10. TECHNICAL DATA

Measuring ranges and admissible basic errors

Table 11

Measured value	Indication range*	Measuring range	L1	L2	L3	Σ	Basic error
Current In 1 A 5 A	 0.00 ... 12 kA 0.00 ... 60 kA	 0.002 ... 1.200 A~ 0.010 ... 6.000 A~	•	•	•		±0.2% r
Voltage L-N 57.7 V 69.3 V 230 V	 0.0 ... 280 kV 0.0 .. 333.0 kV 0.0 ... 1.104 MV	 2.8 ... 70.0 V~ 3.4 .. 84 V~ 11.5 ... 276 V~	•	•	•		±0.2% r
Voltage L-L 100 V 400 V	 0.0 ... 480 kV 0.0 ... 1.92 MV	 5 ... 120 V~ 20 ... 480 V~	•	•	•		±0.5% r
Frequency	47.0 .. 63.0 Hz	47.0...63.0 Hz	•	•	•		±0.2%mv
Active power	-9999 MW .. 0.00 W .. 9999 MW	-1.65 kW...1.4 W...1.65 kW	•	•	•	•	±0.5% r
Reactive power	-9999 Mvar .. 0.00 var ... 9999 Mvar	-1.65 kvar...1.4 var...1.65 kvar	•	•	•	•	±0.5% r
Apparent power	0.00 VA .. 9999 MVA	1.4 VA...1.65 kVA	•	•	•	•	±0.5% r
Power factor PF	-1 .. 0.. 1	-1...0...1	•	•	•	•	±1% r
Tangent φ factor	-10.2...0...10.2	-1.2...0...1.2	•	•	•	•	±1% r
Cosinus φ	-1... 1	-1... 1	•	•	•	•	±1% r
φ	-180 ... 180	-180 ... 180	•	•	•		±0.5% r
Imported active energy	0 .. 99 999 999.9 kWh					•	±0.5% r
Exported active energy	0 .. 99 999 999,9 kWh					•	±0.5% r
Reactive inductive energy	0 .. 99 999 999.9 kvarh					•	±0.5% r
Reactive capacitive energy	0 .. 99 999 999.9 kvarh					•	±0.5% r
Apparent energy	0 ..99 999 999.9 kVAh					•	±0.5% r
THD	0 .. 100%	0 .. 100%	•	•	•		±5% r

* Depending on the set tr_U ratio (ratio of the voltage transformer: 0.1...4000.0) and tr_I ratio (ratio of the current transformer: 1...10000)

r - of the range

mv - of the measured value

Caution! For the correct current measurement the presence of a voltage higher than 0.05 Un is required at least in one of the phase

Power input:	
- in supply circuit	≤ 6 VA
- in voltage circuit	≤ 0.05 VA
- in current circuit	≤ 0.05 VA
Display field:	dedicated display LCD 3.5''
Realay output:	relay, voltageless NO contacts load capacity 250 V~/ 0.5 A ~
Serial interface RS-485:	address 1...247; mode: 8N2,8E1, 8O1,8N1; baud rate: 4.8, 9.6, 19.2, 38.4 kbit/s transmission protocol: Modbus RTU response time: 600 ms
Energy impulse output	output of OC type (NPN), passive of class A , acc.to EN 62053-31 supply voltage18 .. 27 V, current 10 .. 27 mA
Constant of OC type output impulse:	1000 - 20000 imp./kWh independently of set tr_U, tr_I ratios
Protection grade ensured by the casing:	
- from frontal side	IP 65
- from terminal side	IP 20
Weight	0.3 kg
Overall dimensions	96 x 96 x 77 mm

Reference and rated operating conditions

- supply voltage	85..253 V a.c. (40...400) Hz or 90..300 V d.c. 20..40 V a.c. (40...400) Hz or 20..60 V d.c.
- input signal:	0...0.002...1.2 I_n; 0.05...1.2 U_n for current, voltage 0...0.002...1.2 I_n; 0...0.1...1.2 U_n for power factors Pf_i ,$t\varphi_i$ frequency 47...63 Hz sinusoidal (THD ≤ 8%)
- power factor	-1...0...1
- ambient temperature	-25...23...+55°C
- storage temperature	-30...+70°C
- relative humidity	25...95% (condensation inadmissible)
- admissible peak factor:	
- current intensity	2
- voltage	2
- external magnetic field	0...40...400 A/m
- short duration overload (5 s)	
- voltage inputs	2 Un (max.1000 V)
- current inputs	10 In
- operating position	any
- preheating time	5 min.

Additional errors:

in % of the basic error

- from frequency of input signals	< 50%
- from ambient temperature changes	< 50%/10°C
- for THD > 8%	< 100%

Standards fulfilled by the meter:

Electromagnetic compatibility:

- noise immunity acc. to EN 61000-6-2
- noise emissions acc. to EN 61000-6-4

Safety requirements:

according to EN 61010 -1 standard

- isolation between circuits: basic
- installation category: III
- pollution level: 2
- maximum phase-to-earth voltage:
  - for supply and measuring circuits 300 V
  - for remaining circuits 50 V
- altitude above sea level: < 2000 m.