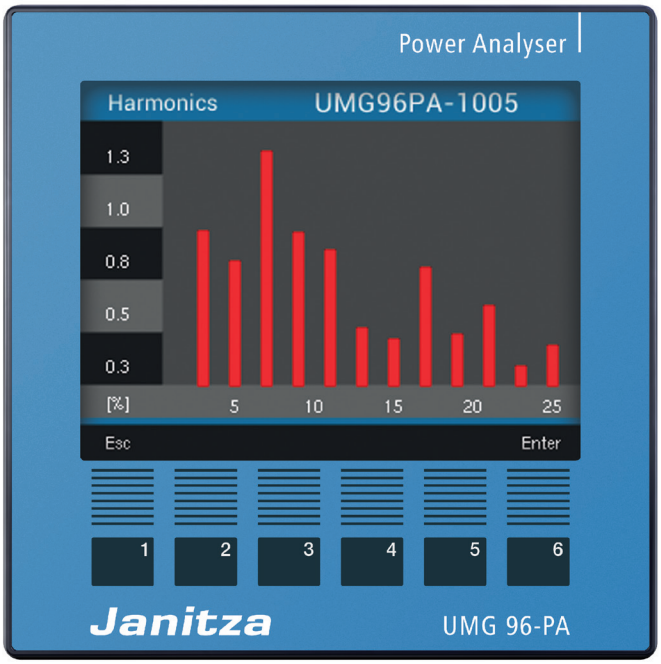
Power Analyser

UMG 96-PA

UMG 96-PA^{MID}

up to firmware version 1.12

Modbus-address list and Formulary



Doc. no. 2.061.029.1 08/2018 up to firmware vers. 1.12

www.janitza.com

Janitza electronics GmbH
Vor dem Polstück 6
D-35633 Lahnau
Support Tel. +49 6441 9642-22
Fax +49 6441 9642-30
E-mail: info@janitza.com
www.janitza.com

Janitza®

Content

Copyright

This handbook is subject to the legal regulations of the copyright laws and may not be fully or partially photocopied, reprinted or reproduced mechanically or electronically and may not be copied or published in any other way without the legal, written permission of

Janitza electronics GmbH
Vor dem Polstück 6
D35633 Lahnau
Germany

Protected trademarks

All trademarks and the resulting rights belong to the respective owners of these rights.

Disclaimer

Janitza electronics GmbH does not accept any responsibility for errors or faults within this handbook and does not accept any obligation to keep the contents of this handbook updated.

Comments on the handbook

We welcome your comments. If anything appears to be unclear in this handbook, please let us know and send us an E-MAIL to:
info@janitza.de

Modbus

Modbus Functions

As a slave, the UMG 96-PA supports the following modbus functions:

03 Read Holding Registers

Reads the binary contents of holding registers (4X references) in the slave.

04 Read Input Registers

Reads the binary contents of input registers (3X references) in the slave.

06 Preset Single Register

Presets a value into a single holding register (4X reference). When broadcast, the function presets the same register reference in all attached slaves.

16 (10Hex) Preset Multiple Registers

Presets values into a sequence of holding registers (4X references). When broadcast, the function presets the same register references in all attached slaves.

23 (17Hex) Read/Write 4X Registers

Performs a combination of one read and one write operation in a single Modbus transaction. The function can write new contents to a group of 4XXXX registers, and then return the contents of another group of 4XXXX registers. Broadcast is not supported.

Transfer parameters

The UMG 96-PA supports the following transfer parameters:

Baud rate	: 9600, 19200, 38400, 57600 and 11500 Baud
Data bits	: 8
Parity	: none
Stop bits (UMG 96RM)	: 2
Stop bits external	: 1 or 2

Byte sequence

The data in the modbus address list can be called up in the

- Big-Endian (high-Byte before low-Byte) and in the
- Little-Endian (low-byte before high-byte)

format.
The addresses described in this address list supply the data in the „Big-Endian“ format.
If you require the data in the „Little-Endian“ format, you must add the value 32768 to the address.

Update rate

The modbus register addresses are updated every 200ms.

Measured values

- Measured values in the **short** format do not take into account the set transformer ratio, i.e. these measured values have to be multiplied by the corresponding transformer factor!
- Measured values in **float or integer format** take into account the corresponding transformer factors!

Number formats

Type	Size	Minimum	Maximum
char	8 bit	0	255
byte	8 bit	-128	127
short	16 bit	-2^{15}	$2^{15}-1$
ushort	16 bit	0	$2^{16}-1$
int	32 bit	-2^{31}	$2^{31}-1$
uint	32 bit	0	$2^{32}-1$
long64	64 bit	-2^{63}	$2^{63}-1$
float	32 bit	IEEE 754	IEEE 754
double	64 bit	IEEE 754	IEEE 754

Symbols and definitions

N	Total number of sample points per period (For example, in a period of 20 ms)
k	Sample value or number of samples per period (0 <= k < N)
p	Number or identification of the phase conductor (p = 1, 2 oder 3)
i_{pk}	Sample value k of the current of the phase conductor p
u_{pNk}	Sample value k of the neutral voltage of the phase conductor p
P_p	Real power of the phase conductor p

Explanations of the measured values

Measured value

- A measured value is a effective value which is formed over a period (measuring window) of 200 ms.
- A measuring window is 10 periods in the 50 Hz network and 12 periods in the 60 Hz network.
- A measuring window has a start time and an end time.
- The resolution between the start time and end time is approximately 2 ns.
- The accuracy of the start time and end time depends on the accuracy of the internal clock. (Typically +- 1 minute/month)
- In order to improve the accuracy of the internal clock, it is recommended that the clock in the device is compared with a time service and reset.

Mean value of measured value

- For each measured value, a sliding mean value is calculated over the selected averaging time.
- The mean value is calculated every 200 ms.
- You can take the possible averaging times from the table.

n	Mean time / seconds
0	5
1	10
2	15
3	30
4	60
5	300
6	480
7	600
8	900

Max. value of measured value

- The ***max. value of the measured value*** is the largest measured value which has occurred since the last deletion.

Min. value of measured value

- The ***min. value of the measured value*** is the lowest measured value which has occurred since the last deletion.

Max. value of mean value

- The ***max. value of the mean value*** is the largest mean value which has occurred since the last deletion.

Nominal current, voltage, frequency

- The limit values for events and transients are set by the nominal value in percentage.

Nominal current I_{rated}

- The Irated is the nominal current of the transformers and is required for calculation of the K-factor.

Peak value negative

- Highest negative sampling value from the last 200 ms measuring window..

Peak value positive

- Highest positive sampling value from the last 200 ms measuring window.

Crest factor

- The crest factor describes the relation between the peak value and effective value of a periodic quantity. It serves as a characteristic value for general description of the curve form of a periodic quantity. The distortion factor is another example of a quantity for characterization of the difference from the pure sinusoidal form.
- Example: *A sinusoidal change voltage with an effective value of 230 V has a peak value of approx. 325 V.* The crest factor is then 325 V / 230 V =1.414 .

Effective value of the current for phase conductor p

$$I_p = \sqrt{\frac{1}{N} \cdot \sum_{k=0}^{N-1} i_{p_k}^2}$$

Effective value of neutral conductor current

$$I_N = \sqrt{\frac{1}{N} \cdot \sum_{k=0}^{N-1} (i_{1_k} + i_{2_k} + i_{3_k})^2}$$

Effective voltage L-N

$$U_{pN} = \sqrt{\frac{1}{N} \cdot \sum_{k=0}^{N-1} u_{pN_k}^2}$$

Effective voltage L-L

$$U_{pg} = \sqrt{\frac{1}{N} \cdot \sum_{k=0}^{N-1} (u_{gN_k} - u_{pN_k})^2}$$

Star connection voltage (vectorial)

$$U_{Sternpunktspannung} = U_{1_{rms}} + U_{2_{rms}} + U_{3_{rms}}$$

Real power for phase conductor

$$P_p = \frac{1}{N} \cdot \sum_{k=0}^{N-1} (u_{pN_k} \times i_{p_k})$$

Apparent power for phase conductor

- Unsigned

$$S_p = U_{pN} \cdot I_p$$

Total apparent power (arithmetic) Sa

- Unsigned

$$S_A = S_1 + S_2 + S_3$$

Peak demand P_{max}

- T = Periodic time
- tn = n-th interval time
- Pn = n-th Power measurement value
- N = Number of measuring intervals in the period T

$$P_{max} = \max\left(P_{max}; \frac{1}{T} \sum_{n=1}^{N} (t_n \cdot P_n)\right)$$

Order number of harmonics

xxx[0] = mains frequency (50 Hz/60 Hz)
xxx[1] = 2nd harmonic (100 Hz/120 Hz)
xxx[2] = 3rd harmonic (150 Hz/180 Hz)
etc.

THD

- THD (Total Harmonic Distortion) is the distortion factor and provides the relation of the harmonic parts of an oscillation to the mains frequency.

Distortion factor for the voltage

- M = 40 (UMG 604, UMG 508, UMG 96RM)
- M = 50 (UMG 605, UMG 511)
- fund corresponds to n=1

$$THD_U = \frac{1}{|U_{fund}|}\sqrt{\sum_{n=2}^{M}|U_{n.Harm}|^2}$$

Distortion factor for the current

- M = 40 (UMG 604, UMG 508, UMG 96RM)
- M = 50 (UMG 605, UMG 511)
- fund corresponds to n=1

$$THD_I = \frac{1}{|I_{fund}|}\sqrt{\sum_{n=2}^{M}|I_{n.Harm}|^2}$$

ZHD

- THD for the interharmonics.
- Is calculated in the product series and UMG 511 UMG 605.

Interharmonics

- Sinusoidal oscillations, which frequencies are not a multiple integer of the mains frequency.
- Is calculated in the product series and UMG 511 UMG 605.
- Calculation and measurement methods in accordance with the DIN EN 61000-4-30.
- The order number of inter harmonics corresponds to the order number of the next smallest harmonic. For example, between the 3rd and 4th harmonic of the 3rd inter harmonics.

TDD (I)

- TDD Total demand distortion, harmonic current distortion in % of maximum demand load current
- IL = Maximum demand load current
- M = 40 (UMG 604, UMG 508, UMG 96RM)
- M = 50 (UMG 605, UMG 511)

$$TDD = \frac{1}{I_L}\sqrt{\sum_{n=2}^{M} I_n^2} \times 100\%$$

Ripple control signal U (EN61000-4-30)

The ripple control signal U is a voltage (200 ms measured value) which is measured at a carrier frequency specified by the user. Only frequencies beneath 3 kHz are observed.

Ripple control signal I

The ripple control signal I is a current (200 ms measured value) which is measured at a carrier frequency specified by the user. Only frequencies beneath 3 kHz are observed.

Positive sequence-negative sequence-zero sequence

- The extent of a voltage or current imbalance in a three-phase system is identified using the positive sequence, negative sequence and zero sequence components.
- The balance of the rotation current system strived for in normal operation is disturbed by the unsymmetrical loads, errors and equipment.
- A three-phase system is called symmetric, when the three phase conductor voltages and currents are the same size and are displaced against each other by 120°. If one or both conditions are not fulfilled, the system is described as unsymmetrical. By calculating the symmetrical components consisting of the positive sequence, negative sequence and zero sequence, the simplified analysis of an imbalanced error is possible in a rotary current system..
- Imbalance is a feature of the network quality for the limits specified in international norms (EN 50160 for example).

Positive sequence

$$U_{Mit} = \frac{1}{3}\left|U_{L1,fund} + U_{L2,fund} \cdot e^{j\frac{2\pi}{3}} + U_{L3,fund} \cdot e^{j\frac{4\pi}{3}}\right|$$

Negative sequence

$$U_{Geg} = \frac{1}{3}\left|U_{L1,fund} + U_{L2,fund} \cdot e^{-j\frac{2\pi}{3}} + U_{L3,fund} \cdot e^{-j\frac{4\pi}{3}}\right|$$

Zero sequence

$$U_{Nullsystem} = \frac{1}{3}\left|U_{L1,fund} + U_{L2,fund} + U_{L3,fund}\right|$$

A zero component can only occur if a sum current can flow back through the main conductor.

Voltage imbalance

$$Unsymmetrie = \frac{U_{Geg}}{U_{Mit}}$$

Under difference U (EN61000-4-30)

$$U_{unter} = \frac{U_{din} - \sqrt{\frac{\sum_{i=1}^{n} U_{rms-unter,i}^2}{n}}}{U_{din}}[\%]$$

Under difference I

$$I_{unter} = \frac{I_{Nennstrom} - \sqrt{\frac{\sum_{i=1}^{n} I_{rms-unter,i}^2}{n}}}{I_{Nennstrom}}[\%]$$

K-factor

- The K-factor describes the increase of the eddy current losses when loaded with harmonics. For a sinusoidal load on the transformer, the K-factor =1. The larger the K-factor, the heavier a transformer can be loaded with harmonics without overheating.

Power Factor (vectorial) - Lambda

- The power factor is unsigned.

$$PF_A = \frac{|P|}{S_A}$$

CosPhi - Fundamental Power Factor

- Only the mains frequency part is used for calculation of the cosphi.
- CosPhi sign:
  - = for the supply of real power
  + = for obtaining real power

$$PF_1 = \cos(\varphi) = \frac{P_1}{S_1}$$

CosPhi total

- CosPhi sign:
  - = for the supply of real power
  + = for obtaining real power

$$\cos(\varphi)_{Sum_3} = \frac{P_{1_{fund}} + P_{2_{fund}} + P_{3_{fund}}}{\sqrt{(P_{1_{fund}} + P_{2_{fund}} + P_{3_{fund}})^2 + (Q_{1_{fund}} + Q_{2_{fund}} + Q_{3_{fund}})^2}}$$

$$\cos(\varphi)_{Sum_4} = \frac{P_{1_{fund}} + P_{2_{fund}} + P_{3_{fund}} + P_{4_{fund}}}{\sqrt{(P_{1_{fund}} + P_{2_{fund}} + P_{3_{fund}} + P_{4_{fund}})^2 + (Q_{1_{fund}} + Q_{2_{fund}} + Q_{3_{fund}} + Q_{4_{fund}})^2}}$$

Phase Angle Phi

- The phase angle between current and voltage of the external conductor p is calculated according to DIN EN 61557-12 and displayed.
- The sign of the phase angle corresponding to the sign of the reactive power.

Mains frequency power factor

The mains frequency power factor is the power factor of the mains frequency and is calculated using the fourier analysis (FFT). The voltage and current must not be sinusoidal. All in the device calculated reactive power are resulting of fundamental reactive power.

Power factor sign

- Sign Q = +1 for phi in the range 0° .. 180° (inductive)
- Sign Q = -1 for phi in the range 180° .. 360° (capacitive)

$$Vorzeichen\,Q(\varphi_p) = +1\ falls\ \varphi_p \in [0° - 180°]$$

$$Vorzeichen\,Q(\varphi_p) = -1\ falls\ \varphi_p \in [180° - 360°]$$

Reactive power for phase conductor p

- Reactive power of the mains frequency.

$$Q_{fund\,p} = Vorzeichen\,Q(\varphi_p) \cdot \sqrt{S_{fund\,p}^{\ 2} - P_{fund\,p}^{\ 2}}$$

Total reactive power

- Reactive power of the mains frequency.

$$Q_V = Q_1 + Q_2 + Q_3$$

Distortion power factor

- The distortion power factor is the power factor of all mains frequencies and is calculated using the fourier analysis (FFT).

$$D = \sqrt{S^2 - P^2 - Q_{fund}^2}$$

- The apparent power „S" contains all fundamental harmonics and all harmonic rates up to the M-th harmonic.
- The effective power „P" contains all fundamental harmonics and all harmonic rates up to the M-th harmonic.
- M = 50 (UMG 605, UMG 605-PRO, UMG 511, UMG 512-PRO)

Reactive energy per phase

$$E_{r_{L1}} = \int Q_{L1}(t) \cdot \Delta t$$

Reactive energy per phase, inductive

$$E_{r(ind)_{L1}} = \int Q_{L1}(t) \cdot \Delta t \qquad \text{für } Q_{L1}(t) > 0$$

Reactive energy per phase, capazitive

$$E_{r(cap)_{L1}} = \int Q_{L1}(t) \cdot \Delta t \qquad \text{für } Q_{L1}(t) < 0$$

Reactive energy, sum L1-L3

$$E_{r_{L1,L2,L3}} = \int (Q_{L1}(t) + Q_{L2}(t) + Q_{L3}(t)) \cdot \Delta t$$

Reactive energy, sum L1-L3, inductive

$$E_{r(ind)_{L1,L2,L3}} = \int (Q_{L1}(t) + Q_{L2}(t) + Q_{L3}(t)) \cdot \Delta t$$

für $(Q_{L1}(t) + Q_{L2}(t) + Q_{L3}(t)) > 0$

Reactive energy, sum L1-L3, capazitive

$$E_{r(cap)_{L1,L2,L3}} = \int (Q_{L1}(t) + Q_{L2}(t) + Q_{L3}(t)) \cdot \Delta t$$

für $(Q_{L1}(t) + Q_{L2}(t) + Q_{L3}(t)) < 0$

Address list

Frequently required readings

Address	Format	RD/WR	Variable	Unit	Note
19000	float	RD	_ULN[0]	V	Voltage L1-N
19002	float	RD	_ULN[1]	V	Voltage L2-N
19004	float	RD	_ULN[2]	V	Voltage L3-N
19006	float	RD	_ULL[0]	V	Voltage L1-L2
19008	float	RD	_ULL[1]	V	Voltage L2-L3
19010	float	RD	_ULL[2]	V	Voltage L3-L1
19012	float	RD	_ILN[0]	A	Current, L1
19014	float	RD	_ILN[1]	A	Current, L2
19016	float	RD	_ILN[2]	A	Current, L3
19018	float	RD	_I_SUM3	A	Vector sum; IN=I1+I2+I3
19020	float	RD	_PLN[0]	W	Real power L1
19022	float	RD	_PLN[1]	W	Real power L2
19024	float	RD	_PLN[2]	W	Real power L3
19026	float	RD	_P_SUM3	W	Sum; Psum3=P1+P2+P3
19028	float	RD	_SLN[0]	VA	Apparent power L1
19030	float	RD	_SLN[1]	VA	Apparent power L2
19032	float	RD	_SLN[2]	VA	Apparent power L3
19034	float	RD	_S_SUM3	VA	Sum; Ssum3=S1+S2+S3
19036	float	RD	_QLN[0]	var	Reactive power (mains frequ.) L1
19038	float	RD	_QLN[1]	var	Reactive power (mains frequ.) L2
19040	float	RD	_QLN[2]	var	Reactive power (mains frequ.) L3
19042	float	RD	_Q_SUM3	var	Sum; Qsum3=Q1+Q2+Q3
19044	float	RD	_COS_PHI[0]		Fund.power factor, CosPhi; UL1 IL1
19046	float	RD	_COS_PHI[1]		Fund.power factor, CosPhi; UL2 IL2
19048	float	RD	_COS_PHI[2]		Fund.power factor, CosPhi; UL3 IL3
19050	float	RD	_FREQ	Hz	Measured frequency
19052	float	RD	_PHASE_SEQ		Rotation field; 1=right, 0=none, -1=left
*19054**	*float*	*RD*	*_WH_V[0]*	*Wh*	*Real energy L1, consumed*
*19056**	*float*	*RD*	*_WH_V[1]*	*Wh*	*Real energy L2, consumed*
*19058**	*float*	*RD*	*_WH_V[2]*	*Wh*	*Real energy L3, consumed*
19060	float	RD	_WH_V_HT_SUML13	Wh	Real energy L1..L3
19062	float	RD	_WH_V[0]	Wh	Real energy L1, consumed
19064	float	RD	_WH_V[1]	Wh	Real energy L2, consumed
19066	float	RD	_WH_V[2]	Wh	Real energy L3, consumed
19068	float	RD	_WH_V_HT_SUML13	Wh	Real energy L1..L3, consumed, rate 1
19070	float	RD	_WH_Z[0]	Wh	Real energy L1, delivered
19072	float	RD	_WH_Z[1]	Wh	Real energy L2, delivered
19074	float	RD	_WH_Z[2]	Wh	Real energy L3, delivered
19076	float	RD	_WH_Z_SUML13	Wh	Real energy L1..L3, delivered
19078	float	RD	_WH_S[0]	VAh	Apparent energy L1
19080	float	RD	_WH_S[1]	VAh	Apparent energy L2
19082	float	RD	_WH_S[2]	VAh	Apparent energy L3
19084	float	RD	_WH_S_SUML13	VAh	Apparent energy L1..L3
*19086**	*float*	*RD*	*_IQH[0]*	*varh*	*Reactive energy, inductive, L1*
*19088**	*float*	*RD*	*_IQH[1]*	*varh*	*Reactive energy, inductive, L2*
*19090**	*float*	*RD*	*_IQH[2]*	*varh*	*Reactive energy, inductive, L3*
19092	float	RD	_IQH_SUML13	varh	Reactive energy L1..L3
19094	float	RD	_IQH[0]	varh	Reactive energy, inductive, L1
19096	float	RD	_IQH[1]	varh	Reactive energy, inductive, L2
19098	float	RD	_IQH[2]	varh	Reactive energy, inductive, L3
19100	float	RD	_IQH_SUML13	varh	Reactive energy L1..L3, ind.
19102	float	RD	_CQH[0]	varh	Reactive energy, capacitive, L1
19104	float	RD	_CQH[1]	varh	Reactive energy, capacitive, L2
19106	float	RD	_CQH[2]	varh	Reactive energy, capacitive, L3
19108	float	RD	_CQH_SUML13	varh	Reactive energy L1..L3, cap.

* The selected device addresses do not match with the standard device addresses of the UMG series.

Address	Format	RD/WR	Variable	Unit	Unit
19110	float	RD	_THD_ULN[0]	%	Harmonic, THD,U L1-N
19112	float	RD	_THD_ULN[1]	%	Harmonic, THD,U L2-N
19114	float	RD	_THD_ULN[2]	%	Harmonic, THD,U L3-N
19116	float	RD	_THD_ILN[0]	%	Harmonic, THD,I L1
19118	float	RD	_THD_ILN[1]	%	Harmonic, THD,I L2
19120	float	RD	_THD_ILN[2]	%	Harmonic, THD,I L3

Measured values, type float

Address	Format	RD/WR	Note
1000	float	RD	voltage L1-N
1002	float	RD	voltage L2-N
1004	float	RD	voltage L3-N
1006	float	RD	voltage L1-L2
1008	float	RD	voltage L2-L3
1010	float	RD	voltage L3-L1
1012	float	RD	current L1
1014	float	RD	current L2
1016	float	RD	current L3
1018	float	RD	current sum (calculated current in N)
1020	float	RD	active power L1
1022	float	RD	active power L2
1024	float	RD	active power L3
1026	float	RD	active power sum
1028	float	RD	reactive power L1
1030	float	RD	reactive power L2
1032	float	RD	reactive power L3
1034	float	RD	reactive power sum
1036	float	RD	apparent power L1
1038	float	RD	apparent power L2
1040	float	RD	apparent power L3
1042	float	RD	apparent power sum
1044	float	RD	cos(phi) L1
1046	float	RD	cos(phi) L2
1048	float	RD	cos(phi) L3
1050	float	RD	cos(phi) sum
1052	float	RD	active power of the fundamental oscillation L1
1054	float	RD	active power of the fundamental oscillation L2
1056	float	RD	active power of the fundamental oscillation L3
1214	float	RD	THD voltage L1
1216	float	RD	THD voltage L2
1218	float	RD	THD voltage L3
1220	float	RD	THD current L1
1222	float	RD	THD current L2
1224	float	RD	THD current L3
1226	float	RD	frequency
1228	float	RD	zero sequence voltage
1230	float	RD	positive sequence voltage
1232	float	RD	negative sequence voltage
1234	float	RD	zero sequence current
1236	float	RD	positive sequence current
1238	float	RD	negative sequence current
1240	float	RD	distortion power L1
1242	float	RD	distortion power L2
1244	float	RD	distortion power L3
1246	float	RD	distortion power sum
1248	float	RD	rotation field
1250	float	RD	real part of the fundamental oscillation voltage L1
1252	float	RD	imaginary part of the fundamental oscillation voltage L1
1254	float	RD	real part of the fundamental oscillation voltage L2
1256	float	RD	imaginary part of the fundamental oscillation voltage L2
1258	float	RD	real part of the fundamental oscillation voltage L3
1260	float	RD	imaginary part of the fundamental oscillation voltage L3
1262	float	RD	real part of the fundamental oscillation current L1
1264	float	RD	imaginary part of the fundamental oscillation current L1
1266	float	RD	real part of the fundamental oscillation current L2
1268	float	RD	imaginary part of the fundamental oscillation current L2

Address	Format	RD/WR	Note
1270	float	RD	real part of the fundamental oscillation current L3
1272	float	RD	imaginary part of the fundamental oscillation current L3
1274	float	RD	frequency (200ms)
1276	float	RD	TDD (total demand distortion) current L1
1278	float	RD	TDD (total demand distortion) current L2
1280	float	RD	TDD (total demand distortion) current L3
1282	float	RD	crest factor voltageL1
1284	float	RD	crest factor voltageL2
1286	float	RD	crest factor voltageL3
1288	float	RD	crest factor current L1
1290	float	RD	crest factor current L2
1292	float	RD	crest factor current L3

Measured values, type short

Address	Format	RD/WR	Note
11000	short (x10)	RD	voltage L1-N
11001	short (x10)	RD	voltage L2-N
11002	short (x10)	RD	voltage L3-N
11003	short (x10)	RD	voltage L1-L2
11004	short (x10)	RD	voltage L2-L3
11005	short (x10)	RD	voltage L3-L1
11006	short (x1000)	RD	current L1
11007	short (x1000)	RD	current L2
11008	short (x1000)	RD	current L3
11009	short (x1000)	RD	current sum
11010	short (x10)	RD	active power L1
11011	short (x10)	RD	active power L2
11012	short (x10)	RD	active power L3
11013	short	RD	active power sum
11014	short (x10)	RD	reactive power L1
11015	short (x10)	RD	reactive power L2
11016	short (x10)	RD	reactive power L3
11017	short	RD	reactive power sum
11018	short (x10)	RD	apparent power L1
11019	short (x10)	RD	apparent power L2
11020	short (x10)	RD	apparent power L3
11021	short	RD	apparent power sum
11022	short (x100)	RD	cos(phi) L1
11023	short (x100)	RD	cos(phi) L2
11024	short (x100)	RD	cos(phi) L3
11025	short (x100)	RD	cos(phi) sum
11026	short (x10)	RD	active power fundamental oscillation L1
11027	short (x10)	RD	active power fundamental oscillation L2
11028	short (x10)	RD	active power fundamental oscillation L3
11111	short (x100)	RD	THD voltage L1-N
11112	short (x100)	RD	THD voltage L2-N
11113	short (x100)	RD	THD voltage L3-N
11114	short (x100)	RD	THD current L1
11115	short (x100)	RD	THD current L2
11116	short (x100)	RD	THD current L3
11117	short	RD	frequency
11118	short	RD	zero sequence voltage
11119	short	RD	positive sequence voltage
11120	short	RD	negative sequence voltage
11121	short	RD	zero sequence current
11122	short	RD	positive sequence current
11123	short	RD	negative sequence current
11124	short (x10)	RD	distortion power L1
11125	short (x10)	RD	distortion power L2
11126	short (x10)	RD	distortion power L3
11127	short	RD	distortion power sum
11128	short	RD	rotation field
11168	ushort (x1000)	RD	crest faktor voltage L1-N
11169	ushort (x1000)	RD	crest faktor voltage L2-N
11170	ushort (x1000)	RD	crest faktor voltage L3-N
11171	ushort (x1000)	RD	crest faktor current L1
11172	ushort (x1000)	RD	crest faktor current L2
11173	ushort (x1000)	RD	crest faktor current L3

Mean values, type float

Address	Format	RD/WR	Note
2000	float	RD	mean value voltage L1
2002	float	RD	mean value voltage L2
2004	float	RD	mean value voltage L3
2006	float	RD	mean value voltage L1-L2
2008	float	RD	mean value voltage L2-L3
2010	float	RD	mean value voltage L3-L1
2012	float	RD	mean value current L1
2014	float	RD	mean value current L2
2016	float	RD	mean value current L3
2018	float	RD	mean value current sum
2020	float	RD	mean value active power L1
2022	float	RD	mean value active power L2
2024	float	RD	mean value active power L3
2026	float	RD	mean value active power sum
2028	float	RD	mean value reactive power L1
2030	float	RD	mean value reactive power L2
2032	float	RD	mean value reactive power L3
2034	float	RD	mean value reactive power sum
2036	float	RD	mean value apparent power L1
2038	float	RD	mean value apparent power L2
2040	float	RD	mean value apparent power L3
2042	float	RD	mean value apparent power sum
2044	float	RD	mean value cos(phi) L1
2046	float	RD	mean value cos(phi) L2
2048	float	RD	mean value cos(phi) L3
2050	float	RD	mean value cos(phi) sum
2052	float	RD	mean value active power, fundamental oscillation L1
2054	float	RD	mean value active power, fundamental oscillation L2
2056	float	RD	mean value active power, fundamental oscillation L3
2214	float	RD	mean value THD voltage L1
2216	float	RD	mean value THD voltage L2
2218	float	RD	mean value THD voltage L3
2220	float	RD	mean value THD current L1
2222	float	RD	mean value THD current L2
2224	float	RD	mean value THD current L3
2226	float	RD	mean value frequency
2228	float	RD	mean value zero sequence voltage
2230	float	RD	mean value positive sequence voltage
2232	float	RD	mean value negative sequence voltage
2234	float	RD	mean value zero sequence current
2236	float	RD	mean value positive sequence current
2238	float	RD	mean value negative sequence current
2240	float	RD	mean value distortion power L1
2242	float	RD	mean value distortion power L2
2244	float	RD	mean value distortion power L3
2246	float	RD	mean value distortion power sum
2248	float	RD	mean value TDD (total demand distortion) current L1
2250	float	RD	mean value TDD (total demand distortion) current L2
2252	float	RD	mean value TDD (total demand distortion) current L3

Mean values, type short

Address	Format	RD/WR	Note
12000	short (x10)	RD	mean value voltage L1-N
12001	short (x10)	RD	mean value voltage L2-N
12002	short (x10)	RD	mean value voltage L3-N
12003	short (x10)	RD	mean value voltage L1-L2
12004	short (x10)	RD	mean value voltage L2-L3
12005	short (x10)	RD	mean value voltage L3-L1
12006	short (x1000)	RD	mean value current L1
12007	short (x1000)	RD	mean value current L2
12008	short (x1000)	RD	mean value current L3
12009	short (x1000)	RD	mean value current sum
12010	short (x10)	RD	mean value active power L1
12011	short (x10)	RD	mean value active power L2
12012	short (x10)	RD	mean value active power L3
12013	short	RD	mean value active power sum
12014	short (x10)	RD	mean value reactive power L1
12015	short (x10)	RD	mean value reactive power L2
12016	short (x10)	RD	mean value reactive power L3
12017	short	RD	mean value reactive power sum
12018	short (x10)	RD	mean value apparent power L1
12019	short (x10)	RD	mean value apparent power L2
12020	short (x10)	RD	mean value apparent power L3
12021	short	RD	mean value apparent power sum
12022	short (x1000)	RD	mean value cos(phi) L1
12023	short (x1000)	RD	mean value cos(phi) L2
12024	short (x1000)	RD	mean value cos(phi) L3
12025	short (x1000)	RD	mean value cos(phi) sum
12026	short (x10)	RD	mean value active power der fundamental oscillation L1
12027	short (x10)	RD	mean value active power der fundamental oscillation L2
12028	short (x10)	RD	mean value active power der fundamental oscillation L3
12107	short (x100)	RD	mean value THD voltage L1
12108	short (x100)	RD	mean value THD voltage L2
12109	short (x100)	RD	mean value THD voltage L3
12110	short (x100)	RD	mean value THD current L1
12111	short (x100)	RD	mean value THD current L2
12112	short (x100)	RD	mean value THD current L3
12113	short	RD	mean value frequency
12114	short	RD	mean value zero sequence voltage
12115	short	RD	mean value positive sequence voltage
12116	short	RD	mean value negative sequence voltage
12117	short	RD	mean value zero sequence current
12118	short	RD	mean value positive sequence current
12119	short	RD	mean value negative sequence current
12120	short (x10)	RD	mean value distortion power L1
12121	short (x10)	RD	mean value distortion power L2
12122	short (x10)	RD	mean value distortion power L3
12123	short	RD	mean value distortion power sum

Minimum values, type float

Address	Format	RD/WR	Note
4000	float	RD	min. value, voltage L1-N
4002	float	RD	min. value, voltage L2-N
4004	float	RD	min. value, voltage L3-N
4006	float	RD	min. value, voltage L1-L2
4008	float	RD	min. value, voltage L1-L3
4010	float	RD	min. value, voltage L3-L1
4012	float	RD	min. value, cos(phi) L1
4014	float	RD	min. value, cos(phi) L2
4016	float	RD	min. value, cos(phi) L3
4018	float	RD	min. value, cos(phi) sum
4098	float	RD	min. value, THD voltage L1
4100	float	RD	min. value, THD voltage L2
4102	float	RD	min. value, THD voltage L3
4104	float	RD	min. value, frequency
4106	float	RD	min. value, voltage zero sequence
4108	float	RD	min. value, voltage positive sequence
4110	float	RD	min. value, voltage negative sequence
4112	float	RD	min. value, active power L1
4114	float	RD	min. value, active power L2
4116	float	RD	min. value, active power L3
4118	float	RD	min. value, active power sum

Minimum values, type short

Address	Format	RD/WR	Note
14000	short (x10)	RD	min. value, voltage L1-N
14001	short (x10)	RD	min. value, voltage L2-N
14002	short (x10)	RD	min. value, voltage L3-N
14003	short (x10)	RD	min. value, voltage L1-L2
14004	short (x10)	RD	min. value, voltage L1-L3
14005	short (x10)	RD	min. value, voltage L3-L1
14006	short (x1000)	RD	min. value, cos(phi) L1
14007	short (x1000)	RD	min. value, cos(phi) L2
14008	short (x1000)	RD	min. value, cos(phi) L3
14009	short (x1000)	RD	min. value, cos(phi) sum
14049	short (x100)	RD	min. value, THD voltage L1
14050	short (x100)	RD	min. value, THD voltage L2
14051	short (x100)	RD	min. value, THD voltage L3
14052	short	RD	min. value, frequency
14053	short	RD	min. value, voltage zero sequence
14054	short	RD	min. value, voltage positive sequence
14055	short	RD	min. value, voltage negative sequence
14056	short (x10)	RD	min. value, active power L1
14057	short (x10)	RD	min. value, active power L2
14058	short (x10)	RD	min. value, active power L3
14059	short (x10)	RD	min. value, active power sum

Maximum values, type float

Address	Format	RD/WR	Note
3000	float	RD	max. value, voltage L1-N
3002	float	RD	max. value, voltage L2-N
3004	float	RD	max. value, voltage L3-N
3006	float	RD	max. value, voltage L1-L2
3008	float	RD	max. value, voltage L2-L3
3010	float	RD	max. value, voltage L3-L1
3012	float	RD	max. value, current L1
3014	float	RD	max. value, current L2
3016	float	RD	max. value, current L3
3018	float	RD	max. value, current sum
3020	float	RD	max. value, active power L1
3022	float	RD	max. value, active power L2
3024	float	RD	max. value, active power L3
3026	float	RD	max. value, active power sum
3028	float	RD	max. value, reactive power L1
3030	float	RD	max. value, reactive power L2
3032	float	RD	max. value, reactive power L3
3034	float	RD	max. value, reactive power sum
3036	float	RD	max. value, apparent power L1
3038	float	RD	max. value, apparent power L2
3040	float	RD	max. value, apparent power L3
3042	float	RD	max. value, apparent power sum
3044	float	RD	max. value, cos(phi) L1
3046	float	RD	max. value, cos(phi) L2
3048	float	RD	max. value, cos(phi) L3
3050	float	RD	max. value, cos(phi) sum
3052	float	RD	max. value, active power, fundamental oscillation L1
3054	float	RD	max. value, active power, fundamental oscillation L2
3056	float	RD	max. value, active power, fundamental oscillation L3
3214	float	RD	max. value, THD voltage L1
3216	float	RD	max. value, THD voltage L2
3218	float	RD	max. value, THD voltage L3
3220	float	RD	max. value, THD current L1
3222	float	RD	max. value, THD current L2
3224	float	RD	max. value, THD current L3
3226	float	RD	max. value, frequency
3228	float	RD	max. value, voltage zero sequence
3230	float	RD	max. value, voltage positive sequence
3232	float	RD	max. value, voltage negative sequence
3234	float	RD	max. value, current zero sequence
3236	float	RD	max. value, current positive sequence
3238	float	RD	max. value, current negative sequence
3240	float	RD	max. value, distortion power L1
3242	float	RD	max. value, distortion power L2
3244	float	RD	max. value, distortion power L3
3246	float	RD	max. value, distortion power sum
3264	float	RD	max. value, TDD current L1
3266	float	RD	max. value, TDD current L2
3268	float	RD	max. value, TDD current L3

Maximum values, type short

Address	Format	RD/WR	Note
13000	short (x10)	RD	max. value, voltage L1-N
13001	short (x10)	RD	max. value, voltage L2-N
13002	short (x10)	RD	max. value, voltage L3-N
13003	short (x10)	RD	max. value, voltage L1-L2
13004	short (x10)	RD	max. value, voltage L2-L3
13005	short (x10)	RD	max. value, voltage L3-L1
13006	short (x1000)	RD	max. value, current L1
13007	short (x1000)	RD	max. value, current L2
13008	short (x1000)	RD	max. value, current L3
13009	short (x1000)	RD	max. value, current sum
13010	short (x10)	RD	max. value, active power L1
13011	short (x10)	RD	max. value, active power L2
13012	short (x10)	RD	max. value, active power L3
13013	short	RD	max. value, active power sum
13014	short (x10)	RD	max. value, reactive power L1
13015	short (x10)	RD	max. value, reactive power L2
13016	short (x10)	RD	max. value, reactive power L3
13017	short	RD	max. value, reactive power sum
13018	short (x10)	RD	max. value, apparent power L1
13019	short (x10)	RD	max. value, apparent power L2
13020	short (x10)	RD	max. value, apparent power L3
13021	short	RD	max. value, apparent power sum
13022	short (x1000)	RD	max. value, cos(phi) L1
13023	short (x1000)	RD	max. value, cos(phi) L2
13024	short (x1000)	RD	max. value, cos(phi) L3
13025	short (x1000)	RD	max. value, cos(phi) sum
13026	short (x10)	RD	max. value, active power der fundamental oscillation L1
13027	short (x10)	RD	max. value, active power der fundamental oscillation L2
13028	short (x10)	RD	max. value, active power der fundamental oscillation L3
13107	short (x100)	RD	max. value, THD voltage L1
13108	short (x100)	RD	max. value, THD voltage L2
13109	short (x100)	RD	max. value, THD voltage L3
13110	short (x100)	RD	max. value, THD current L1
13111	short (x100)	RD	max. value, THD current L2
13112	short (x100)	RD	max. value, THD current L3
13113	short	RD	max. value, frequency
13114	short	RD	max. value, voltage zero sequence
13115	short	RD	max. value, voltage positive sequence
13116	short	RD	max. value, voltage negative sequence
13117	short	RD	max. value, current zero sequence
13118	short	RD	max. value, current positive sequence
13119	short	RD	max. value, current negative sequence
13120	short (x10)	RD	max. value, distortion power L1
13121	short (x10)	RD	max. value, distortion power L2
13122	short (x10)	RD	max. value, distortion power L3
13123	short	RD	max. value, distortion power sum

Maximum values of mean values, type float

Address	Format	RD/WR	Note
3248	float	RD	max. of mean value current L1
3250	float	RD	max. of mean value current L2
3252	float	RD	max. of mean value current L3
3254	float	RD	max. of mean value current sum
3256	float	RD	max. of mean value active power L1
3258	float	RD	max. of mean value active power L2
3260	float	RD	max. of mean value active power L3
3262	float	RD	max. of mean value active power sum

Maximum values of mean values, type short

Address	Format	RD/WR	Note
13124	short (x1000)	RD	max. of mean value current L1
13125	short (x1000)	RD	max. of mean value current L2
13126	short (x1000)	RD	max. of mean value current L3
13128	short (x10)	RD	max. of mean values active power L1
13129	short (x10)	RD	max. of mean values active power L2
13130	short (x10)	RD	max. of mean values active power L3

Energy, type float

Address	Format	RD/WR	Note
5000	float	RD	active energy L1, consumed
5002	float	RD	active energy L2, consumed
5004	float	RD	active energy L3, consumed
5006	float	RD	active energy sum, consumed
5008	float	RD	active energy L1, consumed, HT
5010	float	RD	active energy L2, consumed, HT
5012	float	RD	active energy L3, consumed, HT
5014	float	RD	active energy sum, consumed, HT
5016	float	RD	active energy L1, consumed, NT
5018	float	RD	active energy L2, consumed, NT
5020	float	RD	active energy L3, consumed, NT
5022	float	RD	active energy sum, consumed, NT
5024	float	RD	apparent energy L1
5026	float	RD	apparent energy L2
5028	float	RD	apparent energy L3
5030	float	RD	apparent energy, total
5032	float	RD	apparent energy L1, HT
5034	float	RD	apparent energy L2, HT
5036	float	RD	apparent energy L3, HT
5038	float	RD	apparent energy, total, HT
5040	float	RD	apparent energy L1, NT
5042	float	RD	apparent energy L2, NT
5044	float	RD	apparent energy L3, NT
5046	float	RD	apparent energy, total, NT
5048	float	RD	reactive energy L1, inductive
5050	float	RD	reactive energy L2, inductive
5052	float	RD	reactive energy L3, inductive
5054	float	RD	reactive energy sum, inductive
5056	float	RD	reactive energy L1, inductive, HT
5058	float	RD	reactive energy L2, inductive, HT
5060	float	RD	reactive energy L3, inductive, HT
5062	float	RD	reactive energy, total, inductive, HT
5064	float	RD	reactive energy L1, inductive, NT
5066	float	RD	reactive energy L2, inductive, NT
5068	float	RD	reactive energy L3, inductive, NT
5070	float	RD	reactive energy, total, inductive, NT
5072	float	RD	active energy L1, delivered
5074	float	RD	active energy L2, delivered
5076	float	RD	active energy L3, delivered
5078	float	RD	active energy sum, delivered
5080	float	RD	reactive energy L1, capazitive
5082	float	RD	reactive energy L2, capazitive
5084	float	RD	reactive energy L3, capazitive
5086	float	RD	reactive energy sum, capazitive
5088	float	RD	active energy sum, without return travel block
5090	float	RD	reactive energy sum, without return travel block
5092	float	RD	reactive energy L1, inductive, consumed
5094	float	RD	reactive energy L2, inductive, consumed
5096	float	RD	reactive energy L3, inductive, consumed
5098	float	RD	reactive energy sum, inductive, consumed
5100	float	RD	reactive energy L1, capazitive, consumed
5102	float	RD	reactive energy L2, capazitive, consumed
5104	float	RD	reactive energy L3, capazitive, consumed
5106	float	RD	reactive energy sum, capazitive, consumed
5108	float	RD	reactive energy L1, inductive, delivered
5110	float	RD	reactive energy L2, inductive, delivered
5112	float	RD	reactive energy L3, inductive, delivered
5114	float	RD	reactive energy sum, inductive, delivered
5116	float	RD	reactive energy L1, capazitive, delivered

Address	Format	RD/WR	Note
5118	float	RD	reactive energy L2, capazitive, delivered
5120	float	RD	reactive energy L3, capazitive, delivered
5122	float	RD	reactive energy sum, capazitive, delivered
5124	float	RD	active energy (consumed), max. monthly value, jan., even year
5126	float	RD	active energy (consumed), max. monthly value, feb., even year
5128	float	RD	active energy (consumed), max. monthly value, mar., even year
5130	float	RD	active energy (consumed), max. monthly value, apr., even year
5132	float	RD	active energy (consumed), max. monthly value, may., even year
5134	float	RD	active energy (consumed), max. monthly value, jun., even year
5136	float	RD	active energy (consumed), max. monthly value, jul., even year
5138	float	RD	active energy (consumed), max. monthly value, aug., even year
5140	float	RD	active energy (consumed), max. monthly value, sep., even year
5142	float	RD	active energy (consumed), max. monthly value, oct., even year
5144	float	RD	active energy (consumed), max. monthly value, nov., even year
5146	float	RD	active energy (consumed), max. monthly value, dec., even year
5148	float	RD	active energy (consumed), max. monthly value, jan., uneven year
5150	float	RD	active energy (consumed), max. monthly value, feb., uneven year
5152	float	RD	active energy (consumed), max. monthly value, mar., uneven year
5154	float	RD	active energy (consumed), max. monthly value, apr., uneven year
5156	float	RD	active energy (consumed), max. monthly value, may., uneven year
5158	float	RD	active energy (consumed), max. monthly value, jun., uneven year
5160	float	RD	active energy (consumed), max. monthly value, jul., uneven year
5162	float	RD	active energy (consumed), max. monthly value, aug., uneven year
5164	float	RD	active energy (consumed), max. monthly value, sep., uneven year
5166	float	RD	active energy (consumed), max. monthly value, oct., uneven year
5168	float	RD	active energy (consumed), max. monthly value, nov., uneven year
5170	float	RD	active energy (consumed), max. monthly value, dec., uneven year
5172	float	RD	apparent energy, max. monthly value, jan., even year
5174	float	RD	apparent energy, max. monthly value, feb., even year
5176	float	RD	apparent energy, max. monthly value, mar., even year
5178	float	RD	apparent energy, max. monthly value, apr., even year
5180	float	RD	apparent energy, max. monthly value, may., even year
5182	float	RD	apparent energy, max. monthly value, jun., even year
5184	float	RD	apparent energy, max. monthly value, jul., even year
5186	float	RD	apparent energy, max. monthly value, aug., even year
5188	float	RD	apparent energy, max. monthly value, sep., even year
5190	float	RD	apparent energy, max. monthly value, oct., even year
5192	float	RD	apparent energy, max. monthly value, nov., even year
5194	float	RD	apparent energy, max. monthly value, dec., even year
5196	float	RD	apparent energy, max. monthly value, jan., uneven year
5198	float	RD	apparent energy, max. monthly value, feb., uneven year
5200	float	RD	apparent energy, max. monthly value, mar., uneven year
5202	float	RD	apparent energy, max. monthly value, apr., uneven year
5204	float	RD	apparent energy, max. monthly value, may., uneven year
5206	float	RD	apparent energy, max. monthly value, jun., uneven year
5208	float	RD	apparent energy, max. monthly value, jul., uneven year
5210	float	RD	apparent energy, max. monthly value, aug., uneven year
5212	float	RD	apparent energy, max. monthly value, sep., uneven year
5214	float	RD	apparent energy, max. monthly value, oct., uneven year
5216	float	RD	apparent energy, max. monthly value, nov., uneven year
5218	float	RD	apparent energy, max. monthly value, dec., uneven year
5220	float	RD	reactive energy (ind.), max. monthly value, jan., even year
5222	float	RD	reactive energy (ind.), max. monthly value, feb., even year
5224	float	RD	reactive energy (ind.), max. monthly value, mar., even year
5226	float	RD	reactive energy (ind.), max. monthly value, apr., even year
5228	float	RD	reactive energy (ind.), max. monthly value, may., even year
5230	float	RD	reactive energy (ind.), max. monthly value, jun., even year
5232	float	RD	reactive energy (ind.), max. monthly value, jul., even year
5234	float	RD	reactive energy (ind.), max. monthly value, aug., even year

Address	Format	RD/WR	Note
5236	float	RD	reactive energy (ind.), max. monthly value, sep., even year
5238	float	RD	reactive energy (ind.), max. monthly value, oct., even year
5240	float	RD	reactive energy (ind.), max. monthly value, nov., even year
5242	float	RD	reactive energy (ind.), max. monthly value, dec., even year
5244	float	RD	reactive energy (ind.), max. monthly value, jan., uneven year
5246	float	RD	reactive energy (ind.), max. monthly value, feb., uneven year
5248	float	RD	reactive energy (ind.), max. monthly value, mar., uneven year
5250	float	RD	reactive energy (ind.), max. monthly value, apr., uneven year
5252	float	RD	reactive energy (ind.), max. monthly value, may., uneven year
5254	float	RD	reactive energy (ind.), max. monthly value, jun., uneven year
5256	float	RD	reactive energy (ind.), max. monthly value, jul., uneven year
5258	float	RD	reactive energy (ind.), max. monthly value, aug., uneven year
5260	float	RD	reactive energy (ind.), max. monthly value, sep., uneven year
5262	float	RD	reactive energy (ind.), max. monthly value, oct., uneven year
5264	float	RD	reactive energy (ind.), max. monthly value, nov., uneven year
5266	float	RD	reactive energy (ind.), max. monthly value, dec., uneven year

Energy, type integer

The energy values in integer format do not provide any current- and voltage transformer ratios.

Address	Format	RD/WR	Note
15000	int	RD	active energy L1, consumed
15002	int	RD	active energy L2, consumed
15004	int	RD	active energy L3, consumed
15006	int	RD	active energy sum, consumed
15008	int	RD	active energy L1, consumed, HT
15010	int	RD	active energy L2, consumed, HT
15012	int	RD	active energy L3, consumed, HT
15014	int	RD	active energy sum, consumed, HT
15016	int	RD	active energy L1, consumed, NT
15018	int	RD	active energy L2, consumed, NT
15020	int	RD	active energy L3, consumed, NT
15022	int	RD	active energy sum, consumed, NT
15024	int	RD	apparent energy L1
15026	int	RD	apparent energy L2
15028	int	RD	apparent energy L3
15030	int	RD	apparent energy, total
15032	int	RD	apparent energy L1, HT
15034	int	RD	apparent energy L2, HT
15036	int	RD	apparent energy L3, HT
15038	int	RD	apparent energy, total, HT
15040	int	RD	apparent energy L1, NT
15042	int	RD	apparent energy L2, NT
15044	int	RD	apparent energy L3, NT
15046	int	RD	apparent energy, total, NT
15048	int	RD	reactive energy L1, inductive
15050	int	RD	reactive energy L2, inductive
15052	int	RD	reactive energy L3, inductive
15054	int	RD	reactive energy sum, inductive
15056	int	RD	reactive energy L1, inductive, HT
15058	int	RD	reactive energy L2, inductive, HT
15060	int	RD	reactive energy L3, inductive, HT
15062	int	RD	reactive energy, total, inductive, HT
15064	int	RD	reactive energy L1, inductive, NT
15066	int	RD	reactive energy L2, inductive, NT
15068	int	RD	reactive energy L3, inductive, NT
15070	int	RD	reactive energy, total, inductive, NT
15072	int	RD	active energy, delivered
15074	int	RD	active energy L2, delivered
15076	int	RD	active energy L3, delivered
15078	int	RD	active energy sum, delivered
15080	int	RD	reactive energy L1, inductive, consumed
15082	int	RD	reactive energy L2, inductive, consumed
15084	int	RD	reactive energy L3, inductive, consumed
15086	int	RD	reactive energy sum, inductive, consumed
15088	int	RD	active energy sum, without return travel block
15090	int	RD	reactive energy sum, without return travel block
15092	int	RD	reactive energy L1, inductive, consumed
15094	int	RD	reactive energy L2, inductive, consumed
15096	int	RD	reactive energy L3, inductive, consumed
15098	int	RD	reactive energy sum, inductive, consumed
15100	int	RD	reactive energy L1, capazitive, consumed
15102	int	RD	reactive energy L2, capazitive, consumed
15104	int	RD	reactive energy L3, capazitive, consumed
15106	int	RD	reactive energy sum, capazitive, consumed
15108	int	RD	reactive energy L1, inductive, delivered
15110	int	RD	reactive energy L2, inductive, delivered
15112	int	RD	reactive energy L3, inductive, delivered
15114	int	RD	reactive energy sum, inductive, delivered
15116	int	RD	reactive energy L1, capazitive, delivered

Address	Format	RD/WR	Note
15118	int	RD	reactive energy L2, capazitive, delivered
15120	int	RD	reactive energy L3, capazitive, delivered
15122	int	RD	reactive energy sum, capazitive, delivered
15124	int	RD	active energy (consumed), max. monthly value, jan., even year
15126	int	RD	active energy (consumed), max. monthly value, feb., even year
15128	int	RD	active energy (consumed), max. monthly value, mar., even year
15130	int	RD	active energy (consumed), max. monthly value, apr., even year
15132	int	RD	active energy (consumed), max. monthly value, may., even year
15134	int	RD	active energy (consumed), max. monthly value, jun., even year
15136	int	RD	active energy (consumed), max. monthly value, jul., even year
15138	int	RD	active energy (consumed), max. monthly value, aug., even year
15140	int	RD	active energy (consumed), max. monthly value, sep., even year
15142	int	RD	active energy (consumed), max. monthly value, oct., even year
15144	int	RD	active energy (consumed), max. monthly value, nov., even year
15146	int	RD	active energy (consumed), max. monthly value, dec., even year
15148	int	RD	active energy (consumed), max. monthly value, jan., uneven year
15150	int	RD	active energy (consumed), max. monthly value, feb., uneven year
15152	int	RD	active energy (consumed), max. monthly value, mar., uneven year
15154	int	RD	active energy (consumed), max. monthly value, apr., uneven year
15156	int	RD	active energy (consumed), max. monthly value, may., uneven year
15158	int	RD	active energy (consumed), max. monthly value, jun., uneven year
15160	int	RD	active energy (consumed), max. monthly value, jul., uneven year
15162	int	RD	active energy (consumed), max. monthly value, aug., uneven year
15164	int	RD	active energy (consumed), max. monthly value, sep., uneven year
15166	int	RD	active energy (consumed), max. monthly value, oct., uneven year
15168	int	RD	active energy (consumed), max. monthly value, nov., uneven year
15170	int	RD	active energy (consumed), max. monthly value, dec., uneven year
15192	int	RD	apparent energy, max. monthly value, jan., even year
15194	int	RD	apparent energy, max. monthly value, feb., even year
15196	int	RD	apparent energy, max. monthly value, mar., even year
15198	int	RD	apparent energy, max. monthly value, apr., even year
15200	int	RD	apparent energy, max. monthly value, may., even year
15202	int	RD	apparent energy, max. monthly value, jun., even year
15204	int	RD	apparent energy, max. monthly value, jul., even year
15206	int	RD	apparent energy, max. monthly value, aug., even year
15208	int	RD	apparent energy, max. monthly value, sep., even year
15210	int	RD	apparent energy, max. monthly value, oct., even year
15212	int	RD	apparent energy, max. monthly value, nov., even year
15214	int	RD	apparent energy, max. monthly value, dec., even year
15216	int	RD	apparent energy, max. monthly value, jan., uneven year
15218	int	RD	apparent energy, max. monthly value, feb., uneven year
15220	int	RD	apparent energy, max. monthly value, mar., uneven year
15222	int	RD	apparent energy, max. monthly value, apr., uneven year
15224	int	RD	apparent energy, max. monthly value, may., uneven year
15226	int	RD	apparent energy, max. monthly value, jun., uneven year
15228	int	RD	apparent energy, max. monthly value, jul., uneven year
15230	int	RD	apparent energy, max. monthly value, aug., uneven year
15232	int	RD	apparent energy, max. monthly value, sep., uneven year
15234	int	RD	apparent energy, max. monthly value, oct., uneven year
15236	int	RD	apparent energy, max. monthly value, nov., uneven year
15238	int	RD	apparent energy, max. monthly value, dec., uneven year
15240	int	RD	reactive energy (ind.), max. monthly value, jan., even year
15242	int	RD	reactive energy (ind.), max. monthly value, feb., even year
15244	int	RD	reactive energy (ind.), max. monthly value, mar., even year
15246	int	RD	reactive energy (ind.), max. monthly value, apr., even year
15248	int	RD	reactive energy (ind.), max. monthly value, may., even year
15250	int	RD	reactive energy (ind.), max. monthly value, jun., even year
15252	int	RD	reactive energy (ind.), max. monthly value, jul., even year
15254	int	RD	reactive energy (ind.), max. monthly value, aug., even year

Address	Format	RD/WR	Note
15256	int	RD	reactive energy (ind.), max. monthly value, sep., even year
15258	int	RD	reactive energy (ind.), max. monthly value, oct., even year
15260	int	RD	reactive energy (ind.), max. monthly value, nov., even year
15262	int	RD	reactive energy (ind.), max. monthly value, dec., even year
15264	int	RD	reactive energy (ind.), max. monthly value, jan., uneven year
15266	int	RD	reactive energy (ind.), max. monthly value, feb., uneven year
15268	int	RD	reactive energy (ind.), max. monthly value, mar., uneven year
15270	int	RD	reactive energy (ind.), max. monthly value, apr., uneven year
15272	int	RD	reactive energy (ind.), max. monthly value, may., uneven year
15274	int	RD	reactive energy (ind.), max. monthly value, jun., uneven year
15276	int	RD	reactive energy (ind.), max. monthly value, jul., uneven year
15278	int	RD	reactive energy (ind.), max. monthly value, aug., uneven year
15280	int	RD	reactive energy (ind.), max. monthly value, sep., uneven year
15282	int	RD	reactive energy (ind.), max. monthly value, oct., uneven year
15284	int	RD	reactive energy (ind.), max. monthly value, nov., uneven year
15286	int	RD	reactive energy (ind.), max. monthly value, dec., uneven year

Energy, type double

Address	Format	RD/WR	Note
6000	double	RD/RW	active energy L1, consumed
6004	double	RD/RW	active energy L2, consumed
6008	double	RD/RW	active energy L3, consumed
6012	double	RD/RW	active energy sum, consumed
6016	double	RD/RW	active energy L1, consumed, HT
6020	double	RD/RW	active energy L2, consumed, HT
6024	double	RD/RW	active energy L3, consumed, HT
6028	double	RD/RW	active energy sum, consumed, HT
6032	double	RD/RW	active energy L1, consumed, NT
6036	double	RD/RW	active energy L2, consumed, NT
6040	double	RD/RW	active energy L3, consumed, NT
6044	double	RD/RW	active energy sum, consumed, NT
6048	double	RD/RW	apparent energy L1
6052	double	RD/RW	apparent energy L2
6056	double	RD/RW	apparent energy L3
6060	double	RD/RW	apparent energy, total
6064	double	RD/RW	apparent energy L1, HT
6068	double	RD/RW	apparent energy L2, HT
6072	double	RD/RW	apparent energy L3, HT
6076	double	RD/RW	apparent energy, total, HT
6080	double	RD/RW	apparent energy L1, NT
6084	double	RD/RW	apparent energy L2, NT
6088	double	RD/RW	apparent energy L3, NT
6092	double	RD/RW	apparent energy, total, NT
6096	double	RD/RW	reactive energy L1, inductive
6100	double	RD/RW	reactive energy L2, inductive
6104	double	RD/RW	reactive energy L3, inductive
6108	double	RD/RW	reactive energy sum, inductive
6112	double	RD/RW	reactive energy L1, inductive, HT
6116	double	RD/RW	reactive energy L2, inductive, HT
6120	double	RD/RW	reactive energy L3, inductive, HT
6124	double	RD/RW	reactive energy, total, inductive, HT
6128	double	RD/RW	reactive energy L1, inductive, NT
6132	double	RD/RW	reactive energy L2, inductive, NT
6136	double	RD/RW	reactive energy L3, inductive, NT
6140	double	RD/RW	reactive energy, total, inductive, NT
6144	double	RD/RW	active energy, delivered
6148	double	RD/RW	active energy L2, delivered
6152	double	RD/RW	active energy L3, delivered
6156	double	RD/RW	active energy sum, delivered
6160	double	RD/RW	reactive energy L1, capazitive
6164	double	RD/RW	reactive energy L2, capazitive
6168	double	RD/RW	reactive energy L3, capazitive
6172	double	RD/RW	reactive energy sum, capazitive
6176	double	RD/RW	active energy sum, without return travel block
6180	double	RD/RW	reactive energy sum, without return travel block
6184	double	RD/RW	reactive energy L1, inductive, consumed
6188	double	RD/RW	reactive energy L2, inductive, consumed
6192	double	RD/RW	reactive energy L3, inductive, consumed
6196	double	RD/RW	reactive energy sum, inductive, consumed
6200	double	RD/RW	reactive energy L1, capazitive, consumed
6204	double	RD/RW	reactive energy L2, capazitive, consumed
6208	double	RD/RW	reactive energy L3, capazitive, consumed
6212	double	RD/RW	reactive energy sum, capazitive, consumed
6216	double	RD/RW	reactive energy L1, inductive, delivered
6220	double	RD/RW	reactive energy L2, inductive, delivered
6224	double	RD/RW	reactive energy L3, inductive, delivered
6228	double	RD/RW	reactive energy sum, inductive, delivered
6232	double	RD/RW	reactive energy L1, capazitive, delivered

Address	Format	RD/WR	Note
6236	double	RD/RW	reactive energy L2, capazitive, delivered
6240	double	RD/RW	reactive energy L3, capazitive, delivered
6244	double	RD/RW	reactive energy sum, capazitive, delivered
6248	double	RD	active energy (consumed), max. monthly value, jan., even year
6252	double	RD	active energy (consumed), max. monthly value, feb., even year
6256	double	RD	active energy (consumed), max. monthly value, mar., even year
6260	double	RD	active energy (consumed), max. monthly value, apr., even year
6264	double	RD	active energy (consumed), max. monthly value, may., even year
6268	double	RD	active energy (consumed), max. monthly value, jun., even year
6272	double	RD	active energy (consumed), max. monthly value, jul., even year
6276	double	RD	active energy (consumed), max. monthly value, aug., even year
6280	double	RD	active energy (consumed), max. monthly value, sep., even year
6284	double	RD	active energy (consumed), max. monthly value, oct., even year
6288	double	RD	active energy (consumed), max. monthly value, nov., even year
6292	double	RD	active energy (consumed), max. monthly value, dec., even year
6296	double	RD	active energy (consumed), max. monthly value, jan., uneven year
6300	double	RD	active energy (consumed), max. monthly value, feb., uneven year
6304	double	RD	active energy (consumed), max. monthly value, mar., uneven year
6308	double	RD	active energy (consumed), max. monthly value, apr., uneven year
6312	double	RD	active energy (consumed), max. monthly value, may., uneven year
6316	double	RD	active energy (consumed), max. monthly value, jun., uneven year
6320	double	RD	active energy (consumed), max. monthly value, jul., uneven year
6324	double	RD	active energy (consumed), max. monthly value, aug., uneven year
6328	double	RD	active energy (consumed), max. monthly value, sep., uneven year
6332	double	RD	active energy (consumed), max. monthly value, oct., uneven year
6336	double	RD	active energy (consumed), max. monthly value, nov., uneven year
6340	double	RD	active energy (consumed), max. monthly value, dec., uneven year
6344	double	RD	apparent energy, max. monthly value, jan., even year
6348	double	RD	apparent energy, max. monthly value, feb., even year
6352	double	RD	apparent energy, max. monthly value, mar., even year
6356	double	RD	apparent energy, max. monthly value, apr., even year
6360	double	RD	apparent energy, max. monthly value, may., even year
6364	double	RD	apparent energy, max. monthly value, jun., even year
6368	double	RD	apparent energy, max. monthly value, jul., even year
6372	double	RD	apparent energy, max. monthly value, aug., even year
6376	double	RD	apparent energy, max. monthly value, sep., even year
6380	double	RD	apparent energy, max. monthly value, oct., even year
6384	double	RD	apparent energy, max. monthly value, nov., even year
6388	double	RD	apparent energy, max. monthly value, dec., even year
6392	double	RD	apparent energy, max. monthly value, jan., uneven year
6396	double	RD	apparent energy, max. monthly value, feb., uneven year
6400	double	RD	apparent energy, max. monthly value, mar., uneven year
6404	double	RD	apparent energy, max. monthly value, apr., uneven year
6408	double	RD	apparent energy, max. monthly value, may., uneven year
6412	double	RD	apparent energy, max. monthly value, jun., uneven year
6416	double	RD	apparent energy, max. monthly value, jul., uneven year
6420	double	RD	apparent energy, max. monthly value, aug., uneven year
6424	double	RD	apparent energy, max. monthly value, sep., uneven year
6428	double	RD	apparent energy, max. monthly value, oct., uneven year
6432	double	RD	apparent energy, max. monthly value, nov., uneven year
6436	double	RD	apparent energy, max. monthly value, dec., uneven year
6900	double	RD	reactive energy (ind.), max. monthly value, jan., even year
6904	double	RD	reactive energy (ind.), max. monthly value, feb., even year
6908	double	RD	reactive energy (ind.), max. monthly value, mar., even year
6912	double	RD	reactive energy (ind.), max. monthly value, apr., even year
6916	double	RD	reactive energy (ind.), max. monthly value, may., even year
6920	double	RD	reactive energy (ind.), max. monthly value, jun., even year

Address	Format	RD/WR	Note
6924	double	RD	reactive energy (ind.), max. monthly value, jul., even year
6928	double	RD	reactive energy (ind.), max. monthly value, aug., even year
6932	double	RD	reactive energy (ind.), max. monthly value, sep., even year
6936	double	RD	reactive energy (ind.), max. monthly value, oct., even year
6940	double	RD	reactive energy (ind.), max. monthly value, nov., even year
6944	double	RD	reactive energy (ind.), max. monthly value, dec., even year
6948	double	RD	reactive energy (ind.), max. monthly value, jan., uneven year
6952	double	RD	reactive energy (ind.), max. monthly value, feb., uneven year
6956	double	RD	reactive energy (ind.), max. monthly value, mar., uneven year
6960	double	RD	reactive energy (ind.), max. monthly value, apr., uneven year
6964	double	RD	reactive energy (ind.), max. monthly value, may., uneven year
6968	double	RD	reactive energy (ind.), max. monthly value, jun., uneven year
6972	double	RD	reactive energy (ind.), max. monthly value, jul., uneven year
6976	double	RD	reactive energy (ind.), max. monthly value, aug., uneven year
6980	double	RD	reactive energy (ind.), max. monthly value, sep., uneven year
6984	double	RD	reactive energy (ind.), max. monthly value, oct., uneven year
6988	double	RD	reactive energy (ind.), max. monthly value, nov., uneven year
6992	double	RD	reactive energy (ind.), max. monthly value, dec., uneven year

Energy, type double (UMG 96-PA-MID)

Address	Format	RD/WR	Bemerkung
6444	double	RD	active energy sum, consumed
6448	double	RD	active energy sum, delivered

Address	Format	RD/WR	Note

Peak indicator (drag indicator)

Address	Format	RD/WR	Note
7000	float	RD	highest value current L1
7002	float	RD	highest value current L2
7004	float	RD	highest value current L3
7006	uint	RD	point in time, highest value current L1
7008	uint	RD	point in time, highest value current L2
7010	uint	RD	point in time, highest value current L3
7012	float	RD	highest value apparent power L1
7014	float	RD	highest value apparent power L2
7016	float	RD	highest value apparent power L3
7018	float	RD	highest value apparent power sum
7020	uint	RD	point in time, highest value apparent power L1
7022	uint	RD	point in time, highest value apparent power L2
7024	uint	RD	point in time, highest value apparent power L3
7026	uint	RD	point in time, highest value apparent power sum
7028	float	RD	highest value active power L1, consumed
7030	float	RD	highest value active power L2, consumed
7032	float	RD	highest value active power L3, consumed
7034	float	RD	highest value active power sum, consumed
7036	uint	RD	point in time, highest value active power L1, consumed
7038	uint	RD	point in time, highest value active power L2, consumed
7040	uint	RD	point in time, highest value active power L3, consumed
7042	uint	RD	point in time, highest value active power sum, consumed
7044	float	RD	highest value active power L1, delivered
7046	float	RD	highest value active power L2, delivered
7048	float	RD	highest value active power L3, delivered
7050	float	RD	highest value active power sum, delivered
7052	uint	RD	point in time, highest value active power L1, delivered
7054	uint	RD	point in time, highest value active power L2, delivered
7056	uint	RD	point in time, highest value active power L3, delivered
7058	uint	RD	point in time, highest value active power sum, delivered
7060	float	RD	2. highest value current L1
7062	float	RD	2. highest value current L2
7064	float	RD	2. highest value current L3
7066	uint	RD	point in time, 2. highest value current L1
7068	uint	RD	point in time, 2. highest value current L2
7070	uint	RD	point in time, 2. highest value current L3
7072	float	RD	2. highest value apparent power L1
7074	float	RD	2. highest value apparent power L2
7076	float	RD	2. highest value apparent power L3
7078	float	RD	2. highest value apparent power sum
7080	uint	RD	point in time, 2. highest value apparent power L1
7082	uint	RD	point in time, 2. highest value apparent power L2
7084	uint	RD	point in time, 2. highest value apparent power L3
7086	uint	RD	point in time, 2. highest value apparent power sum
7088	float	RD	2. highest value active power L1, consumed
7090	float	RD	2. highest value active power L2, consumed
7092	float	RD	2. highest value active power L3, consumed
7094	float	RD	2. highest value active power sum, consumed
7096	uint	RD	point in time, 2. highest value active power L1, consumed
7098	uint	RD	point in time, 2. highest value active power L2, consumed
7100	uint	RD	point in time, 2. highest value active power L3, consumed
7102	uint	RD	point in time, 2. highest value active power sum, consumed
7104	float	RD	2. highest value active power L1, delivered
7106	float	RD	2. highest value active power L2, delivered
7108	float	RD	2. highest value active power L3, delivered
7110	float	RD	2. highest value active power sum, delivered
7112	uint	RD	point in time, 2. highest value active power L1, delivered
7114	uint	RD	point in time, 2. highest value active power L2, delivered
7116	uint	RD	point in time, 2. highest value active power L3, delivered

Address	Format	RD/WR	Note
7118	uint	RD	point in time, 2. highest value active power sum, delivered
7120	float	RD	3. highest value current L1
7122	float	RD	3. highest value current L2
7124	float	RD	3. highest value current L3
7126	uint	RD	point in time, 3. highest value current L1
7128	uint	RD	point in time, 3. highest value current L2
7130	uint	RD	point in time, 3. highest value current L3
7132	float	RD	3. highest value apparent power L1
7134	float	RD	3. highest value apparent power L2
7136	float	RD	3. highest value apparent power L3
7138	float	RD	3. highest value apparent power sum
7140	uint	RD	point in time, 3. highest value apparent power L1
7142	uint	RD	point in time, 3. highest value apparent power L2
7144	uint	RD	point in time, 3. highest value apparent power L3
7146	uint	RD	point in time, 3. highest value apparent power sum
7148	float	RD	3. highest value active power L1, consumed
7150	float	RD	3. highest value active power L2, consumed
7152	float	RD	3. highest value active power L3, consumed
7154	float	RD	3. highest value active power sum, consumed
7156	uint	RD	point in time, 3. highest value active power L1, consumed
7158	uint	RD	point in time, 3. highest value active power L2, consumed
7160	uint	RD	point in time, 3. highest value active power L3, consumed
7162	uint	RD	point in time, 3. highest value active power sum, consumed
7164	float	RD	3. highest value active power L1, delivered
7166	float	RD	3. highest value active power L2, delivered
7168	float	RD	3. highest value active power L3, delivered
7170	float	RD	3. highest value active power sum, delivered
7172	uint	RD	point in time, 3. highest value active power L1, delivered
7174	uint	RD	point in time, 3. highest value active power L2, delivered
7176	uint	RD	point in time, 3. highest value active power L3, delivered
7178	uint	RD	point in time, 3. highest value active power sum, delivered

Minimum values, time stamp

Address	Format	RD/WR	Note
4200	uint	RD	point in time, min. value, voltage L1-N
4202	uint	RD	point in time, min. value, voltage L2-N
4204	uint	RD	point in time, min. value, voltage L3-N
4206	uint	RD	point in time, min. value, voltage L1-L2
4208	uint	RD	point in time, min. value, voltage L2-L3
4210	uint	RD	point in time, min. value, voltage L3-L1
4212	uint	RD	point in time, min. value, cos(phi) L1
4214	uint	RD	point in time, min. value, cos(phi) L2
4216	uint	RD	point in time, min. value, cos(phi) L3
4218	uint	RD	point in time, min. value, cos(phi) sum
4220	uint	RD	point in time, min. value, 1. harmonic voltage L1
4222	uint	RD	point in time, min. value, 3. harmonic voltage L1
4224	uint	RD	point in time, min. value, 5. harmonic voltage L1
4226	uint	RD	point in time, min. value, 7. harmonic voltage L1
4228	uint	RD	point in time, min. value, 9. harmonic voltage L1
4230	uint	RD	point in time, min. value, 11. harmonic voltage L1
4232	uint	RD	point in time, min. value, 13. harmonic voltage L1
4234	uint	RD	point in time, min. value, 15. harmonic voltage L1
4236	uint	RD	point in time, min. value, 17. harmonic voltage L1
4238	uint	RD	point in time, min. value, 19. harmonic voltage L1
4240	uint	RD	point in time, min. value, 21. harmonic voltage L1
4242	uint	RD	point in time, min. value, 23. harmonic voltage L1
4244	uint	RD	point in time, min. value, 25. harmonic voltage L1
4246	uint	RD	point in time, min. value, 1. harmonic voltage L2
4248	uint	RD	point in time, min. value, 3. harmonic voltage L2
4250	uint	RD	point in time, min. value, 5. harmonic voltage L2
4252	uint	RD	point in time, min. value, 7. harmonic voltage L2
4254	uint	RD	point in time, min. value, 9. harmonic voltage L2
4256	uint	RD	point in time, min. value, 11. harmonic voltage L2
4258	uint	RD	point in time, min. value, 13. harmonic voltage L2
4260	uint	RD	point in time, min. value, 15. harmonic voltage L2
4262	uint	RD	point in time, min. value, 17. harmonic voltage L2
4264	uint	RD	point in time, min. value, 19. harmonic voltage L2
4266	uint	RD	point in time, min. value, 21. harmonic voltage L2
4268	uint	RD	point in time, min. value, 23. harmonic voltage L2
4270	uint	RD	point in time, min. value, 25. harmonic voltage L2
4272	uint	RD	point in time, min. value, 1. harmonic voltage L3
4274	uint	RD	point in time, min. value, 3. harmonic voltage L3
4276	uint	RD	point in time, min. value, 5. harmonic voltage L3
4278	uint	RD	point in time, min. value, 7. harmonic voltage L3
4280	uint	RD	point in time, min. value, 9. harmonic voltage L3
4282	uint	RD	point in time, min. value, 11. harmonic voltage L3
4284	uint	RD	point in time, min. value, 13. harmonic voltage L3
4286	uint	RD	point in time, min. value, 15. harmonic voltage L3
4288	uint	RD	point in time, min. value, 17. harmonic voltage L3
4290	uint	RD	point in time, min. value, 19. harmonic voltage L3
4292	uint	RD	point in time, min. value, 21. harmonic voltage L3
4294	uint	RD	point in time, min. value, 23. harmonic voltage L3
4296	uint	RD	point in time, min. value, 25. harmonic voltage L3
4298	uint	RD	point in time, min. value, THD voltage L1
4300	uint	RD	point in time, min. value, THD voltage L2
4302	uint	RD	point in time, min. value, THD voltage L3
4304	uint	RD	point in time, max. value, frequency
4306	uint	RD	point in time, min. value, voltage zero sequence
4308	uint	RD	point in time, min. value, voltage positive sequence
4310	uint	RD	point in time, min. value, voltage negative sequence
4312	uint	RD	point in time, min. value, active power L1

Address	Format	RD/WR	Note
4314	uint	RD	point in time, min. value, active power L2
4316	uint	RD	point in time, min. value, active power L3
4318	uint	RD	point in time, min. value, active power sum

Maximum values, time stamp

Address	Format	RD/WR	Note
3300	uint	RD	point in time, max. value, voltage L1-N
3302	uint	RD	point in time, max. value, voltage L2-N
3304	uint	RD	point in time, max. value, voltage L3-N
3306	uint	RD	point in time, max. value, voltage L1-L2
3308	uint	RD	point in time, max. value, voltage L2-L3
3310	uint	RD	point in time, max. value, voltage L3-L1
3312	uint	RD	point in time, max. value, current L1
3314	uint	RD	point in time, max. value, current L2
3316	uint	RD	point in time, max. value, current L3
3318	uint	RD	point in time, max. value, current sum
3320	uint	RD	point in time, max. value, active power L1
3322	uint	RD	point in time, max. value, active power L2
3324	uint	RD	point in time, max. value, active power L3
3326	uint	RD	point in time, max. value, active power sum
3328	uint	RD	point in time, max. value, reactive power L1
3330	uint	RD	point in time, max. value, reactive power L2
3332	uint	RD	point in time, max. value, reactive power L3
3334	uint	RD	point in time, max. value, reactive power sum
3336	uint	RD	point in time, max. value, apparent power L1
3338	uint	RD	point in time, max. value, apparent power L2
3340	uint	RD	point in time, max. value, apparent power L3
3342	uint	RD	point in time, max. value, apparent power sum
3344	uint	RD	point in time, max. value, cos(phi) L1
3346	uint	RD	point in time, max. value, cos(phi) L2
3348	uint	RD	point in time, max. value, cos(phi) L3
3350	uint	RD	point in time, max. value, cos(phi) sum
3352	uint	RD	point in time, max. value, active power (fundamental oscillation) L1
3354	uint	RD	point in time, max. value, active power (fundamental oscillation) L2
3356	uint	RD	point in time, max. value, active power (fundamental oscillation) L3
3358	uint	RD	point in time, max. value, 1. harmonic voltage L1
3360	uint	RD	point in time, max. value, 3. harmonic voltage L1
3362	uint	RD	point in time, max. value, 5. harmonic voltage L1
3364	uint	RD	point in time, max. value, 7. harmonic voltage L1
3366	uint	RD	point in time, max. value, 9. harmonic voltage L1
3368	uint	RD	point in time, max. value, 11. harmonic voltage L1
3370	uint	RD	point in time, max. value, 13. harmonic voltage L1
3372	uint	RD	point in time, max. value, 15. harmonic voltage L1
3374	uint	RD	point in time, max. value, 17. harmonic voltage L1
3376	uint	RD	point in time, max. value, 19. harmonic voltage L1
3378	uint	RD	point in time, max. value, 21. harmonic voltage L1
3380	uint	RD	point in time, max. value, 23. harmonic voltage L1
3382	uint	RD	point in time, max. value, 25. harmonic voltage L1
3384	uint	RD	point in time, max. value, 1. harmonic voltage L2
3386	uint	RD	point in time, max. value, 3. harmonic voltage L2
3388	uint	RD	point in time, max. value, 5. harmonic voltage L2
3390	uint	RD	point in time, max. value, 7. harmonic voltage L2
3392	uint	RD	point in time, max. value, 9. harmonic voltage L2
3394	uint	RD	point in time, max. value, 11. harmonic voltage L2
3396	uint	RD	point in time, max. value, 13. harmonic voltage L2
3398	uint	RD	point in time, max. value, 15. harmonic voltage L2
3400	uint	RD	point in time, max. value, 17. harmonic voltage L2
3402	uint	RD	point in time, max. value, 19. harmonic voltage L2
3404	uint	RD	point in time, max. value, 21. harmonic voltage L2
3406	uint	RD	point in time, max. value, 23. harmonic voltage L2
3408	uint	RD	point in time, max. value, 25. harmonic voltage L2
3410	uint	RD	point in time, max. value, 1. harmonic voltage L3
3412	uint	RD	point in time, max. value, 3. harmonic voltage L3
3414	uint	RD	point in time, max. value, 5. harmonic voltage L3

Address	Format	RD/WR	Note
3416	uint	RD	point in time, max. value, 7. harmonic voltage L3
3418	uint	RD	point in time, max. value, 9. harmonic voltage L3
3420	uint	RD	point in time, max. value, 11. harmonic voltage L3
3422	uint	RD	point in time, max. value, 13. harmonic voltage L3
3424	uint	RD	point in time, max. value, 15. harmonic voltage L3
3426	uint	RD	point in time, max. value, 17. harmonic voltage L3
3428	uint	RD	point in time, max. value, 19. harmonic voltage L3
3430	uint	RD	point in time, max. value, 21. harmonic voltage L3
3432	uint	RD	point in time, max. value, 23. harmonic voltage L3
3434	uint	RD	point in time, max. value, 25. harmonic voltage L3
3436	uint	RD	point in time, max. value, 1. harmonic current L1
3438	uint	RD	point in time, max. value, 3. harmonic current L1
3440	uint	RD	point in time, max. value, 5. harmonic current L1
3442	uint	RD	point in time, max. value, 7. harmonic current L1
3444	uint	RD	point in time, max. value, 9. harmonic current L1
3446	uint	RD	point in time, max. value, 11. harmonic current L1
3448	uint	RD	point in time, max. value, 13. harmonic current L1
3450	uint	RD	point in time, max. value, 15. harmonic current L1
3452	uint	RD	point in time, max. value, 17. harmonic current L1
3454	uint	RD	point in time, max. value, 19. harmonic current L1
3456	uint	RD	point in time, max. value, 21. harmonic current L1
3458	uint	RD	point in time, max. value, 23. harmonic current L1
3460	uint	RD	point in time, max. value, 25. harmonic current L1
3462	uint	RD	point in time, max. value, 1. harmonic current L2
3464	uint	RD	point in time, max. value, 3. harmonic current L2
3466	uint	RD	point in time, max. value, 5. harmonic current L2
3468	uint	RD	point in time, max. value, 7. harmonic current L2
3470	uint	RD	point in time, max. value, 9. harmonic current L2
3472	uint	RD	point in time, max. value, 11. harmonic current L2
3474	uint	RD	point in time, max. value, 13. harmonic current L2
3476	uint	RD	point in time, max. value, 15. harmonic current L2
3478	uint	RD	point in time, max. value, 17. harmonic current L2
3480	uint	RD	point in time, max. value, 19. harmonic current L2
3482	uint	RD	point in time, max. value, 21. harmonic current L2
3484	uint	RD	point in time, max. value, 23. harmonic current L2
3486	uint	RD	point in time, max. value, 25. harmonic current L2
3488	uint	RD	point in time, max. value, 1. harmonic current L3
3490	uint	RD	point in time, max. value, 3. harmonic current L3
3492	uint	RD	point in time, max. value, 5. harmonic current L3
3494	uint	RD	point in time, max. value, 7. harmonic current L3
3496	uint	RD	point in time, max. value, 9. harmonic current L3
3498	uint	RD	point in time, max. value, 11. harmonic current L3
3500	uint	RD	point in time, max. value, 13. harmonic current L3
3502	uint	RD	point in time, max. value, 15. harmonic current L3
3504	uint	RD	point in time, max. value, 17. harmonic current L3
3506	uint	RD	point in time, max. value, 19. harmonic current L3
3508	uint	RD	point in time, max. value, 21. harmonic current L3
3510	uint	RD	point in time, max. value, 23. harmonic current L3
3512	uint	RD	point in time, max. value, 25. harmonic current L3
3514	uint	RD	point in time, max. value, THD voltage L1
3516	uint	RD	point in time, max. value, THD voltage L2
3518	uint	RD	point in time, max. value, THD voltage L3
3520	uint	RD	point in time, max. value, THD current L1
3522	uint	RD	point in time, max. value, THD current L2
3524	uint	RD	point in time, max. value, THD current L3
3526	uint	RD	point in time, max. value, frequency
3528	uint	RD	point in time, max. value, voltage zero sequence
3530	uint	RD	point in time, max. value, voltage positive sequence
3532	uint	RD	point in time, max. value, voltage negative sequence

Address	Format	RD/WR	Note
3534	uint	RD	point in time, max. value, current zero sequence
3536	uint	RD	point in time, max. value, current positive sequence
3538	uint	RD	point in time, max. value, current negative sequence
3540	uint	RD	point in time, max. value, distortion power L1
3542	uint	RD	point in time, max. value, distortion power L2
3544	uint	RD	point in time, max. value, distortion power L3
3546	uint	RD	point in time, max. value, distortion power sum
3548	uint	RD	point in time, max. value, mean value current L1
3550	uint	RD	point in time, max. value, mean value current L2
3552	uint	RD	point in time, max. value, mean value current L3
3554	uint	RD	point in time, max. value, mean value current sum
3556	uint	RD	point in time, max. value, mean value active power L1
3558	uint	RD	point in time, max. value, mean value active power L2
3560	uint	RD	point in time, max. value, mean value active power L3
3562	uint	RD	point in time, max. value, mean value active power sum
3564	uint	RD	point in time, max. value, TDD current L1
3566	uint	RD	point in time, max. value, TDD current L2
3568	uint	RD	point in time, max. value, TDD current L3

Fourier analysis

Measured values, type float, fourier analysis

Address	Format	RD/WR	Note
1058	float	RD	1. harmonic voltage L1
1060	float	RD	3. harmonic voltage L1
1062	float	RD	5. harmonic voltage L1
1064	float	RD	7. harmonic voltage L1
1066	float	RD	9. harmonic voltage L1
1068	float	RD	11. harmonic voltage L1
1070	float	RD	13. harmonic voltage L1
1072	float	RD	15. harmonic voltage L1
1074	float	RD	17. harmonic voltage L1
1076	float	RD	19. harmonic voltage L1
1078	float	RD	21. harmonic voltage L1
1080	float	RD	23. harmonic voltage L1
1082	float	RD	25. harmonic voltage L1
1084	float	RD	1. harmonic voltage L2
1086	float	RD	3. harmonic voltage L2
1088	float	RD	5. harmonic voltage L2
1090	float	RD	7. harmonic voltage L2
1092	float	RD	9. harmonic voltage L2
1094	float	RD	11. harmonic voltage L2
1096	float	RD	13. harmonic voltage L2
1098	float	RD	15. harmonic voltage L2
1100	float	RD	17. harmonic voltage L2
1102	float	RD	19. harmonic voltage L2
1104	float	RD	21. harmonic voltage L2
1106	float	RD	23. harmonic voltage L2
1108	float	RD	25. harmonic voltage L2
1110	float	RD	1. harmonic voltage L3
1112	float	RD	3. harmonic voltage L3
1114	float	RD	5. harmonic voltage L3
1116	float	RD	7. harmonic voltage L3
1118	float	RD	9. harmonic voltage L3
1120	float	RD	11. harmonic voltage L3
1122	float	RD	13. harmonic voltage L3
1124	float	RD	15. harmonic voltage L3
1126	float	RD	17. harmonic voltage L3
1128	float	RD	19. harmonic voltage L3
1130	float	RD	21. harmonic voltage L3
1132	float	RD	23. harmonic voltage L3
1134	float	RD	25. harmonic voltage L3
1136	float	RD	1. harmonic current L1
1138	float	RD	3. harmonic current L1
1140	float	RD	5. harmonic current L1
1142	float	RD	7. harmonic current L1
1144	float	RD	9. harmonic current L1
1146	float	RD	11. harmonic current L1
1148	float	RD	13. harmonic current L1
1150	float	RD	15. harmonic current L1
1152	float	RD	17. harmonic current L1
1154	float	RD	19. harmonic current L1
1156	float	RD	21. harmonic current L1
1158	float	RD	23. harmonic current L1
1160	float	RD	25. harmonic current L1
1162	float	RD	1. harmonic current L2
1164	float	RD	3. harmonic current L2
1166	float	RD	5. harmonic current L2
1168	float	RD	7. harmonic current L2
1170	float	RD	9. harmonic current L2
1172	float	RD	11. harmonic current L2
1174	float	RD	13. harmonic current L2

Address	Format	RD/WR	Note
1176	float	RD	15. harmonic current L2
1178	float	RD	17. harmonic current L2
1180	float	RD	19. harmonic current L2
1182	float	RD	21. harmonic current L2
1184	float	RD	23. harmonic current L2
1186	float	RD	25. harmonic current L2
1188	float	RD	1. harmonic current L3
1190	float	RD	3. harmonic current L3
1192	float	RD	5. harmonic current L3
1194	float	RD	7. harmonic current L3
1196	float	RD	9. harmonic current L3
1198	float	RD	11. harmonic current L3
1200	float	RD	13. harmonic current L3
1202	float	RD	15. harmonic current L3
1204	float	RD	17. harmonic current L3
1206	float	RD	19. harmonic current L3
1208	float	RD	21. harmonic current L3
1210	float	RD	23. harmonic current L3
1212	float	RD	25. harmonic current L3

Measured values, type short, fourier analysis

Address	Format	RD/WR	Note
11029	short (x10)	RD	1. harmonic voltage L1
11030	short (x10)	RD	3. harmonic voltage L1
11031	short (x10)	RD	5. harmonic voltage L1
11032	short (x10)	RD	7. harmonic voltage L1
11033	short (x10)	RD	9. harmonic voltage L1
11034	short (x10)	RD	11. harmonic voltage L1
11035	short (x10)	RD	13. harmonic voltage L1
11036	short (x10)	RD	15. harmonic voltage L1
11037	short (x10)	RD	17. harmonic voltage L1
11038	short (x10)	RD	19. harmonic voltage L1
11039	short (x10)	RD	21. harmonic voltage L1
11040	short (x10)	RD	23. harmonic voltage L1
11041	short (x10)	RD	25. harmonic voltage L1
11042	short (x10)	RD	1. harmonic voltage L2
11043	short (x10)	RD	3. harmonic voltage L2
11044	short (x10)	RD	5. harmonic voltage L2
11045	short (x10)	RD	7. harmonic voltage L2
11046	short (x10)	RD	9. harmonic voltage L2
11047	short (x10)	RD	11. harmonic voltage L2
11048	short (x10)	RD	13. harmonic voltage L2
11049	short (x10)	RD	15. harmonic voltage L2
11050	short (x10)	RD	17. harmonic voltage L2
11051	short (x10)	RD	19. harmonic voltage L2
11052	short (x10)	RD	21. harmonic voltage L2
11053	short (x10)	RD	23. harmonic voltage L2
11054	short (x10)	RD	25. harmonic voltage L2
11055	short (x10)	RD	1. harmonic voltage L3
11056	short (x10)	RD	3. harmonic voltage L3
11057	short (x10)	RD	5. harmonic voltage L3
11058	short (x10)	RD	7. harmonic voltage L3
11059	short (x10)	RD	9. harmonic voltage L3
11060	short (x10)	RD	11. harmonic voltage L3
11061	short (x10)	RD	13. harmonic voltage L3
11062	short (x10)	RD	15. harmonic voltage L3
11063	short (x10)	RD	17. harmonic voltage L3
11064	short (x10)	RD	19. harmonic voltage L3
11065	short (x10)	RD	21. harmonic voltage L3
11066	short (x10)	RD	23. harmonic voltage L3
11067	short (x10)	RD	25. harmonic voltage L3
11068	short (x10)	RD	1. harmonic current L1
11069	short (x10)	RD	3. harmonic current L1
11070	short (x10)	RD	5. harmonic current L1
11071	short (x10)	RD	7. harmonic current L1
11072	short (x10)	RD	9. harmonic current L1
11073	short (x10)	RD	11. harmonic current L1
11074	short (x10)	RD	13. harmonic current L1
11075	short (x10)	RD	15. harmonic current L1
11076	short (x10)	RD	17. harmonic current L1
11077	short (x10)	RD	19. harmonic current L1
11078	short (x10)	RD	21. harmonic current L1
11079	short (x10)	RD	23. harmonic current L1
11080	short (x10)	RD	25. harmonic current L1
11081	short (x10)	RD	1. harmonic current L2
11082	short (x10)	RD	3. harmonic current L2
11083	short (x10)	RD	5. harmonic current L2
11084	short (x10)	RD	7. harmonic current L2
11085	short (x10)	RD	9. harmonic current L2
11086	short (x10)	RD	11. harmonic current L2
11087	short (x10)	RD	13. harmonic current L2

Address	Format	RD/WR	Note
11088	short (x10)	RD	15. harmonic current L2
11089	short (x10)	RD	17. harmonic current L2
11090	short (x10)	RD	19. harmonic current L2
11091	short (x10)	RD	21. harmonic current L2
11092	short (x10)	RD	23. harmonic current L2
11093	short (x10)	RD	25. harmonic current L2
11094	short (x10)	RD	1. harmonic current L3
11095	short (x10)	RD	3. harmonic current L3
11096	short (x10)	RD	5. harmonic current L3
11097	short (x10)	RD	7. harmonic current L3
11098	short (x10)	RD	9. harmonic current L3
11099	short (x10)	RD	11. harmonic current L3
11100	short (x10)	RD	13. harmonic current L3
11101	short (x10)	RD	15. harmonic current L3
11102	short (x10)	RD	17. harmonic current L3
11103	short (x10)	RD	19. harmonic current L3
11104	short (x10)	RD	21. harmonic current L3
11105	short (x10)	RD	23. harmonic current L3
11106	short (x10)	RD	25. harmonic current L3

Address	Format	RD/WR	Note

Mean values, type float, fourier analysis

Address	Format	RD/WR	Note
2058	float	RD	mean value 1. harmonic voltage L1
2060	float	RD	mean value 3. harmonic voltage L1
2062	float	RD	mean value 5. harmonic voltage L1
2064	float	RD	mean value 7. harmonic voltage L1
2066	float	RD	mean value 9. harmonic voltage L1
2068	float	RD	mean value 11. harmonic voltage L1
2070	float	RD	mean value 13. harmonic voltage L1
2072	float	RD	mean value 15. harmonic voltage L1
2074	float	RD	mean value 17. harmonic voltage L1
2076	float	RD	mean value 19. harmonic voltage L1
2078	float	RD	mean value 21. harmonic voltage L1
2080	float	RD	mean value 23. harmonic voltage L1
2082	float	RD	mean value 25. harmonic voltage L1
2084	float	RD	mean value 1. harmonic voltage L2
2086	float	RD	mean value 3. harmonic voltage L2
2088	float	RD	mean value 5. harmonic voltage L2
2090	float	RD	mean value 7. harmonic voltage L2
2092	float	RD	mean value 9. harmonic voltage L2
2094	float	RD	mean value 11. harmonic voltage L2
2096	float	RD	mean value 13. harmonic voltage L2
2098	float	RD	mean value 15. harmonic voltage L2
2100	float	RD	mean value 17. harmonic voltage L2
2102	float	RD	mean value 19. harmonic voltage L2
2104	float	RD	mean value 21. harmonic voltage L2
2106	float	RD	mean value 23. harmonic voltage L2
2108	float	RD	mean value 25. harmonic voltage L2
2110	float	RD	mean value 1. harmonic voltage L3
2112	float	RD	mean value 3. harmonic voltage L3
2114	float	RD	mean value 5. harmonic voltage L3
2116	float	RD	mean value 7. harmonic voltage L3
2118	float	RD	mean value 9. harmonic voltage L3
2120	float	RD	mean value 11. harmonic voltage L3
2122	float	RD	mean value 13. harmonic voltage L3
2124	float	RD	mean value 15. harmonic voltage L3
2126	float	RD	mean value 17. harmonic voltage L3
2128	float	RD	mean value 19. harmonic voltage L3
2130	float	RD	mean value 21. harmonic voltage L3
2132	float	RD	mean value 23. harmonic voltage L3
2134	float	RD	mean value 25. harmonic voltage L3
2136	float	RD	mean value 1. harmonic current L1
2138	float	RD	mean value 3. harmonic current L1
2140	float	RD	mean value 5. harmonic current L1
2142	float	RD	mean value 7. harmonic current L1
2144	float	RD	mean value 9. harmonic current L1
2146	float	RD	mean value 11. harmonic current L1
2148	float	RD	mean value 13. harmonic current L1
2150	float	RD	mean value 15. harmonic current L1
2152	float	RD	mean value 17. harmonic current L1
2154	float	RD	mean value 19. harmonic current L1
2156	float	RD	mean value 21. harmonic current L1
2158	float	RD	mean value 23. harmonic current L1
2160	float	RD	mean value 25. harmonic current L1
2162	float	RD	mean value 1. harmonic current L2
2164	float	RD	mean value 3. harmonic current L2
2166	float	RD	mean value 5. harmonic current L2
2168	float	RD	mean value 7. harmonic current L2
2170	float	RD	mean value 9. harmonic current L2
2172	float	RD	mean value 11. harmonic current L2
2174	float	RD	mean value 13. harmonic current L2

Address	Format	RD/WR	Note
2176	float	RD	mean value 15. harmonic current L2
2178	float	RD	mean value 17. harmonic current L2
2180	float	RD	mean value 19. harmonic current L2
2182	float	RD	mean value 21. harmonic current L2
2184	float	RD	mean value 23. harmonic current L2
2186	float	RD	mean value 25. harmonic current L2
2188	float	RD	mean value 1. harmonic current L3
2190	float	RD	mean value 3. harmonic current L3
2192	float	RD	mean value 5. harmonic current L3
2194	float	RD	mean value 7. harmonic current L3
2196	float	RD	mean value 9. harmonic current L3
2198	float	RD	mean value 11. harmonic current L3
2200	float	RD	mean value 13. harmonic current L3
2202	float	RD	mean value 15. harmonic current L3
2204	float	RD	mean value 17. harmonic current L3
2206	float	RD	mean value 19. harmonic current L3
2208	float	RD	mean value 21. harmonic current L3
2210	float	RD	mean value 23. harmonic current L3
2212	float	RD	mean value 25. harmonic current L3

Mean values, type short, fourier analysis

Address	Format	RD/WR	Note
12029	short (x10)	RD	mean value 1. harmonic voltage L1
12030	short (x10)	RD	mean value 3. harmonic voltage L1
12031	short (x10)	RD	mean value 5. harmonic voltage L1
12032	short (x10)	RD	mean value 7. harmonic voltage L1
12033	short (x10)	RD	mean value 9. harmonic voltage L1
12034	short (x10)	RD	mean value 11. harmonic voltage L1
12035	short (x10)	RD	mean value 13. harmonic voltage L1
12036	short (x10)	RD	mean value 15. harmonic voltage L1
12037	short (x10)	RD	mean value 17. harmonic voltage L1
12038	short (x10)	RD	mean value 19. harmonic voltage L1
12039	short (x10)	RD	mean value 21. harmonic voltage L1
12040	short (x10)	RD	mean value 23. harmonic voltage L1
12041	short (x10)	RD	mean value 25. harmonic voltage L1
12042	short (x10)	RD	mean value 1. harmonic voltage L2
12043	short (x10)	RD	mean value 3. harmonic voltage L2
12044	short (x10)	RD	mean value 5. harmonic voltage L2
12045	short (x10)	RD	mean value 7. harmonic voltage L2
12046	short (x10)	RD	mean value 9. harmonic voltage L2
12047	short (x10)	RD	mean value 11. harmonic voltage L2
12048	short (x10)	RD	mean value 13. harmonic voltage L2
12049	short (x10)	RD	mean value 15. harmonic voltage L2
12050	short (x10)	RD	mean value 17. harmonic voltage L2
12051	short (x10)	RD	mean value 19. harmonic voltage L2
12052	short (x10)	RD	mean value 21. harmonic voltage L2
12053	short (x10)	RD	mean value 23. harmonic voltage L2
12054	short (x10)	RD	mean value 25. harmonic voltage L2
12055	short (x10)	RD	mean value 1. harmonic voltage L3
12056	short (x10)	RD	mean value 3. harmonic voltage L3
12057	short (x10)	RD	mean value 5. harmonic voltage L3
12058	short (x10)	RD	mean value 7. harmonic voltage L3
12059	short (x10)	RD	mean value 9. harmonic voltage L3
12060	short (x10)	RD	mean value 11. harmonic voltage L3
12061	short (x10)	RD	mean value 13. harmonic voltage L3
12062	short (x10)	RD	mean value 15. harmonic voltage L3
12063	short (x10)	RD	mean value 17. harmonic voltage L3
12064	short (x10)	RD	mean value 19. harmonic voltage L3
12065	short (x10)	RD	mean value 21. harmonic voltage L3
12066	short (x10)	RD	mean value 23. harmonic voltage L3
12067	short (x10)	RD	mean value 25. harmonic voltage L3
12068	short (x1000)	RD	mean value 1. harmonic current L1
12069	short (x1000)	RD	mean value 3. harmonic current L1
12070	short (x1000)	RD	mean value 5. harmonic current L1
12071	short (x1000)	RD	mean value 7. harmonic current L1
12072	short (x1000)	RD	mean value 9. harmonic current L1
12073	short (x1000)	RD	mean value 11. harmonic current L1
12074	short (x1000)	RD	mean value 13. harmonic current L1
12075	short (x1000)	RD	mean value 15. harmonic current L1
12076	short (x1000)	RD	mean value 17. harmonic current L1
12077	short (x1000)	RD	mean value 19. harmonic current L1
12078	short (x1000)	RD	mean value 21. harmonic current L1
12079	short (x1000)	RD	mean value 23. harmonic current L1
12080	short (x1000)	RD	mean value 25. harmonic current L1
12081	short (x1000)	RD	mean value 1. harmonic current L2
12082	short (x1000)	RD	mean value 3. harmonic current L2
12083	short (x1000)	RD	mean value 5. harmonic current L2
12084	short (x1000)	RD	mean value 7. harmonic current L2
12085	short (x1000)	RD	mean value 9. harmonic current L2
12086	short (x1000)	RD	mean value 11. harmonic current L2
12087	short (x1000)	RD	mean value 13. harmonic current L2

Address	Format	RD/WR	Note
12088	short (x1000)	RD	mean value 15. harmonic current L2
12089	short (x1000)	RD	mean value 17. harmonic current L2
12090	short (x1000)	RD	mean value 19. harmonic current L2
12091	short (x1000)	RD	mean value 21. harmonic current L2
12092	short (x1000)	RD	mean value 23. harmonic current L2
12093	short (x1000)	RD	mean value 25. harmonic current L2
12094	short (x1000)	RD	mean value 1. harmonic current L3
12095	short (x1000)	RD	mean value 3. harmonic current L3
12096	short (x1000)	RD	mean value 5. harmonic current L3
12097	short (x1000)	RD	mean value 7. harmonic current L3
12098	short (x1000)	RD	mean value 9. harmonic current L3
12099	short (x1000)	RD	mean value 11. harmonic current L3
12100	short (x1000)	RD	mean value 13. harmonic current L3
12101	short (x1000)	RD	mean value 15. harmonic current L3
12102	short (x1000)	RD	mean value 17. harmonic current L3
12103	short (x1000)	RD	mean value 19. harmonic current L3
12104	short (x1000)	RD	mean value 21. harmonic current L3
12105	short (x1000)	RD	mean value 23. harmonic current L3
12106	short (x1000)	RD	mean value 25. harmonic current L3

Maximum values, type float, fourier analysis

Address	Format	RD/WR	Note
3058	float	RD	max. value, 1. harmonic voltage L1
3060	float	RD	max. value, 3. harmonic voltage L1
3062	float	RD	max. value, 5. harmonic voltage L1
3064	float	RD	max. value, 7. harmonic voltage L1
3066	float	RD	max. value, 9. harmonic voltage L1
3068	float	RD	max. value, 11. harmonic voltage L1
3070	float	RD	max. value, 13. harmonic voltage L1
3072	float	RD	max. value, 15. harmonic voltage L1
3074	float	RD	max. value, 17. harmonic voltage L1
3076	float	RD	max. value, 19. harmonic voltage L1
3078	float	RD	max. value, 21. harmonic voltage L1
3080	float	RD	max. value, 23. harmonic voltage L1
3082	float	RD	max. value, 25. harmonic voltage L1
3084	float	RD	max. value, 1. harmonic voltage L2
3086	float	RD	max. value, 3. harmonic voltage L2
3088	float	RD	max. value, 5. harmonic voltage L2
3090	float	RD	max. value, 7. harmonic voltage L2
3092	float	RD	max. value, 9. harmonic voltage L2
3094	float	RD	max. value, 11. harmonic voltage L2
3096	float	RD	max. value, 13. harmonic voltage L2
3098	float	RD	max. value, 15. harmonic voltage L2
3100	float	RD	max. value, 17. harmonic voltage L2
3102	float	RD	max. value, 19. harmonic voltage L2
3104	float	RD	max. value, 21. harmonic voltage L2
3106	float	RD	max. value, 23. harmonic voltage L2
3108	float	RD	max. value, 25. harmonic voltage L2
3110	float	RD	max. value, 1. harmonic voltage L3
3112	float	RD	max. value, 3. harmonic voltage L3
3114	float	RD	max. value, 5. harmonic voltage L3
3116	float	RD	max. value, 7. harmonic voltage L3
3118	float	RD	max. value, 9. harmonic voltage L3
3120	float	RD	max. value, 11. harmonic voltage L3
3122	float	RD	max. value, 13. harmonic voltage L3
3124	float	RD	max. value, 15. harmonic voltage L3
3126	float	RD	max. value, 17. harmonic voltage L3
3128	float	RD	max. value, 19. harmonic voltage L3
3130	float	RD	max. value, 21. harmonic voltage L3
3132	float	RD	max. value, 23. harmonic voltage L3
3134	float	RD	max. value, 25. harmonic voltage L3
3136	float	RD	max. value, 1. harmonic current L1
3138	float	RD	max. value, 3. harmonic current L1
3140	float	RD	max. value, 5. harmonic current L1
3142	float	RD	max. value, 7. harmonic current L1
3144	float	RD	max. value, 9. harmonic current L1
3146	float	RD	max. value, 11. harmonic current L1
3148	float	RD	max. value, 13. harmonic current L1
3150	float	RD	max. value, 15. harmonic current L1
3152	float	RD	max. value, 17. harmonic current L1
3154	float	RD	max. value, 19. harmonic current L1
3156	float	RD	max. value, 21. harmonic current L1
3158	float	RD	max. value, 23. harmonic current L1
3160	float	RD	max. value, 25. harmonic current L1
3162	float	RD	max. value, 1. harmonic current L2
3164	float	RD	max. value, 3. harmonic current L2
3166	float	RD	max. value, 5. harmonic current L2
3168	float	RD	max. value, 7. harmonic current L2
3170	float	RD	max. value, 9. harmonic current L2
3172	float	RD	max. value, 11. harmonic current L2
3174	float	RD	max. value, 13. harmonic current L2

Address	Format	RD/WR	Note
3176	float	RD	max. value, 15. harmonic current L2
3178	float	RD	max. value, 17. harmonic current L2
3180	float	RD	max. value, 19. harmonic current L2
3182	float	RD	max. value, 21. harmonic current L2
3184	float	RD	max. value, 23. harmonic current L2
3186	float	RD	max. value, 25. harmonic current L2
3188	float	RD	max. value, 1. harmonic current L3
3190	float	RD	max. value, 3. harmonic current L3
3192	float	RD	max. value, 5. harmonic current L3
3194	float	RD	max. value, 7. harmonic current L3
3196	float	RD	max. value, 9. harmonic current L3
3198	float	RD	max. value, 11. harmonic current L3
3200	float	RD	max. value, 13. harmonic current L3
3202	float	RD	max. value, 15. harmonic current L3
3204	float	RD	max. value, 17. harmonic current L3
3206	float	RD	max. value, 19. harmonic current L3
3208	float	RD	max. value, 21. harmonic current L3
3210	float	RD	max. value, 23. harmonic current L3
3212	float	RD	max. value, 25. harmonic current L3

Maximum values, type short, fourier analysis

Address	Format	RD/WR	Note
13029	short (x10)	RD	max. value, 1. harmonic voltage L1
13030	short (x10)	RD	max. value, 3. harmonic voltage L1
13031	short (x10)	RD	max. value, 5. harmonic voltage L1
13032	short (x10)	RD	max. value, 7. harmonic voltage L1
13033	short (x10)	RD	max. value, 9. harmonic voltage L1
13034	short (x10)	RD	max. value, 11. harmonic voltage L1
13035	short (x10)	RD	max. value, 13. harmonic voltage L1
13036	short (x10)	RD	max. value, 15. harmonic voltage L1
13037	short (x10)	RD	max. value, 17. harmonic voltage L1
13038	short (x10)	RD	max. value, 19. harmonic voltage L1
13039	short (x10)	RD	max. value, 21. harmonic voltage L1
13040	short (x10)	RD	max. value, 23. harmonic voltage L1
13041	short (x10)	RD	max. value, 25. harmonic voltage L1
13042	short (x10)	RD	max. value, 1. harmonic voltage L2
13043	short (x10)	RD	max. value, 3. harmonic voltage L2
13044	short (x10)	RD	max. value, 5. harmonic voltage L2
13045	short (x10)	RD	max. value, 7. harmonic voltage L2
13046	short (x10)	RD	max. value, 9. harmonic voltage L2
13047	short (x10)	RD	max. value, 11. harmonic voltage L2
13048	short (x10)	RD	max. value, 13. harmonic voltage L2
13049	short (x10)	RD	max. value, 15. harmonic voltage L2
13050	short (x10)	RD	max. value, 17. harmonic voltage L2
13051	short (x10)	RD	max. value, 19. harmonic voltage L2
13052	short (x10)	RD	max. value, 21. harmonic voltage L2
13053	short (x10)	RD	max. value, 23. harmonic voltage L2
13054	short (x10)	RD	max. value, 25. harmonic voltage L2
13055	short (x10)	RD	max. value, 1. harmonic voltage L3
13056	short (x10)	RD	max. value, 3. harmonic voltage L3
13057	short (x10)	RD	max. value, 5. harmonic voltage L3
13058	short (x10)	RD	max. value, 7. harmonic voltage L3
13059	short (x10)	RD	max. value, 9. harmonic voltage L3
13060	short (x10)	RD	max. value, 11. harmonic voltage L3
13061	short (x10)	RD	max. value, 13. harmonic voltage L3
13062	short (x10)	RD	max. value, 15. harmonic voltage L3
13063	short (x10)	RD	max. value, 17. harmonic voltage L3
13064	short (x10)	RD	max. value, 19. harmonic voltage L3
13065	short (x10)	RD	max. value, 21. harmonic voltage L3
13066	short (x10)	RD	max. value, 23. harmonic voltage L3
13067	short (x10)	RD	max. value, 25. harmonic voltage L3
13068	short (x1000)	RD	max. value, 1. harmonic current L1
13069	short (x1000)	RD	max. value, 3. harmonic current L1
13070	short (x1000)	RD	max. value, 5. harmonic current L1
13071	short (x1000)	RD	max. value, 7. harmonic current L1
13072	short (x1000)	RD	max. value, 9. harmonic current L1
13073	short (x1000)	RD	max. value, 11. harmonic current L1
13074	short (x1000)	RD	max. value, 13. harmonic current L1
13075	short (x1000)	RD	max. value, 15. harmonic current L1
13076	short (x1000)	RD	max. value, 17. harmonic current L1
13077	short (x1000)	RD	max. value, 19. harmonic current L1
13078	short (x1000)	RD	max. value, 21. harmonic current L1
13079	short (x1000)	RD	max. value, 23. harmonic current L1
13080	short (x1000)	RD	max. value, 25. harmonic current L1
13081	short (x1000)	RD	max. value, 1. harmonic current L2
13082	short (x1000)	RD	max. value, 3. harmonic current L2
13083	short (x1000)	RD	max. value, 5. harmonic current L2
13084	short (x1000)	RD	max. value, 7. harmonic current L2
13085	short (x1000)	RD	max. value, 9. harmonic current L2
13086	short (x1000)	RD	max. value, 11. harmonic current L2
13087	short (x1000)	RD	max. value, 13. harmonic current L2

Address	Format	RD/WR	Note
13088	short (x1000)	RD	max. value, 15. harmonic current L2
13089	short (x1000)	RD	max. value, 17. harmonic current L2
13090	short (x1000)	RD	max. value, 19. harmonic current L2
13091	short (x1000)	RD	max. value, 21. harmonic current L2
13092	short (x1000)	RD	max. value, 23. harmonic current L2
13093	short (x1000)	RD	max. value, 25. harmonic current L2
13094	short (x1000)	RD	max. value, 1. harmonic current L3
13095	short (x1000)	RD	max. value, 3. harmonic current L3
13096	short (x1000)	RD	max. value, 5. harmonic current L3
13097	short (x1000)	RD	max. value, 7. harmonic current L3
13098	short (x1000)	RD	max. value, 9. harmonic current L3
13099	short (x1000)	RD	max. value, 11. harmonic current L3
13100	short (x1000)	RD	max. value, 13. harmonic current L3
13101	short (x1000)	RD	max. value, 15. harmonic current L3
13102	short (x1000)	RD	max. value, 17. harmonic current L3
13103	short (x1000)	RD	max. value, 19. harmonic current L3
13104	short (x1000)	RD	max. value, 21. harmonic current L3
13105	short (x1000)	RD	max. value, 23. harmonic current L3
13106	short (x1000)	RD	max. value, 25. harmonic current L3

Minimum values, type float, fourier analysis

Address	Format	RD/WR	Note
4020	float	RD	min. value, 1. harmonic voltage L1
4022	float	RD	min. value, 3. harmonic voltage L1
4024	float	RD	min. value, 5. harmonic voltage L1
4026	float	RD	min. value, 7. harmonic voltage L1
4028	float	RD	min. value, 9. harmonic voltage L1
4030	float	RD	min. value, 11. harmonic voltage L1
4032	float	RD	min. value, 13. harmonic voltage L1
4034	float	RD	min. value, 15. harmonic voltage L1
4036	float	RD	min. value, 17. harmonic voltage L1
4038	float	RD	min. value, 19. harmonic voltage L1
4040	float	RD	min. value, 21. harmonic voltage L1
4042	float	RD	min. value, 23. harmonic voltage L1
4044	float	RD	min. value, 25. harmonic voltage L1
4046	float	RD	min. value, 1. harmonic voltage L2
4048	float	RD	min. value, 3. harmonic voltage L2
4050	float	RD	min. value, 5. harmonic voltage L2
4052	float	RD	min. value, 7. harmonic voltage L2
4054	float	RD	min. value, 9. harmonic voltage L2
4056	float	RD	min. value, 11. harmonic voltage L2
4058	float	RD	min. value, 13. harmonic voltage L2
4060	float	RD	min. value, 15. harmonic voltage L2
4062	float	RD	min. value, 17. harmonic voltage L2
4064	float	RD	min. value, 19. harmonic voltage L2
4066	float	RD	min. value, 21. harmonic voltage L2
4068	float	RD	min. value, 23. harmonic voltage L2
4070	float	RD	min. value, 25. harmonic voltage L2
4072	float	RD	min. value, 1. harmonic voltage L3
4074	float	RD	min. value, 3. harmonic voltage L3
4076	float	RD	min. value, 5. harmonic voltage L3
4078	float	RD	min. value, 7. harmonic voltage L3
4080	float	RD	min. value, 9. harmonic voltage L3
4082	float	RD	min. value, 11. harmonic voltage L3
4084	float	RD	min. value, 13. harmonic voltage L3
4086	float	RD	min. value, 15. harmonic voltage L3
4088	float	RD	min. value, 17. harmonic voltage L3
4090	float	RD	min. value, 19. harmonic voltage L3
4092	float	RD	min. value, 21. harmonic voltage L3
4094	float	RD	min. value, 23. harmonic voltage L3
4096	float	RD	min. value, 25. harmonic voltage L3

Minimum values, type short, fourier analysis

Address	Format	RD/WR	Note
14010	short (x10)	RD	min. value, 1. harmonic voltage L1
14011	short (x10)	RD	min. value, 3. harmonic voltage L1
14012	short (x10)	RD	min. value, 5. harmonic voltage L1
14013	short (x10)	RD	min. value, 7. harmonic voltage L1
14014	short (x10)	RD	min. value, 9. harmonic voltage L1
14015	short (x10)	RD	min. value, 11. harmonic voltage L1
14016	short (x10)	RD	min. value, 13. harmonic voltage L1
14017	short (x10)	RD	min. value, 15. harmonic voltage L1
14018	short (x10)	RD	min. value, 17. harmonic voltage L1
14019	short (x10)	RD	min. value, 19. harmonic voltage L1
14020	short (x10)	RD	min. value, 21. harmonic voltage L1
14021	short (x10)	RD	min. value, 23. harmonic voltage L1
14022	short (x10)	RD	min. value, 25. harmonic voltage L1
14023	short (x10)	RD	min. value, 1. harmonic voltage L2
14024	short (x10)	RD	min. value, 3. harmonic voltage L2
14025	short (x10)	RD	min. value, 5. harmonic voltage L2
14026	short (x10)	RD	min. value, 7. harmonic voltage L2
14027	short (x10)	RD	min. value, 9. harmonic voltage L2
14028	short (x10)	RD	min. value, 11. harmonic voltage L2
14029	short (x10)	RD	min. value, 13. harmonic voltage L2
14030	short (x10)	RD	min. value, 15. harmonic voltage L2
14031	short (x10)	RD	min. value, 17. harmonic voltage L2
14032	short (x10)	RD	min. value, 19. harmonic voltage L2
14033	short (x10)	RD	min. value, 21. harmonic voltage L2
14034	short (x10)	RD	min. value, 23. harmonic voltage L2
14035	short (x10)	RD	min. value, 25. harmonic voltage L2
14036	short (x10)	RD	min. value, 1. harmonic voltage L3
14037	short (x10)	RD	min. value, 3. harmonic voltage L3
14038	short (x10)	RD	min. value, 5. harmonic voltage L3
14039	short (x10)	RD	min. value, 7. harmonic voltage L3
14040	short (x10)	RD	min. value, 9. harmonic voltage L3
14041	short (x10)	RD	min. value, 11. harmonic voltage L3
14042	short (x10)	RD	min. value, 13. harmonic voltage L3
14043	short (x10)	RD	min. value, 15. harmonic voltage L3
14044	short (x10)	RD	min. value, 17. harmonic voltage L3
14045	short (x10)	RD	min. value, 19. harmonic voltage L3
14046	short (x10)	RD	min. value, 21. harmonic voltage L3
14047	short (x10)	RD	min. value, 23. harmonic voltage L3
14048	short (x10)	RD	min. value, 25. harmonic voltage L3