INDUSTRIAL+COMMERCIAL

Landis+Gyr Dialog

ZMD400AT/CT, ZFD400AT/CT

TECHNICAL DATA

General

Voltage

Nominal Voltage U_n ZMD400xT	
	3 x 58/100–69/120 V
	3 x 110/190–133/230 V
	3 x 220/380–240/415 V
extended operating voltage range	3 x 58/100–240/415 V

Nominal Voltage U_n ZFD400xT	
	3 x 100–120 V
	3 x 220–240 V
extended operating voltage range	3 x 100–415 V

Voltage Range	80–115% U_n

Frequency

Nominal Frequency f_n	50 or 60 Hz
tolerance	± 2%

IEC-specific data

Current

Nominal Current I_n	1 A, 2 A, 5 A, 5||1 A

Maximal Current I_{max}	
metrological 1 A, 2 A, 5A	200% I_n
metrological 5||1 A	6 A
thermal 1 A	2.4 A
thermal 2 A, 5A, 5||1 A	12 A

Short Circuit Current	0.5 s with 20 x I_{max}

Measurement Accuracy

Accuracy ZxD405xT	
active energy to IEC 62053-22	class 0.5 S
reactive energy to IEC 62053-23	class 1

Accuracy ZxD410xT	
active energy to IEC 62053-21	class 1
reactive energy to IEC 62053-23	class 1

Measurement Behaviour

Starting Current ZxD405xT	
according to IEC	0.1% I_n
typical	0.07% I_n
5||1 A	as 1 A meter

Starting Current ZxD410xT	
according to IEC	0.2% I_n
typical	0.14% I_n
5||1 A	as 1 A meter

The startup of the meter is controlled by the starting power and not by the starting current.

Starting Power in M-Circuit	single phase

nominal voltage x starting current

Starting Power in F-Circuit	all phases

nominal voltage / √3 x starting current x 3

MID-specific data

Current (for Classes B and C)

Rated Current I_n	1.0, 5.0 A
Minimum Current I_{min}	0.01, 0.05 A
Transitional Current I_{tr}	0.05, 0.25 A
Maximum Current I_{max}	2.0, 10.0 A

Measurement Accuracy

ZxD400xT; to EN 50470-3	Classes B and C

Measurement Behaviour

Starting Current I_{st}	
Class B: I_{st}	0.002, 0.01 A
Class C: I_{st}	0.001, 0.005 A

General

Operating Behaviour

Voltage Interruption (Power Down)	
bridging time according to IEC	0.5 s
data storage	after another 0.2 s
switch off	after approx. 2.5 s
Voltage Restoration (Power Up)	
function standby 3 phases	after 2 s
function standby 1 phase	after 5 s
detection of energy direction + phase voltage	after 2 to 3 s

Power Consumption

Power Consumption per Phase in the Voltage Circuit			
phase voltage	58 V	110 V	240 V
active power (typical)	0.65 W	0.7 W	0.8 W
apparent power (typical)	1.3 VA	1.7 VA	3.6 VA

Power Consumption per Phase in the Current Circuit			
phase current	1 A	5 A	10 A
active power (typical)	5 mW	0.125 W	0.5 W
apparent power (typical)	5 mVA	0.125 VA	0.5 VA

Environmental Influences

Temperatur Range	to IEC 62052-11
operation	–25 °C to +70 °C
storage	–40 °C to +85 °C
Temperature Coefficent	
range	from –25 °C to +70 °C
average value (typical)	± 0.012% per K
at cosφ=1 (from 0.05 Ib to I_{max})	± 0.02% per K
at cosφ=0.5 (from 0.1 Ib to I_{max})	± 0.03% per K
Impermeability according to IEC 60529	IP51

Electromagnetic Compatibility

Electrostatic Discharges	to IEC 61000-4-2
contact discharge	15 kV
Electromagnetic RF Fields	to IEC 61000-4-3
80 MHz – 2 GHz	10 and 30 V/m
Radio Interference Suppression according to IEC/CISPR 22	class B
Fast Transient Burst Test	to IEC 61000-4-4
current and voltage circuits not under load	4 kV
current and voltage circuits under load according to IEC 62053-21/22/23	2 kV
auxiliary circuits > 40 V	1 kV
Fast Transient Surge Test	to IEC 61000-4-5
current and voltage circuits	4 kV
auxiliary circuits > 40 V	1 kV

Insulation Strenght

Insulation Strenght	4 kV @ 50 Hz during 1 min
Impulse Voltage 1.2/50µs	to IEC 62052-11
current and voltage circuits	8 kV
auxiliary circuits	6 kV
Protection Class II according to IEC 62052-11	⧈

Calendar Clock

Calendar Type	Gregorian or Persian (Jalaali)
Accuracy	< 5 ppm
Backup Time (Power Reserve)	
with supercap	> 20 days
loading time for max. backup time	300 h
with battery (optional)	10 years
battery type	CR-P2

Display

Characteristics	
type	LCD liquid crystal display
digit size in value field	8 mm
number of positions in value field	up to 8
digit size in index field	6 mm
number of positions in index field	up to 8

Inputs and Outputs

Control Inputs	
control voltage Us	100–240 V AC
input current	< 2 mA ohmic at 230 V AC

Output Contacts	
type	solid state relay
voltage	12–240 V AC/DC
max. current	100 mA
max. pulse frequency (pulse length 20 ms)	25 Hz

Optical Test Output	Active and Reactive Energy
type	red LED
number	2
meter constant	selectable

Communication Interfaces

Optical Interface	according to IEC 62056-21
type	serial, bidirectional, half duplex
max. bit rate	9600 bps
protocols	IEC 62056-21 and dlms

Communication Units

Exchangeable communciation units for various applications.

Additional Power Supply (optional)

On Extension Board 045x	
nominal voltage range	100–240 V AC/DC
tolerance	80–115% U_n
frequency	50 or 60 Hz
max. power consumption	6.8 W

On Extension Board 046x	
nominal voltage range	12–24 VDC
tolerance	80–115% U_n
max. power consumption	3.5 W

Ripple Control Receiver (optional)

On Extension Board 043x or 003x (ZMD400 only)

Same functionality as RCR161.

All established RCR systems e.g. Semagyr, Ricontic, Decabit, Double Decabit, K22/Z22 are supported.

Code length, pulse length and pulse position can be parameterised.

Electrical Data	
nominal voltage	58 or 230 V
frequency	50 or 60 Hz

Filter Values (parameterisable)	
functional voltage U_f	0.3–2.5% U_n
control frequency f_s	110–2000 Hz
bandwidth	0.6–6% f_s

Weight and Dimensions

Weight	approx. 1.5 kg

External Dimensions	
width	177 mm
height (with short terminal cover)	244 mm
height (with standard terminal cover)	281.5 mm
height (with extended hook)	305.5 mm
depth	75 mm

Suspension Triangle	
height (with extended hook)	230 mm
height (suspension eyelet open)	206 mm
height (suspension eyelet covered)	190 mm
width	150 mm

Terminal Cover	
short	no free space
standard	40 mm free space
long	60 mm free space
GSM	60 mm free space
ZxB-type 80 mm	80 mm free space
ZxB-type 110 mm	110 mm free space
ADP1 adapter	
RCR/FTY adapter	

Material

Housing

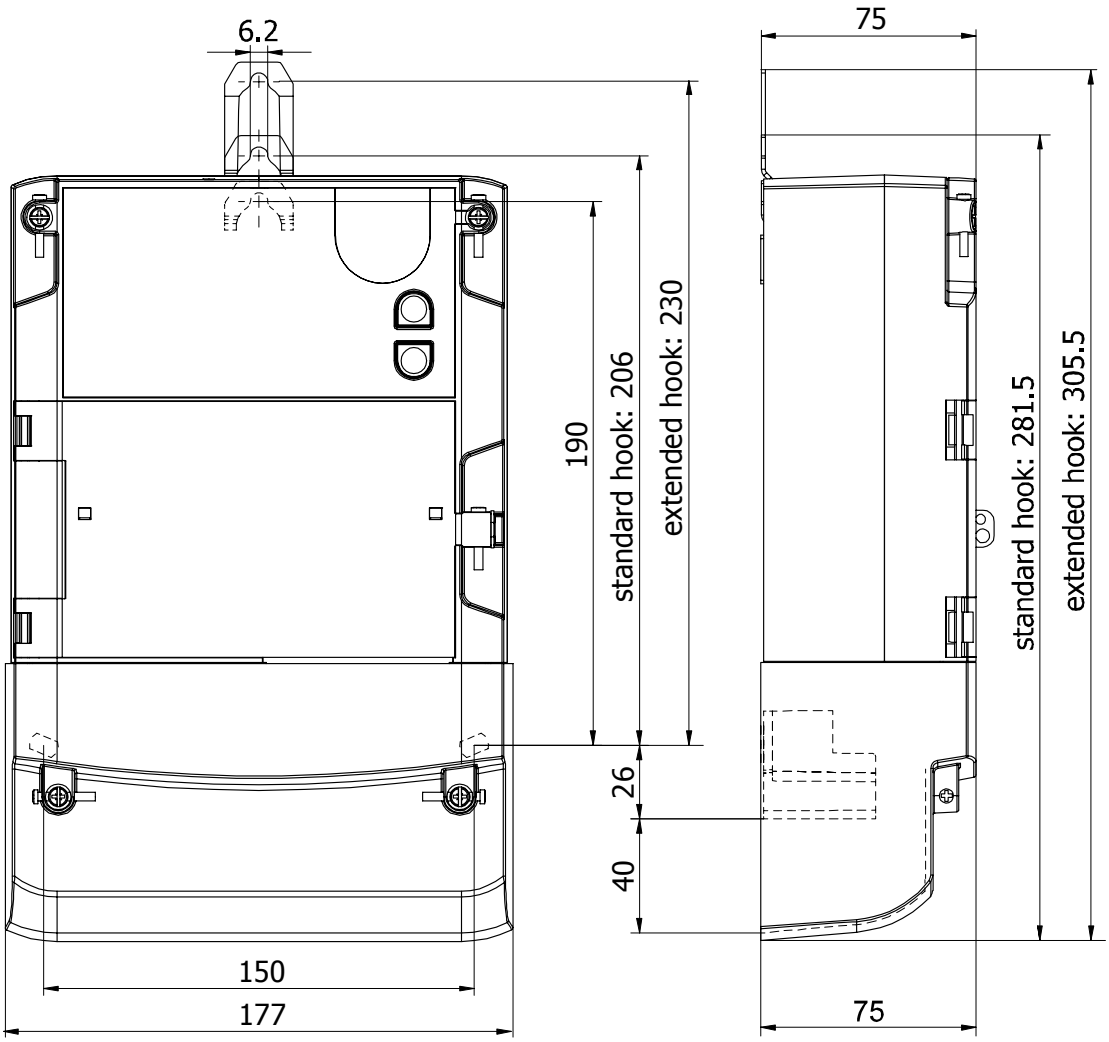
The meter housing is made of polycarbonate which is partly glass-fibre reinforced.

Connections

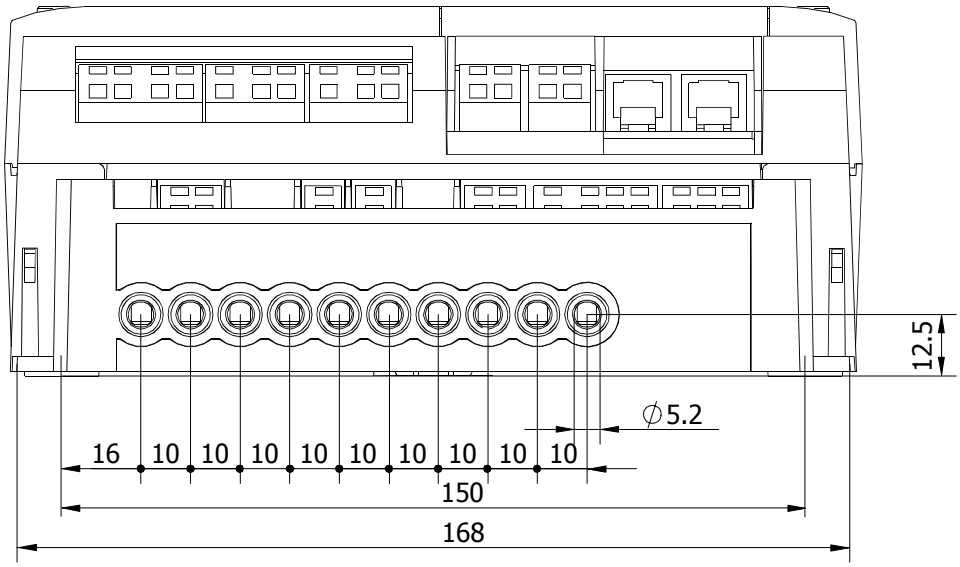
Phase Connections	
type	screw type terminals
diameter	5.2 mm
recommended conductor cross section	4–6 mm^2
screw head	Pozidrive Kombi No. 2
screw dimensions	M4 x 8
screw head diameter	≤ 5.8 mm
tightening torque	< 1.7 Nm

Other Connections	
type	screwless spring-type terminal
max. current of voltage outputs	1 A
max. voltage of inputs	250 V

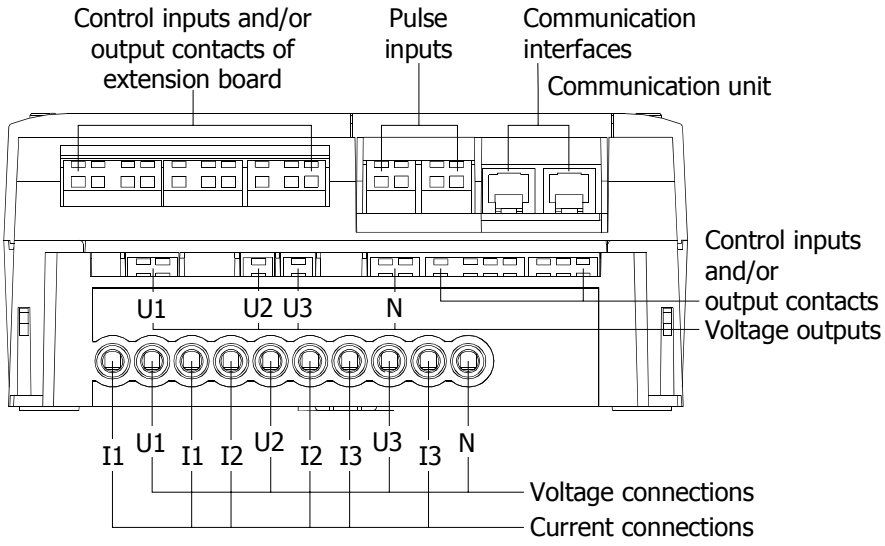
Meter Dimensions (Standard Terminal Cover)



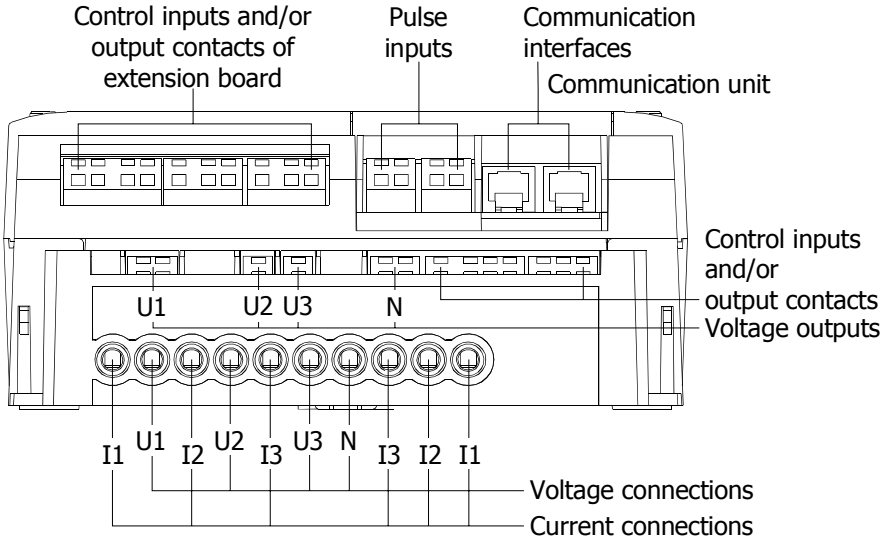
Terminal Dimensions



Terminal Layout according to DIN



Symmetrical Terminal Layout (optional, ZMD400 only)



Type designation **ZMD 4 10 C T 44 4207**

Network Type

ZFD	3-phase 3 wire network (F-circuit)
ZMD	3-phase 4 wire network (M-circuit)

Connection Type

3	Direct connection
4	Transformer operated

Accuracy Class

10	Active energy class 1 (IEC), B (MID)
05	Active energy class 0.5 (IEC), C (MID)

Measured Quantities

C	Active and reactive energy
A	Active energy

Construction

T	With exchangeable communication units

Tariffication

21	Energy rates, external rate control via control inputs
24	Energy rates, internal rate control via time switch (additionally possible via control inputs)
41	Energy and demand rates, external rate control via control inputs
44	Energy and demand rates, internal rate control via time switch (additionally possible via control inputs)
	All versions with 3 control inputs and 2 output contacts

Additional functions

060x	6 outputs
240x	2 control inputs, 4 outputs
420x	4 control inputs, 2 outputs
003x	integrated ripple control receiver
043x	4 outputs, integrated ripple control receiver
045x	4 outputs, additional power supply 100–240 V AC/DC
046x	4 outputs, additional power supply 12–24 V DC
xxx0	no additional functions
xxx2	DC-magnet-detection
xxx7	load profile
xxx9	DC-magnet-detection and load profile

Subject to change without notice.

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