

ZxF100Ax/Cx series 2

E350

Technical Data



Building on its tradition of open communication meters, Landis+Gyr is now bringing out the E350, the latest generation of its flexible modular meter. The E350 is compatible with the interfaces and communication modules of the existing ZMF/ZFF100 platform.

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Filename: D000027981 E350 ZxF100Ax_Cx series 2 Technical Data

The E350 directly connected residential meters record active and reactive energy consumption in all three-phase four-wire networks (ZMF100) and three-phase three-wire networks (ZFF100).

Basic Version

The basic version provides energy registers for tariffication, red test diodes for active and reactive energy, an optical interface for meter reading and an interface for various communication forms. This interface is protected against fraud and is independent of the module suppliers. The exchangeable AMR Module is situated outside of the calibration liability.

E350 – ZxF100Ax/Cx, series 2

General

Voltage

Nominal voltage U_n	
ZMF100	3 x 230/400 V
ZFF100	3 x 230 V

Extended operating voltage range 80% – 115% U_n

Frequency

Nominal frequency f_n	50 Hz
tolerance	± 2%

IEC-specific Data

Current

Base current I_b selectable: 5, 10, 20 or 40 A

Maximum current I_{max}

metrological selectable: 80 or 100 A
thermal 100 A

Short circuit ≤ 10 ms 30 x I_{max}

Measurement Accuracy

ZMF/ZFF110Ax, to IEC 62053-21 class 1

ZMF/ZFF120Ax, to IEC 62053-21 class 2

ZMF/ZFF110Cx

active energy, to IEC 62053-21 class 1
reactive energy, to IEC 62053-23 class 2

ZMF/ZFF120Cx

active energy, to IEC 62053-21 class 2
reactive energy, to IEC 62053-23 class 2

Disconnecter

The function of the disconnecter is customer specific and is defined by the communication module. Possible uses: anti-tampering, load limitation, remote disconnect, prepayment.

Extensions

The basic version can be extended with various AMR Modules for additional functions and communications: Multirate import/export with external rate control, S0 pulse output, communication via PLC, GSM/GPRS, or Radio modem

Technical specifications

Measurement Behaviour

Starting current	
according to IEC	0.5% I_b
typical	ca. 0.3% I_b

MID-specific Data

Current

Reference current I_{ref} selectable: 5, 10 or 20 A

Minimum current I_{min} ≤ 0.05 x I_{ref}

Transitional current I_{tr} 0.5 A, 1 A or 2 A

Maximum current I_{max} 80 or 100 A

Measurement Accuracy to EN 50470-3

ZMF/ZFF110Ax class B

ZMF/ZFF120Ax class A

ZMF/ZFF110Cx, active energy class B

ZMF/ZFF120Cx, active energy class A

Measurement Behaviour

Starting current I_{st}	
class A:	$I_{st} \leq 0.005 \times I_{ref}$
class B:	$I_{st} \leq 0.004 \times I_{ref}$

General

Operating Behaviour

Voltage failure (Power Down)
voltage 170 V, configurable

Voltage restoration (Power Up)

function standby 3 phases < 5 s
detection of energy direction / phase voltage < 3 s
voltage > 176 V

Power Consumption

Power consumption in voltage circuit per phase
active power at U_n (typical) 0.45 W
apparent power at U_n (typical) 0.51 VA

Power consumption in current circuit

apparent power at 5 A (typical) 0.01 VA

Environmental Influences

Temperature range

operation meter -40 °C to $+70\text{ °C}$
operation display -25 °C to $+55\text{ °C}$
storage -40 °C to $+70\text{ °C}$

Temperature coefficient

range -25 °C to $+70\text{ °C}$
average value (typical) $\pm 0.05\%$ per K
at $\cos\varphi=1$ (from $0.1 I_b$ to I_{max}) $\pm 0.05\%$ per K
at $\cos\varphi=0.5$ (from $0.2 I_b$ to I_{max}) $\pm 0.07\%$ per K

Impermeability to IEC 60529 IP 52

Electromagnetic Compatibility

Electrostatic discharges according to IEC 61000-4-2

contact discharge 8 kV

Electromagnetic RF fields acc. to IEC 61000-4-3

80 MHz to 2 GHz 10 and 30 V/m

Radio interference suppression

according to IEC/CISPR 22 class B

Fast transient burst test acc. to IEC 61000-4-4

current and voltage circuits not under load 4 kV
current and voltage circuits under load
according to IEC 62053-21 2 kV
auxiliary circuits > 40 V 1 kV

Fast transient surge test acc. to IEC 61000-4-5

current and voltage circuits 4 kV
auxiliary circuits > 40 V 1 kV

Insulation Strength

Insulation strength 4 kV at 50 Hz during 1 min.

Impulse voltage 1.2/50 μ s to IEC 62052-11
current and voltage circuits 8 kV

Protection class II acc. to IEC 62052-11

Display

Characteristics

type LCD liquid crystal display
digit size value field 8 mm
number of digits value field 8
digit size index field 6 mm
number of digits index field 5

Inputs and Outputs

Optical test outputs active and reactive energy

type red LED
pulse length approx. 10 ms
meter constant 1000 imp/kWh

Communication Interface

Optical interface

type serial, bi-directional interface
protocol according to IEC 62056-21

Wired interface

interface to AMR module to IEC 62056-21
(data readout, rate control)

Disconnecter (ZxF100xB only)

Contact data

maximum switching voltage 400 V AC
maximum switching current 100 A
short circuit ≤ 10 ms to EN 62053-21 3000 A
maximum switching power 25 kVA
power consumption in current path at 5 A: 0.08 VA

Insulation strength

contact to contact 4 kV at 50 Hz during 1 min.

Mechanical life

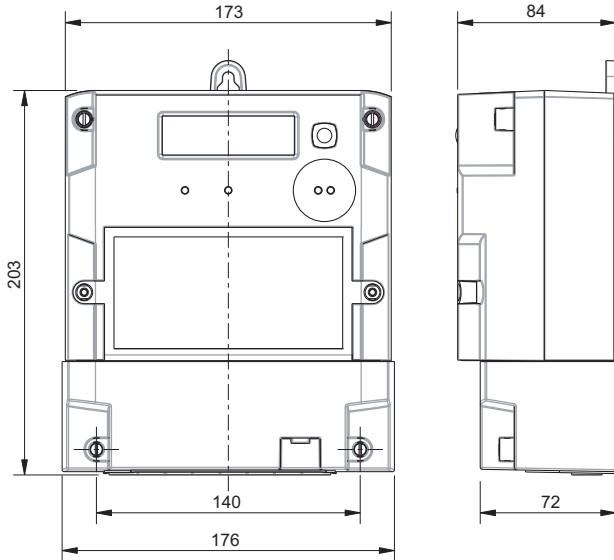
at maximum power 10,000 cycles

Weight and Dimensions

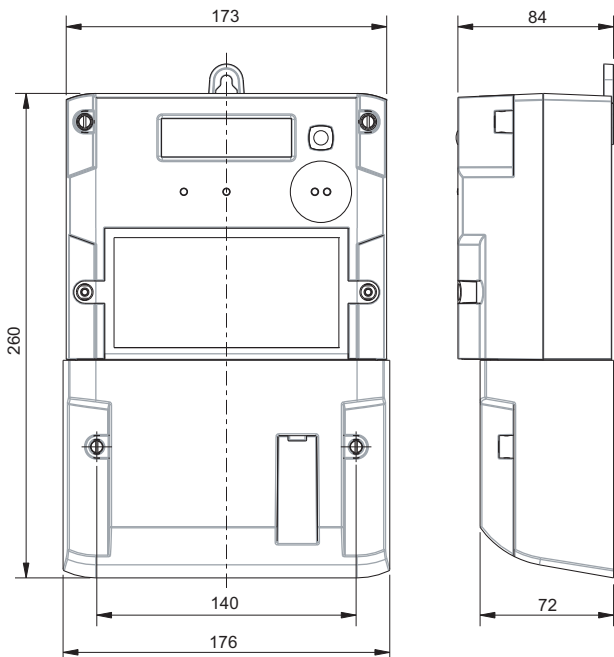
Weight

without disconnecter	approx. 1.2 kg
with disconnecter	approx. 1.3 kg

Dimensions (with short terminal cover)



Dimensions (with extended terminal cover 60 mm)



External dimensions compliant with DIN 43857

width	176 mm
height (with short terminal cover)	203 mm
height (with extended terminal cover)	260 mm
depth	84 mm

Suspension triangle

height (suspension eyelet open)	180 mm
height (suspension eyelet covered)	162 mm
width	150 mm

Terminal cover

short	no free space
extended	40, 60 or 80 mm free space

Material

Housing

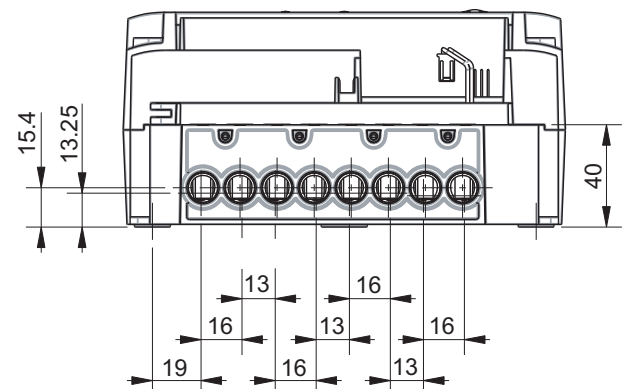
Polycarbonate, partly glass-fibre reinforced

Connections

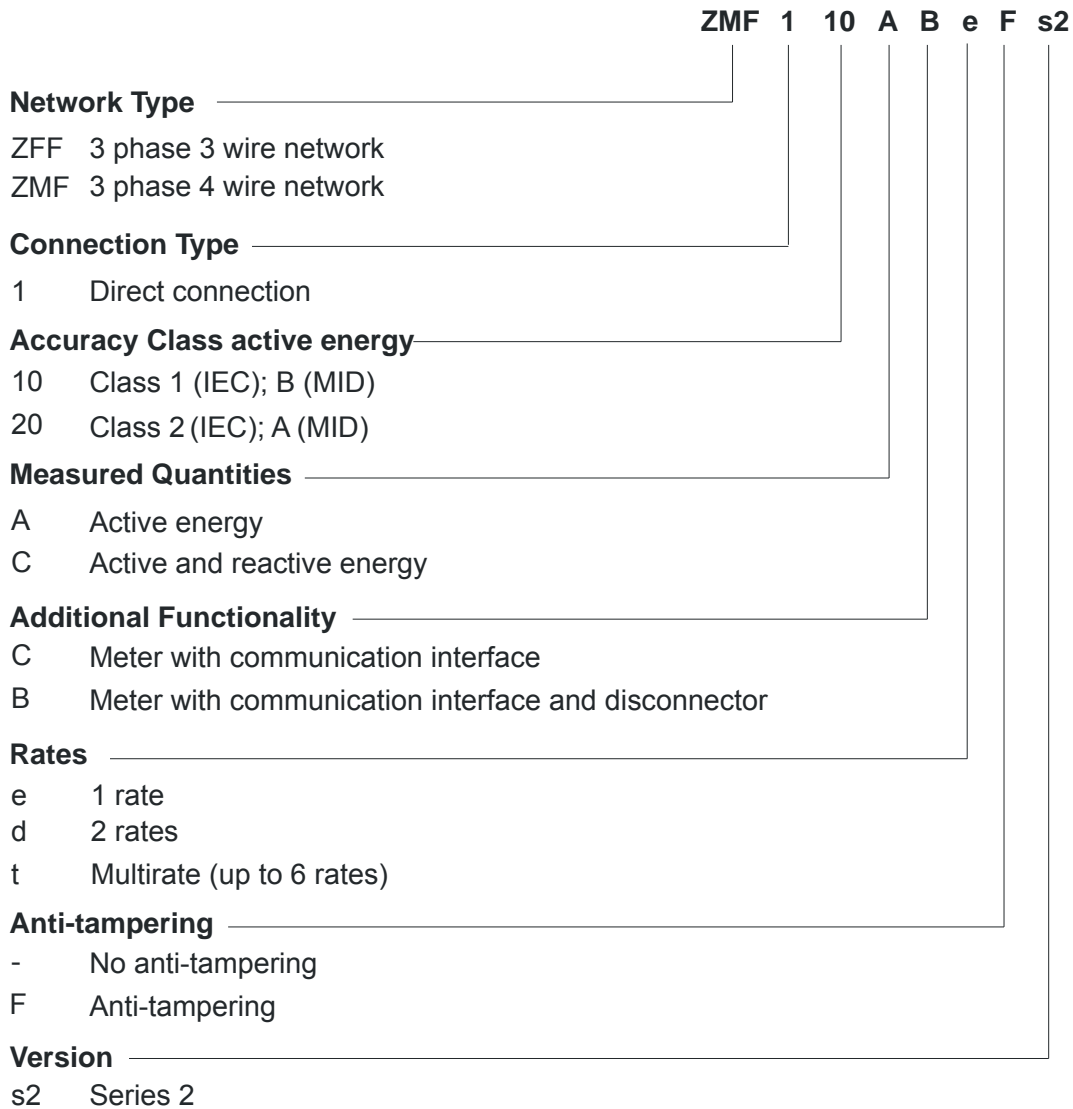
Phase connections

type	screw type terminals
diameter steel type	8.5 mm
diameter brass type	9.5 mm
minimum conductor cross section	4 mm ²
maximum conductor cross section cable	35 mm ²
maximum conductor cross section strand	25 mm ²
screw dimensions	M6 x 14
maximum screw head diameter	≤ 6.6 mm
cross-slot	type Z, size 2, to ISO-4757-1983
tightening torque	< 3 Nm

Layout and dimensions



E350 Type Designation



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