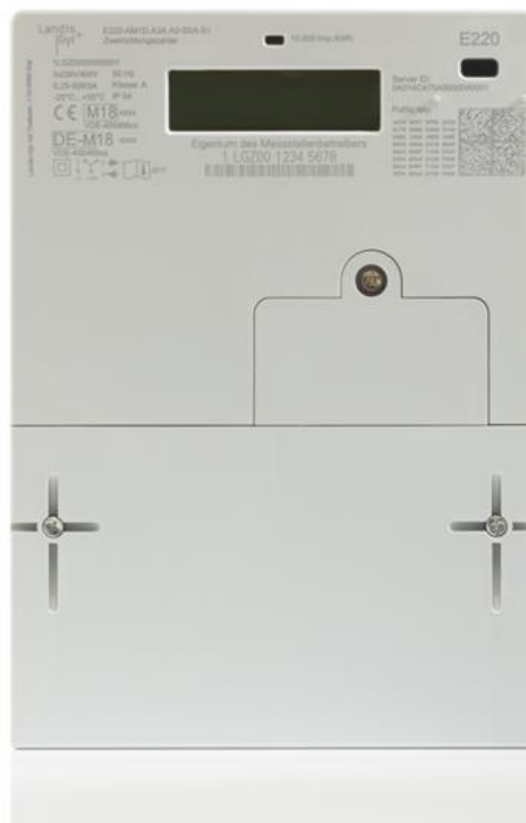


E220-AMxD

E220

Technical Data

[STATUS]



The E220 standalone meter meets all the requirements set by the Digitisation Act. It is designed to meet most of the FNN requirements for base meters and suits both 3-phase 4-wire and 1-phase 2-wire applications. The E220 is an SLP meter that also delivers GRID values. Optional modules available include a Dual Tariff Module or an LMN interface (alternatively RS-485 or wireless M-Bus).

Date: 08.01.2018

File name: D000063493 E220-AMxD Technical Data en b

Revision history

Version	Date	Comments
a.01	18.12.2017	First draft.
a	08.01.2018	First edition.
B	16.02.2018	Correction in MID

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Residential Meter

The E220 is a standalone meter ("moderne Messeinrichtung") according to the Digitisation Act. The meter is suitable for both 3-phase 4-wire and 1-phase 2-wire applications.

The E220 is an SLP (Standard Load Profile) meter that measures active energy (A+ and/or A-) and shows the recorded values on display. If enabled, instantaneous power is displayed on the second line of the display.

According to the Digitalisation Act, the following historical values can be accessed through the main menu by entering the PIN code:

- daily consumption 730 days
- weekly consumption 104 weeks
- monthly consumption 24 months (30 days)
- annual consumption 2 years (365 days)

E220-AMxD – Technical Data

General	
Functions	
Measurement	
E220-AM1D	direct connected meter, 60A
Measurement system	shunt
Control/operation	
Optical interface/flashlight operation	
according to FNN requirements	
Outputs	
Optical information and customer interface	
INFO DSS	unidirectional data push every second
Optical pulse output according to DIN EN 62056-21	
E220-AM1D, 60 A	10000 imp/kWh
Display	
LCD display	according to FNN
Number of lines	2 lines
Height of characters (values)	8 mm
FNN compliance	
Meets the FNN requirements regarding: display and operation, INFO-DSS interface, terminal and terminal cover.	
Voltage and Frequency	
Nominal voltage U_n	
E220-AM1D	3x230/400 VAC
Extended operating voltage range	
E220-AM1D	80% – 115% U_n

GRID functions

GRID values are available in each meter.

Configuration

The E220 can be ordered in four different measurement mode configurations:

- +A with return stop
- -A with return stop
- +A/-A
- -A balanced

Options

The E220 has a module slot for options. There are several optional modules:

- Dual Tariff Module
- RS-485 LMN interface
- Wireless M-Bus LMN interface (from June 2018)

Nominal frequency f_n	
E220-AM1D	50 Hz ($\pm 2\%$)

MID-specific Data

Current

Reference current I_{ref}	
E220-AM1D	5 A

Minimum current I_{min}	
E220-AM1D	$\leq 0.05 \times I_{ref}$

Maximum current I_{max}	
E220-AM1D	60 A

Measurement Accuracy

E220-AM1D	according EN 50470-3
Active energy	class A

General Data

Power Consumption

Power consumption	
Voltage path per phase	< 1.0 W
Current path per phase	< 0.05 VA

Environmental Influences

Temperature range	
Operation (ambient temperature)	-25 °C to +55 °C
Operation LCD display	-25 °C to +70 °C
Storage (ambient temperature)	-40 °C to +70 °C

Ingress protection	according to IEC 60529 IP54
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Environmental conditions according to Measuring Instruments Directive (2014/32/EU)

Electromagnetic Compatibility

Electrostatic discharges according to IEC 61000-4-2

Contact discharge	8 kV
Air discharge	15 kV

Electromagnetic RF fields according to IEC 61000-4-3
80 MHz to 2 GHz 10 and 30 V/m

Radio interference suppression according IEC/CISPR 22
class B

Fast transient burst test according to IEC 61000-4-4
Current and voltage circuits under load
according to IEC 62053-21 4 kV

Surge immunity test according to IEC 61000-4-5
Current and voltage circuits 4 kV

Insulation Strength

Insulation strength
4 kV AC at 50 Hz during 1 min.

Impulse voltage 1.2/50 µs according to EN 50470-1
4 kV

Impulse voltage 0.1/2000 µs
7 kV

Protection class according to IEC 62052-11
Isolation 

Safety Approval IEC62052-31

Overvoltage category III
Test Voltage 6kV
Utilisation Category UC1

Material

Case
Case material polycarbonate (GF)
UV stabilised, fire retardant and self-extinguishing
Housing class V2
Terminal block class V0

Weight and Dimensions

Weight
1.040 kg

Dimensions

Width 170 mm
Height incl. terminal cover 236 mm

Depth 65 mm

Options

Hardware Options

RS-485 LMN (Local Metrological Network) interface

Wired LMN (RS-485) LMN-1
Transmission speed 921.6 kBits/s
Connector RJ-12 / 6p6c

Isolation Auxiliary

Inputs SELV
Open circuit voltage 12VDC
Max. circuit current 100mA
Outputs SELV
Voltage 12VDC
Max. current for each output 10mA

Dual Tariff Module

Terminals 13/15
Control voltage $U_s=230V$

Module B2T/L2T 230V (x.8.1)
Export 2 tariff, import 2 tariff
 $U_s=230V \rightarrow 1.8.1/2.8.1$, $U_s=0V \rightarrow 1.8.2/2.8.2$

Module B2T/L2T 230V (x.8.2)
Export 2 tariff, import 2 tariff
 $U_s=230V \rightarrow 1.8.2/2.8.2$, $U_s=0V \rightarrow 1.8.1/2.8.1$

Module B2T/L1T 230V (1.8.1)
Export 2 tariff, import 1 tariff
 $U_s=230V \rightarrow 1.8.1/2.8.0$, $U_s=0V \rightarrow 1.8.2/2.8.0$

Module B2T/L1T 230V (1.8.2)
Export 2 tariff, import 1 tariff
 $U_s=230V \rightarrow 1.8.2/2.8.0$, $U_s=0V \rightarrow 1.8.1/2.8.0$

Isolation Auxiliary

Inputs HLV
reinforced insulation by optocoupler
Passive Inputs, external voltage required for activation
Control Voltage 230VAC
Max. input current 0.8mA

Firmware Options / Parameterisation

Measurement modes

+A with return stop; active plus only
-A with return stop; active minus only
+A / -A; active plus and active minus
-A balanced without return stop; active totalised

PIN protection

With PIN protection
Without PIN protection

Instantaneous power display

Displayed on 2nd line
Not displayed

Customer settings at power fail

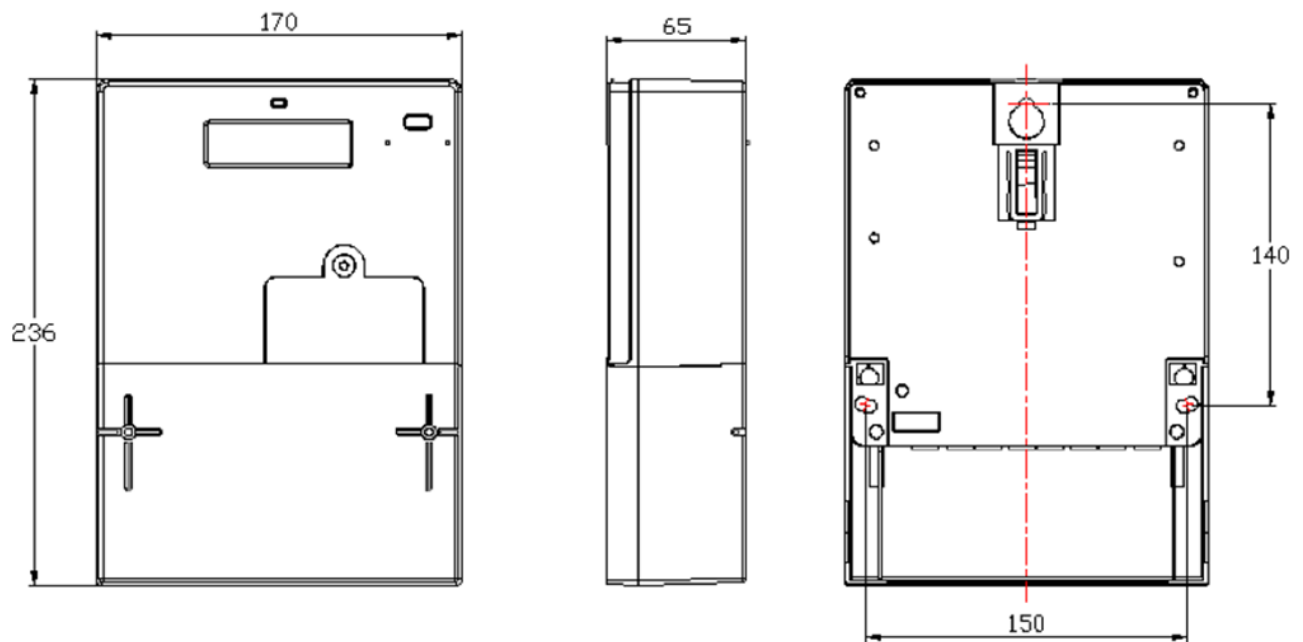
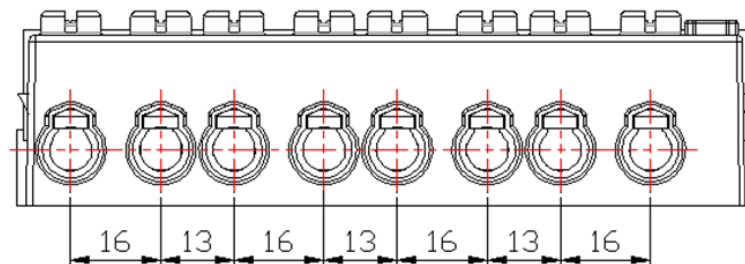
Keep customer settings
Reset to factory settings

License Declarations**Third-Party / Open Source Modules**

Components and copyright

Mbed TLS Package V2.4.2

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Case Dimensions (with Terminal Cover and Module Cover)**Dimensions of Connection Terminals****E220-AM1D 60 A direct connected**

Type-designation

Example	E220	-	A	M	1	D.	A	3	A.	A	0	-	S	0	0	-	S1
Brand name E220 Residential smart meter																	
Product family A Product family residential																	
Network and mechanical standard M 3-phase, 4-wire DIN																	
Maximum current 1 Maximum current 60A																	
Voltage level D 230V phase – neutral / 400V phase – phase																	
Measurement modes A Active, no reactive; vector value measurement																	
Measurement modes 2 1 +A with return stop; active plus only 2 -A with return stop; active minus only 3 +A / -A; active plus and minus 4 -A balanced without return stop; active totalised																	
Additional quantities A Energy only																	
Accuracy active measurement A Class A (MID)																	
Accuracy reactive measurement 0 No reactive measurement																	
Basic meter measurement S SLP Standard Load Profile																	
Tariffication 0 Optional																	
LMN interface 0 Optional																	
Hardware series S1 Series 1																	

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