

ZCF100Ax/Cx s2
E350 series 2
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 ZCF100 platform.

Date: 29.12.2009

Filename: D000030926 E350 ZCF100Ax Cx series 2 Technical Data.docx

The E350 directly connected residential meters record active and reactive energy consumption in all single-phase two-wire networks (ZCF100).

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 series 2 (ZCF100Ax/Cx) Technical Specifications

General

Voltage

Nominal Voltage U_n	
ZCF100	230 V

Extended Operating Voltage Range 80% – 115% U_n

Frequency

Nominal Frequency f_n	50 Hz
tolerance	$\pm 2\%$

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 $30 \times I_{max}$

Measurement Accuracy

ZCF110Ax, to IEC 62053-21 class 1

ZCF120Ax, to IEC 62053-21 class 2

ZCF110Cx

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

ZCF120Cx

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

Disconnecter

The function of the disconnector 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.

Measurement Behaviour

Starting Current

according to IEC	0.5% I_b
typical	approx. 0.3% I_b

MID-specific Data

Current

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

Minimum Current I_{min} $\leq 0.05 \times I_{ref}$

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

ZCF110Ax class B

ZCF120Ax class A

ZCF110Cx, Active Energy class B

ZCF120Cx, 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	< 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 °C
operation display	-25 °C ¹⁾ to +70 °C
storage	-40 °C to +70 °C
¹⁾ recover if temperature comes up	

Temperature Coefficient

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

Impermeability to IEC 60529	IP 52
-----------------------------	-------

Electromagnetic Compatibility

Electrostatic Discharges	acc. 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.
---------------------	-----------------------------

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

Protection Class II acc. to IEC 62052-11	<input type="checkbox"/>
--	--------------------------

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

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	2 kV at 50 Hz during 1 min.
--------------------	-----------------------------

Mechanical Life

at maximum power	10,000 cycles
------------------	---------------

Weight and Dimensions

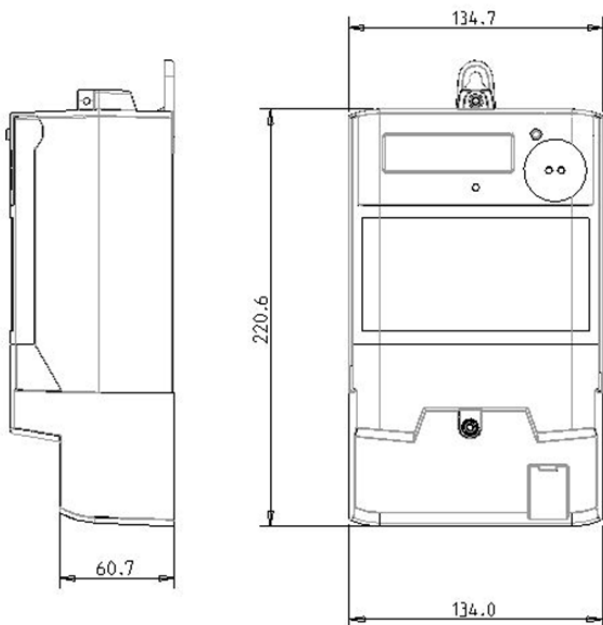
Weight

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

Dimensions (with Extended Terminal Cover)

60 mm extended terminal cover is 240.6 mm long
80 mm extended terminal cover is 260.6 mm long

Dimensions (with Extended Terminal Cover 40 mm)



External Dimensions compliant with DIN 43857

width	134 mm
height (with 40 mm terminal cover)	246 mm
height (with 60 mm ext. terminal cover)	266 mm
depth	87 mm

Suspension Triangle

height (suspension eyelet open)	179 mm
height (suspension eyelet covered)	155 mm
width	105 mm

Terminal Cover

extended	40, 60 or 80 mm free space
----------	----------------------------

Material

Housing

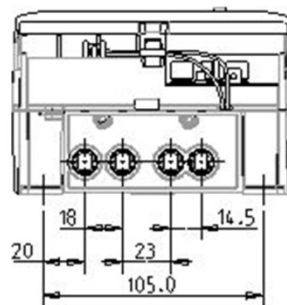
polycarbonate, partly glass-fibre reinforced

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

ZCF 1 10 A B e F s2

Network type

ZCF 1 phase 2 wire network

Connection type

1 Direct connection

Accuracy class active energy

10 Class 1 (IEC); B (MID)

20 Class 2 (IEC); A (MID)

Measured quantities

A Active energy

C Active and reactive energy

Additional functionality

C Meter with communication interface

B Meter with communication interface and disconnecter

Rates

e 1 rate

d 2 rates

t Multirates (up to 6 rates)

Anti-tampering

- No anti-tampering

F Anti-tampering

Version

s2 Series 2

Copyright © 2009, Landis+Gyr. All rights reserved. Subject to change without notice.

Landis+Gyr AG
Feldstrasse 1
CH-6301 Zug
Switzerland
Phone: +41 41 935 6000
www.landisgyr.com

Landis+
Gyr+
manage energy better