



Conto D4-Pd MID 4D Cod. CE4DMID31 - CE4DMID32

63 A - Double-quadrants, direct connected
three-phase meter **3x 230(400) Vac**

with changes valid to: 31.3.2014

Features and specifications are subject to change.

USER MANUAL

KRALgroup
Ing. Alena Kurillová & Ing. Leoš Rosol

Meinlinova 309
CZ-190 16 Praha 9 - Koloděje

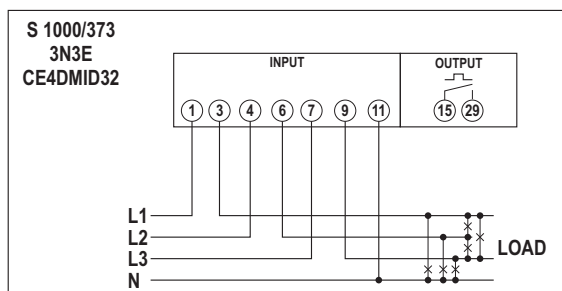
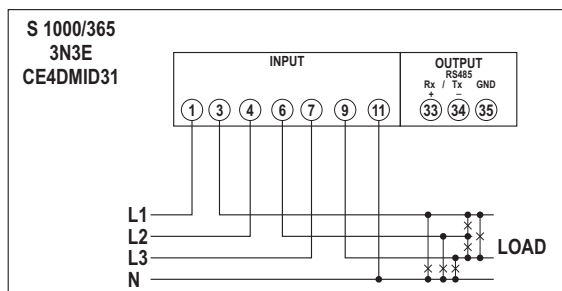
☎ : 602 360 501(2)
☎ : 281 970 988
✉ : info@kralgroup.cz
http://www.kralgroup.cz

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WARNING!

⚠ Device installation and use must be carried out only by qualified staff.
Switch off the voltage before device installation.
The content and the technical specification of this User Manual are subject to
change without prior notice. They do not represent any contractual obligation.
KEEP THIS INSTRUCTION MANUAL - CONTAINS, I.A., EU-DECLARATION
OF CONFORMITY

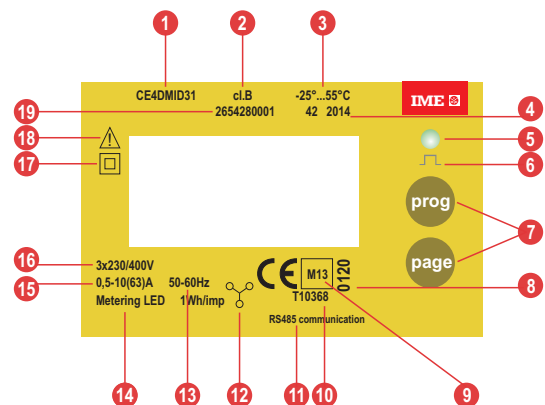
WIRING DIAGRAMS



GLOSSARY

CrC	CRC
tIME	Average time
bAUd	Communication speed
Addr	Communication address
Par	Parity bit
nonE	None
EVEn	Even
odd	odd
MD	Active power demand
PMD	Active power max. demand
PLSt ACt	Associated energy active
PLSt rEA	Associated energy reactive
PLSU	Pulse weight
PLSd	Width of the pulse

FRONT FRAME



- 1 Product code
- 2 Accuracy class
- 3 Working temperature
- 4 Manufacturing year and week
- 5 Metrological LED
- 6 Pulse symbol
- 7 Keyboard
- 8 Certifying board
- 9 Year of affixing
- 10 Certifying number
- 11 Output (ex. RS485 communication)
- 12 Connection on 3-phase 4 wire, 3 system line
- 13 Frequency
- 14 Metering LED pulse weight
- 15 Current
- 16 Voltage
- 17 Double insulation
- 18 Consult the instruction manual before mounting
- 19 Serial number

GENERAL DESCRIPTION

MOUNTING INSTRUCTIONS

Mounting of this equipment must be carried out just by skilled personnel. Before mounting, please make sure that the data on the label (measuring voltage, measuring current, frequency) correspond to the network on which the meter must be connected.

The meter is designed for connection on 3-phase, 4 wire line.

In the wiring scrupulously respect the wiring diagram; an error in connection unavoidably leads to wrong measurements or damages to the meter.

This equipment doesn't need any maintenance.

In case of damage to the equipment or malfunctioning, please contact the manufacturer.

No-one is entitled to carry out repairs on the meter; any tampering will lead to forfeiture of the guarantee as well as the validity of the certification.

TECHNICAL DATA

INPUT

3-phase line, 4 wires

Reference voltage, U_n : 3x190(328)...3x277(480)V

Reference frequency: 50-60Hz

Admitted variation: 47...63Hz

Basic current, I_n : 10A

Max. current, I_{max} : 63A

Current circuit consumption: $\leq 1VA$ (for each phase)

AUXILIARY SUPPLY

Taken from measurement (selfsupplied)

INSULATION (EN50470)

Mechanical environment: M1

Electromagnetic environment: E2

Installation category: III

Degree of pollution: 2

ELECTROMAGNETIC COMPATIBILITY

Emission and immunity tests according to EN50470

ENVIRONMENTAL CONDITIONS

Reference temperature: 23°C $\pm$ 2°C

Specified working range: -25...55°C

Limit range for storage and transport: -40...70°C

Relative humidity: 95% no condensing (EN50472-1)

Degree of protection (EN60529): IP51 front frame, IP20 terminals (IP51 mounting the KWH-meter on a IP51 switchboard)

Max. dissipated power¹⁾: $\leq 5W$

¹⁾ For the thermal dimensioning of the switchboards

OUTPUTS

• **ACTIVE OR REACTIVE ENERGY PULSES** (ord.No.: CE4DMID32)

Optorelay with potential-free SPST-NO contact

Contact range: 110V a.c./d.c. 50mA - 20Ω

• **RS485 COMMUNICATION** (ord. No.: CE4DMID31)

Galvanically insulated from the measuring input

Transmitted data: all the displayed measurements

Standard: RS485 - 3 wires

Transmission: serial asynchronous

Protocol: JBUS/MODBUS compatible

Response time for query: $\leq 200ms$

Max. number of devices which can be network-connected: 32 (up to 255 with RS485 repeater)

Highest distance from the supervisor: 1200m

PROGRAMMING INSTRUCTIONS

Once mounted, the meter must be configured (pulse output, RS485 communication, etc.)

Once programmed, the meter must be sealed (see drawing D1).

After sealing, only the Page key will be accessible, which could be used to scroll the display pages and for possible resetting (see chapter DISPLAY).

PROGRAMMABLE PARAMETERS

AVERAGE POWER

Time: time average for the power

Selectable values: 5 - 8 - 10 - 15 - 20 - 30 - 60 minutes

RS485 COMMUNICATION (ord.No.: CE4DMID31)

Addr: address

Selectable values: 1...255

Baud: baud rate

Selectable in the range: 4800 - 9600 - 19200 bit/second

Par: parity bit

Selectable values: none - even - odd

PULSE ENERGY OUTPUT (ord. No.: CE4DMID32)

Associated energy: active or reactive

PLSU: pulse weight

Selectable values: 1pulse = 1 - 10 - 100 - 1000Wh/varh

PLSd: width of the pulse

Selectable in the range: 50 - 100 - 150 - 200 - 300 - 400 - 500ms

DISPLAY

Display type: 8-digit LCD

Display is subdivided in 11 pages.

Pages are accessible even with sealed KWH meter, just acting on **Page** key.

The first 7 pages allow to display:

positive active energy (MID certified energy)

positive reactive energy

partial positive, active energy

partial positive, reactive energy

working hours and minutes (count start min. current)

The other four pages allows to enter the menus:

CE4d Ux.x

Label data

average power period

communication protocol

RS485 address speed and parity (ord.No.: CE4DMID31)

pulse weight and width (ord.No.: CE4DMID32)

CRC software

I - U

Currents / Voltages

phase currents

interlinked and phase voltages

P

Powers

active, reactive and apparent power

phase active and reactive power

average and average maximum active power

PF

Power factor - Frequency

power factor

frequency

To access the **I-U/P/PF** menu, you have to go to the desired page and wait for some seconds; the first quantity in the list will be automatically displayed.

Press **Page** key to display other quantities.

To access the CE4d Ux.x menu, you have to go on the page and keep Page key pressed for some seconds; the first parameter in the menu will be automatically displayed.

Press **Page** key to display other parameters.

RESETTABLE DISPLAYS

The KWH meter, partial energy and average power peak can be reset by the user on field.

Go on the desired display page and keep **Page** key pressed until reset is over.

ANOMALY DISPLAY (See drawing D2)

D2.1

Read error / timed energy backup.

Symbol  access to all the display pages.

Unreliable read value, send the device to the manufacturer.

D2.2

Read error when the setup parameters are triggered.

Symbol  access to all the display pages.

Turn off and turn on the meter, verify the setup data.

Press **PAGE** key, read the energy and send the device to the manufacturer.

D2.3

Read error when the metrological and calibration constants are tri

Turn off and turn on the meter.

If the defect persists, send the device to the manufacturer.

PROGRAMMING

Prog + Page



Prog + Page



Prog + Page



Prog + Page



Prog + Page



Prog + Page



Prog + Page



Prog + Page



Prog + Page



CE4DMID31
Communication RS485

CE4DMID32
Pulse output

DISPLAY 1

	1	
Active Energy	000036.00 kWh T	Page
Reactive Energy	000558.00 kvarh T	Page
Partial Positive Active Energy	000006.90 kWh P	Page R
Partial Positive Reactive Energy	000004.56 kvarh P	Page R
Working hours and minutes	00066 02 h	Page R
Label data	CE48 UXX	Page 2
Voltages - Currents menu	I-U	Page 3 2s
Powers menu	P	Page 4 2s
Power factor - Frequency menu	PF	Page 5 2s

DISPLAY 2

2

Average power time	t INE 5		
	Page		
Communication Protocol Mdb = Jbus / Modbus	Prot Nod		
	Page		
RS485 address	Addr 255		
	Page		
RS485 speed	bAUD 19.2		
	Page		
Parity bit	PAR none		
	Page		
Associated energy	PLSt ACT		
	Page		
Pulse weight	PLSU 1		
	Page		
Width of the pulse	PLSd 100		
	Page		
CrC Software	CrCXXXXXX		
	Page		



CE4DMID31

RS485 Communication



CE4DMID32

Pulse output

1

Page



DISPLAY 3

3

Current L1

1 3000
A

Page

Current L2

2 4000
A

Page

Current L3

3 3200
A

Page

Phase voltage L1-N

1 2300
V

Page

Phase voltage L2-N

2 2300
V

Page

Phase voltage L3-N

3 2300
V

Page

Linked voltage L1-L2

12 4000
V

Page

Linked voltage L2-L3

23 4000
V

Page

Linked voltage L3-L1

31 4000
V

4

Page

DISPLAY 4

4

Active power

2090
kW

Page

Active power L1

1 6.141
kW

Page

Active power L2

2 8.180
kW

Page

Active power L3

3 6.550
kW

Page

Reactive power

2.560
k var

Page

Reactive power L1

1 0.710
k var

Page

Reactive power L2

2 1.050
k var

Page

Reactive power L3

3 0.800
k var

Page

Apparent power

2346
k VA

Page

Active power demand

4.710
MD kW

Page

Max. active power demand

5.050
PMD kW



DISPLAY 5

5

Power factor
L = IND C = CAP

PF 0.89 L

Page

Frequency

Fr 50.0

Page

1

D2

Anomaly display

D2.1

000658.00
kWh
D

D2.2

SELP Err

D2.3

CALb Err

2s

= Wait for 2 seconds

Page

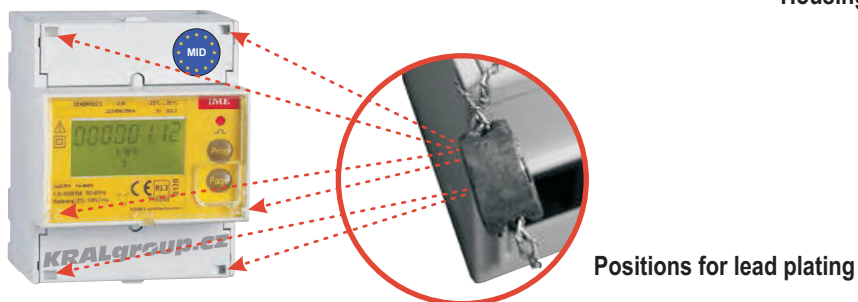
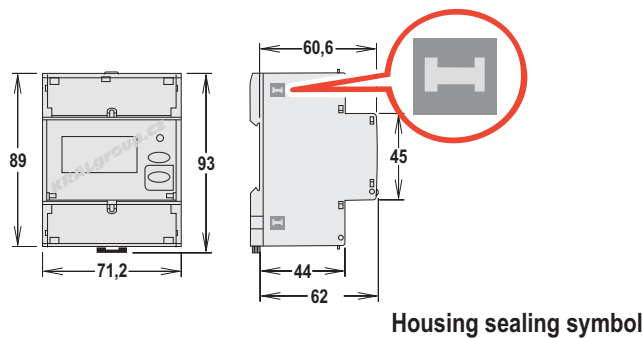
= Keep pressed the key for 2 seconds

Page

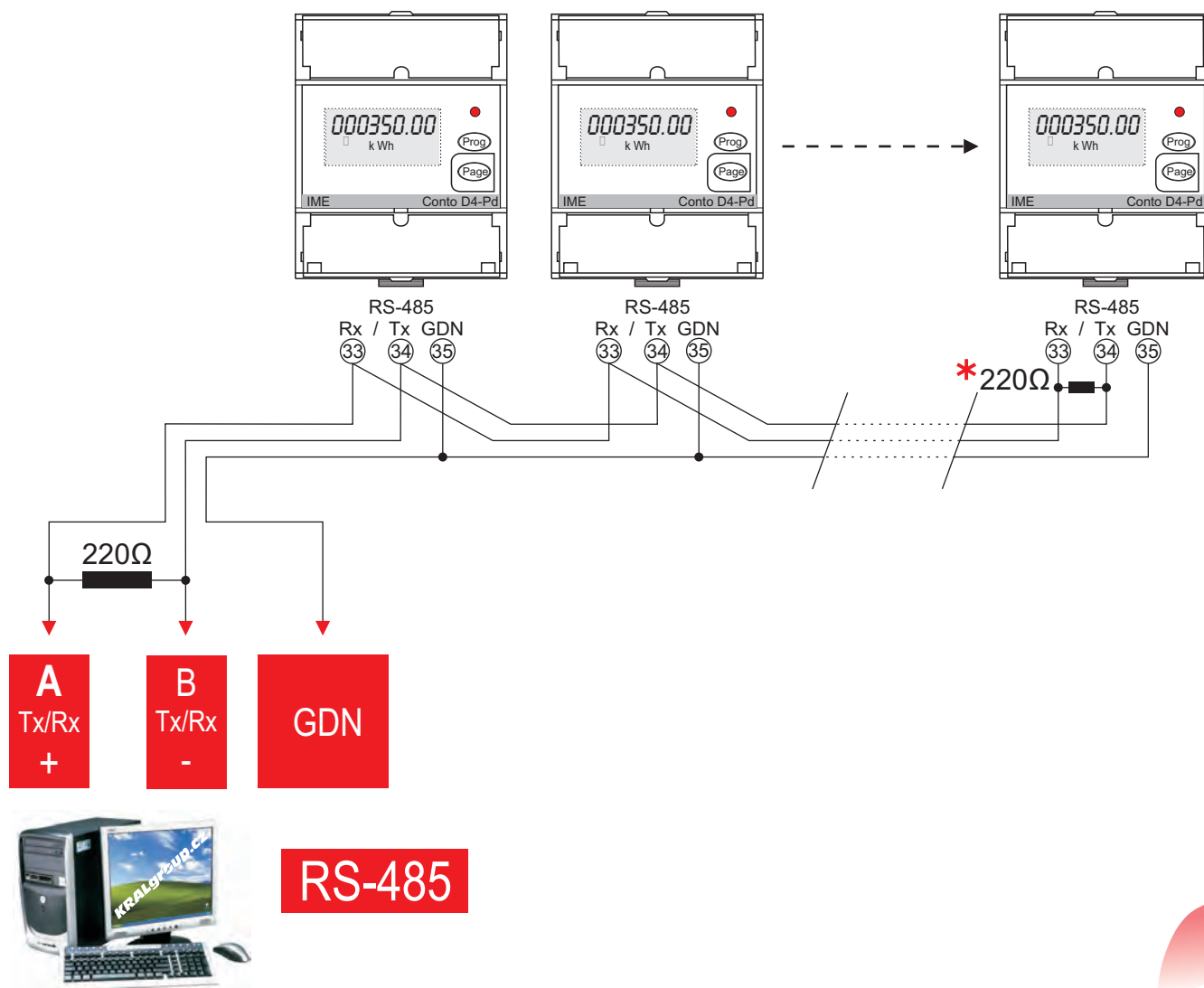
R

= For the Reset keep pressed the key for 2 seconds

SEALABLE



* LAST NETWORK CONTO D4



WASTE DISPOSAL

ATTENTION - Dispose of ecologically!
Does not belong to the mixed waste!

This product may not be, at the end of its useful life, disposed of with normal household waste but must be returned to a collection point for recycling of electronic equipment. Please check with your dealer or local authorities for disposal of the competent authority.

**CONFORMITY DECLARATIONS**

This equipment meets the **2006/95/EC European Standards** and satisfies all the conditions of **2004/108/EC European Standards** on "electromagnetic compatibility" with reference to the **EN55022 + A1 + A2** and **EN61000-4-2, -3, -4, -5, -6, -12 standards**.

The reference standards are:

EN62052-11 - Electricity metering equipment (a.c.).

General requirements, tests and tests conditions.

Part 11: Metering equipment.

EN62053-21 - Electricity metering equipment (a.c.).

Particular requirements.

Part 21: Static meters for active energy (classes 1 and 2).

We IME S.p.A. Via Travaglia 7 - 20094 Corsico (Milan) - ITALY.

Declare under our sole responsibility as manufacturer that the active electrical energy meters CE4DMID31 and CE4DMID32 correspond to the production model described in the EC-type examination certificate and to the requirements of the Directive 2004/22/EC. EC Type Examination Certificate no. T10368.

Identification number of the NB 0122.

The reference standards are:

EN50470-1 - Electricity metering equipment (a.c.).

Part 1: General requirements, tests and tests conditions.

Metering equipment (class indexes A, B, and C)

EN50470-3 - Electricity metering equipment (a.c.).

Part 3: Particular requirements.

Static meters for active energy (class indexes A, B, and C).

Milan, 25/08/2011


Giovanni Calvi
Approval Manager

KRALgroup

Ing. Alena Kurillová & Ing. Leoš Rosol

Your partner for measuring the energy

DIN RAIL MOUNTED kWh METERS

RE/CONDITIONED kWh METER

PRE/PAZMENT kWh METERS

CREDIT CARDS kWh METERS

GSM OPERATED kWh METERS

SPECIAL kWh METERS

OTHERS FOR THE MEASUREMENT OF EL. ENERGY

CURRENT TRANSFORMERS

MEASURING POWER IN HARBORS AND ANCHORAGE SHIP
(MARINAS)

MEASURING POWER IN THE CAMP, IN TRADE FAIR,
EXHIBITION, BUSINESS, COMMERCIAL AND
ADMINISTRATIVE CENTERS

ENERGY MANAGEMENT SYSTEMS

(M-Bus, PLC, GSM, RS-485, EIB, INSTA-BUS)

Our advice is for You with pleasure

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