

# USER MANUAL

**R203 and R204 series with Modbus protocol,  
Profinet IO, Ethernet/IP and OPC-UA**



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## Document revisions

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26/06/2023	1	Changed power supply value for R203-L version	AZ
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**TABLE OF CONTENTS**

<b>1. WARNINGS.....</b>	<b>9</b>
<b>2. INTRODUCTION .....</b>	<b>10</b>
<b>3. R203 AND R204 SERIES MODELS.....</b>	<b>10</b>
<b>4. FLEX TECHNOLOGY FOR PROTOCOL CHANGE.....</b>	<b>11</b>
<b>4.1. CHANGING PROTOCOL WITH SENECA DISCOVERY DEVICE SOFTWARE .....</b>	<b>13</b>
<b>5. DIP SWITCH.....</b>	<b>14</b>
<b>6. MEASUREMENTS AVAILABLE FROM ETHERNET/SERIAL .....</b>	<b>15</b>
<b>6.1. CONVENTIONS .....</b>	<b>15</b>
<b>6.2. INSTANTANEOUS VALUES.....</b>	<b>16</b>
<b>6.3. MEDIUM VALUES (IN THE CONFIGURED DEMAND TIME) .....</b>	<b>17</b>
<b>6.4. ABSOLUTE MAXIMUM / MINIMUM VALUES (SINCE DEVICE POWER UP) .....</b>	<b>19</b>
<b>6.5. COUNTERS: .....</b>	<b>21</b>
<b>6.6. HARMONIC ANALYSIS UP TO THE 55<sup>TH</sup> (MODBUS PROTOCOL MODELS ONLY ).....</b>	<b>22</b>
<b>7. MEASUREMENT AND CALCULATION TIMES .....</b>	<b>23</b>
<b>7.1. SAMPLING TIMES .....</b>	<b>23</b>
<b>7.2. SETTLING TIMES FOR RMS VALUES.....</b>	<b>23</b>
<b>7.3. ANALOG OUTPUT RESPONSE TIME.....</b>	<b>23</b>
<b>7.4. UPDATE TIMES OF THE REGISTERS RELATING TO THE HARMONIC ANALYSIS (MODBUS PROTOCOL MODELS ONLY).....</b>	<b>23</b>

---

<b>7.5. UPDATE TIMES OF THE MODBUS REGISTERS (MODBUS PROTOCOL MODELS ONLY)</b>	
23	
<b>8. MEASUREMENT PRECISION AT 23°C</b>	24
<b>9. ROGOWSKI SENSOR INPUT FULL SCALE</b>	24
<b>10. DATALOGGER (MODBUS PROTOCOL MODELS ONLY)</b>	25
10.1. TIME DATA LOGGER	25
10.2. EVENT DATA LOGGER	25
<b>11. SMART FUNCTIONS FOR SENDING DATA AND EVENTS TO THE CLOUDS (MODBUS PROTOCOL MODELS ONLY)</b>	26
11.1. MQTT(S) CLIENT PROTOCOL	27
11.2. HTTP(S) POST PROTOCOL	27
11.3. FTP CLIENT PROTOCOL	27
11.4. SENDING DATA AND EVENTS WITH OR WITHOUT RECOVERY	27
11.5. SENDING COMMANDS TO THE DEVICE VIA MQTT(S) PROTOCOL	28
<b>12. CONNECTION OF THE DEVICES TO A NETWORK</b>	32
12.1. MODBUS, ETHERNET/IP AND OPC-UA PROTOCOLS MODELS	32
12.2. PROFINET IO PROTOCOL MODELS	33
<b>13. I/O COPY USING THE PEER TO PEER FUNCTION WITHOUT WIRING (MODBUS PROTOCOL MODELS ONLY)</b>	34
<b>14. WEB SERVER</b>	35
14.1. ACCESS TO THE WEB SERVER	35
<b>15. CONNECTION DIAGNOSTICS</b>	36

---

<b>16. DEVICE CONFIGURATION VIA WEB SERVER (MODBUS PROTOCOL MODELS ONLY)</b>	<b>38</b>
16.1. <b>MEASURES SECTION -&gt; MEASURES SETUP</b> .....	38
16.2. <b>MEASURES SECTION -&gt; ENERGY TOTALIZER SETUP</b> .....	39
16.3. <b>DATALOGGER SECTION-&gt; SETUP DATALOGGER</b> .....	39
16.4. <b>SYSTEM SETTINGS SECTION -&gt; SYSTEM SETTINGS</b> .....	39
16.5. <b>SYSTEM SETTINGS SECTION -&gt; SYSTEM ETHERNET</b> .....	40
16.6. <b>SYSTEM SETTINGS SECTION -&gt; SYSTEM TIME</b> .....	40
16.7. <b>SYSTEM CONNECTION SECTION -&gt; MODBUS</b> .....	41
16.8. <b>SYSTEM CONNECTION SECTION -&gt; FTP</b> .....	42
16.9. <b>SYSTEM CONNECTION SECTION -&gt; MQTT</b> .....	42
16.9.1. Examples.....	61
16.9.2. DIREL ADM4.0 .....	61
16.9.3. SENECA CLOUDBOX 2.....	61
16.10. <b>SYSTEM CONNECTION SECTION -&gt; HTTP</b> .....	62
16.11. <b>SYSTEM CONNECTION SECTION -&gt; P2P</b> .....	77
16.12. <b>ANALOG AND DIGITAL OUTPUT SETUP SECTION</b> .....	77
16.13. <b>INPUT DIGITAL SETUP SECTION</b> .....	78
<b>17. DEVICE CONFIGURATION VIA WEB SERVER (ETHERNET/IP, PROFINET IO, OPC-UA PROTOCOL MODELS ONLY)</b> .....	<b>83</b>
17.1. <b>COMMUNICATION SETUP SECTION</b> .....	83
17.2. <b>MEASURES SETUP SECTION</b> .....	84
17.3. <b>CONNECTION DIAGNOSTIC SECTION</b> .....	85
17.4. <b>OPC-UA CONFIGURATION SECTION (OPC-UA PROTOCOL MODELS ONLY)</b> .....	85

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18. DOWNLOADING THE DATALOGGER FILES (MODBUS PROTOCOL MODELS ONLY) ...	99
19. MODBUS PASSTHROUGH (MODBUS PROTOCOL MODELS ONLY) .....	100
20. FIRMWARE UPDATE .....	101
21. RESETTING THE DEVICE TO ITS FACTORY CONFIGURATION .....	101
22. MODBUS COMMUNICATION PROTOCOL (MODBUS PROTOCOL MODELS ONLY) ....	102
22.1. SUPPORTED MODBUS FUNCTION CODES .....	102
22.2. MODBUS REGISTER TABLE .....	103
22.3. NUMBERING OF "0-BASED" OR "1-BASED" MODBUS ADDRESSES .....	103
22.4. NUMBERING OF MODBUS ADDRESSES WITH "0-BASED" CONVENTION .....	104
22.5. NUMBERING OF MODBUS ADDRESSES WITH "1 BASED" CONVENTION (STANDARD) .....	104
22.6. BIT CONVENTION WITHIN A MODBUS HOLDING REGISTER .....	105
22.7. MSB AND LSB BYTE CONVENTION WITHIN A MODBUS HOLDING REGISTER ....	105
22.8. REPRESENTATION OF A 32-BIT VALUE IN TWO CONSECUTIVE MODBUS HOLDING REGISTERS.....	106
22.9. TYPE OF 32-BIT FLOATING POINT DATA (IEEE 754).....	106
22.10. MODBUS 4X HOLDING REGISTERS TABLE (FUNCTION CODE 3) .....	108
23. PROFINET IO COMMUNICATION PROTOCOL (MODBUS PROTOCOL MODELS ONLY) 197	
23.1. CREATING A PROJECT WITH SIEMENS PLC (TIA PORTAL 16) (PROFINET IO PROTOCOL MODELS ONLY) .....	197
23.1.1. INSTALLING THE GSDML FILE .....	198
23.1.2. INSERTION OF THE SIEMENS PLC IN THE PROJECT.....	199

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23.1.3. INSERTION OF THE PROFINET SENECA IO .....	202
23.1.4. CONFIGURATION OF THE PARAMETERS OF THE SENECA DEVICE.....	205
23.1.5. CONFIGURATION PARAMETERS OF THE GSDML FILE .....	206
23.1.6. I/O DATA .....	207
<b>24. ETHERNET/IP COMMUNICATION PROTOCOL (ETHERNET/IP PROTOCOL MODELS ONLY) .....</b>	<b>220</b>
24.1. CREATING A PROJECT WITH PLC ALLEN BRADLEY/ROCKWELL (RS-LOGIX5000 / STUDIO 5000 LOGIX DESIGNER 35.00.00) .....	220
<b>25. OPC-UA COMMUNICATION PROTOCOL (OPC-UA PROTOCOL MODELS ONLY).....</b>	<b>229</b>
25.1. OPC VARIABLE NAMES .....	229
25.2. UAEXPERT™ CLIENT CONFIGURATION .....	236

## 1. **WARNINGS**

### **ATTENTION!**

This user manual extends the information from the installation manual to the configuration of the device. Use the installation manual for more information.

### **ATTENTION!**

In any case, SENECA s.r.l. or its suppliers will not be responsible for the loss of data/revenue or consequential or incidental damages due to negligence or bad/improper management of the device, even if SENECA is well aware of these possible damages.

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## 2. INTRODUCTION

The three-phase smart energy meters of the R203 and R204 series allow the measurement and calculation of electrical quantities such as voltage, current, power, energy, harmonics, etc.

The devices are equipped with a universal current input (TA with current output, TA with voltage output, Rogowski sensors) and support single-phase and three-phase 3- or 4-wire insertion types.

Measurements and calculations are made available via communication protocols depending on the model.

In some models it is also possible to activate the data logger and send the data to the clouds via the MQTT(s), HTTP(s) or FTP protocols.

## 3. R203 AND R204 SERIES MODELS

The R203 and R204 series models are shown in the table:

MODEL	NUMBER OF ETHERNET PORTS	POWER SUPPLY	COMMUNICATION PROTOCOLS	I/O	DATALOGGER	SENDING DATA TO CLOUD(SMART FUNCTIONS)
R203-2-L	2	10 ÷ 30Vdc	MODBUS TCP-IP SERVER MODBUS RTU MQTT(s) HTTP(s) FTP	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory 1 Analog Output	YES	YES
R203-2-H	2	90 ÷ 264Vac	MODBUS TCP-IP SERVER MODBUS RTU SLAVE MQTT(s) CLIENT HTTP(s) CLIENT FTP CLIENT	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory 1 Analog Output	YES	YES
R203-2-L-P	2	10 ÷ 30Vdc	PROFINET IO DEVICE	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory 1 Analog Output	NO	NO
R203-2-H-P	2	90 ÷ 264Vac	PROFINET IO DEVICE	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory 1 Analog Output	NO	NO

R203-2-L-E	2	10 ÷ 30Vdc	ETHERNET/IP ADAPTER	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory 1 Analog Output	NO	NO
R203-2-H-E	2	90 ÷ 264Vac	ETHERNET/IP ADAPTER	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory 1 Analog Output	NO	NO
R203-2-L-U	2	10 ÷ 30Vdc	OPC-UA SERVER	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory 1 Analog Output	NO	NO
R203-2-H-U	2	90 ÷ 264Vac	OPC-UA SERVER	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory 1 Analog Output	NO	NO
R204-2-L	2	10 ÷ 30Vdc	MODBUS TCP-IP SERVER MODBUS RTU MQTT(s) HTTP(s) FTP	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory	YES	YES
R204-2-L-P	2	10 ÷ 30Vdc	PROFINET IO DEVICE	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory	NO	NO
R204-2-L-E	2	10 ÷ 30Vdc	ETHERNET/IP ADAPTER	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory	NO	NO
R204-2-L-U	2	10 ÷ 30Vdc	OPC-UA SERVER	2 Digital Input 2 Digital Output 2 Digital Counter @ 32 bit in Not volatile memory	NO	NO

#### 4. FLEX TECHNOLOGY FOR PROTOCOL CHANGE



The R203 and R204 series devices include Flex technology.

Flex allows you to change the combination of industrial communication protocols supported at will from a list of available ones, the development is continuously updated, for a complete list refer to the page:

<https://www.seneca.it/flex/>

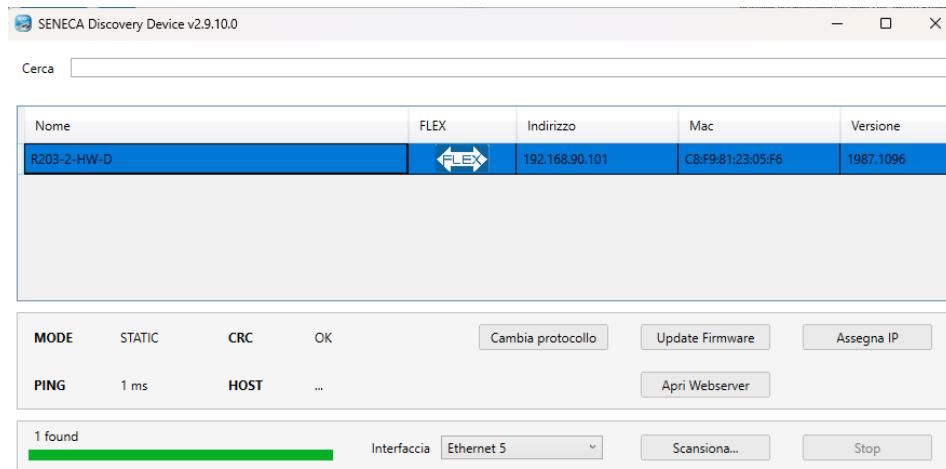
Some examples of supported protocols are:



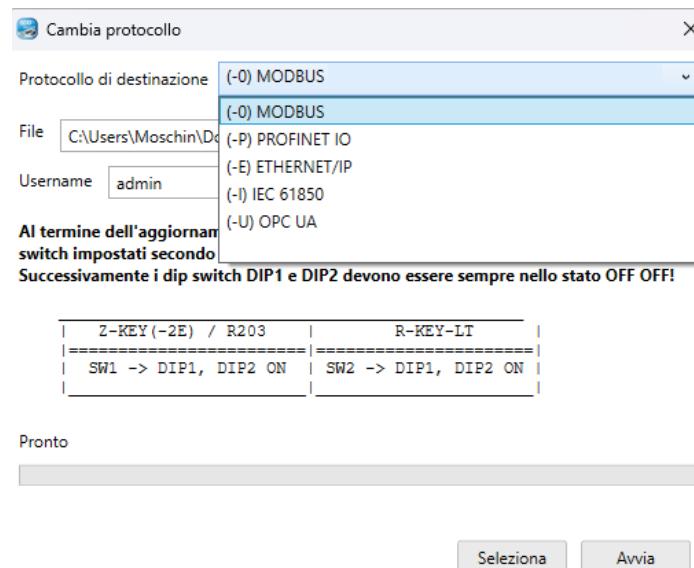
The power meter then becomes “universal” and compatible with Siemens or Rockwell or Schneider systems etc... without the need to purchase different hardware.

#### 4.1. CHANGING PROTOCOL WITH SENECA DISCOVERY DEVICE SOFTWARE

From revision 2.8 the Seneca Discovery Device software identifies the devices that support the “Flex” technology:



It is possible to press the “Change Protocol” button and select the destination protocol from those in the list:



At the end of the operation, bring (only at the first power-on) the dip switches 1 and 2 to “ON” to force the device to default (see also the chapter “RESETTING THE DEVICE TO ITS FACTORY CONFIGURATION”).

## 5. DIP SWITCH

The devices are fitted with 2 dip switches.

The position of the dip switches is shown in the figure.



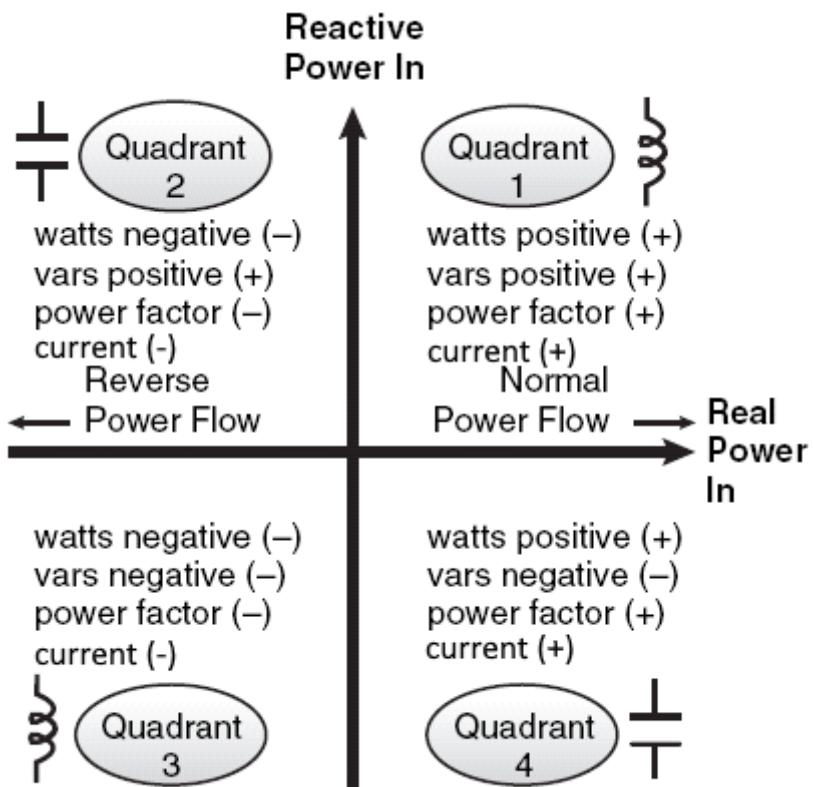
Below is the meaning of the SW1 dip switches:

<b>DIP1</b>	<b>DIP2</b>	<b>MEANING</b>
OFF	OFF	Normal operation: The device loads the configuration from the flash.
ON	ON	Resets the device to its factory configuration
OFF	ON	Disables access to the Web server
ON	OFF	Forces the device IP address to 192.168.90.101

## 6. MEASUREMENTS AVAILABLE FROM ETHERNET/SERIAL

### 6.1. CONVENTIONS

The device provides the measurement values on all 4 quadrants, the conventions for the signs of the measurements used in the product are summarized in the following image:



Where:

quadrant Q1 relates to an inductive load with imported (absorbed) active energy, classic use case.

quadrant Q2 relates to a capacitive load with exported (generated) active energy.

quadrant Q3 relates to an inductive load with exported (generated) active energy.

quadrant Q4 relates to a capacitive load with imported (absorbed) active energy.

## 6.2. INSTANTANEOUS VALUES

<b>VARIABLE</b>	<b>DESCRIPTION</b>
<b>V1N</b>	Voltage between Phase 1 and neutral
<b>V2N</b>	Voltage between Phase 2 and neutral
<b>V3N</b>	Voltage between Phase 3 and neutral
<b>AN</b>	Neutral Current
<b>V12</b>	Phase-to-phase voltage between Phase 1 and 2
<b>V23</b>	Phase-to-phase voltage between Phase 2 and 3
<b>V31</b>	Phase-to-phase voltage between Phase 3 and 1
<b>Vsys</b>	System voltage:
<b>A1</b>	Phase 1 current
<b>A2</b>	Phase 2 current
<b>A3</b>	Phase 3 current
<b>Asys</b>	System current
<b>P1</b>	Phase 1 Active power
<b>P2</b>	Phase 2 Active power
<b>P3</b>	Phase 3 Active power
<b>Psys</b>	System Active power
<b>S1</b>	Phase 1 apparent power
<b>S2</b>	Phase 2 apparent power
<b>S3</b>	Phase 3 apparent power
<b>Ssys</b>	System apparent power
<b>Q1</b>	Phase 1 Reactive power
<b>Q2</b>	Phase 2 Reactive power
<b>Q3</b>	Phase 3 Reactive power
<b>Qsys</b>	System Reactive power
<b>TPF1</b>	Phase 1 Power factor
<b>TPF2</b>	Phase 2 Power factor
<b>TPF3</b>	Phase 3 Power factor
<b>TPFsys</b>	System Power factor
<b>THD-V1N</b>	Voltage THD (Total Harmonic Distortion) between Phase 1 and neutral
<b>THD-V2N</b>	Voltage THD between Phase 2 and neutral
<b>THD-V3N</b>	Voltage THD between Phase 3 and neutral
<b>f</b>	Phase frequency (read from Phase 1)
<b>THD-A1N</b>	Phase 1 current THD
<b>THD-A2N</b>	Phase 2 current THD
<b>THD-A3N</b>	Phase 3 current THD
<b>DIGITAL_IN_1</b>	Digital Input 1
<b>DIGITAL_IN_2</b>	Digital Input 2
<b>DIGITAL_OUT_1</b>	Digital output 1
<b>DIGITAL_OUT_2</b>	Digital output 2


### 6.3. MEDIUM VALUES (IN THE CONFIGURED DEMAND TIME)

VARIABLE	DESCRIPTION
<b>V1N_AVG</b>	Phase 1 to Neutral Voltage (in demand time)
<b>V1N_AVG_MIN</b>	Phase 1 to minimum neutral voltage (in demand time)
<b>V1N_AVG_MAX</b>	Phase 1 to maximum neutral voltage (in demand time)
<b>V2N_AVG</b>	Phase 2 to Neutral Voltage (in demand time)
<b>V2N_AVG_MIN</b>	Phase 2 to minimum neutral voltage (in demand time)
<b>V2N_AVG_MAX</b>	Phase 2 to maximum neutral voltage (in demand time)
<b>V3N_AVG</b>	Phase 3 to Neutral Voltage (in demand time)
<b>V3N_AVG_MIN</b>	Phase 3 to minimum neutral voltage (in demand time)
<b>V3N_AVG_MAX</b>	Phase 3 to maximum neutral voltage (in demand time)
<b>AN_AVG</b>	Neutral Current (on demand time)
<b>AN_AVG_MIN</b>	Minimum neutral current (in demand time)
<b>AN_AVG_MAX</b>	Maximum neutral current (in demand time)
<b>V12_AVG</b>	Phase-to-phase voltage between Phase 1 and 2 (in demand time)
<b>V12_AVG_MIN</b>	Phase-to-phase voltage between minimum Phase 1 and 2 (in demand time)
<b>V12_AVG_MAX</b>	Phase-to-phase voltage between maximum Phase 1 and 2 (in demand time)
<b>V23_AVG</b>	Phase-to-phase voltage between Phase 2 and 3 (in demand time)
<b>V23_AVG_MIN</b>	Phase-to-phase voltage between minimum Phase 2 and 3 (in demand time)
<b>V23_AVG_MAX</b>	Phase-to-phase voltage between maximum Phase 2 and 3 (in demand time)
<b>V31_AVG</b>	Phase-to-phase voltage between Phase 3 and 1 (in demand time)
<b>V31_AVG_MIN</b>	Phase-to-phase voltage between minimum Phase 3 and 1 (in demand time)
<b>V31_AVG_MAX</b>	Phase-to-phase voltage between maximum Phase 3 and 1 (in demand time)
<b>Vsys_AVG</b>	System voltage (in demand time)
<b>Vsys_AVG_MIN</b>	Minimum system voltage (in demand time)
<b>Vsys_AVG_MAX</b>	Maximum system voltage (in demand time)
<b>A1_AVG</b>	Phase 1 current (in demand time)
<b>A1_AVG_MIN</b>	Minimum Phase 1 current (in demand time)
<b>A1_AVG_MAX</b>	Maximum Phase 1 current (in demand time)

<b>A2_AVG</b>	Phase 2 current (in demand time)
<b>A2_AVG_MIN</b>	Minimum Phase 2 current (in demand time)
<b>A2_AVG_MAX</b>	Maximum Phase 2 current (in demand time)
<b>A3_AVG</b>	Phase 3 current (in demand time)
<b>A3_AVG_MIN</b>	Minimum Phase 3 current (in demand time)
<b>A3_AVG_MAX</b>	Maximum Phase 3 current (in demand time)
<b>Asys_AVG</b>	System current (in demand time)
<b>Asys_AVG_MIN</b>	Minimum system current (in demand time)
<b>Asys_AVG_MAX</b>	Maximum system current (in demand time)
<b>P1_AVG</b>	Phase 1 active power (in demand time)
<b>P1_AVG_MIN</b>	Minimum Phase 1 active power (in demand time)
<b>P1_AVG_MAX</b>	Maximum Phase 1 active power (in demand time)
<b>P2_AVG</b>	Phase 2 active power (in demand time)
<b>P2_AVG_MIN</b>	Minimum Phase 2 active power (in demand time)
<b>P2_AVG_MAX</b>	Maximum Phase 2 active power (in demand time)
<b>P3_AVG</b>	Phase 3 active power (in demand time)
<b>P3_AVG_MIN</b>	Minimum Phase 3 active power (in demand time)
<b>P3_AVG_MAX</b>	Maximum Phase 3 active power (in demand time)
<b>Psys_AVG</b>	System active power (in demand time)
<b>Psys_AVG_MIN</b>	Minimum system active power (in demand time)
<b>Psys_AVG_MAX</b>	Maximum system active power (in demand time)
<b>S1_AVG</b>	Phase 1 apparent power (in demand time)
<b>S1_AVG_MIN</b>	Minimum Phase 1 apparent power (in demand time)
<b>S1_AVG_MAX</b>	Maximum Phase 1 apparent power (in demand time)
<b>S2_AVG</b>	Phase 2 apparent power (in demand time)
<b>S2_AVG_MIN</b>	Minimum Phase 2 apparent power (in demand time)
<b>S2_AVG_MAX</b>	Maximum Phase 2 apparent power (in demand time)
<b>S3_AVG</b>	Phase 3 apparent power (in demand time)
<b>S3_AVG_MIN</b>	Minimum Phase 3 apparent power (in demand time)
<b>S3_AVG_MAX</b>	Maximum Phase 3 apparent power (in demand time)
<b>Ssys_AVG</b>	System apparent power (in demand time)
<b>Ssys_AVG_MIN</b>	Minimum system apparent power (in demand time)
<b>Ssys_AVG_MAX</b>	Maximum system apparent power (in demand time)
<b>Q1_AVG</b>	Phase 1 reactive power (in demand time)
<b>Q1_AVG_MIN</b>	Minimum Phase 1 reactive power (in demand time)
<b>Q1_AVG_MAX</b>	Maximum Phase 1 reactive power (in demand time)
<b>Q2_AVG</b>	Phase 2 reactive power (in demand time)
<b>Q2_AVG_MIN</b>	Minimum Phase 2 reactive power (in demand time)
<b>Q2_AVG_MAX</b>	Maximum Phase 2 reactive power (in demand time)
<b>Q3_AVG</b>	Phase 3 reactive power (in demand time)
<b>Q3_AVG_MIN</b>	Minimum Phase 3 reactive power (in demand time)
<b>Q3_AVG_MAX</b>	Maximum Phase 3 reactive power (in demand time)
<b>Qsys_AVG</b>	System reactive power (in demand time)

<b>Qsys_AVG_MIN</b>	Minimum system reactive power (in demand time)
<b>Qsys_AVG_MAX</b>	Maximum system reactive power (in demand time)
<b>TPF1_AVG</b>	Phase 1 power factor (in demand time)
<b>TPF1_AVG_MIN</b>	Minimum Phase 1 power factor (in demand time)
<b>TPF1_AVG_MAX</b>	Maximum Phase 1 power factor (in demand time)
<b>TPF2_AVG</b>	Phase 2 power factor (in demand time)
<b>TPF2_AVG_MIN</b>	Minimum Phase 2 power factor (in demand time)
<b>TPF2_AVG_MAX</b>	Maximum Phase 2 power factor (in demand time)
<b>TPF3_AVG</b>	Phase 3 power factor (in demand time)
<b>TPF3_AVG_MIN</b>	Minimum Phase 3 power factor (in demand time)
<b>TPF3_AVG_MAX</b>	Maximum Phase 3 power factor (in demand time)
<b>TPFsys_AVG</b>	System power factor (in demand time)
<b>TPFsys_AVG_MIN</b>	Minimum system power factor (in demand time)
<b>TPFsys_AVG_MAX</b>	Maximum system power factor (in demand time)
<b>THD-V1N_AVG</b>	Voltage THD between Phase 1 and neutral (in demand time)
<b>THD-V1N_AVG_MIN</b>	Minimum voltage THD between Phase 1 and neutral (in demand time)
<b>THD-V1N_AVG_MAX</b>	Maximum voltage THD between Phase 1 and neutral (in demand time)
<b>THD-V2N_AVG</b>	Voltage THD between Phase 2 and neutral (in demand time)
<b>THD-V2N_AVG_MIN</b>	Minimum voltage THD between Phase 2 and neutral (in demand time)
<b>THD-V2N_AVG_MAX</b>	Maximum voltage THD between Phase 2 and neutral (in demand time)
<b>THD-V3N_AVG</b>	Voltage THD between Phase 3 and neutral (in demand time)
<b>THD-V3N_AVG_MIN</b>	Minimum voltage THD between Phase 3 and neutral (in demand time)
<b>THD-V3N_AVG_MAX</b>	Maximum voltage THD between Phase 3 and neutral (in demand time)
<b>THD-A1N_AVG</b>	Phase 1 current THD (in demand time)
<b>THD-A1N_AVG_MIN</b>	Minimum Phase 1 current THD (in demand time)
<b>THD-A1N_AVG_MAX</b>	Maximum Phase 1 current THD (in demand time)
<b>THD-A2N_AVG</b>	Phase 2 current THD (in demand time)
<b>THD-A2N_AVG_MIN</b>	Minimum Phase 2 current THD (in demand time)
<b>THD-A2N_AVG_MAX</b>	Maximum Phase 2 current THD (in demand time)
<b>THD-A3N_AVG</b>	Phase 3 current THD (in demand time)
<b>THD-A3N_AVG_MIN</b>	Minimum Phase 3 current THD (in demand time)
<b>THD-A3N_AVG_MAX</b>	Maximum Phase 3 current THD (in demand time)

#### 6.4. ABSOLUTE MAXIMUM / MINIMUM VALUES (SINCE DEVICE POWER UP)

<b>VARIABLE</b>	<b>DESCRIPTION</b>
<b>V1N_MIN</b>	Minimum voltage between Phase 1 and neutral (from switch-on)
<b>V1N_MAX</b>	Maximum voltage between Phase 1 and neutral (from switch-on)
<b>V2N_MIN</b>	Minimum voltage between Phase 2 and neutral (from switch-on)

<b>V2N_MAX</b>	Maximum voltage between Phase 2 and neutral (from switch-on)
<b>V3N_MIN</b>	Minimum voltage between Phase 3 and neutral (from switch-on)
<b>V3N_MAX</b>	Maximum voltage between Phase 3 and neutral (from switch-on)
<b>AN_MIN</b>	Minimum neutral current (from switch-on)
<b>AN_MAX</b>	Maximum neutral current (from switch-on)
<b>V12_MIN</b>	Minimum phase-to-phase voltage between Phase 1 and 2 (from switch-on)
<b>V12_MAX</b>	Maximum phase-to-phase voltage between Phase 1 and 2 (from switch-on)
<b>V23_MIN</b>	Minimum phase-to-phase voltage between Phase 2 and 3 (from switch-on)
<b>V23_MAX</b>	Maximum phase-to-phase voltage between Phase 2 and 3 (from switch-on)
<b>V31_MIN</b>	Minimum phase-to-phase voltage between Phase 3 and 1 (from switch-on)
<b>V31_MAX</b>	Maximum phase-to-phase voltage between Phase 3 and 1 (from switch-on)
<b>Vsys_MIN</b>	Minimum system voltage (from switch-on)
<b>Vsys_MAX</b>	Maximum system voltage (from switch-on)
<b>A1_MIN</b>	Minimum Phase 1 current (from switch-on)
<b>A1_MAX</b>	Maximum Phase 1 current (from switch-on)
<b>A2_MIN</b>	Minimum Phase 2 current (from switch-on)
<b>A2_MAX</b>	Maximum Phase 2 current (from switch-on)
<b>A3_MIN</b>	Minimum Phase 3 current (from switch-on)
<b>A3_MAX</b>	Maximum Phase 3 current (from switch-on)
<b>Asys_MIN</b>	Minimum system current (from switch-on)
<b>Asys_MAX</b>	Maximum system current (from switch-on)
<b>P1_MIN</b>	Minimum Phase 1 active power (from switch-on)
<b>P1_MAX</b>	Maximum Phase 1 active power (from switch-on)
<b>P2_MIN</b>	Minimum Phase 2 active power (from switch-on)
<b>P2_MAX</b>	Maximum Phase 2 active power (from switch-on)
<b>P3_MIN</b>	Minimum Phase 3 active power (from switch-on)
<b>P3_MAX</b>	Maximum Phase 3 active power (from switch-on)
<b>Psys_MIN</b>	Minimum system active power (from switch-on)
<b>Psys_MAX</b>	Maximum system active power (from switch-on)
<b>S1_MIN</b>	Minimum Phase 1 apparent power (from switch-on)
<b>S1_MAX</b>	Maximum Phase 1 apparent power (from switch-on)
<b>S2_MIN</b>	Minimum Phase 2 apparent power (from switch-on)
<b>S2_MAX</b>	Maximum Phase 2 apparent power (from switch-on)
<b>S3_MIN</b>	Minimum Phase 3 apparent power (from switch-on)
<b>S3_MAX</b>	Maximum Phase 3 apparent power (from switch-on)
<b>Ssys_MIN</b>	Minimum system apparent power (from switch-on)
<b>Ssys_MAX</b>	Maximum system apparent power (from switch-on)
<b>Q1_MIN</b>	Minimum Phase 1 reactive power (from switch-on)
<b>Q1_MAX</b>	Maximum Phase 1 reactive power (from switch-on)
<b>Q2_MIN</b>	Minimum Phase 2 reactive power (from switch-on)
<b>Q2_MAX</b>	Maximum Phase 2 reactive power (from switch-on)
<b>Q3_MIN</b>	Minimum Phase 3 reactive power (from switch-on)
<b>Q3_MAX</b>	Maximum Phase 3 reactive power (from switch-on)

<b>Qsys_MIN</b>	Minimum system reactive power (from switch-on)
<b>Qsys_MAX</b>	Maximum system reactive power (from switch-on)
<b>TPF1_MIN</b>	Minimum Phase 1 power factor (from switch-on)
<b>TPF1_MAX</b>	Maximum Phase 1 power factor (from switch-on)
<b>TPF2_MIN</b>	Minimum Phase 2 power factor (from switch-on)
<b>TPF2_MAX</b>	Maximum Phase 2 power factor (from switch-on)
<b>TPF3_MIN</b>	Minimum Phase 3 power factor (from switch-on)
<b>TPF3_MAX</b>	Maximum Phase 3 power factor (from switch-on)
<b>TPFsys_MIN</b>	Minimum system power factor (from switch-on)
<b>TPFsys_MAX</b>	Maximum system power factor (from switch-on)
<b>THD-V1N_MIN</b>	Minimum voltage THD between Phase 1 and neutral (from switch-on)
<b>THD-V1N_MAX</b>	Maximum voltage THD between Phase 1 and neutral (from switch-on)
<b>THD-V2N_MIN</b>	Minimum voltage THD between Phase 2 and neutral (from switch-on)
<b>THD-V2N_MAX</b>	Maximum voltage THD between Phase 2 and neutral (from switch-on)
<b>THD-V3N_MIN</b>	Minimum voltage THD between Phase 3 and neutral (from switch-on)
<b>THD-V3N_MAX</b>	Maximum voltage THD between Phase 3 and neutral (from switch-on)
<b>THD-A1N_MIN</b>	Minimum Phase 1 current THD (from switch-on)
<b>THD-A1N_MAX</b>	Maximum Phase 1 current THD (from switch-on)
<b>THD-A2N_MIN</b>	Minimum Phase 2 current THD (from switch-on)
<b>THD-A2N_MAX</b>	Maximum Phase 2 current THD (from switch-on)
<b>THD-A3N_MIN</b>	Minimum Phase 3 current THD (from switch-on)
<b>THD-A3N_MAX</b>	Maximum Phase 3 current THD (from switch-on)

## 6.5. COUNTERS:

All counters are stored in non-volatile memory.

<b>VARIABLE</b>	<b>DESCRIPTION</b>
<b>+WH1</b>	Phase 1 positive active energy
<b>+WH2</b>	Phase 2 positive active energy
<b>+WH3</b>	Phase 3 positive active energy
<b>+Wh</b>	Total positive active energy
<b>-WH1</b>	Phase 1 negative active energy
<b>-WH2</b>	Phase 2 negative active energy
<b>-WH3</b>	Phase 3 negative active energy
<b>-Wh</b>	Total negative active energy
<b>VAh1</b>	Phase 1 apparent energy
<b>VAh2</b>	Phase 2 apparent energy
<b>VAh3</b>	Phase 3 apparent energy
<b>VAh</b>	Total apparent energy
<b>+VARh1-L[Q1]</b>	Phase 1 positive inductive reactive energy (Q1)
<b>+VARh2-L[Q1]</b>	Phase 2 positive inductive reactive energy (Q1)
<b>+VARh3-L[Q1]</b>	Phase 3 positive inductive reactive energy (Q1)

<b>+VARh-L[Q1]</b>	Total positive inductive reactive energy (Q1)
<b>-VARh1-C[Q4]</b>	Phase 1 negative capacitive reactive energy (Q4)
<b>-VARh2-C[Q4]</b>	Phase 2 negative capacitive reactive energy (Q4)
<b>-VARh3-C[Q4]</b>	Phase 3 negative capacitive reactive energy (Q4)
<b>-VARh-C[Q4]</b>	Total negative capacitive reactive energy (Q4)
<b>-VARh1-L[Q3]</b>	Phase 1 negative inductive reactive energy (Q3)
<b>-VARh2-L[Q3]</b>	Phase 2 negative inductive reactive energy (Q3)
<b>-VARh3-L[Q3]</b>	Phase 3 negative inductive reactive energy (Q3)
<b>-VARh-L[Q3]</b>	Total negative inductive reactive energy (Q3)
<b>+VARh1-C[Q2]</b>	Phase 1 positive capacitive reactive energy (Q2)
<b>+VARh2-C[Q2]</b>	Phase 2 positive capacitive reactive energy (Q2)
<b>+VARh3-C[Q2]</b>	Phase 3 positive capacitive reactive energy (Q2)
<b>+VARh-C[Q2]</b>	Total positive capacitive reactive energy (Q2)
<b>Wh</b>	Total active energy
<b>VARh</b>	Total reactive energy
<b>VARh-L[Q1Q3]</b>	Total inductive reactive energy (Q1+Q3)
<b>VARh-C[Q2Q4]</b>	Total capacitive reactive energy (Q2+Q4)
<b>VAh</b>	Total apparent energy
<b>COUNTER 1</b>	32-bit input pulse counter 1. (MAXIMUM COUNTERS FREQUENCY 50 Hz)
<b>COUNTER 2</b>	32-bit input pulse counter 2. (MAXIMUM COUNTERS FREQUENCY 50 Hz)
<b>TOT KVARh L1</b>	Phase 1 total reactive energy
<b>TOT KVARh L2</b>	Phase 2 total reactive energy
<b>TOT KVARh L3</b>	Phase 3 total reactive energy
<b>Wh1</b>	Phase 1 total active energy
<b>Wh2</b>	Phase 2 total active energy
<b>Wh3</b>	Phase 3 total active energy

## 6.6. HARMONIC ANALYSIS UP TO THE 55<sup>TH</sup> (MODBUS PROTOCOL MODELS ONLY )

VOLTAGE HARMONICS FROM THE FUNDAMENTAL TO THE 55 <sup>TH</sup> [V]	VL1-N, VL2-N, VL3-N
CURRENT HARMONICS FROM THE FUNDAMENTAL TO THE 55 <sup>TH</sup> [A]	IL1, IL2, IL3
VOLTAGE HARMONICS FROM THE 2 <sup>ND</sup> TO THE 55 <sup>TH</sup> [% IN COMPARISON WITH THE FUNDAMENTAL]	VL1-N, VL2-N, VL3-N
CURRENT HARMONICS FROM THE 2 <sup>ND</sup> TO THE 55 <sup>TH</sup> [% IN COMPARISON WITH THE FUNDAMENTAL]	IL1, IL2, IL3

## 7. MEASUREMENT AND CALCULATION TIMES

### 7.1. SAMPLING TIMES

The sampling time of the current channels is 8000 samples per second.

The sampling time of the voltage channels is 8000 samples per second

### 7.2. SETTLING TIMES FOR RMS VALUES

We define the settling time as the time required for the RMS value to reach 99.5% of the full scale in response to an input from 0% to 100% of the Full scale.

For RMS currents the settling time is 580 ms for TA input with current or voltage output

For RMS currents the settling time is 700 ms for Rogowski input

For RMS voltages the settling time is 580 ms.

### 7.3. ANALOG OUTPUT RESPONSE TIME

Analog Output Response Time: Typical 10 ms (10-90%)

### 7.4. UPDATE TIMES OF THE REGISTERS RELATING TO THE HARMONIC ANALYSIS (MODBUS PROTOCOL MODELS ONLY)

The individual registers relating to the individual harmonics are updated every 54 seconds.

### 7.5. UPDATE TIMES OF THE MODBUS REGISTERS (MODBUS PROTOCOL MODELS ONLY)

The measurement update time in Modbus registers is shown in the following table:

<i>Modbus Registers</i>	<i>Typical Modbus Refresh time for Phase L1, L2 and L3 [ms]</i>
Voltage phase to phase L1, L2, L3	560
Voltage phase to neutral L1, L2, L3	115
Current L1, L2, L3, N	115
Active Power L1, L2, L3	115
Reactive Power L1, L2, L3	115

## 8. MEASUREMENT PRECISION AT 23°C

Type of measurement	Precision at 23°C
Current (TA current output)	0.2% of the measurement with 1000:1 dynamic range
Current (TA voltage output)	0.2% of the measurement with 1000:1 dynamic range
Current (Rogowski)	0.5% of the measurement with 1000:1 dynamic range
Voltage	0.2% of the measurement with 1000:1 dynamic range
Active power (current measurement with current or voltage TA)	0.5% of the measurement with PF=1 and 2000:1 dynamic range
Reactive power (current measurement with TA)	0.5% of the measurement with PF=0 and 2000:1 dynamic range
Active power (current measurement with Rogowski)	0.5% of the measurement with PF=1 and 500:1 dynamic range
Reactive power (current measurement with Rogowski)	0.5% of the measurement with PF=0 and 500:1 dynamic range

## 9. ROGOWSKI SENSOR INPUT FULL SCALE

INPUT	F.S. 50 Hz (FORM FACTOR 2) [A]	F.S. 60 Hz (FORM FACTOR 2) [A]
ROGOWSKI 1000A/333mV (750A@50Hz)	750	600
ROGOWSKI 1000A/100mV (1250A@50Hz)	1250	1000
ROGOWSKI 1000A/83mV (750A@50Hz)	750	600
ROGOWSKI 1000A/25mV (1250A@50Hz)	1250	1000
ROGOWSKI 1000A/100 mV (2500A@50Hz)	2500	2000
ROGOWSKI 1000A/100 mV (625A@50Hz)	625	500
ROGOWSKI 1000A/100 mV (312A@50Hz)	312	250

## 10. DATALOGGER (MODBUS PROTOCOL MODELS ONLY)

The device has two different data loggers (that can be enabled also simultaneously):

- a configurable sampling time data logger with a maximum speed of 1 sample per second;

- an event data logger, that is, it records the configured event (just one) and the date/time when it occurred;

It is possible to download the data of both data loggers to a device via web server, the format is text separated by commas (csv standard).

### 10.1. TIME DATA LOGGER

The time data logger allows you to store a maximum of 30 variables (tags) in the device's internal flash for a maximum number of 65472 samples each with a maximum of 30 variables.

The sampling time can vary between 1 second (minimum) to 24 h (maximum).

It is also possible to start e stop the data logger through the status of a digital input.

Example of the contents of the time data logger csv file:

```
DATE/TIME;V31_MIN;V2N_AVG_MIN;V2N_AVG_MAX;V3N;V23_AVG_MAX;V3N_MIN;V3N_MAX;V31_AVG_MAX;Vsys;Vsys_AVG;Vsys_MIN;Vsys_MAX;Vsys_AVG_MIN;
2023-12-07-14-52-06;0.000;0.002;0.119;0.085;0.058;0.081;0.089;0.058;0.316;0.058;0.000;0.316;0.000;
2023-12-07-14-52-36;0.000;0.002;0.119;0.084;0.069;0.081;0.090;0.069;0.316;0.069;0.000;0.316;0.000;
2023-12-07-14-53-19;0.000;0.002;0.117;0.086;0.005;0.081;0.089;0.005;0.316;0.005;0.000;0.316;0.000;
2023-12-07-14-53-49;0.000;0.002;0.117;0.085;0.016;0.081;0.089;0.016;0.316;0.016;0.000;0.316;0.000;
2023-12-07-14-54-19;0.000;0.002;0.117;0.085;0.026;0.081;0.089;0.026;0.316;0.026;0.000;0.316;0.000;
2023-12-07-14-54-49;0.000;0.002;0.117;0.087;0.037;0.081;0.090;0.037;0.316;0.037;0.000;0.316;0.000;
2023-12-07-14-55-19;0.000;0.002;0.117;0.085;0.047;0.081;0.090;0.047;0.316;0.047;0.000;0.316;0.000;
2023-12-07-14-55-49;0.000;0.002;0.117;0.086;0.058;0.081;0.090;0.058;0.316;0.058;0.000;0.316;0.000;
2023-12-07-14-56-20;0.000;0.002;0.117;0.085;0.069;0.081;0.090;0.069;0.316;0.069;0.000;0.316;0.000;
2023-12-07-14-56-50;0.000;0.002;0.117;0.086;0.079;0.081;0.090;0.079;0.316;0.079;0.000;0.316;0.000;
2023-12-07-14-57-20;0.000;0.002;0.117;0.086;0.090;0.081;0.090;0.090;0.316;0.090;0.000;0.316;0.000;
2023-12-07-14-57-50;0.000;0.002;0.117;0.085;0.100;0.080;0.090;0.100;0.316;0.100;0.000;0.316;0.000;
2023-12-07-14-58-20;0.000;0.002;0.117;0.085;0.111;0.080;0.090;0.111;0.316;0.111;0.000;0.316;0.000;
2023-12-07-14-58-50;0.000;0.002;0.117;0.082;0.121;0.080;0.090;0.121;0.316;0.121;0.000;0.316;0.000;
2023-12-07-14-59-20;0.000;0.002;0.117;0.083;0.132;0.080;0.090;0.132;0.316;0.132;0.000;0.316;0.000;
2023-12-07-14-59-50;0.000;0.002;0.117;0.083;0.142;0.080;0.090;0.142;0.316;0.142;0.000;0.316;0.000;
```

### 10.2. EVENT DATA LOGGER

If you need to record the date/time of a particular event, you can use the event data logger.

This can record a maximum of 512 samples of a single event with their time tags.

It is possible to define just one event by indicating the variable to be monitored and its threshold (or alarm window).

Example of the contents of the event data logger csv file:

```
DATE/TIME;EVENT TYPE;
2023-12-07-15-24-42;ALARM;
2023-12-07-15-24-45;ALARM RETURN;
2023-12-07-15-24-47;ALARM;
2023-12-07-15-24-49;ALARM RETURN;
```

## 11. SMART FUNCTIONS FOR SENDING DATA AND EVENTS TO THE CLOUDS (MODBUS PROTOCOL MODELS ONLY)

The values acquired by dataloggers can be sent directly to the clouds by choosing between the MQTT(s), Http(s) or FTP protocols.

You can choose to send with a single protocol between Mqtt(s), http(s) or FTP.



The MQTT protocol supported is version 3.1.1



The HTTP protocol for tags publication on cloud is based on API Rest



The TLS protocol supported is version 1.2



Keys certifications according to X.509 standard

### **11.1. *MQTT(s) CLIENT PROTOCOL***

MQTT is the most widely used protocol for IOT applications.

*"MQTT" stands for MQ Telemetry Transport. It is an extremely simple and lightweight public/subscription messaging protocol designed for devices with low bandwidth, high latency or unreliable networks. The design principles are to minimize network bandwidth and device resource requirements while trying to ensure reliability and a certain degree of delivery guarantee. These principles prove ideal for the emerging "machine-to-machine" (M2M) or "Internet of Things" world.*

For more information on the MQTT protocol see



The MQTT version supported is 3.1.1

Sending via MQTT can be parameterized using a simple syntax, it is also possible to add the timestamp (in date/time minutes seconds or in seconds since 1/1/1970 "epoch" format).

Using Mqtt it is also possible to insert a threshold beyond which data can be sent or not.

### **11.2. *HTTP(s) POST PROTOCOL***

Communication with the Clouds is possible via HTTP protocol with a POST call.

The data sent to the server is contained in the body of the HTTP request.

Sending via HTTP can be parameterized using a simple syntax, it is also possible to add the timestamp (in date/time minutes seconds or in seconds since 1/1/1970 "epoch" format).

### **11.3. *FTP CLIENT PROTOCOL***

Data can also be sent to an FTP server.

In this case the logs are sent directly in the csv format produced by the data logger

### **11.4. *SENDING DATA AND EVENTS WITH OR WITHOUT RECOVERY***

If you set a log sampling time over or equal to 30 seconds, you can activate the recovery function.

In this mode data are sent with the configured sending time but, in the event of a communication hole, anything that has not been sent will be sent at the next connection.

## 11.5. SENDING COMMANDS TO THE DEVICE VIA MQTT(s) PROTOCOL

The device is compatible with receiving commands via the MQTT(s) protocol.

By default, the subscription topic for commands is configured as follows:

seneca/%c/cmd

Where %c represents the client ID or a unique device identifier, dynamically replaced upon connection.



This configuration can be modified via the web interface in the section:

System Connection → MQTT

The MQTT commands supported by the device are as follows:

JSON Hexadecimal Command	JSON Decimal String Command	JSON Decimal Value Command	Expected JSON Command Result
{"value": "0xc1a0"}	{"value": "49568"}	{"value": 49568}	Device Reboot
{"value": "0x105"}	{"value": "261"}	{"value": 261}	Clear energy
{"value": "0x104"}	{"value": "260"}	{"value": 260}	Reset MIN/MAX
{"value": "0x103"}	{"value": "259"}	{"value": 259}	Reset AVG
{"value": "0xA01A"}	{"value": "40986"}	{"value": 40986}	Counter 1 reset
{"value": "0xA02A"}	{"value": "41002"}	{"value": 41002}	Counter 2 reset

Additional command examples for valuing counters in hexadecimal:

Configured value	Counter 1 valuing JSON command in hexadecimal
0	{"value": "0xA01A", "CMD_AUX": "0x0"}
1	{"value": "0xA01A", "CMD_AUX": "0x1"}
2	{"value": "0xA01A", "CMD_AUX": "0x2"}
3	{"value": "0xA01A", "CMD_AUX": "0x3"}
4	{"value": "0xA01A", "CMD_AUX": "0x4"}
5	{"value": "0xA01A", "CMD_AUX": "0x5"}
10	{"value": "0xA01A", "CMD_AUX": "0xA"}
50	{"value": "0xA01A", "CMD_AUX": "0x32"}
100	{"value": "0xA01A", "CMD_AUX": "0x64"}
500	{"value": "0xA01A", "CMD_AUX": "0x1F4"}
1000	{"value": "0xA01A", "CMD_AUX": "0x3E8"}
65535	{"value": "0xA01A", "CMD_AUX": "0xFFFF"}

Configured value	Counter 2 valuing JSON command in hexadecimal
0	{"value": "0xA02A", "CMD_AUX": "0x0"}
1	{"value": "0xA02A", "CMD_AUX": "0x1"}
2	{"value": "0xA02A", "CMD_AUX": "0x2"}
3	{"value": "0xA02A", "CMD_AUX": "0x3"}
4	{"value": "0xA02A", "CMD_AUX": "0x4"}
5	{"value": "0xA02A", "CMD_AUX": "0x5"}
10	{"value": "0xA02A", "CMD_AUX": "0xA"}
50	{"value": "0xA02A", "CMD_AUX": "0x32"}
100	{"value": "0xA02A", "CMD_AUX": "0x64"}
500	{"value": "0xA02A", "CMD_AUX": "0x1F4"}
1000	{"value": "0xA02A", "CMD_AUX": "0x3E8"}
65535	{"value": "0xA02A", "CMD_AUX": "0xFFFF"}

Additional command examples for valuing counters with decimal string:

Configured value	Counter 1 valuing JSON command with decimal string
0	{"value": "40986", "CMD_AUX": "0"}
1	{"value": "40986", "CMD_AUX": "1"}
2	{"value": "40986", "CMD_AUX": "2"}
3	{"value": "40986", "CMD_AUX": "3"}
4	{"value": "40986", "CMD_AUX": "4"}
5	{"value": "40986", "CMD_AUX": "5"}
10	{"value": "40986", "CMD_AUX": "10"}
50	{"value": "40986", "CMD_AUX": "50"}
100	{"value": "40986", "CMD_AUX": "100"}
500	{"value": "40986", "CMD_AUX": "500"}
1000	{"value": "40986", "CMD_AUX": "1000"}
65535	{"value": "40986", "CMD_AUX": "65535"}

Configured value	Counter 2 valuing JSON command with decimal string
0	{"value": "41002", "CMD_AUX": "0"}
1	{"value": "41002", "CMD_AUX": "1"}
2	{"value": "41002", "CMD_AUX": "2"}
3	{"value": "41002", "CMD_AUX": "3"}
4	{"value": "41002", "CMD_AUX": "4"}
5	{"value": "41002", "CMD_AUX": "5"}
10	{"value": "41002", "CMD_AUX": "10"}
50	{"value": "41002", "CMD_AUX": "50"}
100	{"value": "41002", "CMD_AUX": "100"}
500	{"value": "41002", "CMD_AUX": "500"}
1000	{"value": "41002", "CMD_AUX": "1000"}
65535	{"value": "41002", "CMD_AUX": "65535"}

Additional command examples for valuing counters with decimal value:

Configured value	Counter 1 valuing JSON command with decimal value
0	{"value":40986, "CMD_AUX":0}
1	{"value":40986, "CMD_AUX":1}
2	{"value":40986, "CMD_AUX":2}
3	{"value":40986, "CMD_AUX":3}
4	{"value":40986, "CMD_AUX":4}
5	{"value":40986, "CMD_AUX":5}
10	{"value":40986, "CMD_AUX":10}
50	{"value":40986, "CMD_AUX":50}
100	{"value":40986, "CMD_AUX":100}
500	{"value":40986, "CMD_AUX":500}
1000	{"value":40986, "CMD_AUX":1000}
65535	{"value":40986, "CMD_AUX":65535}

Configured value	Counter 2 valuing JSON command with decimal value
0	{"value":41002, "CMD_AUX":0}
1	{"value":41002, "CMD_AUX":1}
2	{"value":41002, "CMD_AUX":2}
3	{"value":41002, "CMD_AUX":3}
4	{"value":41002, "CMD_AUX":4}
5	{"value":41002, "CMD_AUX":5}
10	{"value":41002, "CMD_AUX":10}
50	{"value":41002, "CMD_AUX":50}
100	{"value":41002, "CMD_AUX":100}
500	{"value":41002, "CMD_AUX":500}
1000	{"value":41002, "CMD_AUX":1000}
65535	{"value":41002, "CMD_AUX":65535}

## 12. CONNECTION OF THE DEVICES TO A NETWORK

### 12.1. MODBUS, ETHERNET/IP AND OPC-UA PROTOCOLS MODELS

The factory configuration of the IP address is:

**Static address: 192.168.90.101**

Therefore, multiple devices must not be inserted on the same network with the same static IP.

If you want to connect multiple devices on the same network, you need to change the IP address configuration (for instance using the Seneca Discovery Device software).

#### **ATTENTION!**

**DO NOT CONNECT 2 OR MORE FACTORY-CONFIGURED DEVICES ON THE SAME NETWORK, OR THE  
ETHERNET INTERFACE WILL NOT WORK  
(CONFLICT OF IP ADDRESSES 192.168.90.101)**

If the addressing mode with DHCP is activated and an IP address is not received within 1 minute, the device will set an IP address with a fixed error:

169.254.x.y

Where x.y are the last two values of the MAC ADDRESS.

This way it is possible to install more I/O of the R series and then configure the IP Address even on networks without a DHCP server.

## 12.2. PROFINET IO PROTOCOL MODELS

Profinet IO devices are supplied without an IP address.

### **ATTENTION!**

PROFINET IO PROTOCOL DEVICES ARE SUPPLIED WITHOUT AN IP ADDRESS (0.0.0.0).

MORE DEVICES CAN THEREFORE BE INSERTED INTO THE SAME PROFINET NETWORK AND  
IDENTIFIED THROUGH SCAN OF THE PROFINET NETWORK ITSELF

TO SET AN IP ADDRESS (FOR EXAMPLE TO ACCESS THE WEB SERVER) USE THE PROFINET  
CONFIGURATION ENVIRONMENT OR FORCE THE ADDRESS 192.168.90.101 WITH THE APPROPRIATE  
DIP SWITCH

### 13. I/O COPY USING THE PEER TO PEER FUNCTION WITHOUT WIRING (MODBUS PROTOCOL MODELS ONLY)

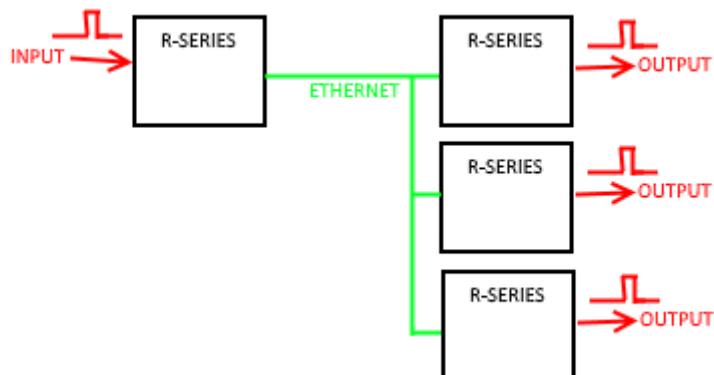
The "R" series devices can be used to copy and update in real time an input channel on a remote output channel without the aid of a master controller.

For example, a digital input can be copied to a remote digital output device:



Note that no controller is required because the communication is managed directly by the R series devices. It is possible to make a more sophisticated connection, for example it is possible to copy the inputs to different R-series remote devices (from Device 1 Input 1 to Device 2 Output1, Device 1 Input 2 to Device 3 Output 1 etc ...)

It is also possible to copy an input to an output of multiple remote devices:



Each R-series device can send and receive a maximum of 32 inputs.

## 14. WEB SERVER

### 14.1. ACCESS TO THE WEB SERVER

The web server can be accessed using a web browser by directly typing the device's IP address. By default, the device is configured to use the HTTP protocol. HTTPS is not enabled by default.

To find the IP address, use the "search" function in the "Easy Setup 2" software or the "Seneca Discovery Device" software.

Using the factory configuration (be careful about the model you purchased; for example, for -P models, you need to force the IP using a dip switch), you have:

`http://192.168.90.101`

The first time you log in, you will be prompted for your username and password.

The default values are:

User Name: admin

Password: admin

In the web server, in the "System Settings" section, there is an option that allows you to enable or disable the HTTPS connection with TLS protocol.



After enabling HTTPS, the device will only be accessible via an encrypted connection. Access must therefore be made using, for example, the following URL:

`https://192.168.90.101`

### ! ATTENTION!

AFTER THE FIRST ACCESS CHANGE USER NAME AND PASSWORD IN ORDER TO PREVENT  
ACCESS TO THE DEVICE TO UNAUTHORIZED PEOPLE.

### ! ATTENTION!

IF THE PARAMETERS TO ACCESS THE WEB SERVER HAVE BEEN LOST, IT IS NECESSARY TO  
RESET THE CONFIGURATION TO DEFAULT USING THE DIP-SWITCHES

## ATTENTION!

IN R203-P AND R204-P DEVICES, BEFORE ACCESSING THE WEB SERVER, DISCONNECT THE DEVICE FROM THE IO PROFINET NETWORK

## 15. CONNECTION DIAGNOSTICS

The device includes advanced connection diagnostics available on the webserver and on communication protocols.

If the system detects a connection error, the WIRING ERROR LED will flash, at this point it is possible to check the reason for the error:

**VOLTAGE CYCLIC DIRECTION** If it is "Wrong" it indicates that the connection of the voltmeters does not comply with the cyclic direction R (L1) -> S (L2) -> T (L3). To solve the problem, wire the voltage inputs again. If it is "Correct" go to the next item. This is not a real connection error (and therefore does not cause the WIRING ERROR LED to flash).

## ATTENTION!

IGNORE THE VOLTAGE CYCLIC DIRECTION ERROR INDICATION IN CASE OF CONNECTION WITH ARON INSERTION

**CURRENT L1..L3** If it is "STRAIGHT" it indicates that the TA relating to the i-th input is connected correctly. If it is "INVERTED" it indicates that the TA relating to the i-th input is reversed (reverse the wiring of the TA terminals). When the three currents are "STRAIGHT" it is possible to move on to the next item.

## ATTENTION!

IF THE DEVICE IS CONNECTED TO A GENERATOR, IT IS CORRECT THAT CURRENT L1..L3 ARE ALL "INVERTED".  
IN THIS CASE, THE WORD "PRODUCTION" WILL APPEAR IN THE "ENERGY" FIELD .

**L1..L3 CONNECTION** If this parameter is "CORRECT" it means that the L-i th current input and the L-i th voltage input have been wired correctly.

In the case of "ERROR" it means that, for example the L1-th phase of the current does not coincide with the L1-th voltage phase, therefore a wiring error of the ammeters or voltmeters (for example the current L1 has been connected to the current input L2).

It is, in fact, possible to wire complying with the cyclic direction of the voltages and the correct direction of the TAs but have no correspondence between the voltage and current phases.

---

In this case, wire the device again (for example, it is possible to move the voltmeters by 1 position, always complying with the cyclic direction until this error disappears).

In the case of non-standard installation configurations, a parameter can be configured to ignore the diagnostics.

## 16. DEVICE CONFIGURATION VIA WEB SERVER (MODBUS PROTOCOL MODELS ONLY)

To configure the device, access the web server and select the section you are interested in.

After a modification to the configuration has been made, the changes must be confirmed with the "**APPLY**" button entering the administrator account and password.

The **Reboot** button reboots the device (not necessary in the event of a configuration change).

The **Default** button returns all the page parameters to the default settings.

### 16.1. MEASURES SECTION -> MEASURES SETUP

#### **CONNECTION TYPE**

Sets the type of connection to make.

#### **CT TYPE**

Selects the type of sensor and the value of the TA secondary to be used between:

TA with current output

TA with MV output

Rogowski sensor

#### **CT RATIO**

Sets any TA ratio, the value to enter is related to the primary, example:

If a 50/5 TA has been installed, the value 50 must be entered as primary with the value 5 on the "TA TYPE" parameter.

#### **VT TYPE**

Sets the type of voltage transformer

#### **NETWORK FREQUENCY [Hz]**

Set the system to 50 or 60 Hz, this parameter is not important since the device adapts to the network frequency autonomously.

#### **AVERAGE POWER WINDOW**

Sets the time on which to measure the average values

#### **USER CALIBRATION VOLTAGE**

Sets a possible multiplication coefficient for the voltage measurement.

#### **USER CALIBRATION CURRENT**

Sets a possible multiplication coefficient for the current measurement.

#### **CUTOFF CURRENT [A]**

Sets a current value (on the primary) below which counters are stopped.

#### **USER CALIBRATION ACTIVE ENERGY**

Sets a possible multiplication coefficient for the active energy.

#### **USER CALIBRATION REACTIVE ENERGY**

Sets a possible multiplication coefficient for the reactive energy.

#### **ANALOG OUTPUT TYPE**

Selects the type of analog output between voltage and current

## 16.2. **MEASURES SECTION -> ENERGY TOTALIZER SETUP**

Allows you to set the starting values of the various counters of the device.

## 16.3. **DATALOGGER SECTION-> SETUP DATALOGGER**

### **EVENT MODE**

Selects the maximum, minimum or window alarm event.

### **RETURN EVENT**

Enables or not also the alarm exit event

### **EVENT SOURCE**

Selects the variable to use for the alarm event

### **EVENT HIGH THRESHOLD**

Sets the threshold representing the high alarm event.

### **EVENT LOW THRESHOLD**

Sets the threshold representing the low alarm event.

### **HYSTERESIS**

Represents the event hysteresis

### **DATA LOGGER SAMPLE TIME**

Enables/Disables and sets the sampling time for the timed data logger. This will also be the send time for MQTT and http connections.

### **DATA RECOVERY**

If the sample time is  $\geq 30$ s it is possible to choose whether the sending of data must take place with or without recovery in case of momentary lack of communication.

### **DATA LOGGER CONNECTOR**

Allows you to choose whether to send data via MQTT, HTTP or FTP protocols.

### **DATA LOGGER SOURCE 1...30**

Selects the i-th variable to be entered in the timed data logger.

## 16.4. **SYSTEM SETTINGS SECTION -> SYSTEM SETTINGS**

### **PROTECT CONFIGURATION (default: Disabled)**

Allows you to enable or not the device IP configuration from the Seneca Discovery software

### **ADMIN ACCOUNT NAME**

This is the name of the administrator account, the administrator can view and configure the device.

**ADMIN ACCOUNT PASSWORD**

This is the password of the administrator account.

**OPERATOR ACCOUNT NAME**

This is the name of the operator account, the operator can view and modify the configuration but cannot change the measurement parameters.

**OPERATOR ACCOUNT PASSWORD**

This is the password of the operator account.

**VIEWER ACCOUNT NAME**

This is the name of the account viewer, the viewer can only view the configuration

**VIEWER ACCOUNT PASSWORD**

This is the password of the viewer account.

**WEBSERVER PORT**

This is the webserver port

**16.5. SYSTEM SETTINGS SECTION -> SYSTEM ETHERNET****DHCP (ETH) (default: Disabled)**

Sets the DHCP client to get an IP address automatically.

**IP ADDRESS STATIC (ETH) (default: 192.168.90.101)**

Sets the device static address. Careful not to enter devices with the same IP address into the same network.

**IP MASK STATIC (ETH) (default: 255.255.255.0)**

Sets the mask for the IP network.

**GATEWAY ADDRESS STATIC (ETH) (default: 192.168.90.1)**

Sets the gateway address.

**DNS (default: 8.8.8.8)**

Set the Domain Name System.

**16.6. SYSTEM SETTINGS SECTION -> SYSTEM TIME****DATE/TIME SYNC WITH NTP SERVER**

Selects whether the time should be synchronized with NTP servers

**DATE/TIME SYNC MODE**

Selects how often to synchronize the date/time

**NTP SERVER IP ADDRESS 1**

Sets the first NTP server

**NTP SERVER IP ADDRESS 2**

Sets the second NTP server (backup)

**TIME ZONE**

Sets the Timezone

**DAYLIGHT SAVING TIME**

Sets whether or not to activate the switchover to winter/summer time

**16.7. SYSTEM CONNECTION SECTION -> MODBUS****SERVER PORT (ETH) (default: 502)**

Sets the communication port for the Modbus TCP-IP server.

**SERVER STATION ADDRESS (ETH) (default: 1)**

Active only if Modbus Passthrough is also active, it sets the station address of the modbus TCP-IP server.

**⚠ ATTENTION!**

THE MODBUS SERVER WILL ANSWER ANY STATION ADDRESS ONLY IF THE MODBUS PASSTHROUGH MODE IS DISABLED.

**MODBUS PASSTHROUGH (ETH) (default: disabled)**

Sets the conversion mode from Modbus TCP-IP to Modbus RTU serial (see chapter 14).

**MODBUS TCP-IP CONNECTION TIMEOUT [sec] (ETH) (default: 60)**

Sets the TCP-IP connection timeout for the Modbus TCP-IP server and Passthrough modes.

**BAUDRATE MODBUS RTU (SER) (default: 38400 baud)**

Sets the baud rate for the RS485 communication port.

**DATA MODBUS RTU (SER) (default: 8 bit)**

Sets the number of bits for the RS485 communication port.

**PARITY MODBUS RTU (SER) (default: None)**

Sets the parity for the RS485 communication port.

**STOP BIT MODBUS RTU (SER) (default: 1 bit)**

Sets the number of stop bits for the RS485 communication port.

**MODBUS PASSTHROUGH SERIAL TIMEOUT (default: 100ms)**

Active only if passthrough mode is activated, sets the maximum waiting time before sending a new packet from TCP-IP to the serial port. It must be set according to the longest response time of all the devices present on the RS485 serial port.

## 16.8. SYSTEM CONNECTION SECTION -> FTP

In this section the timed sending of logs to an FTP server can be configured. The sending of the logs takes place without encryption.

By pressing the "**FTP SEND NOW**" button a log file is forced to be sent, it will be possible to test the operation of the data entered.

### **DATALOGGER SENDING**

Here you can select the frequency of the log sending, in the case of weekly sending you can also choose which days and at what time to send.

#### **FTP SERVER**

Sets the IP address or FTP server name.

#### **SERVER PORT**

Sets the server FTP port

#### **USER NAME**

Sets the user name to access the server FTP

#### **PASSWORD**

Sets the password to access the server FTP

#### **FOLDER**

Sets the folder to write logs to (leave blank for root)

#### **DEVICE NAME**

Sets the name you want to give to the device, this will be the initial part of the file name on the server.

### **ATTENTION!**

IN THE EVENT OF LACK OF CONNECTION WITH THE FTP SERVER, THE DEVICE WILL CONTINUE TO RECORD THE LOGS AS LONG AS THERE IS SPACE IN THE MEMORY. WHEN THE CONNECTION RESUMES, IT WILL SEND THE LOGS NOT YET SENT IN A SINGLE FILE.

### **ATTENTION!**

THE FORMAT OF THE FILES SENT IS THE SAME AS THAT OBTAINED BY DOWNLOADING THE TIME DATABASE FROM THE WEB SERVER (CSV FORMAT).

## 16.9. SYSTEM CONNECTION SECTION -> MQTT

### **CUSTOM CLOUD**

If the MQTT cloud protocol is selected, you can choose between the clouds:

None, Direl, ONBOARD or Seneca CloudBox2

**Note:** Through the device's MQTT configurability, it is possible to connect to virtually any cloud

**Direl ADM:** Sets up the device to connect to the Direl ADM cloud

**On-Board:** Sets up the device to connect to the On-Board cloud

**Seneca Cloubbox 2:** Sets up the device to connect to the Seneca Cloubbox2 cloud

To add other clouds to the list, you can make a request to Seneca.

#### **MAX FAILURE COUNTER**

*It is the maximum number of attempts without a pause before declaring a transmission fail.*

#### **WAIT AFTER FAILURE (minutes)**

*It is the pause in minutes before trying to connect again*

#### **CLIENT ID**

*The Client ID is a unique identifier that distinguishes each MQTT client device or application connected to the broker. It must be unique for each simultaneous connection to the same MQTT broker.*

#### **BROKER HOST**

*Specifies the address (hostname or IP address) of the MQTT server (broker) the client should connect to.*

#### **BROKER PORT**

*Specifies the broker port to connect to*

#### **USE WEBSOCKETS**

*Allows you to activate MQTT communication via Websockets*

#### **KEEP ALIVE INTERVAL [s]**

*This parameter defines Keep alive which ensures that the connection between the broker and client is still open and that the broker and client are aware that they are connected. When the client establishes a connection to the broker, it tells the broker a time interval in seconds. This interval defines the maximum period of time during which the broker and client may not communicate with each other.*

#### **CLEAN SESSION**

*This parameter defines the "clean session". When the clean session flag is set to true, the client does not want a persistent session. If the client disconnects for any reason, all information and messages queued from a previous session are lost.*

#### **MESSAGE RETAIN**

*Usually if a publisher publishes a message on a topic to which no one is subscribed, the message is simply discarded by the broker. However, the publisher can tell the broker to keep the last message of that topic.*

#### **QUALITY OF SERVICE [QOS]**

*This parameter defines the QOS of the MQTT protocol.*

*Can be selected from*

*QOS 0 (once only, without ack)*

*QOS 1 (at least once, with ack)*

*QOS 2 (once only, with ack and resend)*

#### **AUTHENTICATION**

*This parameter defines whether user/password authentication should be used to access the cloud*

**AUTHENTICATION USER**

*Broker or server username*

**AUTHENTICATION PASSWORD**

*Broker or server password*

**SSL/TLS**

*Defines whether to enable the SSL/TLS 1.2 encrypted security protocol*

**CLIENT CERTIFICATE REQUIRED**

*Defines whether to manage x.509 certificates for the SSL/TLS connection*

**CLIENT CERTIFICATE VALIDITY CHECK**

*If activated, it verifies the certificates are valid*

**LOG ON CHANGE**

*Updates values on broker or server only upon change and no longer over time*

**PUBLISH MULTIPLE TAGS**

*This parameter defines whether the publish contains multiple tags or whether the device should send a publish for each tag.*

**PUBLISH TOPIC FOR LOGS**

*Selects the topic name for the logs using the following table:*

%c	Device Client ID
%m	Device MAC Address
%M	Device MAC Address without dot separator
%j[field]	Adds double quotes " to [field]. The double quotes represent a string in JSON

*For example:*

*If:*

*Device Client ID = Padova13*

*Publish Topic for Logs = Seneca/%c/data*

*The data logs will be sent to the topic:Seneca/Padova13/data*

**PUBLISH PAYLOAD FOR LOGS**

*Selects the format to be used for the payload of the data datalogger using the following table:*

%c	Device Client ID
%m	Device MAC Address

%M	Device MAC Address without dots
%d	date-time
%t	timestamp (number of seconds from 01/01/1970)
%u	timestamp (number of milliseconds from 01/01/1970)
%b	bulk (format specified in "Publish Bulk Format")
%f	Inserts an ID instead of the variable name (see table)
%n	Tag name (only for "Publish Bulk Format")
%v	Tag value (only in "Publish Bulk Format")
%j[field]	Adds double quotes " to [field]. The double quotes represent a string in JSON

**Note: the %f placeholder adds a unique ID to the variable to be published according to the following table:**

%f (ID)	VARIABLE	EXPLANATION	TIPO
1	V1N	Voltage between Phase 1 and neutral	READ
2	V1N_AVG	Phase 1 to Neutral Voltage (in demand time)	READ
3	V1N_MIN	Minimum voltage between Phase 1 and neutral (from switch-on)	READ
4	V1N_MAX	Maximum voltage between Phase 1 and neutral (from switch-on)	READ
5	V1N_AVG_MIN	Phase 1 to minimum neutral voltage (in demand time)	READ
6	V1N_AVG_MAX	Phase 1 to maximum neutral voltage (in demand time)	READ
7	V2N	Voltage between Phase 2 and neutral	READ
8	V2N_AVG	Phase 2 to Neutral Voltage (in demand time)	READ
9	V2N_MIN	Minimum voltage between Phase 2 and neutral (from switch-on)	READ
10	V2N_MAX	Maximum voltage between Phase 2 and neutral (from switch-on)	READ
11	V2N_AVG_MIN	Phase 2 to minimum neutral voltage (in demand time)	READ
12	V2N_AVG_MAX	Phase 2 to maximum neutral voltage (in demand time)	READ
13	V3N	Voltage between Phase 3 and neutral	READ
14	V3N_AVG	Phase 3 to Neutral Voltage (in demand time)	READ
15	V3N_MIN	Minimum voltage between Phase 3 and neutral (from switch-on)	READ
16	V3N_MAX	Maximum voltage between Phase 3 and neutral (from switch-on)	READ
17	V3N_AVG_MIN	Phase 3 to minimum neutral voltage (in demand time)	READ
18	V3N_AVG_MAX	Phase 3 to maximum neutral voltage (in demand time)	READ
19	AN	Neutral Current	READ
20	AN_AVG	Neutral Current (on demand time)	READ
21	AN_MIN	Minimum neutral current (from switch-on)	READ
22	AN_MAX	Maximum neutral current (from switch-on)	READ

<b>23</b>	AN_AVG_MIN	Minimum neutral current (in demand time)	READ
<b>24</b>	AN_AVG_MAX	Maximum neutral current (in demand time)	READ
<b>25</b>	V12	Phase-to-phase voltage between Phase 1 and 2	READ
<b>26</b>	V12_AVG	Phase-to-phase voltage between Phase 1 and 2 (in demand time)	READ
<b>27</b>	V12_MIN	Minimum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>28</b>	V12_MAX	Maximum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>29</b>	V12_AVG_MIN	Phase-to-phase voltage between minimum Phase 1 and 2 (in demand time)	READ
<b>30</b>	V12_AVG_MAX	Phase-to-phase voltage between maximum Phase 1 and 2 (in demand time)	READ
<b>31</b>	V23	Phase-to-phase voltage between Phase 2 and 3	READ
<b>32</b>	V23_AVG	Phase-to-phase voltage between Phase 2 and 3 (in demand time)	READ
<b>33</b>	V23_MIN	Minimum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>34</b>	V23_MAX	Maximum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>35</b>	V23_AVG_MIN	Phase-to-phase voltage between minimum Phase 2 and 3 (in demand time)	READ
<b>36</b>	V23_AVG_MAX	Phase-to-phase voltage between maximum Phase 2 and 3 (in demand time)	READ
<b>37</b>	V31	Phase-to-phase voltage between Phase 3 and 1	READ
<b>38</b>	V31_AVG	Phase-to-phase voltage between Phase 3 and 1 (in demand time)	READ
<b>39</b>	V31_MIN	Minimum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>40</b>	V31_MAX	Maximum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>41</b>	V31_AVG_MIN	Phase-to-phase voltage between minimum Phase 3 and 1 (in demand time)	READ
<b>42</b>	V31_AVG_MAX	Phase-to-phase voltage between maximum Phase 3 and 1 (in demand time)	READ
<b>43</b>	Vsys	System voltage:	READ
<b>44</b>	Vsys_AVG	System voltage (in demand time)	READ
<b>45</b>	Vsys_MIN	Minimum system voltage (from switch-on)	READ
<b>46</b>	Vsys_MAX	Maximum system voltage (from switch-on)	READ
<b>47</b>	Vsys_AVG_MIN	Minimum system voltage (in demand time)	READ
<b>48</b>	Vsys_AVG_MAX	Maximum system voltage (in demand time)	READ
<b>49</b>	A1	Phase 1 current	READ
<b>50</b>	A1_AVG	Phase 1 current (in demand time)	READ
<b>51</b>	A1_MIN	Minimum Phase 1 current (from switch-on)	READ
<b>52</b>	A1_MAX	Maximum Phase 1 current (from switch-on)	READ
<b>53</b>	A1_AVG_MIN	Minimum Phase 1 current (in demand time)	READ
<b>54</b>	A1_AVG_MAX	Maximum Phase 1 current (in demand time)	READ

55	A2	Phase 2 current	READ
56	A2_AVG	Phase 2 current (in demand time)	READ
57	A2_MIN	Minimum Phase 2 current (from switch-on)	READ
58	A2_MAX	Maximum Phase 2 current (from switch-on)	READ
59	A2_AVG_MIN	Minimum Phase 2 current (in demand time)	READ
60	A2_AVG_MAX	Maximum Phase 2 current (in demand time)	READ
61	A3	Phase 3 current	READ
62	A3_AVG	Phase 3 current (in demand time)	READ
63	A3_MIN	Minimum Phase 3 current (from switch-on)	READ
64	A3_MAX	Maximum Phase 3 current (from switch-on)	READ
65	A3_AVG_MIN	Minimum Phase 3 current (in demand time)	READ
66	A3_AVG_MAX	Maximum Phase 3 current (in demand time)	READ
67	Asys	System current	READ
68	Asys_AVG	System current (in demand time)	READ
69	Asys_MIN	Minimum system current (from switch-on)	READ
70	Asys_MAX	Maximum system current (from switch-on)	READ
71	Asys_AVG_MIN	Minimum system current (in demand time)	READ
72	Asys_AVG_MAX	Maximum system current (in demand time)	READ
73	P1	Phase 1 Active power	READ
74	P1_AVG	Phase 1 active power (in demand time)	READ
75	P1_MIN	Minimum Phase 1 active power (from switch-on)	READ
76	P1_MAX	Maximum Phase 1 active power (from switch-on)	READ
77	P1_AVG_MIN	Minimum Phase 1 active power (in demand time)	READ
78	P1_AVG_MAX	Maximum Phase 1 active power (in demand time)	READ
79	P2	Phase 2 Active power	READ
80	P2_AVG	Phase 2 active power (in demand time)	READ
81	P2_MIN	Minimum Phase 2 active power (from switch-on)	READ
82	P2_MAX	Maximum Phase 2 active power (from switch-on)	READ
83	P2_AVG_MIN	Minimum Phase 2 active power (in demand time)	READ
84	P2_AVG_MAX	Maximum Phase 2 active power (in demand time)	READ
85	P3	Phase 3 Active power	READ
86	P3_AVG	Phase 3 active power (in demand time)	READ
87	P3_MIN	Minimum Phase 3 active power (from switch-on)	READ
88	P3_MAX	Maximum Phase 3 active power (from switch-on)	READ
89	P3_AVG_MIN	Minimum Phase 3 active power (in demand time)	READ
90	P3_AVG_MAX	Maximum Phase 3 active power (in demand time)	READ
91	Psys	System Active power	READ
92	Psys_AVG	System active power (in demand time)	READ
93	Psys_MIN	Minimum system active power (from switch-on)	READ
94	Psys_MAX	Maximum system active power (from switch-on)	READ
95	Psys_AVG_MIN	Minimum system active power (in demand time)	READ
96	Psys_AVG_MAX	Maximum system active power (in demand time)	READ
97	S1	Phase 1 apparent power	READ

<b>98</b>	<b>S1_AVG</b>	Phase 1 apparent power (in demand time)	READ
<b>99</b>	<b>S1_MIN</b>	Minimum Phase 1 apparent power (from switch-on)	READ
<b>100</b>	<b>S1_MAX</b>	Maximum Phase 1 apparent power (from switch-on)	READ
<b>101</b>	<b>S1_AVG_MIN</b>	Minimum Phase 1 apparent power (in demand time)	READ
<b>102</b>	<b>S1_AVG_MAX</b>	Maximum Phase 1 apparent power (in demand time)	READ
<b>103</b>	<b>S2</b>	Phase 2 apparent power	READ
<b>104</b>	<b>S2_AVG</b>	Phase 2 apparent power (in demand time)	READ
<b>105</b>	<b>S2_MIN</b>	Minimum Phase 2 apparent power (from switch-on)	READ
<b>106</b>	<b>S2_MAX</b>	Maximum Phase 2 apparent power (from switch-on)	READ
<b>107</b>	<b>S2_AVG_MIN</b>	Minimum Phase 2 apparent power (in demand time)	READ
<b>108</b>	<b>S2_AVG_MAX</b>	Maximum Phase 2 apparent power (in demand time)	READ
<b>109</b>	<b>S3</b>	Phase 3 apparent power	READ
<b>110</b>	<b>S3_AVG</b>	Phase 3 apparent power (in demand time)	READ
<b>111</b>	<b>S3_MIN</b>	Minimum Phase 3 apparent power (from switch-on)	READ
<b>112</b>	<b>S3_MAX</b>	Maximum Phase 3 apparent power (from switch-on)	READ
<b>113</b>	<b>S3_AVG_MIN</b>	Minimum Phase 3 apparent power (in demand time)	READ
<b>114</b>	<b>S3_AVG_MAX</b>	Maximum Phase 3 apparent power (in demand time)	READ
<b>115</b>	<b>Ssys</b>	System apparent power	READ
<b>116</b>	<b>Ssys_AVG</b>	System apparent power (in demand time)	READ
<b>117</b>	<b>Ssys_MIN</b>	Minimum system apparent power (from switch-on)	READ
<b>118</b>	<b>Ssys_MAX</b>	Maximum system apparent power (from switch-on)	READ
<b>119</b>	<b>Ssys_AVG_MIN</b>	Minimum system apparent power (in demand time)	READ
<b>120</b>	<b>Ssys_AVG_MAX</b>	Maximum system apparent power (in demand time)	READ
<b>121</b>	<b>Q1</b>	Phase 1 Reactive power	READ
<b>122</b>	<b>Q1_AVG</b>	Phase 1 reactive power (in demand time)	READ
<b>123</b>	<b>Q1_MIN</b>	Minimum Phase 1 reactive power (from switch-on)	READ
<b>124</b>	<b>Q1_MAX</b>	Maximum Phase 1 reactive power (from switch-on)	READ
<b>125</b>	<b>Q1_AVG_MIN</b>	Minimum Phase 1 reactive power (in demand time)	READ
<b>126</b>	<b>Q1_AVG_MAX</b>	Maximum Phase 1 reactive power (in demand time)	READ
<b>127</b>	<b>Q2</b>	Phase 2 Reactive power	READ
<b>128</b>	<b>Q2_AVG</b>	Phase 2 reactive power (in demand time)	READ
<b>129</b>	<b>Q2_MIN</b>	Minimum Phase 2 reactive power (from switch-on)	READ
<b>130</b>	<b>Q2_MAX</b>	Maximum Phase 2 reactive power (from switch-on)	READ
<b>131</b>	<b>Q2_AVG_MIN</b>	Minimum Phase 2 reactive power (in demand time)	READ
<b>132</b>	<b>Q2_AVG_MAX</b>	Maximum Phase 2 reactive power (in demand time)	READ
<b>133</b>	<b>Q3</b>	Phase 3 Reactive power	READ
<b>134</b>	<b>Q3_AVG</b>	Phase 3 reactive power (in demand time)	READ
<b>135</b>	<b>Q3_MIN</b>	Minimum Phase 3 reactive power (from switch-on)	READ
<b>136</b>	<b>Q3_MAX</b>	Maximum Phase 3 reactive power (from switch-on)	READ
<b>137</b>	<b>Q3_AVG_MIN</b>	Minimum Phase 3 reactive power (in demand time)	READ
<b>138</b>	<b>Q3_AVG_MAX</b>	Maximum Phase 3 reactive power (in demand time)	READ
<b>139</b>	<b>Qsys</b>	System Reactive power	READ
<b>140</b>	<b>Qsys_AVG</b>	System reactive power (in demand time)	READ

<b>141</b>	Qsys_MIN	Minimum system reactive power (from switch-on)	READ
<b>142</b>	Qsys_MAX	Maximum system reactive power (from switch-on)	READ
<b>143</b>	Qsys_AVG_MIN	Minimum system reactive power (in demand time)	READ
<b>144</b>	Qsys_AVG_MAX	Maximum system reactive power (in demand time)	READ
<b>145</b>	TPF1	Phase 1 Power factor	READ
<b>146</b>	TPF1_AVG	Phase 1 power factor (in demand time)	READ
<b>147</b>	TPF1_MIN	Minimum Phase 1 power factor (from switch-on)	READ
<b>148</b>	TPF1_MAX	Maximum Phase 1 power factor (from switch-on)	READ
<b>149</b>	TPF1_AVG_MIN	Minimum Phase 1 power factor (in demand time)	READ
<b>150</b>	TPF1_AVG_MAX	Maximum Phase 1 power factor (in demand time)	READ
<b>151</b>	TPF2	Phase 2 Power factor	READ
<b>152</b>	TPF2_AVG	Phase 2 power factor (in demand time)	READ
<b>153</b>	TPF2_MIN	Minimum Phase 2 power factor (from switch-on)	READ
<b>154</b>	TPF2_MAX	Maximum Phase 2 power factor (from switch-on)	READ
<b>155</b>	TPF2_AVG_MIN	Minimum Phase 2 power factor (in demand time)	READ
<b>156</b>	TPF2_AVG_MAX	Maximum Phase 2 power factor (in demand time)	READ
<b>157</b>	TPF3	Phase 3 Power factor	READ
<b>158</b>	TPF3_AVG	Phase 3 power factor (in demand time)	READ
<b>159</b>	TPF3_MIN	Minimum Phase 3 power factor (from switch-on)	READ
<b>160</b>	TPF3_MAX	Maximum Phase 3 power factor (from switch-on)	READ
<b>161</b>	TPF3_AVG_MIN	Minimum Phase 3 power factor (in demand time)	READ
<b>162</b>	TPF3_AVG_MAX	Maximum Phase 3 power factor (in demand time)	READ
<b>163</b>	TPFsys	System Power factor	READ
<b>164</b>	TPFsys_AVG	System power factor (in demand time)	READ
<b>165</b>	TPFsys_MIN	Minimum system power factor (from switch-on)	READ
<b>166</b>	TPFsys_MAX	Maximum system power factor (from switch-on)	READ
<b>167</b>	TPFsys_AVG_MIN	Minimum system power factor (in demand time)	READ
<b>168</b>	TPFsys_AVG_MAX	Maximum system power factor (in demand time)	READ
<b>169</b>	THD-V1N	Voltage THD (Total Harmonic Distortion) between Phase 1 and neutral	READ
<b>170</b>	THD-V1N_AVG	Voltage THD between Phase 1 and neutral (in demand time)	READ
<b>171</b>	THD-V1N_MIN	Minimum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>172</b>	THD-V1N_MAX	Maximum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>173</b>	THD-V1N_AVG_MIN	Minimum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>174</b>	THD-V1N_AVG_MAX	Maximum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>175</b>	THD-V2N	Voltage THD between Phase 2 and neutral	READ
<b>176</b>	THD-V2N_AVG	Voltage THD between Phase 2 and neutral (in demand time)	READ
<b>177</b>	THD-V2N_MIN	Minimum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>178</b>	THD-V2N_MAX	Maximum voltage THD between Phase 2 and neutral (from switch-on)	READ

<b>179</b>	THD-V2N_AVG_MIN	Minimum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>180</b>	THD-V2N_AVG_MAX	Maximum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>181</b>	THD-V3N	Voltage THD between Phase 3 and neutral	READ
<b>182</b>	THD-V3N_AVG	Voltage THD between Phase 3 and neutral (in demand time)	READ
<b>183</b>	THD-V3N_MIN	Minimum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>184</b>	THD-V3N_MAX	Maximum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>185</b>	THD-V3N_AVG_MIN	Minimum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>186</b>	THD-V3N_AVG_MAX	Maximum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>187</b>	f	Phase frequency (read from Phase 1)	READ
<b>188</b>	THD-A1N	Phase 1 current THD	READ
<b>189</b>	THD-A1N_AVG	Phase 1 current THD (in demand time)	READ
<b>190</b>	THD-A1N_MIN	Minimum Phase 1 current THD (from switch-on)	READ
<b>191</b>	THD-A1N_MAX	Maximum Phase 1 current THD (from switch-on)	READ
<b>192</b>	THD-A1N_AVG_MIN	Minimum Phase 1 current THD (in demand time)	READ
<b>193</b>	THD-A1N_AVG_MAX	Maximum Phase 1 current THD (in demand time)	READ
<b>194</b>	THD-A2N	Phase 2 current THD	READ
<b>195</b>	THD-A2N_AVG	Phase 2 current THD (in demand time)	READ
<b>196</b>	THD-A2N_MIN	Minimum Phase 2 current THD (from switch-on)	READ
<b>197</b>	THD-A2N_MAX	Maximum Phase 2 current THD (from switch-on)	READ
<b>198</b>	THD-A2N_AVG_MIN	Minimum Phase 2 current THD (in demand time)	READ
<b>199</b>	THD-A2N_AVG_MAX	Maximum Phase 2 current THD (in demand time)	READ
<b>200</b>	THD-A3N	Phase 3 current THD	READ
<b>201</b>	THD-A3N_AVG	Phase 3 current THD (in demand time)	READ
<b>202</b>	THD-A3N_MIN	Minimum Phase 3 current THD (from switch-on)	READ
<b>203</b>	THD-A3N_MAX	Maximum Phase 3 current THD (from switch-on)	READ
<b>204</b>	THD-A3N_AVG_MIN	Minimum Phase 3 current THD (in demand time)	READ
<b>205</b>	THD-A3N_AVG_MAX	Maximum Phase 3 current THD (in demand time)	READ
<b>206</b>	+WH1	Phase 1 positive active energy	READ
<b>207</b>	+WH2	Phase 2 positive active energy	READ
<b>208</b>	+WH3	Phase 3 positive active energy	READ
<b>209</b>	+Wh	Total positive active energy	READ
<b>210</b>	-WH1	Phase 1 negative active energy	READ
<b>211</b>	-WH2	Phase 2 negative active energy	READ
<b>212</b>	-WH3	Phase 3 negative active energy	READ

<b>213</b>	-Wh	Total negative active energy	READ
<b>214</b>	VAh1	Phase 1 apparent energy	READ
<b>215</b>	VAh2	Phase 2 apparent energy	READ
<b>216</b>	VAh3	Phase 3 apparent energy	READ
<b>217</b>	VAh	Total apparent energy	READ
<b>218</b>	+VARh1-L[Q1]	Phase 1 positive inductive reactive energy (Q1)	READ
<b>219</b>	+VARh2-L[Q1]	Phase 2 positive inductive reactive energy (Q1)	READ
<b>220</b>	+VARh3-L[Q1]	Phase 3 positive inductive reactive energy (Q1)	READ
<b>221</b>	+VARh-L[Q1]	Total positive inductive reactive energy (Q1)	READ
<b>222</b>	-VARh1-C[Q4]	Phase 1 negative capacitive reactive energy (Q4)	READ
<b>223</b>	-VARh2-C[Q4]	Phase 2 negative capacitive reactive energy (Q4)	READ
<b>224</b>	-VARh3-C[Q4]	Phase 3 negative capacitive reactive energy (Q4)	READ
<b>225</b>	-VARh-C[Q4]	Total negative capacitive reactive energy (Q4)	READ
<b>226</b>	-VARh1-L[Q3]	Phase 1 negative inductive reactive energy (Q3)	READ
<b>227</b>	-VARh2-L[Q3]	Phase 2 negative inductive reactive energy (Q3)	READ
<b>228</b>	-VARh3-L[Q3]	Phase 3 negative inductive reactive energy (Q3)	READ
<b>229</b>	-VARh-L[Q3]	Total negative inductive reactive energy (Q3)	READ
<b>230</b>	+VARh1-C[Q2]	Phase 1 positive capacitive reactive energy (Q2)	READ
<b>231</b>	+VARh2-C[Q2]	Phase 2 positive capacitive reactive energy (Q2)	READ
<b>232</b>	+VARh3-C[Q2]	Phase 3 positive capacitive reactive energy (Q2)	READ
<b>233</b>	+VARh-C[Q2]	Total positive capacitive reactive energy (Q2)	READ
<b>234</b>	Wh	Total active energy	READ
<b>235</b>	VARh	Total reactive energy	READ
<b>236</b>	VARh-L[Q1Q3]	Total inductive reactive energy (Q1+Q3)	READ
<b>237</b>	VARh-C[Q2Q4]	Total capacitive reactive energy (Q2+Q4)	READ
<b>238</b>	VAh	Total apparent energy	READ
<b>239</b>	COUNTER 1	Input 1 pulse counter	READ
<b>240</b>	COUNTER 2	Input 2 pulse counter	READ
<b>241</b>	DIGITAL_IN_1	Digital Input 1	READ
<b>242</b>	DIGITAL_IN_2	Digital Input 2	READ
<b>243</b>	DIGITAL_OUT_1	Digital output 1	READ/ WRITE
<b>244</b>	DIGITAL_OUT_2	Digital output 2	READ/ WRITE
<b>245</b>	ANALOG OUT	Value to load on analog output (R203 models only) in uA or mV	READ/ WRITE
<b>246</b>	COMMAND	Command register. Supported commands: 260 decimal to reset MIN/MAX 259 decimal to reset AVG demand time values 261 decimal to reset Energy Counters	READ/ WRITE
<b>247</b>	TOT KVARh L1	Phase 1 total reactive energy	READ
<b>248</b>	TOT KVARh L2	Phase 2 total reactive energy	READ
<b>249</b>	TOT KVARh L3	Phase 3 total reactive energy	READ
<b>250</b>	STATUS	Device status bitBIT0 -> Cyclic phase sense error (1 ERR, 0 OK) BIT1 -> ALARM ( 1 ACTIVE, 0 NOT ACTIVE)	READ

		BIT2 -> DOUT1 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT3 -> DOUT2 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT4 -> DIN1 STATUS ( 1 high, 0 low) BIT5 -> DIN2 STATUS ( 1 high, 0 low) BIT6 -> Current Cutoff ( 1 active, 0 inactive) BIT 7 -> Current error L1 (1 CT connected reverse, 0 CT connected OK) BIT 8 -> Current error L2 (1 CT connected reverse, 0 CT connected OK) BIT 9 -> Current error L3 (1 CT connected inverted, 0 CT connected OK) BIT 10 -> Line 1 Voltage/Current connection error (1 Error, 0 OK) BIT 11 -> Connection error Line 2 Voltage/Current (1 Error, 0 OK) BIT 12 -> Connection error Line 3 Voltage/Current (1 Error, 0 OK)	
<b>251</b>	Wh1	Phase 1 total active energy	READ
<b>252</b>	Wh2	Phase 2 total active energy	READ
<b>253</b>	Wh3	Phase 3 total active energy	READ

**PUBLISH BULK FORMAT**

Selects the format for "bulk mode" according to the following table:

%c	Device Client ID
%m	Device MAC Address
%M	Device MAC Address without dots
%d	date-time
%t	timestamp (number of seconds from 01/01/1970)
%u	timestamp (number of milliseconds from 01/01/1970)
%b	bulk (format specified in "Publish Bulk Format")
%f	Inserts an ID instead of the variable name (see table)
%n	Tag name (only for "Publish Bulk Format")
%v	Tag value (only in "Publish Bulk Format")
%j[field]	Adds double quotes " to [field]. The double quotes represent a string in JSON

**Note: the %f placeholder adds a unique ID to the variable to be published according to the following table:**

%f (ID)	VARIABLE	EXPLANATION	TIPO
<b>1</b>	V1N	Voltage between Phase 1 and neutral	READ
<b>2</b>	V1N_AVG	Phase 1 to Neutral Voltage (in demand time)	READ
<b>3</b>	V1N_MIN	Minimum voltage between Phase 1 and neutral (from switch-on)	READ
<b>4</b>	V1N_MAX	Maximum voltage between Phase 1 and neutral (from switch-on)	READ
<b>5</b>	V1N_AVG_MIN	Phase 1 to minimum neutral voltage (in demand time)	READ

<b>6</b>	V1N_AVG_MAX	Phase 1 to maximum neutral voltage (in demand time)	READ
<b>7</b>	V2N	Voltage between Phase 2 and neutral	READ
<b>8</b>	V2N_AVG	Phase 2 to Neutral Voltage (in demand time)	READ
<b>9</b>	V2N_MIN	Minimum voltage between Phase 2 and neutral (from switch-on)	READ
<b>10</b>	V2N_MAX	Maximum voltage between Phase 2 and neutral (from switch-on)	READ
<b>11</b>	V2N_AVG_MIN	Phase 2 to minimum neutral voltage (in demand time)	READ
<b>12</b>	V2N_AVG_MAX	Phase 2 to maximum neutral voltage (in demand time)	READ
<b>13</b>	V3N	Voltage between Phase 3 and neutral	READ
<b>14</b>	V3N_AVG	Phase 3 to Neutral Voltage (in demand time)	READ
<b>15</b>	V3N_MIN	Minimum voltage between Phase 3 and neutral (from switch-on)	READ
<b>16</b>	V3N_MAX	Maximum voltage between Phase 3 and neutral (from switch-on)	READ
<b>17</b>	V3N_AVG_MIN	Phase 3 to minimum neutral voltage (in demand time)	READ
<b>18</b>	V3N_AVG_MAX	Phase 3 to maximum neutral voltage (in demand time)	READ
<b>19</b>	AN	Neutral Current	READ
<b>20</b>	AN_AVG	Neutral Current (on demand time)	READ
<b>21</b>	AN_MIN	Minimum neutral current (from switch-on)	READ
<b>22</b>	AN_MAX	Maximum neutral current (from switch-on)	READ
<b>23</b>	AN_AVG_MIN	Minimum neutral current (in demand time)	READ
<b>24</b>	AN_AVG_MAX	Maximum neutral current (in demand time)	READ
<b>25</b>	V12	Phase-to-phase voltage between Phase 1 and 2	READ
<b>26</b>	V12_AVG	Phase-to-phase voltage between Phase 1 and 2 (in demand time)	READ
<b>27</b>	V12_MIN	Minimum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>28</b>	V12_MAX	Maximum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>29</b>	V12_AVG_MIN	Phase-to-phase voltage between minimum Phase 1 and 2 (in demand time)	READ
<b>30</b>	V12_AVG_MAX	Phase-to-phase voltage between maximum Phase 1 and 2 (in demand time)	READ
<b>31</b>	V23	Phase-to-phase voltage between Phase 2 and 3	READ
<b>32</b>	V23_AVG	Phase-to-phase voltage between Phase 2 and 3 (in demand time)	READ
<b>33</b>	V23_MIN	Minimum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>34</b>	V23_MAX	Maximum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>35</b>	V23_AVG_MIN	Phase-to-phase voltage between minimum Phase 2 and 3 (in demand time)	READ
<b>36</b>	V23_AVG_MAX	Phase-to-phase voltage between maximum Phase 2 and 3 (in demand time)	READ
<b>37</b>	V31	Phase-to-phase voltage between Phase 3 and 1	READ

<b>38</b>	V31_AVG	Phase-to-phase voltage between Phase 3 and 1 (in demand time)	READ
<b>39</b>	V31_MIN	Minimum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>40</b>	V31_MAX	Maximum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>41</b>	V31_AVG_MIN	Phase-to-phase voltage between minimum Phase 3 and 1 (in demand time)	READ
<b>42</b>	V31_AVG_MAX	Phase-to-phase voltage between maximum Phase 3 and 1 (in demand time)	READ
<b>43</b>	Vsys	System voltage:	READ
<b>44</b>	Vsys_AVG	System voltage (in demand time)	READ
<b>45</b>	Vsys_MIN	Minimum system voltage (from switch-on)	READ
<b>46</b>	Vsys_MAX	Maximum system voltage (from switch-on)	READ
<b>47</b>	Vsys_AVG_MIN	Minimum system voltage (in demand time)	READ
<b>48</b>	Vsys_AVG_MAX	Maximum system voltage (in demand time)	READ
<b>49</b>	A1	Phase 1 current	READ
<b>50</b>	A1_AVG	Phase 1 current (in demand time)	READ
<b>51</b>	A1_MIN	Minimum Phase 1 current (from switch-on)	READ
<b>52</b>	A1_MAX	Maximum Phase 1 current (from switch-on)	READ
<b>53</b>	A1_AVG_MIN	Minimum Phase 1 current (in demand time)	READ
<b>54</b>	A1_AVG_MAX	Maximum Phase 1 current (in demand time)	READ
<b>55</b>	A2	Phase 2 current	READ
<b>56</b>	A2_AVG	Phase 2 current (in demand time)	READ
<b>57</b>	A2_MIN	Minimum Phase 2 current (from switch-on)	READ
<b>58</b>	A2_MAX	Maximum Phase 2 current (from switch-on)	READ
<b>59</b>	A2_AVG_MIN	Minimum Phase 2 current (in demand time)	READ
<b>60</b>	A2_AVG_MAX	Maximum Phase 2 current (in demand time)	READ
<b>61</b>	A3	Phase 3 current	READ
<b>62</b>	A3_AVG	Phase 3 current (in demand time)	READ
<b>63</b>	A3_MIN	Minimum Phase 3 current (from switch-on)	READ
<b>64</b>	A3_MAX	Maximum Phase 3 current (from switch-on)	READ
<b>65</b>	A3_AVG_MIN	Minimum Phase 3 current (in demand time)	READ
<b>66</b>	A3_AVG_MAX	Maximum Phase 3 current (in demand time)	READ
<b>67</b>	Asys	System current	READ
<b>68</b>	Asys_AVG	System current (in demand time)	READ
<b>69</b>	Asys_MIN	Minimum system current (from switch-on)	READ
<b>70</b>	Asys_MAX	Maximum system current (from switch-on)	READ
<b>71</b>	Asys_AVG_MIN	Minimum system current (in demand time)	READ
<b>72</b>	Asys_AVG_MAX	Maximum system current (in demand time)	READ
<b>73</b>	P1	Phase 1 Active power	READ
<b>74</b>	P1_AVG	Phase 1 active power (in demand time)	READ
<b>75</b>	P1_MIN	Minimum Phase 1 active power (from switch-on)	READ
<b>76</b>	P1_MAX	Maximum Phase 1 active power (from switch-on)	READ

77	P1_AVG_MIN	Minimum Phase 1 active power (in demand time)	READ
78	P1_AVG_MAX	Maximum Phase 1 active power (in demand time)	READ
79	P2	Phase 2 Active power	READ
80	P2_AVG	Phase 2 active power (in demand time)	READ
81	P2_MIN	Minimum Phase 2 active power (from switch-on)	READ
82	P2_MAX	Maximum Phase 2 active power (from switch-on)	READ
83	P2_AVG_MIN	Minimum Phase 2 active power (in demand time)	READ
84	P2_AVG_MAX	Maximum Phase 2 active power (in demand time)	READ
85	P3	Phase 3 Active power	READ
86	P3_AVG	Phase 3 active power (in demand time)	READ
87	P3_MIN	Minimum Phase 3 active power (from switch-on)	READ
88	P3_MAX	Maximum Phase 3 active power (from switch-on)	READ
89	P3_AVG_MIN	Minimum Phase 3 active power (in demand time)	READ
90	P3_AVG_MAX	Maximum Phase 3 active power (in demand time)	READ
91	Psys	System Active power	READ
92	Psys_AVG	System active power (in demand time)	READ
93	Psys_MIN	Minimum system active power (from switch-on)	READ
94	Psys_MAX	Maximum system active power (from switch-on)	READ
95	Psys_AVG_MIN	Minimum system active power (in demand time)	READ
96	Psys_AVG_MAX	Maximum system active power (in demand time)	READ
97	S1	Phase 1 apparent power	READ
98	S1_AVG	Phase 1 apparent power (in demand time)	READ
99	S1_MIN	Minimum Phase 1 apparent power (from switch-on)	READ
100	S1_MAX	Maximum Phase 1 apparent power (from switch-on)	READ
101	S1_AVG_MIN	Minimum Phase 1 apparent power (in demand time)	READ
102	S1_AVG_MAX	Maximum Phase 1 apparent power (in demand time)	READ
103	S2	Phase 2 apparent power	READ
104	S2_AVG	Phase 2 apparent power (in demand time)	READ
105	S2_MIN	Minimum Phase 2 apparent power (from switch-on)	READ
106	S2_MAX	Maximum Phase 2 apparent power (from switch-on)	READ
107	S2_AVG_MIN	Minimum Phase 2 apparent power (in demand time)	READ
108	S2_AVG_MAX	Maximum Phase 2 apparent power (in demand time)	READ
109	S3	Phase 3 apparent power	READ
110	S3_AVG	Phase 3 apparent power (in demand time)	READ
111	S3_MIN	Minimum Phase 3 apparent power (from switch-on)	READ
112	S3_MAX	Maximum Phase 3 apparent power (from switch-on)	READ
113	S3_AVG_MIN	Minimum Phase 3 apparent power (in demand time)	READ
114	S3_AVG_MAX	Maximum Phase 3 apparent power (in demand time)	READ
115	Ssys	System apparent power	READ
116	Ssys_AVG	System apparent power (in demand time)	READ
117	Ssys_MIN	Minimum system apparent power (from switch-on)	READ
118	Ssys_MAX	Maximum system apparent power (from switch-on)	READ
119	Ssys_AVG_MIN	Minimum system apparent power (in demand time)	READ

<b>120</b>	Ssys_AVG_MAX	Maximum system apparent power (in demand time)	READ
<b>121</b>	Q1	Phase 1 Reactive power	READ
<b>122</b>	Q1_AVG	Phase 1 reactive power (in demand time)	READ
<b>123</b>	Q1_MIN	Minimum Phase 1 reactive power (from switch-on)	READ
<b>124</b>	Q1_MAX	Maximum Phase 1 reactive power (from switch-on)	READ
<b>125</b>	Q1_AVG_MIN	Minimum Phase 1 reactive power (in demand time)	READ
<b>126</b>	Q1_AVG_MAX	Maximum Phase 1 reactive power (in demand time)	READ
<b>127</b>	Q2	Phase 2 Reactive power	READ
<b>128</b>	Q2_AVG	Phase 2 reactive power (in demand time)	READ
<b>129</b>	Q2_MIN	Minimum Phase 2 reactive power (from switch-on)	READ
<b>130</b>	Q2_MAX	Maximum Phase 2 reactive power (from switch-on)	READ
<b>131</b>	Q2_AVG_MIN	Minimum Phase 2 reactive power (in demand time)	READ
<b>132</b>	Q2_AVG_MAX	Maximum Phase 2 reactive power (in demand time)	READ
<b>133</b>	Q3	Phase 3 Reactive power	READ
<b>134</b>	Q3_AVG	Phase 3 reactive power (in demand time)	READ
<b>135</b>	Q3_MIN	Minimum Phase 3 reactive power (from switch-on)	READ
<b>136</b>	Q3_MAX	Maximum Phase 3 reactive power (from switch-on)	READ
<b>137</b>	Q3_AVG_MIN	Minimum Phase 3 reactive power (in demand time)	READ
<b>138</b>	Q3_AVG_MAX	Maximum Phase 3 reactive power (in demand time)	READ
<b>139</b>	Qsys	System Reactive power	READ
<b>140</b>	Qsys_AVG	System reactive power (in demand time)	READ
<b>141</b>	Qsys_MIN	Minimum system reactive power (from switch-on)	READ
<b>142</b>	Qsys_MAX	Maximum system reactive power (from switch-on)	READ
<b>143</b>	Qsys_AVG_MIN	Minimum system reactive power (in demand time)	READ
<b>144</b>	Qsys_AVG_MAX	Maximum system reactive power (in demand time)	READ
<b>145</b>	TPF1	Phase 1 Power factor	READ
<b>146</b>	TPF1_AVG	Phase 1 power factor (in demand time)	READ
<b>147</b>	TPF1_MIN	Minimum Phase 1 power factor (from switch-on)	READ
<b>148</b>	TPF1_MAX	Maximum Phase 1 power factor (from switch-on)	READ
<b>149</b>	TPF1_AVG_MIN	Minimum Phase 1 power factor (in demand time)	READ
<b>150</b>	TPF1_AVG_MAX	Maximum Phase 1 power factor (in demand time)	READ
<b>151</b>	TPF2	Phase 2 Power factor	READ
<b>152</b>	TPF2_AVG	Phase 2 power factor (in demand time)	READ
<b>153</b>	TPF2_MIN	Minimum Phase 2 power factor (from switch-on)	READ
<b>154</b>	TPF2_MAX	Maximum Phase 2 power factor (from switch-on)	READ
<b>155</b>	TPF2_AVG_MIN	Minimum Phase 2 power factor (in demand time)	READ
<b>156</b>	TPF2_AVG_MAX	Maximum Phase 2 power factor (in demand time)	READ
<b>157</b>	TPF3	Phase 3 Power factor	READ
<b>158</b>	TPF3_AVG	Phase 3 power factor (in demand time)	READ
<b>159</b>	TPF3_MIN	Minimum Phase 3 power factor (from switch-on)	READ
<b>160</b>	TPF3_MAX	Maximum Phase 3 power factor (from switch-on)	READ
<b>161</b>	TPF3_AVG_MIN	Minimum Phase 3 power factor (in demand time)	READ
<b>162</b>	TPF3_AVG_MAX	Maximum Phase 3 power factor (in demand time)	READ

<b>163</b>	TPFsys	System Power factor	READ
<b>164</b>	TPFsys_AVG	System power factor (in demand time)	READ
<b>165</b>	TPFsys_MIN	Minimum system power factor (from switch-on)	READ
<b>166</b>	TPFsys_MAX	Minimum system power factor (from switch-on)	READ
<b>167</b>	TPFsys_AVG_MIN	Minimum system power factor (in demand time)	READ
<b>168</b>	TPFsys_AVG_MAX	Maximum system power factor (in demand time)	READ
<b>169</b>	THD-V1N	Voltage THD (Total Harmonic Distortion) between Phase 1 and neutral	READ
<b>170</b>	THD-V1N_AVG	Voltage THD between Phase 1 and neutral (in demand time)	READ
<b>171</b>	THD-V1N_MIN	Minimum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>172</b>	THD-V1N_MAX	Maximum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>173</b>	THD-V1N_AVG_MIN	Minimum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>174</b>	THD-V1N_AVG_MAX	Maximum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>175</b>	THD-V2N	Voltage THD between Phase 2 and neutral	READ
<b>176</b>	THD-V2N_AVG	Voltage THD between Phase 2 and neutral (in demand time)	READ
<b>177</b>	THD-V2N_MIN	Minimum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>178</b>	THD-V2N_MAX	Maximum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>179</b>	THD-V2N_AVG_MIN	Minimum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>180</b>	THD-V2N_AVG_MAX	Maximum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>181</b>	THD-V3N	Voltage THD between Phase 3 and neutral	READ
<b>182</b>	THD-V3N_AVG	Voltage THD between Phase 3 and neutral (in demand time)	READ
<b>183</b>	THD-V3N_MIN	Minimum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>184</b>	THD-V3N_MAX	Maximum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>185</b>	THD-V3N_AVG_MIN	Minimum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>186</b>	THD-V3N_AVG_MAX	Maximum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>187</b>	f	Phase frequency (read from Phase 1)	READ
<b>188</b>	THD-A1N	Phase 1 current THD	READ
<b>189</b>	THD-A1N_AVG	Phase 1 current THD (in demand time)	READ
<b>190</b>	THD-A1N_MIN	Minimum Phase 1 current THD (from switch-on)	READ
<b>191</b>	THD-A1N_MAX	Maximum Phase 1 current THD (from switch-on)	READ
<b>192</b>	THD-A1N_AVG_MIN	Minimum Phase 1 current THD (in demand time)	READ
<b>193</b>	THD-A1N_AVG_MAX	Maximum Phase 1 current THD (in demand time)	READ
<b>194</b>	THD-A2N	Phase 2 current THD	READ

<b>195</b>	THD-A2N_AVG	Phase 2 current THD (in demand time)	READ
<b>196</b>	THD-A2N_MIN	Minimum Phase 2 current THD (from switch-on)	READ
<b>197</b>	THD-A2N_MAX	Maximum Phase 2 current THD (from switch-on)	READ
<b>198</b>	THD-A2N_AVG_MIN	Minimum Phase 2 current THD (in demand time)	READ
<b>199</b>	THD-A2N_AVG_MAX	Maximum Phase 2 current THD (in demand time)	READ
<b>200</b>	THD-A3N	Phase 3 current THD	READ
<b>201</b>	THD-A3N_AVG	Phase 3 current THD (in demand time)	READ
<b>202</b>	THD-A3N_MIN	Minimum Phase 3 current THD (from switch-on)	READ
<b>203</b>	THD-A3N_MAX	Maximum Phase 3 current THD (from switch-on)	READ
<b>204</b>	THD-A3N_AVG_MIN	Minimum Phase 3 current THD (in demand time)	READ
<b>205</b>	THD-A3N_AVG_MAX	Maximum Phase 3 current THD (in demand time)	READ
<b>206</b>	+WH1	Phase 1 positive active energy	READ
<b>207</b>	+WH2	Phase 2 positive active energy	READ
<b>208</b>	+WH3	Phase 3 positive active energy	READ
<b>209</b>	+Wh	Total positive active energy	READ
<b>210</b>	-WH1	Phase 1 negative active energy	READ
<b>211</b>	-WH2	Phase 2 negative active energy	READ
<b>212</b>	-WH3	Phase 3 negative active energy	READ
<b>213</b>	-Wh	Total negative active energy	READ
<b>214</b>	VAh1	Phase 1 apparent energy	READ
<b>215</b>	VAh2	Phase 2 apparent energy	READ
<b>216</b>	VAh3	Phase 3 apparent energy	READ
<b>217</b>	VAh	Total apparent energy	READ
<b>218</b>	+VARh1-L[Q1]	Phase 1 positive inductive reactive energy (Q1)	READ
<b>219</b>	+VARh2-L[Q1]	Phase 2 positive inductive reactive energy (Q1)	READ
<b>220</b>	+VARh3-L[Q1]	Phase 3 positive inductive reactive energy (Q1)	READ
<b>221</b>	+VARh-L[Q1]	Total positive inductive reactive energy (Q1)	READ
<b>222</b>	-VARh1-C[Q4]	Phase 1 negative capacitive reactive energy (Q4)	READ
<b>223</b>	-VARh2-C[Q4]	Phase 2 negative capacitive reactive energy (Q4)	READ
<b>224</b>	-VARh3-C[Q4]	Phase 3 negative capacitive reactive energy (Q4)	READ
<b>225</b>	-VARh-C[Q4]	Total negative capacitive reactive energy (Q4)	READ
<b>226</b>	-VARh1-L[Q3]	Phase 1 negative inductive reactive energy (Q3)	READ
<b>227</b>	-VARh2-L[Q3]	Phase 2 negative inductive reactive energy (Q3)	READ
<b>228</b>	-VARh3-L[Q3]	Phase 3 negative inductive reactive energy (Q3)	READ
<b>229</b>	-VARh-L[Q3]	Total negative inductive reactive energy (Q3)	READ
<b>230</b>	+VARh1-C[Q2]	Phase 1 positive capacitive reactive energy (Q2)	READ
<b>231</b>	+VARh2-C[Q2]	Phase 2 positive capacitive reactive energy (Q2)	READ
<b>232</b>	+VARh3-C[Q2]	Phase 3 positive capacitive reactive energy (Q2)	READ
<b>233</b>	+VARh-C[Q2]	Total positive capacitive reactive energy (Q2)	READ
<b>234</b>	Wh	Total active energy	READ

<b>235</b>	VARh	Total reactive energy	READ
<b>236</b>	VARh-L[Q1Q3]	Total inductive reactive energy (Q1+Q3)	READ
<b>237</b>	VARh-C[Q2Q4]	Total capacitive reactive energy (Q2+Q4)	READ
<b>238</b>	VAh	Total apparent energy	READ
<b>239</b>	COUNTER 1	Input 1 pulse counter	READ
<b>240</b>	COUNTER 2	Input 2 pulse counter	READ
<b>241</b>	DIGITAL_IN_1	Digital Input 1	READ
<b>242</b>	DIGITAL_IN_2	Digital Input 2	READ
<b>243</b>	DIGITAL_OUT_1	Digital output 1	READ/ WRITE
<b>244</b>	DIGITAL_OUT_2	Digital output 2	READ/ WRITE
<b>245</b>	ANALOG OUT	Value to load on analog output (R203 models only) in uA or mV	READ/ WRITE
<b>246</b>	COMMAND	Command register. Supported commands: 260 decimal to reset MIN/MAX 259 decimal to reset AVG demand time values 261 decimal to reset Energy Counters	READ/ WRITE
<b>247</b>	TOT KVARh L1	Phase 1 total reactive energy	READ
<b>248</b>	TOT KVARh L2	Phase 2 total reactive energy	READ
<b>249</b>	TOT KVARh L3	Phase 3 total reactive energy	READ
<b>250</b>	STATUS	Device status bitBIT0 -> Cyclic phase sense error (1 ERR, 0 OK) BIT1 -> ALARM ( 1 ACTIVE, 0 NOT ACTIVE) BIT2 -> DOUT1 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT3 -> DOUT2 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT4 -> DIN1 STATUS ( 1 high, 0 low) BIT5 -> DIN2 STATUS ( 1 high, 0 low) BIT6 -> Current Cutoff ( 1 active, 0 inactive) BIT 7 -> Current error L1 (1 CT connected reverse, 0 CT connected OK) BIT 8 -> Current error L2 (1 CT connected reverse, 0 CT connected OK) BIT 9 -> Current error L3 (1 CT connected inverted, 0 CT connected OK) BIT 10 -> Line 1 Voltage/Current connection error (1 Error, 0 OK) BIT 11 -> Connection error Line 2 Voltage/Current (1 Error, 0 OK) BIT 12 -> Connection error Line 3 Voltage/Current (1 Error, 0 OK)	READ
<b>251</b>	Wh1	Phase 1 total active energy	READ
<b>252</b>	Wh2	Phase 2 total active energy	READ
<b>253</b>	Wh3	Phase 3 total active energy	READ

**PUBLISH TOPIC FOR EVENT**

indicates the MQTT topic on which the device will send events from the event datalogger *using the following table:*

%c	Device Client ID
%m	Device MAC Address

%M	Device MAC Address without dot separator
%j[field]	Adds double quotes " to [field]. The double quotes represent a string in JSON

### **PUBLISH PAYLOAD FOR EVENT**

Selects the format to be used for the payload using the following table:

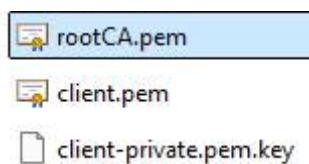
%c	Device Client ID
%m	Device MAC Address
%M	Device MAC Address without dots
%d	date-time
%t	timestamp (number of seconds from 01/01/1970)
%u	timestamp (number of milliseconds from 01/01/1970)
%x	Text of the event
%j[field]	Adds double quotes " to [field]. The double quotes represent a string in JSON

### **SUBSCRIBE TOPIC FOR COMMANDS**

indicates the MQTT topic on which to send commands to the device using the following table:

%c	Device Client ID
%m	Device MAC Address
%M	Device MAC Address without dot separator
%j[field]	Adds double quotes " to [field]. The double quotes represent a string in JSON

The uploaded certificates must have the following names and extensions:



#### **ROOT CA CERTIFICATE FILE (.crt)**

File representing the Root CA Certificate (public key + CA signature) of the broker in .crt format

#### **SERVER CERTIFICATE FILE (.crt)**

File representing the Client Certificate in .crt format, it is generated by the broker passing the client's public key

#### **CLIENT PRIVATE KEY FILE (.key)**

File that represents the private Client key in .key format.

#### 16.9.1. *EXAMPLES*

With the following configuration:

CLIENT ID = R203 MQTT Client

PUBLISH TOPIC FOR LOGS = seneca/%c/data

PUBLISH PAYLOAD FOR LOGS = {"t":%jt,"v":%b}

PUBLISH BULK FORMAT = {"n":%jn,"v":%jv}

You will get in the topic

seneca/R203 MQTT Client/data

the following content:

```
{"t":1687536452,"v":[{"n":"V1N","v":0.088},{"n":"V1N_AVG","v":0.006},{"n":"V1N_MIN","v":0.079},{"n":"V1N_MAX","v":0.096},{"n":"V1N_AVG_MIN","v":0.001},{"n":"V1N_AVG_MAX","v":0.089},{"n":"V2N","v":0.087},{"n":"V31_MIN","v":0.000},{"n":"V2N_AVG_MIN","v":0.002},{"n":"V2N_AVG_MAX","v":0.090},{"n":"V3N","v":0.081},{"n":"V23_AVG_MAX","v":0.016},{"n":"V3N_MIN","v":0.074},{"n":"V3N_MAX","v":0.090},{"n":"V31_AVG_MAX","v":0.016},{"n":"Vsys","v":0.316},{"n":"Vsys_AVG","v":0.016},{"n":"Vsys_MIN","v":0.000},{"n":"Vsys_MAX","v":0.316},{"n":"Vsys_AVG_MIN","v":0.000}]}}
```

#### 16.9.2. *DIREL ADM4.0*

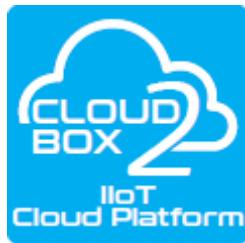
The parameters for the Direl cloud ( <https://www.direl.it/> ) are as follows:

Field	Meaning
Enable	Enables or disables the connection to the Direl ADM4.0 cloud
Username for Commands	This is the username for writing access from the cloud to the device
Password for Commands	It is the password for writing access from the cloud to the device

#### 16.9.3. *SENECA CLOUDBOX 2*

Seneca Cloudbox2 is the Seneca cloud, for more information refer to the site:

<https://www.seneca.it>



The parameters for the connection are:

Field	Meaning
Username	This is the username for accessing the cloud
Password	This is the password for accessing the cloud

## 16.10. SYSTEM CONNECTION SECTION -> HTTP

### **MAX FAILURE COUNTER**

*It is the maximum number of attempts without a pause before declaring a transmission fail.*

### **WAIT AFTER FAILURE (minutes)**

*It is the pause in minutes before trying to connect again*

### **SSL/TLS**

*Defines whether to enable the SSL/TLS 1.2 encrypted security protocol*

### **HOST**

This is the host of the HTTP server

### **PORT**

This is the HTTP server port

### **AUTHENTICATION**

Activates or not the authentication with username and password

### **USERNAME**

Authentication Username

### **PASSWORD**

Authentication Password

### **LOG ON CHANGE**

Sends data on change

### **HYSTERESIS**

Hysteresis for sending data on change

### **PUBLISH WITH MULTIPLE TAGS**

*This parameter defines whether the post contains multiple tags or whether the device should send a post for each tag.*

### **PUBLISH PAYLOAD FOR LOGS**

*Selects the format to be used for the payload of the data datalogger using the following table:*

%c	Device Client ID
%m	Device MAC Address
%M	Device MAC Address without dots
%d	date-time
%t	timestamp (number of seconds from 01/01/1970)
%u	timestamp (number of milliseconds from 01/01/1970)
%b	bulk (format specified in "Publish Bulk Format")
%f	Inserts an ID instead of the variable name (see table)
%n	Tag name (only for "Publish Bulk Format")
%v	Tag value (only in "Publish Bulk Format")
%j[field]	Adds double quotes " to [field]. The double quotes represent a string in JSON

Note: the %f placeholder adds a unique ID to the variable to be published according to the following table:

%f (ID)	VARIABLE	EXPLANATION	TIPO
<b>1</b>	V1N	Voltage between Phase 1 and neutral	READ
<b>2</b>	V1N_AVG	Phase 1 to Neutral Voltage (in demand time)	READ
<b>3</b>	V1N_MIN	Minimum voltage between Phase 1 and neutral (from switch-on)	READ
<b>4</b>	V1N_MAX	Maximum voltage between Phase 1 and neutral (from switch-on)	READ
<b>5</b>	V1N_AVG_MIN	Phase 1 to minimum neutral voltage (in demand time)	READ
<b>6</b>	V1N_AVG_MAX	Phase 1 to maximum neutral voltage (in demand time)	READ
<b>7</b>	V2N	Voltage between Phase 2 and neutral	READ
<b>8</b>	V2N_AVG	Phase 2 to Neutral Voltage (in demand time)	READ
<b>9</b>	V2N_MIN	Minimum voltage between Phase 2 and neutral (from switch-on)	READ
<b>10</b>	V2N_MAX	Maximum voltage between Phase 2 and neutral (from switch-on)	READ
<b>11</b>	V2N_AVG_MIN	Phase 2 to minimum neutral voltage (in demand time)	READ
<b>12</b>	V2N_AVG_MAX	Phase 2 to maximum neutral voltage (in demand time)	READ
<b>13</b>	V3N	Voltage between Phase 3 and neutral	READ
<b>14</b>	V3N_AVG	Phase 3 to Neutral Voltage (in demand time)	READ
<b>15</b>	V3N_MIN	Minimum voltage between Phase 3 and neutral (from switch-on)	READ
<b>16</b>	V3N_MAX	Maximum voltage between Phase 3 and neutral (from switch-on)	READ
<b>17</b>	V3N_AVG_MIN	Phase 3 to minimum neutral voltage (in demand time)	READ
<b>18</b>	V3N_AVG_MAX	Phase 3 to maximum neutral voltage (in demand time)	READ
<b>19</b>	AN	Neutral Current	READ
<b>20</b>	AN_AVG	Neutral Current (on demand time)	READ
<b>21</b>	AN_MIN	Minimum neutral current (from switch-on)	READ
<b>22</b>	AN_MAX	Maximum neutral current (from switch-on)	READ
<b>23</b>	AN_AVG_MIN	Minimum neutral current (in demand time)	READ
<b>24</b>	AN_AVG_MAX	Maximum neutral current (in demand time)	READ
<b>25</b>	V12	Phase-to-phase voltage between Phase 1 and 2	READ

<b>26</b>	V12_AVG	Phase-to-phase voltage between Phase 1 and 2 (in demand time)	READ
<b>27</b>	V12_MIN	Minimum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>28</b>	V12_MAX	Maximum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>29</b>	V12_AVG_MIN	Phase-to-phase voltage between minimum Phase 1 and 2 (in demand time)	READ
<b>30</b>	V12_AVG_MAX	Phase-to-phase voltage between maximum Phase 1 and 2 (in demand time)	READ
<b>31</b>	V23	Phase-to-phase voltage between Phase 2 and 3	READ
<b>32</b>	V23_AVG	Phase-to-phase voltage between Phase 2 and 3 (in demand time)	READ
<b>33</b>	V23_MIN	Minimum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>34</b>	V23_MAX	Maximum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>35</b>	V23_AVG_MIN	Phase-to-phase voltage between minimum Phase 2 and 3 (in demand time)	READ
<b>36</b>	V23_AVG_MAX	Phase-to-phase voltage between maximum Phase 2 and 3 (in demand time)	READ
<b>37</b>	V31	Phase-to-phase voltage between Phase 3 and 1	READ
<b>38</b>	V31_AVG	Phase-to-phase voltage between Phase 3 and 1 (in demand time)	READ
<b>39</b>	V31_MIN	Minimum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>40</b>	V31_MAX	Maximum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>41</b>	V31_AVG_MIN	Phase-to-phase voltage between minimum Phase 3 and 1 (in demand time)	READ
<b>42</b>	V31_AVG_MAX	Phase-to-phase voltage between maximum Phase 3 and 1 (in demand time)	READ
<b>43</b>	Vsys	System voltage:	READ
<b>44</b>	Vsys_AVG	System voltage (in demand time)	READ
<b>45</b>	Vsys_MIN	Minimum system voltage (from switch-on)	READ
<b>46</b>	Vsys_MAX	Maximum system voltage (from switch-on)	READ
<b>47</b>	Vsys_AVG_MIN	Minimum system voltage (in demand time)	READ
<b>48</b>	Vsys_AVG_MAX	Maximum system voltage (in demand time)	READ
<b>49</b>	A1	Phase 1 current	READ
<b>50</b>	A1_AVG	Phase 1 current (in demand time)	READ
<b>51</b>	A1_MIN	Minimum Phase 1 current (from switch-on)	READ
<b>52</b>	A1_MAX	Maximum Phase 1 current (from switch-on)	READ
<b>53</b>	A1_AVG_MIN	Minimum Phase 1 current (in demand time)	READ
<b>54</b>	A1_AVG_MAX	Maximum Phase 1 current (in demand time)	READ
<b>55</b>	A2	Phase 2 current	READ
<b>56</b>	A2_AVG	Phase 2 current (in demand time)	READ
<b>57</b>	A2_MIN	Minimum Phase 2 current (from switch-on)	READ
<b>58</b>	A2_MAX	Maximum Phase 2 current (from switch-on)	READ
<b>59</b>	A2_AVG_MIN	Minimum Phase 2 current (in demand time)	READ

<b>60</b>	A2_AVG_MAX	Maximum Phase 2 current (in demand time)	READ
<b>61</b>	A3	Phase 3 current	READ
<b>62</b>	A3_AVG	Phase 3 current (in demand time)	READ
<b>63</b>	A3_MIN	Minimum Phase 3 current (from switch-on)	READ
<b>64</b>	A3_MAX	Maximum Phase 3 current (from switch-on)	READ
<b>65</b>	A3_AVG_MIN	Minimum Phase 3 current (in demand time)	READ
<b>66</b>	A3_AVG_MAX	Maximum Phase 3 current (in demand time)	READ
<b>67</b>	Asys	System current	READ
<b>68</b>	Asys_AVG	System current (in demand time)	READ
<b>69</b>	Asys_MIN	Minimum system current (from switch-on)	READ
<b>70</b>	Asys_MAX	Maximum system current (from switch-on)	READ
<b>71</b>	Asys_AVG_MIN	Minimum system current (in demand time)	READ
<b>72</b>	Asys_AVG_MAX	Maximum system current (in demand time)	READ
<b>73</b>	P1	Phase 1 Active power	READ
<b>74</b>	P1_AVG	Phase 1 active power (in demand time)	READ
<b>75</b>	P1_MIN	Minimum Phase 1 active power (from switch-on)	READ
<b>76</b>	P1_MAX	Maximum Phase 1 active power (from switch-on)	READ
<b>77</b>	P1_AVG_MIN	Minimum Phase 1 active power (in demand time)	READ
<b>78</b>	P1_AVG_MAX	Maximum Phase 1 active power (in demand time)	READ
<b>79</b>	P2	Phase 2 Active power	READ
<b>80</b>	P2_AVG	Phase 2 active power (in demand time)	READ
<b>81</b>	P2_MIN	Minimum Phase 2 active power (from switch-on)	READ
<b>82</b>	P2_MAX	Maximum Phase 2 active power (from switch-on)	READ
<b>83</b>	P2_AVG_MIN	Minimum Phase 2 active power (in demand time)	READ
<b>84</b>	P2_AVG_MAX	Maximum Phase 2 active power (in demand time)	READ
<b>85</b>	P3	Phase 3 Active power	READ
<b>86</b>	P3_AVG	Phase 3 active power (in demand time)	READ
<b>87</b>	P3_MIN	Minimum Phase 3 active power (from switch-on)	READ
<b>88</b>	P3_MAX	Maximum Phase 3 active power (from switch-on)	READ
<b>89</b>	P3_AVG_MIN	Minimum Phase 3 active power (in demand time)	READ
<b>90</b>	P3_AVG_MAX	Maximum Phase 3 active power (in demand time)	READ
<b>91</b>	Psys	System Active power	READ
<b>92</b>	Psys_AVG	System active power (in demand time)	READ
<b>93</b>	Psys_MIN	Minimum system active power (from switch-on)	READ
<b>94</b>	Psys_MAX	Maximum system active power (from switch-on)	READ
<b>95</b>	Psys_AVG_MIN	Minimum system active power (in demand time)	READ
<b>96</b>	Psys_AVG_MAX	Maximum system active power (in demand time)	READ
<b>97</b>	S1	Phase 1 apparent power	READ
<b>98</b>	S1_AVG	Phase 1 apparent power (in demand time)	READ
<b>99</b>	S1_MIN	Minimum Phase 1 apparent power (from switch-on)	READ
<b>100</b>	S1_MAX	Maximum Phase 1 apparent power (from switch-on)	READ
<b>101</b>	S1_AVG_MIN	Minimum Phase 1 apparent power (in demand time)	READ
<b>102</b>	S1_AVG_MAX	Maximum Phase 1 apparent power (in demand time)	READ

<b>103</b>	S2	Phase 2 apparent power	READ
<b>104</b>	S2_AVG	Phase 2 apparent power (in demand time)	READ
<b>105</b>	S2_MIN	Minimum Phase 2 apparent power (from switch-on)	READ
<b>106</b>	S2_MAX	Maximum Phase 2 apparent power (from switch-on)	READ
<b>107</b>	S2_AVG_MIN	Minimum Phase 2 apparent power (in demand time)	READ
<b>108</b>	S2_AVG_MAX	Maximum Phase 2 apparent power (in demand time)	READ
<b>109</b>	S3	Phase 3 apparent power	READ
<b>110</b>	S3_AVG	Phase 3 apparent power (in demand time)	READ
<b>111</b>	S3_MIN	Minimum Phase 3 apparent power (from switch-on)	READ
<b>112</b>	S3_MAX	Maximum Phase 3 apparent power (from switch-on)	READ
<b>113</b>	S3_AVG_MIN	Minimum Phase 3 apparent power (in demand time)	READ
<b>114</b>	S3_AVG_MAX	Maximum Phase 3 apparent power (in demand time)	READ
<b>115</b>	Ssys	System apparent power	READ
<b>116</b>	Ssys_AVG	System apparent power (in demand time)	READ
<b>117</b>	Ssys_MIN	Minimum system apparent power (from switch-on)	READ
<b>118</b>	Ssys_MAX	Maximum system apparent power (from switch-on)	READ
<b>119</b>	Ssys_AVG_MIN	Minimum system apparent power (in demand time)	READ
<b>120</b>	Ssys_AVG_MAX	Maximum system apparent power (in demand time)	READ
<b>121</b>	Q1	Phase 1 Reactive power	READ
<b>122</b>	Q1_AVG	Phase 1 reactive power (in demand time)	READ
<b>123</b>	Q1_MIN	Minimum Phase 1 reactive power (from switch-on)	READ
<b>124</b>	Q1_MAX	Maximum Phase 1 reactive power (from switch-on)	READ
<b>125</b>	Q1_AVG_MIN	Minimum Phase 1 reactive power (in demand time)	READ
<b>126</b>	Q1_AVG_MAX	Maximum Phase 1 reactive power (in demand time)	READ
<b>127</b>	Q2	Phase 2 Reactive power	READ
<b>128</b>	Q2_AVG	Phase 2 reactive power (in demand time)	READ
<b>129</b>	Q2_MIN	Minimum Phase 2 reactive power (from switch-on)	READ
<b>130</b>	Q2_MAX	Maximum Phase 2 reactive power (from switch-on)	READ
<b>131</b>	Q2_AVG_MIN	Minimum Phase 2 reactive power (in demand time)	READ
<b>132</b>	Q2_AVG_MAX	Maximum Phase 2 reactive power (in demand time)	READ
<b>133</b>	Q3	Phase 3 Reactive power	READ
<b>134</b>	Q3_AVG	Phase 3 reactive power (in demand time)	READ
<b>135</b>	Q3_MIN	Minimum Phase 3 reactive power (from switch-on)	READ
<b>136</b>	Q3_MAX	Maximum Phase 3 reactive power (from switch-on)	READ
<b>137</b>	Q3_AVG_MIN	Minimum Phase 3 reactive power (in demand time)	READ
<b>138</b>	Q3_AVG_MAX	Maximum Phase 3 reactive power (in demand time)	READ
<b>139</b>	Qsys	System Reactive power	READ
<b>140</b>	Qsys_AVG	System reactive power (in demand time)	READ
<b>141</b>	Qsys_MIN	Minimum system reactive power (from switch-on)	READ
<b>142</b>	Qsys_MAX	Maximum system reactive power (from switch-on)	READ
<b>143</b>	Qsys_AVG_MIN	Minimum system reactive power (in demand time)	READ
<b>144</b>	Qsys_AVG_MAX	Maximum system reactive power (in demand time)	READ
<b>145</b>	TPF1	Phase 1 Power factor	READ

<b>146</b>	TPF1_AVG	Phase 1 power factor (in demand time)	READ
<b>147</b>	TPF1_MIN	Minimum Phase 1 power factor (from switch-on)	READ
<b>148</b>	TPF1_MAX	Maximum Phase 1 power factor (from switch-on)	READ
<b>149</b>	TPF1_AVG_MIN	Minimum Phase 1 power factor (in demand time)	READ
<b>150</b>	TPF1_AVG_MAX	Maximum Phase 1 power factor (in demand time)	READ
<b>151</b>	TPF2	Phase 2 Power factor	READ
<b>152</b>	TPF2_AVG	Phase 2 power factor (in demand time)	READ
<b>153</b>	TPF2_MIN	Minimum Phase 2 power factor (from switch-on)	READ
<b>154</b>	TPF2_MAX	Maximum Phase 2 power factor (from switch-on)	READ
<b>155</b>	TPF2_AVG_MIN	Minimum Phase 2 power factor (in demand time)	READ
<b>156</b>	TPF2_AVG_MAX	Maximum Phase 2 power factor (in demand time)	READ
<b>157</b>	TPF3	Phase 3 Power factor	READ
<b>158</b>	TPF3_AVG	Phase 3 power factor (in demand time)	READ
<b>159</b>	TPF3_MIN	Minimum Phase 3 power factor (from switch-on)	READ
<b>160</b>	TPF3_MAX	Maximum Phase 3 power factor (from switch-on)	READ
<b>161</b>	TPF3_AVG_MIN	Minimum Phase 3 power factor (in demand time)	READ
<b>162</b>	TPF3_AVG_MAX	Maximum Phase 3 power factor (in demand time)	READ
<b>163</b>	TPFsys	System Power factor	READ
<b>164</b>	TPFsys_AVG	System power factor (in demand time)	READ
<b>165</b>	TPFsys_MIN	Minimum system power factor (from switch-on)	READ
<b>166</b>	TPFsys_MAX	Maximum system power factor (from switch-on)	READ
<b>167</b>	TPFsys_AVG_MIN	Minimum system power factor (in demand time)	READ
<b>168</b>	TPFsys_AVG_MAX	Maximum system power factor (in demand time)	READ
<b>169</b>	THD-V1N	Voltage THD (Total Harmonic Distortion) between Phase 1 and neutral	READ
<b>170</b>	THD-V1N_AVG	Voltage THD between Phase 1 and neutral (in demand time)	READ
<b>171</b>	THD-V1N_MIN	Minimum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>172</b>	THD-V1N_MAX	Maximum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>173</b>	THD-V1N_AVG_MIN	Minimum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>174</b>	THD-V1N_AVG_MAX	Maximum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>175</b>	THD-V2N	Voltage THD between Phase 2 and neutral	READ
<b>176</b>	THD-V2N_AVG	Voltage THD between Phase 2 and neutral (in demand time)	READ
<b>177</b>	THD-V2N_MIN	Minimum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>178</b>	THD-V2N_MAX	Maximum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>179</b>	THD-V2N_AVG_MIN	Minimum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>180</b>	THD-V2N_AVG_MAX	Maximum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>181</b>	THD-V3N	Voltage THD between Phase 3 and neutral	READ
<b>182</b>	THD-V3N_AVG	Voltage THD between Phase 3 and neutral (in demand time)	READ
<b>183</b>	THD-V3N_MIN	Minimum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>184</b>	THD-V3N_MAX	Maximum voltage THD between Phase 3 and neutral (from switch-on)	READ

<b>185</b>	THD-V3N_AVG_MIN	Minimum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>186</b>	THD-V3N_AVG_MAX	Maximum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>187</b>	f	Phase frequency (read from Phase 1)	READ
<b>188</b>	THD-A1N	Phase 1 current THD	READ
<b>189</b>	THD-A1N_AVG	Phase 1 current THD (in demand time)	READ
<b>190</b>	THD-A1N_MIN	Minimum Phase 1 current THD (from switch-on)	READ
<b>191</b>	THD-A1N_MAX	Maximum Phase 1 current THD (from switch-on)	READ
<b>192</b>	THD-A1N_AVG_MIN	Minimum Phase 1 current THD (in demand time)	READ
<b>193</b>	THD-A1N_AVG_MAX	Maximum Phase 1 current THD (in demand time)	READ
<b>194</b>	THD-A2N	Phase 2 current THD	READ
<b>195</b>	THD-A2N_AVG	Phase 2 current THD (in demand time)	READ
<b>196</b>	THD-A2N_MIN	Minimum Phase 2 current THD (from switch-on)	READ
<b>197</b>	THD-A2N_MAX	Maximum Phase 2 current THD (from switch-on)	READ
<b>198</b>	THD-A2N_AVG_MIN	Minimum Phase 2 current THD (in demand time)	READ
<b>199</b>	THD-A2N_AVG_MAX	Maximum Phase 2 current THD (in demand time)	READ
<b>200</b>	THD-A3N	Phase 3 current THD	READ
<b>201</b>	THD-A3N_AVG	Phase 3 current THD (in demand time)	READ
<b>202</b>	THD-A3N_MIN	Minimum Phase 3 current THD (from switch-on)	READ
<b>203</b>	THD-A3N_MAX	Maximum Phase 3 current THD (from switch-on)	READ
<b>204</b>	THD-A3N_AVG_MIN	Minimum Phase 3 current THD (in demand time)	READ
<b>205</b>	THD-A3N_AVG_MAX	Maximum Phase 3 current THD (in demand time)	READ
<b>206</b>	+WH1	Phase 1 positive active energy	READ
<b>207</b>	+WH2	Phase 2 positive active energy	READ
<b>208</b>	+WH3	Phase 3 positive active energy	READ
<b>209</b>	+Wh	Total positive active energy	READ
<b>210</b>	-WH1	Phase 1 negative active energy	READ
<b>211</b>	-WH2	Phase 2 negative active energy	READ
<b>212</b>	-WH3	Phase 3 negative active energy	READ
<b>213</b>	-Wh	Total negative active energy	READ
<b>214</b>	VAh1	Phase 1 apparent energy	READ
<b>215</b>	VAh2	Phase 2 apparent energy	READ
<b>216</b>	VAh3	Phase 3 apparent energy	READ
<b>217</b>	VAh	Total apparent energy	READ
<b>218</b>	+VARh1-L[Q1]	Phase 1 positive inductive reactive energy (Q1)	READ
<b>219</b>	+VARh2-L[Q1]	Phase 2 positive inductive reactive energy (Q1)	READ
<b>220</b>	+VARh3-L[Q1]	Phase 3 positive inductive reactive energy (Q1)	READ
<b>221</b>	+VARh-L[Q1]	Total positive inductive reactive energy (Q1)	READ

<b>222</b>	-VARh1-C[Q4]	Phase 1 negative capacitive reactive energy (Q4)	READ
<b>223</b>	-VARh2-C[Q4]	Phase 2 negative capacitive reactive energy (Q4)	READ
<b>224</b>	-VARh3-C[Q4]	Phase 3 negative capacitive reactive energy (Q4)	READ
<b>225</b>	-VARh-C[Q4]	Total negative capacitive reactive energy (Q4)	READ
<b>226</b>	-VARh1-L[Q3]	Phase 1 negative inductive reactive energy (Q3)	READ
<b>227</b>	-VARh2-L[Q3]	Phase 2 negative inductive reactive energy (Q3)	READ
<b>228</b>	-VARh3-L[Q3]	Phase 3 negative inductive reactive energy (Q3)	READ
<b>229</b>	-VARh-L[Q3]	Total negative inductive reactive energy (Q3)	READ
<b>230</b>	+VARh1-C[Q2]	Phase 1 positive capacitive reactive energy (Q2)	READ
<b>231</b>	+VARh2-C[Q2]	Phase 2 positive capacitive reactive energy (Q2)	READ
<b>232</b>	+VARh3-C[Q2]	Phase 3 positive capacitive reactive energy (Q2)	READ
<b>233</b>	+VARh-C[Q2]	Total positive capacitive reactive energy (Q2)	READ
<b>234</b>	Wh	Total active energy	READ
<b>235</b>	VARh	Total reactive energy	READ
<b>236</b>	VARh-L[Q1Q3]	Total inductive reactive energy (Q1+Q3)	READ
<b>237</b>	VARh-C[Q2Q4]	Total capacitive reactive energy (Q2+Q4)	READ
<b>238</b>	VAh	Total apparent energy	READ
<b>239</b>	COUNTER 1	Input 1 pulse counter	READ
<b>240</b>	COUNTER 2	Input 2 pulse counter	READ
<b>241</b>	DIGITAL_IN_1	Digital Input 1	READ
<b>242</b>	DIGITAL_IN_2	Digital Input 2	READ
<b>243</b>	DIGITAL_OUT_1	Digital output 1	READ/ WRITE
<b>244</b>	DIGITAL_OUT_2	Digital output 2	READ/ WRITE
<b>245</b>	ANALOG OUT	Value to load on analog output (R203 models only) in uA or mV	READ/ WRITE
<b>246</b>	COMMAND	Command register. Supported commands: 260 decimal to reset MIN/MAX 259 decimal to reset AVG demand time values 261 decimal to reset Energy Counters	READ/ WRITE
<b>247</b>	TOT KVARh L1	Phase 1 total reactive energy	READ
<b>248</b>	TOT KVARh L2	Phase 2 total reactive energy	READ
<b>249</b>	TOT KVARh L3	Phase 3 total reactive energy	READ
<b>250</b>	STATUS	Device status bit BIT0 -> Cyclic phase sense error (1 ERR, 0 OK) BIT1 -> ALARM ( 1 ACTIVE, 0 NOT ACTIVE) BIT2 -> DOUT1 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT3 -> DOUT2 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT4 -> DIN1 STATUS ( 1 high, 0 low) BIT5 -> DIN2 STATUS ( 1 high, 0 low) BIT6 -> Current Cutoff ( 1 active, 0 inactive) BIT 7 -> Current error L1 (1 CT connected reverse, 0 CT connected OK) BIT 8 -> Current error L2 (1 CT connected reverse, 0 CT connected OK) BIT 9 -> Current error L3 (1 CT connected inverted, 0 CT connected OK) BIT 10 -> Line 1 Voltage/Current connection error (1 Error, 0 OK) BIT 11 -> Connection error Line 2 Voltage/Current (1 Error, 0 OK) BIT 12 -> Connection error Line 3 Voltage/Current (1 Error, 0 OK)	READ

<b>251</b>	Wh1	Phase 1 total active energy	READ
<b>252</b>	Wh2	Phase 2 total active energy	READ
<b>253</b>	Wh3	Phase 3 total active energy	READ

**PUBLISH BULK FORMAT**

Selects the format for "bulk mode" according to the following table:

%c	Device Client ID
%m	Device MAC Address
%M	Device MAC Address without dots
%d	date-time
%t	timestamp (number of seconds from 01/01/1970)
%u	timestamp (number of milliseconds from 01/01/1970)
%b	bulk (format specified in "Publish Bulk Format")
%f	Inserts an ID instead of the variable name (see table)
%n	Tag name (only for "Publish Bulk Format")
%v	Tag value (only in "Publish Bulk Format")
%j[field]	Adds double quotes " to [field]. The double quotes represent a string in JSON

Note: the %f placeholder adds a unique ID to the variable to be published according to the following table:

%f (ID)	VARIABLE	EXPLANATION	TIPO
<b>1</b>	V1N	Voltage between Phase 1 and neutral	READ
<b>2</b>	V1N_AVG	Phase 1 to Neutral Voltage (in demand time)	READ
<b>3</b>	V1N_MIN	Minimum voltage between Phase 1 and neutral (from switch-on)	READ
<b>4</b>	V1N_MAX	Maximum voltage between Phase 1 and neutral (from switch-on)	READ
<b>5</b>	V1N_AVG_MIN	Phase 1 to minimum neutral voltage (in demand time)	READ
<b>6</b>	V1N_AVG_MAX	Phase 1 to maximum neutral voltage (in demand time)	READ
<b>7</b>	V2N	Voltage between Phase 2 and neutral	READ
<b>8</b>	V2N_AVG	Phase 2 to Neutral Voltage (in demand time)	READ
<b>9</b>	V2N_MIN	Minimum voltage between Phase 2 and neutral (from switch-on)	READ
<b>10</b>	V2N_MAX	Maximum voltage between Phase 2 and neutral (from switch-on)	READ
<b>11</b>	V2N_AVG_MIN	Phase 2 to minimum neutral voltage (in demand time)	READ
<b>12</b>	V2N_AVG_MAX	Phase 2 to maximum neutral voltage (in demand time)	READ
<b>13</b>	V3N	Voltage between Phase 3 and neutral	READ
<b>14</b>	V3N_AVG	Phase 3 to Neutral Voltage (in demand time)	READ
<b>15</b>	V3N_MIN	Minimum voltage between Phase 3 and neutral (from switch-on)	READ
<b>16</b>	V3N_MAX	Maximum voltage between Phase 3 and neutral (from switch-on)	READ
<b>17</b>	V3N_AVG_MIN	Phase 3 to minimum neutral voltage (in demand time)	READ
<b>18</b>	V3N_AVG_MAX	Phase 3 to maximum neutral voltage (in demand time)	READ
<b>19</b>	AN	Neutral Current	READ

<b>20</b>	AN_AVG	Neutral Current (on demand time)	READ
<b>21</b>	AN_MIN	Minimum neutral current (from switch-on)	READ
<b>22</b>	AN_MAX	Maximum neutral current (from switch-on)	READ
<b>23</b>	AN_AVG_MIN	Minimum neutral current (in demand time)	READ
<b>24</b>	AN_AVG_MAX	Maximum neutral current (in demand time)	READ
<b>25</b>	V12	Phase-to-phase voltage between Phase 1 and 2	READ
<b>26</b>	V12_AVG	Phase-to-phase voltage between Phase 1 and 2 (in demand time)	READ
<b>27</b>	V12_MIN	Minimum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>28</b>	V12_MAX	Maximum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>29</b>	V12_AVG_MIN	Phase-to-phase voltage between minimum Phase 1 and 2 (in demand time)	READ
<b>30</b>	V12_AVG_MAX	Phase-to-phase voltage between maximum Phase 1 and 2 (in demand time)	READ
<b>31</b>	V23	Phase-to-phase voltage between Phase 2 and 3	READ
<b>32</b>	V23_AVG	Phase-to-phase voltage between Phase 2 and 3 (in demand time)	READ
<b>33</b>	V23_MIN	Minimum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>34</b>	V23_MAX	Maximum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>35</b>	V23_AVG_MIN	Phase-to-phase voltage between minimum Phase 2 and 3 (in demand time)	READ
<b>36</b>	V23_AVG_MAX	Phase-to-phase voltage between maximum Phase 2 and 3 (in demand time)	READ
<b>37</b>	V31	Phase-to-phase voltage between Phase 3 and 1	READ
<b>38</b>	V31_AVG	Phase-to-phase voltage between Phase 3 and 1 (in demand time)	READ
<b>39</b>	V31_MIN	Minimum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>40</b>	V31_MAX	Maximum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>41</b>	V31_AVG_MIN	Phase-to-phase voltage between minimum Phase 3 and 1 (in demand time)	READ
<b>42</b>	V31_AVG_MAX	Phase-to-phase voltage between maximum Phase 3 and 1 (in demand time)	READ
<b>43</b>	Vsys	System voltage:	READ
<b>44</b>	Vsys_AVG	System voltage (in demand time)	READ
<b>45</b>	Vsys_MIN	Minimum system voltage (from switch-on)	READ
<b>46</b>	Vsys_MAX	Maximum system voltage (from switch-on)	READ
<b>47</b>	Vsys_AVG_MIN	Minimum system voltage (in demand time)	READ
<b>48</b>	Vsys_AVG_MAX	Maximum system voltage (in demand time)	READ
<b>49</b>	A1	Phase 1 current	READ
<b>50</b>	A1_AVG	Phase 1 current (in demand time)	READ
<b>51</b>	A1_MIN	Minimum Phase 1 current (from switch-on)	READ
<b>52</b>	A1_MAX	Maximum Phase 1 current (from switch-on)	READ
<b>53</b>	A1_AVG_MIN	Minimum Phase 1 current (in demand time)	READ

<b>54</b>	<b>A1_AVG_MAX</b>	Maximum Phase 1 current (in demand time)	READ
<b>55</b>	<b>A2</b>	Phase 2 current	READ
<b>56</b>	<b>A2_AVG</b>	Phase 2 current (in demand time)	READ
<b>57</b>	<b>A2_MIN</b>	Minimum Phase 2 current (from switch-on)	READ
<b>58</b>	<b>A2_MAX</b>	Maximum Phase 2 current (from switch-on)	READ
<b>59</b>	<b>A2_AVG_MIN</b>	Minimum Phase 2 current (in demand time)	READ
<b>60</b>	<b>A2_AVG_MAX</b>	Maximum Phase 2 current (in demand time)	READ
<b>61</b>	<b>A3</b>	Phase 3 current	READ
<b>62</b>	<b>A3_AVG</b>	Phase 3 current (in demand time)	READ
<b>63</b>	<b>A3_MIN</b>	Minimum Phase 3 current (from switch-on)	READ
<b>64</b>	<b>A3_MAX</b>	Maximum Phase 3 current (from switch-on)	READ
<b>65</b>	<b>A3_AVG_MIN</b>	Minimum Phase 3 current (in demand time)	READ
<b>66</b>	<b>A3_AVG_MAX</b>	Maximum Phase 3 current (in demand time)	READ
<b>67</b>	<b>Asys</b>	System current	READ
<b>68</b>	<b>Asys_AVG</b>	System current (in demand time)	READ
<b>69</b>	<b>Asys_MIN</b>	Minimum system current (from switch-on)	READ
<b>70</b>	<b>Asys_MAX</b>	Maximum system current (from switch-on)	READ
<b>71</b>	<b>Asys_AVG_MIN</b>	Minimum system current (in demand time)	READ
<b>72</b>	<b>Asys_AVG_MAX</b>	Maximum system current (in demand time)	READ
<b>73</b>	<b>P1</b>	Phase 1 Active power	READ
<b>74</b>	<b>P1_AVG</b>	Phase 1 active power (in demand time)	READ
<b>75</b>	<b>P1_MIN</b>	Minimum Phase 1 active power (from switch-on)	READ
<b>76</b>	<b>P1_MAX</b>	Maximum Phase 1 active power (from switch-on)	READ
<b>77</b>	<b>P1_AVG_MIN</b>	Minimum Phase 1 active power (in demand time)	READ
<b>78</b>	<b>P1_AVG_MAX</b>	Maximum Phase 1 active power (in demand time)	READ
<b>79</b>	<b>P2</b>	Phase 2 Active power	READ
<b>80</b>	<b>P2_AVG</b>	Phase 2 active power (in demand time)	READ
<b>81</b>	<b>P2_MIN</b>	Minimum Phase 2 active power (from switch-on)	READ
<b>82</b>	<b>P2_MAX</b>	Maximum Phase 2 active power (from switch-on)	READ
<b>83</b>	<b>P2_AVG_MIN</b>	Minimum Phase 2 active power (in demand time)	READ
<b>84</b>	<b>P2_AVG_MAX</b>	Maximum Phase 2 active power (in demand time)	READ
<b>85</b>	<b>P3</b>	Phase 3 Active power	READ
<b>86</b>	<b>P3_AVG</b>	Phase 3 active power (in demand time)	READ
<b>87</b>	<b>P3_MIN</b>	Minimum Phase 3 active power (from switch-on)	READ
<b>88</b>	<b>P3_MAX</b>	Maximum Phase 3 active power (from switch-on)	READ
<b>89</b>	<b>P3_AVG_MIN</b>	Minimum Phase 3 active power (in demand time)	READ
<b>90</b>	<b>P3_AVG_MAX</b>	Maximum Phase 3 active power (in demand time)	READ
<b>91</b>	<b>Psys</b>	System Active power	READ
<b>92</b>	<b>Psys_AVG</b>	System active power (in demand time)	READ
<b>93</b>	<b>Psys_MIN</b>	Minimum system active power (from switch-on)	READ
<b>94</b>	<b>Psys_MAX</b>	Maximum system active power (from switch-on)	READ
<b>95</b>	<b>Psys_AVG_MIN</b>	Minimum system active power (in demand time)	READ
<b>96</b>	<b>Psys_AVG_MAX</b>	Maximum system active power (in demand time)	READ

97	S1	Phase 1 apparent power	READ
98	S1_AVG	Phase 1 apparent power (in demand time)	READ
99	S1_MIN	Minimum Phase 1 apparent power (from switch-on)	READ
100	S1_MAX	Maximum Phase 1 apparent power (from switch-on)	READ
101	S1_AVG_MIN	Minimum Phase 1 apparent power (in demand time)	READ
102	S1_AVG_MAX	Maximum Phase 1 apparent power (in demand time)	READ
103	S2	Phase 2 apparent power	READ
104	S2_AVG	Phase 2 apparent power (in demand time)	READ
105	S2_MIN	Minimum Phase 2 apparent power (from switch-on)	READ
106	S2_MAX	Maximum Phase 2 apparent power (from switch-on)	READ
107	S2_AVG_MIN	Minimum Phase 2 apparent power (in demand time)	READ
108	S2_AVG_MAX	Maximum Phase 2 apparent power (in demand time)	READ
109	S3	Phase 3 apparent power	READ
110	S3_AVG	Phase 3 apparent power (in demand time)	READ
111	S3_MIN	Minimum Phase 3 apparent power (from switch-on)	READ
112	S3_MAX	Maximum Phase 3 apparent power (from switch-on)	READ
113	S3_AVG_MIN	Minimum Phase 3 apparent power (in demand time)	READ
114	S3_AVG_MAX	Maximum Phase 3 apparent power (in demand time)	READ
115	Ssys	System apparent power	READ
116	Ssys_AVG	System apparent power (in demand time)	READ
117	Ssys_MIN	Minimum system apparent power (from switch-on)	READ
118	Ssys_MAX	Maximum system apparent power (from switch-on)	READ
119	Ssys_AVG_MIN	Minimum system apparent power (in demand time)	READ
120	Ssys_AVG_MAX	Maximum system apparent power (in demand time)	READ
121	Q1	Phase 1 Reactive power	READ
122	Q1_AVG	Phase 1 reactive power (in demand time)	READ
123	Q1_MIN	Minimum Phase 1 reactive power (from switch-on)	READ
124	Q1_MAX	Maximum Phase 1 reactive power (from switch-on)	READ
125	Q1_AVG_MIN	Minimum Phase 1 reactive power (in demand time)	READ
126	Q1_AVG_MAX	Maximum Phase 1 reactive power (in demand time)	READ
127	Q2	Phase 2 Reactive power	READ
128	Q2_AVG	Phase 2 reactive power (in demand time)	READ
129	Q2_MIN	Minimum Phase 2 reactive power (from switch-on)	READ
130	Q2_MAX	Maximum Phase 2 reactive power (from switch-on)	READ
131	Q2_AVG_MIN	Minimum Phase 2 reactive power (in demand time)	READ
132	Q2_AVG_MAX	Maximum Phase 2 reactive power (in demand time)	READ
133	Q3	Phase 3 Reactive power	READ
134	Q3_AVG	Phase 3 reactive power (in demand time)	READ
135	Q3_MIN	Minimum Phase 3 reactive power (from switch-on)	READ
136	Q3_MAX	Maximum Phase 3 reactive power (from switch-on)	READ
137	Q3_AVG_MIN	Minimum Phase 3 reactive power (in demand time)	READ
138	Q3_AVG_MAX	Maximum Phase 3 reactive power (in demand time)	READ
139	Qsys	System Reactive power	READ

<b>140</b>	Qsys_AVG	System reactive power (in demand time)	READ
<b>141</b>	Qsys_MIN	Minimum system reactive power (from switch-on)	READ
<b>142</b>	Qsys_MAX	Maximum system reactive power (from switch-on)	READ
<b>143</b>	Qsys_AVG_MIN	Minimum system reactive power (in demand time)	READ
<b>144</b>	Qsys_AVG_MAX	Maximum system reactive power (in demand time)	READ
<b>145</b>	TPF1	Phase 1 Power factor	READ
<b>146</b>	TPF1_AVG	Phase 1 power factor (in demand time)	READ
<b>147</b>	TPF1_MIN	Minimum Phase 1 power factor (from switch-on)	READ
<b>148</b>	TPF1_MAX	Maximum Phase 1 power factor (from switch-on)	READ
<b>149</b>	TPF1_AVG_MIN	Minimum Phase 1 power factor (in demand time)	READ
<b>150</b>	TPF1_AVG_MAX	Maximum Phase 1 power factor (in demand time)	READ
<b>151</b>	TPF2	Phase 2 Power factor	READ
<b>152</b>	TPF2_AVG	Phase 2 power factor (in demand time)	READ
<b>153</b>	TPF2_MIN	Minimum Phase 2 power factor (from switch-on)	READ
<b>154</b>	TPF2_MAX	Maximum Phase 2 power factor (from switch-on)	READ
<b>155</b>	TPF2_AVG_MIN	Minimum Phase 2 power factor (in demand time)	READ
<b>156</b>	TPF2_AVG_MAX	Maximum Phase 2 power factor (in demand time)	READ
<b>157</b>	TPF3	Phase 3 Power factor	READ
<b>158</b>	TPF3_AVG	Phase 3 power factor (in demand time)	READ
<b>159</b>	TPF3_MIN	Minimum Phase 3 power factor (from switch-on)	READ
<b>160</b>	TPF3_MAX	Maximum Phase 3 power factor (from switch-on)	READ
<b>161</b>	TPF3_AVG_MIN	Minimum Phase 3 power factor (in demand time)	READ
<b>162</b>	TPF3_AVG_MAX	Maximum Phase 3 power factor (in demand time)	READ
<b>163</b>	TPFsys	System Power factor	READ
<b>164</b>	TPFsys_AVG	System power factor (in demand time)	READ
<b>165</b>	TPFsys_MIN	Minimum system power factor (from switch-on)	READ
<b>166</b>	TPFsys_MAX	Maximum system power factor (from switch-on)	READ
<b>167</b>	TPFsys_AVG_MIN	Minimum system power factor (in demand time)	READ
<b>168</b>	TPFsys_AVG_MAX	Maximum system power factor (in demand time)	READ
<b>169</b>	THD-V1N	Voltage THD (Total Harmonic Distortion) between Phase 1 and neutral	READ
<b>170</b>	THD-V1N_AVG	Voltage THD between Phase 1 and neutral (in demand time)	READ
<b>171</b>	THD-V1N_MIN	Minimum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>172</b>	THD-V1N_MAX	Maximum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>173</b>	THD-V1N_AVG_MIN	Minimum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>174</b>	THD-V1N_AVG_MAX	Maximum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>175</b>	THD-V2N	Voltage THD between Phase 2 and neutral	READ
<b>176</b>	THD-V2N_AVG	Voltage THD between Phase 2 and neutral (in demand time)	READ
<b>177</b>	THD-V2N_MIN	Minimum voltage THD between Phase 2 and neutral (from switch-on)	READ

<b>178</b>	THD-V2N_MAX	Maximum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>179</b>	THD-V2N_AVG_MIN	Minimum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>180</b>	THD-V2N_AVG_MAX	Maximum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>181</b>	THD-V3N	Voltage THD between Phase 3 and neutral	READ
<b>182</b>	THD-V3N_AVG	Voltage THD between Phase 3 and neutral (in demand time)	READ
<b>183</b>	THD-V3N_MIN	Minimum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>184</b>	THD-V3N_MAX	Maximum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>185</b>	THD-V3N_AVG_MIN	Minimum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>186</b>	THD-V3N_AVG_MAX	Maximum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>187</b>	f	Phase frequency (read from Phase 1)	READ
<b>188</b>	THD-A1N	Phase 1 current THD	READ
<b>189</b>	THD-A1N_AVG	Phase 1 current THD (in demand time)	READ
<b>190</b>	THD-A1N_MIN	Minimum Phase 1 current THD (from switch-on)	READ
<b>191</b>	THD-A1N_MAX	Maximum Phase 1 current THD (from switch-on)	READ
<b>192</b>	THD-A1N_AVG_MIN	Minimum Phase 1 current THD (in demand time)	READ
<b>193</b>	THD-A1N_AVG_MAX	Maximum Phase 1 current THD (in demand time)	READ
<b>194</b>	THD-A2N	Phase 2 current THD	READ
<b>195</b>	THD-A2N_AVG	Phase 2 current THD (in demand time)	READ
<b>196</b>	THD-A2N_MIN	Minimum Phase 2 current THD (from switch-on)	READ
<b>197</b>	THD-A2N_MAX	Maximum Phase 2 current THD (from switch-on)	READ
<b>198</b>	THD-A2N_AVG_MIN	Minimum Phase 2 current THD (in demand time)	READ
<b>199</b>	THD-A2N_AVG_MAX	Maximum Phase 2 current THD (in demand time)	READ
<b>200</b>	THD-A3N	Phase 3 current THD	READ
<b>201</b>	THD-A3N_AVG	Phase 3 current THD (in demand time)	READ
<b>202</b>	THD-A3N_MIN	Minimum Phase 3 current THD (from switch-on)	READ
<b>203</b>	THD-A3N_MAX	Maximum Phase 3 current THD (from switch-on)	READ
<b>204</b>	THD-A3N_AVG_MIN	Minimum Phase 3 current THD (in demand time)	READ
<b>205</b>	THD-A3N_AVG_MAX	Maximum Phase 3 current THD (in demand time)	READ
<b>206</b>	+WH1	Phase 1 positive active energy	READ
<b>207</b>	+WH2	Phase 2 positive active energy	READ
<b>208</b>	+WH3	Phase 3 positive active energy	READ
<b>209</b>	+Wh	Total positive active energy	READ
<b>210</b>	-WH1	Phase 1 negative active energy	READ

<b>211</b>	-WH2	Phase 2 negative active energy	READ
<b>212</b>	-WH3	Phase 3 negative active energy	READ
<b>213</b>	-Wh	Total negative active energy	READ
<b>214</b>	VAh1	Phase 1 apparent energy	READ
<b>215</b>	VAh2	Phase 2 apparent energy	READ
<b>216</b>	VAh3	Phase 3 apparent energy	READ
<b>217</b>	VAh	Total apparent energy	READ
<b>218</b>	+VARh1-L[Q1]	Phase 1 positive inductive reactive energy (Q1)	READ
<b>219</b>	+VARh2-L[Q1]	Phase 2 positive inductive reactive energy (Q1)	READ
<b>220</b>	+VARh3-L[Q1]	Phase 3 positive inductive reactive energy (Q1)	READ
<b>221</b>	+VARh-L[Q1]	Total positive inductive reactive energy (Q1)	READ
<b>222</b>	-VARh1-C[Q4]	Phase 1 negative capacitive reactive energy (Q4)	READ
<b>223</b>	-VARh2-C[Q4]	Phase 2 negative capacitive reactive energy (Q4)	READ
<b>224</b>	-VARh3-C[Q4]	Phase 3 negative capacitive reactive energy (Q4)	READ
<b>225</b>	-VARh-C[Q4]	Total negative capacitive reactive energy (Q4)	READ
<b>226</b>	-VARh1-L[Q3]	Phase 1 negative inductive reactive energy (Q3)	READ
<b>227</b>	-VARh2-L[Q3]	Phase 2 negative inductive reactive energy (Q3)	READ
<b>228</b>	-VARh3-L[Q3]	Phase 3 negative inductive reactive energy (Q3)	READ
<b>229</b>	-VARh-L[Q3]	Total negative inductive reactive energy (Q3)	READ
<b>230</b>	+VARh1-C[Q2]	Phase 1 positive capacitive reactive energy (Q2)	READ
<b>231</b>	+VARh2-C[Q2]	Phase 2 positive capacitive reactive energy (Q2)	READ
<b>232</b>	+VARh3-C[Q2]	Phase 3 positive capacitive reactive energy (Q2)	READ
<b>233</b>	+VARh-C[Q2]	Total positive capacitive reactive energy (Q2)	READ
<b>234</b>	Wh	Total active energy	READ
<b>235</b>	VARh	Total reactive energy	READ
<b>236</b>	VARh-L[Q1Q3]	Total inductive reactive energy (Q1+Q3)	READ
<b>237</b>	VARh-C[Q2Q4]	Total capacitive reactive energy (Q2+Q4)	READ
<b>238</b>	VAh	Total apparent energy	READ
<b>239</b>	COUNTER 1	Input 1 pulse counter	READ
<b>240</b>	COUNTER 2	Input 2 pulse counter	READ
<b>241</b>	DIGITAL_IN_1	Digital Input 1	READ
<b>242</b>	DIGITAL_IN_2	Digital Input 2	READ
<b>243</b>	DIGITAL_OUT_1	Digital output 1	READ/ WRITE
<b>244</b>	DIGITAL_OUT_2	Digital output 2	READ/ WRITE
<b>245</b>	ANALOG OUT	Value to load on analog output (R203 models only) in uA or mV	READ/ WRITE
<b>246</b>	COMMAND	Command register. Supported commands: 260 decimal to reset MIN/MAX 259 decimal to reset AVG demand time values 261 decimal to reset Energy Counters	READ/ WRITE
<b>247</b>	TOT KVARh L1	Phase 1 total reactive energy	READ
<b>248</b>	TOT KVARh L2	Phase 2 total reactive energy	READ

<b>249</b>	TOT KVARH L3	Phase 3 total reactive energy	READ
<b>250</b>	STATUS	Device status bitBIT0 -> Cyclic phase sense error (1 ERR, 0 OK) BIT1 -> ALARM ( 1 ACTIVE, 0 NOT ACTIVE) BIT2 -> DOUT1 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT3 -> DOUT2 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT4 -> DIN1 STATUS ( 1 high, 0 low) BIT5 -> DIN2 STATUS ( 1 high, 0 low) BIT6 -> Current Cutoff ( 1 active, 0 inactive) BIT 7 -> Current error L1 (1 CT connected reverse, 0 CT connected OK) BIT 8 -> Current error L2 (1 CT connected reverse, 0 CT connected OK) BIT 9 -> Current error L3 (1 CT connected inverted, 0 CT connected OK) BIT 10 -> Line 1 Voltage/Current connection error (1 Error, 0 OK) BIT 11 -> Connection error Line 2 Voltage/Current (1 Error, 0 OK) BIT 12 -> Connection error Line 3 Voltage/Current (1 Error, 0 OK)	READ
<b>251</b>	Wh1	Phase 1 total active energy	READ
<b>252</b>	Wh2	Phase 2 total active energy	READ
<b>253</b>	Wh3	Phase 3 total active energy	READ

### PUBLISH PAYLOAD FOR EVENT

Selects the format to be used for the payload using the following table:

%c	Device Client ID
%m	Device MAC Address
%M	Device MAC Address without dots
%d	date-time
%t	timestamp (number of seconds from 01/01/1970)
%u	timestamp (number of milliseconds from 01/01/1970)
%x	Text of the event
%j[field]	Adds double quotes " to [field]. The double quotes represent a string in JSON

### 16.11. SYSTEM CONNECTION SECTION -> P2P

#### P2P SERVER PORT (MODBUS models only) (default: 50026)

Sets the communication port for the P2P server.

### 16.12. ANALOG AND DIGITAL OUTPUT SETUP SECTION

#### ANALOG OUTPUT RETRANSMITTED PHASE

Selects which phase is brought to the analog output (selectable between L1, L2, L3)

#### ANALOG OUTPUT RETRANSMITTED VALUE

Selects which variable is brought to the analog output (selectable between voltage RMS, current RMS, active power, power factor, reactive factor, apparent power, frequency)

#### DIGITAL OUTPUT LOGIC

Selects the output logic (normally high or low).

**DIGITAL OUTPUT FUNCTION**

Selects the type of function the digital output must perform

**DIGITAL OUTPUT SOURCE**

Selects the variable to take to the analog output

**16.13. INPUT DIGITAL SETUP SECTION****DIGITAL INPUT 1 MODE**

Selects the behaviour of digital input 1 if input or start/stop for the data logger.

In the "start/stop data logger" mode, when the digital input goes high the data logger starts recording (start), when the digital input goes low the data logger stops (stop).

**DIGITAL INPUT 2 MODE**

Selects the behaviour of digital input 2 if input or start/stop for the data logger.

In the "start/stop data logger" mode, when the digital input goes high the data logger starts recording (start), when the digital input goes low the data logger stops (stop).

**DIGITAL INPUT FILTER [ms]**

Sets the filter time for digital inputs, used as filtering for counters.

CONNECTIONS DIAGNOSTIC SECTION  
In this section you can check if the connection to the device has been made correctly.

It is also possible to exchange the CURRENT - VOLTAGE relationship of each phase without rewiring the system.

In the case of particular connections, the CONNECTION DIAGNOSTIC parameter can be configured to "DISABLE" so that the system ignores connection errors.

**MQTT STATUS**

Indicates the status of the MQTT communication with the date/time of the last successful communication.

**CA CERTIFICATE FILE (.crt)**

File that represents the Root CA Certificate

**CLIENT CERTIFICATE FILE (.crt)**

File that represents the Client Certificate

**CLIENT KEY FILE (.key)**

File that represents the Client key

With the following configuration:

MAX FAILURE COUNTER	3	3
WAIT AFTER FAILURE (minutes)	30	30
CLIENT ID	R203 MQTT Client	R203 MQTT Client
BROKER HOST	test.mosquitto.org	test.mosquitto.org
BROKER PORT	1883	1883
USE WEBSOCKETS	OFF	OFF ▾
KEEP ALIVE INTERVAL (seconds)	30	30
CLEAN SESSION	OFF	OFF ▾
MESSAGE RETAIN	OFF	OFF ▾
QUALITY OF SERVICE	QoS 0	QoS 0 ▾
AUTHENTICATION	OFF	OFF ▾
USERNAME	admin	admin
PASSWORD	admin	admin
SSL/TLS	OFF	OFF ▾
CLIENT CERTIFICATE REQUIRED	OFF	OFF ▾
CHECK CERTIFICATES	OFF	OFF ▾
LOG ON CHANGE	OFF	OFF ▾
PUBLISH WITH MULTIPLE TAGS	OFF	OFF ▾
PUBLISH TOPIC FOR LOGS	seneca/%c/data	seneca/%c/data
PUBLISH PAYLOAD FOR LOGS	{"t":%jt,"v":[%b]}	{"t":%jt,"v":[%b]}
PUBLISH BULK FORMAT	{"n":%jn,"v":%jv}	{"n":%jn,"v":%jv}
PUBLISH TOPIC FOR EVENT	seneca/%c/event	seneca/%c/event
PUBLISH PAYLOAD FOR EVENT	{%x}	{%x}
MQTT STATUS	07/12/2023 16:36:02	
REBOOT	FACTORY DEFAULT	APPLY

For example, you will get:

```
1  [
2    "t": "1701966872",
3    "v": [
4      {
5        "n": "V31_MIN",
6        "v": "0.000"
7      },
8      {
9        "n": "V2N_AVG_MIN",
10       "v": "0.581"
11     },
12     {
13       "n": "V2N_AVG_MAX",
14       "v": "34.850"
15     },
16     {
17       "n": "V3N",
18       "v": "35.052"
19     },
20     {
21       "n": "V23_AVG_MAX",
22       "v": "0.037"
23     },
24     {
25       "n": "V3N_MIN",
26       "v": "34.611"
27     },
28     {
29       "n": "V3N_MAX",
30       "v": "35.092"
31     },
32     {
33       "n": "V31_AVG_MAX",
34       "v": "0.352"
35     },
36     {
37       "n": "Vsys",
38       "v": "2.145"
39     },
40     {
41       "n": "Vsys_AVG",
42       "v": "0.250"
43     },
44   ]
```

With the following configuration:

	CURRENT	UPDATED
<b>NOTE:</b> Log Publish Period is given by "DATA LOGGER SAMPLE TIME" parameter (see page "Setup Datalogger").		
MAX FAILURE COUNTER	3	<input type="text" value="3"/>
WAIT AFTER FAILURE (minutes)	30	<input type="text" value="30"/>
CLIENT ID	R203 MQTT Client	<input type="text" value="R203 MQTT Client"/>
BROKER HOST	test.mosquitto.org	<input type="text" value="test.mosquitto.org"/>
BROKER PORT	1883	<input type="text" value="1883"/>
USE WEBSOCKETS	OFF	<input type="button" value="OFF ▾"/>
KEEP ALIVE INTERVAL (seconds)	30	<input type="text" value="30"/>
CLEAN SESSION	OFF	<input type="button" value="OFF ▾"/>
MESSAGE RETAIN	OFF	<input type="button" value="OFF ▾"/>
QUALITY OF SERVICE	QoS 0	<input type="button" value="QoS 0 ▾"/>
AUTHENTICATION	OFF	<input type="button" value="OFF ▾"/>
USERNAME	admin	<input type="text" value="admin"/>
PASSWORD	admin	<input type="text" value="admin"/>
SSL/TLS	OFF	<input type="button" value="OFF ▾"/>
CLIENT CERTIFICATE REQUIRED	OFF	<input type="button" value="OFF ▾"/>
CHECK CERTIFICATES	OFF	<input type="button" value="OFF ▾"/>
LOG ON CHANGE	OFF	<input type="button" value="OFF ▾"/>
PUBLISH WITH MULTIPLE TAGS	ON	<input type="button" value="ON ▾"/>
PUBLISH TOPIC FOR LOGS	seneca/%c/data	<input type="text" value="seneca/%c/data"/>
PUBLISH PAYLOAD FOR LOGS	{"n":%jn,"v":%jv}	<input n":%jn,"v":%jv}"="" type="text" value="{"/>
PUBLISH BULK FORMAT	{"n":%jn,"v":%jv}	<input n":%jn,"v":%jv}"="" type="text" value="{"/>
PUBLISH TOPIC FOR EVENT	seneca/%c/event	<input type="text" value="seneca/%c/event"/>
PUBLISH PAYLOAD FOR EVENT	{%x}	<input type="text" value="{%x}"/>
MQTT STATUS	 07/12/2023 16:38:16	
REBOOT	<input type="button" value="FACTORY DEFAULT"/>	<input type="button" value="APPLY"/>

Note the “PUBLISH PAYLOAD FOR LOGS” parameter, it will send a whole series of packets of the type:

```
1 - {  
2   "n": "Vsys_AVG_MIN",  
3   "v": "0.000"  
4 }
```

## 17. DEVICE CONFIGURATION VIA WEB SERVER (ETHERNET/IP, PROFINET IO, OPC-UA PROTOCOL MODELS ONLY)

To configure the device, access the web server and select the section you are interested in.

After a modification to the configuration has been made, the changes must be confirmed with the "**APPLY**" button entering the administrator account and password.

The **Reboot** button reboots the device (not necessary in the event of a configuration change).

The **Default** button returns all the page parameters to the default settings.

### 17.1. COMMUNICATION SETUP SECTION

#### **DHCP (ETH) (default: Disabled)**

Sets the DHCP client to get an IP address automatically.

#### **IP ADDRESS STATIC (ETH) (default: 192.168.90.101)**

Sets the device static address. Careful not to enter devices with the same IP address into the same network.

#### **IP MASK STATIC (ETH) (default: 255.255.255.0)**

Sets the mask for the IP network.

#### **GATEWAY ADDRESS STATIC (ETH) (default: 192.168.90.1)**

Sets the gateway address.

#### **DNS (default: 8.8.8.8)**

Set the Domain Name System.

#### **PROTECT CONFIGURATION (default: Disabled)**

Allows you to enable or disable password protection for reading and writing the configuration (including the IP address) using the Easy Setup 2 software or Seneca Discovery Tool. The password is the same one that allows accessing the web server.

### **⚠ ATTENTION!**

**IF THE CONFIGURATION PROTECTION IS ENABLED IT WILL BE IMPOSSIBLE TO READ/WRITE THE CONFIGURATION OF THE DEVICE WITHOUT KNOWING THE ADMINISTRATOR PASSWORD.**

**IF THE PASSWORD IS LOST, IT WILL BE POSSIBLE TO RETURN THE DEVICE TO DEFAULT USING THE DIP SWITCHES**

**WEB SERVER ACCOUNT NAME (default: admin)**

Sets the user name to access the web server.

**USER ACCOUNT CONFIGURATION/WEB SERVER PASSWORD (default: admin)**

Sets the password to access the webserver and to read/write the configuration (if enabled).

**WEB SERVER PORT (default: 80)**

Sets the communication port for the web server.

## 17.2. MEASURES SETUP SECTION

**CONNECTION TYPE**

Sets the type of connection to make.

**CT TYPE**

Selects the type of sensor and the value of the TA secondary to be used between:

TA with current output

TA with MV output

Rogowski sensor

**CT RATIO**

Sets any TA ratio, the value to enter is related to the primary, example:

If a 50/5 TA has been installed, the value 50 must be entered as primary with the value 5 on the "TA TYPE" parameter.

**VT TYPE**

Sets the type of voltage transformer

**NETWORK FREQUENCY [Hz]**

Sets the system to 50 or 60 Hz.

**AVERAGE POWER WINDOW**

Sets the time on which to measure the average values

**USER CALIBRATION VOLTAGE**

Sets a possible multiplication coefficient for the voltage measurement.

**USER CALIBRATION CURRENT**

Sets a possible multiplication coefficient for the current measurement.

**CUTOFF CURRENT [A]**

Sets a current value (on the primary) below which counters are stopped.

**USER CALIBRATION ACTIVE ENERGY**

Sets a possible multiplication coefficient for the active energy.

**USER CALIBRATION REACTIVE ENERGY**

Sets a possible multiplication coefficient for the reactive energy.

**ANALOG OUTPUT TYPE**

Selects the type of analog output between voltage and current

**17.3. CONNECTION DIAGNOSTIC SECTION**

In this section you can check if the connection to the device has been made correctly.

It is also possible to exchange the CURRENT - VOLTAGE relationship of each phase without rewiring the system.

In the case of particular connections, the CONNECTION DIAGNOSTIC parameter can be configured to "DISABLE" so that the system ignores connection errors.

**17.4. OPC-UA CONFIGURATION SECTION (OPC-UA PROTOCOL MODELS ONLY)****MAX FAILURE COUNTER**

Maximum number of errors before waiting the time of the "WAIT AFTER FAILURE" parameter

**SERVER NAME**

Name that identifies the server

**SERVER PORT**

Server port

**AUTHENTICATION**

Establishes whether or not to activate authentication with username and password

**USERNAME**

Username to be used if authentication is active

**PASSWORD**

Password be used if authentication is active

**OPC-UA SERVER SECURITY POLICY**

Set the server security policy, you can choose between:

BASIC128RSA15  
BASIC256  
BASIC256SHA256  
AES128SHA256RSAOAEP

**OPC-UA SERVER MESSAGE SECURITY MODE**

Select between:

NONE

SIGN  
SIGN AND ENCRYPT

### OPC-UA VARIABLE LIST

Select the variables to publish on the OPC-UA server, a maximum of 60 variables can be published among the following:

VARIABLE	EXPLANATION	TIPO
<b>V1N</b>	Voltage between Phase 1 and neutral	READ
<b>V1N_AVG</b>	Phase 1 to Neutral Voltage (in demand time)	READ
<b>V1N_MIN</b>	Minimum voltage between Phase 1 and neutral (from switch-on)	READ
<b>V1N_MAX</b>	Maximum voltage between Phase 1 and neutral (from switch-on)	READ
<b>V1N_AVG_MIN</b>	Phase 1 to minimum neutral voltage (in demand time)	READ
<b>V1N_AVG_MAX</b>	Phase 1 to maximum neutral voltage (in demand time)	READ
<b>V2N</b>	Voltage between Phase 2 and neutral	READ
<b>V2N_AVG</b>	Phase 2 to Neutral Voltage (in demand time)	READ
<b>V2N_MIN</b>	Minimum voltage between Phase 2 and neutral (from switch-on)	READ
<b>V2N_MAX</b>	Maximum voltage between Phase 2 and neutral (from switch-on)	READ
<b>V2N_AVG_MIN</b>	Phase 2 to minimum neutral voltage (in demand time)	READ
<b>V2N_AVG_MAX</b>	Phase 2 to maximum neutral voltage (in demand time)	READ
<b>V3N</b>	Voltage between Phase 3 and neutral	READ
<b>V3N_AVG</b>	Phase 3 to Neutral Voltage (in demand time)	READ
<b>V3N_MIN</b>	Minimum voltage between Phase 3 and neutral (from switch-on)	READ
<b>V3N_MAX</b>	Maximum voltage between Phase 3 and neutral (from switch-on)	READ
<b>V3N_AVG_MIN</b>	Phase 3 to minimum neutral voltage (in demand time)	READ
<b>V3N_AVG_MAX</b>	Phase 3 to maximum neutral voltage (in demand time)	READ
<b>AN</b>	Neutral Current	READ
<b>AN_AVG</b>	Neutral Current (on demand time)	READ
<b>AN_MIN</b>	Minimum neutral current (from switch-on)	READ
<b>AN_MAX</b>	Maximum neutral current (from switch-on)	READ
<b>AN_AVG_MIN</b>	Minimum neutral current (in demand time)	READ
<b>AN_AVG_MAX</b>	Maximum neutral current (in demand time)	READ
<b>V12</b>	Phase-to-phase voltage between Phase 1 and 2	READ
<b>V12_AVG</b>	Phase-to-phase voltage between Phase 1 and 2 (in demand time)	READ
<b>V12_MIN</b>	Minimum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>V12_MAX</b>	Maximum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ

<b>V12_AVG_MIN</b>	Phase-to-phase voltage between minimum Phase 1 and 2 (in demand time)	READ
<b>V12_AVG_MAX</b>	Phase-to-phase voltage between maximum Phase 1 and 2 (in demand time)	READ
<b>V23</b>	Phase-to-phase voltage between Phase 2 and 3	READ
<b>V23_AVG</b>	Phase-to-phase voltage between Phase 2 and 3 (in demand time)	READ
<b>V23_MIN</b>	Minimum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>V23_MAX</b>	Maximum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>V23_AVG_MIN</b>	Phase-to-phase voltage between minimum Phase 2 and 3 (in demand time)	READ
<b>V23_AVG_MAX</b>	Phase-to-phase voltage between maximum Phase 2 and 3 (in demand time)	READ
<b>V31</b>	Phase-to-phase voltage between Phase 3 and 1	READ
<b>V31_AVG</b>	Phase-to-phase voltage between Phase 3 and 1 (in demand time)	READ
<b>V31_MIN</b>	Minimum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>V31_MAX</b>	Maximum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>V31_AVG_MIN</b>	Phase-to-phase voltage between minimum Phase 3 and 1 (in demand time)	READ
<b>V31_AVG_MAX</b>	Phase-to-phase voltage between maximum Phase 3 and 1 (in demand time)	READ
<b>Vsys</b>	System voltage:	READ
<b>Vsys_AVG</b>	System voltage (in demand time)	READ
<b>Vsys_MIN</b>	Minimum system voltage (from switch-on)	READ
<b>Vsys_MAX</b>	Maximum system voltage (from switch-on)	READ
<b>Vsys_AVG_MIN</b>	Minimum system voltage (in demand time)	READ
<b>Vsys_AVG_MAX</b>	Maximum system voltage (in demand time)	READ
<b>A1</b>	Phase 1 current	READ
<b>A1_AVG</b>	Phase 1 current (in demand time)	READ
<b>A1_MIN</b>	Minimum Phase 1 current (from switch-on)	READ
<b>A1_MAX</b>	Maximum Phase 1 current (from switch-on)	READ
<b>A1_AVG_MIN</b>	Minimum Phase 1 current (in demand time)	READ
<b>A1_AVG_MAX</b>	Maximum Phase 1 current (in demand time)	READ
<b>A2</b>	Phase 2 current	READ
<b>A2_AVG</b>	Phase 2 current (in demand time)	READ
<b>A2_MIN</b>	Minimum Phase 2 current (from switch-on)	READ
<b>A2_MAX</b>	Maximum Phase 2 current (from switch-on)	READ
<b>A2_AVG_MIN</b>	Minimum Phase 2 current (in demand time)	READ
<b>A2_AVG_MAX</b>	Maximum Phase 2 current (in demand time)	READ
<b>A3</b>	Phase 3 current	READ
<b>A3_AVG</b>	Phase 3 current (in demand time)	READ

<b>A3_MIN</b>	Minimum Phase 3 current (from switch-on)	READ
<b>A3_MAX</b>	Maximum Phase 3 current (from switch-on)	READ
<b>A3_AVG_MIN</b>	Minimum Phase 3 current (in demand time)	READ
<b>A3_AVG_MAX</b>	Maximum Phase 3 current (in demand time)	READ
<b>Asys</b>	System current	READ
<b>Asys_AVG</b>	System current (in demand time)	READ
<b>Asys_MIN</b>	Minimum system current (from switch-on)	READ
<b>Asys_MAX</b>	Maximum system current (from switch-on)	READ
<b>Asys_AVG_MIN</b>	Minimum system current (in demand time)	READ
<b>Asys_AVG_MAX</b>	Maximum system current (in demand time)	READ
<b>P1</b>	Phase 1 Active power	READ
<b>P1_AVG</b>	Phase 1 active power (in demand time)	READ
<b>P1_MIN</b>	Minimum Phase 1 active power (from switch-on)	READ
<b>P1_MAX</b>	Maximum Phase 1 active power (from switch-on)	READ
<b>P1_AVG_MIN</b>	Minimum Phase 1 active power (in demand time)	READ
<b>P1_AVG_MAX</b>	Maximum Phase 1 active power (in demand time)	READ
<b>P2</b>	Phase 2 Active power	READ
<b>P2_AVG</b>	Phase 2 active power (in demand time)	READ
<b>P2_MIN</b>	Minimum Phase 2 active power (from switch-on)	READ
<b>P2_MAX</b>	Maximum Phase 2 active power (from switch-on)	READ
<b>P2_AVG_MIN</b>	Minimum Phase 2 active power (in demand time)	READ
<b>P2_AVG_MAX</b>	Maximum Phase 2 active power (in demand time)	READ
<b>P3</b>	Phase 3 Active power	READ
<b>P3_AVG</b>	Phase 3 active power (in demand time)	READ
<b>P3_MIN</b>	Minimum Phase 3 active power (from switch-on)	READ
<b>P3_MAX</b>	Maximum Phase 3 active power (from switch-on)	READ
<b>P3_AVG_MIN</b>	Minimum Phase 3 active power (in demand time)	READ
<b>P3_AVG_MAX</b>	Maximum Phase 3 active power (in demand time)	READ
<b>Psys</b>	System Active power	READ
<b>Psys_AVG</b>	System active power (in demand time)	READ
<b>Psys_MIN</b>	Minimum system active power (from switch-on)	READ
<b>Psys_MAX</b>	Maximum system active power (from switch-on)	READ
<b>Psys_AVG_MIN</b>	Minimum system active power (in demand time)	READ
<b>Psys_AVG_MAX</b>	Maximum system active power (in demand time)	READ
<b>S1</b>	Phase 1 apparent power	READ
<b>S1_AVG</b>	Phase 1 apparent power (in demand time)	READ
<b>S1_MIN</b>	Minimum Phase 1 apparent power (from switch-on)	READ
<b>S1_MAX</b>	Maximum Phase 1 apparent power (from switch-on)	READ
<b>S1_AVG_MIN</b>	Minimum Phase 1 apparent power (in demand time)	READ
<b>S1_AVG_MAX</b>	Maximum Phase 1 apparent power (in demand time)	READ
<b>S2</b>	Phase 2 apparent power	READ
<b>S2_AVG</b>	Phase 2 apparent power (in demand time)	READ
<b>S2_MIN</b>	Minimum Phase 2 apparent power (from switch-on)	READ

<b>S2_MAX</b>	Maximum Phase 2 apparent power (from switch-on)	READ
<b>S2_AVG_MIN</b>	Minimum Phase 2 apparent power (in demand time)	READ
<b>S2_AVG_MAX</b>	Maximum Phase 2 apparent power (in demand time)	READ
<b>S3</b>	Phase 3 apparent power	READ
<b>S3_AVG</b>	Phase 3 apparent power (in demand time)	READ
<b>S3_MIN</b>	Minimum Phase 3 apparent power (from switch-on)	READ
<b>S3_MAX</b>	Maximum Phase 3 apparent power (from switch-on)	READ
<b>S3_AVG_MIN</b>	Minimum Phase 3 apparent power (in demand time)	READ
<b>S3_AVG_MAX</b>	Maximum Phase 3 apparent power (in demand time)	READ
<b>Ssys</b>	System apparent power	READ
<b>Ssys_AVG</b>	System apparent power (in demand time)	READ
<b>Ssys_MIN</b>	Minimum system apparent power (from switch-on)	READ
<b>Ssys_MAX</b>	Maximum system apparent power (from switch-on)	READ
<b>Ssys_AVG_MIN</b>	Minimum system apparent power (in demand time)	READ
<b>Ssys_AVG_MAX</b>	Maximum system apparent power (in demand time)	READ
<b>Q1</b>	Phase 1 Reactive power	READ
<b>Q1_AVG</b>	Phase 1 reactive power (in demand time)	READ
<b>Q1_MIN</b>	Minimum Phase 1 reactive power (from switch-on)	READ
<b>Q1_MAX</b>	Maximum Phase 1 reactive power (from switch-on)	READ
<b>Q1_AVG_MIN</b>	Minimum Phase 1 reactive power (in demand time)	READ
<b>Q1_AVG_MAX</b>	Maximum Phase 1 reactive power (in demand time)	READ
<b>Q2</b>	Phase 2 Reactive power	READ
<b>Q2_AVG</b>	Phase 2 reactive power (in demand time)	READ
<b>Q2_MIN</b>	Minimum Phase 2 reactive power (from switch-on)	READ
<b>Q2_MAX</b>	Maximum Phase 2 reactive power (from switch-on)	READ
<b>Q2_AVG_MIN</b>	Minimum Phase 2 reactive power (in demand time)	READ
<b>Q2_AVG_MAX</b>	Maximum Phase 2 reactive power (in demand time)	READ
<b>Q3</b>	Phase 3 Reactive power	READ
<b>Q3_AVG</b>	Phase 3 reactive power (in demand time)	READ
<b>Q3_MIN</b>	Minimum Phase 3 reactive power (from switch-on)	READ
<b>Q3_MAX</b>	Maximum Phase 3 reactive power (from switch-on)	READ
<b>Q3_AVG_MIN</b>	Minimum Phase 3 reactive power (in demand time)	READ
<b>Q3_AVG_MAX</b>	Maximum Phase 3 reactive power (in demand time)	READ
<b>Qsys</b>	System Reactive power	READ
<b>Qsys_AVG</b>	System reactive power (in demand time)	READ
<b>Qsys_MIN</b>	Minimum system reactive power (from switch-on)	READ
<b>Qsys_MAX</b>	Maximum system reactive power (from switch-on)	READ
<b>Qsys_AVG_MIN</b>	Minimum system reactive power (in demand time)	READ
<b>Qsys_AVG_MAX</b>	Maximum system reactive power (in demand time)	READ
<b>TPF1</b>	Phase 1 Power factor	READ
<b>TPF1_AVG</b>	Phase 1 power factor (in demand time)	READ
<b>TPF1_MIN</b>	Minimum Phase 1 power factor (from switch-on)	READ
<b>TPF1_MAX</b>	Maximum Phase 1 power factor (from switch-on)	READ

<b>TPF1_AVG_MIN</b>	Minimum Phase 1 power factor (in demand time)	READ
<b>TPF1_AVG_MAX</b>	Maximum Phase 1 power factor (in demand time)	READ
<b>TPF2</b>	Phase 2 Power factor	READ
<b>TPF2_AVG</b>	Phase 2 power factor (in demand time)	READ
<b>TPF2_MIN</b>	Minimum Phase 2 power factor (from switch-on)	READ
<b>TPF2_MAX</b>	Maximum Phase 2 power factor (from switch-on)	READ
<b>TPF2_AVG_MIN</b>	Minimum Phase 2 power factor (in demand time)	READ
<b>TPF2_AVG_MAX</b>	Maximum Phase 2 power factor (in demand time)	READ
<b>TPF3</b>	Phase 3 Power factor	READ
<b>TPF3_AVG</b>	Phase 3 power factor (in demand time)	READ
<b>TPF3_MIN</b>	Minimum Phase 3 power factor (from switch-on)	READ
<b>TPF3_MAX</b>	Maximum Phase 3 power factor (from switch-on)	READ
<b>TPF3_AVG_MIN</b>	Minimum Phase 3 power factor (in demand time)	READ
<b>TPF3_AVG_MAX</b>	Maximum Phase 3 power factor (in demand time)	READ
<b>TPFsys</b>	System Power factor	READ
<b>TPFsys_AVG</b>	System power factor (in demand time)	READ
<b>TPFsys_MIN</b>	Minimum system power factor (from switch-on)	READ
<b>TPFsys_MAX</b>	Maximum system power factor (from switch-on)	READ
<b>TPFsys_AVG_MIN</b>	Minimum system power factor (in demand time)	READ
<b>TPFsys_AVG_MAX</b>	Maximum system power factor (in demand time)	READ
<b>THD-V1N</b>	Voltage THD (Total Harmonic Distortion) between Phase 1 and neutral	READ
<b>THD-V1N_AVG</b>	Voltage THD between Phase 1 and neutral (in demand time)	READ
<b>THD-V1N_MIN</b>	Minimum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>THD-V1N_MAX</b>	Maximum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>THD-V1N_AVG_MIN</b>	Minimum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>THD-V1N_AVG_MAX</b>	Maximum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>THD-V2N</b>	Voltage THD between Phase 2 and neutral	READ
<b>THD-V2N_AVG</b>	Voltage THD between Phase 2 and neutral (in demand time)	READ
<b>THD-V2N_MIN</b>	Minimum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>THD-V2N_MAX</b>	Maximum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>THD-V2N_AVG_MIN</b>	Minimum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>THD-V2N_AVG_MAX</b>	Maximum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>THD-V3N</b>	Voltage THD between Phase 3 and neutral	READ
<b>THD-V3N_AVG</b>	Voltage THD between Phase 3 and neutral (in demand time)	READ
<b>THD-V3N_MIN</b>	Minimum voltage THD between Phase 3 and neutral (from switch-on)	READ

<b>THD-V3N_MAX</b>	Maximum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>THD-V3N_AVG_MIN</b>	Minimum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>THD-V3N_AVG_MAX</b>	Maximum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>f</b>	Phase frequency (read from Phase 1)	READ
<b>THD-A1N</b>	Phase 1 current THD	READ
<b>THD-A1N_AVG</b>	Phase 1 current THD (in demand time)	READ
<b>THD-A1N_MIN</b>	Minimum Phase 1 current THD (from switch-on)	READ
<b>THD-A1N_MAX</b>	Maximum Phase 1 current THD (from switch-on)	READ
<b>THD-A1N_AVG_MIN</b>	Minimum Phase 1 current THD (in demand time)	READ
<b>THD-A1N_AVG_MAX</b>	Maximum Phase 1 current THD (in demand time)	READ
<b>THD-A2N</b>	Phase 2 current THD	READ
<b>THD-A2N_AVG</b>	Phase 2 current THD (in demand time)	READ
<b>THD-A2N_MIN</b>	Minimum Phase 2 current THD (from switch-on)	READ
<b>THD-A2N_MAX</b>	Maximum Phase 2 current THD (from switch-on)	READ
<b>THD-A2N_AVG_MIN</b>	Minimum Phase 2 current THD (in demand time)	READ
<b>THD-A2N_AVG_MAX</b>	Maximum Phase 2 current THD (in demand time)	READ
<b>THD-A3N</b>	Phase 3 current THD	READ
<b>THD-A3N_AVG</b>	Phase 3 current THD (in demand time)	READ
<b>THD-A3N_MIN</b>	Minimum Phase 3 current THD (from switch-on)	READ
<b>THD-A3N_MAX</b>	Maximum Phase 3 current THD (from switch-on)	READ
<b>THD-A3N_AVG_MIN</b>	Minimum Phase 3 current THD (in demand time)	READ
<b>THD-A3N_AVG_MAX</b>	Maximum Phase 3 current THD (in demand time)	READ
<b>+WH1</b>	Phase 1 positive active energy	READ
<b>+WH2</b>	Phase 2 positive active energy	READ
<b>+WH3</b>	Phase 3 positive active energy	READ
<b>+Wh</b>	Total positive active energy	READ
<b>-WH1</b>	Phase 1 negative active energy	READ
<b>-WH2</b>	Phase 2 negative active energy	READ
<b>-WH3</b>	Phase 3 negative active energy	READ
<b>-Wh</b>	Total negative active energy	READ
<b>VAh1</b>	Phase 1 apparent energy	READ
<b>VAh2</b>	Phase 2 apparent energy	READ
<b>VAh3</b>	Phase 3 apparent energy	READ
<b>VAh</b>	Total apparent energy	READ
<b>+VARh1-L[Q1]</b>	Phase 1 positive inductive reactive energy (Q1)	READ
<b>+VARh2-L[Q1]</b>	Phase 2 positive inductive reactive energy (Q1)	READ

<b>+VARh3-L[Q1]</b>	Phase 3 positive inductive reactive energy (Q1)	READ
<b>+VARh-L[Q1]</b>	Total positive inductive reactive energy (Q1)	READ
<b>-VARh1-C[Q4]</b>	Phase 1 negative capacitive reactive energy (Q4)	READ
<b>-VARh2-C[Q4]</b>	Phase 2 negative capacitive reactive energy (Q4)	READ
<b>-VARh3-C[Q4]</b>	Phase 3 negative capacitive reactive energy (Q4)	READ
<b>-VARh-C[Q4]</b>	Total negative capacitive reactive energy (Q4)	READ
<b>-VARh1-L[Q3]</b>	Phase 1 negative inductive reactive energy (Q3)	READ
<b>-VARh2-L[Q3]</b>	Phase 2 negative inductive reactive energy (Q3)	READ
<b>-VARh3-L[Q3]</b>	Phase 3 negative inductive reactive energy (Q3)	READ
<b>-VARh-L[Q3]</b>	Total negative inductive reactive energy (Q3)	READ
<b>+VARh1-C[Q2]</b>	Phase 1 positive capacitive reactive energy (Q2)	READ
<b>+VARh2-C[Q2]</b>	Phase 2 positive capacitive reactive energy (Q2)	READ
<b>+VARh3-C[Q2]</b>	Phase 3 positive capacitive reactive energy (Q2)	READ
<b>+VARh-C[Q2]</b>	Total positive capacitive reactive energy (Q2)	READ
<b>Wh</b>	Total active energy	READ
<b>VARh</b>	Total reactive energy	READ
<b>VARh-L[Q1Q3]</b>	Total inductive reactive energy (Q1+Q3)	READ
<b>VARh-C[Q2Q4]</b>	Total capacitive reactive energy (Q2+Q4)	READ
<b>VAh</b>	Total apparent energy	READ
<b>COUNTER 1</b>	Input 1 pulse counter	READ
<b>COUNTER 2</b>	Input 2 pulse counter	READ
<b>DIGITAL_IN_1</b>	Digital Input 1	READ
<b>DIGITAL_IN_2</b>	Digital Input 2	READ
<b>DIGITAL_OUT_1</b>	Digital output 1	READ/ WRITE
<b>DIGITAL_OUT_2</b>	Digital output 2	READ/ WRITE
<b>ANALOG OUT</b>	Value to load on analog output (R203 models only) in uA or mV	READ/ WRITE
<b>COMMAND</b>	Command register. Supported commands: 260 decimal to reset MIN/MAX 259 decimal to reset AVG demand time values 261 decimal to reset Energy Counters	READ/ WRITE
<b>TOT KVARh L1</b>	Phase 1 total reactive energy	READ
<b>TOT KVARh L2</b>	Phase 2 total reactive energy	READ
<b>TOT KVARh L3</b>	Phase 3 total reactive energy	READ
<b>STATUS</b>	Device status bitBIT0 -> Cyclic phase sense error (1 ERR, 0 OK) BIT1 -> ALARM ( 1 ACTIVE, 0 NOT ACTIVE) BIT2 -> DOUT1 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT3 -> DOUT2 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT4 -> DIN1 STATUS ( 1 high, 0 low) BIT5 -> DIN2 STATUS ( 1 high, 0 low) BIT6 -> Current Cutoff ( 1 active, 0 inactive) BIT 7 -> Current error L1 (1 CT connected reverse, 0 CT connected OK) BIT 8 -> Current error L2 (1 CT connected reverse, 0 CT connected OK)	READ

	BIT 9 -> Current error L3 (1 CT connected inverted, 0 CT connected OK) BIT 10 -> Line 1 Voltage/Current connection error (1 Error, 0 OK) BIT 11 -> Connection error Line 2 Voltage/Current (1 Error, 0 OK) BIT 12 -> Connection error Line 3 Voltage/Current (1 Error, 0 OK)	
<b>Wh1</b>	Phase 1 total active energy	READ
<b>Wh2</b>	Phase 2 total active energy	READ
<b>Wh3</b>	Phase 3 total active energy	READ

VARIABLE	EXPLANATION
V1N	Voltage between Phase 1 and neutral
V1N_AVG	Phase 1 to Neutral Voltage (in demand time)
V1N_MIN	Minimum voltage between Phase 1 and neutral (from switch-on)
V1N_MAX	Maximum voltage between Phase 1 and neutral (from switch-on)
V1N_AVG_MIN	Phase 1 to minimum neutral voltage (in demand time)
V1N_AVG_MAX	Phase 1 to maximum neutral voltage (in demand time)
V2N	Voltage between Phase 2 and neutral
V2N_AVG	Phase 2 to Neutral Voltage (in demand time)
V2N_MIN	Minimum voltage between Phase 2 and neutral (from switch-on)
V2N_MAX	Maximum voltage between Phase 2 and neutral (from switch-on)
V2N_AVG_MIN	Phase 2 to minimum neutral voltage (in demand time)
V2N_AVG_MAX	Phase 2 to maximum neutral voltage (in demand time)
V3N	Voltage between Phase 3 and neutral
V3N_AVG	Phase 3 to Neutral Voltage (in demand time)
V3N_MIN	Minimum voltage between Phase 3 and neutral (from switch-on)
V3N_MAX	Maximum voltage between Phase 3 and neutral (from switch-on)
V3N_AVG_MIN	Phase 3 to minimum neutral voltage (in demand time)
V3N_AVG_MAX	Phase 3 to maximum neutral voltage (in demand time)
AN	Neutral Current
AN_AVG	Neutral Current (on demand time)
AN_MIN	Minimum neutral current (from switch-on)
AN_MAX	Maximum neutral current (from switch-on)
AN_AVG_MIN	Minimum neutral current (in demand time)
AN_AVG_MAX	Maximum neutral current (in demand time)
V12	Phase-to-phase voltage between Phase 1 and 2
V12_AVG	Phase-to-phase voltage between Phase 1 and 2 (in demand time)
V12_MIN	Minimum phase-to-phase voltage between Phase 1 and 2 (from switch-on)
V12_MAX	Maximum phase-to-phase voltage between Phase 1 and 2 (from switch-on)
V12_AVG_MIN	Phase-to-phase voltage between minimum Phase 1 and 2 (in demand time)
V12_AVG_MAX	Phase-to-phase voltage between maximum Phase 1 and 2 (in demand time)

V23	Phase-to-phase voltage between Phase 2 and 3
V23_AVG	Phase-to-phase voltage between Phase 2 and 3 (in demand time)
V23_MIN	Minimum phase-to-phase voltage between Phase 2 and 3 (from switch-on)
V23_MAX	Maximum phase-to-phase voltage between Phase 2 and 3 (from switch-on)
V23_AVG_MIN	Phase-to-phase voltage between minimum Phase 2 and 3 (in demand time)
V23_AVG_MAX	Phase-to-phase voltage between maximum Phase 2 and 3 (in demand time)
V31	Phase-to-phase voltage between Phase 3 and 1
V31_AVG	Phase-to-phase voltage between Phase 3 and 1 (in demand time)
V31_MIN	Minimum phase-to-phase voltage between Phase 3 and 1 (from switch-on)
V31_MAX	Maximum phase-to-phase voltage between Phase 3 and 1 (from switch-on)
V31_AVG_MIN	Phase-to-phase voltage between minimum Phase 3 and 1 (in demand time)
V31_AVG_MAX	Phase-to-phase voltage between maximum Phase 3 and 1 (in demand time)
Vsys	System voltage:
Vsys_AVG	System voltage (in demand time)
Vsys_MIN	Minimum system voltage (from switch-on)
Vsys_MAX	Maximum system voltage (from switch-on)
Vsys_AVG_MIN	Minimum system voltage (in demand time)
Vsys_AVG_MAX	Maximum system voltage (in demand time)
A1	Phase 1 current
A1_AVG	Phase 1 current (in demand time)
A1_MIN	Minimum Phase 1 current (from switch-on)
A1_MAX	Maximum Phase 1 current (from switch-on)
A1_AVG_MIN	Minimum Phase 1 current (in demand time)
A1_AVG_MAX	Maximum Phase 1 current (in demand time)
A2	Phase 2 current
A2_AVG	Phase 2 current (in demand time)
A2_MIN	Minimum Phase 2 current (from switch-on)
A2_MAX	Maximum Phase 2 current (from switch-on)
A2_AVG_MIN	Minimum Phase 2 current (in demand time)
A2_AVG_MAX	Maximum Phase 2 current (in demand time)
A3	Phase 3 current
A3_AVG	Phase 3 current (in demand time)
A3_MIN	Minimum Phase 3 current (from switch-on)
A3_MAX	Maximum Phase 3 current (from switch-on)
A3_AVG_MIN	Minimum Phase 3 current (in demand time)
A3_AVG_MAX	Maximum Phase 3 current (in demand time)
Asys	System current

Asys_AVG	System current (in demand time)
Asys_MIN	Minimum system current (from switch-on)
Asys_MAX	Maximum system current (from switch-on)
Asys_AVG_MIN	Minimum system current (in demand time)
Asys_AVG_MAX	Maximum system current (in demand time)
P1	Phase 1 Active power
P1_AVG	Phase 1 active power (in demand time)
P1_MIN	Minimum Phase 1 active power (from switch-on)
P1_MAX	Maximum Phase 1 active power (from switch-on)
P1_AVG_MIN	Minimum Phase 1 active power (in demand time)
P1_AVG_MAX	Maximum Phase 1 active power (in demand time)
P2	Phase 2 Active power
P2_AVG	Phase 2 active power (in demand time)
P2_MIN	Minimum Phase 2 active power (from switch-on)
P2_MAX	Maximum Phase 2 active power (from switch-on)
P2_AVG_MIN	Minimum Phase 2 active power (in demand time)
P2_AVG_MAX	Maximum Phase 2 active power (in demand time)
P3	Phase 3 Active power
P3_AVG	Phase 3 active power (in demand time)
P3_MIN	Minimum Phase 3 active power (from switch-on)
P3_MAX	Maximum Phase 3 active power (from switch-on)
P3_AVG_MIN	Minimum Phase 3 active power (in demand time)
P3_AVG_MAX	Maximum Phase 3 active power (in demand time)
Psys	System Active power
Psys_AVG	System active power (in demand time)
Psys_MIN	Minimum system active power (from switch-on)
Psys_MAX	Maximum system active power (from switch-on)
Psys_AVG_MIN	Minimum system active power (in demand time)
Psys_AVG_MAX	Maximum system active power (in demand time)
S1	Phase 1 apparent power
S1_AVG	Phase 1 apparent power (in demand time)
S1_MIN	Minimum Phase 1 apparent power (from switch-on)
S1_MAX	Maximum Phase 1 apparent power (from switch-on)
S1_AVG_MIN	Minimum Phase 1 apparent power (in demand time)
S1_AVG_MAX	Maximum Phase 1 apparent power (in demand time)
S2	Phase 2 apparent power
S2_AVG	Phase 2 apparent power (in demand time)
S2_MIN	Minimum Phase 2 apparent power (from switch-on)
S2_MAX	Maximum Phase 2 apparent power (from switch-on)
S2_AVG_MIN	Minimum Phase 2 apparent power (in demand time)
S2_AVG_MAX	Maximum Phase 2 apparent power (in demand time)
S3	Phase 3 apparent power
S3_AVG	Phase 3 apparent power (in demand time)

S3_MIN	Minimum Phase 3 apparent power (from switch-on)
S3_MAX	Maximum Phase 3 apparent power (from switch-on)
S3_AVG_MIN	Minimum Phase 3 apparent power (in demand time)
S3_AVG_MAX	Maximum Phase 3 apparent power (in demand time)
Ssys	System apparent power
Ssys_AVG	System apparent power (in demand time)
Ssys_MIN	Minimum system apparent power (from switch-on)
Ssys_MAX	Maximum system apparent power (from switch-on)
Ssys_AVG_MIN	Minimum system apparent power (in demand time)
Ssys_AVG_MAX	Maximum system apparent power (in demand time)
Q1	Phase 1 Reactive power
Q1_AVG	Phase 1 reactive power (in demand time)
Q1_MIN	Minimum Phase 1 reactive power (from switch-on)
Q1_MAX	Maximum Phase 1 reactive power (from switch-on)
Q1_AVG_MIN	Minimum Phase 1 reactive power (in demand time)
Q1_AVG_MAX	Maximum Phase 1 reactive power (in demand time)
Q2	Phase 2 Reactive power
Q2_AVG	Phase 2 reactive power (in demand time)
Q2_MIN	Minimum Phase 2 reactive power (from switch-on)
Q2_MAX	Maximum Phase 2 reactive power (from switch-on)
Q2_AVG_MIN	Minimum Phase 2 reactive power (in demand time)
Q2_AVG_MAX	Maximum Phase 2 reactive power (in demand time)
Q3	Phase 3 Reactive power
Q3_AVG	Phase 3 reactive power (in demand time)
Q3_MIN	Minimum Phase 3 reactive power (from switch-on)
Q3_MAX	Maximum Phase 3 reactive power (from switch-on)
Q3_AVG_MIN	Minimum Phase 3 reactive power (in demand time)
Q3_AVG_MAX	Maximum Phase 3 reactive power (in demand time)
Qsys	System Reactive power
Qsys_AVG	System reactive power (in demand time)
Qsys_MIN	Minimum system reactive power (from switch-on)
Qsys_MAX	Maximum system reactive power (from switch-on)
Qsys_AVG_MIN	Minimum system reactive power (in demand time)
Qsys_AVG_MAX	Maximum system reactive power (in demand time)
TPF1	Phase 1 Power factor
TPF1_AVG	Phase 1 power factor (in demand time)
TPF1_MIN	Minimum Phase 1 power factor (from switch-on)
TPF1_MAX	Maximum Phase 1 power factor (from switch-on)
TPF1_AVG_MIN	Minimum Phase 1 power factor (in demand time)
TPF1_AVG_MAX	Maximum Phase 1 power factor (in demand time)
TPF2	Phase 2 Power factor
TPF2_AVG	Phase 2 power factor (in demand time)
TPF2_MIN	Minimum Phase 2 power factor (from switch-on)

TPF2_MAX	Maximum Phase 2 power factor (from switch-on)
TPF2_AVG_MIN	Minimum Phase 2 power factor (in demand time)
TPF2_AVG_MAX	Maximum Phase 2 power factor (in demand time)
TPF3	Phase 3 Power factor
TPF3_AVG	Phase 3 power factor (in demand time)
TPF3_MIN	Minimum Phase 3 power factor (from switch-on)
TPF3_MAX	Maximum Phase 3 power factor (from switch-on)
TPF3_AVG_MIN	Minimum Phase 3 power factor (in demand time)
TPF3_AVG_MAX	Maximum Phase 3 power factor (in demand time)
TPFsys	System Power factor
TPFsys_AVG	System power factor (in demand time)
TPFsys_MIN	Minimum system power factor (from switch-on)
TPFsys_MAX	Minimum system power factor (from switch-on)
TPFsys_AVG_MIN	Minimum system power factor (in demand time)
TPFsys_AVG_MAX	Maximum system power factor (in demand time)
THD-V1N	Voltage THD (Total Harmonic Distortion) between Phase 1 and neutral
THD-V1N_AVG	Voltage THD between Phase 1 and neutral (in demand time)
THD-V1N_MIN	Minimum voltage THD between Phase 1 and neutral (from switch-on)
THD-V1N_MAX	Maximum voltage THD between Phase 1 and neutral (from switch-on)
THD-V1N_AVG_MIN	Minimum voltage THD between Phase 1 and neutral (in demand time)
THD-V1N_AVG_MAX	Maximum voltage THD between Phase 1 and neutral (in demand time)
THD-V2N	Voltage THD between Phase 2 and neutral
THD-V2N_AVG	Voltage THD between Phase 2 and neutral (in demand time)
THD-V2N_MIN	Minimum voltage THD between Phase 2 and neutral (from switch-on)
THD-V2N_MAX	Maximum voltage THD between Phase 2 and neutral (from switch-on)
THD-V2N_AVG_MIN	Minimum voltage THD between Phase 2 and neutral (in demand time)
THD-V2N_AVG_MAX	Maximum voltage THD between Phase 2 and neutral (in demand time)
THD-V3N	Voltage THD between Phase 3 and neutral
THD-V3N_AVG	Voltage THD between Phase 3 and neutral (in demand time)
THD-V3N_MIN	Minimum voltage THD between Phase 3 and neutral (from switch-on)
THD-V3N_MAX	Maximum voltage THD between Phase 3 and neutral (from switch-on)
THD-V3N_AVG_MIN	Minimum voltage THD between Phase 3 and neutral (in demand time)
THD-V3N_AVG_MAX	Maximum voltage THD between Phase 3 and neutral (in demand time)
f	Phase frequency (read from Phase 1)
THD-A1N	Phase 1 current THD
THD-A1N_AVG	Phase 1 current THD (in demand time)
THD-A1N_MIN	Minimum Phase 1 current THD (from switch-on)
THD-A1N_MAX	Maximum Phase 1 current THD (from switch-on)
THD-A1N_AVG_MIN	Minimum Phase 1 current THD (in demand time)
THD-A1N_AVG_MAX	Maximum Phase 1 current THD (in demand time)
THD-A2N	Phase 2 current THD

THD-A2N_AVG	Phase 2 current THD (in demand time)
THD-A2N_MIN	Minimum Phase 2 current THD (from switch-on)
THD-A2N_MAX	Maximum Phase 2 current THD (from switch-on)
THD-A2N_AVG_MIN	Minimum Phase 2 current THD (in demand time)
THD-A2N_AVG_MAX	Maximum Phase 2 current THD (in demand time)
THD-A3N	Phase 3 current THD
THD-A3N_AVG	Phase 3 current THD (in demand time)
THD-A3N_MIN	Minimum Phase 3 current THD (from switch-on)
THD-A3N_MAX	Maximum Phase 3 current THD (from switch-on)
THD-A3N_AVG_MIN	Minimum Phase 3 current THD (in demand time)
THD-A3N_AVG_MAX	Maximum Phase 3 current THD (in demand time)
+WH1	Phase 1 positive active energy
+WH2	Phase 2 positive active energy
+WH3	Phase 3 positive active energy
+Wh	Total positive active energy
-WH1	Phase 1 negative active energy
-WH2	Phase 2 negative active energy
-WH3	Phase 3 negative active energy
-Wh	Total negative active energy
VAh1	Phase 1 apparent energy
VAh2	Phase 2 apparent energy
VAh3	Phase 3 apparent energy
VAh	Total apparent energy
+VARh1-L[Q1]	Phase 1 positive inductive reactive energy (Q1)
+VARh2-L[Q1]	Phase 2 positive inductive reactive energy (Q1)
+VARh3-L[Q1]	Phase 3 positive inductive reactive energy (Q1)
+VARh-L[Q1]	Total positive inductive reactive energy (Q1)
-VARh1-C[Q4]	Phase 1 negative capacitive reactive energy (Q4)
-VARh2-C[Q4]	Phase 2 negative capacitive reactive energy (Q4)
-VARh3-C[Q4]	Phase 3 negative capacitive reactive energy (Q4)
-VARh-C[Q4]	Total negative capacitive reactive energy (Q4)
-VARh1-L[Q3]	Phase 1 negative inductive reactive energy (Q3)
-VARh2-L[Q3]	Phase 2 negative inductive reactive energy (Q3)
-VARh3-L[Q3]	Phase 3 negative inductive reactive energy (Q3)
-VARh-L[Q3]	Total negative inductive reactive energy (Q3)
+VARh1-C[Q2]	Phase 1 positive capacitive reactive energy (Q2)
+VARh2-C[Q2]	Phase 2 positive capacitive reactive energy (Q2)
+VARh3-C[Q2]	Phase 3 positive capacitive reactive energy (Q2)
+VARh-C[Q2]	Total positive capacitive reactive energy (Q2)
Wh	Total active energy
VARh	Total reactive energy
VARh-L[Q1Q3]	Total inductive reactive energy (Q1+Q3)
VARh-C[Q2Q4]	Total capacitive reactive energy (Q2+Q4)

VAh	Total apparent energy
COUNTER 1	Input 1 pulse counter
COUNTER 2	Input 2 pulse counter
DIGITAL_IN_1	Digital Input 1
DIGITAL_IN_2	Digital Input 2
DIGITAL_OUT_1	Digital output 1
DIGITAL_OUT_2	Digital output 2

**OPC-UA SERVER CERTIFICATE**

File that represents the Server Certificate in DER format

**OPC-UA SERVER KEY**

File that represents the Server key

**RESET CERTIFICATE**

Reload the default certificate and key

## 18. **DOWNLOADING THE DATALOGGER FILES (MODBUS PROTOCOL MODELS ONLY)**

In the "Data logger view" section you can download the entire timed database in csv text format.

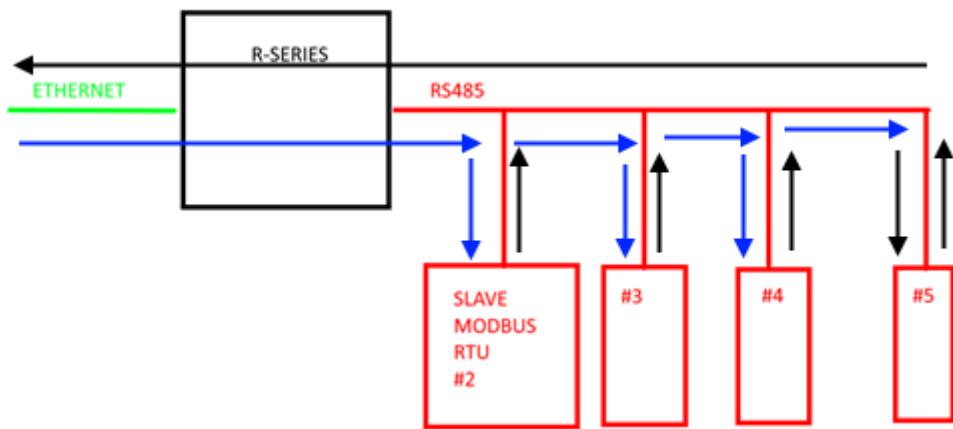
In the "Data logger event view" section you can download the entire event database in csv text format.



THE TEXT FILES DOWNLOADED BY THE DATA LOGGER HAVE THE DEFAULT .CGI EXTENSION. TO USE THEM WITH EXCEL-TYPE SOFTWARE IT IS POSSIBLE TO RENAME THEM AS .CSV

## 19. MODBUS PASSTHROUGH (MODBUS PROTOCOL MODELS ONLY)

Thanks to the Modbus Passthrough function it is possible to extend the amount of I/O available in the device via the RS485 port and the Modbus RTU slave protocol, for example by using the Seneca Z-PC series products. In this mode the RS485 port stops working as Modbus RTU slave and the device becomes a Modbus TCP-IP gateway to Modbus RTU serial:



Each Modbus TCP-IP request with station address other than that of the R series device is converted into a serial packet on the RS485 and, in the case of a reply, it is turned over to TCP-IP.

Therefore, it is no longer necessary to purchase gateways to extend the I/O number or to connect already available Modbus RTU I/O.

## 20. FIRMWARE UPDATE

In the “Update” section of the Webserver it is possible to update the firmware using a binary file that can be downloaded directly from the Seneca website in the download section of the device.

### **ATTENTION!**

**BEFORE UPDATING THE FW, STOP COMMUNICATION WITH THE PLC CONNECTED TO THE DEVICE (FOR EXAMPLE BY DISCONNECTING THE ETHERNET CABLE) OTHERWISE THE COMMUNICATION WITH THE PLC WILL PREVENT THE CORRECT SENDING OF THE FIRMWARE AND THE PROCEDURE WILL NOT BE SUCCESSFUL.**

## 21. RESETTING THE DEVICE TO ITS FACTORY CONFIGURATION

The factory configuration resets all parameters to default.

To reset the device to the factory configuration it is necessary to follow the procedure below:

- 1) Remove power from the device
- 2) Turn dip switches 1 and 2 to ON
- 3) Power up the device and wait at least 10 seconds
- 4) Turn dip switches 1 and 2 to OFF
- 5) At the next restart the device will have loaded the factory configuration

### **ATTENTION!**

**RESTORING TO FACTORY DEFAULT DELETES ANY ACQUIRED LOGS AND ALL CONFIGURATIONS. BE SURE TO SAVE THE CURRENT CONFIGURATION AND LOG FILE BEFORE PERFORMING THIS OPERATION.**

## 22. MODBUS COMMUNICATION PROTOCOL (MODBUS PROTOCOL MODELS ONLY)

The supported communication protocol is:

- Modbus RTU Slave (from the RS485 port)
- Modbus TCP-IP Server (from Ethernet ports)

The Modbus TCP-IP Server supports up to 8 concurrent clients.

For more information on these protocols, see the website:

<http://www.modbus.org/specs.php>.

### 22.1. SUPPORTED MODBUS FUNCTION CODES

The following Modbus functions are supported:

- Read Holding Register (function 3)
- Write Single Register (function 6)
- Write Multiple registers (function 16)



All 32-bit values are contained in 2 consecutive registers



All 64-bit values are contained in 4 consecutive registers



Any registers with RW\* (in flash memory) can be written up to about 10000 times  
The PLC/Master Modbus programmer must not exceed this limit

## 22.2. MODBUS REGISTER TABLE

The following abbreviations are used in the register tables:

MS = More significant
LS = Less significant
MSW = Most significant word (16bit)
LSW = Least significant word (16bit)
MMSW = Most "most" significant word (16bit)
LLSW = Least "least" significant word (16bit)
MSW = 8 most significant bits
LSB = 8 least significant bits
MSBIT = Most significant bit
MSBIT = Least significant bit
RO = Register in read-only
RW = Read/write register
RW** = Reading and writing register contained in flash memory, writable a maximum of 10000 times.
Unsigned 16 bit = unsigned integer register, can take values from 0 to 65535
Signed 16 bit = signed integer register can take values from -32768 to +32767
Float 32 bits = 32-bit single-precision floating point register (IEEE 754) <a href="https://en.wikipedia.org/wiki/IEEE_754">https://en.wikipedia.org/wiki/IEEE_754</a>
BIT = Boolean registry, can be 0 (false) or 1 (true)

## 22.3. NUMBERING OF "0-BASED" OR "1-BASED" MODBUS ADDRESSES

According to the Modbus standard the Holding Register registers are addressable from 0 to 65535, there are 2 different conventions for numbering the addresses: "0-BASED" and "1-BASED".

For greater clarity, Seneca shows its register tables in both conventions.



### ATTENTION!

**CAREFULLY READ THE DOCUMENTATION OF THE MODBUS MASTER DEVICE IN ORDER TO  
UNDERSTAND WHICH OF THE TWO CONVENTIONS THE MANUFACTURER HAS DECIDED TO USE**

## 22.4. NUMBERING OF MODBUS ADDRESSES WITH "0-BASED" CONVENTION

The numbering is:

<b>HOLDING REGISTER MODBUS ADDRESS (OFFSET)</b>	<b>MEANING</b>
0	FIRST REGISTER
1	SECOND REGISTER
2	THIRD REGISTER
3	FOURTH REGISTER
4	FIFTH REGISTER

Therefore, the first register is at address 0.

In the following tables, this convention is indicated with "**ADDRESS OFFSET**".

## 22.5. NUMBERING OF MODBUS ADDRESSES WITH "1 BASED" CONVENTION (STANDARD)

The numbering is that established by the Modbus consortium and is of the type:

<b>HOLDING REGISTER MODBUS ADDRESS 4x</b>	<b>MEANING</b>
40001	FIRST REGISTER
40002	SECOND REGISTER
40003	THIRD REGISTER
40004	FOURTH REGISTER
40005	FIFTH REGISTER

In the following tables this convention is indicated with "**ADDRESS 4x**" since a 4 is added to the address so that the first Modbus register is 40001.

A further convention is also possible where the number 4 is omitted in front of the register address:

<b>HOLDING MODBUS ADDRESS WITHOUT 4x</b>	<b>MEANING</b>
1	FIRST REGISTER
2	SECOND REGISTER
3	THIRD REGISTER
4	FOURTH REGISTER
5	FIFTH REGISTER

## 22.6. BIT CONVENTION WITHIN A MODBUS HOLDING REGISTER

A Modbus Holding Register consists of 16 bits with the following convention:

BIT 15	BIT 14	BIT 13	BIT 12	BIT 11	BIT 10	BIT 9	BIT 8	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
--------	--------	--------	--------	--------	--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

For instance, if the value of the register in decimal is

12300

the value 12300 in hexadecimal is:

0x300C

the hexadecimal 0x300C in binary value is:

11 0000 0000 1100

So, using the above convention, we get:

BIT 15	BIT 14	BIT 13	BIT 12	BIT 11	BIT 10	BIT 9	BIT 8	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0

## 22.7. MSB and LSB BYTE CONVENTION WITHIN A MODBUS HOLDING REGISTER

A Modbus Holding Register consists of 16 bits with the following convention:

BIT 15	BIT 14	BIT 13	BIT 12	BIT 11	BIT 10	BIT 9	BIT 8	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
--------	--------	--------	--------	--------	--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

LSB Byte (Least Significant Byte) defines the 8 bits ranging from Bit 0 to Bit 7 included, we define MSB Byte (Most Significant Byte) the 8 bits ranging from Bit 8 to Bit 15 inclusive:

BIT 15	BIT 14	BIT 13	BIT 12	BIT 11	BIT 10	BIT 9	BIT 8	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE MSB								BYTE LSB							

## 22.8. REPRESENTATION OF A 32-BIT VALUE IN TWO CONSECUTIVE MODBUS HOLDING REGISTERS

The representation of a 32-bit value in the Modbus Holding Registers is made using 2 consecutive Holding Registers (a Holding Register is a 16-bit register). To obtain the 32-bit value it is therefore necessary to read two consecutive registers:

For example, if register 40064 contains the 16 most significant bits (MSW) while register 40065 contains the least significant 16 bits (LSW), the 32-bit value is obtained by composing the 2 registers:

$$Value_{32bit} = Register_{LSW} + (Register_{MSW} * 65536)$$

In the reading registers it is possible to swap the most significant word with the least significant word, therefore it is possible to obtain 40064 as LSW and 40065 as MSW.

## 22.9. TYPE OF 32-BIT FLOATING POINT DATA (IEEE 754)

The IEEE 754 standard ([https://en.wikipedia.org/wiki/IEEE\\_754](https://en.wikipedia.org/wiki/IEEE_754)) defines the format for representing floating point numbers.

As already mentioned, since it is a 32-bit data type, its representation occupies two 16-bit holding registers.

To obtain a binary / hexadecimal conversion of a floating point value it is possible to refer to an online converter at this address:

<http://www.h-schmidt.net/FloatConverter/IEEE754.html>

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Using the last representation the value 2.54 is represented at 32 bits as:

0x40228F5C

Since we have 16-bit registers available, the value must be divided into MSW and LSW:

0x4022 (16418 decimal) are the 16 most significant bits (MSW) while 0x8F5C (36700 decimal) are the 16 least significant bits (LSW).

**22.10. MODBUS 4X HOLDING REGISTERS TABLE (FUNCTION CODE 3)**

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40001</b>	0	MACHINE-ID	-	Device ID	RO	UNSIGNED 16BIT
<b>40002</b>	1	FW REVISION (Major/Minor)	-	FW revision	RO	UNSIGNED 16BIT
<b>40003</b>	2	FW REVISION (Fix/Build)	-	FW revision	RO	UNSIGNED 16BIT
<b>40004</b>	3	FW CODE	-	FW code	RO	UNSIGNED 16BIT
<b>40005</b>	4	FW RESERVED	-	-	RO	UNSIGNED 16BIT
<b>40006</b>	5	FW RESERVED	-	-	RO	UNSIGNED 16BIT
<b>40007</b>	6	BOARD-ID	-	HW revision	RO	UNSIGNED 16BIT
<b>40008</b>	7	BOOT REVISION (Major/Minor)	-	FW Bootloader revision	RO	UNSIGNED 16BIT
<b>40009</b>	8	BOOT REVISION (Fix/Build)	-	FW Bootloader revision	RO	UNSIGNED 16BIT
<b>40010</b>	9	BOOT CODE	-	Bootloader FW code	RO	UNSIGNED 16BIT
<b>40011</b>	10	RESERVED	-	-	RO	UNSIGNED 16BIT
<b>40012</b>	11	RESERVED	-	-	RO	UNSIGNED 16BIT
<b>40013</b>	12	COMMAND AUX 3H	-	COMMAND REGISTER 3	RW	UNSIGNED 16BIT
<b>40014</b>	13	COMMAND AUX 3L	-		RW	UNSIGNED 16BIT
<b>40015</b>	14	COMMAND AUX 2	-		RW	UNSIGNED 16BIT
<b>40016</b>	15	COMMAND AUX 1	-	COMMAND REGISTER 2	RW	UNSIGNED 16BIT
<b>40017</b>	16	COMMAND	-		RW	UNSIGNED 16BIT
				Supported command list: 260 decimal to reset MIN/MAX 259 decimal to reset AVG		

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				261 decimal to reset Energy Counters 40986 decimal to load value in CMD_AUX register to COUNTER1 41002 decimal to load value in CMD_AUX register to COUNTER2		
40018	17	STATUS	-	BIT0 -> Cyclic phase sense error (1 ERR, 0 OK) BIT1 -> ALARM ( 1 ACTIVE, 0 NOT ACTIVE) BIT2 -> DOUT1 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT3 -> DOUT2 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT4 -> DIN1 STATUS ( 1 high, 0 low) BIT5 -> DIN2 STATUS ( 1 high, 0 low) BIT6 -> Current Cutoff ( 1 active, 0 inactive) BIT 7 -> Current error L1 (1 CT connected reverse, 0 CT connected OK) BIT 8 -> Current error L2 (1 CT connected reverse, 0 CT connected OK) BIT 9 -> Current error L3 (1 CT connected inverted, 0 CT connected OK) BIT 10 -> Line 1 Voltage/Current connection error (1 Error, 0 OK) BIT 11 -> Connection error Line 2 Voltage/Current (1 Error, 0 OK) BIT 12 -> Connection error Line 3 Voltage/Current (1 Error, 0 OK)	RW	UNSIGNED 16BIT

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40019</b>	18	RESERVED	-	-	RW	UNSIGNED 16BIT
<b>40020</b>	19	RESERVED	-	-	RW	UNSIGNED 16BIT
<b>40021</b>	20	RESERVED	-	-	RW	UNSIGNED 16BIT
<b>40022</b>	21	INPUT VALUES	-	Status of digital inputs 1 and 2 Bit[0] = INPUT1 Bit[1] = INPUT2	RW	UNSIGNED 16BIT
<b>40023</b>	22	Output	-	Status of digital outputs Bit[0] = OUTPUT1 Bit[1] = OUTPUT2	RW	UNSIGNED 16BIT
<b>40024</b>	23	RESERVED	-	-	RW	UNSIGNED 16BIT
<b>40025</b>	24	RESERVED	-	-	RW	UNSIGNED 16BIT
<b>40026</b>	25	RESERVED	-	-	RW	UNSIGNED 16BIT
<b>40027</b>	26	ANALOG OUTPUT MANUAL	-	When the analogue output is in pilot "manual" mode the output 0=0% 8190=100%	RW	UNSIGNED 16BIT
<b>40101</b>	100	V RMS [V] MSW	L1-L2	RMS phase-to-phase voltage measurement in [V] (Set to 0 if Aron insertion is used)	RO	FLOAT32
<b>40102</b>	101	V RMS [V] LSW			RO	
<b>40103</b>	102	V RMS [V] MSW	L2-L3	RMS phase-to-phase voltage measurement in [V] (Set to 0 if Aron insertion is used)	RO	FLOAT32
<b>40104</b>	103	V RMS [V] LSW			RO	
<b>40105</b>	104	V RMS [V] MSW	L3-L1	RMS phase-to-phase voltage measurement in [V] (Set to 0 if Aron insertion is used)	RO	FLOAT32
<b>40106</b>	105	V RMS [V] LSW			RO	
<b>40107</b>	106	I RMS [A] MSW	L1	RMS current measurement in [A]	RO	FLOAT32
<b>40108</b>	107	I RMS [A] LSW			RO	
<b>40109</b>	108	I RMS [A] MSW	L2	RMS current measurement in [A]	RO	FLOAT32
<b>40110</b>	109	I RMS [A] LSW			RO	
<b>40111</b>	110	I RMS [A] MSW	L3	RMS current measurement in [A]	RO	FLOAT32
<b>40112</b>	111	I RMS [A] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40113</b>	112	I RMS [A] MSW	N	RMS current measurement in [A]	RO	FLOAT32
<b>40114</b>	113	I RMS [A] LSW			RO	
<b>40115</b>	114	V-I PHASE [°] MSW	L1	Measurement of the angle in [°] between Voltage and Current	RO	FLOAT32
<b>40116</b>	115	V-I PHASE [°] LSW			RO	
<b>40117</b>	116	V-I PHASE [°] MSW	L2	Measurement of the angle in [°] between Voltage and Current	RO	FLOAT32
<b>40118</b>	117	V-I PHASE [°] LSW			RO	
<b>40119</b>	118	V-I PHASE [°] MSW	L3	Measurement of the angle in [°] between Voltage and Current	RO	FLOAT32
<b>40120</b>	119	V-I PHASE [°] LSW			RO	
<b>40121</b>	120	P ACTIVE POWER [W] MSW	L1	Phase Active Power measurement in [W] "+" sign = Absorbed Active Power "-" sign = Generated Active Power	RO	FLOAT32
<b>40122</b>	121	P ACTIVE POWER [W] LSW			RO	
<b>40123</b>	122	P ACTIVE POWER [W] MSW			RO	
<b>40124</b>	123	P ACTIVE POWER [W] LSW	L2	Phase Active Power measurement in [W] "+" sign = Absorbed Active Power "-" sign = Generated Active Power	RO	FLOAT32
<b>40125</b>	124	P ACTIVE POWER [W] MSW			RO	
<b>40126</b>	125	P ACTIVE POWER [W] LSW			RO	
<b>40127</b>	126	Q REACTIVE POWER [VAR] MSW	L1	Phase Reactive Power measurement in [VAR]	RO	FLOAT32
<b>40128</b>	127	Q REACTIVE POWER [VAR] LSW			RO	
<b>40129</b>	128	Q REACTIVE POWER [VAR] MSW	L2	Phase Reactive Power measurement in [VAR]	RO	FLOAT32
<b>40130</b>	129	Q REACTIVE POWER [VAR] LSW			RO	
<b>40131</b>	130	Q REACTIVE POWER [VAR] MSW	L3	Phase Reactive Power measurement in [VAR]	RO	FLOAT32
<b>40132</b>	131	Q REACTIVE POWER [VAR] LSW			RO	
<b>40133</b>	132	S APPARENT POWER [VA] MSW	L1	Phase Apparent Power measurement in [VA]	RO	FLOAT32
<b>40134</b>	133	S APPARENT POWER [VA] LSW			RO	
<b>40135</b>	134	S APPARENT POWER [VA] MSW	L2	Phase Apparent Power measurement in [VA]	RO	FLOAT32
<b>40136</b>	135	S APPARENT POWER [VA] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40137</b>	136	S APPARENT POWER [VA] MSW	L3	Phase Apparent Power measurement in [VA]	RO	FLOAT32
<b>40138</b>	137	S APPARENT POWER [VA] LSW			RO	
<b>40139</b>	138	PF POWER FACTOR MSW	L1	Phase power factor measurement "+" sign = User "-" sign = Generator	RO	FLOAT32
<b>40140</b>	139	PF POWER FACTOR LSW			RO	
<b>40141</b>	140	PF POWER FACTOR MSW	L2	Phase power factor measurement "+" sign = User "-" sign = Generator	RO	FLOAT32
<b>40142</b>	141	PF POWER FACTOR LSW			RO	
<b>40143</b>	142	PF POWER FACTOR MSW	L3	Phase power factor measurement "+" sign = User "-" sign = Generator	RO	FLOAT32
<b>40144</b>	143	PF POWER FACTOR LSW			RO	
<b>40145</b>	144	F FREQUENCY [HZ] MSW	L1	Phase frequency measurement in [Hz]	RO	FLOAT32
<b>40146</b>	145	F FREQUENCY [HZ] LSW			RO	
<b>40147</b>	146	F FREQUENCY [HZ] MSW	L2	Phase frequency measurement in [Hz]	RO	FLOAT32
<b>40148</b>	147	F FREQUENCY [HZ] LSW			RO	
<b>40149</b>	148	F FREQUENCY [HZ] MSW	L3	Phase frequency measurement in [Hz]	RO	FLOAT32
<b>40150</b>	149	F FREQUENCY [HZ] LSW			RO	
<b>40151</b>	150	PERIOD [s] MSW	L1	Phase period measurement in [s]	RO	FLOAT32
<b>40152</b>	151	PERIOD [s] LSW			RO	
<b>40153</b>	152	PERIOD [s] MSW	L2	Phase period measurement in [s]	RO	FLOAT32
<b>40154</b>	153	PERIOD [s] LSW			RO	
<b>40155</b>	154	PERIOD [s] MSW	L3	Phase period measurement in [s]	RO	FLOAT32
<b>40156</b>	155	PERIOD [s] LSW			RO	
<b>40157</b>	156	V-V PHASE [°] MSW	L1-L2	Measurement of the angle in [°] between Voltage and Voltage	RO	FLOAT32
<b>40158</b>	157	V-V PHASE [°] LSW			RO	
<b>40159</b>	158	V-V PHASE [°] MSW	L2-L3	Measurement of the angle in [°] between Voltage and Voltage	RO	FLOAT32
<b>40160</b>	159	V-V PHASE [°] LSW			RO	
<b>40161</b>	160	V-V PHASE [°] MSW	L3-L1	Measurement of the angle in [°] between Voltage and Voltage	RO	FLOAT32
<b>40162</b>	161	V-V PHASE [°] LSW			RO	
<b>40163</b>	162	VLN rms [V] MSW	L1-N	Phase-neutral star voltage measurement (if Aron insertion is used, VL1N = V12)	RO	FLOAT32
<b>40164</b>	163	VLN rms [V] LSW			RO	
<b>40165</b>	164	VLN rms [V] MSW	L2-N		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40166</b>	165	VLN rms [V] LSW		Phase-neutral star voltage measurement (if Aron insertion is used, VL2N = VL1N = V12)	RO	
<b>40167</b>	166	VLN rms [V] MSW	L3-N	Phase-neutral star voltage measurement (if Aron insertion is used, VL3N = V32)	RO	FLOAT32
<b>40168</b>	167	VLN rms [V] LSW			RO	
<b>40169</b>	168	P TOTAL [W] MSW	3PH	Total Active Power measurement in [W]	RO	FLOAT32
<b>40170</b>	169	P TOTAL [W] LSW		"+" sign = Absorbed Active Power	RO	
				"-" sign = Generated Active Power	RO	
<b>40171</b>	170	Q TOTAL [VAR] MSW	3PH	Total Reactive Power measurement in [VAR]	RO	FLOAT32
<b>40172</b>	171	Q TOTAL [VAR] LSW			RO	
<b>40173</b>	172	S TOTAL [VA] MSW	3PH	Total Apparent Power measurement in [VA]	RO	FLOAT32
<b>40174</b>	173	S TOTAL [VA] LSW			RO	
<b>40175</b>	174	PF TOTAL MSW	3PH	Total power factor measurement	RO	FLOAT32
<b>40176</b>	175	PF TOTAL LSW		"+" sign = User	RO	
				"-" sign = Generator	RO	
<b>40177</b>	176	THD V [%] MSW	L1	Measurement of the total voltage harmonic distortion in [%] in comparison with the fundamental	RO	FLOAT32
<b>40178</b>	177	THD V [%] LSW			RO	
<b>40179</b>	178	THD V [%] MSW	L2	Measurement of the total voltage harmonic distortion in [%] in comparison with the fundamental	RO	FLOAT32
<b>40180</b>	179	THD V [%] LSW			RO	
<b>40181</b>	180	THD V [%] MSW	L3	Measurement of the total voltage harmonic distortion in [%] in comparison with the fundamental	RO	FLOAT32
<b>40182</b>	181	THD V [%] LSW			RO	
<b>40183</b>	182	THD I [%] MSW	L1	Measurement of the total current harmonic distortion in [%] in	RO	FLOAT32
<b>40184</b>	183	THD I [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental		
<b>40185</b>	184	THD I [%] MSW	L2	Measurement of the total current harmonic	RO	FLOAT32
<b>40186</b>	185	THD I [%] LSW		distortion in [%] in comparison with the fundamental	RO	
<b>40187</b>	186	THD I [%] MSW	L3	Measurement of the total current harmonic	RO	FLOAT32
<b>40188</b>	187	THD I [%] LSW		distortion in [%] in comparison with the fundamental	RO	
<b>40189</b>	188	VRMS FUNDAMENTAL [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the fundamental alone [V]	RO	FLOAT32
<b>40190</b>	189	VRMS FUNDAMENTAL [V] LSW			RO	
<b>40191</b>	190	VRMS FUNDAMENTAL [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the fundamental alone [V]	RO	FLOAT32
<b>40192</b>	191	VRMS FUNDAMENTAL [V] LSW			RO	
<b>40193</b>	192	VRMS FUNDAMENTAL [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the fundamental alone [V]	RO	FLOAT32
<b>40194</b>	193	VRMS FUNDAMENTAL [V] LSW			RO	
<b>40195</b>	194	VRMS HARMONIC 2 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40196</b>	195	VRMS HARMONIC 2 [V] LSW			RO	
<b>40197</b>	196	VRMS HARMONIC 2 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40198</b>	197	VRMS HARMONIC 2 [V] LSW			RO	
<b>40199</b>	198	VRMS HARMONIC 2 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40200</b>	199	VRMS HARMONIC 2 [V] LSW			RO	
<b>40201</b>	200	VRMS HARMONIC 3 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40202</b>	201	VRMS HARMONIC 3 [V] LSW			RO	
<b>40203</b>	202	VRMS HARMONIC 3 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40204</b>	203	VRMS HARMONIC 3 [V] LSW			RO	
<b>40205</b>	204	VRMS HARMONIC 3 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40206</b>	205	VRMS HARMONIC 3 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40207</b>	206	VRMS HARMONIC 4 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40208</b>	207	VRMS HARMONIC 4 [V] LSW			RO	
<b>40209</b>	208	VRMS HARMONIC 4 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40210</b>	209	VRMS HARMONIC 4 [V] LSW			RO	
<b>40211</b>	210	VRMS HARMONIC 4 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40212</b>	211	VRMS HARMONIC 4 [V] LSW			RO	
<b>40213</b>	212	VRMS HARMONIC 5 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40214</b>	213	VRMS HARMONIC 5 [V] LSW			RO	
<b>40215</b>	214	VRMS HARMONIC 5 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40216</b>	215	VRMS HARMONIC 5 [V] LSW			RO	
<b>40217</b>	216	VRMS HARMONIC 5 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40218</b>	217	VRMS HARMONIC 5 [V] LSW			RO	
<b>40219</b>	218	VRMS HARMONIC 6 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40220</b>	219	VRMS HARMONIC 6 [V] LSW			RO	
<b>40221</b>	220	VRMS HARMONIC 6 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40222</b>	221	VRMS HARMONIC 6 [V] LSW			RO	
<b>40223</b>	222	VRMS HARMONIC 6 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40224</b>	223	VRMS HARMONIC 6 [V] LSW			RO	
<b>40225</b>	224	VRMS HARMONIC 7 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40226</b>	225	VRMS HARMONIC 7 [V] LSW			RO	
<b>40227</b>	226	VRMS HARMONIC 7 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40228</b>	227	VRMS HARMONIC 7 [V] LSW			RO	
<b>40229</b>	228	VRMS HARMONIC 7 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40230</b>	229	VRMS HARMONIC 7 [V] LSW			RO	
<b>40231</b>	230	VRMS HARMONIC 8 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS	RO	FLOAT32
<b>40232</b>	231	VRMS HARMONIC 8 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic [V]		
<b>40233</b>	232	VRMS HARMONIC 8 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40234</b>	233	VRMS HARMONIC 8 [V] LSW			RO	
<b>40235</b>	234	VRMS HARMONIC 8 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40236</b>	235	VRMS HARMONIC 8 [V] LSW			RO	
<b>40237</b>	236	VRMS HARMONIC 9 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40238</b>	237	VRMS HARMONIC 9 [V] LSW			RO	
<b>40239</b>	238	VRMS HARMONIC 9 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40240</b>	239	VRMS HARMONIC 9 [V] LSW			RO	
<b>40241</b>	240	VRMS HARMONIC 9 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40242</b>	241	VRMS HARMONIC 9 [V] LSW			RO	
<b>40243</b>	242	VRMS HARMONIC 10 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40244</b>	243	VRMS HARMONIC 10 [V] LSW			RO	
<b>40245</b>	244	VRMS HARMONIC 10 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40246</b>	245	VRMS HARMONIC 10 [V] LSW			RO	
<b>40247</b>	246	VRMS HARMONIC 10 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40248</b>	247	VRMS HARMONIC 10 [V] LSW			RO	
<b>40249</b>	248	VRMS HARMONIC 11 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40250</b>	249	VRMS HARMONIC 11 [V] LSW			RO	
<b>40251</b>	250	VRMS HARMONIC 11 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40252</b>	251	VRMS HARMONIC 11 [V] LSW			RO	
<b>40253</b>	252	VRMS HARMONIC 11 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40254</b>	253	VRMS HARMONIC 11 [V] LSW			RO	
<b>40255</b>	254	VRMS HARMONIC 12 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40256</b>	255	VRMS HARMONIC 12 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40257</b>	256	VRMS HARMONIC 12 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40258</b>	257	VRMS HARMONIC 12 [V] LSW			RO	
<b>40259</b>	258	VRMS HARMONIC 12 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40260</b>	259	VRMS HARMONIC 12 [V] LSW			RO	
<b>40261</b>	260	VRMS HARMONIC 13 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40262</b>	261	VRMS HARMONIC 13 [V] LSW			RO	
<b>40263</b>	262	VRMS HARMONIC 13 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40264</b>	263	VRMS HARMONIC 13 [V] LSW			RO	
<b>40265</b>	264	VRMS HARMONIC 13 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40266</b>	265	VRMS HARMONIC 13 [V] LSW			RO	
<b>40267</b>	266	VRMS HARMONIC 14 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40268</b>	267	VRMS HARMONIC 14 [V] LSW			RO	
<b>40269</b>	268	VRMS HARMONIC 14 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40270</b>	269	VRMS HARMONIC 14 [V] LSW			RO	
<b>40271</b>	270	VRMS HARMONIC 14 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40272</b>	271	VRMS HARMONIC 14 [V] LSW			RO	
<b>40273</b>	272	VRMS HARMONIC 15 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40274</b>	273	VRMS HARMONIC 15 [V] LSW			RO	
<b>40275</b>	274	VRMS HARMONIC 15 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40276</b>	275	VRMS HARMONIC 15 [V] LSW			RO	
<b>40277</b>	276	VRMS HARMONIC 15 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40278</b>	277	VRMS HARMONIC 15 [V] LSW			RO	
<b>40279</b>	278	VRMS HARMONIC 16 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40280</b>	279	VRMS HARMONIC 16 [V] LSW			RO	
<b>40281</b>	280	VRMS HARMONIC 16 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40282</b>	281	VRMS HARMONIC 16 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic [V]		
<b>40283</b>	282	VRMS HARMONIC 16 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40284</b>	283	VRMS HARMONIC 16 [V] LSW			RO	
<b>40285</b>	284	VRMS HARMONIC 17 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40286</b>	285	VRMS HARMONIC 17 [V] LSW			RO	
<b>40287</b>	286	VRMS HARMONIC 17 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40288</b>	287	VRMS HARMONIC 17 [V] LSW			RO	
<b>40289</b>	288	VRMS HARMONIC 17 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40290</b>	289	VRMS HARMONIC 17 [V] LSW			RO	
<b>40291</b>	290	VRMS HARMONIC 18 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40292</b>	291	VRMS HARMONIC 18 [V] LSW			RO	
<b>40293</b>	292	VRMS HARMONIC 18 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40294</b>	293	VRMS HARMONIC 18 [V] LSW			RO	
<b>40295</b>	294	VRMS HARMONIC 18 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40296</b>	295	VRMS HARMONIC 18 [V] LSW			RO	
<b>40297</b>	296	VRMS HARMONIC 19 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40298</b>	297	VRMS HARMONIC 19 [V] LSW			RO	
<b>40299</b>	298	VRMS HARMONIC 19 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40300</b>	299	VRMS HARMONIC 19 [V] LSW			RO	
<b>40301</b>	300	VRMS HARMONIC 19 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40302</b>	301	VRMS HARMONIC 19 [V] LSW			RO	
<b>40303</b>	302	VRMS HARMONIC 20 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40304</b>	303	VRMS HARMONIC 20 [V] LSW			RO	
<b>40305</b>	304	VRMS HARMONIC 20 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40306</b>	305	VRMS HARMONIC 20 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40307</b>	306	VRMS HARMONIC 20 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40308</b>	307	VRMS HARMONIC 20 [V] LSW			RO	
<b>40309</b>	308	VRMS HARMONIC 21 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40310</b>	309	VRMS HARMONIC 21 [V] LSW			RO	
<b>40311</b>	310	VRMS HARMONIC 21 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40312</b>	311	VRMS HARMONIC 21 [V] LSW			RO	
<b>40313</b>	312	VRMS HARMONIC 21 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40314</b>	313	VRMS HARMONIC 21 [V] LSW			RO	
<b>40315</b>	314	VRMS HARMONIC 22 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40316</b>	315	VRMS HARMONIC 22 [V] LSW			RO	
<b>40317</b>	316	VRMS HARMONIC 22 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40318</b>	317	VRMS HARMONIC 22 [V] LSW			RO	
<b>40319</b>	318	VRMS HARMONIC 22 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40320</b>	319	VRMS HARMONIC 22 [V] LSW			RO	
<b>40321</b>	320	VRMS HARMONIC 23 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40322</b>	321	VRMS HARMONIC 23 [V] LSW			RO	
<b>40323</b>	322	VRMS HARMONIC 23 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40324</b>	323	VRMS HARMONIC 23 [V] LSW			RO	
<b>40325</b>	324	VRMS HARMONIC 23 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40326</b>	325	VRMS HARMONIC 23 [V] LSW			RO	
<b>40327</b>	326	VRMS HARMONIC 24 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40328</b>	327	VRMS HARMONIC 24 [V] LSW			RO	
<b>40329</b>	328	VRMS HARMONIC 24 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40330</b>	329	VRMS HARMONIC 24 [V] LSW			RO	
<b>40331</b>	330	VRMS HARMONIC 24 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS	RO	FLOAT32
<b>40332</b>	331	VRMS HARMONIC 24 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic [V]		
<b>40333</b>	332	VRMS HARMONIC 25 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40334</b>	333	VRMS HARMONIC 25 [V] LSW			RO	
<b>40335</b>	334	VRMS HARMONIC 25 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40336</b>	335	VRMS HARMONIC 25 [V] LSW			RO	
<b>40337</b>	336	VRMS HARMONIC 25 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40338</b>	337	VRMS HARMONIC 25 [V] LSW			RO	
<b>40339</b>	338	VRMS HARMONIC 26 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40340</b>	339	VRMS HARMONIC 26 [V] LSW			RO	
<b>40341</b>	340	VRMS HARMONIC 26 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40342</b>	341	VRMS HARMONIC 26 [V] LSW			RO	
<b>40343</b>	342	VRMS HARMONIC 26 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40344</b>	343	VRMS HARMONIC 26 [V] LSW			RO	
<b>40345</b>	344	VRMS HARMONIC 27 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40346</b>	345	VRMS HARMONIC 27 [V] LSW			RO	
<b>40347</b>	346	VRMS HARMONIC 27 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40348</b>	347	VRMS HARMONIC 27 [V] LSW			RO	
<b>40349</b>	348	VRMS HARMONIC 27 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40350</b>	349	VRMS HARMONIC 27 [V] LSW			RO	
<b>40351</b>	350	VRMS HARMONIC 28 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40352</b>	351	VRMS HARMONIC 28 [V] LSW			RO	
<b>40353</b>	352	VRMS HARMONIC 28 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40354</b>	353	VRMS HARMONIC 28 [V] LSW			RO	
<b>40355</b>	354	VRMS HARMONIC 28 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40356</b>	355	VRMS HARMONIC 28 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40357</b>	356	VRMS HARMONIC 29 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40358</b>	357	VRMS HARMONIC 29 [V] LSW			RO	
<b>40359</b>	358	VRMS HARMONIC 29 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40360</b>	359	VRMS HARMONIC 29 [V] LSW			RO	
<b>40361</b>	360	VRMS HARMONIC 29 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40362</b>	361	VRMS HARMONIC 29 [V] LSW			RO	
<b>40363</b>	362	VRMS HARMONIC 30 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40364</b>	363	VRMS HARMONIC 30 [V] LSW			RO	
<b>40365</b>	364	VRMS HARMONIC 30 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40366</b>	365	VRMS HARMONIC 30 [V] LSW			RO	
<b>40367</b>	366	VRMS HARMONIC 30 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40368</b>	367	VRMS HARMONIC 30 [V] LSW			RO	
<b>40369</b>	368	VRMS HARMONIC 31 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40370</b>	369	VRMS HARMONIC 31 [V] LSW			RO	
<b>40371</b>	370	VRMS HARMONIC 31 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40372</b>	371	VRMS HARMONIC 31 [V] LSW			RO	
<b>40373</b>	372	VRMS HARMONIC 31 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40374</b>	373	VRMS HARMONIC 31 [V] LSW			RO	
<b>40375</b>	374	VRMS HARMONIC 32 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40376</b>	375	VRMS HARMONIC 32 [V] LSW			RO	
<b>40377</b>	376	VRMS HARMONIC 32 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40378</b>	377	VRMS HARMONIC 32 [V] LSW			RO	
<b>40379</b>	378	VRMS HARMONIC 32 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40380</b>	379	VRMS HARMONIC 32 [V] LSW			RO	
<b>40381</b>	380	VRMS HARMONIC 33 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40382</b>	381	VRMS HARMONIC 33 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic [V]		
<b>40383</b>	382	VRMS HARMONIC 33 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40384</b>	383	VRMS HARMONIC 33 [V] LSW			RO	
<b>40385</b>	384	VRMS HARMONIC 33 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40386</b>	385	VRMS HARMONIC 33 [V] LSW			RO	
<b>40387</b>	386	VRMS HARMONIC 34 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40388</b>	387	VRMS HARMONIC 34 [V] LSW			RO	
<b>40389</b>	388	VRMS HARMONIC 34 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40390</b>	389	VRMS HARMONIC 34 [V] LSW			RO	
<b>40391</b>	390	VRMS HARMONIC 34 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40392</b>	391	VRMS HARMONIC 34 [V] LSW			RO	
<b>40393</b>	392	VRMS HARMONIC 35 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40394</b>	393	VRMS HARMONIC 35 [V] LSW			RO	
<b>40395</b>	394	VRMS HARMONIC 35 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40396</b>	395	VRMS HARMONIC 35 [V] LSW			RO	
<b>40397</b>	396	VRMS HARMONIC 35 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40398</b>	397	VRMS HARMONIC 35 [V] LSW			RO	
<b>40399</b>	398	VRMS HARMONIC 36 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40400</b>	399	VRMS HARMONIC 36 [V] LSW			RO	
<b>40401</b>	400	VRMS HARMONIC 36 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40402</b>	401	VRMS HARMONIC 36 [V] LSW			RO	
<b>40403</b>	402	VRMS HARMONIC 36 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40404</b>	403	VRMS HARMONIC 36 [V] LSW			RO	
<b>40405</b>	404	VRMS HARMONIC 37 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40406</b>	405	VRMS HARMONIC 37 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40407</b>	406	VRMS HARMONIC 37 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40408</b>	407	VRMS HARMONIC 37 [V] LSW			RO	
<b>40409</b>	408	VRMS HARMONIC 37 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40410</b>	409	VRMS HARMONIC 37 [V] LSW			RO	
<b>40411</b>	410	VRMS HARMONIC 38 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40412</b>	411	VRMS HARMONIC 38 [V] LSW			RO	
<b>40413</b>	412	VRMS HARMONIC 38 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40414</b>	413	VRMS HARMONIC 38 [V] LSW			RO	
<b>40415</b>	414	VRMS HARMONIC 38 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40416</b>	415	VRMS HARMONIC 38 [V] LSW			RO	
<b>40417</b>	416	VRMS HARMONIC 39 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40418</b>	417	VRMS HARMONIC 39 [V] LSW			RO	
<b>40419</b>	418	VRMS HARMONIC 39 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40420</b>	419	VRMS HARMONIC 39 [V] LSW			RO	
<b>40421</b>	420	VRMS HARMONIC 39 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40422</b>	421	VRMS HARMONIC 39 [V] LSW			RO	
<b>40423</b>	422	VRMS HARMONIC 40 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40424</b>	423	VRMS HARMONIC 40 [V] LSW			RO	
<b>40425</b>	424	VRMS HARMONIC 40 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40426</b>	425	VRMS HARMONIC 40 [V] LSW			RO	
<b>40427</b>	426	VRMS HARMONIC 40 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40428</b>	427	VRMS HARMONIC 40 [V] LSW			RO	
<b>40429</b>	428	VRMS HARMONIC 41 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40430</b>	429	VRMS HARMONIC 41 [V] LSW			RO	
<b>40431</b>	430	VRMS HARMONIC 41 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40432</b>	431	VRMS HARMONIC 41 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic [V]		
<b>40433</b>	432	VRMS HARMONIC 41 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40434</b>	433	VRMS HARMONIC 41 [V] LSW			RO	
<b>40435</b>	434	VRMS HARMONIC 42 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40436</b>	435	VRMS HARMONIC 42 [V] LSW			RO	
<b>40437</b>	436	VRMS HARMONIC 42 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40438</b>	437	VRMS HARMONIC 42 [V] LSW			RO	
<b>40439</b>	438	VRMS HARMONIC 42 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40440</b>	439	VRMS HARMONIC 42 [V] LSW			RO	
<b>40441</b>	440	VRMS HARMONIC 43 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40442</b>	441	VRMS HARMONIC 43 [V] LSW			RO	
<b>40443</b>	442	VRMS HARMONIC 43 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40444</b>	443	VRMS HARMONIC 43 [V] LSW			RO	
<b>40445</b>	444	VRMS HARMONIC 43 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40446</b>	445	VRMS HARMONIC 43 [V] LSW			RO	
<b>40447</b>	446	VRMS HARMONIC 44 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40448</b>	447	VRMS HARMONIC 44 [V] LSW			RO	
<b>40449</b>	448	VRMS HARMONIC 44 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40450</b>	449	VRMS HARMONIC 44 [V] LSW			RO	
<b>40451</b>	450	VRMS HARMONIC 44 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40452</b>	451	VRMS HARMONIC 44 [V] LSW			RO	
<b>40453</b>	452	VRMS HARMONIC 45 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40454</b>	453	VRMS HARMONIC 45 [V] LSW			RO	
<b>40455</b>	454	VRMS HARMONIC 45 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40456</b>	455	VRMS HARMONIC 45 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40457</b>	456	VRMS HARMONIC 45 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40458</b>	457	VRMS HARMONIC 45 [V] LSW			RO	
<b>40459</b>	458	VRMS HARMONIC 46 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40460</b>	459	VRMS HARMONIC 46 [V] LSW			RO	
<b>40461</b>	460	VRMS HARMONIC 46 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40462</b>	461	VRMS HARMONIC 46 [V] LSW			RO	
<b>40463</b>	462	VRMS HARMONIC 46 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40464</b>	463	VRMS HARMONIC 46 [V] LSW			RO	
<b>40465</b>	464	VRMS HARMONIC 47 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40466</b>	465	VRMS HARMONIC 47 [V] LSW			RO	
<b>40467</b>	466	VRMS HARMONIC 47 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40468</b>	467	VRMS HARMONIC 47 [V] LSW			RO	
<b>40469</b>	468	VRMS HARMONIC 47 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40470</b>	469	VRMS HARMONIC 47 [V] LSW			RO	
<b>40471</b>	470	VRMS HARMONIC 48 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40472</b>	471	VRMS HARMONIC 48 [V] LSW			RO	
<b>40473</b>	472	VRMS HARMONIC 48 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40474</b>	473	VRMS HARMONIC 48 [V] LSW			RO	
<b>40475</b>	474	VRMS HARMONIC 48 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40476</b>	475	VRMS HARMONIC 48 [V] LSW			RO	
<b>40477</b>	476	VRMS HARMONIC 49 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40478</b>	477	VRMS HARMONIC 49 [V] LSW			RO	
<b>40479</b>	478	VRMS HARMONIC 49 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40480</b>	479	VRMS HARMONIC 49 [V] LSW			RO	
<b>40481</b>	480	VRMS HARMONIC 49 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS	RO	FLOAT32
<b>40482</b>	481	VRMS HARMONIC 49 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic [V]		
<b>40483</b>	482	VRMS HARMONIC 50 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40484</b>	483	VRMS HARMONIC 50 [V] LSW			RO	
<b>40485</b>	484	VRMS HARMONIC 50 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40486</b>	485	VRMS HARMONIC 50 [V] LSW			RO	
<b>40487</b>	486	VRMS HARMONIC 50 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40488</b>	487	VRMS HARMONIC 50 [V] LSW			RO	
<b>40489</b>	488	VRMS HARMONIC 51 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40490</b>	489	VRMS HARMONIC 51 [V] LSW			RO	
<b>40491</b>	490	VRMS HARMONIC 51 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40492</b>	491	VRMS HARMONIC 51 [V] LSW			RO	
<b>40493</b>	492	VRMS HARMONIC 51 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40494</b>	493	VRMS HARMONIC 51 [V] LSW			RO	
<b>40495</b>	494	VRMS HARMONIC 52 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40496</b>	495	VRMS HARMONIC 52 [V] LSW			RO	
<b>40497</b>	496	VRMS HARMONIC 52 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40498</b>	497	VRMS HARMONIC 52 [V] LSW			RO	
<b>40499</b>	498	VRMS HARMONIC 52 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40500</b>	499	VRMS HARMONIC 52 [V] LSW			RO	
<b>40501</b>	500	VRMS HARMONIC 53 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40502</b>	501	VRMS HARMONIC 53 [V] LSW			RO	
<b>40503</b>	502	VRMS HARMONIC 53 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40504</b>	503	VRMS HARMONIC 53 [V] LSW			RO	
<b>40505</b>	504	VRMS HARMONIC 53 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40506</b>	505	VRMS HARMONIC 53 [V] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40507</b>	506	VRMS HARMONIC 54 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40508</b>	507	VRMS HARMONIC 54 [V] LSW			RO	
<b>40509</b>	508	VRMS HARMONIC 54 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40510</b>	509	VRMS HARMONIC 54 [V] LSW			RO	
<b>40511</b>	510	VRMS HARMONIC 54 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40512</b>	511	VRMS HARMONIC 54 [V] LSW			RO	
<b>40513</b>	512	VRMS HARMONIC 55 [V] MSW	L1-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40514</b>	513	VRMS HARMONIC 55 [V] LSW			RO	
<b>40515</b>	514	VRMS HARMONIC 55 [V] MSW	L2-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40516</b>	515	VRMS HARMONIC 55 [V] LSW			RO	
<b>40517</b>	516	VRMS HARMONIC 55 [V] MSW	L3-N	Measurement of the Phase - Neutral VRMS of the i-th harmonic [V]	RO	FLOAT32
<b>40518</b>	517	VRMS HARMONIC 55 [V] LSW			RO	
<b>40519</b>	518	IRMS FUNDAMENTAL [A] MSW	L1	Measurement of the phase IRMS fundamental alone [A]	RO	FLOAT32
<b>40520</b>	519	IRMS FUNDAMENTAL [A] LSW			RO	
<b>40521</b>	520	IRMS FUNDAMENTAL [A] MSW	L2	Measurement of the phase IRMS fundamental alone [A]	RO	FLOAT32
<b>40522</b>	521	IRMS FUNDAMENTAL [A] LSW			RO	
<b>40523</b>	522	IRMS FUNDAMENTAL [A] MSW	L3	Measurement of the phase IRMS fundamental alone [A]	RO	FLOAT32
<b>40524</b>	523	IRMS FUNDAMENTAL [A] LSW			RO	
<b>40525</b>	524	IRMS HARMONIC 2 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic [A]	RO	FLOAT32
<b>40526</b>	525	IRMS HARMONIC 2 [A] LSW			RO	
<b>40527</b>	526	IRMS HARMONIC 2 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic [A]	RO	FLOAT32
<b>40528</b>	527	IRMS HARMONIC 2 [A] LSW			RO	
<b>40529</b>	528	IRMS HARMONIC 2 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic [A]	RO	FLOAT32
<b>40530</b>	529	IRMS HARMONIC 2 [A] LSW			RO	
<b>40531</b>	530	IRMS HARMONIC 3 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic [A]	RO	FLOAT32
<b>40532</b>	531	IRMS HARMONIC 3 [A] LSW			RO	
<b>40533</b>	532	IRMS HARMONIC 3 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic [A]	RO	FLOAT32
<b>40534</b>	533	IRMS HARMONIC 3 [A] LSW			RO	
<b>40535</b>	534	IRMS HARMONIC 3 [A] MSW	L3		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40536</b>	535	IRMS HARMONIC 3 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40537</b>	536	IRMS HARMONIC 4 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40538</b>	537	IRMS HARMONIC 4 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40539</b>	538	IRMS HARMONIC 4 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40540</b>	539	IRMS HARMONIC 4 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40541</b>	540	IRMS HARMONIC 4 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40542</b>	541	IRMS HARMONIC 4 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40543</b>	542	IRMS HARMONIC 5 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40544</b>	543	IRMS HARMONIC 5 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40545</b>	544	IRMS HARMONIC 5 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40546</b>	545	IRMS HARMONIC 5 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40547</b>	546	IRMS HARMONIC 5 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40548</b>	547	IRMS HARMONIC 5 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40549</b>	548	IRMS HARMONIC 6 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40550</b>	549	IRMS HARMONIC 6 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40551</b>	550	IRMS HARMONIC 6 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40552</b>	551	IRMS HARMONIC 6 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40553</b>	552	IRMS HARMONIC 6 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40554</b>	553	IRMS HARMONIC 6 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40555</b>	554	IRMS HARMONIC 7 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40556</b>	555	IRMS HARMONIC 7 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40557</b>	556	IRMS HARMONIC 7 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40558</b>	557	IRMS HARMONIC 7 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40559</b>	558	IRMS HARMONIC 7 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40560</b>	559	IRMS HARMONIC 7 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40561</b>	560	IRMS HARMONIC 8 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40562</b>	561	IRMS HARMONIC 8 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40563</b>	562	IRMS HARMONIC 8 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40564</b>	563	IRMS HARMONIC 8 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40565</b>	564	IRMS HARMONIC 8 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40566</b>	565	IRMS HARMONIC 8 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40567</b>	566	IRMS HARMONIC 9 [A] MSW	L1		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40568</b>	567	IRMS HARMONIC 9 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40569</b>	568	IRMS HARMONIC 9 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40570</b>	569	IRMS HARMONIC 9 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40571</b>	570	IRMS HARMONIC 9 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40572</b>	571	IRMS HARMONIC 9 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40573</b>	572	IRMS HARMONIC 10 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40574</b>	573	IRMS HARMONIC 10 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40575</b>	574	IRMS HARMONIC 10 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40576</b>	575	IRMS HARMONIC 10 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40577</b>	576	IRMS HARMONIC 10 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40578</b>	577	IRMS HARMONIC 10 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40579</b>	578	IRMS HARMONIC 11 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40580</b>	579	IRMS HARMONIC 11 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40581</b>	580	IRMS HARMONIC 11 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40582</b>	581	IRMS HARMONIC 11 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40583</b>	582	IRMS HARMONIC 11 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40584</b>	583	IRMS HARMONIC 11 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40585</b>	584	IRMS HARMONIC 12 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40586</b>	585	IRMS HARMONIC 12 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40587</b>	586	IRMS HARMONIC 12 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40588</b>	587	IRMS HARMONIC 12 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40589</b>	588	IRMS HARMONIC 12 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40590</b>	589	IRMS HARMONIC 12 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40591</b>	590	IRMS HARMONIC 13 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40592</b>	591	IRMS HARMONIC 13 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40593</b>	592	IRMS HARMONIC 13 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40594</b>	593	IRMS HARMONIC 13 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40595</b>	594	IRMS HARMONIC 13 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40596</b>	595	IRMS HARMONIC 13 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40597</b>	596	IRMS HARMONIC 14 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40598</b>	597	IRMS HARMONIC 14 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40599</b>	598	IRMS HARMONIC 14 [A] MSW	L2		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40600</b>	599	IRMS HARMONIC 14 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40601</b>	600	IRMS HARMONIC 14 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40602</b>	601	IRMS HARMONIC 14 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40603</b>	602	IRMS HARMONIC 15 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40604</b>	603	IRMS HARMONIC 15 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40605</b>	604	IRMS HARMONIC 15 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40606</b>	605	IRMS HARMONIC 15 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40607</b>	606	IRMS HARMONIC 15 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40608</b>	607	IRMS HARMONIC 15 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40609</b>	608	IRMS HARMONIC 16 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40610</b>	609	IRMS HARMONIC 16 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40611</b>	610	IRMS HARMONIC 16 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40612</b>	611	IRMS HARMONIC 16 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40613</b>	612	IRMS HARMONIC 16 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40614</b>	613	IRMS HARMONIC 16 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40615</b>	614	IRMS HARMONIC 17 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40616</b>	615	IRMS HARMONIC 17 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40617</b>	616	IRMS HARMONIC 17 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40618</b>	617	IRMS HARMONIC 17 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40619</b>	618	IRMS HARMONIC 17 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40620</b>	619	IRMS HARMONIC 17 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40621</b>	620	IRMS HARMONIC 18 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40622</b>	621	IRMS HARMONIC 18 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40623</b>	622	IRMS HARMONIC 18 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40624</b>	623	IRMS HARMONIC 18 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40625</b>	624	IRMS HARMONIC 18 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40626</b>	625	IRMS HARMONIC 18 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40627</b>	626	IRMS HARMONIC 19 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40628</b>	627	IRMS HARMONIC 19 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40629</b>	628	IRMS HARMONIC 19 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40630</b>	629	IRMS HARMONIC 19 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40631</b>	630	IRMS HARMONIC 19 [A] MSW	L3		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40632</b>	631	IRMS HARMONIC 19 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40633</b>	632	IRMS HARMONIC 20 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40634</b>	633	IRMS HARMONIC 20 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40635</b>	634	IRMS HARMONIC 20 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40636</b>	635	IRMS HARMONIC 20 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40637</b>	636	IRMS HARMONIC 20 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40638</b>	637	IRMS HARMONIC 20 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40639</b>	638	IRMS HARMONIC 21 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40640</b>	639	IRMS HARMONIC 21 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40641</b>	640	IRMS HARMONIC 21 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40642</b>	641	IRMS HARMONIC 21 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40643</b>	642	IRMS HARMONIC 21 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40644</b>	643	IRMS HARMONIC 21 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40645</b>	644	IRMS HARMONIC 22 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40646</b>	645	IRMS HARMONIC 22 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40647</b>	646	IRMS HARMONIC 22 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40648</b>	647	IRMS HARMONIC 22 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40649</b>	648	IRMS HARMONIC 22 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40650</b>	649	IRMS HARMONIC 22 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40651</b>	650	IRMS HARMONIC 23 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40652</b>	651	IRMS HARMONIC 23 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40653</b>	652	IRMS HARMONIC 23 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40654</b>	653	IRMS HARMONIC 23 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40655</b>	654	IRMS HARMONIC 23 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40656</b>	655	IRMS HARMONIC 23 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40657</b>	656	IRMS HARMONIC 24 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40658</b>	657	IRMS HARMONIC 24 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40659</b>	658	IRMS HARMONIC 24 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40660</b>	659	IRMS HARMONIC 24 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40661</b>	660	IRMS HARMONIC 24 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40662</b>	661	IRMS HARMONIC 24 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40663</b>	662	IRMS HARMONIC 25 [A] MSW	L1		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40664</b>	663	IRMS HARMONIC 25 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40665</b>	664	IRMS HARMONIC 25 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40666</b>	665	IRMS HARMONIC 25 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40667</b>	666	IRMS HARMONIC 25 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40668</b>	667	IRMS HARMONIC 25 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40669</b>	668	IRMS HARMONIC 26 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40670</b>	669	IRMS HARMONIC 26 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40671</b>	670	IRMS HARMONIC 26 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40672</b>	671	IRMS HARMONIC 26 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40673</b>	672	IRMS HARMONIC 26 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40674</b>	673	IRMS HARMONIC 26 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40675</b>	674	IRMS HARMONIC 27 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40676</b>	675	IRMS HARMONIC 27 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40677</b>	676	IRMS HARMONIC 27 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40678</b>	677	IRMS HARMONIC 27 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40679</b>	678	IRMS HARMONIC 27 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40680</b>	679	IRMS HARMONIC 27 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40681</b>	680	IRMS HARMONIC 28 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40682</b>	681	IRMS HARMONIC 28 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40683</b>	682	IRMS HARMONIC 28 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40684</b>	683	IRMS HARMONIC 28 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40685</b>	684	IRMS HARMONIC 28 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40686</b>	685	IRMS HARMONIC 28 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40687</b>	686	IRMS HARMONIC 29 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40688</b>	687	IRMS HARMONIC 29 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40689</b>	688	IRMS HARMONIC 29 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40690</b>	689	IRMS HARMONIC 29 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40691</b>	690	IRMS HARMONIC 29 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40692</b>	691	IRMS HARMONIC 29 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40693</b>	692	IRMS HARMONIC 30 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40694</b>	693	IRMS HARMONIC 30 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40695</b>	694	IRMS HARMONIC 30 [A] MSW	L2		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40696</b>	695	IRMS HARMONIC 30 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40697</b>	696	IRMS HARMONIC 30 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40698</b>	697	IRMS HARMONIC 30 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40699</b>	698	IRMS HARMONIC 31 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40700</b>	699	IRMS HARMONIC 31 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40701</b>	700	IRMS HARMONIC 31 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40702</b>	701	IRMS HARMONIC 31 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40703</b>	702	IRMS HARMONIC 31 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40704</b>	703	IRMS HARMONIC 31 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40705</b>	704	IRMS HARMONIC 32 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40706</b>	705	IRMS HARMONIC 32 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40707</b>	706	IRMS HARMONIC 32 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40708</b>	707	IRMS HARMONIC 32 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40709</b>	708	IRMS HARMONIC 32 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40710</b>	709	IRMS HARMONIC 32 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40711</b>	710	IRMS HARMONIC 33 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40712</b>	711	IRMS HARMONIC 33 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40713</b>	712	IRMS HARMONIC 33 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40714</b>	713	IRMS HARMONIC 33 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40715</b>	714	IRMS HARMONIC 33 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40716</b>	715	IRMS HARMONIC 33 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40717</b>	716	IRMS HARMONIC 34 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40718</b>	717	IRMS HARMONIC 34 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40719</b>	718	IRMS HARMONIC 34 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40720</b>	719	IRMS HARMONIC 34 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40721</b>	720	IRMS HARMONIC 34 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40722</b>	721	IRMS HARMONIC 34 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40723</b>	722	IRMS HARMONIC 35 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40724</b>	723	IRMS HARMONIC 35 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40725</b>	724	IRMS HARMONIC 35 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40726</b>	725	IRMS HARMONIC 35 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40727</b>	726	IRMS HARMONIC 35 [A] MSW	L3		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40728</b>	727	IRMS HARMONIC 35 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40729</b>	728	IRMS HARMONIC 36 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40730</b>	729	IRMS HARMONIC 36 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40731</b>	730	IRMS HARMONIC 36 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40732</b>	731	IRMS HARMONIC 36 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40733</b>	732	IRMS HARMONIC 36 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40734</b>	733	IRMS HARMONIC 36 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40735</b>	734	IRMS HARMONIC 37 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40736</b>	735	IRMS HARMONIC 37 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40737</b>	736	IRMS HARMONIC 37 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40738</b>	737	IRMS HARMONIC 37 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40739</b>	738	IRMS HARMONIC 37 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40740</b>	739	IRMS HARMONIC 37 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40741</b>	740	IRMS HARMONIC 38 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40742</b>	741	IRMS HARMONIC 38 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40743</b>	742	IRMS HARMONIC 38 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40744</b>	743	IRMS HARMONIC 38 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40745</b>	744	IRMS HARMONIC 38 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40746</b>	745	IRMS HARMONIC 38 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40747</b>	746	IRMS HARMONIC 39 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40748</b>	747	IRMS HARMONIC 39 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40749</b>	748	IRMS HARMONIC 39 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40750</b>	749	IRMS HARMONIC 39 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40751</b>	750	IRMS HARMONIC 39 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40752</b>	751	IRMS HARMONIC 39 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40753</b>	752	IRMS HARMONIC 40 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40754</b>	753	IRMS HARMONIC 40 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40755</b>	754	IRMS HARMONIC 40 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40756</b>	755	IRMS HARMONIC 40 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40757</b>	756	IRMS HARMONIC 40 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40758</b>	757	IRMS HARMONIC 40 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40759</b>	758	IRMS HARMONIC 41 [A] MSW	L1		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40760</b>	759	IRMS HARMONIC 41 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40761</b>	760	IRMS HARMONIC 41 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40762</b>	761	IRMS HARMONIC 41 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40763</b>	762	IRMS HARMONIC 41 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40764</b>	763	IRMS HARMONIC 41 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40765</b>	764	IRMS HARMONIC 42 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40766</b>	765	IRMS HARMONIC 42 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40767</b>	766	IRMS HARMONIC 42 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40768</b>	767	IRMS HARMONIC 42 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40769</b>	768	IRMS HARMONIC 42 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40770</b>	769	IRMS HARMONIC 42 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40771</b>	770	IRMS HARMONIC 43 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40772</b>	771	IRMS HARMONIC 43 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40773</b>	772	IRMS HARMONIC 43 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40774</b>	773	IRMS HARMONIC 43 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40775</b>	774	IRMS HARMONIC 43 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40776</b>	775	IRMS HARMONIC 43 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40777</b>	776	IRMS HARMONIC 44 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40778</b>	777	IRMS HARMONIC 44 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40779</b>	778	IRMS HARMONIC 44 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40780</b>	779	IRMS HARMONIC 44 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40781</b>	780	IRMS HARMONIC 44 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40782</b>	781	IRMS HARMONIC 44 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40783</b>	782	IRMS HARMONIC 45 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40784</b>	783	IRMS HARMONIC 45 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40785</b>	784	IRMS HARMONIC 45 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40786</b>	785	IRMS HARMONIC 45 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40787</b>	786	IRMS HARMONIC 45 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40788</b>	787	IRMS HARMONIC 45 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40789</b>	788	IRMS HARMONIC 46 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40790</b>	789	IRMS HARMONIC 46 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40791</b>	790	IRMS HARMONIC 46 [A] MSW	L2		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40792</b>	791	IRMS HARMONIC 46 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40793</b>	792	IRMS HARMONIC 46 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40794</b>	793	IRMS HARMONIC 46 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40795</b>	794	IRMS HARMONIC 47 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40796</b>	795	IRMS HARMONIC 47 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40797</b>	796	IRMS HARMONIC 47 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40798</b>	797	IRMS HARMONIC 47 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40799</b>	798	IRMS HARMONIC 47 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40800</b>	799	IRMS HARMONIC 47 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40801</b>	800	IRMS HARMONIC 48 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40802</b>	801	IRMS HARMONIC 48 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40803</b>	802	IRMS HARMONIC 48 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40804</b>	803	IRMS HARMONIC 48 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40805</b>	804	IRMS HARMONIC 48 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40806</b>	805	IRMS HARMONIC 48 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40807</b>	806	IRMS HARMONIC 49 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40808</b>	807	IRMS HARMONIC 49 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40809</b>	808	IRMS HARMONIC 49 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40810</b>	809	IRMS HARMONIC 49 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40811</b>	810	IRMS HARMONIC 49 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40812</b>	811	IRMS HARMONIC 49 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40813</b>	812	IRMS HARMONIC 50 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40814</b>	813	IRMS HARMONIC 50 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40815</b>	814	IRMS HARMONIC 50 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40816</b>	815	IRMS HARMONIC 50 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40817</b>	816	IRMS HARMONIC 50 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40818</b>	817	IRMS HARMONIC 50 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40819</b>	818	IRMS HARMONIC 51 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40820</b>	819	IRMS HARMONIC 51 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40821</b>	820	IRMS HARMONIC 51 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40822</b>	821	IRMS HARMONIC 51 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40823</b>	822	IRMS HARMONIC 51 [A] MSW	L3		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40824</b>	823	IRMS HARMONIC 51 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40825</b>	824	IRMS HARMONIC 52 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40826</b>	825	IRMS HARMONIC 52 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40827</b>	826	IRMS HARMONIC 52 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40828</b>	827	IRMS HARMONIC 52 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40829</b>	828	IRMS HARMONIC 52 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40830</b>	829	IRMS HARMONIC 52 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40831</b>	830	IRMS HARMONIC 53 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40832</b>	831	IRMS HARMONIC 53 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40833</b>	832	IRMS HARMONIC 53 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40834</b>	833	IRMS HARMONIC 53 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40835</b>	834	IRMS HARMONIC 53 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40836</b>	835	IRMS HARMONIC 53 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40837</b>	836	IRMS HARMONIC 54 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40838</b>	837	IRMS HARMONIC 54 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40839</b>	838	IRMS HARMONIC 54 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40840</b>	839	IRMS HARMONIC 54 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40841</b>	840	IRMS HARMONIC 54 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40842</b>	841	IRMS HARMONIC 54 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40843</b>	842	IRMS HARMONIC 55 [A] MSW	L1	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40844</b>	843	IRMS HARMONIC 55 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40845</b>	844	IRMS HARMONIC 55 [A] MSW	L2	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40846</b>	845	IRMS HARMONIC 55 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40847</b>	846	IRMS HARMONIC 55 [A] MSW	L3	Measurement of the phase IRMS of the i-th harmonic[A]	RO	FLOAT32
<b>40848</b>	847	IRMS HARMONIC 55 [A] LSW		Measurement of the phase IRMS of the i-th harmonic[A]	RO	
<b>40849</b>	848	VRMS HARMONIC 2 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40850</b>	849	VRMS HARMONIC 2 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40851</b>	850	VRMS HARMONIC 2 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40852</b>	851	VRMS HARMONIC 2 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40853</b>	852	VRMS HARMONIC 2 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40854</b>	853	VRMS HARMONIC 2 [%] LSW			RO	
<b>40855</b>	854	VRMS HARMONIC 3 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40856</b>	855	VRMS HARMONIC 3 [%] LSW			RO	
<b>40857</b>	856	VRMS HARMONIC 3 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40858</b>	857	VRMS HARMONIC 3 [%] LSW			RO	
<b>40859</b>	858	VRMS HARMONIC 3 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40860</b>	859	VRMS HARMONIC 3 [%] LSW			RO	
<b>40861</b>	860	VRMS HARMONIC 4 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40862</b>	861	VRMS HARMONIC 4 [%] LSW			RO	
<b>40863</b>	862	VRMS HARMONIC 4 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40864</b>	863	VRMS HARMONIC 4 [%] LSW			RO	
<b>40865</b>	864	VRMS HARMONIC 4 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40866</b>	865	VRMS HARMONIC 4 [%] LSW			RO	
<b>40867</b>	866	VRMS HARMONIC 5 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40868</b>	867	VRMS HARMONIC 5 [%] LSW			RO	
<b>40869</b>	868	VRMS HARMONIC 5 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in	RO	FLOAT32
<b>40870</b>	869	VRMS HARMONIC 5 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>40871</b>	870	VRMS HARMONIC 5 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40872</b>	871	VRMS HARMONIC 5 [%] LSW			RO	
<b>40873</b>	872	VRMS HARMONIC 6 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40874</b>	873	VRMS HARMONIC 6 [%] LSW			RO	
<b>40875</b>	874	VRMS HARMONIC 6 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40876</b>	875	VRMS HARMONIC 6 [%] LSW			RO	
<b>40877</b>	876	VRMS HARMONIC 6 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40878</b>	877	VRMS HARMONIC 6 [%] LSW			RO	
<b>40879</b>	878	VRMS HARMONIC 7 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40880</b>	879	VRMS HARMONIC 7 [%] LSW			RO	
<b>40881</b>	880	VRMS HARMONIC 7 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40882</b>	881	VRMS HARMONIC 7 [%] LSW			RO	
<b>40883</b>	882	VRMS HARMONIC 7 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40884</b>	883	VRMS HARMONIC 7 [%] LSW			RO	
<b>40885</b>	884	VRMS HARMONIC 8 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40886</b>	885	VRMS HARMONIC 8 [%] LSW			RO	
<b>40887</b>	886	VRMS HARMONIC 8 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage	RO	FLOAT32
<b>40888</b>	887	VRMS HARMONIC 8 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>40889</b>	888	VRMS HARMONIC 8 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40890</b>	889	VRMS HARMONIC 8 [%] LSW			RO	
<b>40891</b>	890	VRMS HARMONIC 9 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40892</b>	891	VRMS HARMONIC 9 [%] LSW			RO	
<b>40893</b>	892	VRMS HARMONIC 9 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40894</b>	893	VRMS HARMONIC 9 [%] LSW			RO	
<b>40895</b>	894	VRMS HARMONIC 9 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40896</b>	895	VRMS HARMONIC 9 [%] LSW			RO	
<b>40897</b>	896	VRMS HARMONIC 10 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40898</b>	897	VRMS HARMONIC 10 [%] LSW			RO	
<b>40899</b>	898	VRMS HARMONIC 10 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40900</b>	899	VRMS HARMONIC 10 [%] LSW			RO	
<b>40901</b>	900	VRMS HARMONIC 10 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40902</b>	901	VRMS HARMONIC 10 [%] LSW			RO	
<b>40903</b>	902	VRMS HARMONIC 11 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40904</b>	903	VRMS HARMONIC 11 [%] LSW			RO	
<b>40905</b>	904	VRMS HARMONIC 11 [%] MSW	L2-N		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40906</b>	905	VRMS HARMONIC 11 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40907</b>	906	VRMS HARMONIC 11 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40908</b>	907	VRMS HARMONIC 11 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40909</b>	908	VRMS HARMONIC 12 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40910</b>	909	VRMS HARMONIC 12 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40911</b>	910	VRMS HARMONIC 12 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40912</b>	911	VRMS HARMONIC 12 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40913</b>	912	VRMS HARMONIC 12 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40914</b>	913	VRMS HARMONIC 12 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40915</b>	914	VRMS HARMONIC 13 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40916</b>	915	VRMS HARMONIC 13 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40917</b>	916	VRMS HARMONIC 13 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40918</b>	917	VRMS HARMONIC 13 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40919</b>	918	VRMS HARMONIC 13 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40920</b>	919	VRMS HARMONIC 13 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40921</b>	920	VRMS HARMONIC 14 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in	RO	FLOAT32
<b>40922</b>	921	VRMS HARMONIC 14 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>40923</b>	922	VRMS HARMONIC 14 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40924</b>	923	VRMS HARMONIC 14 [%] LSW			RO	
<b>40925</b>	924	VRMS HARMONIC 14 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40926</b>	925	VRMS HARMONIC 14 [%] LSW			RO	
<b>40927</b>	926	VRMS HARMONIC 15 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40928</b>	927	VRMS HARMONIC 15 [%] LSW			RO	
<b>40929</b>	928	VRMS HARMONIC 15 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40930</b>	929	VRMS HARMONIC 15 [%] LSW			RO	
<b>40931</b>	930	VRMS HARMONIC 15 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40932</b>	931	VRMS HARMONIC 15 [%] LSW			RO	
<b>40933</b>	932	VRMS HARMONIC 16 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40934</b>	933	VRMS HARMONIC 16 [%] LSW			RO	
<b>40935</b>	934	VRMS HARMONIC 16 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40936</b>	935	VRMS HARMONIC 16 [%] LSW			RO	
<b>40937</b>	936	VRMS HARMONIC 16 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40938</b>	937	VRMS HARMONIC 16 [%] LSW			RO	
<b>40939</b>	938	VRMS HARMONIC 17 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage	RO	FLOAT32
<b>40940</b>	939	VRMS HARMONIC 17 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>40941</b>	940	VRMS HARMONIC 17 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40942</b>	941	VRMS HARMONIC 17 [%] LSW			RO	
<b>40943</b>	942	VRMS HARMONIC 17 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40944</b>	943	VRMS HARMONIC 17 [%] LSW			RO	
<b>40945</b>	944	VRMS HARMONIC 18 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40946</b>	945	VRMS HARMONIC 18 [%] LSW			RO	
<b>40947</b>	946	VRMS HARMONIC 18 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40948</b>	947	VRMS HARMONIC 18 [%] LSW			RO	
<b>40949</b>	948	VRMS HARMONIC 18 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40950</b>	949	VRMS HARMONIC 18 [%] LSW			RO	
<b>40951</b>	950	VRMS HARMONIC 19 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40952</b>	951	VRMS HARMONIC 19 [%] LSW			RO	
<b>40953</b>	952	VRMS HARMONIC 19 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40954</b>	953	VRMS HARMONIC 19 [%] LSW			RO	
<b>40955</b>	954	VRMS HARMONIC 19 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40956</b>	955	VRMS HARMONIC 19 [%] LSW			RO	
<b>40957</b>	956	VRMS HARMONIC 20 [%] MSW	L1-N		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>40958</b>	957	VRMS HARMONIC 20 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40959</b>	958	VRMS HARMONIC 20 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40960</b>	959	VRMS HARMONIC 20 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40961</b>	960	VRMS HARMONIC 20 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40962</b>	961	VRMS HARMONIC 20 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40963</b>	962	VRMS HARMONIC 21 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40964</b>	963	VRMS HARMONIC 21 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40965</b>	964	VRMS HARMONIC 21 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40966</b>	965	VRMS HARMONIC 21 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40967</b>	966	VRMS HARMONIC 21 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40968</b>	967	VRMS HARMONIC 21 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40969</b>	968	VRMS HARMONIC 22 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40970</b>	969	VRMS HARMONIC 22 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40971</b>	970	VRMS HARMONIC 22 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40972</b>	971	VRMS HARMONIC 22 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>40973</b>	972	VRMS HARMONIC 22 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in	RO	FLOAT32
<b>40974</b>	973	VRMS HARMONIC 22 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>40975</b>	974	VRMS HARMONIC 23 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40976</b>	975	VRMS HARMONIC 23 [%] LSW			RO	
<b>40977</b>	976	VRMS HARMONIC 23 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40978</b>	977	VRMS HARMONIC 23 [%] LSW			RO	
<b>40979</b>	978	VRMS HARMONIC 23 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40980</b>	979	VRMS HARMONIC 23 [%] LSW			RO	
<b>40981</b>	980	VRMS HARMONIC 24 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40982</b>	981	VRMS HARMONIC 24 [%] LSW			RO	
<b>40983</b>	982	VRMS HARMONIC 24 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40984</b>	983	VRMS HARMONIC 24 [%] LSW			RO	
<b>40985</b>	984	VRMS HARMONIC 24 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40986</b>	985	VRMS HARMONIC 24 [%] LSW			RO	
<b>40987</b>	986	VRMS HARMONIC 25 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40988</b>	987	VRMS HARMONIC 25 [%] LSW			RO	
<b>40989</b>	988	VRMS HARMONIC 25 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40990</b>	989	VRMS HARMONIC 25 [%] LSW			RO	
<b>40991</b>	990	VRMS HARMONIC 25 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage	RO	FLOAT32
<b>40992</b>	991	VRMS HARMONIC 25 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>40993</b>	992	VRMS HARMONIC 26 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40994</b>	993	VRMS HARMONIC 26 [%] LSW			RO	
<b>40995</b>	994	VRMS HARMONIC 26 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40996</b>	995	VRMS HARMONIC 26 [%] LSW			RO	
<b>40997</b>	996	VRMS HARMONIC 26 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>40998</b>	997	VRMS HARMONIC 26 [%] LSW			RO	
<b>40999</b>	998	VRMS HARMONIC 27 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41000</b>	999	VRMS HARMONIC 27 [%] LSW			RO	
<b>41001</b>	1000	VRMS HARMONIC 27 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41002</b>	1001	VRMS HARMONIC 27 [%] LSW			RO	
<b>41003</b>	1002	VRMS HARMONIC 27 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41004</b>	1003	VRMS HARMONIC 27 [%] LSW			RO	
<b>41005</b>	1004	VRMS HARMONIC 28 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41006</b>	1005	VRMS HARMONIC 28 [%] LSW			RO	
<b>41007</b>	1006	VRMS HARMONIC 28 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41008</b>	1007	VRMS HARMONIC 28 [%] LSW			RO	
<b>41009</b>	1008	VRMS HARMONIC 28 [%] MSW	L3-N		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41010</b>	1009	VRMS HARMONIC 28 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41011</b>	1010	VRMS HARMONIC 29 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41012</b>	1011	VRMS HARMONIC 29 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41013</b>	1012	VRMS HARMONIC 29 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41014</b>	1013	VRMS HARMONIC 29 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41015</b>	1014	VRMS HARMONIC 29 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41016</b>	1015	VRMS HARMONIC 29 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41017</b>	1016	VRMS HARMONIC 30 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41018</b>	1017	VRMS HARMONIC 30 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41019</b>	1018	VRMS HARMONIC 30 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41020</b>	1019	VRMS HARMONIC 30 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41021</b>	1020	VRMS HARMONIC 30 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41022</b>	1021	VRMS HARMONIC 30 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41023</b>	1022	VRMS HARMONIC 31 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41024</b>	1023	VRMS HARMONIC 31 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41025</b>	1024	VRMS HARMONIC 31 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41026</b>	1025	VRMS HARMONIC 31 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41027</b>	1026	VRMS HARMONIC 31 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41028</b>	1027	VRMS HARMONIC 31 [%] LSW			RO	
<b>41029</b>	1028	VRMS HARMONIC 32 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41030</b>	1029	VRMS HARMONIC 32 [%] LSW			RO	
<b>41031</b>	1030	VRMS HARMONIC 32 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41032</b>	1031	VRMS HARMONIC 32 [%] LSW			RO	
<b>41033</b>	1032	VRMS HARMONIC 32 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41034</b>	1033	VRMS HARMONIC 32 [%] LSW			RO	
<b>41035</b>	1034	VRMS HARMONIC 33 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41036</b>	1035	VRMS HARMONIC 33 [%] LSW			RO	
<b>41037</b>	1036	VRMS HARMONIC 33 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41038</b>	1037	VRMS HARMONIC 33 [%] LSW			RO	
<b>41039</b>	1038	VRMS HARMONIC 33 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41040</b>	1039	VRMS HARMONIC 33 [%] LSW			RO	
<b>41041</b>	1040	VRMS HARMONIC 34 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41042</b>	1041	VRMS HARMONIC 34 [%] LSW			RO	
<b>41043</b>	1042	VRMS HARMONIC 34 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage	RO	FLOAT32
<b>41044</b>	1043	VRMS HARMONIC 34 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>41045</b>	1044	VRMS HARMONIC 34 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41046</b>	1045	VRMS HARMONIC 34 [%] LSW			RO	
<b>41047</b>	1046	VRMS HARMONIC 35 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41048</b>	1047	VRMS HARMONIC 35 [%] LSW			RO	
<b>41049</b>	1048	VRMS HARMONIC 35 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41050</b>	1049	VRMS HARMONIC 35 [%] LSW			RO	
<b>41051</b>	1050	VRMS HARMONIC 35 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41052</b>	1051	VRMS HARMONIC 35 [%] LSW			RO	
<b>41053</b>	1052	VRMS HARMONIC 36 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41054</b>	1053	VRMS HARMONIC 36 [%] LSW			RO	
<b>41055</b>	1054	VRMS HARMONIC 36 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41056</b>	1055	VRMS HARMONIC 36 [%] LSW			RO	
<b>41057</b>	1056	VRMS HARMONIC 36 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41058</b>	1057	VRMS HARMONIC 36 [%] LSW			RO	
<b>41059</b>	1058	VRMS HARMONIC 37 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41060</b>	1059	VRMS HARMONIC 37 [%] LSW			RO	
<b>41061</b>	1060	VRMS HARMONIC 37 [%] MSW	L2-N		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41062</b>	1061	VRMS HARMONIC 37 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41063</b>	1062	VRMS HARMONIC 37 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41064</b>	1063	VRMS HARMONIC 37 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41065</b>	1064	VRMS HARMONIC 38 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41066</b>	1065	VRMS HARMONIC 38 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41067</b>	1066	VRMS HARMONIC 38 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41068</b>	1067	VRMS HARMONIC 38 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41069</b>	1068	VRMS HARMONIC 38 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41070</b>	1069	VRMS HARMONIC 38 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41071</b>	1070	VRMS HARMONIC 39 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41072</b>	1071	VRMS HARMONIC 39 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41073</b>	1072	VRMS HARMONIC 39 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41074</b>	1073	VRMS HARMONIC 39 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41075</b>	1074	VRMS HARMONIC 39 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41076</b>	1075	VRMS HARMONIC 39 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41077</b>	1076	VRMS HARMONIC 40 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41078</b>	1077	VRMS HARMONIC 40 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41079</b>	1078	VRMS HARMONIC 40 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41080</b>	1079	VRMS HARMONIC 40 [%] LSW			RO	
<b>41081</b>	1080	VRMS HARMONIC 40 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41082</b>	1081	VRMS HARMONIC 40 [%] LSW			RO	
<b>41083</b>	1082	VRMS HARMONIC 41 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41084</b>	1083	VRMS HARMONIC 41 [%] LSW			RO	
<b>41085</b>	1084	VRMS HARMONIC 41 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41086</b>	1085	VRMS HARMONIC 41 [%] LSW			RO	
<b>41087</b>	1086	VRMS HARMONIC 41 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41088</b>	1087	VRMS HARMONIC 41 [%] LSW			RO	
<b>41089</b>	1088	VRMS HARMONIC 42 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41090</b>	1089	VRMS HARMONIC 42 [%] LSW			RO	
<b>41091</b>	1090	VRMS HARMONIC 42 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41092</b>	1091	VRMS HARMONIC 42 [%] LSW			RO	
<b>41093</b>	1092	VRMS HARMONIC 42 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41094</b>	1093	VRMS HARMONIC 42 [%] LSW			RO	
<b>41095</b>	1094	VRMS HARMONIC 43 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage	RO	FLOAT32
<b>41096</b>	1095	VRMS HARMONIC 43 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>41097</b>	1096	VRMS HARMONIC 43 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41098</b>	1097	VRMS HARMONIC 43 [%] LSW			RO	
<b>41099</b>	1098	VRMS HARMONIC 43 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41100</b>	1099	VRMS HARMONIC 43 [%] LSW			RO	
<b>41101</b>	1100	VRMS HARMONIC 44 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41102</b>	1101	VRMS HARMONIC 44 [%] LSW			RO	
<b>41103</b>	1102	VRMS HARMONIC 44 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41104</b>	1103	VRMS HARMONIC 44 [%] LSW			RO	
<b>41105</b>	1104	VRMS HARMONIC 44 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41106</b>	1105	VRMS HARMONIC 44 [%] LSW			RO	
<b>41107</b>	1106	VRMS HARMONIC 45 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41108</b>	1107	VRMS HARMONIC 45 [%] LSW			RO	
<b>41109</b>	1108	VRMS HARMONIC 45 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41110</b>	1109	VRMS HARMONIC 45 [%] LSW			RO	
<b>41111</b>	1110	VRMS HARMONIC 45 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41112</b>	1111	VRMS HARMONIC 45 [%] LSW			RO	
<b>41113</b>	1112	VRMS HARMONIC 46 [%] MSW	L1-N		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41114</b>	1113	VRMS HARMONIC 46 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41115</b>	1114	VRMS HARMONIC 46 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41116</b>	1115	VRMS HARMONIC 46 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41117</b>	1116	VRMS HARMONIC 46 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41118</b>	1117	VRMS HARMONIC 46 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41119</b>	1118	VRMS HARMONIC 47 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41120</b>	1119	VRMS HARMONIC 47 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41121</b>	1120	VRMS HARMONIC 47 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41122</b>	1121	VRMS HARMONIC 47 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41123</b>	1122	VRMS HARMONIC 47 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41124</b>	1123	VRMS HARMONIC 47 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41125</b>	1124	VRMS HARMONIC 48 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41126</b>	1125	VRMS HARMONIC 48 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41127</b>	1126	VRMS HARMONIC 48 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41128</b>	1127	VRMS HARMONIC 48 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41129</b>	1128	VRMS HARMONIC 48 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in	RO	FLOAT32
<b>41130</b>	1129	VRMS HARMONIC 48 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41131</b>	1130	VRMS HARMONIC 49 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41132</b>	1131	VRMS HARMONIC 49 [%] LSW			RO	
<b>41133</b>	1132	VRMS HARMONIC 49 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41134</b>	1133	VRMS HARMONIC 49 [%] LSW			RO	
<b>41135</b>	1134	VRMS HARMONIC 49 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41136</b>	1135	VRMS HARMONIC 49 [%] LSW			RO	
<b>41137</b>	1136	VRMS HARMONIC 50 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41138</b>	1137	VRMS HARMONIC 50 [%] LSW			RO	
<b>41139</b>	1138	VRMS HARMONIC 50 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41140</b>	1139	VRMS HARMONIC 50 [%] LSW			RO	
<b>41141</b>	1140	VRMS HARMONIC 50 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41142</b>	1141	VRMS HARMONIC 50 [%] LSW			RO	
<b>41143</b>	1142	VRMS HARMONIC 51 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41144</b>	1143	VRMS HARMONIC 51 [%] LSW			RO	
<b>41145</b>	1144	VRMS HARMONIC 51 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41146</b>	1145	VRMS HARMONIC 51 [%] LSW			RO	
<b>41147</b>	1146	VRMS HARMONIC 51 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage	RO	FLOAT32
<b>41148</b>	1147	VRMS HARMONIC 51 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>41149</b>	1148	VRMS HARMONIC 52 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41150</b>	1149	VRMS HARMONIC 52 [%] LSW			RO	
<b>41151</b>	1150	VRMS HARMONIC 52 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41152</b>	1151	VRMS HARMONIC 52 [%] LSW			RO	
<b>41153</b>	1152	VRMS HARMONIC 52 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41154</b>	1153	VRMS HARMONIC 52 [%] LSW			RO	
<b>41155</b>	1154	VRMS HARMONIC 53 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41156</b>	1155	VRMS HARMONIC 53 [%] LSW			RO	
<b>41157</b>	1156	VRMS HARMONIC 53 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41158</b>	1157	VRMS HARMONIC 53 [%] LSW			RO	
<b>41159</b>	1158	VRMS HARMONIC 53 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41160</b>	1159	VRMS HARMONIC 53 [%] LSW			RO	
<b>41161</b>	1160	VRMS HARMONIC 54 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41162</b>	1161	VRMS HARMONIC 54 [%] LSW			RO	
<b>41163</b>	1162	VRMS HARMONIC 54 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41164</b>	1163	VRMS HARMONIC 54 [%] LSW			RO	
<b>41165</b>	1164	VRMS HARMONIC 54 [%] MSW	L3-N		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41166</b>	1165	VRMS HARMONIC 54 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41167</b>	1166	VRMS HARMONIC 55 [%] MSW	L1-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41168</b>	1167	VRMS HARMONIC 55 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41169</b>	1168	VRMS HARMONIC 55 [%] MSW	L2-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41170</b>	1169	VRMS HARMONIC 55 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41171</b>	1170	VRMS HARMONIC 55 [%] MSW	L3-N	Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41172</b>	1171	VRMS HARMONIC 55 [%] LSW		Measurement of the Phase - Neutral voltage of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41173</b>	1172	IRMS HARMONIC 2 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41174</b>	1173	IRMS HARMONIC 2 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41175</b>	1174	IRMS HARMONIC 2 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41176</b>	1175	IRMS HARMONIC 2 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41177</b>	1176	IRMS HARMONIC 2 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41178</b>	1177	IRMS HARMONIC 2 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41179</b>	1178	IRMS HARMONIC 3 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41180</b>	1179	IRMS HARMONIC 3 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41181</b>	1180	IRMS HARMONIC 3 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in	RO	FLOAT32
<b>41182</b>	1181	IRMS HARMONIC 3 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41183</b>	1182	IRMS HARMONIC 3 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41184</b>	1183	IRMS HARMONIC 3 [%] LSW			RO	
<b>41185</b>	1184	IRMS HARMONIC 4 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41186</b>	1185	IRMS HARMONIC 4 [%] LSW			RO	
<b>41187</b>	1186	IRMS HARMONIC 4 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41188</b>	1187	IRMS HARMONIC 4 [%] LSW			RO	
<b>41189</b>	1188	IRMS HARMONIC 4 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41190</b>	1189	IRMS HARMONIC 4 [%] LSW			RO	
<b>41191</b>	1190	IRMS HARMONIC 5 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41192</b>	1191	IRMS HARMONIC 5 [%] LSW			RO	
<b>41193</b>	1192	IRMS HARMONIC 5 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41194</b>	1193	IRMS HARMONIC 5 [%] LSW			RO	
<b>41195</b>	1194	IRMS HARMONIC 5 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41196</b>	1195	IRMS HARMONIC 5 [%] LSW			RO	
<b>41197</b>	1196	IRMS HARMONIC 6 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41198</b>	1197	IRMS HARMONIC 6 [%] LSW			RO	
<b>41199</b>	1198	IRMS HARMONIC 6 [%] MSW	L2	Measurement of the Phase - Neutral current	RO	FLOAT32
<b>41200</b>	1199	IRMS HARMONIC 6 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>41201</b>	1200	IRMS HARMONIC 6 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41202</b>	1201	IRMS HARMONIC 6 [%] LSW			RO	
<b>41203</b>	1202	IRMS HARMONIC 7 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41204</b>	1203	IRMS HARMONIC 7 [%] LSW			RO	
<b>41205</b>	1204	IRMS HARMONIC 7 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41206</b>	1205	IRMS HARMONIC 7 [%] LSW			RO	
<b>41207</b>	1206	IRMS HARMONIC 7 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41208</b>	1207	IRMS HARMONIC 7 [%] LSW			RO	
<b>41209</b>	1208	IRMS HARMONIC 8 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41210</b>	1209	IRMS HARMONIC 8 [%] LSW			RO	
<b>41211</b>	1210	IRMS HARMONIC 8 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41212</b>	1211	IRMS HARMONIC 8 [%] LSW			RO	
<b>41213</b>	1212	IRMS HARMONIC 8 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41214</b>	1213	IRMS HARMONIC 8 [%] LSW			RO	
<b>41215</b>	1214	IRMS HARMONIC 9 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41216</b>	1215	IRMS HARMONIC 9 [%] LSW			RO	
<b>41217</b>	1216	IRMS HARMONIC 9 [%] MSW	L2		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41218</b>	1217	IRMS HARMONIC 9 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41219</b>	1218	IRMS HARMONIC 9 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41220</b>	1219	IRMS HARMONIC 9 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41221</b>	1220	IRMS HARMONIC 10 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41222</b>	1221	IRMS HARMONIC 10 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41223</b>	1222	IRMS HARMONIC 10 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41224</b>	1223	IRMS HARMONIC 10 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41225</b>	1224	IRMS HARMONIC 10 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41226</b>	1225	IRMS HARMONIC 10 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41227</b>	1226	IRMS HARMONIC 11 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41228</b>	1227	IRMS HARMONIC 11 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41229</b>	1228	IRMS HARMONIC 11 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41230</b>	1229	IRMS HARMONIC 11 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41231</b>	1230	IRMS HARMONIC 11 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41232</b>	1231	IRMS HARMONIC 11 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41233</b>	1232	IRMS HARMONIC 12 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in	RO	FLOAT32
<b>41234</b>	1233	IRMS HARMONIC 12 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41235</b>	1234	IRMS HARMONIC 12 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41236</b>	1235	IRMS HARMONIC 12 [%] LSW			RO	
<b>41237</b>	1236	IRMS HARMONIC 12 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41238</b>	1237	IRMS HARMONIC 12 [%] LSW			RO	
<b>41239</b>	1238	IRMS HARMONIC 13 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41240</b>	1239	IRMS HARMONIC 13 [%] LSW			RO	
<b>41241</b>	1240	IRMS HARMONIC 13 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41242</b>	1241	IRMS HARMONIC 13 [%] LSW			RO	
<b>41243</b>	1242	IRMS HARMONIC 13 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41244</b>	1243	IRMS HARMONIC 13 [%] LSW			RO	
<b>41245</b>	1244	IRMS HARMONIC 14 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41246</b>	1245	IRMS HARMONIC 14 [%] LSW			RO	
<b>41247</b>	1246	IRMS HARMONIC 14 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41248</b>	1247	IRMS HARMONIC 14 [%] LSW			RO	
<b>41249</b>	1248	IRMS HARMONIC 14 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41250</b>	1249	IRMS HARMONIC 14 [%] LSW			RO	
<b>41251</b>	1250	IRMS HARMONIC 15 [%] MSW	L1	Measurement of the Phase - Neutral current	RO	FLOAT32
<b>41252</b>	1251	IRMS HARMONIC 15 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>41253</b>	1252	IRMS HARMONIC 15 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41254</b>	1253	IRMS HARMONIC 15 [%] LSW			RO	
<b>41255</b>	1254	IRMS HARMONIC 15 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41256</b>	1255	IRMS HARMONIC 15 [%] LSW			RO	
<b>41257</b>	1256	IRMS HARMONIC 16 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41258</b>	1257	IRMS HARMONIC 16 [%] LSW			RO	
<b>41259</b>	1258	IRMS HARMONIC 16 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41260</b>	1259	IRMS HARMONIC 16 [%] LSW			RO	
<b>41261</b>	1260	IRMS HARMONIC 16 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41262</b>	1261	IRMS HARMONIC 16 [%] LSW			RO	
<b>41263</b>	1262	IRMS HARMONIC 17 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41264</b>	1263	IRMS HARMONIC 17 [%] LSW			RO	
<b>41265</b>	1264	IRMS HARMONIC 17 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41266</b>	1265	IRMS HARMONIC 17 [%] LSW			RO	
<b>41267</b>	1266	IRMS HARMONIC 17 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41268</b>	1267	IRMS HARMONIC 17 [%] LSW			RO	
<b>41269</b>	1268	IRMS HARMONIC 18 [%] MSW	L1		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41270</b>	1269	IRMS HARMONIC 18 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41271</b>	1270	IRMS HARMONIC 18 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41272</b>	1271	IRMS HARMONIC 18 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41273</b>	1272	IRMS HARMONIC 18 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41274</b>	1273	IRMS HARMONIC 18 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41275</b>	1274	IRMS HARMONIC 19 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41276</b>	1275	IRMS HARMONIC 19 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41277</b>	1276	IRMS HARMONIC 19 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41278</b>	1277	IRMS HARMONIC 19 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41279</b>	1278	IRMS HARMONIC 19 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41280</b>	1279	IRMS HARMONIC 19 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41281</b>	1280	IRMS HARMONIC 20 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41282</b>	1281	IRMS HARMONIC 20 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41283</b>	1282	IRMS HARMONIC 20 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41284</b>	1283	IRMS HARMONIC 20 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41285</b>	1284	IRMS HARMONIC 20 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41286</b>	1285	IRMS HARMONIC 20 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41287</b>	1286	IRMS HARMONIC 21 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41288</b>	1287	IRMS HARMONIC 21 [%] LSW			RO	
<b>41289</b>	1288	IRMS HARMONIC 21 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41290</b>	1289	IRMS HARMONIC 21 [%] LSW			RO	
<b>41291</b>	1290	IRMS HARMONIC 21 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41292</b>	1291	IRMS HARMONIC 21 [%] LSW			RO	
<b>41293</b>	1292	IRMS HARMONIC 22 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41294</b>	1293	IRMS HARMONIC 22 [%] LSW			RO	
<b>41295</b>	1294	IRMS HARMONIC 22 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41296</b>	1295	IRMS HARMONIC 22 [%] LSW			RO	
<b>41297</b>	1296	IRMS HARMONIC 22 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41298</b>	1297	IRMS HARMONIC 22 [%] LSW			RO	
<b>41299</b>	1298	IRMS HARMONIC 23 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41300</b>	1299	IRMS HARMONIC 23 [%] LSW			RO	
<b>41301</b>	1300	IRMS HARMONIC 23 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41302</b>	1301	IRMS HARMONIC 23 [%] LSW			RO	
<b>41303</b>	1302	IRMS HARMONIC 23 [%] MSW	L3	Measurement of the Phase - Neutral current	RO	FLOAT32
<b>41304</b>	1303	IRMS HARMONIC 23 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>41305</b>	1304	IRMS HARMONIC 24 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41306</b>	1305	IRMS HARMONIC 24 [%] LSW			RO	
<b>41307</b>	1306	IRMS HARMONIC 24 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41308</b>	1307	IRMS HARMONIC 24 [%] LSW			RO	
<b>41309</b>	1308	IRMS HARMONIC 24 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41310</b>	1309	IRMS HARMONIC 24 [%] LSW			RO	
<b>41311</b>	1310	IRMS HARMONIC 25 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41312</b>	1311	IRMS HARMONIC 25 [%] LSW			RO	
<b>41313</b>	1312	IRMS HARMONIC 25 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41314</b>	1313	IRMS HARMONIC 25 [%] LSW			RO	
<b>41315</b>	1314	IRMS HARMONIC 25 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41316</b>	1315	IRMS HARMONIC 25 [%] LSW			RO	
<b>41317</b>	1316	IRMS HARMONIC 26 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41318</b>	1317	IRMS HARMONIC 26 [%] LSW			RO	
<b>41319</b>	1318	IRMS HARMONIC 26 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41320</b>	1319	IRMS HARMONIC 26 [%] LSW			RO	
<b>41321</b>	1320	IRMS HARMONIC 26 [%] MSW	L3		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41322</b>	1321	IRMS HARMONIC 26 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41323</b>	1322	IRMS HARMONIC 27 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41324</b>	1323	IRMS HARMONIC 27 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41325</b>	1324	IRMS HARMONIC 27 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41326</b>	1325	IRMS HARMONIC 27 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41327</b>	1326	IRMS HARMONIC 27 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41328</b>	1327	IRMS HARMONIC 27 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41329</b>	1328	IRMS HARMONIC 28 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41330</b>	1329	IRMS HARMONIC 28 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41331</b>	1330	IRMS HARMONIC 28 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41332</b>	1331	IRMS HARMONIC 28 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41333</b>	1332	IRMS HARMONIC 28 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41334</b>	1333	IRMS HARMONIC 28 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41335</b>	1334	IRMS HARMONIC 29 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41336</b>	1335	IRMS HARMONIC 29 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41337</b>	1336	IRMS HARMONIC 29 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in	RO	FLOAT32
<b>41338</b>	1337	IRMS HARMONIC 29 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41339</b>	1338	IRMS HARMONIC 29 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41340</b>	1339	IRMS HARMONIC 29 [%] LSW			RO	
<b>41341</b>	1340	IRMS HARMONIC 30 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41342</b>	1341	IRMS HARMONIC 30 [%] LSW			RO	
<b>41343</b>	1342	IRMS HARMONIC 30 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41344</b>	1343	IRMS HARMONIC 30 [%] LSW			RO	
<b>41345</b>	1344	IRMS HARMONIC 30 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41346</b>	1345	IRMS HARMONIC 30 [%] LSW			RO	
<b>41347</b>	1346	IRMS HARMONIC 31 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41348</b>	1347	IRMS HARMONIC 31 [%] LSW			RO	
<b>41349</b>	1348	IRMS HARMONIC 31 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41350</b>	1349	IRMS HARMONIC 31 [%] LSW			RO	
<b>41351</b>	1350	IRMS HARMONIC 31 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41352</b>	1351	IRMS HARMONIC 31 [%] LSW			RO	
<b>41353</b>	1352	IRMS HARMONIC 32 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41354</b>	1353	IRMS HARMONIC 32 [%] LSW			RO	
<b>41355</b>	1354	IRMS HARMONIC 32 [%] MSW	L2	Measurement of the Phase - Neutral current	RO	FLOAT32
<b>41356</b>	1355	IRMS HARMONIC 32 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>41357</b>	1356	IRMS HARMONIC 32 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41358</b>	1357	IRMS HARMONIC 32 [%] LSW			RO	
<b>41359</b>	1358	IRMS HARMONIC 33 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41360</b>	1359	IRMS HARMONIC 33 [%] LSW			RO	
<b>41361</b>	1360	IRMS HARMONIC 33 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41362</b>	1361	IRMS HARMONIC 33 [%] LSW			RO	
<b>41363</b>	1362	IRMS HARMONIC 33 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41364</b>	1363	IRMS HARMONIC 33 [%] LSW			RO	
<b>41365</b>	1364	IRMS HARMONIC 34 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41366</b>	1365	IRMS HARMONIC 34 [%] LSW			RO	
<b>41367</b>	1366	IRMS HARMONIC 34 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41368</b>	1367	IRMS HARMONIC 34 [%] LSW			RO	
<b>41369</b>	1368	IRMS HARMONIC 34 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41370</b>	1369	IRMS HARMONIC 34 [%] LSW			RO	
<b>41371</b>	1370	IRMS HARMONIC 35 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41372</b>	1371	IRMS HARMONIC 35 [%] LSW			RO	
<b>41373</b>	1372	IRMS HARMONIC 35 [%] MSW	L2		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41374</b>	1373	IRMS HARMONIC 35 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41375</b>	1374	IRMS HARMONIC 35 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41376</b>	1375	IRMS HARMONIC 35 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41377</b>	1376	IRMS HARMONIC 36 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41378</b>	1377	IRMS HARMONIC 36 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41379</b>	1378	IRMS HARMONIC 36 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41380</b>	1379	IRMS HARMONIC 36 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41381</b>	1380	IRMS HARMONIC 36 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41382</b>	1381	IRMS HARMONIC 36 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41383</b>	1382	IRMS HARMONIC 37 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41384</b>	1383	IRMS HARMONIC 37 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41385</b>	1384	IRMS HARMONIC 37 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41386</b>	1385	IRMS HARMONIC 37 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41387</b>	1386	IRMS HARMONIC 37 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41388</b>	1387	IRMS HARMONIC 37 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41389</b>	1388	IRMS HARMONIC 38 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in	RO	FLOAT32
<b>41390</b>	1389	IRMS HARMONIC 38 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41391</b>	1390	IRMS HARMONIC 38 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41392</b>	1391	IRMS HARMONIC 38 [%] LSW			RO	
<b>41393</b>	1392	IRMS HARMONIC 38 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41394</b>	1393	IRMS HARMONIC 38 [%] LSW			RO	
<b>41395</b>	1394	IRMS HARMONIC 39 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41396</b>	1395	IRMS HARMONIC 39 [%] LSW			RO	
<b>41397</b>	1396	IRMS HARMONIC 39 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41398</b>	1397	IRMS HARMONIC 39 [%] LSW			RO	
<b>41399</b>	1398	IRMS HARMONIC 39 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41400</b>	1399	IRMS HARMONIC 39 [%] LSW			RO	
<b>41401</b>	1400	IRMS HARMONIC 40 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41402</b>	1401	IRMS HARMONIC 40 [%] LSW			RO	
<b>41403</b>	1402	IRMS HARMONIC 40 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41404</b>	1403	IRMS HARMONIC 40 [%] LSW			RO	
<b>41405</b>	1404	IRMS HARMONIC 40 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41406</b>	1405	IRMS HARMONIC 40 [%] LSW			RO	
<b>41407</b>	1406	IRMS HARMONIC 41 [%] MSW	L1	Measurement of the Phase - Neutral current	RO	FLOAT32
<b>41408</b>	1407	IRMS HARMONIC 41 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>41409</b>	1408	IRMS HARMONIC 41 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41410</b>	1409	IRMS HARMONIC 41 [%] LSW			RO	
<b>41411</b>	1410	IRMS HARMONIC 41 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41412</b>	1411	IRMS HARMONIC 41 [%] LSW			RO	
<b>41413</b>	1412	IRMS HARMONIC 42 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41414</b>	1413	IRMS HARMONIC 42 [%] LSW			RO	
<b>41415</b>	1414	IRMS HARMONIC 42 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41416</b>	1415	IRMS HARMONIC 42 [%] LSW			RO	
<b>41417</b>	1416	IRMS HARMONIC 42 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41418</b>	1417	IRMS HARMONIC 42 [%] LSW			RO	
<b>41419</b>	1418	IRMS HARMONIC 43 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41420</b>	1419	IRMS HARMONIC 43 [%] LSW			RO	
<b>41421</b>	1420	IRMS HARMONIC 43 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41422</b>	1421	IRMS HARMONIC 43 [%] LSW			RO	
<b>41423</b>	1422	IRMS HARMONIC 43 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41424</b>	1423	IRMS HARMONIC 43 [%] LSW			RO	
<b>41425</b>	1424	IRMS HARMONIC 44 [%] MSW	L1		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41426</b>	1425	IRMS HARMONIC 44 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41427</b>	1426	IRMS HARMONIC 44 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41428</b>	1427	IRMS HARMONIC 44 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41429</b>	1428	IRMS HARMONIC 44 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41430</b>	1429	IRMS HARMONIC 44 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41431</b>	1430	IRMS HARMONIC 45 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41432</b>	1431	IRMS HARMONIC 45 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41433</b>	1432	IRMS HARMONIC 45 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41434</b>	1433	IRMS HARMONIC 45 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41435</b>	1434	IRMS HARMONIC 45 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41436</b>	1435	IRMS HARMONIC 45 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41437</b>	1436	IRMS HARMONIC 46 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41438</b>	1437	IRMS HARMONIC 46 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41439</b>	1438	IRMS HARMONIC 46 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41440</b>	1439	IRMS HARMONIC 46 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41441</b>	1440	IRMS HARMONIC 46 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in	RO	FLOAT32
<b>41442</b>	1441	IRMS HARMONIC 46 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41443</b>	1442	IRMS HARMONIC 47 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41444</b>	1443	IRMS HARMONIC 47 [%] LSW			RO	
<b>41445</b>	1444	IRMS HARMONIC 47 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41446</b>	1445	IRMS HARMONIC 47 [%] LSW			RO	
<b>41447</b>	1446	IRMS HARMONIC 47 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41448</b>	1447	IRMS HARMONIC 47 [%] LSW			RO	
<b>41449</b>	1448	IRMS HARMONIC 48 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41450</b>	1449	IRMS HARMONIC 48 [%] LSW			RO	
<b>41451</b>	1450	IRMS HARMONIC 48 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41452</b>	1451	IRMS HARMONIC 48 [%] LSW			RO	
<b>41453</b>	1452	IRMS HARMONIC 48 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41454</b>	1453	IRMS HARMONIC 48 [%] LSW			RO	
<b>41455</b>	1454	IRMS HARMONIC 49 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41456</b>	1455	IRMS HARMONIC 49 [%] LSW			RO	
<b>41457</b>	1456	IRMS HARMONIC 49 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41458</b>	1457	IRMS HARMONIC 49 [%] LSW			RO	
<b>41459</b>	1458	IRMS HARMONIC 49 [%] MSW	L3	Measurement of the Phase - Neutral current	RO	FLOAT32
<b>41460</b>	1459	IRMS HARMONIC 49 [%] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				of the i-th harmonic in comparison with the fundamental [%]		
<b>41461</b>	1460	IRMS HARMONIC 50 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41462</b>	1461	IRMS HARMONIC 50 [%] LSW			RO	
<b>41463</b>	1462	IRMS HARMONIC 50 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41464</b>	1463	IRMS HARMONIC 50 [%] LSW			RO	
<b>41465</b>	1464	IRMS HARMONIC 50 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41466</b>	1465	IRMS HARMONIC 50 [%] LSW			RO	
<b>41467</b>	1466	IRMS HARMONIC 51 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41468</b>	1467	IRMS HARMONIC 51 [%] LSW			RO	
<b>41469</b>	1468	IRMS HARMONIC 51 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41470</b>	1469	IRMS HARMONIC 51 [%] LSW			RO	
<b>41471</b>	1470	IRMS HARMONIC 51 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41472</b>	1471	IRMS HARMONIC 51 [%] LSW			RO	
<b>41473</b>	1472	IRMS HARMONIC 52 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41474</b>	1473	IRMS HARMONIC 52 [%] LSW			RO	
<b>41475</b>	1474	IRMS HARMONIC 52 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41476</b>	1475	IRMS HARMONIC 52 [%] LSW			RO	
<b>41477</b>	1476	IRMS HARMONIC 52 [%] MSW	L3		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41478</b>	1477	IRMS HARMONIC 52 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41479</b>	1478	IRMS HARMONIC 53 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41480</b>	1479	IRMS HARMONIC 53 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41481</b>	1480	IRMS HARMONIC 53 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41482</b>	1481	IRMS HARMONIC 53 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41483</b>	1482	IRMS HARMONIC 53 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41484</b>	1483	IRMS HARMONIC 53 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41485</b>	1484	IRMS HARMONIC 54 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41486</b>	1485	IRMS HARMONIC 54 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41487</b>	1486	IRMS HARMONIC 54 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41488</b>	1487	IRMS HARMONIC 54 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41489</b>	1488	IRMS HARMONIC 54 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41490</b>	1489	IRMS HARMONIC 54 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41491</b>	1490	IRMS HARMONIC 55 [%] MSW	L1	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41492</b>	1491	IRMS HARMONIC 55 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	
<b>41493</b>	1492	IRMS HARMONIC 55 [%] MSW	L2	Measurement of the Phase - Neutral current of the i-th harmonic in	RO	FLOAT32
<b>41494</b>	1493	IRMS HARMONIC 55 [%] LSW		Measurement of the Phase - Neutral current of the i-th harmonic in	RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				comparison with the fundamental [%]		
<b>41495</b>	1494	IRMS HARMONIC 55 [%] MSW	L3	Measurement of the Phase - Neutral current of the i-th harmonic in comparison with the fundamental [%]	RO	FLOAT32
<b>41496</b>	1495	IRMS HARMONIC 55 [%] LSW			RO	
<b>41497</b>	1496	VRMS AVG [V] MSW	L1	Average VRMS calculated over the configured average time [V]	RO	FLOAT32
<b>41498</b>	1497	VRMS AVG [V] LSW			RO	
<b>41499</b>	1498	VRMS AVG MIN [V] MSW	L1	Minimum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41500</b>	1499	VRMS AVG MIN [V] LSW			RW	
<b>41501</b>	1500	VRMS AVG MAX [V] MSW	L1	Maximum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41502</b>	1501	VRMS AVG MAX [V] LSW			RW	
<b>41503</b>	1502	VRMS MIN [V] MSW	L1	Device minimum VRMS [V]	RW	FLOAT32
<b>41504</b>	1503	VRMS MIN [V] LSW			RW	
<b>41505</b>	1504	VRMS MAX [V] MSW	L1	Device maximum VRMS [V]	RW	FLOAT32
<b>41506</b>	1505	VRMS MAX [V] LSW			RW	
<b>41507</b>	1506	VRMS AVG [V] MSW	L2	Average VRMS calculated over the configured average time [V]	RO	FLOAT32
<b>41508</b>	1507	VRMS AVG [V] LSW			RO	
<b>41509</b>	1508	VRMS AVG MIN [V] MSW	L2	Minimum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41510</b>	1509	VRMS AVG MIN [V] LSW			RW	
<b>41511</b>	1510	VRMS AVG MAX [V] MSW	L2	Maximum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41512</b>	1511	VRMS AVG MAX [V] LSW			RW	
<b>41513</b>	1512	VRMS MIN [V] MSW	L2	Device minimum VRMS [V]	RW	FLOAT32
<b>41514</b>	1513	VRMS MIN [V] LSW			RW	
<b>41515</b>	1514	VRMS MAX [V] MSW	L2	Device maximum VRMS [V]	RW	FLOAT32
<b>41516</b>	1515	VRMS MAX [V] LSW			RW	
<b>41517</b>	1516	VRMS AVG [V] MSW	L3	Average VRMS calculated over the configured average time [V]	RO	FLOAT32
<b>41518</b>	1517	VRMS AVG [V] LSW			RO	
<b>41519</b>	1518	VRMS AVG MIN [V] MSW	L3	Minimum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41520</b>	1519	VRMS AVG MIN [V] LSW			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41521</b>	1520	VRMS AVG MAX [V] MSW	L3	Maximum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41522</b>	1521	VRMS AVG MAX [V] LSW			RW	
<b>41523</b>	1522	VRMS MIN [V] MSW	L3	Device minimum VRMS [V]	RW	FLOAT32
<b>41524</b>	1523	VRMS MIN [V] LSW			RW	
<b>41525</b>	1524	VRMS MAX [V] MSW	L3	Device maximum VRMS [V]	RW	FLOAT32
<b>41526</b>	1525	VRMS MAX [V] LSW			RW	
<b>41527</b>	1526	IRMS AVG MSW [A]	L1	Average IRMS calculated over the configured average time [A]	RO	FLOAT32
<b>41528</b>	1527	IRMS AVG LSW [A]			RO	
<b>41529</b>	1528	IRMS AVG MIN MSW [A]	L1	Minimum IRMS calculated over the configured average time [A]	RW	FLOAT32
<b>41530</b>	1529	IRMS AVG MIN LSW [A]			RW	
<b>41531</b>	1530	IRMS AVG MAX MSW [A]	L1	Maximum IRMS calculated over the configured average time [A]	RW	FLOAT32
<b>41532</b>	1531	IRMS AVG MAX LSW [A]			RW	
<b>41533</b>	1532	IRMS MIN MSW [A]	L1	Minimum IRMS since device power up [A]	RW	FLOAT32
<b>41534</b>	1533	IRMS MIN LSW [A]			RW	
<b>41535</b>	1534	IRMS MAX MSW [A]	L1	Device maximum IRMS [A]	RW	FLOAT32
<b>41536</b>	1535	IRMS MAX LSW [A]			RW	
<b>41537</b>	1536	IRMS AVG MSW [A]	L2	Average IRMS calculated over the configured average time [A]	RO	FLOAT32
<b>41538</b>	1537	IRMS AVG LSW [A]			RO	
<b>41539</b>	1538	IRMS AVG MIN MSW [A]	L2	Minimum IRMS calculated over the configured average time [A]	RW	FLOAT32
<b>41540</b>	1539	IRMS AVG MIN LSW [A]			RW	
<b>41541</b>	1540	IRMS AVG MAX MSW [A]	L2	Maximum IRMS calculated over the configured average time [A]	RW	FLOAT32
<b>41542</b>	1541	IRMS AVG MAX LSW [A]			RW	
<b>41543</b>	1542	IRMS MIN MSW [A]	L2	Device minimum IRMS [A]	RW	FLOAT32
<b>41544</b>	1543	IRMS MIN LSW [A]			RW	
<b>41545</b>	1544	IRMS MAX MSW [A]	L2	Maximum IRMS since device power up [A]	RW	FLOAT32
<b>41546</b>	1545	IRMS MAX LSW [A]			RW	
<b>41547</b>	1546	IRMS AVG MSW [A]	L3	Average IRMS calculated over the configured average time [A]	RO	FLOAT32
<b>41548</b>	1547	IRMS AVG LSW [A]			RO	
<b>41549</b>	1548	IRMS AVG MIN MSW [A]	L3	Minimum IRMS calculated over the	RW	FLOAT32
<b>41550</b>	1549	IRMS AVG MIN LSW [A]			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
				configured average time [A]		
<b>41551</b>	1550	IRMS AVG MAX MSW [A]	L3	Maximum IRMS calculated over the configured average time [A]	RW	FLOAT32
<b>41552</b>	1551	IRMS AVG MAX LSW [A]		Device minimum IRMS [A]	RW	
<b>41553</b>	1552	IRMS MIN MSW [A]	L3	Device maximum IRMS [A]	RW	FLOAT32
<b>41554</b>	1553	IRMS MIN LSW [A]		Device maximum IRMS [A]	RW	
<b>41555</b>	1554	IRMS MAX MSW [A]	L3	Average VRMS calculated over the configured average time [V]	RO	FLOAT32
<b>41556</b>	1555	IRMS MAX LSW [A]		Average VRMS calculated over the configured average time [V]	RO	
<b>41557</b>	1556	VRMS AVG [V] MSW	L1-L2	Minimum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41558</b>	1557	VRMS AVG [V] LSW		Minimum VRMS calculated over the configured average time [V]	RW	
<b>41559</b>	1558	VRMS AVG MIN [V] MSW	L1-L2	Maximum VRMS since device power up [V]	RW	FLOAT32
<b>41560</b>	1559	VRMS AVG MIN [V] LSW		Maximum VRMS since device power up [V]	RW	
<b>41561</b>	1560	VRMS AVG MAX [V] MSW	L1-L2	Minimum VRMS since device power up [V]	RW	FLOAT32
<b>41562</b>	1561	VRMS AVG MAX [V] LSW		Minimum VRMS since device power up [V]	RW	
<b>41563</b>	1562	VRMS MIN [V] MSW	L1-L2	Average VRMS calculated over the configured average time [V]	RO	FLOAT32
<b>41564</b>	1563	VRMS MIN [V] LSW		Average VRMS calculated over the configured average time [V]	RO	
<b>41565</b>	1564	VRMS MAX [V] MSW	L1-L2	Maximum VRMS since device power up [V]	RW	FLOAT32
<b>41566</b>	1565	VRMS MAX [V] LSW		Maximum VRMS since device power up [V]	RW	
<b>41567</b>	1566	VRMS AVG [V] MSW	L2-L3	Average VRMS calculated over the configured average time [V]	RO	FLOAT32
<b>41568</b>	1567	VRMS AVG [V] LSW		Average VRMS calculated over the configured average time [V]	RO	
<b>41569</b>	1568	VRMS AVG MIN [V] MSW	L2-L3	Minimum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41570</b>	1569	VRMS AVG MIN [V] LSW		Minimum VRMS calculated over the configured average time [V]	RW	
<b>41571</b>	1570	VRMS AVG MAX [V] MSW	L2-L3	Maximum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41572</b>	1571	VRMS AVG MAX [V] LSW		Maximum VRMS calculated over the configured average time [V]	RW	
<b>41573</b>	1572	VRMS MIN [V] MSW	L2-L3	Minimum VRMS since device power up [V]	RW	FLOAT32
<b>41574</b>	1573	VRMS MIN [V] LSW		Minimum VRMS since device power up [V]	RW	
<b>41575</b>	1574	VRMS MAX [V] MSW	L2-L3	Maximum VRMS since device power up [V]	RW	FLOAT32
<b>41576</b>	1575	VRMS MAX [V] LSW		Maximum VRMS since device power up [V]	RW	
<b>41577</b>	1576	VRMS AVG [V] MSW	L3-L1	Average VRMS calculated over the configured average time [V]	RO	FLOAT32
<b>41578</b>	1577	VRMS AVG [V] LSW		Average VRMS calculated over the configured average time [V]	RO	
<b>41579</b>	1578	VRMS AVG MIN [V] MSW	L3-L1		RW	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41580</b>	1579	VRMS AVG MIN [V] LSW		Minimum VRMS calculated over the configured average time [V]	RW	
<b>41581</b>	1580	VRMS AVG MAX [V] MSW	L3-L1	Maximum VRMS calculated over the configured average time [V]	RW	FLOAT32
<b>41582</b>	1581	VRMS AVG MAX [V] LSW		Maximum VRMS since device power up [V]	RW	
<b>41583</b>	1582	VRMS MIN [V] MSW	L3-L1	Minimum VRMS since device power up [V]	RW	FLOAT32
<b>41584</b>	1583	VRMS MIN [V] LSW		Minimum VRMS since device power up [V]	RW	
<b>41585</b>	1584	VRMS MAX [V] MSW	L3-L1	Maximum VRMS since device power up [V]	RW	FLOAT32
<b>41586</b>	1585	VRMS MAX [V] LSW		Maximum VRMS since device power up [V]	RW	
<b>41587</b>	1586	P AVG [W] MSW	L1	Average Active Power calculated over the configured average time [W]	RO	FLOAT32
<b>41588</b>	1587	P AVG [W] LSW		Average Active Power calculated over the configured average time [W]	RO	
<b>41589</b>	1588	P AVG MIN [W] MSW	L1	Minimum Active Power calculated over the configured average time [W]	RW	FLOAT32
<b>41590</b>	1589	P AVG MIN [W] LSW		Minimum Active Power calculated over the configured average time [W]	RW	
<b>41591</b>	1590	P AVG MAX [W] MSW	L1	Maximum Active Power calculated over the configured average time [WA]	RW	FLOAT32
<b>41592</b>	1591	P AVG MAX [W] LSW		Maximum Active Power calculated over the configured average time [WA]	RW	
<b>41593</b>	1592	P MIN [W] MSW	L1	Minimum Active Power since device power up [W]	RW	FLOAT32
<b>41594</b>	1593	P MIN [W] LSW		Minimum Active Power since device power up [W]	RW	
<b>41595</b>	1594	P MAX [W] MSW	L1	Maximum Active Power since device power up [W]	RW	FLOAT32
<b>41596</b>	1595	P MAX [W] LSW		Maximum Active Power since device power up [W]	RW	
<b>41597</b>	1596	P AVG [W] MSW	L2	Average Active Power calculated over the configured average time [W]	RO	FLOAT32
<b>41598</b>	1597	P AVG [W] LSW		Average Active Power calculated over the configured average time [W]	RO	
<b>41599</b>	1598	P AVG MIN [W] MSW	L2	Minimum Active Power calculated over the configured average time [W]	RW	FLOAT32
<b>41600</b>	1599	P AVG MIN [W] LSW		Minimum Active Power calculated over the configured average time [W]	RW	
<b>41601</b>	1600	P AVG MAX [W] MSW	L2	Maximum Active Power calculated over the configured average time [WA]	RW	FLOAT32
<b>41602</b>	1601	P AVG MAX [W] LSW		Maximum Active Power calculated over the configured average time [WA]	RW	
<b>41603</b>	1602	P MIN [W] MSW	L2	Minimum Active Power since device power up [W]	RW	FLOAT32
<b>41604</b>	1603	P MIN [W] LSW		Minimum Active Power since device power up [W]	RW	
<b>41605</b>	1604	P MAX [W] MSW	L2	Maximum Active Power since device power up [W]	RW	FLOAT32
<b>41606</b>	1605	P MAX [W] LSW		Maximum Active Power since device power up [W]	RW	
<b>41607</b>	1606	P AVG [W] MSW	L3		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41608</b>	1607	P AVG [W] LSW		Average Active Power calculated over the configured average time [W]	RO	
<b>41609</b>	1608	P AVG MIN [W] MSW	L3	Minimum Active Power calculated over the configured average time [W]	RW	FLOAT32
<b>41610</b>	1609	P AVG MIN [W] LSW		Maximum Active Power calculated over the configured average time [WA]	RW	
<b>41611</b>	1610	P AVG MAX [W] MSW	L3	Minimum Active Power since device power up [W]	RW	FLOAT32
<b>41612</b>	1611	P AVG MAX [W] LSW		Maximum Active Power since device power up [W]	RW	
<b>41613</b>	1612	P MIN [W] MSW	L3	Average Reactive Power calculated over the configured average time [VAR]	RO	FLOAT32
<b>41614</b>	1613	P MIN [W] LSW		Minimum Reactive Power calculated over the configured average time [VAR]	RO	
<b>41615</b>	1614	P MAX [W] MSW	L3	Maximum Reactive Power calculated over the configured average time [VAR]	RO	FLOAT32
<b>41616</b>	1615	P MAX [W] LSW		Minimum Reactive Power since device power up [VAR]	RO	
<b>41617</b>	1616	Q AVG [VAR] MSW	L1	Maximum Reactive Power since device power up [VAR]	RO	FLOAT32
<b>41618</b>	1617	Q AVG [VAR] LSW		Average Reactive Power calculated over the configured average time [VAR]	RO	
<b>41619</b>	1618	Q AVG MIN [VAR] MSW	L1	Minimum Reactive Power calculated over the configured average time [VAR]	RO	FLOAT32
<b>41620</b>	1619	Q AVG MIN [VAR] LSW		Maximum Reactive Power calculated over the configured average time [VAR]	RO	
<b>41621</b>	1620	Q AVG MAX [VAR] MSW	L1	Minimum Reactive Power since device power up [VAR]	RO	FLOAT32
<b>41622</b>	1621	Q AVG MAX [VAR] LSW		Maximum Reactive Power since device power up [VAR]	RO	
<b>41623</b>	1622	Q MIN [VAR] MSW	L1	Minimum Reactive Power calculated over the configured average time [VAR]	RO	FLOAT32
<b>41624</b>	1623	Q MIN [VAR] LSW		Maximum Reactive Power calculated over the configured average time [VAR]	RO	
<b>41625</b>	1624	Q MAX [VAR] MSW	L1	Minimum Reactive Power since device power up [VAR]	RO	FLOAT32
<b>41626</b>	1625	Q MAX [VAR] LSW		Maximum Reactive Power since device power up [VAR]	RO	
<b>41627</b>	1626	Q AVG [VAR] MSW	L2	Average Reactive Power calculated over the configured average time [VAR]	RO	FLOAT32
<b>41628</b>	1627	Q AVG [VAR] LSW		Minimum Reactive Power calculated over the configured average time [VAR]	RO	
<b>41629</b>	1628	Q AVG MIN [VAR] MSW	L2	Maximum Reactive Power calculated over the configured average time [VAR]	RO	FLOAT32
<b>41630</b>	1629	Q AVG MIN [VAR] LSW		Minimum Reactive Power calculated over the configured average time [VAR]	RO	
<b>41631</b>	1630	Q AVG MAX [VAR] MSW	L2	Maximum Reactive Power calculated over the configured average time [VAR]	RO	FLOAT32
<b>41632</b>	1631	Q AVG MAX [VAR] LSW		Minimum Reactive Power calculated over the configured average time [VAR]	RO	
<b>41633</b>	1632	Q MIN [VAR] MSW	L2		RW	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41634</b>	1633	Q MIN [VAR] LSW		Minimum Reactive Power since device power up [VAR]	RW	
<b>41635</b>	1634	Q MAX [VAR] MSW	L2	Maximum Reactive Power since device power up [VAR]	RW	FLOAT32
<b>41636</b>	1635	Q MAX [VAR] LSW		Maximum Reactive Power since device power up [VAR]	RW	
<b>41637</b>	1636	Q AVG [VAR] MSW	L3	Average Reactive Power calculated over the configured average time [VAR]	RO	FLOAT32
<b>41638</b>	1637	Q AVG [VAR] LSW			RO	
<b>41639</b>	1638	Q AVG MIN [VAR] MSW	L3	Minimum Reactive Power calculated over the configured average time [VAR]	RW	FLOAT32
<b>41640</b>	1639	Q AVG MIN [VAR] LSW			RW	
<b>41641</b>	1640	Q AVG MAX [VAR] MSW	L3	Maximum Reactive Power calculated over the configured average time [VAR]	RW	FLOAT32
<b>41642</b>	1641	Q AVG MAX [VAR] LSW			RW	
<b>41643</b>	1642	Q MIN [VAR] MSW	L3	Minimum Reactive Power since device power up [VAR]	RW	FLOAT32
<b>41644</b>	1643	Q MIN [VAR] LSW			RW	
<b>41645</b>	1644	Q MAX [VAR] MSW	L3	Maximum Reactive Power since device power up [VAR]	RW	FLOAT32
<b>41646</b>	1645	Q MAX [VAR] LSW			RW	
<b>41647</b>	1646	S AVG [VA] MSW	L1	Average Apparent Power calculated over the configured average time [VA]	RO	FLOAT32
<b>41648</b>	1647	S AVG [VA] LSW			RO	
<b>41649</b>	1648	S AVG MIN [VA] MSW	L1	Minimum Apparent Power calculated over the configured average time [VA]	RW	FLOAT32
<b>41650</b>	1649	S AVG MIN [VA] LSW			RW	
<b>41651</b>	1650	S AVG MAX [VA] MSW	L1	Maximum Apparent Power calculated over the configured average time [VA]	RW	FLOAT32
<b>41652</b>	1651	S AVG MAX [VA] LSW			RW	
<b>41653</b>	1652	S MIN [VA] MSW	L1	Minimum Apparent Power since device power up [VA]	RW	FLOAT32
<b>41654</b>	1653	S MIN [VA] LSW			RW	
<b>41655</b>	1654	S MAX [VA] MSW	L1	Maximum Apparent Power since device power up [VA]	RW	FLOAT32
<b>41656</b>	1655	S MAX [VA] LSW			RW	
<b>41657</b>	1656	S AVG [VA] MSW	L2	Average Apparent Power calculated over the configured average time [VA]	RO	FLOAT32
<b>41658</b>	1657	S AVG [VA] LSW			RO	
<b>41659</b>	1658	S AVG MIN [VA] MSW	L2	Minimum Apparent Power calculated over the configured average time [VA]	RW	FLOAT32
<b>41660</b>	1659	S AVG MIN [VA] LSW			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41661</b>	1660	S AVG MAX [VA] MSW	L2	Maximum Apparent Power calculated over the configured average time [VA]	RW	FLOAT32
<b>41662</b>	1661	S AVG MAX [VA] LSW			RW	
<b>41663</b>	1662	S MIN [VA] MSW	L2	Minimum Apparent Power since device power up [VA]	RW	FLOAT32
<b>41664</b>	1663	S MIN [VA] LSW			RW	
<b>41665</b>	1664	S MAX [VA] MSW	L2	Maximum Apparent Power since device power up [VA]	RW	FLOAT32
<b>41666</b>	1665	S MAX [VA] LSW			RW	
<b>41667</b>	1666	S AVG [VA] MSW	L3	Average Apparent Power calculated over the configured average time [VA]	RO	FLOAT32
<b>41668</b>	1667	S AVG [VA] LSW			RO	
<b>41669</b>	1668	S AVG MIN [VA] MSW	L3	Minimum Apparent Power calculated over the configured average time [VA]	RW	FLOAT32
<b>41670</b>	1669	S AVG MIN [VA] LSW			RW	
<b>41671</b>	1670	S AVG MAX [VA] MSW	L3	Maximum Apparent Power calculated over the configured average time [VA]	RW	FLOAT32
<b>41672</b>	1671	S AVG MAX [VA] LSW			RW	
<b>41673</b>	1672	S MIN [VA] MSW	L3	Minimum Apparent Power since device power up [VA]	RW	FLOAT32
<b>41674</b>	1673	S MIN [VA] LSW			RW	
<b>41675</b>	1674	S MAX [VA] MSW	L3	Maximum Apparent Power since device power up [VA]	RW	FLOAT32
<b>41676</b>	1675	S MAX [VA] LSW			RW	
<b>41677</b>	1676	PF AVG MSW	L1	Average Power Factor calculated over the configured average time	RO	FLOAT32
<b>41678</b>	1677	PF AVG LSW			RO	
<b>41679</b>	1678	PF AVG MIN MSW	L1	Minimum Power Factor calculated over the configured average time	RW	FLOAT32
<b>41680</b>	1679	PF AVG MIN LSW			RW	
<b>41681</b>	1680	PF AVG MAX MSW	L1	Maximum Power Factor calculated over the configured average time	RW	FLOAT32
<b>41682</b>	1681	PF AVG MAX LSW			RW	
<b>41683</b>	1682	PF MIN MSW	L1	Minimum Power Factor since device power up	RW	FLOAT32
<b>41684</b>	1683	PF MIN LSW			RW	
<b>41685</b>	1684	PF MAX MSW	L1	Maximum Power Factor since device power up	RW	FLOAT32
<b>41686</b>	1685	PF MAX LSW			RW	
<b>41687</b>	1686	PF AVG MSW	L2	Average Power Factor calculated over the configured average time	RO	FLOAT32
<b>41688</b>	1687	PF AVG LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41689</b>	1688	PF AVG MIN MSW	L2	Minimum Power Factor calculated over the configured average time	RW	FLOAT32
<b>41690</b>	1689	PF AVG MIN LSW			RW	
<b>41691</b>	1690	PF AVG MAX MSW	L2	Maximum Power Factor calculated over the configured average time	RW	FLOAT32
<b>41692</b>	1691	PF AVG MAX LSW			RW	
<b>41693</b>	1692	PF MIN MSW	L2	Minimum Power Factor since device power up	RW	FLOAT32
<b>41694</b>	1693	PF MIN LSW			RW	
<b>41695</b>	1694	PF MAX MSW	L2	Maximum Power Factor since device power up	RW	FLOAT32
<b>41696</b>	1695	PF MAX LSW			RW	
<b>41697</b>	1696	PF AVG MSW	L3	Average Power Factor calculated over the configured average time	RO	FLOAT32
<b>41698</b>	1697	PF AVG LSW			RO	
<b>41699</b>	1698	PF AVG MIN MSW	L3	Minimum Power Factor calculated over the configured average time	RW	FLOAT32
<b>41700</b>	1699	PF AVG MIN LSW			RW	
<b>41701</b>	1700	PF AVG MAX MSW	L3	Maximum Power Factor calculated over the configured average time	RW	FLOAT32
<b>41702</b>	1701	PF AVG MAX LSW			RW	
<b>41703</b>	1702	PF MIN MSW	L3	Minimum Power Factor since device power up	RW	FLOAT32
<b>41704</b>	1703	PF MIN LSW			RW	
<b>41705</b>	1704	PF MAX MSW	L3	Maximum Power Factor since device power up	RW	FLOAT32
<b>41706</b>	1705	PF MAX LSW			RW	
<b>41707</b>	1706	P AVG [W] MSW	3PH	Average Active Power calculated over the configured average time [W]	RO	FLOAT32
<b>41708</b>	1707	P AVG [W] LSW			RO	
<b>41709</b>	1708	P AVG MIN [W] MSW	3PH	Minimum Active Power calculated over the configured average time [W]	RW	FLOAT32
<b>41710</b>	1709	P AVG MIN [W] LSW			RW	
<b>41711</b>	1710	P AVG MAX [W] MSW	3PH	Maximum Active Power calculated over the configured average time [WA]	RW	FLOAT32
<b>41712</b>	1711	P AVG MAX [W] LSW			RW	
<b>41713</b>	1712	P MIN [W] MSW	3PH	Minimum Active Power since device power up [W]	RW	FLOAT32
<b>41714</b>	1713	P MIN [W] LSW			RW	
<b>41715</b>	1714	P MAX [W] MSW	3PH	Maximum Active Power since device power up [W]	RW	FLOAT32
<b>41716</b>	1715	P MAX [W] LSW			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41717</b>	1716	Q AVG [VAR] MSW	3PH	Average Reactive Power calculated over the configured average time [VAR]	RO	FLOAT32
<b>41718</b>	1717	Q AVG [VAR] LSW			RO	
<b>41719</b>	1718	Q AVG MIN [VAR] MSW	3PH	Minimum Reactive Power calculated over the configured average time [VAR]	RW	FLOAT32
<b>41720</b>	1719	Q AVG MIN [VAR] LSW			RW	
<b>41721</b>	1720	Q AVG MAX [VAR] MSW	3PH	Maximum Reactive Power calculated over the configured average time [VAR]	RW	FLOAT32
<b>41722</b>	1721	Q AVG MAX [VAR] LSW			RW	
<b>41723</b>	1722	Q MIN [VAR] MSW	3PH	Minimum Reactive Power since device power up [VAR]	RW	FLOAT32
<b>41724</b>	1723	Q MIN [VAR] LSW			RW	
<b>41725</b>	1724	Q MAX [VAR] MSW	3PH	Maximum Reactive Power since device power up [VAR]	RW	FLOAT32
<b>41726</b>	1725	Q MAX [VAR] LSW			RW	
<b>41727</b>	1726	S AVG [VA] MSW	3PH	Average Apparent Power calculated over the configured average time [VA]	RO	FLOAT32
<b>41728</b>	1727	S AVG [VA] LSW			RO	
<b>41729</b>	1728	S AVG MIN [VA] MSW	3PH	Minimum Apparent Power calculated over the configured average time [VA]	RW	FLOAT32
<b>41730</b>	1729	S AVG MIN [VA] LSW			RW	
<b>41731</b>	1730	S AVG MAX [VA] MSW	3PH	Maximum Apparent Power calculated over the configured average time [VA]	RW	FLOAT32
<b>41732</b>	1731	S AVG MAX [VA] LSW			RW	
<b>41733</b>	1732	S MIN [VA] MSW	3PH	Minimum Apparent Power since device power up [VA]	RW	FLOAT32
<b>41734</b>	1733	S MIN [VA] LSW			RW	
<b>41735</b>	1734	S MAX [VA] MSW	3PH	Maximum Apparent Power since device power up [VA]	RW	FLOAT32
<b>41736</b>	1735	S MAX [VA] LSW			RW	
<b>41737</b>	1736	PF AVG MSW	3PH	Average Power Factor calculated over the configured average time	RO	FLOAT32
<b>41738</b>	1737	PF AVG LSW			RO	
<b>41739</b>	1738	PF AVG MIN MSW	3PH	Minimum Power Factor calculated over the configured average time	RW	FLOAT32
<b>41740</b>	1739	PF AVG MIN LSW			RW	
<b>41741</b>	1740	PF AVG MAX MSW	3PH	Maximum Power Factor calculated over the configured average time	RW	FLOAT32
<b>41742</b>	1741	PF AVG MAX LSW			RW	
<b>41743</b>	1742	PF MIN MSW	3PH		RW	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41744</b>	1743	PF MIN LSW		Minimum Power Factor since device power up	RW	
<b>41745</b>	1744	PF MAX MSW	3PH	Maximum Power Factor since device power up	RW	FLOAT32
<b>41746</b>	1745	PF MAX LSW			RW	
<b>41747</b>	1746	E ACTIVE ENERGY (+) [Wh] MMSW	L1	Active Energy (Only +) Q1-Q4 [Wh]	RW	UNSIGNED64
<b>41748</b>	1747	E ACTIVE ENERGY (+) [Wh] MSW			RW	
<b>41749</b>	1748	E ACTIVE ENERGY (+) [Wh] LSW			RW	
<b>41750</b>	1749	E ACTIVE ENERGY (+) [Wh] LLSW			RW	
<b>41751</b>	1750	E ACTIVE ENERGY (+) [Wh] MMSW	L2	Active Energy (Only +) Q1-Q4 [Wh]	RW	UNSIGNED64
<b>41752</b>	1751	E ACTIVE ENERGY (+) [Wh] MSW			RW	
<b>41753</b>	1752	E ACTIVE ENERGY (+) [Wh] LSW			RW	
<b>41754</b>	1753	E ACTIVE ENERGY (+) [Wh] LLSW			RW	
<b>41755</b>	1754	E ACTIVE ENERGY (+) [Wh] MMSW	L3	Active Energy (Only +) Q1-Q4 [Wh]	RW	UNSIGNED64
<b>41756</b>	1755	E ACTIVE ENERGY (+) [Wh] MSW			RW	
<b>41757</b>	1756	E ACTIVE ENERGY (+) [Wh] LSW			RW	
<b>41758</b>	1757	E ACTIVE ENERGY (+) [Wh] LLSW			RW	
<b>41759</b>	1758	E ACTIVE ENERGY (-) [Wh] MMSW	L1	Active Energy (Only -) Q2-Q3 [Wh]	RW	UNSIGNED64
<b>41760</b>	1759	E ACTIVE ENERGY (-) [Wh] MSW			RW	
<b>41761</b>	1760	E ACTIVE ENERGY (-) [Wh] LSW			RW	
<b>41762</b>	1761	E ACTIVE ENERGY (-) [Wh] LLSW			RW	
<b>41763</b>	1762	E ACTIVE ENERGY (-) [Wh] MMSW	L2	Active Energy (Only -) Q2-Q3 [Wh]	RW	UNSIGNED64
<b>41764</b>	1763	E ACTIVE ENERGY (-) [Wh] MSW			RW	
<b>41765</b>	1764	E ACTIVE ENERGY (-) [Wh] LSW			RW	
<b>41766</b>	1765	E ACTIVE ENERGY (-) [Wh] LLSW			RW	
<b>41767</b>	1766	E ACTIVE ENERGY (-) [Wh] MMSW	L3	Active Energy (Only -) Q2-Q3 [Wh]	RW	UNSIGNED64
<b>41768</b>	1767	E ACTIVE ENERGY (-) [Wh] MSW			RW	
<b>41769</b>	1768	E ACTIVE ENERGY (-) [Wh] LSW			RW	
<b>41770</b>	1769	E ACTIVE ENERGY (-) [Wh] LLSW			RW	
<b>41771</b>	1770	E REACTIVE ENERGY (+) [VARh] MMSW	L1	Reactive Energy (Only +) Q1-Q2 [VARh]	RW	UNSIGNED64
<b>41772</b>	1771	E REACTIVE ENERGY (+) [VARh] MSW			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41773</b>	1772	E REACTIVE ENERGY (+) [VARh] LSW	L2	Reactive Energy (Only +) Q1-Q2 [VARh]	RW	UNSIGNED64
<b>41774</b>	1773	E REACTIVE ENERGY (+) [VARh] LLSW			RW	
<b>41775</b>	1774	E REACTIVE ENERGY (+) [VARh] MMSW			RW	
<b>41776</b>	1775	E REACTIVE ENERGY (+) [VARh] MSW			RW	
<b>41777</b>	1776	E REACTIVE ENERGY (+) [VARh] LSW	L3	Reactive Energy (Only +) Q1-Q2 [VARh]	RW	UNSIGNED64
<b>41778</b>	1777	E REACTIVE ENERGY (+) [VARh] LLSW			RW	
<b>41779</b>	1778	E REACTIVE ENERGY (+) [VARh] MMSW			RW	
<b>41780</b>	1779	E REACTIVE ENERGY (+) [VARh] MSW			RW	
<b>41781</b>	1780	E REACTIVE ENERGY (+) [VARh] LSW	L1	Reactive Energy (Only +) Q1-Q2 [VARh]	RW	UNSIGNED64
<b>41782</b>	1781	E REACTIVE ENERGY (+) [VARh] LLSW			RW	
<b>41783</b>	1782	E REACTIVE ENERGY (-) [VARh] MMSW			RW	
<b>41784</b>	1783	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41785</b>	1784	E REACTIVE ENERGY (-) [VARh] LSW	L2	Reactive Energy (Only -) Q3-Q4 [VARh]	RW	UNSIGNED64
<b>41786</b>	1785	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41787</b>	1786	E REACTIVE ENERGY (-) [VARh] MMSW			RW	
<b>41788</b>	1787	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41789</b>	1788	E REACTIVE ENERGY (-) [VARh] LSW	L3	Reactive Energy (Only -) Q3-Q4 [VARh]	RW	UNSIGNED64
<b>41790</b>	1789	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41791</b>	1790	E REACTIVE ENERGY (-) [VARh] MMSW			RW	
<b>41792</b>	1791	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41793</b>	1792	E REACTIVE ENERGY (-) [VARh] LSW	L1	Reactive Energy (Only -) Q3-Q4 [VARh]	RW	UNSIGNED64
<b>41794</b>	1793	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41795</b>	1794	E REACTIVE ENERGY (+)[VARh] MMSW			RW	UNSIGNED64
<b>41796</b>	1795	E REACTIVE ENERGY (+)[VARh] MSW			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41797</b>	1796	E REACTIVE ENERGY (+)[VARh] LSW			RW	
<b>41798</b>	1797	E REACTIVE ENERGY (+)[VARh] LLSW			RW	
<b>41799</b>	1798	E REACTIVE ENERGY (+)[VARh] MMSW	L2	Reactive Energy (Only +) Q1 [VARh]	RW	UNSIGNED64
<b>41800</b>	1799	E REACTIVE ENERGY (+)[VARh] MSW			RW	
<b>41801</b>	1800	E REACTIVE ENERGY (+)[VARh] LSW			RW	
<b>41802</b>	1801	E REACTIVE ENERGY (+)[VARh] LLSW			RW	
<b>41803</b>	1802	E REACTIVE ENERGY (+)[VARh] MMSW	L3	Reactive Energy (Only +) Q1 [VARh]	RW	UNSIGNED64
<b>41804</b>	1803	E REACTIVE ENERGY (+)[VARh] MSW			RW	
<b>41805</b>	1804	E REACTIVE ENERGY (+)[VARh] LSW			RW	
<b>41806</b>	1805	E REACTIVE ENERGY (+)[VARh] LLSW			RW	
<b>41807</b>	1806	E REACTIVE ENERGY (-) [VARh] MMSW	L1	Reactive Energy (Only -) Q2 [VARh]	RW	UNSIGNED64
<b>41808</b>	1807	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41809</b>	1808	E REACTIVE ENERGY (-) [VARh] LSW			RW	
<b>41810</b>	1809	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41811</b>	1810	E REACTIVE ENERGY (-) [VARh] MMSW	L2	Reactive Energy (Only -) Q2 [VARh]	RW	UNSIGNED64
<b>41812</b>	1811	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41813</b>	1812	E REACTIVE ENERGY (-) [VARh] LSW			RW	
<b>41814</b>	1813	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41815</b>	1814	E REACTIVE ENERGY (-) [VARh] MMSW	L3	Reactive Energy (Only -) Q2 [VARh]	RW	UNSIGNED64
<b>41816</b>	1815	E REACTIVE ENERGY (-) [VARh] MSW			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41817</b>	1816	E REACTIVE ENERGY (-) [VARh] LSW	L1	Reactive Energy (Only -) Q4 [VARh]	RW	UNSIGNED64
<b>41818</b>	1817	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41819</b>	1818	E REACTIVE ENERGY (-)[VARh] MMSW			RW	
<b>41820</b>	1819	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41821</b>	1820	E REACTIVE ENERGY (-) [VARh] LSW	L2	Reactive Energy (Only -) Q4 [VARh]	RW	UNSIGNED64
<b>41822</b>	1821	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41823</b>	1822	E REACTIVE ENERGY (-)[VARh] MMSW			RW	
<b>41824</b>	1823	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41825</b>	1824	E REACTIVE ENERGY (-) [VARh] LSW	L3	Reactive Energy (Only -) Q4 [VARh]	RW	UNSIGNED64
<b>41826</b>	1825	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41827</b>	1826	E REACTIVE ENERGY (-)[VARh] MMSW			RW	
<b>41828</b>	1827	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41829</b>	1828	E REACTIVE ENERGY (-) [VARh] LSW	L1	Reactive Energy (Only -) Q3 [VARh]	RW	UNSIGNED64
<b>41830</b>	1829	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41831</b>	1830	E REACTIVE ENERGY (-)[VARh] MMSW			RW	
<b>41832</b>	1831	E REACTIVE ENERGY (-)[VARh] MSW			RW	
<b>41833</b>	1832	E REACTIVE ENERGY (-)[VARh] LSW	L2	Reactive Energy (Only -) Q3 [VARh]	RW	UNSIGNED64
<b>41834</b>	1833	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41835</b>	1834	E REACTIVE ENERGY (-) [VARh] MMSW			RW	
<b>41836</b>	1835	E REACTIVE ENERGY (-) [VARh] MSW			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41837</b>	1836	E REACTIVE ENERGY (-) [VARh] LSW	L3	Reactive Energy (Only -) Q3 [VARh]	RW	UNSIGNED64
<b>41838</b>	1837	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41839</b>	1838	E REACTIVE ENERGY (-) [VARh] MMSW			RW	
<b>41840</b>	1839	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41841</b>	1840	E REACTIVE ENERGY (-) [VARh] LSW			RW	
<b>41842</b>	1841	E REACTIVE ENERGY (-) [VARh] LLSW	L1	Total Active Energy [Wh]	RW	UNSIGNED64
<b>41843</b>	1842	E ACTIVE ENERGY [Wh] MMSW			RW	
<b>41844</b>	1843	E ACTIVE ENERGY [Wh] MSW			RW	
<b>41845</b>	1844	E ACTIVE ENERGY [Wh] LSW			RW	
<b>41846</b>	1845	E ACTIVE ENERGY [Wh] LLSW	L2	Total Active Energy [Wh]	RW	SIGNED64
<b>41847</b>	1846	E ACTIVE ENERGY [Wh] MMSW			RW	
<b>41848</b>	1847	E ACTIVE ENERGY [Wh] MSW			RW	
<b>41849</b>	1848	E ACTIVE ENERGY [Wh] LSW			RW	
<b>41850</b>	1849	E ACTIVE ENERGY [Wh] LLSW	L3	Total Active Energy [Wh]	RW	SIGNED64
<b>41851</b>	1850	E ACTIVE ENERGY [Wh] MMSW			RW	
<b>41852</b>	1851	E ACTIVE ENERGY [Wh] MSW			RW	
<b>41853</b>	1852	E ACTIVE ENERGY [Wh] LSW			RW	
<b>41854</b>	1853	E ACTIVE ENERGY [Wh] LLSW	L1	Total Reactive Energy [VARh]	RW	SIGNED64
<b>41855</b>	1854	E REACTIVE ENERGY [VARh] MMSW			RW	
<b>41856</b>	1855	E REACTIVE ENERGY [VARh] MSW			RW	
<b>41857</b>	1856	E REACTIVE ENERGY [VARh] LSW			RW	
<b>41858</b>	1857	E REACTIVE ENERGY [VARh] LLSW	L2	Total Reactive Energy [VARh]	RW	SIGNED64
<b>41859</b>	1858	E REACTIVE ENERGY [VARh] MMSW			RW	
<b>41860</b>	1859	E REACTIVE ENERGY [VARh] MSW			RW	
<b>41861</b>	1860	E REACTIVE ENERGY [VARh] LSW			RW	
<b>41862</b>	1861	E REACTIVE ENERGY [VARh] LLSW	L3	Total Reactive Energy [VARh]	RW	SIGNED64
<b>41863</b>	1862	E REACTIVE ENERGY [VARh] MMSW			RW	
<b>41864</b>	1863	E REACTIVE ENERGY [VARh] MSW			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41865</b>	1864	E REACTIVE ENERGY [VARh] LSW	L1	Total Apparent Energy [VAh]	RW	SIGNED64
<b>41866</b>	1865	E REACTIVE ENERGY [VARh] LLSW			RW	
<b>41867</b>	1866	E REACTIVE ENERGY [VARh] MMSW			RW	
<b>41868</b>	1867	E REACTIVE ENERGY [VARh] MSW			RW	
<b>41869</b>	1868	E REACTIVE ENERGY [VARh] LSW			RW	
<b>41870</b>	1869	E REACTIVE ENERGY [VARh] LLSW	L2	Total Apparent Energy [VAh]	RW	SIGNED64
<b>41871</b>	1870	E REACTIVE ENERGY [VARh] MMSW			RW	
<b>41872</b>	1871	E REACTIVE ENERGY [VARh] MSW			RW	
<b>41873</b>	1872	E REACTIVE ENERGY [VARh] LSW			RW	
<b>41874</b>	1873	E REACTIVE ENERGY [VARh] LLSW			RW	
<b>41875</b>	1874	E REACTIVE ENERGY [VARh] MMSW	L3	Total Apparent Energy [VAh]	RW	SIGNED64
<b>41876</b>	1875	E REACTIVE ENERGY [VARh] MSW			RW	
<b>41877</b>	1876	E REACTIVE ENERGY [VARh] LSW			RW	
<b>41878</b>	1877	E REACTIVE ENERGY [VARh] LLSW			RW	
<b>41879</b>	1878	E ACTIVE ENERGY (+) [Wh] MMSW	3PH	Active Energy (Only +) Q1-Q4 [Wh]	RW	UNSIGNED64
<b>41880</b>	1879	E ACTIVE ENERGY (+) [Wh] MSW			RW	
<b>41881</b>	1880	E ACTIVE ENERGY (+) [Wh] LSW			RW	
<b>41882</b>	1881	E ACTIVE ENERGY (+) [Wh] LLSW			RW	
<b>41883</b>	1882	E ACTIVE ENERGY (-) [Wh] MMSW	3PH	Active Energy (Only -) Q2-Q3 [Wh]	RW	UNSIGNED64
<b>41884</b>	1883	E ACTIVE ENERGY (-) [Wh] MSW			RW	
<b>41885</b>	1884	E ACTIVE ENERGY (-) [Wh] LSW			RW	
<b>41886</b>	1885	E ACTIVE ENERGY (-) [Wh] LLSW			RW	
<b>41887</b>	1886	E REACTIVE ENERGY (+) [VARh] MMSW	3PH	Reactive Energy (Only +) Q1-Q2 [Wh]	RW	UNSIGNED64
<b>41888</b>	1887	E REACTIVE ENERGY (+) [VARh] MSW			RW	
<b>41889</b>	1888	E REACTIVE ENERGY (+) [VARh] LSW			RW	
<b>41890</b>	1889	E REACTIVE ENERGY (+) [VARh] LLSW			RW	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41891</b>	1890	E REACTIVE ENERGY (-) [VARh] MMSW	3PH	Reactive Energy (Only -) Q3-Q4 [Wh]	RW	UNSIGNED64
<b>41892</b>	1891	E REACTIVE ENERGY (-) [VARh] MSW			RW	
<b>41893</b>	1892	E REACTIVE ENERGY (-) [VARh] LSW			RW	
<b>41894</b>	1893	E REACTIVE ENERGY (-) [VARh] LLSW			RW	
<b>41895</b>	1894	E ACTIVE ENERGY [Wh] MMSW	3PH	Total Active Energy [Wh]	RW	SIGNED64
<b>41896</b>	1895	E ACTIVE ENERGY [Wh] MSW			RW	
<b>41897</b>	1896	E ACTIVE ENERGY [Wh] LSW			RW	
<b>41898</b>	1897	E ACTIVE ENERGY [Wh] LLSW			RW	
<b>41899</b>	1898	E REACTIVE ENERGY [VARh] MMSW	3PH	Total Reactive Energy [Varh]	RW	SIGNED64
<b>41900</b>	1899	E REACTIVE ENERGY [VARh] MSW			RW	
<b>41901</b>	1900	E REACTIVE ENERGY [VARh] LSW			RW	
<b>41902</b>	1901	E REACTIVE ENERGY [VARh] LLSW			RW	
<b>41903</b>	1902	E APPARENT ENERGY [VAh] MMSW	3PH	Total Apparent Energy [Vah]	RW	SIGNED64
<b>41904</b>	1903	E APPARENT ENERGY [VAh] MSW			RW	
<b>41905</b>	1904	E APPARENT ENERGY [VAh] LSW			RW	
<b>41906</b>	1905	E APPARENT ENERGY [VAh] LLSW			RW	
<b>41923</b>	1922	THD I AVG MSW	L1	Average Current THD calculated over the configured average time	RO	FLOAT32
<b>41924</b>	1923	THD I AVG LSW			RO	
<b>41925</b>	1924	THD I AVG MIN MSW	L1	Minimum Current THD calculated over the configured average time	RW	FLOAT32
<b>41926</b>	1925	THD I AVG MIN LSW			RW	
<b>41927</b>	1926	THD I AVG MAX MSW	L1	Maximum Current THD calculated over the configured average time	RW	FLOAT32
<b>41928</b>	1927	THD I AVG MAX LSW			RW	
<b>41929</b>	1928	THD I MIN MSW	L1	Minimum Current THD since device power up	RW	FLOAT32
<b>41930</b>	1929	THD I MIN LSW			RW	
<b>41931</b>	1930	THD I MAX MSW	L1	Maximum Current THD since device power up	RW	FLOAT32
<b>41932</b>	1931	THD I MAX LSW			RW	
<b>41933</b>	1932	THD I AVG MSW	L2	Average Current THD calculated over the configured average time	RO	FLOAT32
<b>41934</b>	1933	THD I AVG LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41935</b>	1934	THD I AVG MIN MSW	L2	Minimum Current THD calculated over the configured average time	RW	FLOAT32
<b>41936</b>	1935	THD I AVG MIN LSW			RW	
<b>41937</b>	1936	THD I AVG MAX MSW	L2	Maximum Current THD calculated over the configured average time	RW	FLOAT32
<b>41938</b>	1937	THD I AVG MAX LSW			RW	
<b>41939</b>	1938	THD I MIN MSW	L2	Minimum Current THD since device power up	RW	FLOAT32
<b>41940</b>	1939	THD I MIN LSW			RW	
<b>41941</b>	1940	THD I MAX MSW	L2	Maximum Current THD since device power up	RW	FLOAT32
<b>41942</b>	1941	THD I MAX LSW			RW	
<b>41943</b>	1942	THD I AVG MSW	L3	Average Current THD calculated over the configured average time	RO	FLOAT32
<b>41944</b>	1943	THD I AVG LSW			RO	
<b>41945</b>	1944	THD I AVG MIN MSW	L3	Minimum Current THD calculated over the configured average time	RW	FLOAT32
<b>41946</b>	1945	THD I AVG MIN LSW			RW	
<b>41947</b>	1946	THD I AVG MAX MSW	L3	Maximum Current THD calculated over the configured average time	RW	FLOAT32
<b>41948</b>	1947	THD I AVG MAX LSW			RW	
<b>41949</b>	1948	THD I MIN MSW	L3	Minimum Current THD since device power up	RW	FLOAT32
<b>41950</b>	1949	THD I MIN LSW			RW	
<b>41951</b>	1950	THD I MAX MSW	L3	Maximum Current THD since device power up	RW	FLOAT32
<b>41952</b>	1951	THD I MAX LSW			RW	
<b>41953</b>	1952	THD I AVG MSW	L1	Average Voltage THD calculated over the configured average time	RO	FLOAT32
<b>41954</b>	1953	THD V AVG LSW			RO	
<b>41955</b>	1954	THD V AVG MIN MSW	L1	Minimum Voltage THD calculated over the configured average time	RW	FLOAT32
<b>41956</b>	1955	THD V AVG MIN LSW			RW	
<b>41957</b>	1956	THD V AVG MAX MSW	L1	Maximum Voltage THD calculated over the configured average time	RW	FLOAT32
<b>41958</b>	1957	THD V AVG MAX LSW			RW	
<b>41959</b>	1958	THD V MIN MSW	L1	Minimum Voltage THD since device power up	RW	FLOAT32
<b>41960</b>	1959	THD V MIN LSW			RW	
<b>41961</b>	1960	THD V MAX MSW	L1	Maximum Voltage THD since device power up	RW	FLOAT32
<b>41962</b>	1961	THD V MAX LSW			RW	
<b>41963</b>	1962	THD I AVG MSW	L2		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>41964</b>	1963	THD V AVG LSW		Average Voltage THD calculated over the configured average time	RO	
<b>41965</b>	1964	THD V AVG MIN MSW	L2	Minimum Voltage THD calculated over the configured average time	RW	FLOAT32
<b>41966</b>	1965	THD V AVG MIN LSW			RW	
<b>41967</b>	1966	THD V AVG MAX MSW	L2	Maximum Voltage THD calculated over the configured average time	RW	FLOAT32
<b>41968</b>	1967	THD V AVG MAX LSW			RW	
<b>41969</b>	1968	THD V MIN MSW	L2	Minimum Voltage THD since device power up	RW	FLOAT32
<b>41970</b>	1969	THD V MIN LSW			RW	
<b>41971</b>	1970	THD V MAX MSW	L2	Maximum Voltage THD since device power up	RW	FLOAT32
<b>41972</b>	1971	THD V MAX LSW			RW	
<b>41973</b>	1972	THD I AVG MSW	L3	Average Voltage THD calculated over the configured average time	RO	FLOAT32
<b>41974</b>	1973	THD V AVG LSW			RO	
<b>41975</b>	1974	THD V AVG MIN MSW	L3	Minimum Voltage THD calculated over the configured average time	RW	FLOAT32
<b>41976</b>	1975	THD V AVG MIN LSW			RW	
<b>41977</b>	1976	THD V AVG MAX MSW	L3	Maximum Voltage THD calculated over the configured average time	RW	FLOAT32
<b>41978</b>	1977	THD V AVG MAX LSW			RW	
<b>41979</b>	1978	THD V MIN MSW	L3	Minimum Voltage THD since device power up	RW	FLOAT32
<b>41980</b>	1979	THD V MIN LSW			RW	
<b>41981</b>	1980	THD V MAX MSW	L3	Maximum Voltage THD since device power up	RW	FLOAT32
<b>41982</b>	1981	THD V MAX LSW			RW	
<b>41995</b>	1994	Vsys [V] MSW	3PH	System Voltage (VL1+VL2+VL3)/3	RW	FLOAT32
<b>41996</b>	1995	Vsys [V] LSW			RW	
<b>41997</b>	1996	Isys [A] MSW	3PH	System Current (IL1+IL2+IL3)	RW	FLOAT32
<b>41998</b>	1997	Isys [A] LSW			RW	
<b>42019</b>	2018	COUNTER 1 MSW	-	Digital Input 1 Counter	RW	UNSIGNED INT 32
<b>42020</b>	2019	COUNTER 1 LSW			RW	
<b>42021</b>	2020	COUNTER 2 MSW	-	Digital Input 2 Counter	RW	UNSIGNED INT 32
<b>42022</b>	2021	COUNTER 2 LSW			RW	
<b>42023</b>	2022	E ACTIVE ENERGY (+) [KWh] MSW	L1	Active Energy (Only +) Q1-Q4	RO	FLOAT 32
<b>42024</b>	2023	E ACTIVE ENERGY (+) [KWh] LSW			RO	

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>42025</b>	2024	E ACTIVE ENERGY (+) [KWh] MSW	L2	Active Energy (Only +) Q1-Q4	RO	FLOAT 32
<b>42026</b>	2025	E ACTIVE ENERGY (+) [KWh] LSW			RO	
<b>42027</b>	2026	E ACTIVE ENERGY (+) [KWh] MSW	L3	Active Energy (Only +) Q1-Q4	RO	FLOAT 32
<b>42028</b>	2027	E ACTIVE ENERGY (+) [KWh] LSW			RO	
<b>42029</b>	2028	E ACTIVE ENERGY (-) [KWh] MSW	L1	Active Energy (Only -) Q2-Q3	RO	FLOAT 32
<b>42030</b>	2029	E ACTIVE ENERGY (-) [KWh] LSW			RO	
<b>42031</b>	2030	E ACTIVE ENERGY (-) [KWh] MSW	L2	Active Energy (Only -) Q2-Q3	RO	FLOAT 32
<b>42032</b>	2031	E ACTIVE ENERGY (-) [KWh] LSW			RO	
<b>42033</b>	2032	E ACTIVE ENERGY (-) [KWh] MSW	L3	Active Energy (Only -) Q2-Q3	RO	FLOAT 32
<b>42034</b>	2033	E ACTIVE ENERGY (-) [KWh] LSW			RO	
<b>42035</b>	2034	E REACTIVE ENERGY (+) [KVARh] MSW	L1	Reactive Energy (Only +) Q1-Q2	RO	FLOAT 32
<b>42036</b>	2035	E REACTIVE ENERGY (+) [KVARh] LSW			RO	
<b>42037</b>	2036	E REACTIVE ENERGY (+) [KVARh] MSW	L2	Reactive Energy (Only +) Q1-Q2	RO	FLOAT 32
<b>42038</b>	2037	E REACTIVE ENERGY (+) [KVARh] LSW			RO	
<b>42039</b>	2038	E REACTIVE ENERGY (+) [KVARh] MSW	L3	Reactive Energy (Only +) Q1-Q2	RO	FLOAT 32
<b>42040</b>	2039	E REACTIVE ENERGY (+) [KVARh] LSW			RO	
<b>42041</b>	2040	E REACTIVE ENERGY (-) [KVARh] MSW	L1	Reactive Energy (Only -) Q3-Q4	RO	FLOAT 32
<b>42042</b>	2041				RO	
<b>42043</b>	2042	E REACTIVE ENERGY (-) [KVARh] LSW	L2	Reactive Energy (Only -) Q3-Q4	RO	FLOAT32
<b>42044</b>	2043	E REACTIVE ENERGY (-) [KVARh] MSW			RO	
<b>42045</b>	2044	E REACTIVE ENERGY (-) [KVARh] LSW	L3	Reactive Energy (Only -) Q3-Q4	RO	FLOAT32
<b>42046</b>	2045	E REACTIVE ENERGY (-) [KVARh] MSW			RO	
<b>42047</b>	2046	E REACTIVE ENERGY (+)[KVARh] MSW	L1	Reactive Energy (Only +) Q1 [KVARh]	RO	FLOAT32
<b>42048</b>	2047	E REACTIVE ENERGY (+)[KVARh] LSW			RO	
<b>42049</b>	2048	E REACTIVE ENERGY (+)[KVARh] MSW	L2	Reactive Energy (Only +) Q1 [KVARh]	RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>42050</b>	2049	E REACTIVE ENERGY (+)[KVARh] LSW			RO	
<b>42051</b>	2050	E REACTIVE ENERGY (+)[KVARh] MSW	L3	Reactive Energy (Only +) Q1 [KVARh]	RO	FLOAT32
<b>42052</b>	2051	E REACTIVE ENERGY (+)[KVARh] LSW			RO	
<b>42053</b>	2052	E REACTIVE ENERGY (-) [KVARh] MSW	L1	Reactive Energy (Only -) Q3 [KVARh]	RO	FLOAT32
<b>42054</b>	2053	E REACTIVE ENERGY (-) [KVARh] LSW			RO	
<b>42055</b>	2054	E REACTIVE ENERGY (-) [KVARh] MSW	L2	Reactive Energy (Only -) Q3 [KVARh]	RO	FLOAT32
<b>42056</b>	2055	E REACTIVE ENERGY (-) [KVARh] LSW			RO	
<b>42057</b>	2056	E REACTIVE ENERGY (-) [KVARh] MSW	L3	Reactive Energy (Only -) Q3 [KVARh]	RO	FLOAT32
<b>42058</b>	2057	E REACTIVE ENERGY (-) [KVARh] LSW			RO	
<b>42059</b>	2058	E REACTIVE ENERGY (+) [KVARh] MSW	L1	Reactive Energy (Only +) Q2 [KVARh]	RO	FLOAT32
<b>42060</b>	2059	E REACTIVE ENERGY (+) [KVARh] LSW			RO	
<b>42061</b>	2060	E REACTIVE ENERGY (+) [KVARh] MSW	L2	Reactive Energy (Only +) Q2 [KVARh]	RO	FLOAT32
<b>42062</b>	2061	E REACTIVE ENERGY (+) [KVARh] LSW			RO	
<b>42063</b>	2062	E REACTIVE ENERGY (+) [KVARh] MSW	L3	Reactive Energy (Only +) Q2 [KVARh]	RO	FLOAT32
<b>42064</b>	2063	E REACTIVE ENERGY (+) [KVARh] LSW			RO	
<b>42065</b>	2064	E REACTIVE ENERGY (-) [KVARh] MSW	L1	Reactive Energy (Only -) Q4 [KVARh]	RO	FLOAT32
<b>42066</b>	2065	E REACTIVE ENERGY (-) [KVARh] LSW			RO	
<b>42067</b>	2066	E REACTIVE ENERGY (-) [KVARh] MSW	L2	Reactive Energy (Only -) Q4 [KVARh]	RO	FLOAT32
<b>42068</b>	2067	E REACTIVE ENERGY (-) [KVARh] LSW			RO	
<b>42069</b>	2068	E REACTIVE ENERGY (-) [KVARh] MSW	L3	Reactive Energy (Only -) Q4 [KVARh]	RO	FLOAT32
<b>42070</b>	2069	E REACTIVE ENERGY (-) [KVARh] LSW			RO	
<b>42071</b>	2070	TOT E ACTIVE ENERGY [KWh] MSW	L1	Total Active Energy [KWh]	RO	FLOAT32
<b>42072</b>	2071	TOT E ACTIVE ENERGY [KWh] LSW			RO	
<b>42073</b>	2072	TOT E ACTIVE ENERGY [KWh] MSW	L2		RO	FLOAT32

ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>42074</b>	2073	TOT E ACTIVE ENERGY [KWh] LSW		Total Active Energy [KWh]	RO	
<b>42075</b>	2074	TOT E ACTIVE ENERGY [KWh] MSW	L3	Total Active Energy [KWh]	RO	FLOAT32
<b>42076</b>	2075	TOT E ACTIVE ENERGY [KWh] LSW			RO	
<b>42077</b>	2076	TOT E REACTIVE ENERGY [KVARh]MSW	L1	Total Reactive Energy [KVARh]	RO	FLOAT32
<b>42078</b>	2077	TOT E REACTIVE ENERGY [KVARh]LSW			RO	
<b>42079</b>	2078	TOT E REACTIVE ENERGY [KVARh]MSW	L2	Total Reactive Energy [KVARh]	RO	FLOAT32
<b>42080</b>	2079	TOT E REACTIVE ENERGY [KVARh]LSW			RO	
<b>42081</b>	2080	TOT E REACTIVE ENERGY [KVARh]MSW	L3	Total Reactive Energy [KVARh]	RO	FLOAT32
<b>42082</b>	2081	TOT E REACTIVE ENERGY [KVARh]LSW			RO	
<b>42083</b>	2082	TOT E APPARENT ENERGY [KVARh] MSW	L1	Total Apparent Energy [VAh]	RO	FLOAT32
<b>42084</b>	2083	TOT E APPARENT ENERGY [KVARh] LSW			RO	
<b>42085</b>	2084	TOT E APPARENT ENERGY [KVARh] MSW	L2	Total Apparent Energy [VAh]	RO	FLOAT32
<b>42086</b>	2085	TOT E APPARENT ENERGY [KVARh] LSW			RO	
<b>42087</b>	2086	TOT E APPARENT ENERGY [KVARh] MSW	L3	Total Apparent Energy [VAh]	RO	FLOAT32
<b>42088</b>	2087	TOT E APPARENT ENERGY [KVARh] LSW			RO	
<b>42089</b>	2088	E ACTIVE ENERGY (+) [KWh] MSW	3PH	Active Energy (Only +) Q1-Q4 [KWh]	RO	FLOAT32
<b>42090</b>	2089	E ACTIVE ENERGY (+) [KWh] LSW			RO	
<b>42091</b>	2090	E ACTIVE ENERGY (-) [KWh] MSW	3PH	Active Energy (Only -) Q2-Q3 [KWh]	RO	FLOAT32
<b>42092</b>	2091	E ACTIVE ENERGY (-) [KWh] LSW			RO	
<b>42093</b>	2092	E REACTIVE ENERGY (+) [KVARh] MSW	3PH	Reactive Energy (Only +) Q1-Q2 [KWh]	RO	FLOAT32
<b>42094</b>	2093	E REACTIVE ENERGY (+) [KVARh] LSW			RO	
<b>42095</b>	2094	E REACTIVE ENERGY (-) [KVARh] MSW	3PH	Reactive Energy (Only -) Q3-Q4 [KWh]	RO	FLOAT32
<b>42096</b>	2095	E REACTIVE ENERGY (-) [KVARh] LSW			RO	
<b>42097</b>	2096	TOT E ACTIVE ENERGY [KWh] MSW	3PH	Total Active Energy [KWh]	RO	FLOAT32
<b>42098</b>	2097	TOT E ACTIVE ENERGY [KWh] LSW			RO	

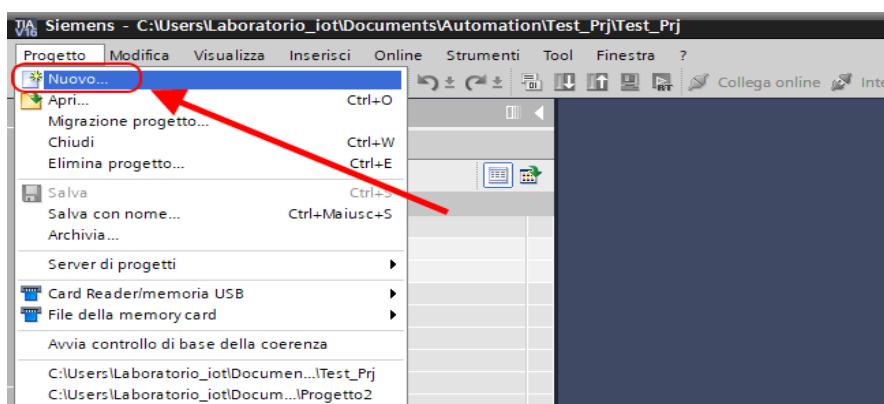
ADDRESS (4x)	ADDRESS OFFSET	REGISTER	PHASE	DESCRIPTION	W/R	TYPE
<b>42099</b>	2098	TOT E REACTIVE ENERGY [KVARh] MSW	3PH	Total Reactive Energy [KVARh]	RO	FLOAT32
<b>42100</b>	2099	TOT E REACTIVE ENERGY [KVARh] LSW			RO	
<b>42101</b>	2100	TOT E APPARENT ENERGY [KVAh] MSW	3PH	Total Apparent Energy [KVAh]	RO	FLOAT32
<b>42102</b>	2101	TOT E APPARENT ENERGY [KVAh] LSW			RO	
<b>42103</b>	2102	TOT E REACTIVE ENERGY (+) ABSORBED [KVARh] MSW	3PH	Total Absorbed Reactive Energy (+) [KVARh]	RO	FLOAT32
<b>42104</b>	2103	TOT E REACTIVE ENERGY (+) ABSORBED [KVARh] LSW			RO	
<b>42105</b>	2104	TOT E REACTIVE ENERGY (-) ABSORBED [KVARh] MSW	3PH	Total Absorbed Reactive Energy (-) [KVARh]	RO	FLOAT32
<b>42106</b>	2105	TOT E REACTIVE ENERGY (-) ABSORBED [KVARh] LSW			RO	
<b>42107</b>	2106	TOT E REACTIVE ENERGY (+) DELIVERED [KVARh] MSW	3PH	Total Delivered Reactive Energy (+) [KVARh]	RO	FLOAT32
<b>42108</b>	2107	TOT E REACTIVE ENERGY (+) DELIVERED [KVARh] LSW			RO	
<b>42109</b>	2108	TOT E REACTIVE ENERGY (-) DELIVERED [KVARh] MSW	3PH	Total Delivered Reactive Energy (-) [KVARh]	RO	FLOAT32
<b>42110</b>	2109	TOT E REACTIVE ENERGY (-) DELIVERED [KVARh] LSW			RO	
<b>42111</b>	2110	TOTAL RECATIVE ENERGY L1 MSW	3PH	Energia reattiva totale L1	RO	FLOAT32
<b>42112</b>	2111	TOTAL RECATIVE ENERGY L1 LSW			RO	
<b>42113</b>	2112	TOTAL RECATIVE ENERGY L2 MSW		Energia reattiva totale L2	RO	FLOAT32
<b>42114</b>	2113	TOTAL RECATIVE ENERGY L2 LSW			RO	
<b>42115</b>	2114	TOTAL RECATIVE ENERGY L3 MSW	3PH	Energia reattiva totale L3	RO	FLOAT32
<b>42116</b>	2115	TOTAL RECATIVE ENERGY L3 LSW			RO	
<b>45075</b>	5074	DEMAND VALUE [min]	-	Value of the demand value for the average [minutes]. The modification is enabled after a reboot.	RW*	UNSIGNED INT 32

## 23. PROFINET IO COMMUNICATION PROTOCOL (MODBUS PROTOCOL MODELS ONLY)

Type of protocol: Class A Device, Cyclic Real-time (RT) and Acyclic Data

### 23.1. CREATING A PROJECT WITH SIEMENS PLC (TIA PORTAL 16) (PROFINET IO PROTOCOL MODELS ONLY)

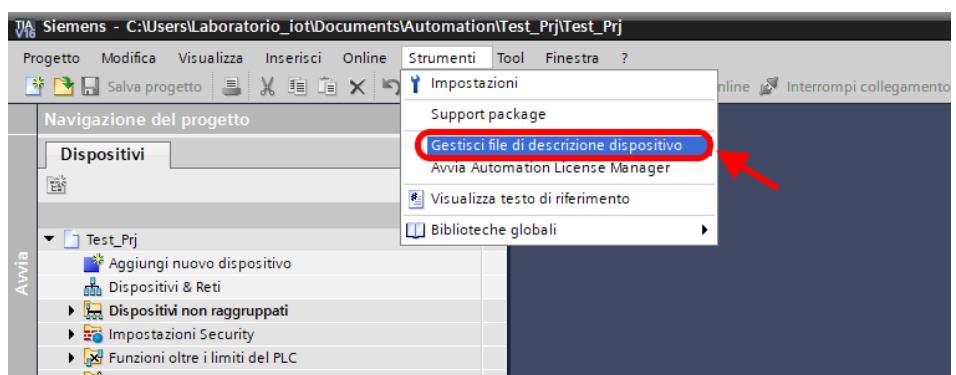
Creating a new project:



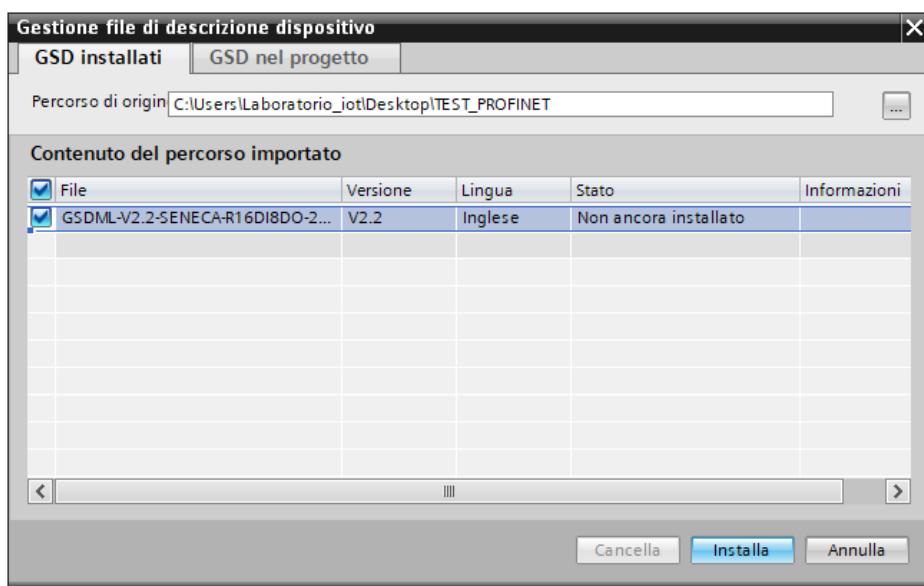
### 23.1.1. **INSTALLING THE GSDML FILE**

Install the GSDML file of the Seneca product

(it is possible to obtain the file on the web page of the device on the [www.seneca.it](http://www.seneca.it) site):



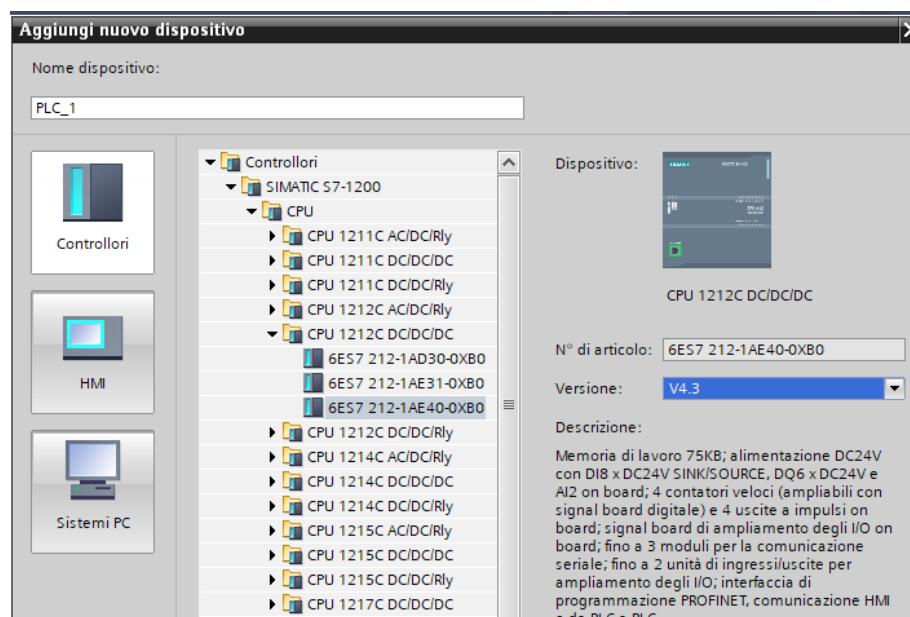
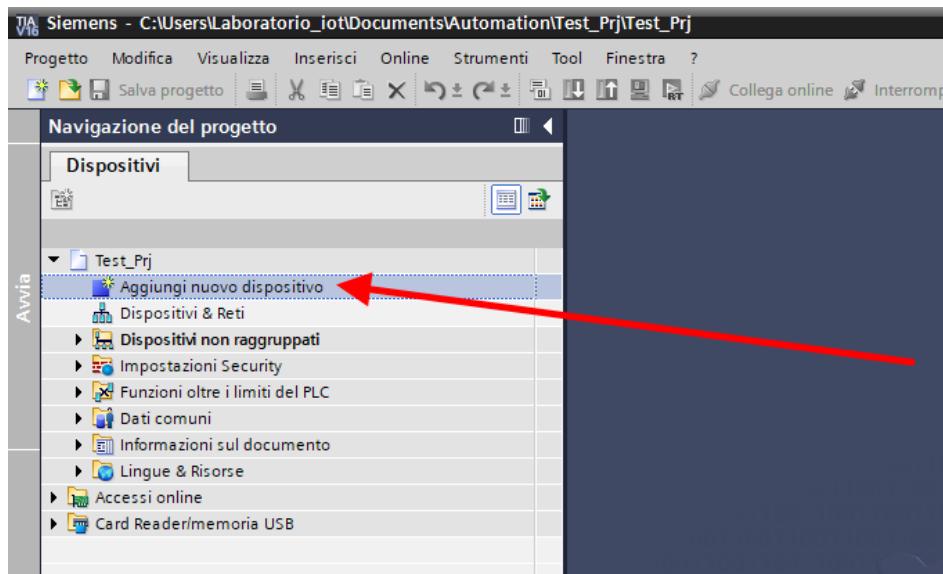
Point to the directory where the file is and press OK, then the list of GSD files in the folder will appear:



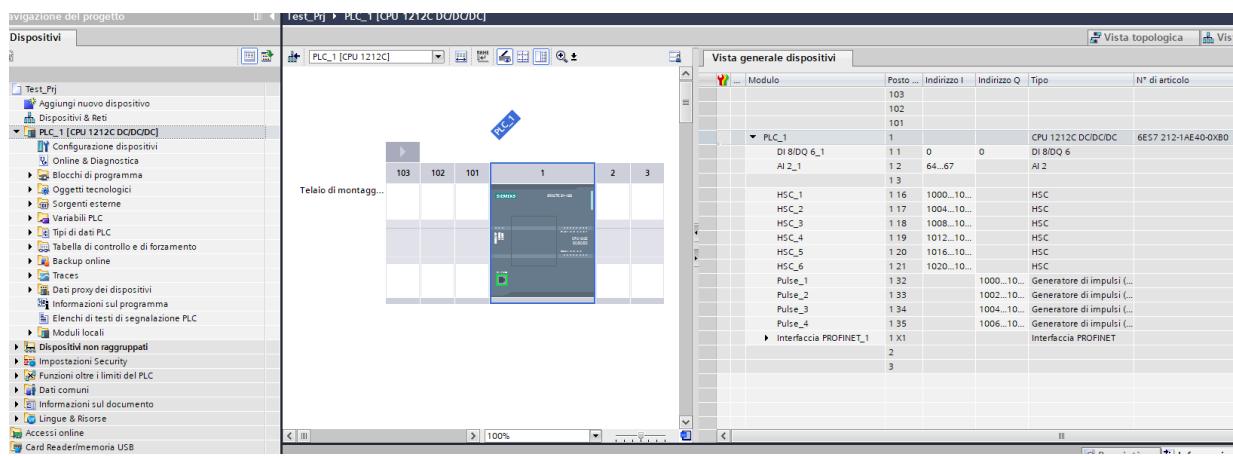
Click on "install".

### 23.1.2. **INSERTION OF THE SIEMENS PLC IN THE PROJECT**

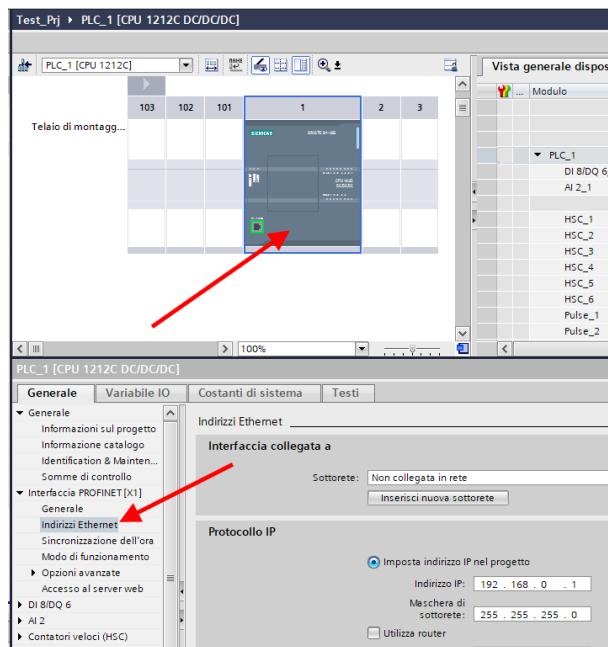
Now insert the Siemens PLC (in our example a SIEMATIC S7 1200), click on "Add new device ...":



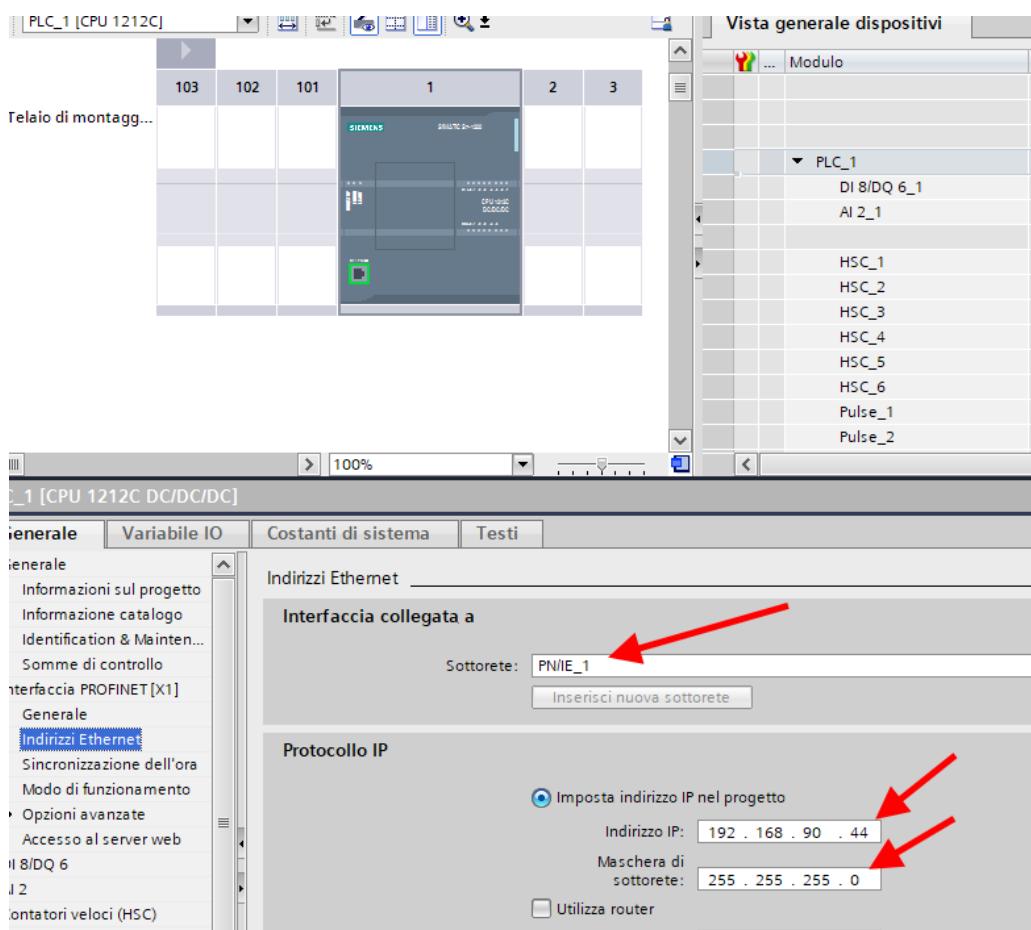
Confirm and the PLC will be added to the rack:



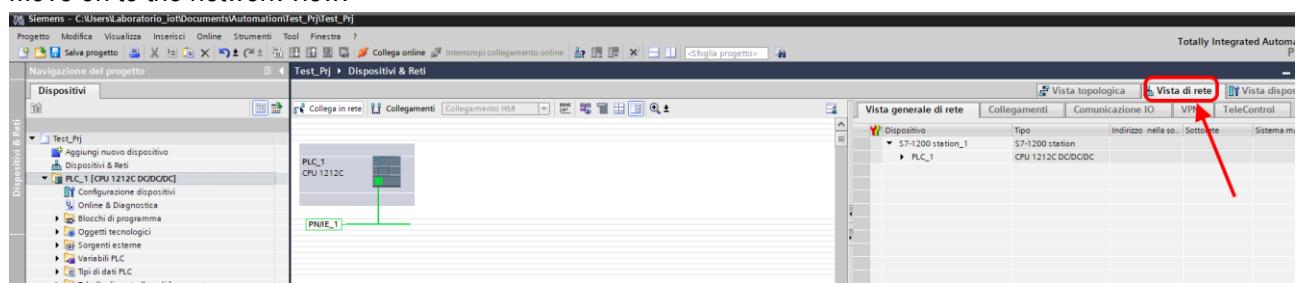
Now click on the PLC and select Profinet interface -> Ethernet addresses



Set the IP you want (in this case 192.168.90.44) and the PLC subnet:

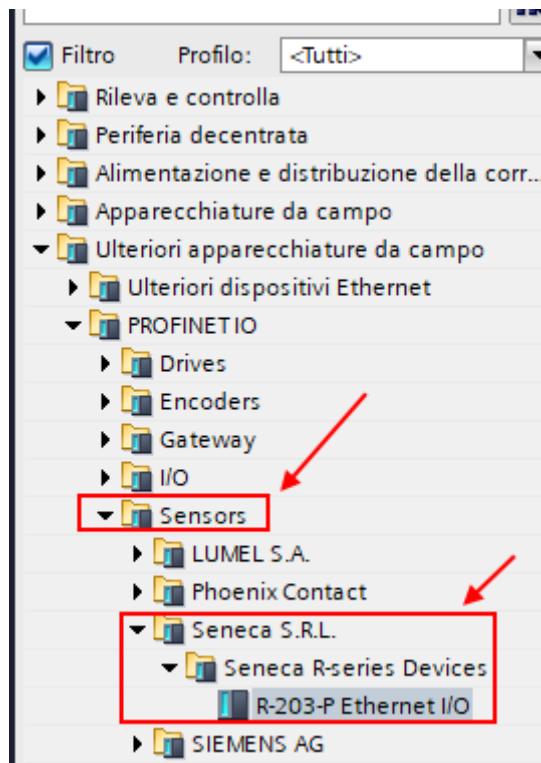


Move on to the network view:

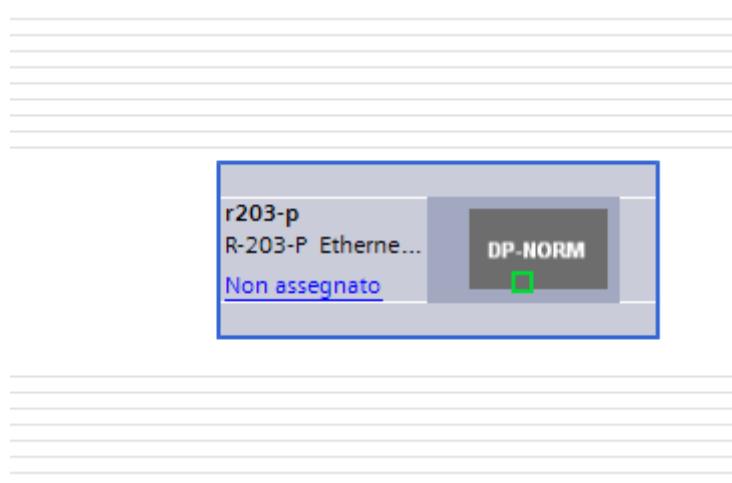


### 23.1.3. **INSERTION OF THE PROFINET SENECA IO**

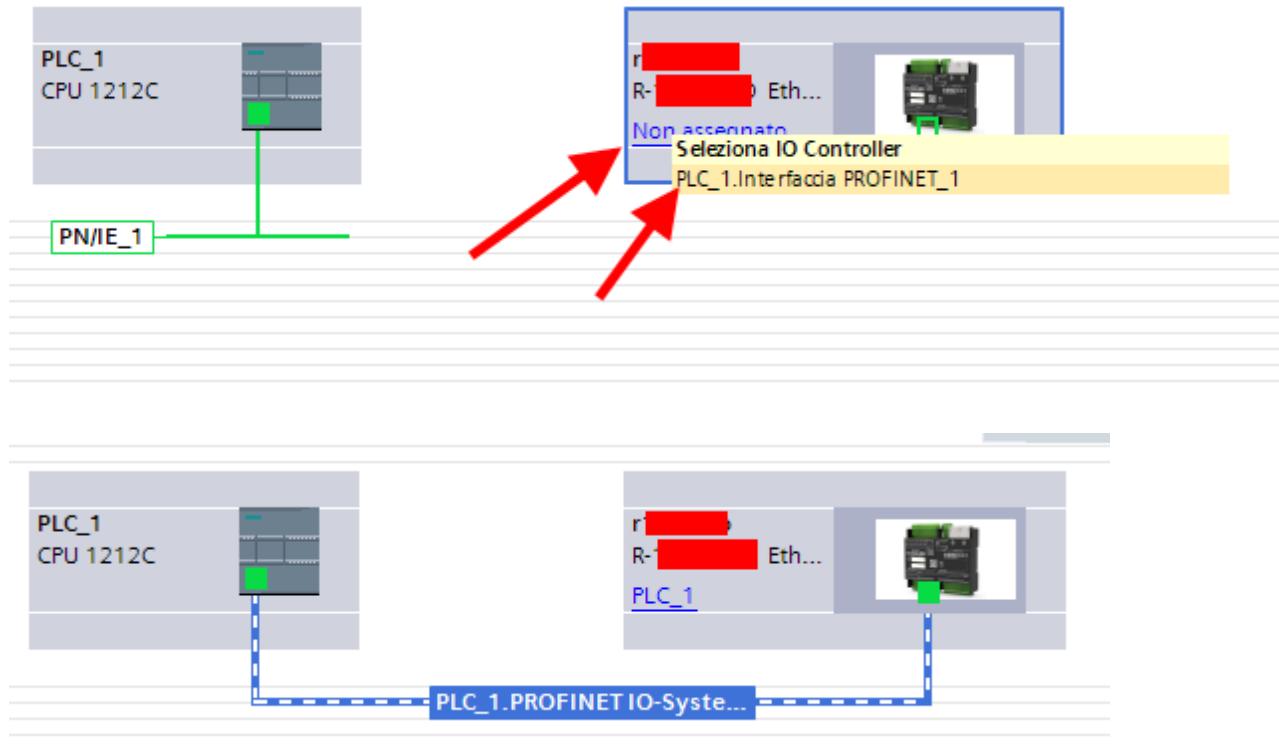
On the right select "Hardware Catalogue" and then under "Additional Field Equipment" -> PROFINET IO -> Sensors -> Seneca S.R.L. -> Seneca R-Series Devices -> R-203-P Ethernet I/O



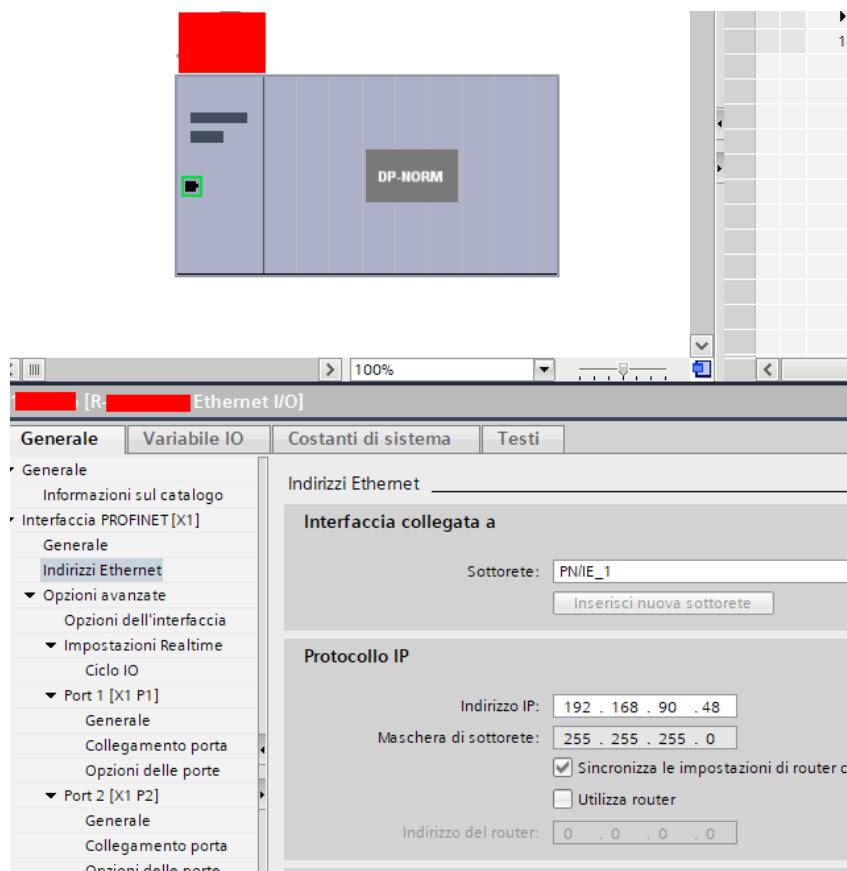
Drag the device to the network view:



Now associate it to the PLC by clicking with the left mouse on "Not assigned" and then select the PLC:



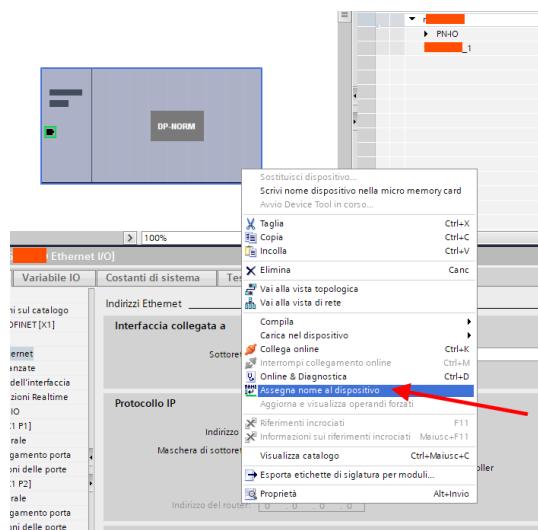
Click twice on the Seneca device and configure the IP address here too (for example 192.168.90.48):



In Profinet the devices are identified by their name, so right click on the Seneca device and select "Assign device name"

## **ATTENTION!**

**AVOID INSERTING SPECIAL CHARACTERS IN THE PROFINET NAME OF THE DEVICE**

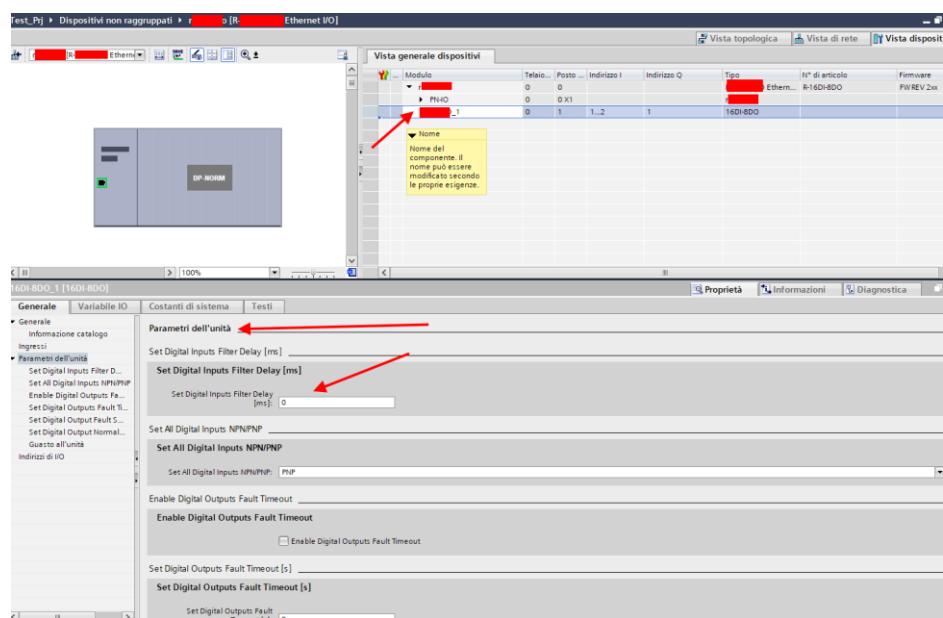


Scan the network with "Update list" and set (if necessary) the device name with "Assign name".

#### 23.1.4. **CONFIGURATION OF THE PARAMETERS OF THE SENECA DEVICE**

It is also possible to directly configure the device IO without any external software.

To configure the device, click on the IO so that the "Unit parameters" appear:



At the next start, the PLC will send the desired configuration to the device.

### 23.1.5. **CONFIGURATION PARAMETERS OF THE GSDML FILE**

#### **CONNECTION TYPE**

Sets the type of connection to make.

#### **TA TYPE**

Selects the type of sensor and the value of the TA secondary to be used between:

TA with current output

TA with MV output

Rogowski sensor

#### **TA RATIO**

Sets any TA ratio, the value to enter is related to the primary, example:

If a 50/5 TA has been installed, the value 50 must be entered as primary with the value 5 on the "TA TYPE" parameter.

#### **TV TYPE**

Sets the type of voltage transformer

#### **TV RATIO**

Sets the possible TV ratio

#### **NETWORK FREQUENCY [Hz]**

Sets the system to 50 or 60 Hz.

#### **AVERAGE POWER WINDOW**

Sets the time on which to measure the average values

#### **USER CALIBRATION VOLTAGE**

Sets a possible multiplication coefficient for the voltage measurement.

#### **USER CALIBRATION CURRENT**

Sets a possible multiplication coefficient for the current measurement.

#### **CUTOFF CURRENT [A]**

Sets a current value (on the primary) below which counters are stopped.

#### **USER CALIBRATION ACTIVE ENERGY**

Sets a possible multiplication coefficient for the active energy.

#### **USER CALIBRATION REACTIVE ENERGY**

Sets a possible multiplication coefficient for the reactive energy.

#### **AO MODE**

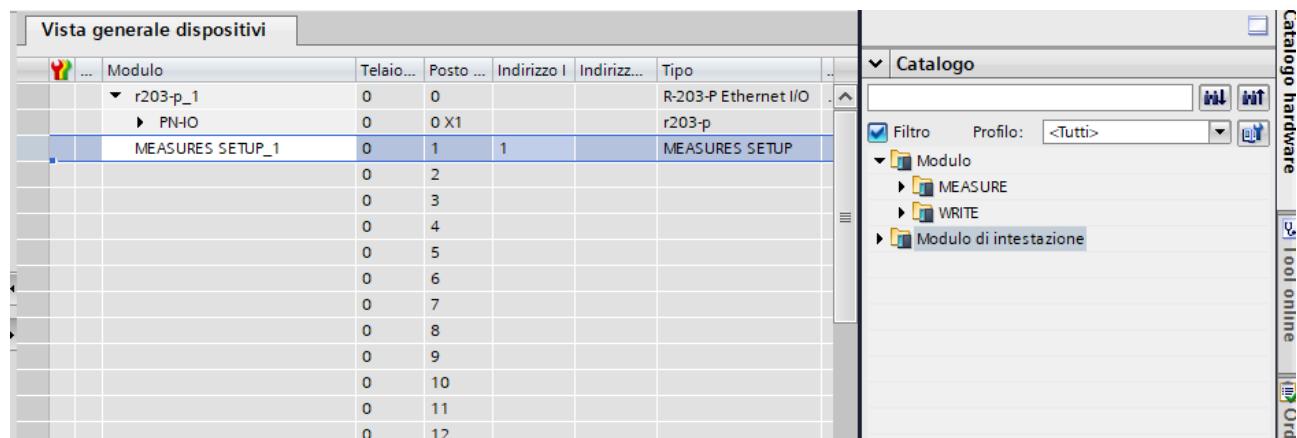
Sets whether the analog output is configured in Voltage [0V...10V] or Current [0mA...20mA].

This parameter will be only used for analog output models.

### 23.1.6. **I/O DATA**

You can now choose which variable groups to publish in Profinet.

Once the device inserted the following will appear:



MEASURE\_SETUP is a group of variables that is always present, while on the right there are “MEASURE” and “WRITE” variables.

You can add up to 15 variable groups.

The variable groups are optional, those that can be added are:

#### **MEASURE SETUP (Always present)**

Provides general information on the status of the inputs and the device:

Name	Data Type	Display as Bits	Length [Bytes]
<b>STATUS</b>	Unsigned8	Bit 0: CYCLIC PHASE SENSOR ERROR Bit 1: CURRENT CUT OFF Bit 2: CURRENT ERROR L1 Bit 3: CURRENT ERROR L2 Bit 4: CURRENT ERROR L3 Bit 5: LINE 1 VOLTAGE/CURRENT CONNECTION ERROR Bit 6: LINE 2 VOLTAGE/CURRENT CONNECTION ERROR Bit 7: LINE 3 VOLTAGE/CURRENT CONNECTION ERROR	1

For more information on the meaning of these Boolean values, refer to the chapter 15.

## **VOLTAGE**

Provides the values of the phase-to-line and star voltages:

Name	Data Type	Display as Bits	Length [Bytes]
VL1L2	Float32	<input type="checkbox"/> No	4
VL2L3	Float32	<input type="checkbox"/> No	4
VL3L1	Float32	<input type="checkbox"/> No	4
VL1N	Float32	<input type="checkbox"/> No	4
VL2N	Float32	<input type="checkbox"/> No	4
VL3N	Float32	<input type="checkbox"/> No	4

## **CURRENT**

Provides the values of the phase and neutral currents in [A]:

Name	Data Type	Display as Bits	Length [Bytes]
IL1	Float32	<input type="checkbox"/>	4
IL2	Float32	<input type="checkbox"/>	4
IL3	Float32	<input type="checkbox"/>	4
IN	Float32	<input type="checkbox"/>	4

## ACTIVE REACTIVE APPARENT TOTAL POWER

Provides the total active, reactive and apparent power values in [KW], [KVAR], [KVA]:

Name	Data Type	Display as Bits	Length [Bytes]
ACTIVE POWER L1	Float32	<input type="checkbox"/>	4
ACTIVE POWER L2	Float32	<input type="checkbox"/>	4
ACTIVE POWER L3	Float32	<input type="checkbox"/>	4
REACTIVE POWER L1	Float32	<input type="checkbox"/>	4
REACTIVE POWER L2	Float32	<input type="checkbox"/>	4
REACTIVE POWER L3	Float32	<input type="checkbox"/>	4
APPARENT POWER L1	Float32	<input type="checkbox"/>	4
APPARENT POWER L2	Float32	<input type="checkbox"/>	4
APPARENT POWER L3	Float32	<input type="checkbox"/>	4
TOTAL ACTIVE POWER	Float32	<input type="checkbox"/>	4
TOTAL REACTIVE POWER	Float32	<input type="checkbox"/>	4
TOTAL APPARENT POWER	Float32	<input type="checkbox"/>	4

## ANGLE

Provides the values of the vector phase shift in [°]

Name	Data Type	Display as Bits	Length [Bytes]
ANGLE V/I L1	Float32	<input type="checkbox"/> No	4
ANGLE V/I L2	Float32	<input type="checkbox"/> No	4
ANGLE V/I L3	Float32	<input type="checkbox"/> No	4
ANGLE V/I L1 L2	Float32	<input type="checkbox"/> No	4
ANGLE V/I L2 L3	Float32	<input type="checkbox"/> No	4
ANGLE V/I L3 L1	Float32	<input type="checkbox"/> No	4

## POWER FACTOR

Provides the power factor values:

Name	Data Type	Display as Bits	Length [Bytes]
POWER FACTOR L1	Float32	<input type="checkbox"/> No	4
POWER FACTOR L2	Float32	<input type="checkbox"/> No	4
POWER FACTOR L3	Float32	<input type="checkbox"/> No	4
POWER FACTOR TOTAL	Float32	<input type="checkbox"/> No	4

## FREQUENCY PERIOD

Provides frequency [Hz] and period [ms] values:

Name	Data Type	Display as Bits	Length [Bytes]
FREQUENCY L1	Float32	<input type="checkbox"/> No	4
FREQUENCY L2	Float32	<input type="checkbox"/> No	4
FREQUENCY L3	Float32	<input type="checkbox"/> No	4
PERIOD L1	Float32	<input type="checkbox"/> No	4
PERIOD L2	Float32	<input type="checkbox"/> No	4
PERIOD L3	Float32	<input type="checkbox"/> No	4

## THD

Provides the Total Harmonic Distortion in [%]

Name	Data Type	Display as Bits	Length [Bytes]
THD V L1	Float32	<input type="checkbox"/> No	4
THD V L2	Float32	<input type="checkbox"/> No	4
THD V L3	Float32	<input type="checkbox"/> No	4
THD I L1	Float32	<input type="checkbox"/> No	4
THD I L2	Float32	<input type="checkbox"/> No	4
THD I L3	Float32	<input type="checkbox"/> No	4

**AVERAGE**

Provides the values averaged over the demand time configured in [V], [A], [KW], [KVAR], [KVA]

Name	Data Type	Display as Bits	Length [Bytes]
AVG V L1	Float32	<input type="checkbox"/> No	4
AVG V L2	Float32	<input type="checkbox"/> No	4
AVG V L3	Float32	<input type="checkbox"/> No	4
AVG I L1	Float32	<input type="checkbox"/> No	4
AVG I L2	Float32	<input type="checkbox"/> No	4
AVG I L3	Float32	<input type="checkbox"/> No	4
AVG ACTIVE POWER 3PH	Float32	<input type="checkbox"/> No	4
AVG REACTIVE POWER 3PH	Float32	<input type="checkbox"/> No	4
AVG APPARENT POWER 3PH	Float32	<input type="checkbox"/> No	4

**MIN**

Provides the minimum values of the measurements in [V], [A], [KW], [KVAR], [KVA]:

Name	Data Type	Display as Bits	Length [Bytes]
MIN V L1	Float32	No	4
MIN V L2	Float32	No	4
MIN V L3	Float32	No	4
MIN I L1	Float32	No	4
MIN I L2	Float32	No	4
MIN I L3	Float32	No	4
MIN ACTIVE POWER 3PH	Float32	No	4
MIN REACTIVE POWER 3PH	Float32	No	4
MIN APPARENT POWER 3PH	Float32	No	4

**MAX**

Provides maximum measurement values in [V], [A], [KW], [KVAR], [KVA]:

Name	Data Type	Display as Bits	Length [Bytes]
MAX V L1	Float32	No	4
MAX V L2	Float32	No	4
MAX V L3	Float32	No	4
MAX I L1	Float32	No	4
MAX I L2	Float32	No	4
MAX I L3	Float32	No	4
MAX ACTIVE POWER 3PH	Float32	No	4
MAX REACTIVE POWER 3PH	Float32	No	4
MAX APPARENT POWER 3PH	Float32	No	4

### **ENERGY ACTIVE PHASE**

Provides the values of phase active energy separated by quadrants, positive and negative and total in [KWh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY ACTIVE(+) Q1-Q4 L1	Float32	No	4
ENERGY ACTIVE(+) Q1-Q4 L2	Float32	No	4
ENERGY ACTIVE(+) Q1-Q4 L3	Float32	No	4
ENERGY ACTIVE(-) Q2-Q3 L1	Float32	No	4
ENERGY ACTIVE(-) Q2-Q3 L2	Float32	No	4
ENERGY ACTIVE(-) Q2-Q3 L3	Float32	No	4
ENERGY ACTIVE TOTAL L1	Float32	No	4
ENERGY ACTIVE TOTAL L2	Float32	No	4
ENERGY ACTIVE TOTAL L3	Float32	No	4

### **ENERGY ACTIVE 3PH PHASE**

Provides the values of the positive and negative and total three-phase active energy in [KWh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY ACTIVE 3PH (+) Q1-Q4	Float32	No	4
ENERGY ACTIVE 3PH (-) Q2-Q3	Float32	No	4
ENERGY ACTIVE TOTAL 3PH	Float32	No	4

**ENERGY REACTIVE Q1-Q2**

Provides positive reactive energy values in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY REACTIVE(+) Q1-Q2 L1	Float32	No	4
ENERGY REACTIVE(+) Q1-Q2 L2	Float32	No	4
ENERGY REACTIVE(+) Q1-Q2 L3	Float32	No	4
ENERGY ACTIVE 3PH (+) Q1-Q2	Float32	No	4

**ENERGY REACTIVE Q3-Q4**

Provides the values of the negative reactive energy in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY REACTIVE(-) Q3-Q4 L1	Float32	No	4
ENERGY REACTIVE(-) Q3-Q4 L2	Float32	No	4
ENERGY REACTIVE(-) Q3-Q4 L3	Float32	No	4
ENERGY ACTIVE 3PH (-) Q3-Q4	Float32	No	4

**ENERGY REACTIVE Q1**

Provides the Q1 quadrant reactive energy values of each phase in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY REACTIVE(+) Q1 L1	Float32	No	4
ENERGY REACTIVE(+) Q1 L2	Float32	No	4
ENERGY REACTIVE(+) Q1 L3	Float32	No	4

### **ENERGY REACTIVE Q2**

Provides the reactive energy values of the Q2 quadrant of each phase in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY REACTIVE(-) Q2 L1	Float32	<a href="#">No</a>	4
ENERGY REACTIVE(-) Q2 L2	Float32	<a href="#">No</a>	4
ENERGY REACTIVE(-) Q2 L3	Float32	<a href="#">No</a>	4

### **ENERGY REACTIVE Q3**

Provides the Q3 quadrant reactive energy values of each phase in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY REACTIVE(+) Q3 L1	Float32	<a href="#">No</a>	4
ENERGY REACTIVE(+) Q3 L2	Float32	<a href="#">No</a>	4
ENERGY REACTIVE(+) Q3 L3	Float32	<a href="#">No</a>	4

### **ENERGY REACTIVE Q4**

Provides the reactive energy values of the Q4 quadrant of each phase in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY REACTIVE(-) Q4 L1	Float32	<a href="#">No</a>	4
ENERGY REACTIVE(-) Q4 L2	Float32	<a href="#">No</a>	4
ENERGY REACTIVE(-) Q4 L3	Float32	<a href="#">No</a>	4

## ENERGY REACTIVE TOTAL

Provides the total reactive energy values of each phase and three-phase in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY REACTIVE TOTAL L1	Float32	No	4
ENERGY REACTIVE TOTAL L2	Float32	No	4
ENERGY REACTIVE TOTAL L3	Float32	No	4
ENERGY REACTIVE TOTAL 3PH	Float32	No	4

## ENERGY APPARENT TOTAL

Provides the total apparent energy values of each phase and three-phase in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY APPARENT TOTAL L1	Float32	No	4
ENERGY APPARENT TOTAL L2	Float32	No	4
ENERGY APPARENT TOTAL L3	Float32	No	4
ENERGY APPARENT TOTAL 3PH	Float32	No	4

## ENERGY REACTIVE ABSORBED TOTAL

Provides the values of the total absorbed reactive energy in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY REACTIVE ABSORBED (+) TOTAL 3PH	Float32	No	4
ENERGY REACTIVE ABSORBED (-) TOTAL 3PH	Float32	No	4

## ENERGY REACTIVE DELIVERED TOTAL

Provides the values of the total reactive energy delivered in [KVARh]:

Name	Data Type	Display as Bits	Length [Bytes]
ENERGY REACTIVE DELIVERED (+) TOTAL 3PH	Float32	<input type="checkbox"/> No	4
ENERGY REACTIVE DELIVERED (-) TOTAL 3PH	Float32	<input type="checkbox"/> No	4

## DI

Provides the two analog input values:

Name	Data Type	Display as Bits	Length [Bytes]
DIGITAL INPUT	Unsigned8	Bit 0: DIN.1 Bit 1: DIN.2 Bit 2: NONE Bit 3: NONE Bit 4: NONE Bit 5: NONE Bit 6: NONE Bit 7: NONE	1

## DO

Status (writable) with the value of the two digital outputs:

Name	Data Type	Display as Bits	Length [Bytes]
DO	Unsigned8	Bit 0: DOUT.1 Bit 1: DOUT.2 Bit 2: NONE Bit 3: NONE Bit 4: NONE Bit 5: NONE Bit 6: NONE Bit 7: NONE	1

## AO

Status (writable) with the value of the analog output in [mA] or [V]:

Name	Data Type	Display as Bits	Length [Bytes]
AO VALUE	Float32	<input type="checkbox"/> No	4

### NETWORK FREQUENCY

It allows you to change in real time the frequency and operation from 0 = 50Hz to 1= 60 Hz

Name	Data Type	Display as Bits	Length [Bytes]
NETWORK FREQUENCY VALUE	Unsigned8	<input type="checkbox"/> No	1

### COMMAND VALUE

It allows you to send commands to the device:

COMMAND CODE(decimal)	ACTION
260	Reset MIN/MAX
259	Reset AVG
261	Reset Energy Counters
40986	Load value in CMD_AUX register to COUNTER1
41002	Load value in CMD_AUX register to COUNTER2

Name	Data Type	Display as Bits	Length [Bytes]
COMMAND VALUE	Unsigned16	<input type="checkbox"/> No	2

### COMMAND AUX

Additional COMMAND Register to send special commands to the device

Name	Data Type	Display as Bits	Length [Bytes]
COMMAND AUX VALUE	Unsigned32	<input type="checkbox"/> No	4

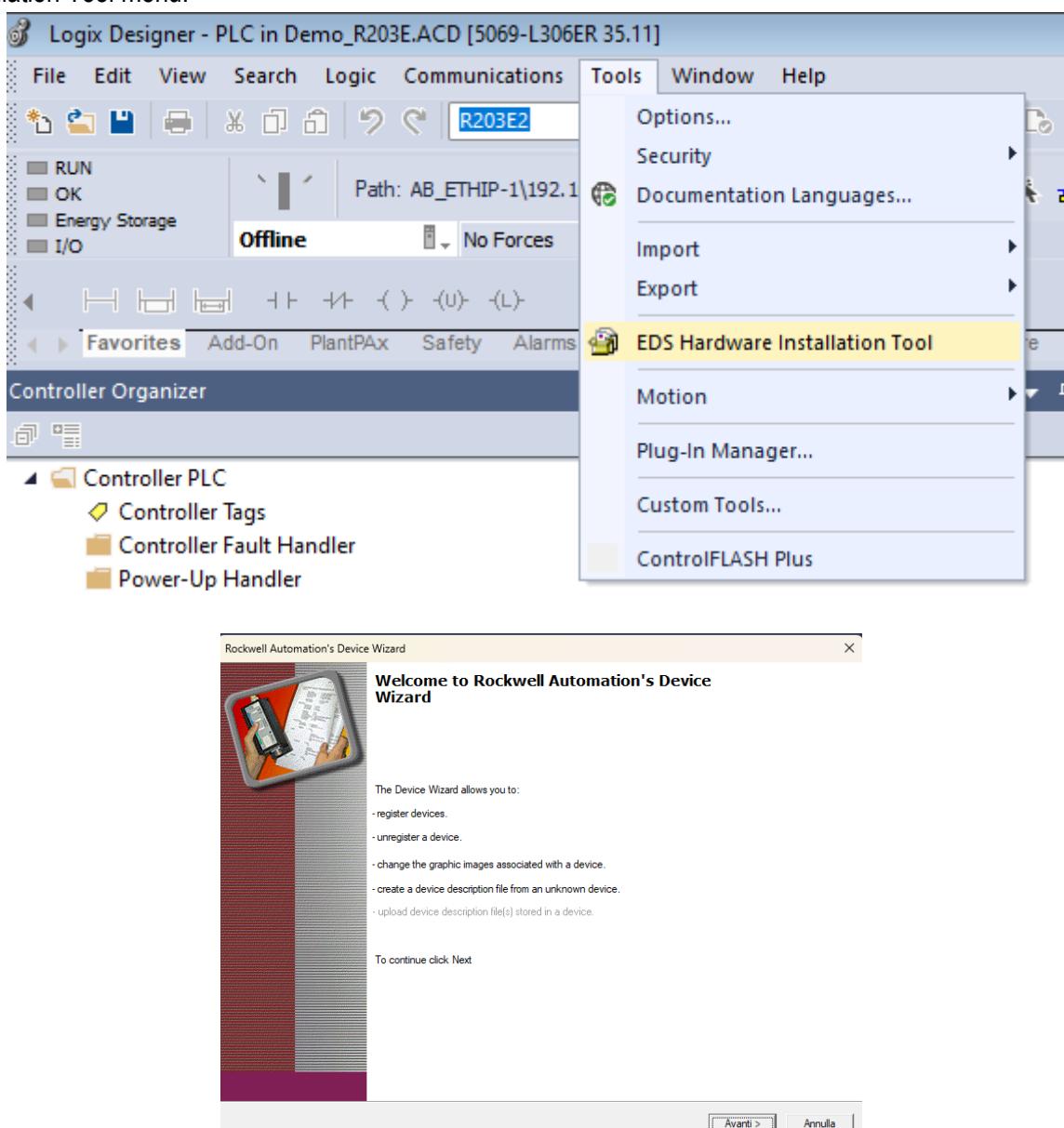
Now compile, send the project and go online with the PLC.

## 24. ETHERNET/IP COMMUNICATION PROTOCOL (ETHERNET/IP PROTOCOL MODELS ONLY)

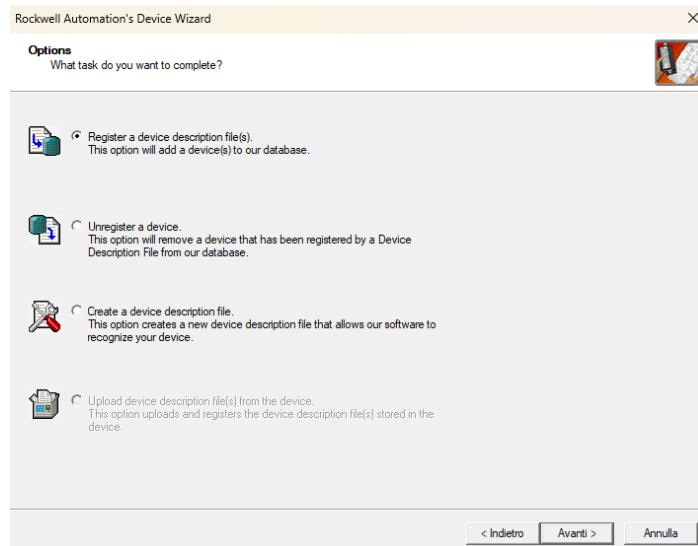
EtherNet/IP (Ethernet Industrial Protocol) is an open field bus based on CIP (Common Industrial Protocol), developed by Rockwell Automation and ODVA (Open DeviceNet Vendor Association).

### 24.1. CREATING A PROJECT WITH PLC ALLEN BRADLEY/ROCKWELL (RS-LOGIX5000 / STUDIO 5000 LOGIX DESIGNER 35.00.00)

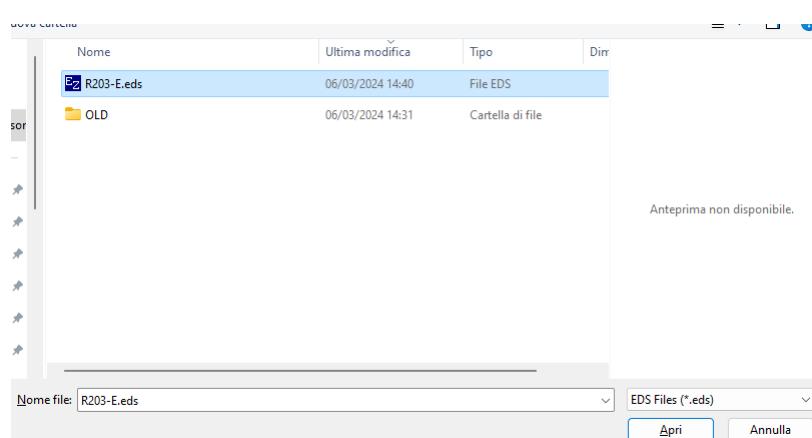
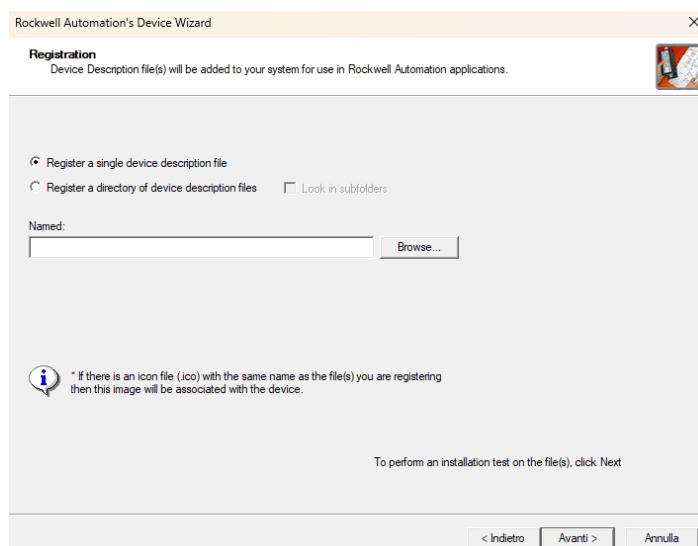
Once the PLC has been added to the project, import the EDS file of the device via the Tools-> EDS Hardware Installation Tool menu:



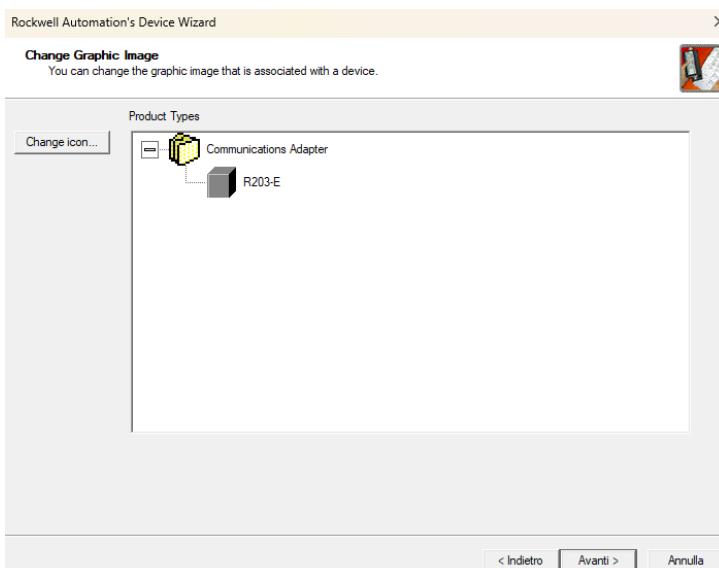
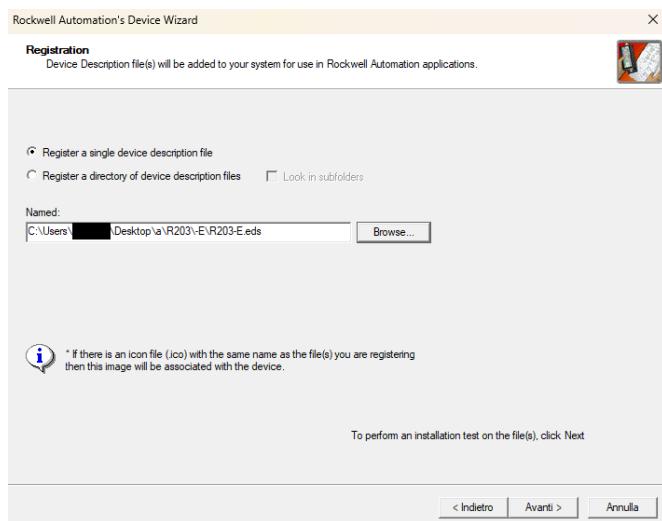
Press "Next", and select Add a new device:



Select to register a single device and select the “R203-E.eds” file

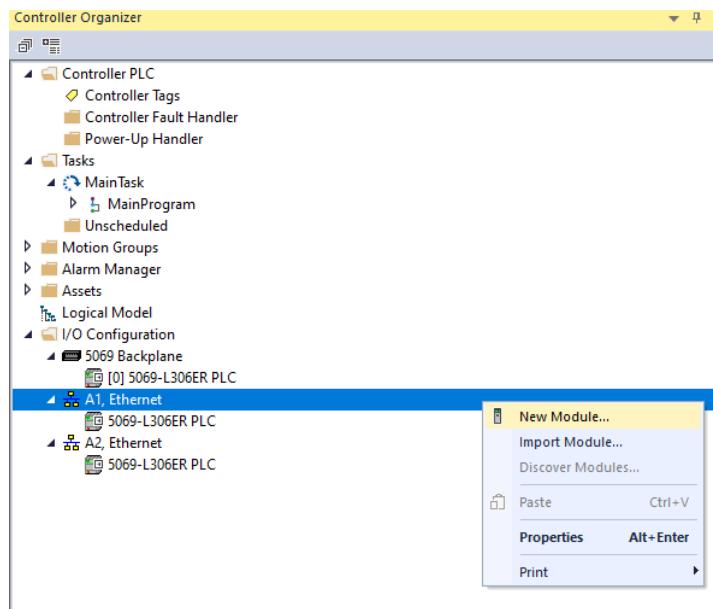


Select “Open” and then “Next”:

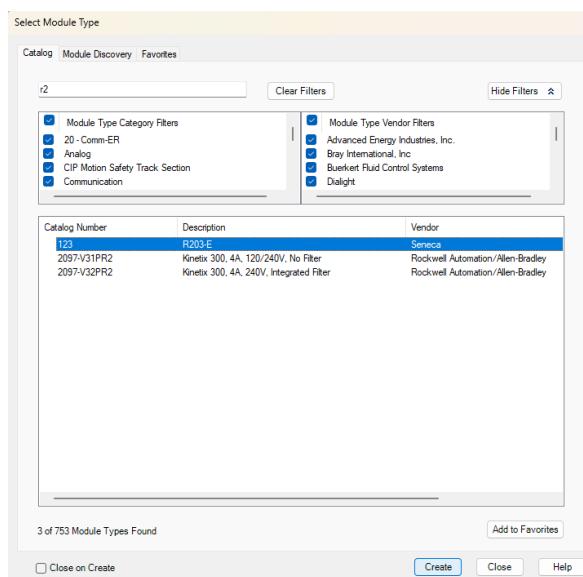


At this point the R203-E product has been entered into the device database.

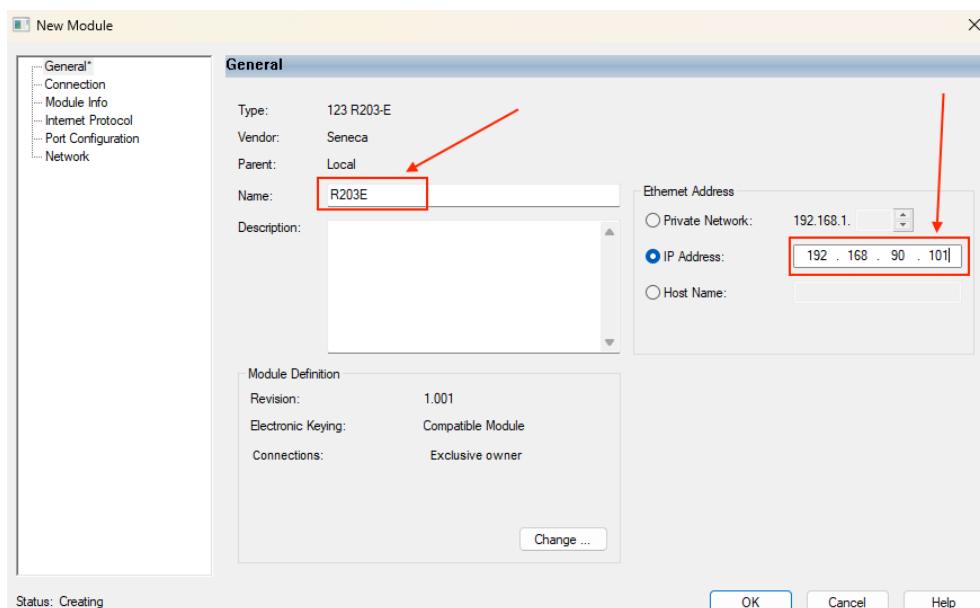
Now go with the mouse over the ethernet port of the PLC connected to the device and with the right button select "New Module...":



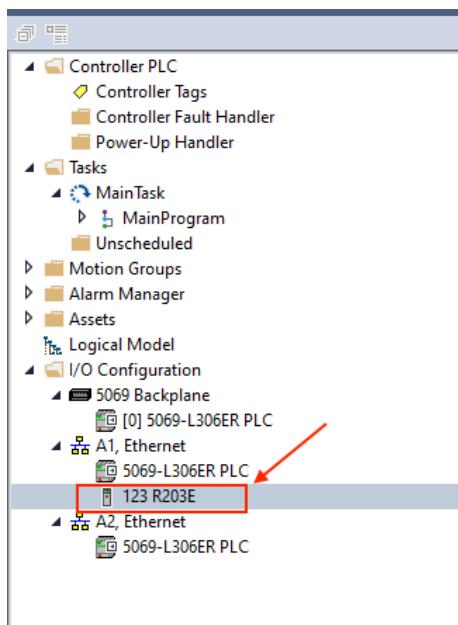
Now select the R203-E device:



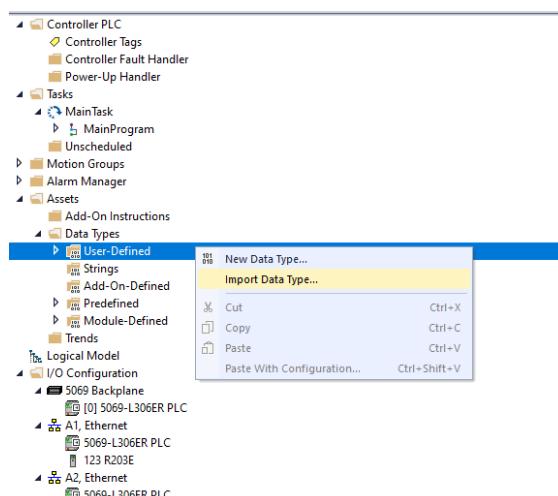
Give the device a name and enter its IP address:

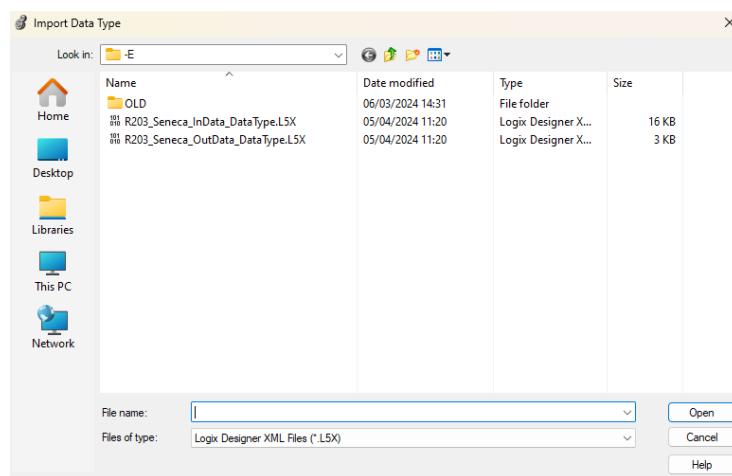


By confirming with OK the device is added:

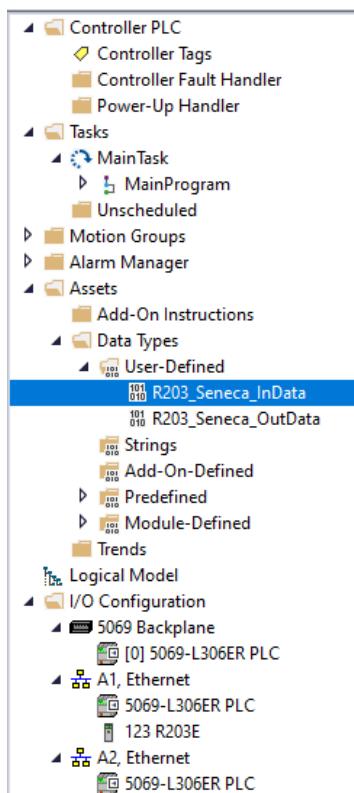


To simplify the acquisition of measurements and sending records to the device, you import the User Data Defined relating to R203-E:

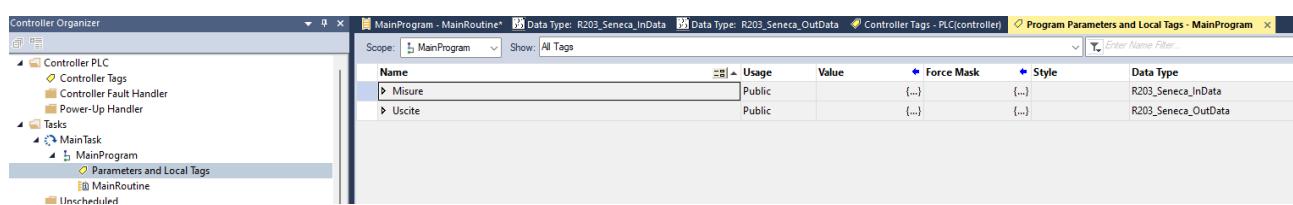




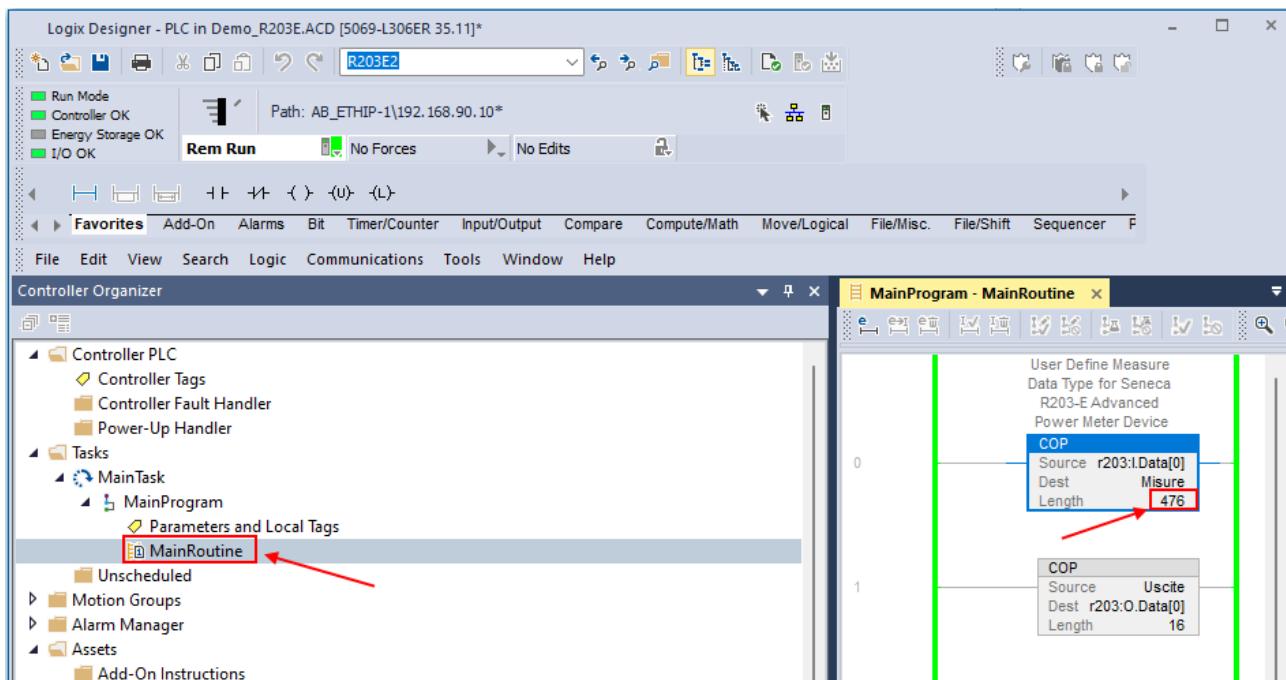
The InData will represent the measurements that come out of the device towards the PLC, OutData are the tags that allow you to send commands to the device:



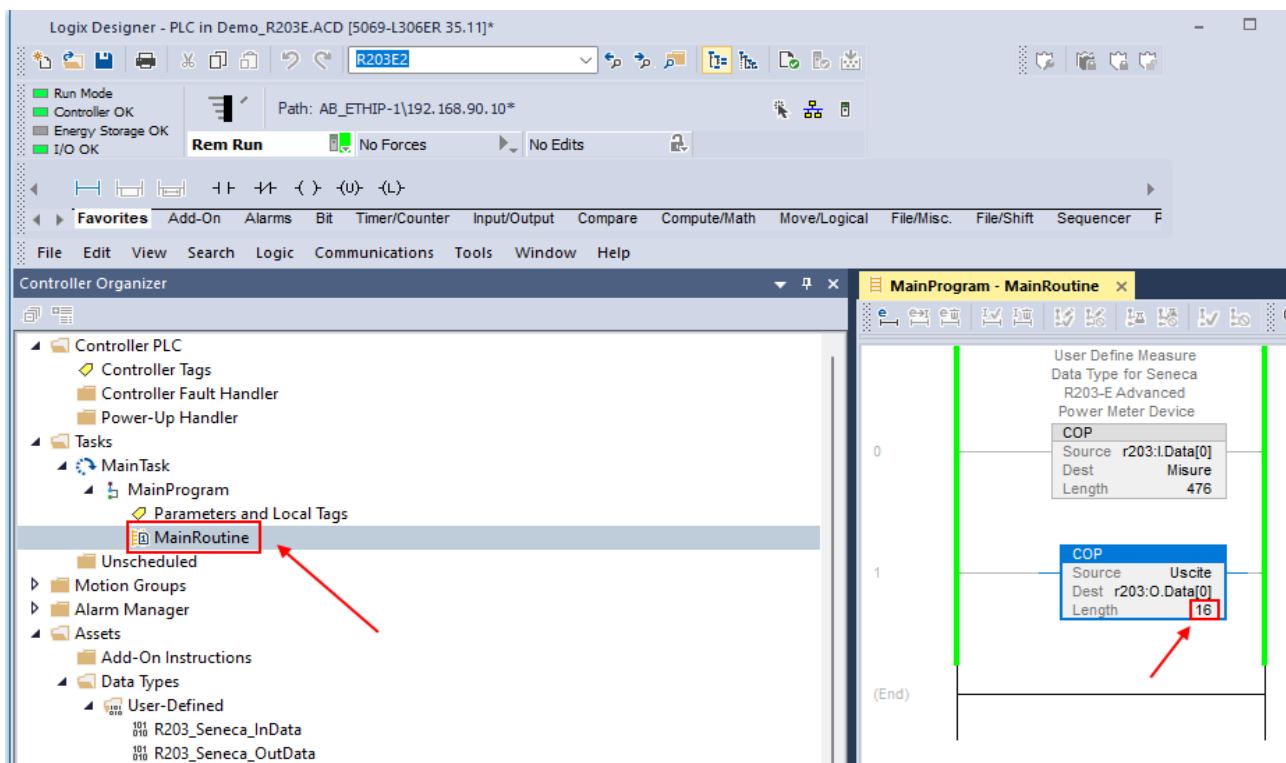
Now define the “Measurements” and “Outputs” with “R203\_Seneca\_InData” and “R203\_Seneca\_OutData” data type respectively:



At this point define a program that copies the measurements arriving from R203 into the R203\_Seneca\_InData structure:

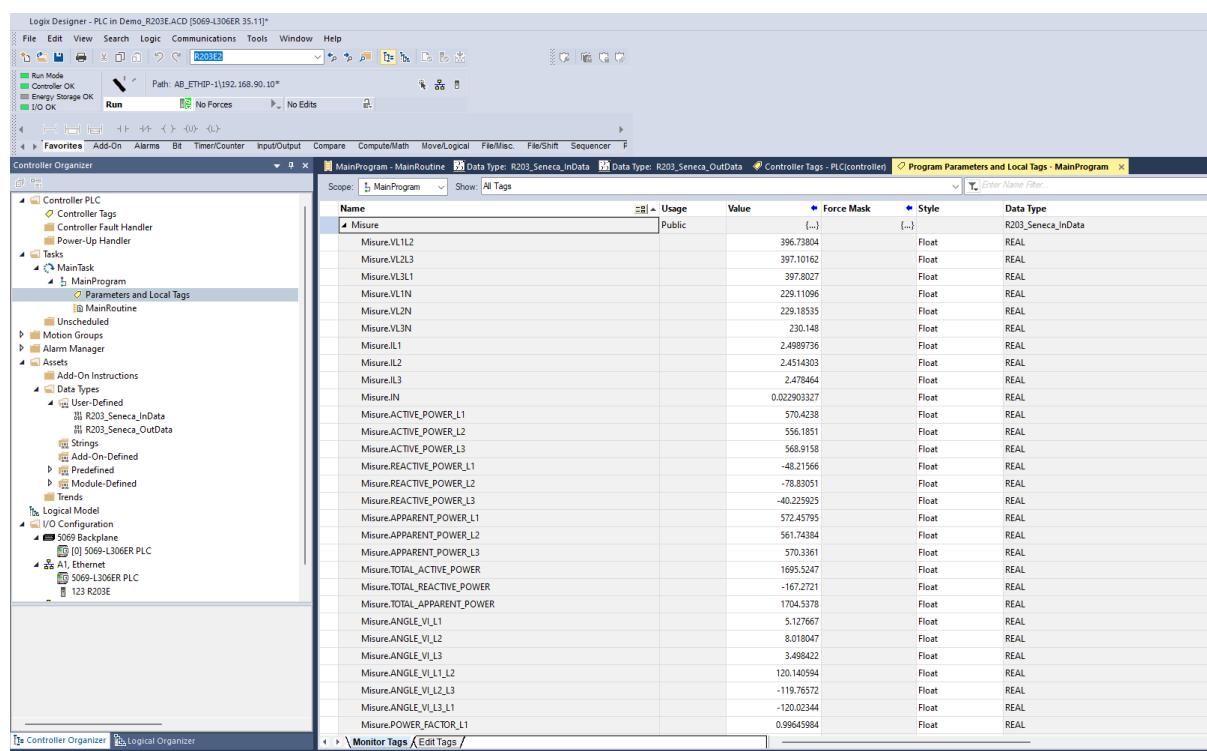


And then copy the values that you will control in the R203\_Seneca\_OutData structure into the data sent to the device:

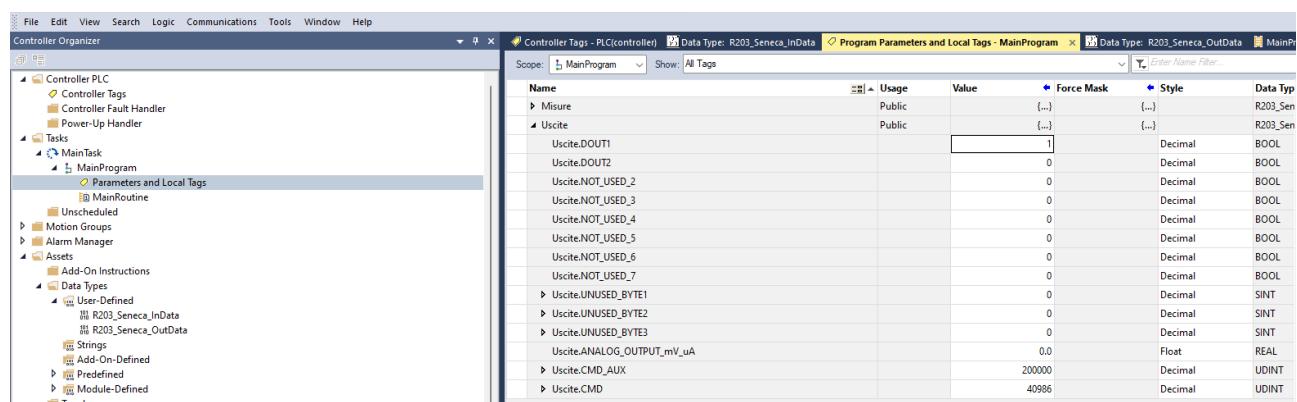


Now put the PLC in "Program" mode and download the program to the PLC.

Put the PLC in "RUN" mode and check the measurements:



You can also control the digital outputs by activating DOUT1 for example:



CMD and CMD\_AUX can be used to send commands to the device according to the following table:

COMMAND CODE(decimal)	ACTION
260	Reset MIN/MAX
259	Reset AVG
261	Reset Energy Counters
40986	Load value in CMD_AUX register to COUNTER1
41002	Load value in CMD_AUX register to COUNTER2

## 25. OPC-UA COMMUNICATION PROTOCOL (OPC-UA PROTOCOL MODELS ONLY)

OPC Unified Architecture (OPC UA) is a cross-platform, open source IEC62541 standard for exchanging data from sensors to cloud and SCADA applications developed by the OPC Foundation.

### 25.1. OPC VARIABLE NAMES

Find below the abbreviation of the OPC variable and its explanation

VARIABLE	EXPLANATION	TIPO
<b>V1N</b>	Voltage between Phase 1 and neutral	READ
<b>V1N_AVG</b>	Phase 1 to Neutral Voltage (in demand time)	READ
<b>V1N_MIN</b>	Minimum voltage between Phase 1 and neutral (from switch-on)	READ
<b>V1N_MAX</b>	Maximum voltage between Phase 1 and neutral (from switch-on)	READ
<b>V1N_AVG_MIN</b>	Phase 1 to minimum neutral voltage (in demand time)	READ
<b>V1N_AVG_MAX</b>	Phase 1 to maximum neutral voltage (in demand time)	READ
<b>V2N</b>	Voltage between Phase 2 and neutral	READ
<b>V2N_AVG</b>	Phase 2 to Neutral Voltage (in demand time)	READ
<b>V2N_MIN</b>	Minimum voltage between Phase 2 and neutral (from switch-on)	READ
<b>V2N_MAX</b>	Maximum voltage between Phase 2 and neutral (from switch-on)	READ
<b>V2N_AVG_MIN</b>	Phase 2 to minimum neutral voltage (in demand time)	READ
<b>V2N_AVG_MAX</b>	Phase 2 to maximum neutral voltage (in demand time)	READ
<b>V3N</b>	Voltage between Phase 3 and neutral	READ
<b>V3N_AVG</b>	Phase 3 to Neutral Voltage (in demand time)	READ
<b>V3N_MIN</b>	Minimum voltage between Phase 3 and neutral (from switch-on)	READ
<b>V3N_MAX</b>	Maximum voltage between Phase 3 and neutral (from switch-on)	READ
<b>V3N_AVG_MIN</b>	Phase 3 to minimum neutral voltage (in demand time)	READ
<b>V3N_AVG_MAX</b>	Phase 3 to maximum neutral voltage (in demand time)	READ
<b>AN</b>	Neutral Current	READ
<b>AN_AVG</b>	Neutral Current (on demand time)	READ
<b>AN_MIN</b>	Minimum neutral current (from switch-on)	READ
<b>AN_MAX</b>	Maximum neutral current (from switch-on)	READ
<b>AN_AVG_MIN</b>	Minimum neutral current (in demand time)	READ
<b>AN_AVG_MAX</b>	Maximum neutral current (in demand time)	READ
<b>V12</b>	Phase-to-phase voltage between Phase 1 and 2	READ
<b>V12_AVG</b>	Phase-to-phase voltage between Phase 1 and 2 (in demand time)	READ

<b>V12_MIN</b>	Minimum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>V12_MAX</b>	Maximum phase-to-phase voltage between Phase 1 and 2 (from switch-on)	READ
<b>V12_AVG_MIN</b>	Phase-to-phase voltage between minimum Phase 1 and 2 (in demand time)	READ
<b>V12_AVG_MAX</b>	Phase-to-phase voltage between maximum Phase 1 and 2 (in demand time)	READ
<b>V23</b>	Phase-to-phase voltage between Phase 2 and 3	READ
<b>V23_AVG</b>	Phase-to-phase voltage between Phase 2 and 3 (in demand time)	READ
<b>V23_MIN</b>	Minimum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>V23_MAX</b>	Maximum phase-to-phase voltage between Phase 2 and 3 (from switch-on)	READ
<b>V23_AVG_MIN</b>	Phase-to-phase voltage between minimum Phase 2 and 3 (in demand time)	READ
<b>V23_AVG_MAX</b>	Phase-to-phase voltage between maximum Phase 2 and 3 (in demand time)	READ
<b>V31</b>	Phase-to-phase voltage between Phase 3 and 1	READ
<b>V31_AVG</b>	Phase-to-phase voltage between Phase 3 and 1 (in demand time)	READ
<b>V31_MIN</b>	Minimum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>V31_MAX</b>	Maximum phase-to-phase voltage between Phase 3 and 1 (from switch-on)	READ
<b>V31_AVG_MIN</b>	Phase-to-phase voltage between minimum Phase 3 and 1 (in demand time)	READ
<b>V31_AVG_MAX</b>	Phase-to-phase voltage between maximum Phase 3 and 1 (in demand time)	READ
<b>Vsys</b>	System voltage:	READ
<b>Vsys_AVG</b>	System voltage (in demand time)	READ
<b>Vsys_MIN</b>	Minimum system voltage (from switch-on)	READ
<b>Vsys_MAX</b>	Maximum system voltage (from switch-on)	READ
<b>Vsys_AVG_MIN</b>	Minimum system voltage (in demand time)	READ
<b>Vsys_AVG_MAX</b>	Maximum system voltage (in demand time)	READ
<b>A1</b>	Phase 1 current	READ
<b>A1_AVG</b>	Phase 1 current (in demand time)	READ
<b>A1_MIN</b>	Minimum Phase 1 current (from switch-on)	READ
<b>A1_MAX</b>	Maximum Phase 1 current (from switch-on)	READ
<b>A1_AVG_MIN</b>	Minimum Phase 1 current (in demand time)	READ
<b>A1_AVG_MAX</b>	Maximum Phase 1 current (in demand time)	READ
<b>A2</b>	Phase 2 current	READ
<b>A2_AVG</b>	Phase 2 current (in demand time)	READ
<b>A2_MIN</b>	Minimum Phase 2 current (from switch-on)	READ
<b>A2_MAX</b>	Maximum Phase 2 current (from switch-on)	READ

<b>A2_AVG_MIN</b>	Minimum Phase 2 current (in demand time)	READ
<b>A2_AVG_MAX</b>	Maximum Phase 2 current (in demand time)	READ
<b>A3</b>	Phase 3 current	READ
<b>A3_AVG</b>	Phase 3 current (in demand time)	READ
<b>A3_MIN</b>	Minimum Phase 3 current (from switch-on)	READ
<b>A3_MAX</b>	Maximum Phase 3 current (from switch-on)	READ
<b>A3_AVG_MIN</b>	Minimum Phase 3 current (in demand time)	READ
<b>A3_AVG_MAX</b>	Maximum Phase 3 current (in demand time)	READ
<b>Asys</b>	System current	READ
<b>Asys_AVG</b>	System current (in demand time)	READ
<b>Asys_MIN</b>	Minimum system current (from switch-on)	READ
<b>Asys_MAX</b>	Maximum system current (from switch-on)	READ
<b>Asys_AVG_MIN</b>	Minimum system current (in demand time)	READ
<b>Asys_AVG_MAX</b>	Maximum system current (in demand time)	READ
<b>P1</b>	Phase 1 Active power	READ
<b>P1_AVG</b>	Phase 1 active power (in demand time)	READ
<b>P1_MIN</b>	Minimum Phase 1 active power (from switch-on)	READ
<b>P1_MAX</b>	Maximum Phase 1 active power (from switch-on)	READ
<b>P1_AVG_MIN</b>	Minimum Phase 1 active power (in demand time)	READ
<b>P1_AVG_MAX</b>	Maximum Phase 1 active power (in demand time)	READ
<b>P2</b>	Phase 2 Active power	READ
<b>P2_AVG</b>	Phase 2 active power (in demand time)	READ
<b>P2_MIN</b>	Minimum Phase 2 active power (from switch-on)	READ
<b>P2_MAX</b>	Maximum Phase 2 active power (from switch-on)	READ
<b>P2_AVG_MIN</b>	Minimum Phase 2 active power (in demand time)	READ
<b>P2_AVG_MAX</b>	Maximum Phase 2 active power (in demand time)	READ
<b>P3</b>	Phase 3 Active power	READ
<b>P3_AVG</b>	Phase 3 active power (in demand time)	READ
<b>P3_MIN</b>	Minimum Phase 3 active power (from switch-on)	READ
<b>P3_MAX</b>	Maximum Phase 3 active power (from switch-on)	READ
<b>P3_AVG_MIN</b>	Minimum Phase 3 active power (in demand time)	READ
<b>P3_AVG_MAX</b>	Maximum Phase 3 active power (in demand time)	READ
<b>Psys</b>	System Active power	READ
<b>Psys_AVG</b>	System active power (in demand time)	READ
<b>Psys_MIN</b>	Minimum system active power (from switch-on)	READ
<b>Psys_MAX</b>	Maximum system active power (from switch-on)	READ
<b>Psys_AVG_MIN</b>	Minimum system active power (in demand time)	READ
<b>Psys_AVG_MAX</b>	Maximum system active power (in demand time)	READ
<b>S1</b>	Phase 1 apparent power	READ
<b>S1_AVG</b>	Phase 1 apparent power (in demand time)	READ
<b>S1_MIN</b>	Minimum Phase 1 apparent power (from switch-on)	READ
<b>S1_MAX</b>	Maximum Phase 1 apparent power (from switch-on)	READ
<b>S1_AVG_MIN</b>	Minimum Phase 1 apparent power (in demand time)	READ

<b>S1_AVG_MAX</b>	Maximum Phase 1 apparent power (in demand time)	READ
<b>S2</b>	Phase 2 apparent power	READ
<b>S2_AVG</b>	Phase 2 apparent power (in demand time)	READ
<b>S2_MIN</b>	Minimum Phase 2 apparent power (from switch-on)	READ
<b>S2_MAX</b>	Maximum Phase 2 apparent power (from switch-on)	READ
<b>S2_AVG_MIN</b>	Minimum Phase 2 apparent power (in demand time)	READ
<b>S2_AVG_MAX</b>	Maximum Phase 2 apparent power (in demand time)	READ
<b>S3</b>	Phase 3 apparent power	READ
<b>S3_AVG</b>	Phase 3 apparent power (in demand time)	READ
<b>S3_MIN</b>	Minimum Phase 3 apparent power (from switch-on)	READ
<b>S3_MAX</b>	Maximum Phase 3 apparent power (from switch-on)	READ
<b>S3_AVG_MIN</b>	Minimum Phase 3 apparent power (in demand time)	READ
<b>S3_AVG_MAX</b>	Maximum Phase 3 apparent power (in demand time)	READ
<b>Ssys</b>	System apparent power	READ
<b>Ssys_AVG</b>	System apparent power (in demand time)	READ
<b>Ssys_MIN</b>	Minimum system apparent power (from switch-on)	READ
<b>Ssys_MAX</b>	Maximum system apparent power (from switch-on)	READ
<b>Ssys_AVG_MIN</b>	Minimum system apparent power (in demand time)	READ
<b>Ssys_AVG_MAX</b>	Maximum system apparent power (in demand time)	READ
<b>Q1</b>	Phase 1 Reactive power	READ
<b>Q1_AVG</b>	Phase 1 reactive power (in demand time)	READ
<b>Q1_MIN</b>	Minimum Phase 1 reactive power (from switch-on)	READ
<b>Q1_MAX</b>	Maximum Phase 1 reactive power (from switch-on)	READ
<b>Q1_AVG_MIN</b>	Minimum Phase 1 reactive power (in demand time)	READ
<b>Q1_AVG_MAX</b>	Maximum Phase 1 reactive power (in demand time)	READ
<b>Q2</b>	Phase 2 Reactive power	READ
<b>Q2_AVG</b>	Phase 2 reactive power (in demand time)	READ
<b>Q2_MIN</b>	Minimum Phase 2 reactive power (from switch-on)	READ
<b>Q2_MAX</b>	Maximum Phase 2 reactive power (from switch-on)	READ
<b>Q2_AVG_MIN</b>	Minimum Phase 2 reactive power (in demand time)	READ
<b>Q2_AVG_MAX</b>	Maximum Phase 2 reactive power (in demand time)	READ
<b>Q3</b>	Phase 3 Reactive power	READ
<b>Q3_AVG</b>	Phase 3 reactive power (in demand time)	READ
<b>Q3_MIN</b>	Minimum Phase 3 reactive power (from switch-on)	READ
<b>Q3_MAX</b>	Maximum Phase 3 reactive power (from switch-on)	READ
<b>Q3_AVG_MIN</b>	Minimum Phase 3 reactive power (in demand time)	READ
<b>Q3_AVG_MAX</b>	Maximum Phase 3 reactive power (in demand time)	READ
<b>Qsys</b>	System Reactive power	READ
<b>Qsys_AVG</b>	System reactive power (in demand time)	READ
<b>Qsys_MIN</b>	Minimum system reactive power (from switch-on)	READ
<b>Qsys_MAX</b>	Maximum system reactive power (from switch-on)	READ
<b>Qsys_AVG_MIN</b>	Minimum system reactive power (in demand time)	READ
<b>Qsys_AVG_MAX</b>	Maximum system reactive power (in demand time)	READ

<b>TPF1</b>	Phase 1 Power factor	READ
<b>TPF1_AVG</b>	Phase 1 power factor (in demand time)	READ
<b>TPF1_MIN</b>	Minimum Phase 1 power factor (from switch-on)	READ
<b>TPF1_MAX</b>	Maximum Phase 1 power factor (from switch-on)	READ
<b>TPF1_AVG_MIN</b>	Minimum Phase 1 power factor (in demand time)	READ
<b>TPF1_AVG_MAX</b>	Maximum Phase 1 power factor (in demand time)	READ
<b>TPF2</b>	Phase 2 Power factor	READ
<b>TPF2_AVG</b>	Phase 2 power factor (in demand time)	READ
<b>TPF2_MIN</b>	Minimum Phase 2 power factor (from switch-on)	READ
<b>TPF2_MAX</b>	Maximum Phase 2 power factor (from switch-on)	READ
<b>TPF2_AVG_MIN</b>	Minimum Phase 2 power factor (in demand time)	READ
<b>TPF2_AVG_MAX</b>	Maximum Phase 2 power factor (in demand time)	READ
<b>TPF3</b>	Phase 3 Power factor	READ
<b>TPF3_AVG</b>	Phase 3 power factor (in demand time)	READ
<b>TPF3_MIN</b>	Minimum Phase 3 power factor (from switch-on)	READ
<b>TPF3_MAX</b>	Maximum Phase 3 power factor (from switch-on)	READ
<b>TPF3_AVG_MIN</b>	Minimum Phase 3 power factor (in demand time)	READ
<b>TPF3_AVG_MAX</b>	Maximum Phase 3 power factor (in demand time)	READ
<b>TPFsys</b>	System Power factor	READ
<b>TPFsys_AVG</b>	System power factor (in demand time)	READ
<b>TPFsys_MIN</b>	Minimum system power factor (from switch-on)	READ
<b>TPFsys_MAX</b>	Maximum system power factor (from switch-on)	READ
<b>TPFsys_AVG_MIN</b>	Minimum system power factor (in demand time)	READ
<b>TPFsys_AVG_MAX</b>	Maximum system power factor (in demand time)	READ
<b>THD-V1N</b>	Voltage THD (Total Harmonic Distortion) between Phase 1 and neutral	READ
<b>THD-V1N_AVG</b>	Voltage THD between Phase 1 and neutral (in demand time)	READ
<b>THD-V1N_MIN</b>	Minimum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>THD-V1N_MAX</b>	Maximum voltage THD between Phase 1 and neutral (from switch-on)	READ
<b>THD-V1N_AVG_MIN</b>	Minimum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>THD-V1N_AVG_MAX</b>	Maximum voltage THD between Phase 1 and neutral (in demand time)	READ
<b>THD-V2N</b>	Voltage THD between Phase 2 and neutral	READ
<b>THD-V2N_AVG</b>	Voltage THD between Phase 2 and neutral (in demand time)	READ
<b>THD-V2N_MIN</b>	Minimum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>THD-V2N_MAX</b>	Maximum voltage THD between Phase 2 and neutral (from switch-on)	READ
<b>THD-V2N_AVG_MIN</b>	Minimum voltage THD between Phase 2 and neutral (in demand time)	READ
<b>THD-V2N_AVG_MAX</b>	Maximum voltage THD between Phase 2 and neutral (in demand time)	READ

<b>THD-V3N</b>	Voltage THD between Phase 3 and neutral	READ
<b>THD-V3N_AVG</b>	Voltage THD between Phase 3 and neutral (in demand time)	READ
<b>THD-V3N_MIN</b>	Minimum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>THD-V3N_MAX</b>	Maximum voltage THD between Phase 3 and neutral (from switch-on)	READ
<b>THD-V3N_AVG_MIN</b>	Minimum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>THD-V3N_AVG_MAX</b>	Maximum voltage THD between Phase 3 and neutral (in demand time)	READ
<b>f</b>	Phase frequency (read from Phase 1)	READ
<b>THD-A1N</b>	Phase 1 current THD	READ
<b>THD-A1N_AVG</b>	Phase 1 current THD (in demand time)	READ
<b>THD-A1N_MIN</b>	Minimum Phase 1 current THD (from switch-on)	READ
<b>THD-A1N_MAX</b>	Maximum Phase 1 current THD (from switch-on)	READ
<b>THD-A1N_AVG_MIN</b>	Minimum Phase 1 current THD (in demand time)	READ
<b>THD-A1N_AVG_MAX</b>	Maximum Phase 1 current THD (in demand time)	READ
<b>THD-A2N</b>	Phase 2 current THD	READ
<b>THD-A2N_AVG</b>	Phase 2 current THD (in demand time)	READ
<b>THD-A2N_MIN</b>	Minimum Phase 2 current THD (from switch-on)	READ
<b>THD-A2N_MAX</b>	Maximum Phase 2 current THD (from switch-on)	READ
<b>THD-A2N_AVG_MIN</b>	Minimum Phase 2 current THD (in demand time)	READ
<b>THD-A2N_AVG_MAX</b>	Maximum Phase 2 current THD (in demand time)	READ
<b>THD-A3N</b>	Phase 3 current THD	READ
<b>THD-A3N_AVG</b>	Phase 3 current THD (in demand time)	READ
<b>THD-A3N_MIN</b>	Minimum Phase 3 current THD (from switch-on)	READ
<b>THD-A3N_MAX</b>	Maximum Phase 3 current THD (from switch-on)	READ
<b>THD-A3N_AVG_MIN</b>	Minimum Phase 3 current THD (in demand time)	READ
<b>THD-A3N_AVG_MAX</b>	Maximum Phase 3 current THD (in demand time)	READ
<b>+WH1</b>	Phase 1 positive active energy	READ
<b>+WH2</b>	Phase 2 positive active energy	READ
<b>+WH3</b>	Phase 3 positive active energy	READ
<b>+Wh</b>	Total positive active energy	READ
<b>-WH1</b>	Phase 1 negative active energy	READ
<b>-WH2</b>	Phase 2 negative active energy	READ
<b>-WH3</b>	Phase 3 negative active energy	READ
<b>-Wh</b>	Total negative active energy	READ
<b>VAh1</b>	Phase 1 apparent energy	READ
<b>VAh2</b>	Phase 2 apparent energy	READ

<b>VAh3</b>	Phase 3 apparent energy	READ
<b>VAh</b>	Total apparent energy	READ
<b>+VARh1-L[Q1]</b>	Phase 1 positive inductive reactive energy (Q1)	READ
<b>+VARh2-L[Q1]</b>	Phase 2 positive inductive reactive energy (Q1)	READ
<b>+VARh3-L[Q1]</b>	Phase 3 positive inductive reactive energy (Q1)	READ
<b>+VARh-L[Q1]</b>	Total positive inductive reactive energy (Q1)	READ
<b>-VARh1-C[Q4]</b>	Phase 1 negative capacitive reactive energy (Q4)	READ
<b>-VARh2-C[Q4]</b>	Phase 2 negative capacitive reactive energy (Q4)	READ
<b>-VARh3-C[Q4]</b>	Phase 3 negative capacitive reactive energy (Q4)	READ
<b>-VARh-C[Q4]</b>	Total negative capacitive reactive energy (Q4)	READ
<b>-VARh1-L[Q3]</b>	Phase 1 negative inductive reactive energy (Q3)	READ
<b>-VARh2-L[Q3]</b>	Phase 2 negative inductive reactive energy (Q3)	READ
<b>-VARh3-L[Q3]</b>	Phase 3 negative inductive reactive energy (Q3)	READ
<b>-VARh-L[Q3]</b>	Total negative inductive reactive energy (Q3)	READ
<b>+VARh1-C[Q2]</b>	Phase 1 positive capacitive reactive energy (Q2)	READ
<b>+VARh2-C[Q2]</b>	Phase 2 positive capacitive reactive energy (Q2)	READ
<b>+VARh3-C[Q2]</b>	Phase 3 positive capacitive reactive energy (Q2)	READ
<b>+VARh-C[Q2]</b>	Total positive capacitive reactive energy (Q2)	READ
<b>Wh</b>	Total active energy	READ
<b>VARh</b>	Total reactive energy	READ
<b>VARh-L[Q1Q3]</b>	Total inductive reactive energy (Q1+Q3)	READ
<b>VARh-C[Q2Q4]</b>	Total capacitive reactive energy (Q2+Q4)	READ
<b>VAh</b>	Total apparent energy	READ
<b>COUNTER 1</b>	Input 1 pulse counter	READ
<b>COUNTER 2</b>	Input 2 pulse counter	READ
<b>DIGITAL_IN_1</b>	Digital Input 1	READ
<b>DIGITAL_IN_2</b>	Digital Input 2	READ
<b>DIGITAL_OUT_1</b>	Digital output 1	READ/ WRITE
<b>DIGITAL_OUT_2</b>	Digital output 2	READ/ WRITE
<b>ANALOG OUT</b>	Value to load on analog output (R203 models only) in uA or mV	READ/ WRITE
<b>COMMAND</b>	Command register. Supported commands: 260 decimal to reset MIN/MAX 259 decimal to reset AVG demand time values 261 decimal to reset Energy Counters	READ/ WRITE
<b>TOT KVARh L1</b>	Phase 1 total reactive energy	READ
<b>TOT KVARh L2</b>	Phase 2 total reactive energy	READ
<b>TOT KVARh L3</b>	Phase 3 total reactive energy	READ
<b>STATUS</b>	Device status bitBIT0 -> Cyclic phase sense error (1 ERR, 0 OK) BIT1 -> ALARM ( 1 ACTIVE, 0 NOT ACTIVE) BIT2 -> DOUT1 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT3 -> DOUT2 status ( 1 ACTIVE, 0 NOT ACTIVE) BIT4 -> DIN1 STATUS ( 1 high, 0 low) BIT5 -> DIN2 STATUS ( 1 high, 0 low)	READ

	BIT6 -> Current Cutoff ( 1 active, 0 inactive) BIT 7 -> Current error L1 (1 CT connected reverse, 0 CT connected OK) BIT 8 -> Current error L2 (1 CT connected reverse, 0 CT connected OK) BIT 9 -> Current error L3 (1 CT connected inverted, 0 CT connected OK) BIT 10 -> Line 1 Voltage/Current connection error (1 Error, 0 OK) BIT 11 -> Connection error Line 2 Voltage/Current (1 Error, 0 OK) BIT 12 -> Connection error Line 3 Voltage/Current (1 Error, 0 OK)	
<b>Wh1</b>	Phase 1 total active energy	READ
<b>Wh2</b>	Phase 2 total active energy	READ
<b>Wh3</b>	Phase 3 total active energy	READ

## 25.2 *UaEXPERT™ CLIENT CONFIGURATION*

To perform a test connection, use the UaExpert™ software.

UaExpert™ is a complete OPC UA client capable of supporting different OPC UA profiles and features.

The free version can be downloaded from the link:

<https://www.unified-automation.com/downloads.html>

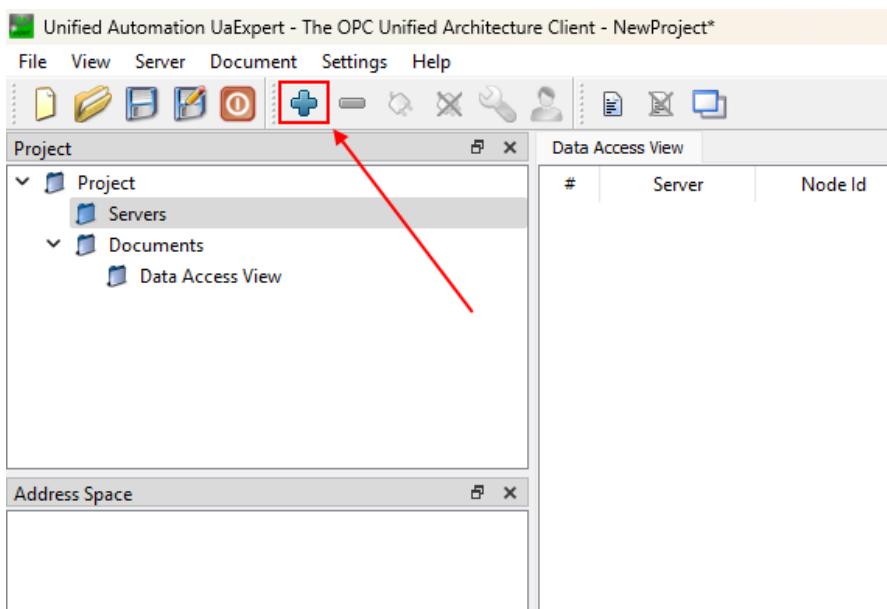
First, configure the OPC-UA server parameters in the webserver of the device (OPC-UA settings section):

OPC-UA SETTING		
SERVER NAME	R203	R203
SERVER PORT	4840	4840
AUTHENTICATION	OFF	ON <input checked="" type="checkbox"/>
USERNAME	admin	admin
PASSWORD	admin	admin
OPC-UA SERVER SECURITY POLICY	NONE	AES128SHA256RSAOAEP <input checked="" type="checkbox"/>
OPC-UA SERVER MESSAGE SECURITY MODE	SIGN AND ENCRYPT	SIGN AND ENCRYPT <input checked="" type="checkbox"/>

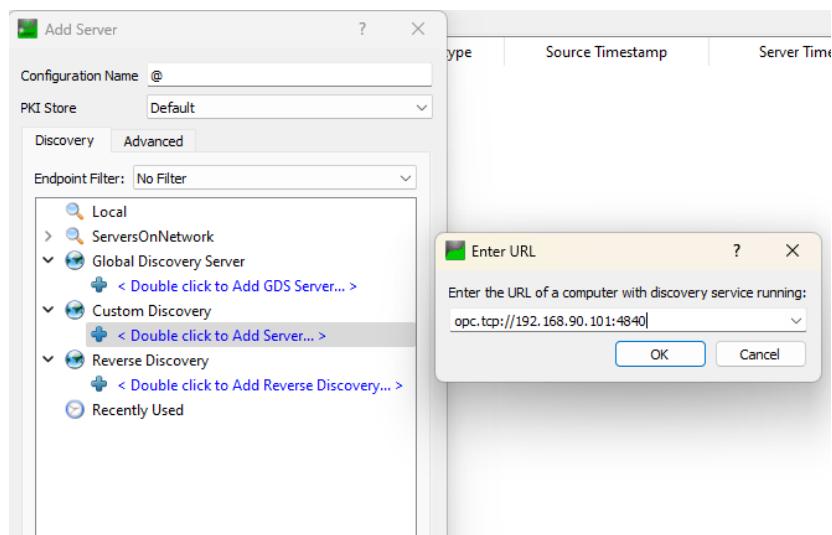
In this way you have activated the indicated security policy.

Use certificates by default.

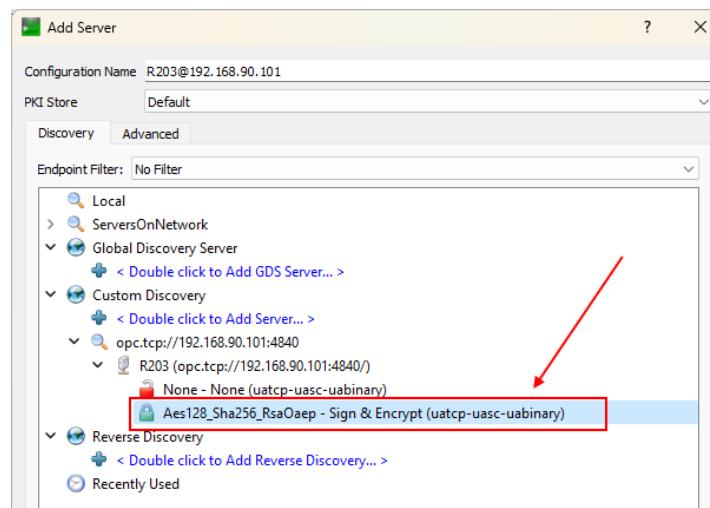
Now open the OPC-UA client and press the “+” icon to add an OPC-UA server:



At this point under "Custom directory" we enter the IP address of the device (192.168.90.101 in the example) and the configured port (4840 in the example):



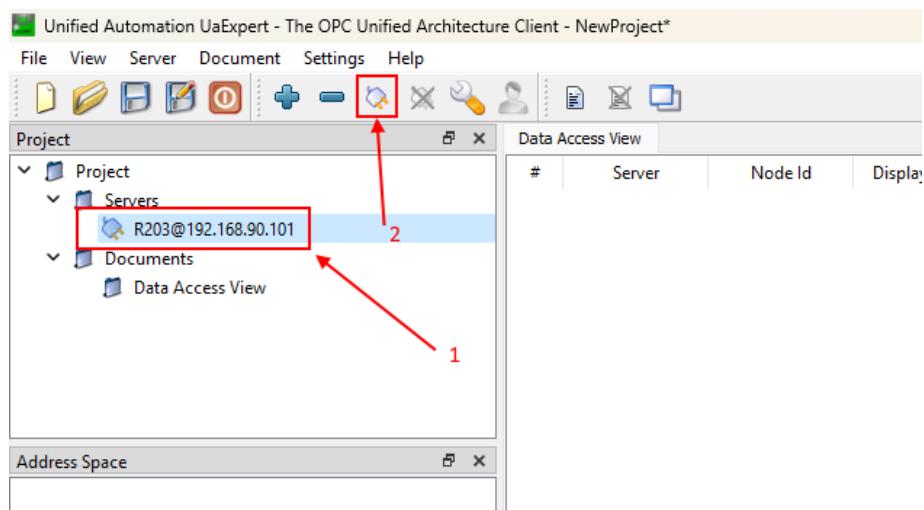
By pressing OK the server is added to the list, select the desired encryption:



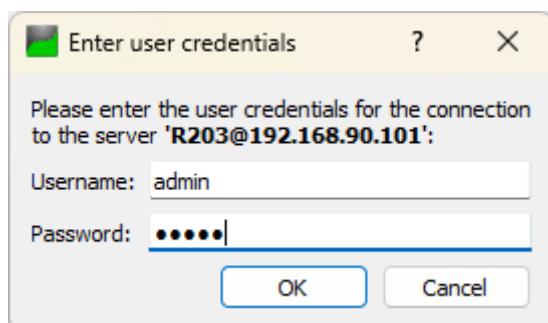
Press OK

Now the server is added.

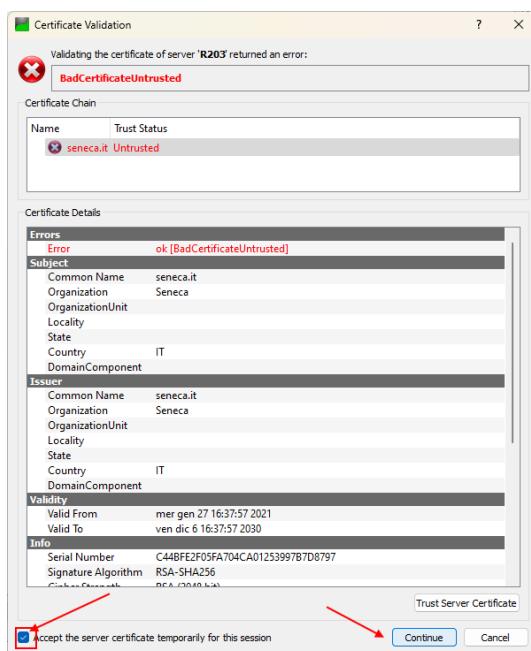
First select the server and then press the connection icon:



You will be asked for your credentials as configured:

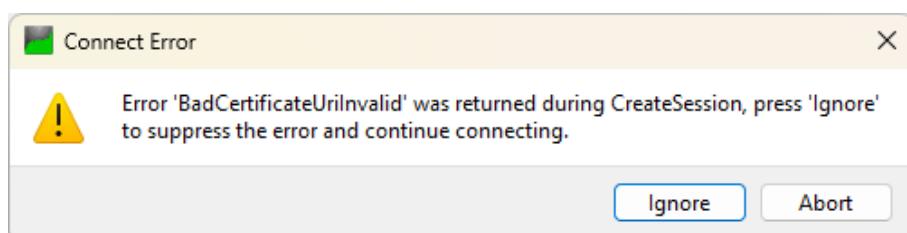


At this point a screen will appear indicating that the certificate is not secure:

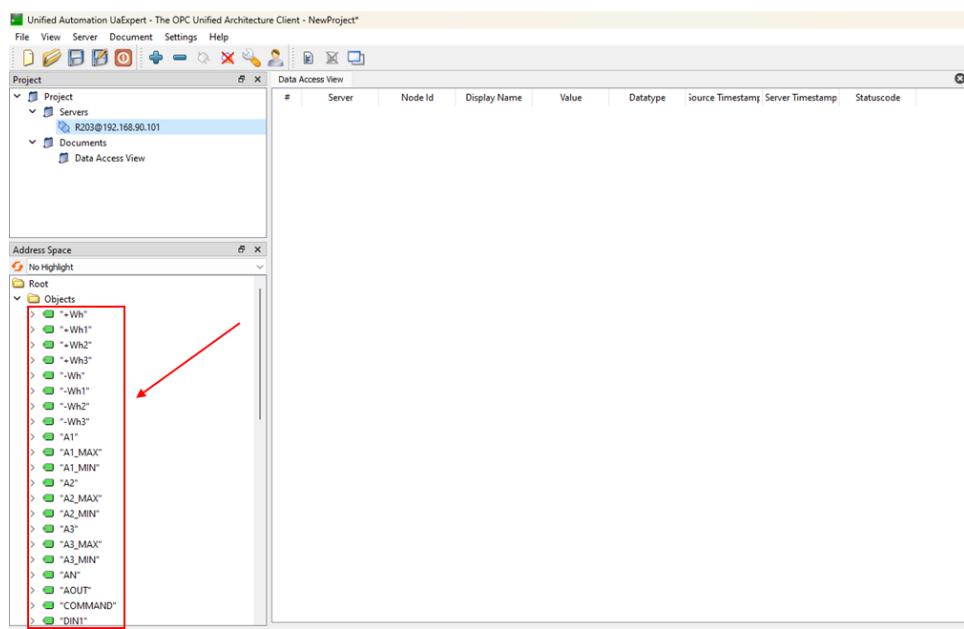


Accept the certificate and press the "Continue" button.

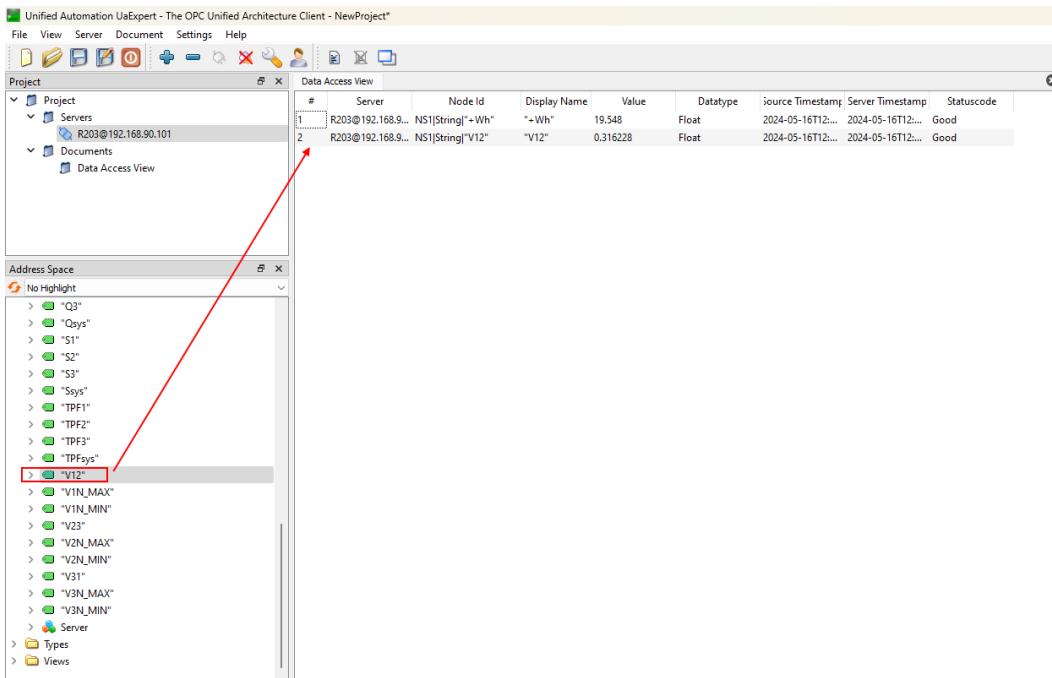
Now ignore the next two certificate-related errors:



Now the connection is established and the configured list of variables appears:



Now you can drag the variables you want to view:



It is also possible to write on the variables in read/write mode, for example it is possible to activate the digital output DOUT2 by writing the value to 1:

Data Access View									
#	Server	Node Id	Display Name	Value	Datatype	Source Timestamp	Server Timestamp	Statuscode	
1	R203@192.168.9...	NS1[String]"+Wh"	"+Wh"	19.548	Float	2024-05-16T12:...	2024-05-16T12:...	Good	
2	R203@192.168.9...	NS1[String]"V12"	"V12"	0.316228	Float	2024-05-16T12:...	2024-05-16T12:...	Good	
3	R203@192.168.9...	NS1[String]"DOUT1"	"DOUT1"	0	Byte	2024-05-16T12:...	2024-05-16T12:...	Good	
4	R203@192.168.9...	NS1[String]"DOUT2"	"DOUT2"	1	Byte	2024-05-16T12:...	2024-05-16T12:...	Good	

