

RESIDENTIAL

Landis+Gyr Dialog

ZMD100AS, ZFD100AS

TECHNICAL DATA



General

Voltage

Rated voltage U_n ZMD100AS
 nominal value 3 x 230/400 V
 permissible range 3 x 220/380 V to 3 x 240/415 V

Rated voltage U_n ZFD100AS
 nominal value 3 x 230 V
 permissible range 3 x 220 V to 3 x 240 V

Extended operating voltage range 80–115% U_n

Frequency

Nominal frequency f_n selectable: 50 or 60 Hz

IEC-specific data

Current

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

Maximum current I_{max}
 metrological selectable: 60, 80 or 100 A
 thermal 120 A

Short-circuit ≤ 10 ms 10'000 A

Measuring accuracy

ZMD/ZFD110, to IEC 62053-21 Class 1

ZMD/ZFD120, to IEC 62053-21 Class 2

Measurement Behaviour

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

Max. measuring range approx. 15 mA to 100 A

Typical starting power

| related to basic current I_b | 5 | 10 | 20 | 40 |
|--------------------------------|-----|----|----|----|
| M circuit | 3.5 | 7 | 15 | 30 |
| F circuit | 6 | 12 | 25 | 50 |

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

ZMD/ZFD110, to EN 50470-3 Class B

ZMD/ZFD120, 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

Operation Behaviour

Voltage interruption

| | |
|--------------------------------|---------------------|
| blocking of inputs and outputs | immediate |
| standby operation | for 0.5 s |
| data storage | after 0.5 s |
| disconnection | after approx. 1.5 s |

Voltage interruption * operated with 3 phases

ready for service (depending on duration of failure)
after 1 to 3 s*

recognition of energy direction and phase voltage
after 1 to 2 s*

minimal voltage for start up

with 2 or 3 phases 80% U_n

with 1 phase 90% U_n

Power consumption

Power consumption in voltage circuit

active energy at U_n (typical) 0.4 W

apparent energy at U_n (typical) 1.5 VA

Power consumption in current circuit

apparent energy at 10 A (typical) 0.03 VA

Environmental influences

Temperature range

operation and storage $-40\text{ °C to }+70\text{ °C}$

Temperature coefficient

range $-20\text{ °C to }+55\text{ °C}$

typical mean value $\pm 0.0\%$ per K

with $\cos\varphi=1$ (from 0.1 I_b to I_{max}) $\pm 0.02\%$ per K

with $\cos\varphi=0.5$ (from 0.2 I_b to I_{max}) $\pm 0.03\%$ per K

Impermeability to IEC 60529 IP 52

Electromagnetic compatibility

Electrostatic discharges to IEC 61000-4-2

contact discharges 8 kV

Electromagn. high frequency fields to IEC 61000-4-3

80 MHz to 2 GHz at least 10 V/m

Radio interference suppression to IEC/CISPR 22 Cl. B

Line transients (burst) to IEC 61000-4-4

for current and voltage circuits 2 kV

for auxiliary circuits > 40 V 1 kV

Insulation strength

Insulation strength 4 kV at 50 Hz for 1 min.


Impulse voltage strength to IEC 62052-11

impulse voltage 12 kV

rise time of pulse voltage 1.2 μ s

decay time of pulse voltage 50 μ s

source resistance of generator 50 Ω

Protection class II to IEC 62052-11 

Display

Characteristics

type LCD liquid crystal display

digit size 8 mm

number of digits up to 7

Inputs and Outputs

Tariff control

control voltage U_t 220 to 240 V

permissible range 0.8 to 1.15 U_t

current input < 2 mA ohmic at 230 V

Optical Test Output Infrared LED

Meter constant R

selectable: 500, 1000, 5000 or 10000 pulses/kWh

Pulse frequency

(dep. on meter constant R and measured value)

at U_n and 10 A approx. 1, 2, 10 or 20 Hz

Pulse length approx. 2 ms

Pulse output r53 (no measurement of load curve)

type S0 interface

standard IEC 61393/DIN 43864

selectable: 1, 2, 3.33, 5 or 6.66 Wh/pulse

resp. pulse constant 1000, 500, 300, 200 or 150 pulses/kWh

supply voltage (nominal value) 24 V DC

maximum supply voltage 50 V DC

current 10 to 20 mA DC

pulse length selectable: 20, 40 or 80 ms

maximum line length 1000 m

Weight and dimensions

Weight approx. 0.9 kg

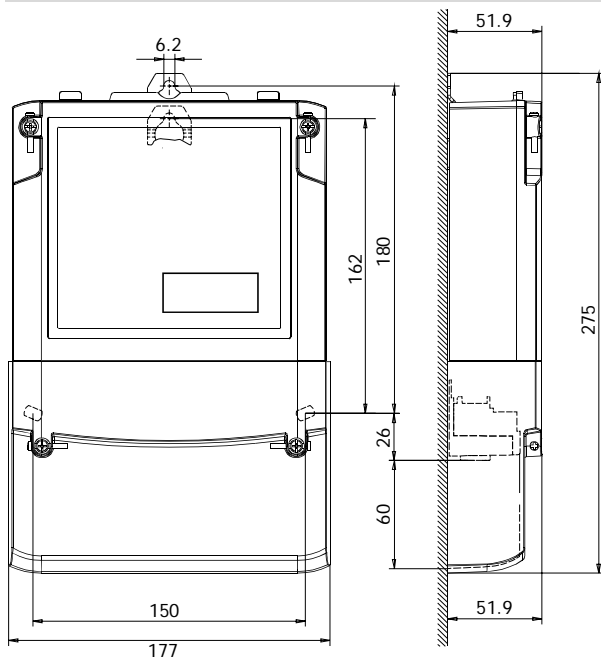
External dimensions comply with DIN 43857

width 177 mm
 height (with short terminal cover) 213 mm
 height (with standard terminal cover) 275 mm
 depth 52 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
 to DIN (black) 60 mm free space

Connections

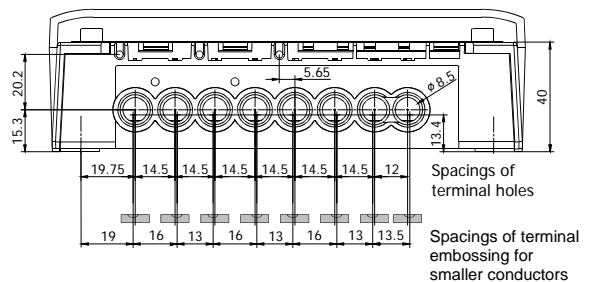
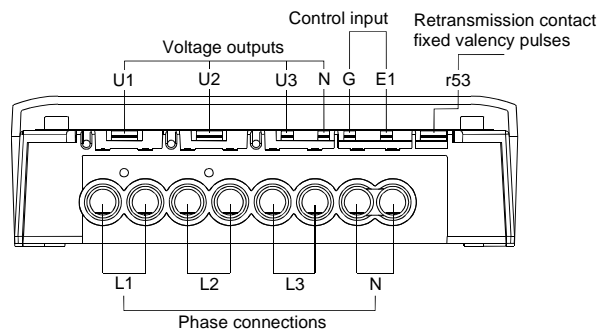
Phase connections

type screw type terminals
 diameter normal 8.5 mm
 diameter special 9.5 mm
 minimum conductor cross-section 4 mm²
 maximum conductor cross-section cable 35 mm²
 maximum conductor cross-section strand 25 mm²
 screw dimensions M6 x 14
 head diameter max. 6.6 mm
 cross-slot type Z, size 2, to ISO-4757-1983
 slot 0.8 +0.2/+0.06 mm
 tightening torque max. 3 Nm
 adaptation to plug adapters for Geyer terminals, ODU contacts, Amphenol Tuchel plugs is ensured.

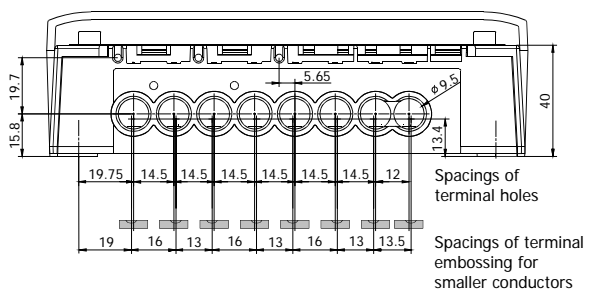
Other connections

type screwless spring-loaded terminals
 maximum current of voltage outputs 1 A
 maximum voltage of control inputs 275 V
 maximum voltage r53 (observe polarity) 50 V DC

Standard layout and dimensions



Layout and dimensions with diameter of 9.5 mm Ø



Type designation

| | Z | M | D | 1 | 2 | A | S | d | r | 5 | 3 | s |
|-----------------------------|---|--|---|---|---|---|---|---|---|---|---|---|
| Network type | ZFD | ZMD | | | | | | | | | | |
| | Three-phase three-wire network (Aron connection) | Three-phase four-wire network | | | | | | | | | | |
| Connection type | 110 | 120 | | | | | | | | | | |
| | Direct connection (IEC class 1; MID class B) | Direct connection (IEC class 2; MID class A) | | | | | | | | | | |
| Measurement variants | AS | | | | | | | | | | | |
| | Simple active energy meter | | | | | | | | | | | |
| Tariff functions | e | d | | | | | | | | | | |
| | with single-rate tariff | with double-rate tariff | | | | | | | | | | |
| Pulse retransmission | r53 | | | | | | | | | | | |
| | Transistor output, SO according IEC 61393/DIN 43 864, pulse length t_i variable | | | | | | | | | | | |
| Solar cell (option) | s | | | | | | | | | | | |
| | with solar cell | | | | | | | | | | | |

Data subject to change without notice.

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