

# ETIMETER

## Modular Energy Counters

### EVSE-ready 3-phase Modular Energy Meter 80A



- EVSE (Electric vehicle supply equipment) ready 3 phase modular Energy Meter 80A with RS485 port, pulse output:
- // compact three-phase direct connected DIN-rail mounting meter.
  - // class B for active energy and class 2 for reactive energy
  - // maximum current 80 A ( $I_{Lmax}$ ).
  - // RS485 (modbus) communication
  - // tariff input.
  - // 70°C ambient operational temperature. (EVSE ready)
  - // MID certificate available

Meter is intended for energy measurements in three-phase electrical power network and can be used in residential, industrial and utility applications. Meter measures energy directly in 3-wire and 4-wire networks according to the principle of fast sampling of voltage and current signals. A built-in microprocessor calculates energy and other electrical quantities from the measured signals. It also controls LCD, LED, IR and RS485 communication. A capacitive touch button on the front of the energy meter enables access to switch between measurements and settings in the menu. Connecting terminals can be sealed up against non-authorized access with protection covers.



#### Features:

- // Three phase direct connected DIN-rail mounting meter.
- // Class 1 for active energy according to EN 62053-21 and class B according to EN 50470-3.
- // Class 2 for reactive energy according to IEC 62053-23.
- // Bidirectional energy measurement (import/export).
- // Maximum current 80 A ( $I_{Lmax}$ ).
- // Display segment Matrix LCD.
- // LCD display with backlight.
- // Multifunctional front red LED.
- // Measurements of:
  - // power (active/reactive/apparent),
  - // energy (active/reactive/apparent, each phase and total),
- // voltage for each phase,
- // current for each phase,
- // phase to phase voltage
- // phase to phase angle,
- // frequency,
- // power factor (for each phase and total),
- // power angle (for each phase and total),
- // active tariff,
- // THD of voltage,
- // THD of current.
- // Modbus RS485 Serial communication
- // 2nd multifunction pulse output (valid only for IE38MS).
- // RS485 Serial communication (valid only for IE38MD).
- // NFC (option) enables an easy setting and downloading meter data.
- // M-bus Serial communication (valid only for IE38MM).
- // Tariff input (230 V AC)
- // Tariff management (up to 6 tariffs manageable via communication).
- // -25°C ... 70°C ambient operation temperature.
- // Sealable terminal cover.
- // DIN-rail mounting according to EN 60715.
- // 3 DIN modules width.

### Modular Energy Counter 3MEM80

Type	Description	Code		
3MEM80-BEVRSP0	3phase, 80A, 50(Pulse output), RS485, EVSE ready	004657206	248	1/96

### Modular Energy Counter 3MEM 80 with MID certificate

Type	Description	Code		
3MEM80-BEVRSP0-MID	3phase 80 A, 50(Pulse output), RS485, EVSE ready	004657210	248	1/96
3MEM80-BPO-MID	3phase 80 A, 2x50(Pulse output), EVSE ready	004657211	248	1/96
3MEM80-BMB-MID	3phase 80 A, 50(Pulse output), M-bus, EVSE ready	004657212	248	1/96



**General hardware features**

	3MEM80-BPO-MID	3MEM80-BMB-MID	3MEM80-BEVRSP0-MID
MID approval	✓	✓	✓
Pulse output S01	✓	✓	✓
Pulse output S02	✓	✗	✗
Tariff input	✓	✓	✓
85°C display	✓	✓	✓
MODBUS comm. Protocol RS485	✗	✗	✓
M-bus serial comm.	✗	✓	✗

**Technical Data**

Rail mounting	DIN EN60715	<b>Pulse output S0<sub>1</sub></b>	
<b>Main inputs</b>		Pulse rate	500 imp/kWh
Contacts capacity - Flexible (Rigid)	1.5 mm <sup>2</sup> ...25 (16) mm <sup>2</sup>	Pulse duration	32 ms ± 2 ms
Connection screws	M5	Rated voltage DC (max)	27 V
Max torque	3.5 Nm (PH2)	Switched current (max)	27 mA
Length or removed isolation	10 mm	Standard	EN 62053-31 (A&B)
<b>Auxiliary contacts</b>		<b>Pulse output S0<sub>2</sub> (option)</b>	
Contact capacity	0.05 mm <sup>2</sup> ...1.5 mm <sup>2</sup>	Type	Programmable
Screws	M3	Rated voltage DC (max)	27 V
Max torque	0.6 Nm	Switched current (max)	27 mA
Length or removed isolation	8 mm	<b>M-BUS Serial communication (option)</b>	
<b>Measuring input</b>		Type	M-BUS
Type	three-phase (3W4, 3W3, 2W3) single-phase (1W)	Speed	300 bit/s to 9600 bit/s (default 2400 bit/s)
Reference (nominal) current (I <sub>ref</sub> )	5 A	Protocol	M-BUS
Maximum current (I <sub>max</sub> )	80 A	Primary address	0 – (default)
Minimum current (I <sub>min</sub> )	0.25 A	<b>Tariff input</b>	
Transitional current (I <sub>tr</sub> )	0.5 A	Rated voltage	230 V (-20 %...+15 %)
Starting current	20 mA	Input resistance	360 kΩ
Power consumption at I <sub>ref</sub>	< 0.1 VA	<b>RS485 Serial communication (option)</b>	
Nominal voltage (U <sub>n</sub> )	3x230 V/400 V (-20 %...+15 %)	Type	RS485
Power consumption per phase at U <sub>n</sub>	< 8 VA	Speed	1200 bit/s to 115200 bit/s (default 115200 bit/s)
Nominal frequency (f <sub>n</sub> )	50 Hz and 60 Hz	Frame	8, N, 2
Minimum measuring time	10 s	Protocol	MODBUS RTU
<b>Accuracy</b>		Address	33 – (default)
Active energy	class 1 EN 62053-21 class B EN 50470-3 ±1.5 % from I <sub>min</sub> to I <sub>tr</sub> ±1 % from I <sub>tr</sub> to I <sub>max</sub>	<b>Ambient conditions and Safety</b>	
		Temperature and climatic condition	EN 62052 11
		Dust/water protection	IP50
Reactive, Apparent energy	class 2 IEC 62053-23 ±2.5 % from I <sub>min</sub> to I <sub>tr</sub> ±2 % from I <sub>tr</sub> to I <sub>max</sub>	Operating temp. range	-25°C... +70°C (non-condensing humidity)
		Storage temp. range	-40 °C... +85°C
Voltage	±1 % of measured value	Enclosure material	self-extinguish complying UL94V
Current	±1 % of I <sub>ref</sub> from I <sub>st</sub> to I <sub>ref</sub> ±1 % of measured value from I <sub>ref</sub> to I <sub>max</sub>	Indoor meter	yes
		Degree of pollution	2
Active Power	±1 % of nominal power (U <sub>n</sub> <sup>n</sup> *I <sub>ref</sub> ) from I <sub>st</sub> to I <sub>ref</sub> ±1 % of measured value from I <sub>ref</sub> to I <sub>max</sub>	Protection class	II
		Installation category	300 V <sub>max</sub> cat.III
Reactive, Apparent power	±2 % of nominal power from I <sub>st</sub> to I <sub>ref</sub> ±2 % of measured value from I <sub>ref</sub> to I <sub>max</sub>	Standard	IEC 62052-31
		Mechanical environment	M1
Frequency	±0.5 % of measured value	Electromagnetic environment	E2
<b>LCD</b>		Humidity	non condensing
Display type	Matrix (128 x 64)	Installation	DIN Rail 35 mm
Illumination	white (normal operation) / red (alarm indication)	Dimensions (W x H x D)	52.5 mm x 91.7 mm x 68.2 mm
<b>LED</b>		Colour	RAL 7035
Colour	red	EU Directives	EU Directive on Measuring Instruments 2014/32/EU. EU Directive on EMC 2014/30/EU. EU Directive on Low Voltage 2014/35/EU. EC Directive WEEE 2002/96/EC.
Pulse rate	1000 imp/kWh		
LED on	no load indication		

### 3-phase Modular Energy Meter 65A

3 phase modular Energy Meter 65A, various options of communication, measurement:

- // Compact three-phase direct connected DIN-rail mounting meter
- // 3 DIN modules width
- // Maximum current 65 A (I<sub>max</sub>)
- // Class 1 for active energy and class 2 for reactive energy
- // Optional: RS485, M-bus comm., Tariff input, pulse output



The meter can be equipped with the following communications and features:

- // RS485 serial communication with the MODBUS protocol.
- // M-bus serial communication, which enables data transmission and thus connection of the measuring places into the network for the control and management with energy.
- // Tariff input. Tariff input provides measurement of two tariffs for selected energy registers.
- // A built-in pulse output (option). It is designed for sending data to the devices for checking and monitoring consumed energy.

Features:

- // Three phase direct connected DIN-rail mounting meter.
- // Class 1 for active energy according to EN 62053- 21, class B according to EN 50470-3.
- // Class 2 for reactive energy according to EN 62053-23.
- // Bidirectional energy measurement (import/export).
- // Maximum current 65 A (I<sub>max</sub>).
- // Basic current 5 A (I<sub>b</sub>).
- // Reference voltage 3x230 V/400 V (U<sub>n</sub>).
- // Voltage operating range (-20 % ... +15 %) U<sub>n</sub>.
- // Reference frequencies 50 Hz and 60 Hz.
- // Power consumption voltage circuit < 8 VA at U<sub>n</sub> per phase.
- // Power consumption current circuit < 0.8 VA at I<sub>b</sub> per phase.
- // Temperature range climatic condition as indoor meter according EN 50470.
- // Display 7+1 digit (100 Wh resolution).
- // Multifunctional front red LED.
- // LED constant 1000 imp/kWh.
- // Measurements of:
  - // power (active/reactive/apparent)
  - // energy (active/reactive/apparent, each phase and total),
  - // voltage for each phase,
  - // current for each phase,
  - // phase to phase voltage
  - // phase to phase angle,
  - // frequency,
  - // power factor (for each phase and total),
- // power angle (for each phase and total),
- // active tariff (option),
- // THD of voltage,
- // THD of current.
- // Pulse output according to EN 62053-31 (option).
- // Tariff input (option).
- // RS485 Serial communication (option).
- // M-bus Serial communication (option).
- // DIN-rail mounting according to EN 60715.
- // Sealable terminal cover.

#### Modular Energy Counter 3MEM65

Type	Description	Code		
3MEM65-BPO	3 phase, 65A, Pulse output	004657201	248	1/96
3MEM65-BT	3 phase, 65A, Tariff input	004657202	248	1/96
3MEM65-BRS	3 phase, 65A, RS485	004657203	248	1/96
3MEM65-BMB	3 phase, 65A, M-bus	004657204	248	1/96



## Technical Data

Rail mounting	DIN EN60715	<b>Pulse output (option)</b>	
<b>Main inputs</b>		Pulse rate	1000 imp/kWh
Contacts capacity - Rigid (flexible)	1.5 mm <sup>2</sup> ...25 (16) mm <sup>2</sup>	Pulse duration	32 ms ± 2 ms
Connection screws	M5	Rated voltage DC (max)	27 V
Max torque	3.5 Nm (PH2)	Switched current (max)	27 mA
Length or removed isolation	10 mm	Standard	EN 62053-31 (A&B)
<b>Auxiliary contacts</b>		<b>M-BUS Serial communication (option)</b>	
Contact capacity	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	Type	M-bus
Screws	M3	Speed	300 bit/s to 9600 bit/s (default 2400 bits/s)
Max torque	1.2 Nm	Protocol	M-bus
Length or removed isolation	8 mm	Address	0 – (default)
<b>Measuring input</b>		<b>RS485 Serial communication (option)</b>	
Type	three phase (4u)	Type	RS485
Reference (nominal) current (I <sub>ref</sub> )	5 A	Speed	1200 bit/s to 38400 bit/s (default 38400 bit/s)
Maximum current (I <sub>max</sub> )	65 A	Frame	8, N, 2
Minimum current (I <sub>min</sub> )	0.25 A	Protocol	MODBUS RTU
Transitional current (I <sub>tr</sub> )	0.5 A	Address	33 – (default)
Starting current	20 mA	<b>Tariff input (option)</b>	
Power consumption at I <sub>ref</sub>	< 0.1 VA	Rated voltage	230 V (-20 % +15 %)
Nominal voltage (U <sub>n</sub> )	3x230 V/400 V (-20 %...+15 %)	Input resistance	450 kΩ
Power consumption per phase at U <sub>n</sub>	< 8 VA	<b>Ambient conditions and Safety</b>	
Nominal frequency (f <sub>n</sub> )	50 Hz and 60 Hz	Temperature and climatic condition	EN 62052 11
Minimum measuring time	10 s	Dust/water protection	IP50
<b>Accuracy</b>		Operating temp. range	-25°C... +55°C (non-condensing humidity)
Active energy	class 1 EN 62053-21 class B EN 50470-3 ±1.5 % from I <sub>min</sub> to I <sub>tr</sub> ±1 % from I <sub>tr</sub> to I <sub>max</sub>	Storage temp. range	-40 °C... +70°C
		Enclosure material	self-extinguish complying UL94 V
Reactive, Apparent energy	class 2 EN 62053-23 ±2.5 % from I <sub>min</sub> to I <sub>tr</sub> ±2 % from I <sub>tr</sub> to I <sub>max</sub>	Indoor meter	yes
		Degree of pollution	2
Voltage	±1 % of measured value	Protection class	II
		Installation category	300 V <sub>ms</sub> cat.III
Current	±1 % of I <sub>ref</sub> from I <sub>st</sub> to I <sub>ref</sub> ±1 % of measured value from I <sub>ref</sub> to I <sub>max</sub>	Standard	IEC 62052-31
		Mechanical environment	M1
Active Power	±1 % of nominal power (U <sub>n</sub> *I <sub>ref</sub> ) from I <sub>st</sub> to I <sub>ref</sub> ±1 % of measured value from I <sub>ref</sub> to I <sub>max</sub>	Electromagnetic environment	E2
		Humidity	non condensing
Reactive, Apparent power	±2 % of nominal power from I <sub>st</sub> to I <sub>ref</sub> ±2 % of measured value from I <sub>ref</sub> to I <sub>max</sub>	Installation	DIN Rail 35 mm
		Dimensions (W x H x D)	53.6 mm x 84 mm x 64 mm (69 mm)
Frequency	±0.5 % of measured value	Colour	RAL 7035
<b>LCD</b>		EU Directives	EU Directive on Measuring Instruments 2014/32/EU. EU Directive on EMC 2014/30/EU. EU Directive on Low Voltage 2014/35/EU. EC Directive WEEE 2002/96/EC.
Number of digits:	8 (7+1)		
Height of digits:	4.52 mm		
<b>LED</b>			
Colour	red		
Pulse rate	1000 imp/kWh		
LED on	no load indication		

## EVSE-ready 3-phase Modular Energy Meter 40A

EVSE (Electric vehicle supply equipment) ready 3 phase modular Energy Meter 40A with RS485 port:



- // Compact three-phase direct connected DIN-rail mounting meter
- // 3 DIN modules width
- // According to requirements of PTB, VDE and OCMF
- // Class 1 for active energy and class 2 for reactive energy
- // Maximum current 40 A (I<sub>max</sub>)
- // 70°C ambient operation temperature (EVSE ready)
- // Possibility to connect only on one phase

The 3MEM40-EVRS energy meters are intended for energy measurements in the three-phase and one phase electrical charger stations due to allowed high temperature operation (up to 70°C). Measuring energy directly in 4-wire networks according to the principle of fast sampling of voltage and current signals. A built-in microprocessor calculates power, energy, current, voltage, power factor, power angle, frequency, harmonics of THD voltage and THD current harmonics.

Features:

- // 3 DIN modules width three phase direct connected DIN-rail mounting meter
- // Class 1 for active energy according to EN 62053-21
- // Reference frequency 50 Hz or 60 Hz
- // Maximum current 40 A (I<sub>max</sub>)
- // Basic current 5 A (I<sub>b</sub>)
- // Reference voltage 3×230 V/400 V (U<sub>n</sub>)
- // Voltage operating range (-20 % ... +15 %)U<sub>n</sub>
- // Two row display 6+2 digit (10 Wh resolution) with backlight
- // Multifunctional front LED
- // RS485 Serial communication
- // Measurement of:
  - // power (active/reactive/apparent),
  - // energy (active/reactive/apparent) each phase and total),
  - // voltage (each phase),
  - // current (each phase),
  - // phase to phase voltage,
  - // phase to phase angle,
  - // frequency,
  - // power factor (for each phase and total),
  - // power angle (for each phase and total),
  - // THD of voltage,
- // THD of current.
- // Possibility to connect only on one phase (on L3).
- // Remote control of backlight LCD.
- // 70°C ambient operation temperature.
- // Sealable terminal cover.

### Modular Energy Counter 3MEM40

Type	Description	Code		
3MEM40-EVRS	3 phase, 40A, RS485, EVSE	004657200	248	1/96



## Technical Data

Rail mounting	DIN EN60715	RS485 Serial communication (option)	
<b>Main inputs</b>		Type	RS485
Contacts capacity - Rigid (flexible)	1.5 mm <sup>2</sup> ...25 (16) mm <sup>2</sup>	Speed	1200 bit/s to 115200 bit/s (default 115200 bit/s)
Connection screws	M5	Frame	8, N, 1
Max torque	3.5 Nm (PH2)	Protocol	MODBUS RTU
Length or removed isolation	10 mm	Address	33 – (default)
<b>Auxiliary contacts</b>		<b>Ambient conditions and Safety</b>	
Contact capacity	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	Temperature and climatic condition	EN 62052 11
Screws	M3	Dust/water protection	IP50
Max torque	1.2 Nm	Operating temp. range	-25°C... +70°C
Length or removed isolation	8 mm	Storage temp. range	-30 °C... +80°C
<b>Measuring input</b>		Enclosure material	self-extinguish complying UL94 V
Type	three phase (4u)	Indoor meter	yes
Reference (nominal) current (I <sub>ref</sub> )	5 A	Degree of pollution	2
Maximum current (I <sub>max</sub> )	40 A	Protection class	II
Minimum current (I <sub>min</sub> )	0.25 A	Installation category	300 V <sub>max</sub> cat.III
Transitional current (I <sub>tr</sub> )	0.5 A	Standard	IEC 62052-31
Starting current	20 mA	Mechanical environment	M1
Power consumption at I <sub>ref</sub>	< 0.1 VA	Electromagnetic environment	E2
Nominal voltage (U <sub>n</sub> )	3x230 V/400 V (-20 %...+15 %)	Humidity	non condensing
Power consumption per phase at U <sub>n</sub>	< 8 VA	Installation	DIN Rail 35 mm
Nominal frequency (f <sub>n</sub> )	50 Hz and 60 Hz	Dimensions (W x H x D)	53.6 mm x 84 mm x 69.4 mm
Minimum measuring time	10 s	Colour	RAL 7035
<b>Accuracy</b>			
Active energy	class 1 EN 62053-21 class B EN 50470-3 ±1.5 % from I <sub>min</sub> to I <sub>tr</sub> ±1 % from I <sub>tr</sub> to I <sub>max</sub>		
Reactive, Apparent energy	class 2 EN 62053-23 ±2.5 % from I <sub>min</sub> to I <sub>tr</sub> ±2 % from I <sub>tr</sub> to I <sub>max</sub>		
Voltage	±1 % of measured value		
Current	±1 % of I <sub>ref</sub> from I <sub>st</sub> to I <sub>ref</sub> ±1 % of measured value from I <sub>ref</sub> to I <sub>max</sub>		
Active Power	±1 % of nominal power (U <sub>n</sub> *I <sub>ref</sub> ) from I <sub>st</sub> to I <sub>ref</sub> ±1 % of measured value from I <sub>ref</sub> to I <sub>max</sub>		
Reactive, Apparent power	±2 % of nominal power from I <sub>st</sub> to I <sub>ref</sub> ±2 % of measured value from I <sub>ref</sub> to I <sub>max</sub>		
Frequency	±0.5 % of measured value		
<b>LCD</b>			
Type	LCD		
Number of energy display rows	2		
Number of digits:	8 (6+2)		
Height of digits:	4.52 mm		
<b>LED</b>			
Colour	red		
Pulse rate	1000 imp/kWh		
LED on	no load indication		

## Single Phase Modular Energy Meter 40A

Single phase modular Energy Meter, direct metering 40A:



- // Single-phase direct connected DIN-rail mounting meter
- // 1 DIN module width
- // Class 1 for active energy and class 2 for reactive energy
- // Maximum current 40 A (I<sub>max</sub>)
- // Communication: s0 (pulse output)

1MEM40-BPO energy meters for measurement in a single-phase electrical network. Can be used in residential, industrial and utility applications. Meters measure energy directly in 2-wire networks according to the principle of fast sampling of voltage and current signals.

Features:

- // Single-phase direct connected DIN-rail mounting meter.
- // Class 1 for active energy according to EN 62053-21
- // Class 2 for reactive energy according to IEC 62053-23.
- // Bidirectional energy measurement (imp./exp.).
- // Maximum current 40 A (I<sub>max</sub>).
- // Basic current 5 A (I<sub>b</sub>).
- // 230 V rated system voltage input (U<sub>n</sub>).
- // Voltage operating range (-20 % ... +15 %) U<sub>n</sub>.
- // Reference frequencies 50 Hz and 60 Hz.
- // Power consumption voltage circuit < 10 VA at U<sub>n</sub>.
- // Power consumption current circuit < 0.1 VA at I<sub>b</sub>.
- // Temperature range climatic condition as indoor meter according IEC 62052-11.
- // Custom LCD display with 7 digits (100 Wh resolution).
- // Multifunctional front red LED.
- // LED constant 1000 imp/kWh.
- // Backlight for better visibility.
- // Special functions added for easier integration into monitoring and control systems.
- // Measurements of:
  - // power (active/reactive/apparent),
  - // energy (active/reactive/apparent),
  - // voltage,
  - // current,
  - // frequency,
  - // power factor,
  - // power angle,
  - // active tariff (option),
  - // THD of voltage,
  - // THD of current.
- // Pulse output according to IEC 62053-31.
- // DIN-rail mounting according to EN 60715.
- // 55°C ambient operation temperature.
- // Sealable terminal cover.
- // 1 DIN module width.

### Modular Energy Counter 1MEM40

Type	Description	Code	 g	
1MEM40-BPO	Single phase, 40A, S0 (Pulse output)	004657205	84	1/100



## Technical Data

Rail mounting	DIN EN60715	<b>Pulse output</b>	
<b>Main inputs</b>		Pulse rate	1000 imp/kWh
Contacts capacity - Flexible (Rigid)	1.5 mm <sup>2</sup> ...10 mm <sup>2</sup>	Pulse duration	32 ms ± 2 ms
Connection screws	M3.5	Rated voltage DC	27 V max
Max torque	0.8 Nm (PZ2)	Switched current	27 mA max
Length or removed isolation	10 mm	Standard	IEC 62053-31 (A&B)
<b>Auxiliary contacts</b>		<b>Ambient conditions and Safety</b>	
Contact capacity	0.05 mm <sup>2</sup> ... 1 (2.5) mm <sup>2</sup>	Temperature and climatic condition	EN 62052 11
Screws	M3	Dust/water protection	IP50
Max torque	0.6 Nm	Operating temp. range	-25°C... +55°C
Length or removed isolation	8 mm	Storage temp. range	-30 °C... +70°C
<b>Measuring input</b>		Enclosure material	self-extinguish complying UL94 V
Type	Single phase (1b)	Indoor meter	yes
Reference (nominal) current (I <sub>ref</sub> )	5 A	Degree of pollution	2
Maximum current (I <sub>max</sub> )	40 A	Protection class	II
Minimum current (I <sub>min</sub> )	0.25 A	Installation category	300 V <sub>max</sub> cat.III
Transitional current (I <sub>tr</sub> )	0.5 A	Standard	IEC 62052-31
Starting current	20 mA	Mechanical environment	M1
Power consumption at I <sub>ref</sub>	< 0.1 VA	Electromagnetic environment	E2
Nominal voltage (U <sub>n</sub> )	3x230 V (-20 %...+15 %)	Humidity	non condensing
Power consumption per phase at U <sub>n</sub>	< 10 VA	Installation	DIN Rail 35 mm
Nominal frequency (f <sub>n</sub> )	50 Hz and 60 Hz	Dimensions (W x H x D)	17,5 mm x 90,7 mm x 68,2 mm
Minimum measuring time	10 s	Colour	RAL 7035
<b>Accuracy</b>			EU Directive on Measuring Instruments 2014/32/EU. EU Directive on EMC 2014/30/EU. EU Directive on Low Voltage 2014/35/EU. EC Directive WEEE 2002/96/EC. EU Directive RED 2014/53/EU
Active energy	class 1 EN 62053-21 class B EN 50470-3 ±1.5 % from I <sub>min</sub> to I <sub>tr</sub> ±1 % from I <sub>tr</sub> to I <sub>max</sub>	EU Directives	
Reactive, Apparent energy	class 2 EN 62053-23 ±2.5 % from I <sub>min</sub> to I <sub>tr</sub> ±2 % from I <sub>tr</sub> to I <sub>max</sub>		
Voltage	±1 % of measured value		
Current	±1 % of I <sub>ref</sub> from I <sub>st</sub> to I <sub>ref</sub> ±1 % of measured value from I <sub>ref</sub> to I <sub>max</sub>		
Active Power	±1 % of nominal power (U <sub>n</sub> *I <sub>ref</sub> ) from I <sub>st</sub> to I <sub>ref</sub> ±1 % of measured value from I <sub>ref</sub> to I <sub>max</sub>		
Reactive, Apparent power	±2 % of nominal power from I <sub>st</sub> to I <sub>ref</sub> ±2 % of measured value from I <sub>ref</sub> to I <sub>max</sub>		
Frequency	±0.1 % of measured value		
<b>LCD</b>			
Number of digits:	7		
Height of digits:	5.5 mm		
<b>LED</b>			
Colour	red		
Pulse rate	1000 imp/kWh		
LED on	no load indication		