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+440,441	0xD08C	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H13 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+442,443	0xD08D	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H14 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+444,445	0xD08E	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H15 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+446,447	0xD08F	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H16 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+448,449	0xD090	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H17 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+450,451	0xD091	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H18 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+452,453	0xD092	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H19 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+454,455	0xD093	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H20 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+456,457	0xD094	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H21 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+458,459	0xD095	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H22 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+460,461	0xD096	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H23 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+462,463	0xD097	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H24 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+464,465	0xD098	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H25 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+466,467	0xD099	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H26 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+468,469	0xD09A	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H27 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+470,471	0xD09B	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H28 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+472,473	0xD09C	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H29 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+474,475	0xD09D	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H30 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+476,477	0xD09E	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H31 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+478,479	0xD09F	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H32 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+480,481	0xD0A0	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H33 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+482,483	0xD0A1	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H34 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+484,485	0xD0A2	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H35 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+486,487	0xD0A3	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H36 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+488,489	0xD0A4	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H37 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	

+490,491	0xD0A5	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H38 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+492,493	0xD0A6	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H39 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+494,495	0xD0A7	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H40 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+496,497	0xD0A8	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H41 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+498,499	0xD0A9	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H42 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+500,501	0xD0AA	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H43 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+502,503	0xD0AB	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H44 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+504,505	0xD0AC	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H45 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+506,507	0xD0AD	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H46 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+508,509	0xD0AE	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H47 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+510,511	0xD0AF	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H48 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+512,513	0xD0B0	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H49 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+514,515	0xD0B1	9x'th percentile value (Max1) of V2 / I2 (Phase B/BC) interval H50 during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+516,517	0xD180	Maximum (Max2) of V2 / I2 (Phase B/BC) interval THD/TDD during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+518,519	0xD181	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H02 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+520,521	0xD182	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H03 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+522,523	0xD183	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H04 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+524,525	0xD184	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H05 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+526,527	0xD185	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H06 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+528,529	0xD186	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H07 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+530,531	0xD187	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H08 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+532,533	0xD188	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H09 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+534,535	0xD189	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H10 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+536,537	0xD18A	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H11 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+538,539	0xD18B	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H12 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+540,541	0xD18C	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H13 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	
+542,543	0xD18D	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H14 value during 1 Time-Period	0-l-eee519HrmMax	x0.01%	UINT32	R	

+544,545	0xD18E	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H15 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+546,547	0xD18F	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H16 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+548,549	0xD190	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H17 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+550,551	0xD191	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H18 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+552,553	0xD192	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H19 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+554,555	0xD193	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H20 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+556,557	0xD194	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H21 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+558,559	0xD195	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H22 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+560,561	0xD196	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H23 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+562,563	0xD197	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H24 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+564,565	0xD198	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H25 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+566,567	0xD199	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H26 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+568,569	0xD19A	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H27 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+570,571	0xD19B	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H28 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+572,573	0xD19C	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H29 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+574,575	0xD19D	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H30 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+576,577	0xD19E	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H31 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+578,579	0xD19F	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H32 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+580,581	0xD1A0	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H33 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+582,583	0xD1A1	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H34 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+584,585	0xD1A2	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H35 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+586,587	0xD1A3	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H36 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+588,589	0xD1A4	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H37 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+590,591	0xD1A5	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H38 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+592,593	0xD1A6	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H39 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+594,595	0xD1A7	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H40 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+596,597	0xD1A8	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H41 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	

+598,599	0xD1A9	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H42 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+600,601	0xD1AA	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H43 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+602,603	0xD1AB	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H44 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+604,605	0xD1AC	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H45 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+606,607	0xD1AD	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H46 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+608,609	0xD1AE	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H47 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+610,611	0xD1AF	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H48 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+612,613	0xD1B0	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H49 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+614,615	0xD1B1	Maximum (Max2) of V2 / I2 (Phase B/BC) interval H50 value during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+616,617	0xCC04	Number of V3 / I3 (Phase C/CA) non-valid intervals during 1 Time-Period	0-65535		UINT32	R	
+618,619	0xCC05	Number of V3 / I3 (Phase C/CA) valid intervals during 1 Time-Period	0-65535		UINT32	R	
+620,621	0xD280	Number of V3 / I3 (Phase C/CA) interval THD/TDD values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+622,623	0xD281	Number of V3 / I3 (Phase C/CA) interval H02 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+624,625	0xD282	Number of V3 / I3 (Phase C/CA) interval H03 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+626,627	0xD283	Number of V3 / I3 (Phase C/CA) interval H04 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+628,629	0xD284	Number of V3 / I3 (Phase C/CA) interval H05 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+630,631	0xD285	Number of V3 / I3 (Phase C/CA) interval H06 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+632,633	0xD286	Number of V3 / I3 (Phase C/CA) interval H07 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+634,635	0xD287	Number of V3 / I3 (Phase C/CA) interval H08 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+636,637	0xD288	Number of V3 / I3 (Phase C/CA) interval H09 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+638,639	0xD289	Number of V3 / I3 (Phase C/CA) interval H10 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	

+640,641	0xD28A	Number of V3 / I3 (Phase C/CA) interval H11 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+642,643	0xD28B	Number of V3 / I3 (Phase C/CA) interval H12 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+644,645	0xD28C	Number of V3 / I3 (Phase C/CA) interval H13 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+646,647	0xD28D	Number of V3 / I3 (Phase C/CA) interval H14 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+648,649	0xD28E	Number of V3 / I3 (Phase C/CA) interval H15 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+650,651	0xD28F	Number of V3 / I3 (Phase C/CA) interval H16 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+652,653	0xD290	Number of V3 / I3 (Phase C/CA) interval H17 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+654,655	0xD291	Number of V3 / I3 (Phase C/CA) interval H18 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+656,657	0xD292	Number of V3 / I3 (Phase C/CA) interval H19 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+658,659	0xD293	Number of V3 / I3 (Phase C/CA) interval H20 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+660,661	0xD294	Number of V3 / I3 (Phase C/CA) interval H21 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+662,663	0xD295	Number of V3 / I3 (Phase C/CA) interval H22 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+664,665	0xD296	Number of V3 / I3 (Phase C/CA) interval H23 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+666,667	0xD297	Number of V3 / I3 (Phase C/CA) interval H24 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+668,669	0xD298	Number of V3 / I3 (Phase C/CA) interval H25 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+670,671	0xD299	Number of V3 / I3 (Phase C/CA) interval H26 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	

+672,673	0xD29A	Number of V3 / I3 (Phase C/CA) interval H27 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+674,675	0xD29B	Number of V3 / I3 (Phase C/CA) interval H28 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+676,677	0xD29C	Number of V3 / I3 (Phase C/CA) interval H29 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+678,679	0xD29D	Number of V3 / I3 (Phase C/CA) interval H30 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+680,681	0xD29E	Number of V3 / I3 (Phase C/CA) interval H31 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+682,683	0xD29F	Number of V3 / I3 (Phase C/CA) interval H32 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+684,685	0xD2A0	Number of V3 / I3 (Phase C/CA) interval H33 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+686,687	0xD2A1	Number of V3 / I3 (Phase C/CA) interval H34 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+688,689	0xD2A2	Number of V3 / I3 (Phase C/CA) interval H35 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+690,691	0xD2A3	Number of V3 / I3 (Phase C/CA) interval H36 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+692,693	0xD2A4	Number of V3 / I3 (Phase C/CA) interval H37 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+694,695	0xD2A5	Number of V3 / I3 (Phase C/CA) interval H38 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+696,697	0xD2A6	Number of V3 / I3 (Phase C/CA) interval H39 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+698,699	0xD2A7	Number of V3 / I3 (Phase C/CA) interval H40 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+700,701	0xD2A8	Number of V3 / I3 (Phase C/CA) interval H41 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+702,703	0xD2A9	Number of V3 / I3 (Phase C/CA) interval H42 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	

+704,705	0xD2AA	Number of V3 / I3 (Phase C/CA) interval H43 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+706,707	0xD2AB	Number of V3 / I3 (Phase C/CA) interval H44 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+708,709	0xD2AC	Number of V3 / I3 (Phase C/CA) interval H45 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+710,711	0xD2AD	Number of V3 / I3 (Phase C/CA) interval H46 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+712,713	0xD2AE	Number of V3 / I3 (Phase C/CA) interval H47 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+714,715	0xD2AF	Number of V3 / I3 (Phase C/CA) interval H48 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+716,717	0xD2B0	Number of V3 / I3 (Phase C/CA) interval H49 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+718,719	0xD2B1	Number of V3 / I3 (Phase C/CA) interval H50 values exceeding limit during 1 Time-Period	0-65535		UINT32	R	
+720,721	0xD380	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval THD/TDD during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+722,723	0xD381	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H02 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+724,725	0xD382	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H03 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+726,727	0xD383	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H04 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+728,729	0xD384	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H05 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+730,731	0xD385	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H06 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+732,733	0xD386	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H07 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+734,735	0xD387	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H08 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+736,737	0xD388	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H09 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+738,739	0xD389	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H10 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+740,741	0xD38A	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H11 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+742,743	0xD38B	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H12 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+744,745	0xD38C	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H13 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	
+746,747	0xD38D	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H14 during 1 Time-Period	0-1eee519HrmMax	x0.01%	UINT32	R	

+748,749	0xD38E	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H15 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+750,751	0xD38F	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H16 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+752,753	0xD390	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H17 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+754,755	0xD391	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H18 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+756,757	0xD392	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H19 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+758,759	0xD393	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H20 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+760,761	0xD394	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H21 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+762,763	0xD395	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H22 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+764,765	0xD396	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H23 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+766,767	0xD397	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H24 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+768,769	0xD398	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H25 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+770,771	0xD399	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H26 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+772,773	0xD39A	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H27 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+774,775	0xD39B	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H28 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+776,777	0xD39C	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H29 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+778,779	0xD39D	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H30 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+780,781	0xD39E	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H31 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+782,783	0xD39F	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H32 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+784,785	0xD3A0	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H33 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+786,787	0xD3A1	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H34 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+788,789	0xD3A2	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H35 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+790,791	0xD3A3	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H36 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+792,793	0xD3A4	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H37 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+794,795	0xD3A5	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H38 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+796,797	0xD3A6	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H39 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+798,799	0xD3A7	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H40 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+800,801	0xD3A8	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H41 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	

+802,803	0xD3A9	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H42 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+804,805	0xD3AA	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H43 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+806,807	0xD3AB	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H44 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+808,809	0xD3AC	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H45 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+810,811	0xD3AD	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H46 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+812,813	0xD3AE	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H47 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+814,815	0xD3AF	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H48 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+816,817	0xD3B0	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H49 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+818,819	0xD3B1	9x'th percentile value (Max1) of V3 / I3 (Phase C/CA) interval H50 during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+820,821	0xD480	Maximum (Max2) of V3 / I3 (Phase C/CA) interval THD/TDD during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+822,823	0xD481	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H02 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+824,825	0xD482	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H03 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+826,827	0xD483	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H04 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+828,829	0xD484	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H05 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+830,831	0xD485	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H06 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+832,833	0xD486	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H07 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+834,835	0xD487	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H08 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+836,837	0xD488	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H09 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+838,839	0xD489	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H10 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+840,841	0xD48A	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H11 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+842,843	0xD48B	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H12 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+844,845	0xD48C	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H13 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+846,847	0xD48D	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H14 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+848,849	0xD48E	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H15 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+850,851	0xD48F	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H16 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+852,853	0xD490	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H17 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+854,855	0xD491	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H18 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	

+856,857	0xD492	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H19 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+858,859	0xD493	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H20 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+860,861	0xD494	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H21 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+862,863	0xD495	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H22 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+864,865	0xD496	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H23 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+866,867	0xD497	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H24 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+868,869	0xD498	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H25 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+870,871	0xD499	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H26 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+872,873	0xD49A	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H27 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+874,875	0xD49B	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H28 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+876,877	0xD49C	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H29 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+878,879	0xD49D	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H30 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+880,881	0xD49E	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H31 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+882,883	0xD49F	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H32 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+884,885	0xD4A0	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H33 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+886,887	0xD4A1	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H34 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+888,889	0xD4A2	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H35 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+890,891	0xD4A3	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H36 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+892,893	0xD4A4	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H37 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+894,895	0xD4A5	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H38 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+896,897	0xD4A6	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H39 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+898,899	0xD4A7	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H40 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+900,901	0xD4A8	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H41 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+902,903	0xD4A9	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H42 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+904,905	0xD4AA	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H43 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+906,907	0xD4AB	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H44 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+908,909	0xD4AC	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H45 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	

+910,911	0xD4AD	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H46 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+912,913	0xD4AE	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H47 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+914,915	0xD4AF	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H48 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+916,917	0xD4B0	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H49 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	
+918,919	0xD4B1	Maximum (Max2) of V3 / I3 (Phase C/CA) interval H50 value during 1 Time-Period	0-IEEE519HrmMax	x0.01%	UINT32	R	

3.11 File Response Block Alias

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
File Response Block Alias							
3072-3079		Block Heading					
+0		File function	11		UINT16	R	
+1		File ID	0, 25, 26, 27		UINT16	R/W	
+2		Section number	0		UINT16	R	
+3		Section channel ID	0		UINT16	R	
+4		Number of records in the block	1 - 10		UINT16	R/W	Write: sets the block size
+5		Record size, words	18		UINT16	R	
+6		Request variation	0		UINT16	R	
+7		Reserved	0		UINT16	R	
3080-3583		Last 1-10 file records					
Power Quality (PQ) Log Response Block Alias							
3072-3079		Block Heading					
+0		File function	11		UINT16	R	
+1		File ID	26		UINT16	R/W	
+2		Section number	0		UINT16	R	
+3		Section channel ID	0		UINT16	R	
+4		Number of records in the block	1 - 10		UINT16	R/W	Write: sets the block size
+5		Record size, words	18		UINT16	R	
+6		Request variation	0		UINT16	R	
+7		Reserved	0		UINT16	R	
3080-3259		PQ Log Records					
+0		Record status	F5		INT16	R	
+1		Record sequence number	0 - 65535		UINT16	R	
+2,3		Start time, seconds since 1/1/1970	F1	sec	UINT32	R	
+4,5		Start time, fractional seconds in μ sec		μ sec	UINT32	R	
+6,7		End time, seconds since 1/1/1970	F1	sec	UINT32	R	
+8,9		End time, fractional seconds in μ sec		μ sec	UINT32	R	

Address	Point ID	Description	Options/Range	Units	Type	R/W	Notes
+10		PQ event type	F22		UINT16	R	
+11		PQ event number	1 - 65535		UINT16	R	
+12		Point ID (generic)	see Generic Data in Section 3.4		UINT16	R	
+13		Reserved	0		UINT16	R	
+14, 15		Value reference (base), primary units	see Generic Data in Section 3.4		INT32	R	
+16, 17		Value magnitude, primary units	see Generic Data in Section 3.4		INT32	R	
3080-3097		Record #1					
		...					
3242-3259		Record #10					

The block of registers 3072-3583 is the alias for the common file response block. It is intended for continuous polling of the last 1 to 10 records of the event files (Event Log, or PQ Log) from SCADA systems. The alias block is preset at factory to provide access to the last ten PQ Log records. You can change factory assignments to point to another log file or change the number of the records in the transfer block by re-writing of the corresponding registers in the block heading. To update records in the alias block, at least one of the block heading registers 3072-3079 must be read first.

NOTES:

1. Registers 3080-3259 share the same data transfer buffer as the common file transfer block registers 63152-64943. Reading data from the common transfer block within the same connection session can destroy data in the alias transfer block. To guarantee that the alias block contains correct data, always read block heading registers 3072-3079 before accessing data records in the alias block.
2. If you read the block through a TCP connection and change a file ID or the number of records in the block, your assignments for the transfer block will be effective only within the current connection socket. Since the device cannot guarantee that your next connection will be made through the same socket, you should not make any assumptions regarding the present block settings. When you open a new connection, always check the block heading before accessing data records.

¹ When the 4LN3 or 3LN3 wiring mode is selected, the voltages will be line-to-neutral; for any other wiring mode, they will be line-to-line voltages.

3.12 Billing/TOU Daily and Monthly Profile Data Logs

File Channel/Section ¹	Record Field No. ²	Point Label	Point ID	Description	Range	Units ³	Type	Notes
0/0				Energy Register #1				
	1	REG1	0x1780	Summary (total) energy reading	0-999,999,999	U5	UINT32	
	2	TRF1	0x7000	Tariff #1 energy reading	0-999,999,999	U5	UINT32	
	3	TRF2	0x7001	Tariff #2 energy reading	0-999,999,999	U5	UINT32	
	4	TRF3	0x7002	Tariff #3 energy reading	0-999,999,999	U5	UINT32	
	5	TRF4	0x7003	Tariff #4 energy reading	0-999,999,999	U5	UINT32	
	6	TRF5	0x7004	Tariff #5 energy reading	0-999,999,999	U5	UINT32	
	7	TRF6	0x7005	Tariff #6 energy reading	0-999,999,999	U5	UINT32	
	8	TRF7	0x7006	Tariff #7 energy reading	0-999,999,999	U5	UINT32	
	9	TRF8	0x7007	Tariff #8 energy reading	0-999,999,999	U5	UINT32	
	10	TRF9	0x7008	Tariff #9 energy reading	0-999,999,999	U5	UINT32	
	11	TRF10	0x7009	Tariff #10 energy reading	0-999,999,999	U5	UINT32	
	12	TRF11	0x700A	Tariff #11 energy reading	0-999,999,999	U5	UINT32	
	13	TRF12	0x700B	Tariff #12 energy reading	0-999,999,999	U5	UINT32	
	14	TRF13	0x700C	Tariff #13 energy reading	0-999,999,999	U5	UINT32	
	15	TRF14	0x700D	Tariff #14 energy reading	0-999,999,999	U5	UINT32	
	16	TRF15	0x700E	Tariff #15 energy reading	0-999,999,999	U5	UINT32	
	17	TRF16	0x700F	Tariff #16 energy reading	0-999,999,999	U5	UINT32	
...				...				
15/15				Energy Register #16				
	1	REG16	0x178F	Summary (total) energy reading	0-999,999,999	U5	UINT32	
	2	TRF1	0x7000	Tariff #1 energy reading	0-999,999,999	U5	UINT32	
	3	TRF2	0x7001	Tariff #2 energy reading	0-999,999,999	U5	UINT32	
	4	TRF3	0x7002	Tariff #3 energy reading	0-999,999,999	U5	UINT32	
	5	TRF4	0x7003	Tariff #4 energy reading	0-999,999,999	U5	UINT32	
	6	TRF5	0x7004	Tariff #5 energy reading	0-999,999,999	U5	UINT32	
	7	TRF6	0x7005	Tariff #6 energy reading	0-999,999,999	U5	UINT32	
	8	TRF7	0x7006	Tariff #7 energy reading	0-999,999,999	U5	UINT32	

File Channel/Section ¹	Record Field No. ²	Point Label	Point ID	Description	Range	Units ³	Type	Notes
	9	TRF8	0x7007	Tariff #8 energy reading	0-999,999,999	U5	UINT32	
	10	TRF9	0x7008	Tariff #9 energy reading	0-999,999,999	U5	UINT32	
	11	TRF10	0x7009	Tariff #10 energy reading	0-999,999,999	U5	UINT32	
	12	TRF11	0x700A	Tariff #11 energy reading	0-999,999,999	U5	UINT32	
	13	TRF12	0x700B	Tariff #12 energy reading	0-999,999,999	U5	UINT32	
	14	TRF13	0x700C	Tariff #13 energy reading	0-999,999,999	U5	UINT32	
	15	TRF14	0x700D	Tariff #14 energy reading	0-999,999,999	U5	UINT32	
	16	TRF15	0x700E	Tariff #15 energy reading	0-999,999,999	U5	UINT32	
	17	TRF16	0x700F	Tariff #16 energy reading	0-999,999,999	U5	UINT32	
16/16				Maximum Demand Register #1				
	1	REG1 MD	0x4780	Summary (total) max. demand reading	0-Pmax	U3	UINT32	
	2	TRF1 MD	0x7100	Tariff #1 max. demand reading	0-Pmax	U3	UINT32	
	3	TRF2 MD	0x7101	Tariff #2 max. demand reading	0-Pmax	U3	UINT32	
	4	TRF3 MD	0x7102	Tariff #3 max. demand reading	0-Pmax	U3	UINT32	
	5	TRF4 MD	0x7103	Tariff #4 max. demand reading	0-Pmax	U3	UINT32	
	6	TRF5 MD	0x7104	Tariff #5 max. demand reading	0-Pmax	U3	UINT32	
	7	TRF6 MD	0x7105	Tariff #6 max. demand reading	0-Pmax	U3	UINT32	
	8	TRF7 MD	0x7106	Tariff #7 max. demand reading	0-Pmax	U3	UINT32	
	9	TRF8 MD	0x7107	Tariff #8 max. demand reading	0-Pmax	U3	UINT32	
	10	TRF9 MD	0x7108	Tariff #9 max. demand reading	0-Pmax	U3	UINT32	
	11	TRF10 MD	0x7109	Tariff #10 max. demand reading	0-Pmax	U3	UINT32	
	12	TRF11 MD	0x710A	Tariff #11 max. demand reading	0-Pmax	U3	UINT32	
	13	TRF12 MD	0x710B	Tariff #12 max. demand reading	0-Pmax	U3	UINT32	
	14	TRF13 MD	0x710C	Tariff #13 max. demand reading	0-Pmax	U3	UINT32	
	15	TRF14 MD	0x710D	Tariff #14 max. demand reading	0-Pmax	U3	UINT32	
	16	TRF15 MD	0x710E	Tariff #15 max. demand reading	0-Pmax	U3	UINT32	
	17	TRF16 MD	0x710F	Tariff #16 max. demand reading	0-Pmax	U3	UINT32	
...				...				
32/32				Maximum Demand Register #16				

File Channel/Section ¹	Record Field No. ²	Point Label	Point ID	Description	Range	Units ³	Type	Notes
	1	REG16 MD	0x478F	Summary (total) max. demand reading	0-Pmax	U3	UINT32	
	2	TRF1 MD	0x7100	Tariff #1 max. demand reading	0-Pmax	U3	UINT32	
	3	TRF2 MD	0x7101	Tariff #2 max. demand reading	0-Pmax	U3	UINT32	
	4	TRF3 MD	0x7102	Tariff #3 max. demand reading	0-Pmax	U3	UINT32	
	5	TRF4 MD	0x7103	Tariff #4 max. demand reading	0-Pmax	U3	UINT32	
	6	TRF5 MD	0x7104	Tariff #5 max. demand reading	0-Pmax	U3	UINT32	
	7	TRF6 MD	0x7105	Tariff #6 max. demand reading	0-Pmax	U3	UINT32	
	8	TRF7 MD	0x7106	Tariff #7 max. demand reading	0-Pmax	U3	UINT32	
	9	TRF8 MD	0x7107	Tariff #8 max. demand reading	0-Pmax	U3	UINT32	
	10	TRF9 MD	0x7108	Tariff #9 max. demand reading	0-Pmax	U3	UINT32	
	11	TRF10 MD	0x7109	Tariff #10 max. demand reading	0-Pmax	U3	UINT32	
	12	TRF11 MD	0x710A	Tariff #11 max. demand reading	0-Pmax	U3	UINT32	
	13	TRF12 MD	0x710B	Tariff #12 max. demand reading	0-Pmax	U3	UINT32	
	14	TRF13 MD	0x710C	Tariff #13 max. demand reading	0-Pmax	U3	UINT32	
	15	TRF14 MD	0x710D	Tariff #14 max. demand reading	0-Pmax	U3	UINT32	
	16	TRF15 MD	0x710E	Tariff #15 max. demand reading	0-Pmax	U3	UINT32	
	17	TRF16 MD	0x710F	Tariff #16 max. demand reading	0-Pmax	U3	UINT32	

¹An energy use profile section and a maximum demand profile section are allocated for registers for which a source input is selected in the Billing/TOU Register setup and for which energy use profile is enabled. A maximum demand profile section is allocated for registers for which maximum demand profile is enabled in the Billing/TOU Register setup. Not configured sections/channels are not available for download. Refer to the file channel mask in the file info for configured channels.

²The number of parameters in a section is automatically configured depending on the number of actually used tariffs selected in the TOU Daily Profiles.

³For power scale and units, refer to [Chapter 4](#) "Data Scales and Units".

¹⁰ IEEE519HrmMax:

- Voltages: 10000 (percent of fundamental value)
- Currents: 100000 (percent of Max Load Current)

Chapter 4 Data Scales and Units

Code	Condition	Value/Range	Notes
Data Scales			
Vmax		Voltage Scale × PT Ratio, V	2
V4max		Voltage Scale × V4 PT Ratio, V	2
I _{max}		Current Scale × CT Ratio ¹ , A,	3
I _{4max}		Current Scale × I4 CT Ratio ¹ , A,	3
I _{xmax}	1A secondary	20 × CT Ratio ¹ , A (CT card) 40 × CT Ratio ¹ , A (DFRM)	
	5A secondary	100 × CT Ratio ¹ , A (CT card) 200 × CT Ratio ¹ , A (DFRM)	
I _{4xmax}	1A secondary	20 × I4x CT Ratio ¹ , A (CT card) 40 × I4x CT Ratio ¹ , A (DFRM)	
	5A secondary	100 × I4x CT Ratio ¹ , A (CT card) 200 × I4x CT Ratio ¹ , A (DFRM)	
P _{max}	PT Ratio = 1	Vmax × I _{max} × 2, W	4
	PT Ratio > 1	(Vmax × I _{max} × 2)/1000, kW	
Al _{min} Al _{max}	+/-1mA	Al _{min} = -AI full scale × 2 Al _{max} = AI full scale × 2	
	0-20mA	Al _{min} = AI zero scale Al _{max} = AI full scale	
	4-20mA	Al _{min} = AI zero scale Al _{max} = AI full scale	
	0-1mA	Al _{min} = AI zero scale Al _{max} = AI full scale	
	0-50mA	Al _{min} = AI zero scale Al _{max} = AI full scale × 2	
	+/-10V	Al _{min} = -AI full scale Al _{max} = AI full scale	
Data Units			
U1	PT Ratio = 1	0.1V	
	PT Ratio > 1	1V	
U2		0.01A	
U3	PT Ratio = 1	1W/Var/VA	
	PT Ratio > 1	1kW/kvar/kVA	
U4	Not used	Not used	
	Not used	Not used	
U5		0.001, 0.01, 0.1, 1 kWh/kVAh/kvarh (programmable)	5

¹ CT Ratio = CT primary current/CT secondary current

² The default Voltage Scale is 828V. You can change it via the Modbus Setup registers (see Section 3.1) or via the Device Options setup in PAS.

³ The default Current Scale is 4 × CT secondary current for devices with a 400% overload (ANSI) or 2 × CT secondary current for devices with a 200% overload (IEC). You can change it via the Modbus Setup registers (see Section 3.1) or via the Device Options setup in PAS.

⁴ P_{max} is rounded to whole kilowatts. If P_{max} is greater than 9,999,000 W, it is truncated to 9,999,000 W.

⁵ See Energy Decimal Places in the Device Options setup.

Chapter 5 Data Formats

Format Code	Value	Description	Notes
Timestamp			
F1		Local time in a UNIX-style format. Represents the number of seconds since midnight (00:00:00), January 1, 1970. The time is valid after January 1, 2000.	
File ID			
F2	0	Event log	
	1-8, 11-16	Data log #1-#8, #11-#16	
	9	Data log #9 – EN 50160 Compliance Statistics	
	10	Data log #10 – EN 50160 Harmonic Statistics	
	17-24	Waveform log #1-#8	
	25	Not used	
	26	Power quality (PQ) log	
	27	Not used	
	128	Real time waveform capture	
File Attributes			
F3	Bit 0 = 0	Non-wrap file (stop when full)	
	Bit 0 = 1	Wrap-around (circular) file	
	Bit 1 = 1	Fixed (non-changeable) file attributes	
	Bits 4:7 =	Multi-section data log file attributes:	
	0	Regular file	
	1	TOU monthly profile log	Multi-section file
	2	TOU daily profile log	Multi-section file
	3	Not used	Multi-section file
	4	Not used	Multi-section file
	5	Not used	Multi-section file
	6	Not used	Multi-section file
	7	Not used	Multi-section file
	8	Not used	Multi-section file
	9	Not used	Multi-section file
10	Not used	Multi-section file	
File Status Word (bitmap)			
F4	Bit 0 = 1	The last record of the file is being read	
	Bit 8 = 1	File is empty	
	Bit 9 = 1	Reading after EOF	
	Bit 10 = 1	Corrupted record (CRC error)	
	Bit 11 = 1	No file section found for the requested channel	
	Bit 12 = 1	Reading after the end of a data block	

Format Code	Value	Description	Notes
	Bit 13 = 1	File is not accessible	
	Bit 14 = 1	Record not found	
	Bit 15 = 1	Generic read error (with one of the bits 8-14)	
File Record Status Word (bitmap)			
F5	Bit 0 = 1	The last record of the file is being read	
	Bit 8 = 1	File is empty	
	Bit 9 = 1	Reading after EOF	
	Bit 10 = 1	Corrupted record (CRC error)	
	Bit 11 = 1	No file section found for the requested channel	
	Bit 12 = 1	Reading after the end of a data block	
	Bit 13 = 1	File is not accessible	
	Bit 14 = 1	Record not found	
	Bit 15 = 1	Generic read error (with one of the bits 8-14)	
Billing/TOU Profile Log Channel ID			
F6	0-15	Billing/TOU registers #1-#16	
	16-31	Billing/TOU maximum demand registers #1-#16	
Waveform Log Channel ID			
F7	0	V1	1
	1	V2	1
	2	V3	1
	3	Not used	
	4	I1	
	5	I2	
	6	I3	
	7	I4	
	8	Not used	
	9	Not used	
	10	Not used	
	11	Not used	
	12	Not used	
	13	DI1-16	
	14	Not used	
	15	Not used	
	16	AI1	
	17	AI2	
	18	AI3	
19	AI4		

Format Code	Value	Description	Notes
	20	AI5	
	21	Not used	
	22	Not used	
	23	Not used	
	24	Not used	
	25	Not used	
	26	Not used	
	27	Not used	
	28	Not used	
	29	Not used	
	30	Not used	
	31	Not used	
Billing/TOU Profile Log Channel Mask (bitmap)			
F8	Bit 0:15 = 1	Billing/TOU energy registers #1-#16	
	Bit 16:31 = 1	Billing/TOU maximum demand registers #1-#16	
Waveform Log Channel Mask (bitmap)			
F9	Bit 0	Channel V1	1
	Bit 1	Channel V2	1
	Bit 2	Channel V3	1
	Bit 3	Not used	
	Bit 4	Channel I1	
	Bit 5	Channel I2	
	Bit 6	Channel I3	
	Bit 7	Channel I4	
	Bit 8	Not used	
	Bit 9	Not used	
	Bit 10	Not used	
	Bit 11	Not used	
	Bit 12	Not used	
	Bit 13	Channels DI1-16	
	Bit 14	Channels DI17-26	
	Bit 15	Not used	
	Bit 16	Channel AI1	
	Bit 17	Channel AI2	
	Bit 18	Channel AI3	
	Bit 19	Channel AI4	
Bit 20	Channel AI5		

Format Code	Value	Description	Notes
	Bit 21	Not used	
	Bit 22	Not used	
	Bit 23	Not used	
	Bit 24	Not used	
	Bit 25	Not used	
	Bit 26	Not used	
	Bit 27	Not used	
	Bit 28	Not used	
	Bit 29	Not used	
	Bit 30	Not used	
	Bit 31	Not used	
TOU Tariff Change Time			
F10	Bits 8:15 = 0-15	Tariff number #1-#16	
	Bits 2:7 = 0-23	Tariff start hour	
	Bits 0:1 = 0-3	Tariff start quarter of an hour	
Billing Register Source ID			
F11	0x0000	None	
	0x0700-0x077F	Pulse input DI1-DI26	
	0x1700	kWh import	
	0x1701	kWh export	
	0x1702	kWh net	
	0x1703	kWh total	
	0x1704	kvarh import	
	0x1705	kvarh export	
	0x1706	kvarh net	
	0x1707	kvarh total	
	0x1708	kVAh total	
	0x1709	kVAh import	
	0x170A	kVAh export	
	0x170B	kvarh Q1	
	0x170C	kvarh Q2	
	0x170D	kvarh Q3	
	0x170E	kvarh Q4	
	0x1800	kWh L1 import	
	0x1801	kWh L2 import	
	0x1802	kWh L3 import	
0x1809	kWh L1 export		

Format Code	Value	Description	Notes
	0x180A	kWh L2 export	
	0x180B	kWh L3 export	
	0x1803	kvarh L1 import	
	0x1804	kvarh L2 import	
	0x1805	kvarh L3 import	
	0x180C	kvarh L1 export	
	0x180D	kvarh L2 export	
	0x180E	kvarh L3 export	
	0x1806	kVAh L1 total	
	0x1807	kVAh L2 total	
	0x1808	kVAh L3 total	
	0x1780-0x178F	Billing energy register #1-16	
Setpoint Trigger Parameters ID			
F12	0x0000-0xFFFF	Any data point ID excluding energy counters	See Section 3.4
	0x0480-0x048F	External trigger #1-#16 (UDP broadcast trigger message)	
Setpoint Relational Operator			
F13	0 = NONE	No relation (used with pulsed events)	
	1 = GREATER OR EQUAL	Analog value or counter is over the operate limit	
	2 = LESS OR EQUAL	Analog value or counter is under the operate limit	
	3 = EQUAL	Analog value or counter is equal to the operate limit	
	4 = NOT EQUAL	Analog value or counter is not equal to the operate limit	
	5 = ON	Binary status is 1/ON	
	6 = OFF	Binary status is 0/OFF	
	7 = NEW	New Min/Max value logged for the point	
	8 = Delta	The absolute value of the difference between the last reported value and the current value exceeds the specified threshold	
	12 = Delta+	Incremental delta - the positive difference between the current value and the last reported value exceeds the specified threshold	
	13 = Delta-	Decremental delta - the positive difference between the last reported value and the current value exceeds the specified threshold	
14 = rDelta	Relative delta - the absolute value of the difference between the last tested value and the current value exceeds the specified threshold		
15 = rDelta+	Incremental relative delta - the positive difference between the current value and the last tested value exceeds the specified threshold		

Format Code	Value	Description	Notes
	16 = rDelta-	Decremental relative delta - the positive difference between the last tested value and the current value exceeds the specified threshold	
Setpoint Action ID			
F14	0x0000	No action	
	0x2000-0x203F	Set user event flag #1-#64	
	0x2100-0x213F	Clear user event flag #1-#64	
	0x3000-0x303F	Operate relay RO1-RO64	
	0x3100-0x313F	Release latched relay RO1-RO64	
	0x3700-0x373F	Unblock relay RO1-RO64	
	0x3800-0x3807	Unblock direct control port. Lower byte 0-7: 0=all ports, 1=COM1, 2=COM2, 3=COM3, 4=COM4, 5=COM5, 6=USB, 7=Ethernet	
	0x3900-0x3901	Close breaker XCBR1-XCBR2	
	0x3902-0x390F	Close switch XSWI1-XSWI14	
	0x3A00-0x3A01	Open breaker XCBR1-XCBR2	
	0x3A02-0x3A0F	Open switch XSWI1-XSWI14	
	0x4000-0x401F	Increment counter #1-#32	
	0x4100-0x411F	Decrement counter #1-#32	
	0x4200-0x421F	Clear counter #1-#32	
	0x5100	Send event notification	
	0x5300	Remote control	
	0x6000	Reset total energy registers	
	0x6100	Reset total maximum demand registers	
	0x6200	Reset billing summary and TOU energy	
	0x6300	Reset billing summary and TOU maximum demands	
	0x6400	Clear all counters	
	0x6500	Clear Min/Max log registers	
	0x7000	Event log on setpoint operated	
	0x7001	Event log on setpoint released	
	0x7002	Event log on any setpoint transition	
	0x7100-0x710F	Data log 1-16	
	0x7200-0x7207	Waveform Log 1-8	
	0x7400	Not used	
0x8000-0x800F	External trigger #1-#16 (UDP broadcast trigger message)		
Energy Pulse Source ID			
F15	0x0000	None	
	0x0400	kWh Import pulse	

Format Code	Value	Description	Notes
	0x0401	kWh Export pulse	
	0x0402	kWh Total pulse	
	0x0403	kvarh Import pulse	
	0x0404	kvarh Export pulse	
	0x0405	kvarh Total pulse	
	0x0406	kVAh pulse	
Counter Source ID			
F16	0x0000	None	
	0x0700-0x077F	Pulse input DI1-DI26	
Relay Output Pulse Source ID			
F17	0x0000	None	
	0x0400	kWh Import pulse	
	0x0401	kWh Export pulse	
	0x0402	kWh Total pulse	
	0x0403	kvarh Import pulse	
	0x0404	kvarh Export pulse	
	0x0405	kvarh Total pulse	
	0x0406	kVAh pulse	
	0x0407	Start of power demand interval pulse	
	0x0408	Start of tariff interval pulse	
AO Parameters ID (see Section 3.4 for data scales)			
F18	0x0000	None (output disabled)	2
		1-Cycle Phase Values	
	0x0C00	V1 Voltage	
	0x0C01	V2 Voltage	
	0x0C02	V3 Voltage	
	0x0C03	I1 Current	
	0x0C04	I2 Current	
	0x0C05	I3 Current	
	0x0C12	V1 Voltage THD	
	0x0C13	V2 Voltage THD	
	0x0C14	V3 Voltage THD	
	0x0C15	I1 Current THD	
	0x0C16	I2 Current THD	
	0x0C17	I3 Current THD	
	0x0C18	I1 K-Factor	
	0x0C19	I2 K-Factor	

Format Code	Value	Description	Notes
	0x0C1A	I3 K-Factor	
	0x0C1B	I1 Current TDD	
	0x0C1C	I2 Current TDD	
	0x0C1D	I3 Current TDD	
	0x0C1E	V12 Voltage	
	0x0C1F	V23 Voltage	
	0x0C20	V31 Voltage	
		1-Cycle Total Value	
	0x0F00	Total kW	
	0x0F01	Total kvar	
	0x0F02	Total kVA	
	0x0F03	Total PF	
	0x0F04	Total PF Lag	
	0x0F05	Total PF Lead	
		1-Cycle Auxiliary Values	
	0x1000	I4 Current	
	0x1001	In Current	
	0x1002	Frequency	
		1-Sec Phase Values	
	0x1100	V1 Voltage	
	0x1101	V2 Voltage	
	0x1102	V3 Voltage	
	0x1103	I1 Current	
	0x1104	I2 Current	
	0x1105	I3 Current	
	0x111E	V12 Voltage	
	0x111F	V23 Voltage	
	0x1120	V31 Voltage	
		1-Sec Total Values	
	0x1400	Total kW	
	0x1401	Total kvar	
	0x1402	Total kVA	
	0x1403	Total PF	
	0x1404	Total PF Lag	
	0x1405	Total PF Lead	
	0x140A	3-phase average L-N voltage	
	0x140B	3-phase average L-L voltage	

Format Code	Value	Description	Notes
	0x140C	3-phase average current	
		1-Sec Auxiliary Values	
	0x1500	I4 Current	
	0x1501	In Current	
	0x1502	Frequency	
		Present Demands	
	0x160F	Accumulated kW import demand	
	0x1610	Accumulated kvar import demand	
	0x1611	Accumulated kVA demand	
	0x161A	Accumulated kW export demand	
	0x161B	Accumulated kvar export demand	
Event Source/Point ID			
F19	Appendix A	Setpoint Operation Events	
	0x0000-0x59FF	Trigger parameter ID	
	0x6400-0xFFFF	Trigger parameter ID	
		Setpoint Action Events	
	0x5A00-0x5A3F	Setpoint #1-#64	
		Communications Events	
	0x5B00-0x5BFF	Data/Function point ID (low byte, see F21)	
		Self-Check Diagnostics Events	
	0x5D00-0x5DFF	Data/Function point ID (low byte, see F21)	
		Self-Update Events	
	0x5E08	RTC DST/Standard time update	3
		Run-time Error	
	0x6014	Library error	
	0x6015	RTOS Kernel error	
	0x6016	Task error	
		Control Events	
	0x6100	Not used	
	0x6101	Not used	
	0x6102	Not used	
	0x6103	Remote control (Value: 0=OFF, 1=ON)	
		Hardware Diagnostics Events	
	0x6201	Permanent fault	
	0x6202	RAM/Data error	
	0x6203	CPU watchdog reset	
	0x6204	DSP/Sampling fault	

Format Code	Value	Description	Notes
	0x6205	CPU exception	
	0x6206	Reserved	
	0x6207	Software watchdog reset	
	0x620E	Expanded memory fault (Event effect = File ID + 1)	
	0x620F	CPU EEPROM fault	
	0x6210	AC board EEPROM fault	
	0x6211	I/O board EEPROM fault	
		External Events	
	0x6300	Power down	
	0x6308	Power up	
	0x6309	External reset	
	0x6318	IRIG-B signal lost	
	0x6319	IRIG-B time unlocked	
	0x631A	IRIG-B time locked	
	0x6320	SNTP server failed	4
	0x6321	SNTP server reconnected	4
Event Effect ID			
F20		Communications/Self-check/Self-update Events	
	0x0000	None	
	0x6000	Total energy registers cleared	
	0x6100	All total maximum demands cleared	
	0x6101	Power maximum demands cleared	
	0x6102	Volt/Ampere maximum demands cleared	
	0x6103	Volt maximum demands cleared	
	0x6104	Ampere maximum demands cleared	
	0x6105	Harmonic maximum demands cleared	
	0x6200	Billing/TOU registers cleared	
	0x6300	Billing/TOU maximum demand registers cleared	
	0x6400	All counters cleared	
	0x6401-0x641F	Counter cleared (low byte = counter ID)	
	0x6500	Min/Max log cleared	
	0x6A00-0x6A1B	Log file cleared (low byte = File ID)	
	0x6B00	Not used	
	0x6B06	Communication counters cleared	
	0x6B07	Switch operation counters cleared	
	0xF100-0xF11F	Setpoint cleared (low byte = setpoint ID)	
	0xF200	Setup/Data cleared	

Format Code	Value	Description	Notes
	0xF300	Setup reset (set by default)	
	0xF400	Setup changed	
	0xF500	RTC set	3
	0xF600	Device function/option enabled	
	0xF700	Device function/option disabled	
	0xF800	Device function restarted	
	0xF900	Device function stopped	
		Control Events	
	0xA0XX	Position change (bits 0:7=switch number)	
	0xA1XX	Operation activated (bits 0:7=switch number)	
	0xA2XX	Operation terminated (bits 0:7=switch number)	
	0xA3XX	Operation terminated by timeout (bits 0:7=switch number)	
		Setpoint Operation Events	
	0xE100-0xE13F	Setpoint operated (low byte = setpoint ID)	
	0xE200-0xE23F	Setpoint released (low byte = setpoint ID)	
		Setpoint Action Events	
	See F14	Setpoint action ID	
Data/Function Point ID			
		Data Location	
F21	0x03	Data memory	
	0x04	Factory setup	
	0x05	Access/Password setup	
	0x06	Basic setup	
	0x07	Communications setup	
	0x08	Real-time clock	
	0x09	Digital inputs setup	
	0x0A	Pulse counters setup	
	0x0B	AO setup	
	0x0E	Timers setup	
	0x10	Event/alarm setpoints	
	0x11	Pulsing setup	
	0x12	User assignable register map	
	0x13	Reserved	
	0x14	Data log setup	
	0x15	File/Memory setup	
	0x16	Billing/TOU registers setup	
	0x18	TOU daily profiles	

Format Code	Value	Description	Notes
	0x19	TOU calendar	
	0x1D	RO Setup	
	0x1C	User selectable options	
	0x1F	DNP 3.0 class 0 map	
	0x20	DNP 3.0 options setup	
	0x21	DNP 3.0 events setup	
	0x22	DNP 3.0 event setpoints	
	0x23	Calibration registers	
	0x24	Date/Time Setup	
	0x25	Net setup	
	0x26	AI setup	
	0x27	Waveform log setup	
	0x28	PQ log setup	
	0x29	Not used	
	0x2A	Device mode control	
	0x2B-0x2C	Reserved	
	0x2D	Transformer correction setup	
	0x2E	Not used	
	0x2F	Reserved	
	0x30	IEC 60870 setup	
	0x31	Not used	
	0x32	Not used	
		Device Mode/Option	
	0x40	General device operations	
	0x41	Energy test mode	
	0x42	Setpoints mode	
	0x43	PQ recorder	
	0x44	Fault recorder	
		Device Diagnostics	
	0x80	Device diagnostics	
	0x81	Critical error	
Event Type ID			
F22		Setpoint Events	
	0x0000	SP: Generic setpoint event	
	0x0001-0x0040	SP1-SP64: Setpoint #1-#64 event	
		IEEE 1159 PQ Events (IEEE 1159 categories)	
	0x0100	PQE: Generic IEEE1159 PQ event	

Format Code	Value	Description	Notes
	0x0102	PQE11: Impulsive transient	
	0x010C	PQE211: Sag, instantaneous	
	0x010D	PQE212: Swell, instantaneous	
	0x010F	PQE221: Interruption, momentary	
	0x0110	PQE222: Sag, momentary	
	0x0111	PQE223: Swell, momentary	
	0x0113	PQE231: Interruption, temporary	
	0x0114	PQE232: Sag, temporary	
	0x0115	PQE233: Swell, temporary	
	0x0117	PQE31: Interruption, sustained	
	0x0118	PQE32: Undervoltage	
	0x0119	PQE33: Overvoltage	
	0x011A	PQE4: Voltage imbalance	
	0x011D	PQE52: Harmonics	
	0x011E	PQE53: Interharmonics	
	0x0121	Not used	
	0x0122	PQE7: Frequency variation	
		Fault Events	
	0x0200	FE: Generic fault event	
	0x0201	FE1: Zero-sequence current	
	0x0202	FE2: Zero-sequence voltage	
	0x0203	FE3: Current unbalance	
	0x0204	FE4: Voltage unbalance	
	0x0205	FE5: Overcurrent	
	0x0206	FE6: Undervoltage	
	0x0207	FE7: Neutral current (I4)	
		DI Events	
	0x0300	DI: Generic DI event	
	0x0301-0x0380	DI1- DI26: DI1-DI26 event	
		RO Events	
	0x0400	RO: Generic RO event	
	0x0401-0x0407	RO1-RO7: RO1-RO7 event	
		EN 50160:2022 PQ Events (EN 50160 categories)	
	0x0800	PQE: Generic PQ event	
	0x0801	PQE1: Frequency variation	
	0x0802	PQE2: Voltage variation	

Format Code	Value	Description	Notes
	0x0803	PQE3: Rapid voltage change	
	0x0804	PQE4: Flicker	
	0x0805	PQE5: Voltage unbalance	
	0x0806	PQE6: Voltage THD	
	0x0807	PQE7: Harmonic voltage	
	0x0808	PQE8: Interharmonic voltage	
	0x0809	PQE9: Mains signaling voltage	
	0x080A	PQE10: Voltage interruption	
	0x080B	PQE11: Voltage dip	
	0x080C	PQE12: Voltage swell	
	0x080D	PQE13: Transient overvoltage	
		Data Log Events	
	0x0900	Online PQ statistics	
		IEEE 519 Events	
	0x1000	Generic IEEE 519 PQ event	
	0x1001	IEEE 519 Daily event	Last second of the day
	0x1002	IEEE 519 Weekly event	Last second of the week
	0x1010	IEEE 519 PQ event Event - Harmonic Voltage Weekly 95th	PQE519VW95
	0x1011	IEEE 519 PQ event Event - Harmonic Voltage Daily 99th	PQE519VD99
	0x1012	IEEE 519 PQ event Event - Harmonic Current Weekly 95th	PQE519IW95
	0x1013	IEEE 519 PQ event Event - Harmonic Current Weekly 99th	PQE519IW99
	0x1014	IEEE 519 PQ event Event - Harmonic Current Daily 99th	PQE519ID99
	0x1015	IEEE 519 PQ event Event - DC Current	PQE519IDC
Device Diagnostics (bitmap)			
F23	Bit 0 = 1	Critical error	
	Bit 1 = 1	Permanent fault (critical error)	
	Bit 2 = 1	RAM/Data error	
	Bit 3 = 1	CPU watchdog reset	
	Bit 4 = 1	DSP/Sampling fault	
	Bit 5 = 1	CPU exception	
	Bit 6	Reserved	
	Bit 7 = 1	Software watchdog reset	
	Bit 8 = 1	Power down	
	Bit 9 = 1	Device reset	
	Bit 10 = 1	Configuration reset	

Format Code	Value	Description	Notes
	Bit 11 = 1	RTC fault (critical error)	
	Bit 12 = 1	Configuration fault (critical error)	
	Bit 13 = 1	Low battery	
	Bit 14 = 1	Expanded memory fault	
	Bit 15 = 1	CPU EEPROM fault	
	Bit 16 = 1	AC board EEPROM fault	
	Bit 17 = 1	I/O board EEPROM fault	
	Bit 18	Reserved	
	Bit 19	Reserved	
	Bit 20 = 1	C Library error	
	Bit 21 = 1	RTOS Kernel error	
	Bit 22 = 1	Task error	
	Bit 23	Reserved	
	Bit 24 = 1	IRIG-B signal lost	
	Bit 25 = 1	IRIG-B time unlocked	
DNP Object Types			
F24		Binary Input Static Object	
	0	Single-Bit Binary Input	
	1	Binary Input With Status	
		Binary Input Change Event Object	
	0	Binary Input Change Without Time	
	1	Binary Input Change With Time	
		Binary Counter	
	0	32-bit Binary Counter	
	1	32-bit Binary Counter Without Flag	
	2	16-bit Binary Counter	
	3	16-bit Binary Counter Without Flag	
		Binary Counter Change Event	
	0	32-bit Counter Change Event Without Time	
	1	32-bit Counter Change Event With Time	
		16-bit Counter Change Event Without Time	
	3	16-bit Counter Change Event With Time	
		Frozen Binary Counter	
	0	32-bit Frozen Counter	
	1	32-bit Frozen Counter Without Flag	
	2	32-bit Frozen Counter With Time of Freeze	
3	16-bit Frozen Counter		

Format Code	Value	Description	Notes	
	4	16-bit Frozen Counter Without Flag		
	5	16-bit Frozen Counter With Time of Freeze		
		Analog Input		
	0	32-bit Analog Input		
	1	32-bit Analog Input Without Flag		
	2	16-bit Analog Input		
	3	16-bit Analog Input Without Flag		
		Analog Input Change Event		
	0	32-bit Analog Change Event Without Time		
	1	32-bit Analog Change Event With Time		
	2	16-bit Analog Change Event Without Time		
	3	16-bit Analog Change Event With Time		
DNP Class 0 Objects				
F25	0x1E01	Analog Input 30:01		
	0x1E02	Analog Input 30:02		
	0x1E03	Analog Input 30:03		
	0x1E04	Analog Input 30:04		
	0x2801	Analog Output 40:01		
	0x2802	Analog Output 40:02		
	0x0101	Binary Input 01:01		
	0x0102	Binary Input 01:02		
	0x1401	Binary Counter 20:01		
	0x1402	Binary Counter 20:02		
	0x1405	Binary Counter 20:05		
	0x1406	Binary Counter 20:06		
	0x1501	Frozen Counter 21:01		
	0x1502	Frozen Counter 21:02		
	0x1505	Frozen Counter 21:05		
	0x1506	Frozen Counter 21:06		
	0x1509	Frozen Counter 21:09		
	0x150A	Frozen Counter 21:10		
	Wiring Mode			
F26	0	3OP2 - 3-wire open delta using 2 CTs (2 element)		
	1	4LN3 - 4-wire WYE using 3 PTs (3 element), line-to-neutral voltage readings		

Format Code	Value	Description	Notes
	2	3DIR2 - 3-wire direct connection using 2 CTs (2 element)	
	3	4LL3 - 4-wire WYE using 3 PTs (3 element), line-to-line voltage readings	
	4	3OP3 - 3-wire open delta using 3 CTs (2 1/2 element)	
	5	3LN3 - 4-wire WYE using 2 PTs (2 1/2 element), line-to-neutral voltage readings	
	6	3LL3 - 4-wire WYE using 2 PTs (2 1/2 element), line-to-line voltage readings	
	8	3BLN3 - 3-wire broken delta using 2 PTs (2 1/2 element), line-to-neutral voltage readings	
	9	3BLL3 - 3-wire broken delta using 2 PTs (2 1/2 element), line-to-line voltage readings	
IEC 61850 Measured Value Indices (IEC 61850 future release)			
F27	0	Phase voltage	
	1	Auxiliary voltage V4	
	2	Not used	
	3	Phase currents	
	4	Neutral current	
	5	Auxiliary current I4	
	6	Phase currents (extended inputs)	
	7	Neutral current (extended inputs)	
	8	Auxiliary current I4 (extended inputs)	
	9	Voltage sequence	
	10	Current sequence	
	11	Current sequence (extended inputs)	
	12	Voltage unbalance	
	13	Current unbalance	
	14	Active power	
	15	Reactive power	
	16	Active power import/export	
	17	Reactive power import/export	
	18	Apparent power	
	19	Active power demand	
	20	Reactive power demand	
	21	Apparent power demand	
	22	Power factor	
	23	Power factor lag/lead	
24	Frequency		

Format Code	Value	Description	Notes
	25	Voltage THD	
	26	Current THD	
	27	Voltage interharmonic THD	
	28	Current interharmonic THD	
	29	Current TDD	
	30	Current K-factor	
	31	Not used	
	32	Not used	
	33	Analog input #1	
	34	Analog input #2	
	35	Analog input #3	
	36	Analog input #4	
	37	Analog input #5	
	38	Analog input #6	
	39	Analog input #7	
	40	Analog input #8	
	41	Analog input #9	
	42	Analog input #10	
	43	Analog input #11	
	44	Analog input #12	
	45	Analog input #13	
	46	Analog input #14	
	47	Analog input #15	
	48	Analog input #16	
Single Point Info Static Type			
F30	1	M_SP_NA_1	
	2	M_SP_TA_1 (CP24Time2a)	
	30	M_SP_TB_1 (CP56Time2a)	
Single Point Info Event Type			
F31	2	M_SP_TA_1 (CP24Time2a)	
	30	M_SP_TB_1 (CP56Time2a)	
Double Point Info Static Type			
F32	3	M_DP_NA_1	
	4	M_DP_TA_1 (CP24Time2a)	

Format Code	Value	Description	Notes
	31	M_DP_TB_1 (CP56Time2a)	
Double Point Info Event Type			
F33	4	M_DP_TA_1 (CP24Time2a)	
	31	M_DP_TB_1 (CP56Time2a)	
Measured Value Static Type			
F34	9	M_ME_NA_1	
	10	M_ME_NB_1	
	11	M_ME_NC_1	
	12	M_ME_TA_1 (CP24Time2a)	
	13	M_ME_TB_1 (CP24Time2a)	
	14	M_ME_TC_1 (CP24Time2a)	
	34	M_ME_TD_1 (CP56Time2a)	
	35	M_ME_TE_1 (CP56Time2a)	
	36	M_ME_TF_1 (CP56Time2a)	
Measured Value Event Type			
F35	12	M_ME_TA_1 (CP24Time2a)	
	13	M_ME_TB_1 (CP24Time2a)	
	14	M_ME_TC_1 (CP24Time2a)	
	34	M_ME_TD_1 (CP56Time2a)	
	35	M_ME_TE_1 (CP56Time2a)	
	36	M_ME_TF_1 (CP56Time2a)	
Integrated Totals Static Type			
F36	15	M_IT_NA_1	
	16	M_IT_TA_1 (CP24Time2a)	
	37	M_IT_TB_1 (CP56Time2a)	
Integrated Totals Event Type			
F37	16	M_IT_TA_1 (CP24Time2a)	
	37	M_IT_TB_1 (CP56Time2a)	
Factory Device Options (bitmap)			
F38	0	Not used	
	1:15	Not used	
	16:19	Not used	

Format Code	Value	Description	Notes
	20:31	Not used	
IEEE 519 PQ Log Point ID			
F41		Voltage Point IDs - Daily Event	Event Type = 0x1011 (F22)
	0x5A00	V1 H02 Harmonic magnitude (3-Second)	
	0x5A01	V1 H03 Harmonic magnitude (3-Second)	
	0x5A02	V1 H04 Harmonic magnitude (3-Second)	
	0x5A03	V1 H05 Harmonic magnitude (3-Second)	
	0x5A04	V1 H06 Harmonic magnitude (3-Second)	
	0x5A05	V1 H07 Harmonic magnitude (3-Second)	
	0x5A06	V1 H08 Harmonic magnitude (3-Second)	
	0x5A07	V1 H09 Harmonic magnitude (3-Second)	
	0x5A08	V1 H10 Harmonic magnitude (3-Second)	
	0x5A09	V1 H11 Harmonic magnitude (3-Second)	
	0x5A0A	V1 H12 Harmonic magnitude (3-Second)	
	0x5A0B	V1 H13 Harmonic magnitude (3-Second)	
	0x5A0C	V1 H14 Harmonic magnitude (3-Second)	
	0x5A0D	V1 H15 Harmonic magnitude (3-Second)	
	0x5A0E	V1 H16 Harmonic magnitude (3-Second)	
	0x5A0F	V1 H17 Harmonic magnitude (3-Second)	
	0x5A10	V1 H18 Harmonic magnitude (3-Second)	
	0x5A11	V1 H19 Harmonic magnitude (3-Second)	
	0x5A12	V1 H20 Harmonic magnitude (3-Second)	
	0x5A13	V1 H21 Harmonic magnitude (3-Second)	
	0x5A14	V1 H22 Harmonic magnitude (3-Second)	
	0x5A15	V1 H23 Harmonic magnitude (3-Second)	
	0x5A16	V1 H24 Harmonic magnitude (3-Second)	
	0x5A17	V1 H25 Harmonic magnitude (3-Second)	
	0x5A18	V1 H26 Harmonic magnitude (3-Second)	
	0x5A19	V1 H27 Harmonic magnitude (3-Second)	
	0x5A1A	V1 H28 Harmonic magnitude (3-Second)	
	0x5A1B	V1 H29 Harmonic magnitude (3-Second)	
	0x5A1C	V1 H30 Harmonic magnitude (3-Second)	
	0x5A1D	V1 H31 Harmonic magnitude (3-Second)	
	0x5A1E	V1 H32 Harmonic magnitude (3-Second)	
	0x5A1F	V1 H33 Harmonic magnitude (3-Second)	
	0x5A80	V1 H34 Harmonic magnitude (3-Second)	

Format Code	Value	Description	Notes
	0x5A81	V1 H35 Harmonic magnitude (3-Second)	
	0x5A82	V1 H36 Harmonic magnitude (3-Second)	
	0x5A83	V1 H37 Harmonic magnitude (3-Second)	
	0x5A84	V1 H38 Harmonic magnitude (3-Second)	
	0x5A85	V1 H39 Harmonic magnitude (3-Second)	
	0x5A86	V1 H40 Harmonic magnitude (3-Second)	
	0x5A87	V1 H41 Harmonic magnitude (3-Second)	
	0x5A88	V1 H42 Harmonic magnitude (3-Second)	
	0x5A89	V1 H43 Harmonic magnitude (3-Second)	
	0x5A8A	V1 H44 Harmonic magnitude (3-Second)	
	0x5A8B	V1 H45 Harmonic magnitude (3-Second)	
	0x5A8C	V1 H46 Harmonic magnitude (3-Second)	
	0x5A8D	V1 H47 Harmonic magnitude (3-Second)	
	0x5A8E	V1 H48 Harmonic magnitude (3-Second)	
	0x5A8F	V1 H49 Harmonic magnitude (3-Second)	
	0x5A90	V1 H50 Harmonic magnitude (3-Second)	
	0x5A91	V2 H02 Harmonic magnitude (3-Second)	
	0x5A92	V2 H03 Harmonic magnitude (3-Second)	
	0x5A93	V2 H04 Harmonic magnitude (3-Second)	
	0x5A94	V2 H05 Harmonic magnitude (3-Second)	
	0x5A95	V2 H06 Harmonic magnitude (3-Second)	
	0x5A96	V2 H07 Harmonic magnitude (3-Second)	
	0x5A97	V2 H08 Harmonic magnitude (3-Second)	
	0x5A98	V2 H09 Harmonic magnitude (3-Second)	
	0x5A99	V2 H10 Harmonic magnitude (3-Second)	
	0x5A9A	V2 H11 Harmonic magnitude (3-Second)	
	0x5A9B	V2 H12 Harmonic magnitude (3-Second)	
	0x5A9C	V2 H13 Harmonic magnitude (3-Second)	
	0x5A9D	V2 H14 Harmonic magnitude (3-Second)	
	0x5A9E	V2 H15 Harmonic magnitude (3-Second)	
	0x5A9F	V2 H16 Harmonic magnitude (3-Second)	
	0x5B00	V2 H17 Harmonic magnitude (3-Second)	
	0x5B01	V2 H18 Harmonic magnitude (3-Second)	
	0x5B02	V2 H19 Harmonic magnitude (3-Second)	
	0x5B03	V2 H20 Harmonic magnitude (3-Second)	
	0x5B04	V2 H21 Harmonic magnitude (3-Second)	
	0x5B05	V2 H22 Harmonic magnitude (3-Second)	

Format Code	Value	Description	Notes
	0x5B06	V2 H23 Harmonic magnitude (3-Second)	
	0x5B07	V2 H24 Harmonic magnitude (3-Second)	
	0x5B08	V2 H25 Harmonic magnitude (3-Second)	
	0x5B09	V2 H26 Harmonic magnitude (3-Second)	
	0x5B0A	V2 H27 Harmonic magnitude (3-Second)	
	0x5B0B	V2 H28 Harmonic magnitude (3-Second)	
	0x5B0C	V2 H29 Harmonic magnitude (3-Second)	
	0x5B0D	V2 H30 Harmonic magnitude (3-Second)	
	0x5B0E	V2 H31 Harmonic magnitude (3-Second)	
	0x5B0F	V2 H32 Harmonic magnitude (3-Second)	
	0x5B10	V2 H33 Harmonic magnitude (3-Second)	
	0x5B11	V2 H34 Harmonic magnitude (3-Second)	
	0x5B12	V2 H35 Harmonic magnitude (3-Second)	
	0x5B13	V2 H36 Harmonic magnitude (3-Second)	
	0x5B14	V2 H37 Harmonic magnitude (3-Second)	
	0x5B15	V2 H38 Harmonic magnitude (3-Second)	
	0x5B16	V2 H39 Harmonic magnitude (3-Second)	
	0x5B17	V2 H40 Harmonic magnitude (3-Second)	
	0x5B18	V2 H41 Harmonic magnitude (3-Second)	
	0x5B19	V2 H42 Harmonic magnitude (3-Second)	
	0x5B1A	V2 H43 Harmonic magnitude (3-Second)	
	0x5B1B	V2 H44 Harmonic magnitude (3-Second)	
	0x5B1C	V2 H45 Harmonic magnitude (3-Second)	
	0x5B1D	V2 H46 Harmonic magnitude (3-Second)	
	0x5B1E	V2 H47 Harmonic magnitude (3-Second)	
	0x5B1F	V2 H48 Harmonic magnitude (3-Second)	
	0x5B80	V2 H49 Harmonic magnitude (3-Second)	
	0x5B81	V2 H50 Harmonic magnitude (3-Second)	
	0x5B82	V3 H02 Harmonic magnitude (3-Second)	
	0x5B83	V3 H03 Harmonic magnitude (3-Second)	
	0x5B84	V3 H04 Harmonic magnitude (3-Second)	
	0x5B85	V3 H05 Harmonic magnitude (3-Second)	
	0x5B86	V3 H06 Harmonic magnitude (3-Second)	
	0x5B87	V3 H07 Harmonic magnitude (3-Second)	
	0x5B88	V3 H08 Harmonic magnitude (3-Second)	
	0x5B89	V3 H09 Harmonic magnitude (3-Second)	
	0x5B8A	V3 H10 Harmonic magnitude (3-Second)	

Format Code	Value	Description	Notes
	0x5B8B	V3 H11 Harmonic magnitude (3-Second)	
	0x5B8C	V3 H12 Harmonic magnitude (3-Second)	
	0x5B8D	V3 H13 Harmonic magnitude (3-Second)	
	0x5B8E	V3 H14 Harmonic magnitude (3-Second)	
	0x5B8F	V3 H15 Harmonic magnitude (3-Second)	
	0x5B90	V3 H16 Harmonic magnitude (3-Second)	
	0x5B91	V3 H17 Harmonic magnitude (3-Second)	
	0x5B92	V3 H18 Harmonic magnitude (3-Second)	
	0x5B93	V3 H19 Harmonic magnitude (3-Second)	
	0x5B94	V3 H20 Harmonic magnitude (3-Second)	
	0x5B95	V3 H21 Harmonic magnitude (3-Second)	
	0x5B96	V3 H22 Harmonic magnitude (3-Second)	
	0x5B97	V3 H23 Harmonic magnitude (3-Second)	
	0x5B98	V3 H24 Harmonic magnitude (3-Second)	
	0x5B99	V3 H25 Harmonic magnitude (3-Second)	
	0x5B9A	V3 H26 Harmonic magnitude (3-Second)	
	0x5B9B	V3 H27 Harmonic magnitude (3-Second)	
	0x5B9C	V3 H28 Harmonic magnitude (3-Second)	
	0x5B9D	V3 H29 Harmonic magnitude (3-Second)	
	0x5B9E	V3 H30 Harmonic magnitude (3-Second)	
	0x5B9F	V3 H31 Harmonic magnitude (3-Second)	
	0x5C00	V3 H32 Harmonic magnitude (3-Second)	
	0x5C01	V3 H33 Harmonic magnitude (3-Second)	
	0x5C02	V3 H34 Harmonic magnitude (3-Second)	
	0x5C03	V3 H35 Harmonic magnitude (3-Second)	
	0x5C04	V3 H36 Harmonic magnitude (3-Second)	
	0x5C05	V3 H37 Harmonic magnitude (3-Second)	
	0x5C06	V3 H38 Harmonic magnitude (3-Second)	
	0x5C07	V3 H39 Harmonic magnitude (3-Second)	
	0x5C08	V3 H40 Harmonic magnitude (3-Second)	
	0x5C09	V3 H41 Harmonic magnitude (3-Second)	
	0x5C0A	V3 H42 Harmonic magnitude (3-Second)	
	0x5C0B	V3 H43 Harmonic magnitude (3-Second)	
	0x5C0C	V3 H44 Harmonic magnitude (3-Second)	
	0x5C0D	V3 H45 Harmonic magnitude (3-Second)	
	0x5C0E	V3 H46 Harmonic magnitude (3-Second)	
	0x5C0F	V3 H47 Harmonic magnitude (3-Second)	

Format Code	Value	Description	Notes
	0x5C10	V3 H48 Harmonic magnitude (3-Second)	
	0x5C11	V3 H49 Harmonic magnitude (3-Second)	
	0x5C12	V3 H50 Harmonic magnitude (3-Second)	
	0x5C13	V1 THD (3-Second, H02 - H50)	
	0x5C14	V1 THD (3-Second, H02 - H50)	
	0x5C15	V1 THD (3-Second, H02 - H50)	
		Voltage Point IDs - Weekly Event	Event Type = 0x1010 (F22)
	0x5C80	V1 H02 Harmonic magnitude (10-Minute)	
	0x5C81	V1 H03 Harmonic magnitude (10-Minute)	
	0x5C82	V1 H04 Harmonic magnitude (10-Minute)	
	0x5C83	V1 H05 Harmonic magnitude (10-Minute)	
	0x5C84	V1 H06 Harmonic magnitude (10-Minute)	
	0x5C85	V1 H07 Harmonic magnitude (10-Minute)	
	0x5C86	V1 H08 Harmonic magnitude (10-Minute)	
	0x5C87	V1 H09 Harmonic magnitude (10-Minute)	
	0x5C88	V1 H10 Harmonic magnitude (10-Minute)	
	0x5C89	V1 H11 Harmonic magnitude (10-Minute)	
	0x5C8A	V1 H12 Harmonic magnitude (10-Minute)	
	0x5C8B	V1 H13 Harmonic magnitude (10-Minute)	
	0x5C8C	V1 H14 Harmonic magnitude (10-Minute)	
	0x5C8D	V1 H15 Harmonic magnitude (10-Minute)	
	0x5C8E	V1 H16 Harmonic magnitude (10-Minute)	
	0x5C8F	V1 H17 Harmonic magnitude (10-Minute)	
	0x5C90	V1 H18 Harmonic magnitude (10-Minute)	
	0x5C91	V1 H19 Harmonic magnitude (10-Minute)	
	0x5C92	V1 H20 Harmonic magnitude (10-Minute)	
	0x5C93	V1 H21 Harmonic magnitude (10-Minute)	
	0x5C94	V1 H22 Harmonic magnitude (10-Minute)	
	0x5C95	V1 H23 Harmonic magnitude (10-Minute)	
	0x5C96	V1 H24 Harmonic magnitude (10-Minute)	
	0x5C97	V1 H25 Harmonic magnitude (10-Minute)	
	0x5C98	V1 H26 Harmonic magnitude (10-Minute)	
	0x5C99	V1 H27 Harmonic magnitude (10-Minute)	
	0x5C9A	V1 H28 Harmonic magnitude (10-Minute)	
	0x5C9B	V1 H29 Harmonic magnitude (10-Minute)	
	0x5C9C	V1 H30 Harmonic magnitude (10-Minute)	

Format Code	Value	Description	Notes
	0x5C9D	V1 H31 Harmonic magnitude (10-Minute)	
	0x5C9E	V1 H32 Harmonic magnitude (10-Minute)	
	0x5C9F	V1 H33 Harmonic magnitude (10-Minute)	
	0x5D00	V1 H34 Harmonic magnitude (10-Minute)	
	0x5D01	V1 H35 Harmonic magnitude (10-Minute)	
	0x5D02	V1 H36 Harmonic magnitude (10-Minute)	
	0x5D03	V1 H37 Harmonic magnitude (10-Minute)	
	0x5D04	V1 H38 Harmonic magnitude (10-Minute)	
	0x5D05	V1 H39 Harmonic magnitude (10-Minute)	
	0x5D06	V1 H40 Harmonic magnitude (10-Minute)	
	0x5D07	V1 H41 Harmonic magnitude (10-Minute)	
	0x5D08	V1 H42 Harmonic magnitude (10-Minute)	
	0x5D09	V1 H43 Harmonic magnitude (10-Minute)	
	0x5D0A	V1 H44 Harmonic magnitude (10-Minute)	
	0x5D0B	V1 H45 Harmonic magnitude (10-Minute)	
	0x5D0C	V1 H46 Harmonic magnitude (10-Minute)	
	0x5D0D	V1 H47 Harmonic magnitude (10-Minute)	
	0x5D0E	V1 H48 Harmonic magnitude (10-Minute)	
	0x5D0F	V1 H49 Harmonic magnitude (10-Minute)	
	0x5D10	V1 H50 Harmonic magnitude (10-Minute)	
	0x5D11	V2 H02 Harmonic magnitude (10-Minute)	
	0x5D12	V2 H03 Harmonic magnitude (10-Minute)	
	0x5D13	V2 H04 Harmonic magnitude (10-Minute)	
	0x5D14	V2 H05 Harmonic magnitude (10-Minute)	
	0x5D15	V2 H06 Harmonic magnitude (10-Minute)	
	0x5D16	V2 H07 Harmonic magnitude (10-Minute)	
	0x5D17	V2 H08 Harmonic magnitude (10-Minute)	
	0x5D18	V2 H09 Harmonic magnitude (10-Minute)	
	0x5D19	V2 H10 Harmonic magnitude (10-Minute)	
	0x5D1A	V2 H11 Harmonic magnitude (10-Minute)	
	0x5D1B	V2 H12 Harmonic magnitude (10-Minute)	
	0x5D1C	V2 H13 Harmonic magnitude (10-Minute)	
	0x5D1D	V2 H14 Harmonic magnitude (10-Minute)	
	0x5D1E	V2 H15 Harmonic magnitude (10-Minute)	
	0x5D1F	V2 H16 Harmonic magnitude (10-Minute)	
	0x5D80	V2 H17 Harmonic magnitude (10-Minute)	
	0x5D81	V2 H18 Harmonic magnitude (10-Minute)	

Format Code	Value	Description	Notes
	0x5D82	V2 H19 Harmonic magnitude (10-Minute)	
	0x5D83	V2 H20 Harmonic magnitude (10-Minute)	
	0x5D84	V2 H21 Harmonic magnitude (10-Minute)	
	0x5D85	V2 H22 Harmonic magnitude (10-Minute)	
	0x5D86	V2 H23 Harmonic magnitude (10-Minute)	
	0x5D87	V2 H24 Harmonic magnitude (10-Minute)	
	0x5D88	V2 H25 Harmonic magnitude (10-Minute)	
	0x5D89	V2 H26 Harmonic magnitude (10-Minute)	
	0x5D8A	V2 H27 Harmonic magnitude (10-Minute)	
	0x5D8B	V2 H28 Harmonic magnitude (10-Minute)	
	0x5D8C	V2 H29 Harmonic magnitude (10-Minute)	
	0x5D8D	V2 H30 Harmonic magnitude (10-Minute)	
	0x5D8E	V2 H31 Harmonic magnitude (10-Minute)	
	0x5D8F	V2 H32 Harmonic magnitude (10-Minute)	
	0x5D90	V2 H33 Harmonic magnitude (10-Minute)	
	0x5D91	V2 H34 Harmonic magnitude (10-Minute)	
	0x5D92	V2 H35 Harmonic magnitude (10-Minute)	
	0x5D93	V2 H36 Harmonic magnitude (10-Minute)	
	0x5D94	V2 H37 Harmonic magnitude (10-Minute)	
	0x5D95	V2 H38 Harmonic magnitude (10-Minute)	
	0x5D96	V2 H39 Harmonic magnitude (10-Minute)	
	0x5D97	V2 H40 Harmonic magnitude (10-Minute)	
	0x5D98	V2 H41 Harmonic magnitude (10-Minute)	
	0x5D99	V2 H42 Harmonic magnitude (10-Minute)	
	0x5D9A	V2 H43 Harmonic magnitude (10-Minute)	
	0x5D9B	V2 H44 Harmonic magnitude (10-Minute)	
	0x5D9C	V2 H45 Harmonic magnitude (10-Minute)	
	0x5D9D	V2 H46 Harmonic magnitude (10-Minute)	
	0x5D9E	V2 H47 Harmonic magnitude (10-Minute)	
	0x5D9F	V2 H48 Harmonic magnitude (10-Minute)	
	0x5E00	V2 H49 Harmonic magnitude (10-Minute)	
	0x5E01	V2 H50 Harmonic magnitude (10-Minute)	
	0x5E02	V3 H02 Harmonic magnitude (10-Minute)	
	0x5E03	V3 H03 Harmonic magnitude (10-Minute)	
	0x5E04	V3 H04 Harmonic magnitude (10-Minute)	
	0x5E05	V3 H05 Harmonic magnitude (10-Minute)	
	0x5E06	V3 H06 Harmonic magnitude (10-Minute)	

Format Code	Value	Description	Notes
	0x5E07	V3 H07 Harmonic magnitude (10-Minute)	
	0x5E08	V3 H08 Harmonic magnitude (10-Minute)	
	0x5E09	V3 H09 Harmonic magnitude (10-Minute)	
	0x5E0A	V3 H10 Harmonic magnitude (10-Minute)	
	0x5E0B	V3 H11 Harmonic magnitude (10-Minute)	
	0x5E0C	V3 H12 Harmonic magnitude (10-Minute)	
	0x5E0D	V3 H13 Harmonic magnitude (10-Minute)	
	0x5E0E	V3 H14 Harmonic magnitude (10-Minute)	
	0x5E0F	V3 H15 Harmonic magnitude (10-Minute)	
	0x5E10	V3 H16 Harmonic magnitude (10-Minute)	
	0x5E11	V3 H17 Harmonic magnitude (10-Minute)	
	0x5E12	V3 H18 Harmonic magnitude (10-Minute)	
	0x5E13	V3 H19 Harmonic magnitude (10-Minute)	
	0x5E14	V3 H20 Harmonic magnitude (10-Minute)	
	0x5E15	V3 H21 Harmonic magnitude (10-Minute)	
	0x5E16	V3 H22 Harmonic magnitude (10-Minute)	
	0x5E17	V3 H23 Harmonic magnitude (10-Minute)	
	0x5E18	V3 H24 Harmonic magnitude (10-Minute)	
	0x5E19	V3 H25 Harmonic magnitude (10-Minute)	
	0x5E1A	V3 H26 Harmonic magnitude (10-Minute)	
	0x5E1B	V3 H27 Harmonic magnitude (10-Minute)	
	0x5E1C	V3 H28 Harmonic magnitude (10-Minute)	
	0x5E1D	V3 H29 Harmonic magnitude (10-Minute)	
	0x5E1E	V3 H30 Harmonic magnitude (10-Minute)	
	0x5E1F	V3 H31 Harmonic magnitude (10-Minute)	
	0x5E80	V3 H32 Harmonic magnitude (10-Minute)	
	0x5E81	V3 H33 Harmonic magnitude (10-Minute)	
	0x5E82	V3 H34 Harmonic magnitude (10-Minute)	
	0x5E83	V3 H35 Harmonic magnitude (10-Minute)	
	0x5E84	V3 H36 Harmonic magnitude (10-Minute)	
	0x5E85	V3 H37 Harmonic magnitude (10-Minute)	
	0x5E86	V3 H38 Harmonic magnitude (10-Minute)	
	0x5E87	V3 H39 Harmonic magnitude (10-Minute)	
	0x5E88	V3 H40 Harmonic magnitude (10-Minute)	
	0x5E89	V3 H41 Harmonic magnitude (10-Minute)	
	0x5E8A	V3 H42 Harmonic magnitude (10-Minute)	
	0x5E8B	V3 H43 Harmonic magnitude (10-Minute)	

Format Code	Value	Description	Notes
	0x5E8C	V3 H44 Harmonic magnitude (10-Minute)	
	0x5E8D	V3 H45 Harmonic magnitude (10-Minute)	
	0x5E8E	V3 H46 Harmonic magnitude (10-Minute)	
	0x5E8F	V3 H47 Harmonic magnitude (10-Minute)	
	0x5E90	V3 H48 Harmonic magnitude (10-Minute)	
	0x5E91	V3 H49 Harmonic magnitude (10-Minute)	
	0x5E92	V3 H50 Harmonic magnitude (10-Minute)	
	0x5E93	V1 THD (10-Minute H02 - H50)	
	0x5E94	V2 THD (10-Minute, H02 - H50)	
	0x5E95	V3 THD (10-Minute, H02 - H50)	
		DC Current Point IDs - DC Event	Event Type = 0x1015 (F22)
	0x0C3A	I1 DC (200 ms)	
	0x0C3B	I2 DC (200 ms)	
	0x0C3C	I3 DC (200 ms)	
		Current Point IDs - Daily Event	Event Type = 0x1014 (F22)
	0x5F00	I1 H02 Harmonic magnitude (3-Second)	
	0x5F01	I1 H03 Harmonic magnitude (3-Second)	
	0x5F02	I1 H04 Harmonic magnitude (3-Second)	
	0x5F03	I1 H05 Harmonic magnitude (3-Second)	
	0x5F04	I1 H06 Harmonic magnitude (3-Second)	
	0x5F05	I1 H07 Harmonic magnitude (3-Second)	
	0x5F06	I1 H08 Harmonic magnitude (3-Second)	
	0x5F07	I1 H09 Harmonic magnitude (3-Second)	
	0x5F08	I1 H10 Harmonic magnitude (3-Second)	
	0x5F09	I1 H11 Harmonic magnitude (3-Second)	
	0x5F0A	I1 H12 Harmonic magnitude (3-Second)	
	0x5F0B	I1 H13 Harmonic magnitude (3-Second)	
	0x5F0C	I1 H14 Harmonic magnitude (3-Second)	
	0x5F0D	I1 H15 Harmonic magnitude (3-Second)	
	0x5F0E	I1 H16 Harmonic magnitude (3-Second)	
	0x5F0F	I1 H17 Harmonic magnitude (3-Second)	
	0x5F10	I1 H18 Harmonic magnitude (3-Second)	
	0x5F11	I1 H19 Harmonic magnitude (3-Second)	
	0x5F12	I1 H20 Harmonic magnitude (3-Second)	
	0x5F13	I1 H21 Harmonic magnitude (3-Second)	

Format Code	Value	Description	Notes
	0x5F14	I1 H22 Harmonic magnitude (3-Second)	
	0x5F15	I1 H23 Harmonic magnitude (3-Second)	
	0x5F16	I1 H24 Harmonic magnitude (3-Second)	
	0x5F17	I1 H25 Harmonic magnitude (3-Second)	
	0x5F18	I1 H26 Harmonic magnitude (3-Second)	
	0x5F19	I1 H27 Harmonic magnitude (3-Second)	
	0x5F1A	I1 H28 Harmonic magnitude (3-Second)	
	0x5F1B	I1 H29 Harmonic magnitude (3-Second)	
	0x5F1C	I1 H30 Harmonic magnitude (3-Second)	
	0x5F1D	I1 H31 Harmonic magnitude (3-Second)	
	0x5F1E	I1 H32 Harmonic magnitude (3-Second)	
	0x5F1F	I1 H33 Harmonic magnitude (3-Second)	
	0x5F80	I1 H34 Harmonic magnitude (3-Second)	
	0x5F81	I1 H35 Harmonic magnitude (3-Second)	
	0x5F82	I1 H36 Harmonic magnitude (3-Second)	
	0x5F83	I1 H37 Harmonic magnitude (3-Second)	
	0x5F84	I1 H38 Harmonic magnitude (3-Second)	
	0x5F85	I1 H39 Harmonic magnitude (3-Second)	
	0x5F86	I1 H40 Harmonic magnitude (3-Second)	
	0x5F87	I1 H41 Harmonic magnitude (3-Second)	
	0x5F88	I1 H42 Harmonic magnitude (3-Second)	
	0x5F89	I1 H43 Harmonic magnitude (3-Second)	
	0x5F8A	I1 H44 Harmonic magnitude (3-Second)	
	0x5F8B	I1 H45 Harmonic magnitude (3-Second)	
	0x5F8C	I1 H46 Harmonic magnitude (3-Second)	
	0x5F8D	I1 H47 Harmonic magnitude (3-Second)	
	0x5F8E	I1 H48 Harmonic magnitude (3-Second)	
	0x5F8F	I1 H49 Harmonic magnitude (3-Second)	
	0x5F90	I1 H50 Harmonic magnitude (3-Second)	
	0x5F91	I2 H02 Harmonic magnitude (3-Second)	
	0x5F92	I2 H03 Harmonic magnitude (3-Second)	
	0x5F93	I2 H04 Harmonic magnitude (3-Second)	
	0x5F94	I2 H05 Harmonic magnitude (3-Second)	
	0x5F95	I2 H06 Harmonic magnitude (3-Second)	
	0x5F96	I2 H07 Harmonic magnitude (3-Second)	
	0x5F97	I2 H08 Harmonic magnitude (3-Second)	
	0x5F98	I2 H09 Harmonic magnitude (3-Second)	

Format Code	Value	Description	Notes
	0x5F99	I2 H10 Harmonic magnitude (3-Second)	
	0x5F9A	I2 H11 Harmonic magnitude (3-Second)	
	0x5F9B	I2 H12 Harmonic magnitude (3-Second)	
	0x5F9C	I2 H13 Harmonic magnitude (3-Second)	
	0x5F9D	I2 H14 Harmonic magnitude (3-Second)	
	0x5F9E	I2 H15 Harmonic magnitude (3-Second)	
	0x5F9F	I2 H16 Harmonic magnitude (3-Second)	
	0x6000	I2 H17 Harmonic magnitude (3-Second)	
	0x6001	I2 H18 Harmonic magnitude (3-Second)	
	0x6002	I2 H19 Harmonic magnitude (3-Second)	
	0x6003	I2 H20 Harmonic magnitude (3-Second)	
	0x6004	I2 H21 Harmonic magnitude (3-Second)	
	0x6005	I2 H22 Harmonic magnitude (3-Second)	
	0x6006	I2 H23 Harmonic magnitude (3-Second)	
	0x6007	I2 H24 Harmonic magnitude (3-Second)	
	0x6008	I2 H25 Harmonic magnitude (3-Second)	
	0x6009	I2 H26 Harmonic magnitude (3-Second)	
	0x600A	I2 H27 Harmonic magnitude (3-Second)	
	0x600B	I2 H28 Harmonic magnitude (3-Second)	
	0x600C	I2 H29 Harmonic magnitude (3-Second)	
	0x600D	I2 H30 Harmonic magnitude (3-Second)	
	0x600E	I2 H31 Harmonic magnitude (3-Second)	
	0x600F	I2 H32 Harmonic magnitude (3-Second)	
	0x6010	I2 H33 Harmonic magnitude (3-Second)	
	0x6011	I2 H34 Harmonic magnitude (3-Second)	
	0x6012	I2 H35 Harmonic magnitude (3-Second)	
	0x6013	I2 H36 Harmonic magnitude (3-Second)	
	0x6014	I2 H37 Harmonic magnitude (3-Second)	
	0x6015	I2 H38 Harmonic magnitude (3-Second)	
	0x6016	I2 H39 Harmonic magnitude (3-Second)	
	0x6017	I2 H40 Harmonic magnitude (3-Second)	
	0x6018	I2 H41 Harmonic magnitude (3-Second)	
	0x6019	I2 H42 Harmonic magnitude (3-Second)	
	0x601A	I2 H43 Harmonic magnitude (3-Second)	
	0x601B	I2 H44 Harmonic magnitude (3-Second)	
	0x601C	I2 H45 Harmonic magnitude (3-Second)	
	0x601D	I2 H46 Harmonic magnitude (3-Second)	

Format Code	Value	Description	Notes
	0x601E	I2 H47 Harmonic magnitude (3-Second)	
	0x601F	I2 H48 Harmonic magnitude (3-Second)	
	0x6080	I2 H49 Harmonic magnitude (3-Second)	
	0x6081	I2 H50 Harmonic magnitude (3-Second)	
	0x6082	I3 H02 Harmonic magnitude (3-Second)	
	0x6083	I3 H03 Harmonic magnitude (3-Second)	
	0x6084	I3 H04 Harmonic magnitude (3-Second)	
	0x6085	I3 H05 Harmonic magnitude (3-Second)	
	0x6086	I3 H06 Harmonic magnitude (3-Second)	
	0x6087	I3 H07 Harmonic magnitude (3-Second)	
	0x6088	I3 H08 Harmonic magnitude (3-Second)	
	0x6089	I3 H09 Harmonic magnitude (3-Second)	
	0x608A	I3 H10 Harmonic magnitude (3-Second)	
	0x608B	I3 H11 Harmonic magnitude (3-Second)	
	0x608C	I3 H12 Harmonic magnitude (3-Second)	
	0x608D	I3 H13 Harmonic magnitude (3-Second)	
	0x608E	I3 H14 Harmonic magnitude (3-Second)	
	0x608F	I3 H15 Harmonic magnitude (3-Second)	
	0x6090	I3 H16 Harmonic magnitude (3-Second)	
	0x6091	I3 H17 Harmonic magnitude (3-Second)	
	0x6092	I3 H18 Harmonic magnitude (3-Second)	
	0x6093	I3 H19 Harmonic magnitude (3-Second)	
	0x6094	I3 H20 Harmonic magnitude (3-Second)	
	0x6095	I3 H21 Harmonic magnitude (3-Second)	
	0x6096	I3 H22 Harmonic magnitude (3-Second)	
	0x6097	I3 H23 Harmonic magnitude (3-Second)	
	0x6098	I3 H24 Harmonic magnitude (3-Second)	
	0x6099	I3 H25 Harmonic magnitude (3-Second)	
	0x609A	I3 H26 Harmonic magnitude (3-Second)	
	0x609B	I3 H27 Harmonic magnitude (3-Second)	
	0x609C	I3 H28 Harmonic magnitude (3-Second)	
	0x609D	I3 H29 Harmonic magnitude (3-Second)	
	0x609E	I3 H30 Harmonic magnitude (3-Second)	
	0x609F	I3 H31 Harmonic magnitude (3-Second)	
	0x6100	I3 H32 Harmonic magnitude (3-Second)	
	0x6101	I3 H33 Harmonic magnitude (3-Second)	
	0x6102	I3 H34 Harmonic magnitude (3-Second)	

Format Code	Value	Description	Notes
	0x6103	I3 H35 Harmonic magnitude (3-Second)	
	0x6104	I3 H36 Harmonic magnitude (3-Second)	
	0x6105	I3 H37 Harmonic magnitude (3-Second)	
	0x6106	I3 H38 Harmonic magnitude (3-Second)	
	0x6107	I3 H39 Harmonic magnitude (3-Second)	
	0x6108	I3 H40 Harmonic magnitude (3-Second)	
	0x6109	I3 H41 Harmonic magnitude (3-Second)	
	0x610A	I3 H42 Harmonic magnitude (3-Second)	
	0x610B	I3 H43 Harmonic magnitude (3-Second)	
	0x610C	I3 H44 Harmonic magnitude (3-Second)	
	0x610D	I3 H45 Harmonic magnitude (3-Second)	
	0x610E	I3 H46 Harmonic magnitude (3-Second)	
	0x610F	I3 H47 Harmonic magnitude (3-Second)	
	0x6110	I3 H48 Harmonic magnitude (3-Second)	
	0x6111	I3 H49 Harmonic magnitude (3-Second)	
	0x6112	I3 H50 Harmonic magnitude (3-Second)	
	0x6113	I1 TDD (3-Second, H02 - H50)	
	0x6114	I2 TDD (3-Second, H02 - H50)	
	0x6115	I3 TDD (3-Second, H02 - H50)	
		Current Point IDs - Weekly Events	Event Type = 0x1012 (F22) Event Type = 0x1013 (F22)
	0x6180	I1 H02 Harmonic magnitude (10-Minute)	
	0x6181	I1 H03 Harmonic magnitude (10-Minute)	
	0x6182	I1 H04 Harmonic magnitude (10-Minute)	
	0x6183	I1 H05 Harmonic magnitude (10-Minute)	
	0x6184	I1 H06 Harmonic magnitude (10-Minute)	
	0x6185	I1 H07 Harmonic magnitude (10-Minute)	
	0x6186	I1 H08 Harmonic magnitude (10-Minute)	
	0x6187	I1 H09 Harmonic magnitude (10-Minute)	
	0x6188	I1 H10 Harmonic magnitude (10-Minute)	
	0x6189	I1 H11 Harmonic magnitude (10-Minute)	
	0x618A	I1 H12 Harmonic magnitude (10-Minute)	
	0x618B	I1 H13 Harmonic magnitude (10-Minute)	
	0x618C	I1 H14 Harmonic magnitude (10-Minute)	
	0x618D	I1 H15 Harmonic magnitude (10-Minute)	
	0x618E	I1 H16 Harmonic magnitude (10-Minute)	

Format Code	Value	Description	Notes
	0x618F	I1 H17 Harmonic magnitude (10-Minute)	
	0x6190	I1 H18 Harmonic magnitude (10-Minute)	
	0x6191	I1 H19 Harmonic magnitude (10-Minute)	
	0x6192	I1 H20 Harmonic magnitude (10-Minute)	
	0x6193	I1 H21 Harmonic magnitude (10-Minute)	
	0x6194	I1 H22 Harmonic magnitude (10-Minute)	
	0x6195	I1 H23 Harmonic magnitude (10-Minute)	
	0x6196	I1 H24 Harmonic magnitude (10-Minute)	
	0x6197	I1 H25 Harmonic magnitude (10-Minute)	
	0x6198	I1 H26 Harmonic magnitude (10-Minute)	
	0x6199	I1 H27 Harmonic magnitude (10-Minute)	
	0x619A	I1 H28 Harmonic magnitude (10-Minute)	
	0x619B	I1 H29 Harmonic magnitude (10-Minute)	
	0x619C	I1 H30 Harmonic magnitude (10-Minute)	
	0x619D	I1 H31 Harmonic magnitude (10-Minute)	
	0x619E	I1 H32 Harmonic magnitude (10-Minute)	
	0x619F	I1 H33 Harmonic magnitude (10-Minute)	
	0x6200	I1 H34 Harmonic magnitude (10-Minute)	
	0x6201	I1 H35 Harmonic magnitude (10-Minute)	
	0x6202	I1 H36 Harmonic magnitude (10-Minute)	
	0x6203	I1 H37 Harmonic magnitude (10-Minute)	
	0x6204	I1 H38 Harmonic magnitude (10-Minute)	
	0x6205	I1 H39 Harmonic magnitude (10-Minute)	
	0x6206	I1 H40 Harmonic magnitude (10-Minute)	
	0x6207	I1 H41 Harmonic magnitude (10-Minute)	
	0x6208	I1 H42 Harmonic magnitude (10-Minute)	
	0x6209	I1 H43 Harmonic magnitude (10-Minute)	
	0x620A	I1 H44 Harmonic magnitude (10-Minute)	
	0x620B	I1 H45 Harmonic magnitude (10-Minute)	
	0x620C	I1 H46 Harmonic magnitude (10-Minute)	
	0x620D	I1 H47 Harmonic magnitude (10-Minute)	
	0x620E	I1 H48 Harmonic magnitude (10-Minute)	
	0x620F	I1 H49 Harmonic magnitude (10-Minute)	
	0x6210	I1 H50 Harmonic magnitude (10-Minute)	
	0x6211	I2 H02 Harmonic magnitude (10-Minute)	
	0x6212	I2 H03 Harmonic magnitude (10-Minute)	
	0x6213	I2 H04 Harmonic magnitude (10-Minute)	

Format Code	Value	Description	Notes
	0x6214	I2 H05 Harmonic magnitude (10-Minute)	
	0x6215	I2 H06 Harmonic magnitude (10-Minute)	
	0x6216	I2 H07 Harmonic magnitude (10-Minute)	
	0x6217	I2 H08 Harmonic magnitude (10-Minute)	
	0x6218	I2 H09 Harmonic magnitude (10-Minute)	
	0x6219	I2 H10 Harmonic magnitude (10-Minute)	
	0x621A	I2 H11 Harmonic magnitude (10-Minute)	
	0x621B	I2 H12 Harmonic magnitude (10-Minute)	
	0x621C	I2 H13 Harmonic magnitude (10-Minute)	
	0x621D	I2 H14 Harmonic magnitude (10-Minute)	
	0x621E	I2 H15 Harmonic magnitude (10-Minute)	
	0x621F	I2 H16 Harmonic magnitude (10-Minute)	
	0x6280	I2 H17 Harmonic magnitude (10-Minute)	
	0x6281	I2 H18 Harmonic magnitude (10-Minute)	
	0x6282	I2 H19 Harmonic magnitude (10-Minute)	
	0x6283	I2 H20 Harmonic magnitude (10-Minute)	
	0x6284	I2 H21 Harmonic magnitude (10-Minute)	
	0x6285	I2 H22 Harmonic magnitude (10-Minute)	
	0x6286	I2 H23 Harmonic magnitude (10-Minute)	
	0x6287	I2 H24 Harmonic magnitude (10-Minute)	
	0x6288	I2 H25 Harmonic magnitude (10-Minute)	
	0x6289	I2 H26 Harmonic magnitude (10-Minute)	
	0x628A	I2 H27 Harmonic magnitude (10-Minute)	
	0x628B	I2 H28 Harmonic magnitude (10-Minute)	
	0x628C	I2 H29 Harmonic magnitude (10-Minute)	
	0x628D	I2 H30 Harmonic magnitude (10-Minute)	
	0x628E	I2 H31 Harmonic magnitude (10-Minute)	
	0x628F	I2 H32 Harmonic magnitude (10-Minute)	
	0x6290	I2 H33 Harmonic magnitude (10-Minute)	
	0x6291	I2 H34 Harmonic magnitude (10-Minute)	
	0x6292	I2 H35 Harmonic magnitude (10-Minute)	
	0x6293	I2 H36 Harmonic magnitude (10-Minute)	
	0x6294	I2 H37 Harmonic magnitude (10-Minute)	
	0x6295	I2 H38 Harmonic magnitude (10-Minute)	
	0x6296	I2 H39 Harmonic magnitude (10-Minute)	
	0x6297	I2 H40 Harmonic magnitude (10-Minute)	
	0x6298	I2 H41 Harmonic magnitude (10-Minute)	

Format Code	Value	Description	Notes
	0x6299	I2 H42 Harmonic magnitude (10-Minute)	
	0x629A	I2 H43 Harmonic magnitude (10-Minute)	
	0x629B	I2 H44 Harmonic magnitude (10-Minute)	
	0x629C	I2 H45 Harmonic magnitude (10-Minute)	
	0x629D	I2 H46 Harmonic magnitude (10-Minute)	
	0x629E	I2 H47 Harmonic magnitude (10-Minute)	
	0x629F	I2 H48 Harmonic magnitude (10-Minute)	
	0x6300	I2 H49 Harmonic magnitude (10-Minute)	
	0x6301	I2 H50 Harmonic magnitude (10-Minute)	
	0x6302	I3 H02 Harmonic magnitude (10-Minute)	
	0x6303	I3 H03 Harmonic magnitude (10-Minute)	
	0x6304	I3 H04 Harmonic magnitude (10-Minute)	
	0x6305	I3 H05 Harmonic magnitude (10-Minute)	
	0x6306	I3 H06 Harmonic magnitude (10-Minute)	
	0x6307	I3 H07 Harmonic magnitude (10-Minute)	
	0x6308	I3 H08 Harmonic magnitude (10-Minute)	
	0x6309	I3 H09 Harmonic magnitude (10-Minute)	
	0x630A	I3 H10 Harmonic magnitude (10-Minute)	
	0x630B	I3 H11 Harmonic magnitude (10-Minute)	
	0x630C	I3 H12 Harmonic magnitude (10-Minute)	
	0x630D	I3 H13 Harmonic magnitude (10-Minute)	
	0x630E	I3 H14 Harmonic magnitude (10-Minute)	
	0x630F	I3 H15 Harmonic magnitude (10-Minute)	
	0x6310	I3 H16 Harmonic magnitude (10-Minute)	
	0x6311	I3 H17 Harmonic magnitude (10-Minute)	
	0x6312	I3 H18 Harmonic magnitude (10-Minute)	
	0x6313	I3 H19 Harmonic magnitude (10-Minute)	
	0x6314	I3 H20 Harmonic magnitude (10-Minute)	
	0x6315	I3 H21 Harmonic magnitude (10-Minute)	
	0x6316	I3 H22 Harmonic magnitude (10-Minute)	
	0x6317	I3 H23 Harmonic magnitude (10-Minute)	
	0x6318	I3 H24 Harmonic magnitude (10-Minute)	
	0x6319	I3 H25 Harmonic magnitude (10-Minute)	
	0x631A	I3 H26 Harmonic magnitude (10-Minute)	
	0x631B	I3 H27 Harmonic magnitude (10-Minute)	
	0x631C	I3 H28 Harmonic magnitude (10-Minute)	
	0x631D	I3 H29 Harmonic magnitude (10-Minute)	

Format Code	Value	Description	Notes
	0x631E	I3 H30 Harmonic magnitude (10-Minute)	
	0x631F	I3 H31 Harmonic magnitude (10-Minute)	
	0x6380	I3 H32 Harmonic magnitude (10-Minute)	
	0x6381	I3 H33 Harmonic magnitude (10-Minute)	
	0x6382	I3 H34 Harmonic magnitude (10-Minute)	
	0x6383	I3 H35 Harmonic magnitude (10-Minute)	
	0x6384	I3 H36 Harmonic magnitude (10-Minute)	
	0x6385	I3 H37 Harmonic magnitude (10-Minute)	
	0x6386	I3 H38 Harmonic magnitude (10-Minute)	
	0x6387	I3 H39 Harmonic magnitude (10-Minute)	
	0x6388	I3 H40 Harmonic magnitude (10-Minute)	
	0x6389	I3 H41 Harmonic magnitude (10-Minute)	
	0x638A	I3 H42 Harmonic magnitude (10-Minute)	
	0x638B	I3 H43 Harmonic magnitude (10-Minute)	
	0x638C	I3 H44 Harmonic magnitude (10-Minute)	
	0x638D	I3 H45 Harmonic magnitude (10-Minute)	
	0x638E	I3 H46 Harmonic magnitude (10-Minute)	
	0x638F	I3 H47 Harmonic magnitude (10-Minute)	
	0x6390	I3 H48 Harmonic magnitude (10-Minute)	
	0x6391	I3 H49 Harmonic magnitude (10-Minute)	
	0x6392	I3 H50 Harmonic magnitude (10-Minute)	
	0x6393	I1 TDD (10-Minute, H02 - H50)	
	0x6394	I2 TDD (10-Minute, H02 - H50)	
	0x6395	I3 TDD (10-Minute, H02 - H50)	
IEEE 519 Limits			
F42	Bit 0 = 1	The last record of the file is being read	
	Bit 8 = 1	File is empty	
	Bit 9 = 1	Reading after EOF	
	Bit 10 = 1	Corrupted record (CRC error)	
	Bit 11 = 1	No file section found for the requested channel	
	Bit 12 = 1	Reading after the end of a data block	
	Bit 13 = 1	File is not accessible	
	Bit 14 = 1	Record not found	
	Bit 15 = 1	Generic read error (with one of the bits 8-14)	

NOTES:

- ¹ When the 4LN3 or 3LN3 wiring mode is selected, the voltages will be line-to-neutral; for any other wiring mode, they will be line-to-line voltages.
- ² 1) For bi-directional analog output (± 1 mA), the zero scale setup corresponds to the center (0 mA) of the scale range, and the direction of the current matches the sign of the output parameter. Unsigned parameters are output within the current range 0 to +1 mA and can be scaled as in the case of single-ended analog output (0-1 mA).

For signed values, such as powers and signed power factor, the scale is always symmetrical with regard to 0 mA, and the full scale corresponds to +1 mA output for positive readings and to -1 mA output for negative readings. The zero scale (0 mA output) is permanently set in the instrument to zero for all parameters except the signed power factor for which it is set to 1.000 (see Note 2). In write requests, the zero scale is ignored.

2) Except for the signed power factor, the setup scale is continuous within the entire value range. For signed power factor, the setup scale is broken at +1.000 in order to provide continuous output current when the power factor changes close to ± 1.000 . The setup scale is symmetrical in the range of -0 to +0 with a center at 1.000 (-1.000 is assumed to be equal to +1.000). Negative power factor is output as -1.000 minus measured value, and non-negative power factor is output as +1.000 minus measured value. To set the entire range for power factor from -0 to +0, the scales would be specified as -0 to 0. Because of the fact that negative zero may not be transmitted through communications, the value of -0.001 is used to specify the scale of -0, and both +0.001 and 0.000 are used to specify the scale of +0.
- ³ The event value field shows the present device time in the F1 format.
- ⁴ The event value field shows the server IP address in a network byte order.