INDUSTRIAL+COMMERCIAL

Landis+Gyr Dialog

ZMD400AT/CT - ZFD400AT/CT

TECHNICAL DATA

Voltage

Nominal Voltage Un ZMD400xT	
	3 x 58/100…69/120 V
	3 x 110/190…133/230 V
	3 x 220/380…240/415 V
wide voltage range	3 x 58/100…240/415 V

Nominal Voltage Un ZFD400xT	
	3 x 100…120 V
	3 x 220…240 V
wide voltage range	3 x 100…415 V

Voltage Range	80 % – 115 % Un

Frequency

Nominal Frequency fn	50 or 60 Hz
tolerance	± 2 %

Current

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

Maximal Current Imax	
metrological 1 A, 2 A, 5A	200 % In
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 Imax

Mesurement 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 % In
typical	0.07 % In
5||1 A	as 1 A meter

Starting Current ZxD410xT	
according to IEC	0.2 % In
typical	0.14 % In
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 power x starting current

Starting Power in F-Circuit	all phases

nominal voltage / √3 x starting current x 3

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 – +70 °C
storage	-40 °C – +85 °C

Temperature Coefficent	
range	von -25 °C – +70 °C
average value (typical)	± 0.012 % per K
at cosφ=1 (from 0.05 Ib to Imax)	± 0.02 % per K
at cosφ=0.5 (from 0.1 Ib to Imax)	± 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 62053-11
current and voltage circuits	8 kV
auxiliary circuits	6 kV

Protection Class according to IEC 60050-131	⧈ 2

Calendar Clock

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 switching frequency	50 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 025x	
nominal voltage range	100…160 V DC 100…240 V AC
tolerance	80 – 115 % Un
frequency	50 or 60 Hz
max power consumption	2.2 W

Ripple Control Receiver (optional)

on extension board 043x or 003x (ZMD400 only)	
nominal voltage	58 or 230 V
frequency	50 or 60 Hz
functional voltage Uf	0.3 – 2.5 % Un
control frequency fs	110 – 2000 Hz
bandwidth	0.6 – 6 % fs

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
depth	75 mm

Suspension Triangle	
height (suspension eyelet open)	206 mm
height (suspension eyelet covered)	190 mm
widht	150 mm

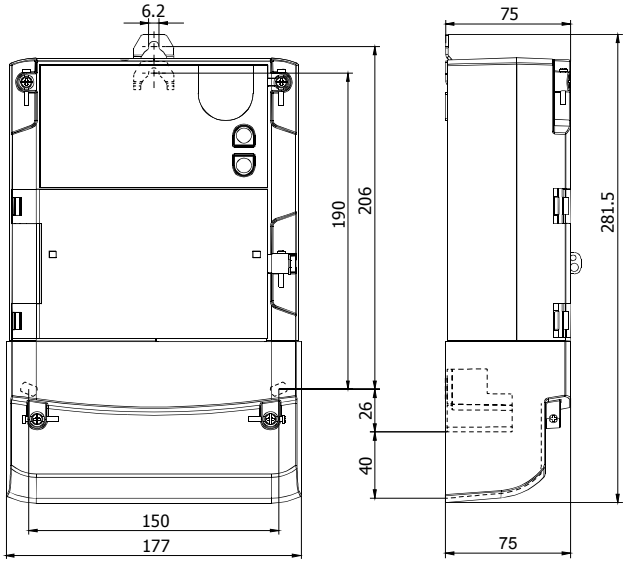
Terminal Cover	
short	no free space
standard	40 mm free space
long	60 mm free space
GSM	60 mm free space
ZxB-type 80 mm	80 mm free space
ZxB-type 110 mm	110 mm free space
Metcom3 adapter	
FTT4/5 adapter	

Connections

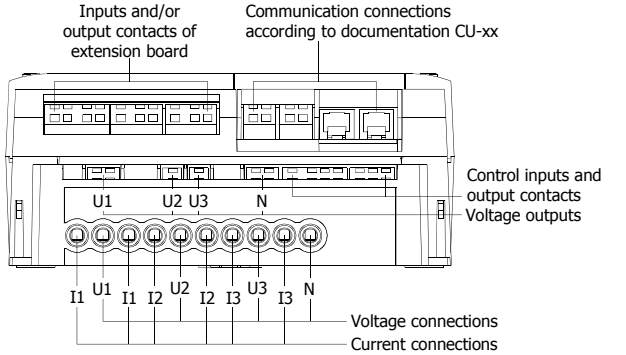
Phase Connections	
type	screw type terminals
diameter	5.2 mm
recommended conductor cross section	4 – 6 mm^2
screw head	Pozidrive Kombi No. 1
screw dimensions	M4 x 8
screw head diameter	≤ 5.8 mm
tightening torque	< 1.7 Nm

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

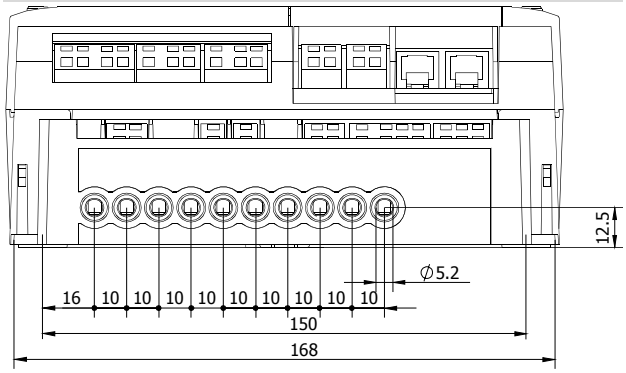
Meter Dimensions (Standard Terminal Cover)



Terminal Layout



Terminal Dimensions



Material

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

Type Designation **ZMD 4 10 C R 44 4207 . c1**

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 according to IEC
05:	Active energy class 0.5 S according to IEC

Measured Quantities

C:	Active and reactive energy
A:	Active energy

Construction

R:	With integrated interface
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

0000:	no additional functions	0007: + load profile
0600:	6 outputs	0607: + load profile
2400:	2 control inputs, 4 outputs	2407: + load profile
4200:	4 control inputs, 2 outputs	4207: + load profile
0030:	integrated ripple control receiver	0037: + load profile
0430:	4 outputs, integrated ripple control receiver	0437: + load profile
0250:	2 outputs, additional power supply	0257: + load profile

Integrated Interface (R-Types only)

c1:	RS232 interface
c2:	RS485 interface
c3:	CS interface

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