

## RESIDENTIAL

Landis+Gyr Domestic

ZMF100AC, ZMF100AB,  
ZFF100AC

## TECHNICAL DATA



## General

## Voltage

## Nominal voltage

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

## 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  $\leq 10$  ms 10'000 A

## Measurement Accuracy

ZMF/ZFF110, to IEC 62053-21 Class 1

ZMF/ZFF120, to IEC 62053-21 Class 2

## Measurement Behaviour

## Starting current

according to IEC 0.5 %  $I_b$   
typical ca. 0.3 %  $I_b$

## MID-specific data

## Current (for Classes A and B)

Reference current  $I_{ref}$  5 A; 10 A; 20 A

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

Transitional current  $I_{tr}$  0.5 A; 1 A; 2 A

Maximum current  $I_{max}$  100 A

## Measurement Accuracy

ZMF/ZFF110, to EN 50470-3 Class B

ZMF/ZFF120, to EN 50470-3 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)

bridging time 0.2 s

#### Voltage restoration (Power Up)

function standby 3 phases < 5 s

detection of energy direction and phase voltage < 3 s

### Power Consumption

#### Power consumption in voltage circuit per phase

active power at  $U_n$  (typical) 0.45 W

apparent power at  $U_n$  (typical) 2.4 VA

#### Power consumption in current circuit

apparent power at 5 A (typical) 0.01 VA

### Environmental Influences

#### Temperature range

operation -40 °C to +70 °C

storage -40 °C to +85 °C

#### Temperature coefficient

range from -25 °C to +70 °C

average value (typical)  $\pm 0.02$  % 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  $I_{max}$ )  $\pm 0.075$  % 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  $\mu$ s to IEC 62052-11

current and voltage circuits 8 kV

According to SP 12 kV

Protection class II acc. to IEC 62052-11



### Display

#### Characteristics

type LCD liquid crystal display

digit size 8.4 mm

number of digits 7

### Inputs and Outputs

Optical test output Active Energy

type infrared LED

combined with optical interface

(i.e. infrared-LED is integrated in optical interface)

pulse length approx. 2 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)

test output (physically combined with test diode)

### Breaker add-on (option)

#### Contact data

maximum switching voltage 400 V AC

maximum switching current 100 A

short circuit  $\leq 10$  ms to EN62053-21 3000 A

maximum switching power 25 kVA

power consumption in current path at 5 A: 0.08 VA

Insulation strength 4 kV at 50 Hz during 1 min.

contact–contact; coil–contact

Impulse voltage 1.2/50  $\mu$ s to IEC 62052-11

contact–contact 12 kV

coil–contact 12 kV

open contact 2 kV

#### Mechanical life

at maximum power, PF=1 10.000 cycles

## Weight and dimensions without breaker

### Weight

without breaker approx. 1 kg

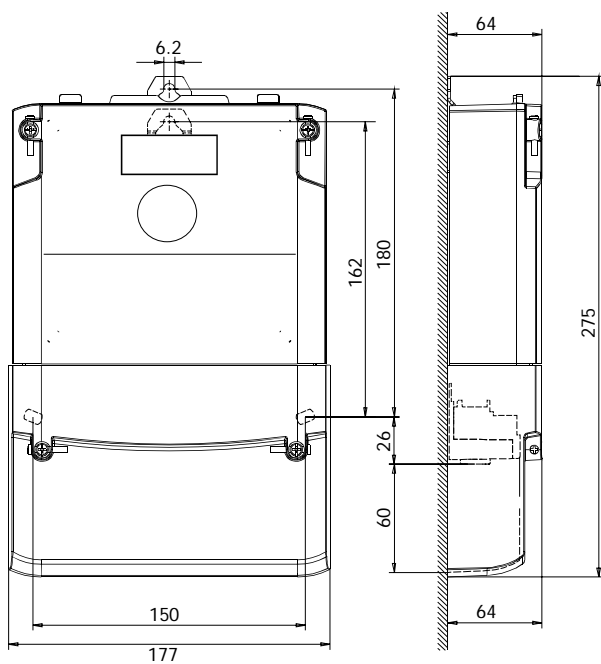
### External dimensions comply with DIN 43857

width 177 mm  
 height (with short terminal cover) 213 mm  
 height (with standard terminal cover) 275 mm  
 depth 64 mm

### Suspension triangle

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

### Dimensions



### Terminal cover

short no free space  
 standard 60 mm free space

## Weight and dimensions with breaker

### Weight

with breaker approx. 1.7 kg

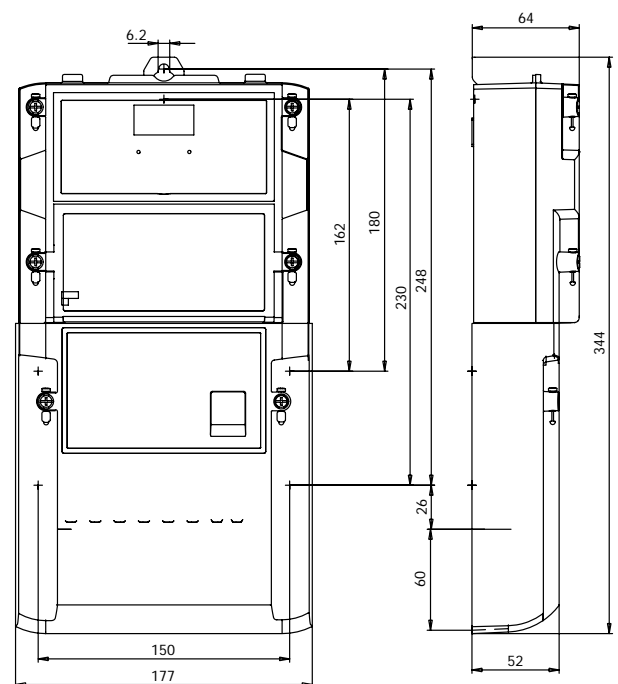
### External dimensions comply with DIN 43857

width 177 mm  
 height (with terminal cover for breaker) 344 mm  
 depth 64 mm

### Suspension triangle

height (suspension eyelet open) 248 mm  
 height (suspension eyelet covered) 230 mm  
 width 150 mm

### Dimensions with breaker



### Terminal cover

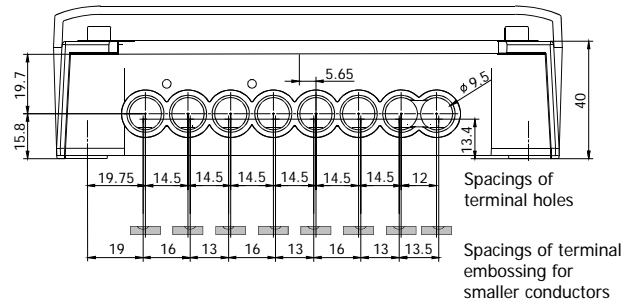
standard 60 mm free space

## Connections

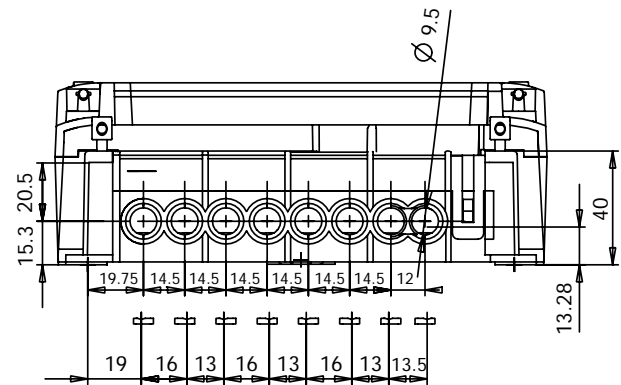
### Phase connections

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

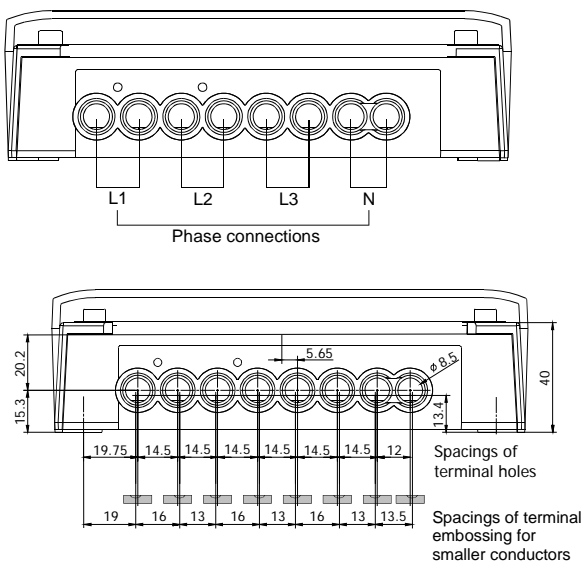
### Layout and dimensions with diameter of 9.5 mm Ø



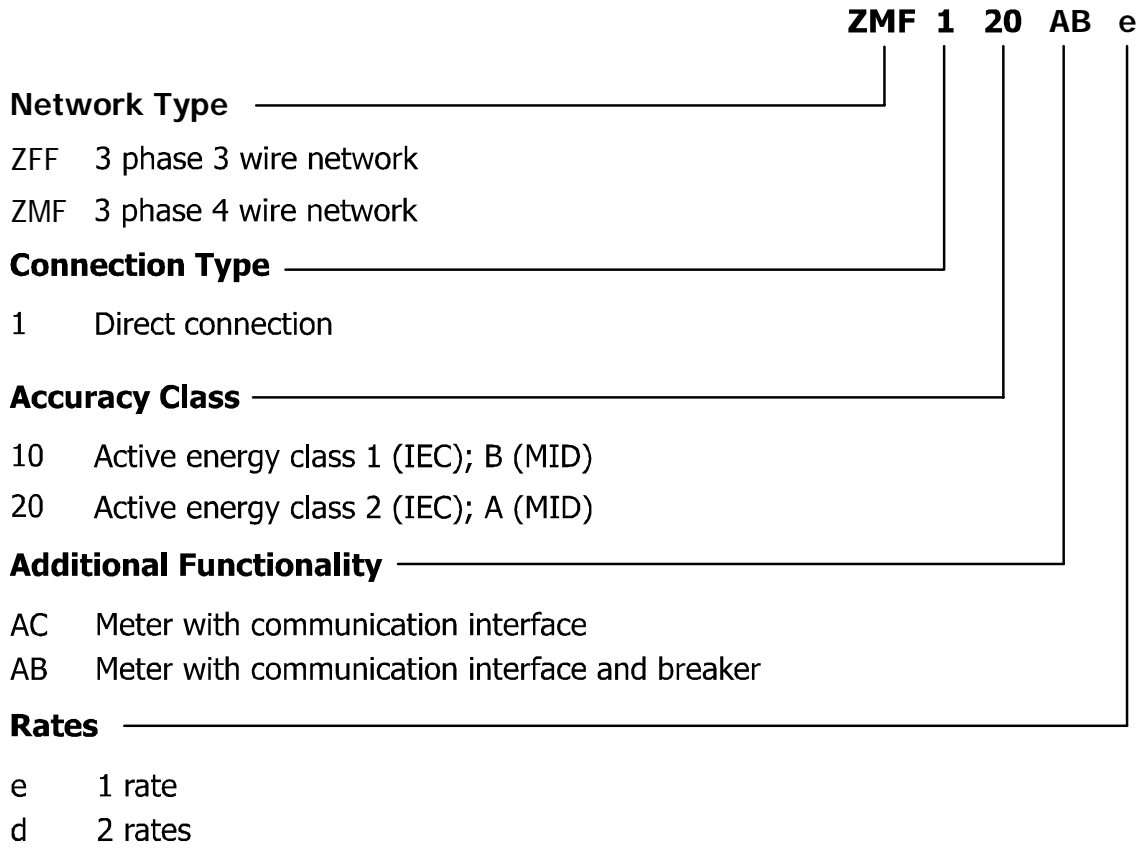
### Layout and dimensions with breaker



### Standard layout and dimensions



## Type designation



Data subject to change without notice.

**Landis+Gyr Ltd.**  
Feldstrasse 1  
CH-6301 Zug  
Switzerland  
Phone: +41 41 935 6000  
[www.landisgyr.com](http://www.landisgyr.com)

**Landis+**  
**Gyr+**