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CONTO D1

Single Phase Din Rail Energy Meter

Installation Manual

Version	Model
BASIC	CE1D45A0
PULSE	CE1D45AP CE1DMID45AP

Version	Model
MODBUS	CE1D45AMB CE1DMID45AMB
MBUS	CE1D45AM CE1DMID45AM

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DESCRIPTION

The CONTO D1 45A series is an advanced multifunction single phase energy monitoring solution with optional outputs such as pulses, RS485 RTU Modbus, Mbus and KWh meter. Equipped with scroll display button for ease of navigation through the various parameters. Housed for DIN rail mounting, IP51 protection.
Certified in the UK according to EU Directive 2014/32/EU.
MID certificate number 0120 / SGS0141.

Model	Version	Display	Measurement	Outputs
CE1D45A0	Basic	LCD	kWh	No
CE1D45AP	Pulse	LCD with Backlight	kWh	Pulse
CE1D45AMB	ModBus	LCD with Backlight	Multi-parameters	Impulsi & RS485
CE1D45AM	Mbus	LLCD with Backlight	Multi-parameters	Impulsi & Mbus

Model	Version	Display	Measurement	Outputs
CE1DMID45AP	Pulse	LCD with Backlight	kWh	Pulse
CE1DMID45AMB	ModBus	LCD with Backlight	Multi-parameters	Pulses & RS485
CE1DMID45AM	Mbus	LCD with Backlight	Multi-parameters	Pulses & Mbus

APPLICATION

The energy-meters are used to measure single-phase applications like residential, utility and Industrial.
The unit measures and displays various important electrical parameters. It equipped with a white back-lighted LCD screen for perfect reading (only LCD for Basic version). Bi-directional energy measurement makes it a good choice for solar PV energy metering. The compact design and din rail installation provides an easy and economical solution for your metering demand.

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DANGERS AND WARNINGS

Information for your own safety
This manual does not contain all of the safety measures for operation of the equipment (module, device), because special operating conditions,and local code requirements or regulations may necessitate further measures. However,it does contain information which must be read for your personal safety and to avoid material damages. This information is highlighted by a warning triangle and is represented as follows, depending on the degree of potential danger.

Qualified personnel
Operation of the equipment (module, device) described in this manual may only be performed by qualified personnel. Qualified personnel in this manual means person who are authorized to commission, start up ground and label devices, systems and circuits according to safety and regulatory standards.

Warning
This means that failure to observe the instruction can result in death, serious injury or considerable material damage.

Caution
This means hazard of electric shock and failure to take the necessary safety precautions will result in death, serious injury or considerable material damage.

Proper handling
The equipment (device, module) may only be used for the application specified in the catalogue and the user manual, and only be connected with devices and components recommended and approved by IME.

- Use only insulating tools
- Do not connect while circuit is live (hot)
- Place the meter only in dry surroundings
- Do not mount the meter in an explosive area or expose the meter to dust, mildew and insects
- Make sure the used wires are suitable for the maximum current of this meter
- Make sure the AC wires are connected correctly before activating the current/voltage to the meter
- Do not connect the meter to a 3 phase - 400VAC - network
- Do not touch the meter connecting clamps directly with your bare hands, with metal, blank wire or other material as you may get an electrical shock
- Make sure the protection cover is placed after installation
- Installation, maintenance and reparation should only be done by qualified personnel
- Never break the seals and open the front cover as this might influence the functionality of the meter, and will avoid any warranty
- Do not drop or allow physical impact to the meter as there are high precision components inside that may break

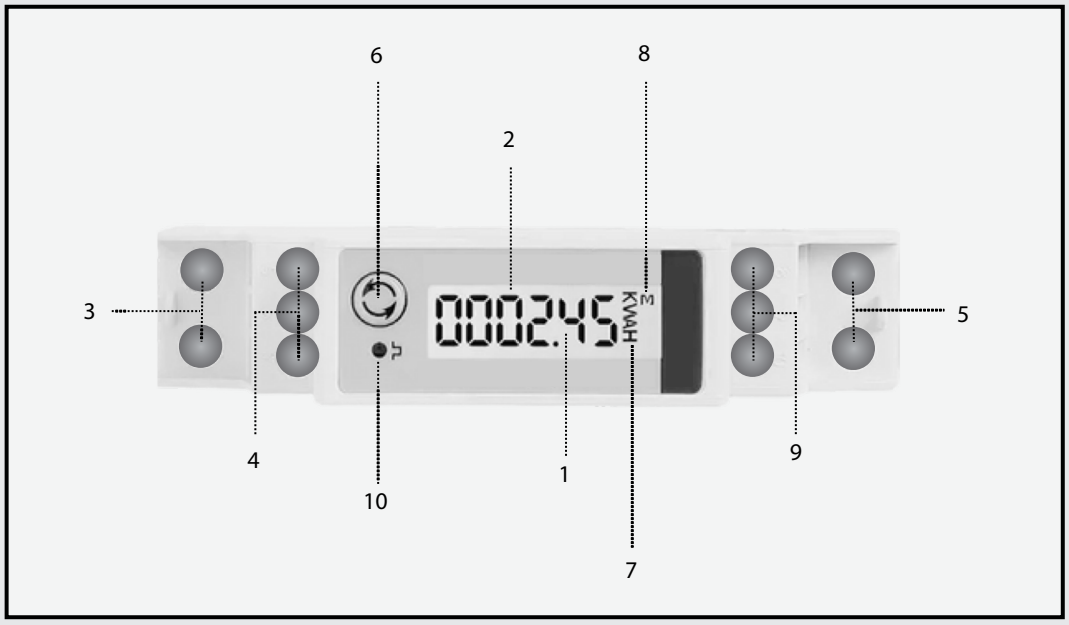
PRELIMINARY OPERATIONS

To ensure the safety of personnel and equipment, it is imperative to thoroughly review the contents of this booklet prior to operating the machine.

Upon receipt of the box containing the device, it is essential to verify the following points:

- the condition of the packaging
- the lack of damage or breakage resulting from transportation
- the correlation between the appliance code and the ordered code
- the inclusion of both the item and the instruction sheet in the packaging

PRESENTATION

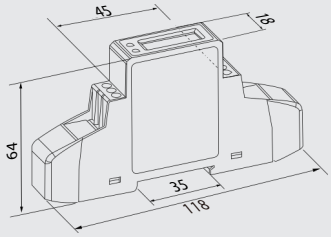


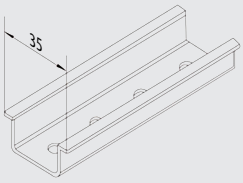
3	Line
2	Values
7	Measurement unit
4	Pulse Output
1	LCD
6	Scroll display
5	Neutral
8	Energy type
9	Communication
10	Metrological LED

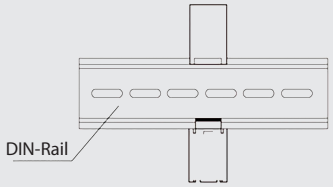
Note: For further information on other meter variants - models with pulse output only or without any features - please see the 'Wiring diagrams' section

INSTALLATION

Dimensions and Prescriptions
Maintain distance from systems that produce electromagnetic disturbances.

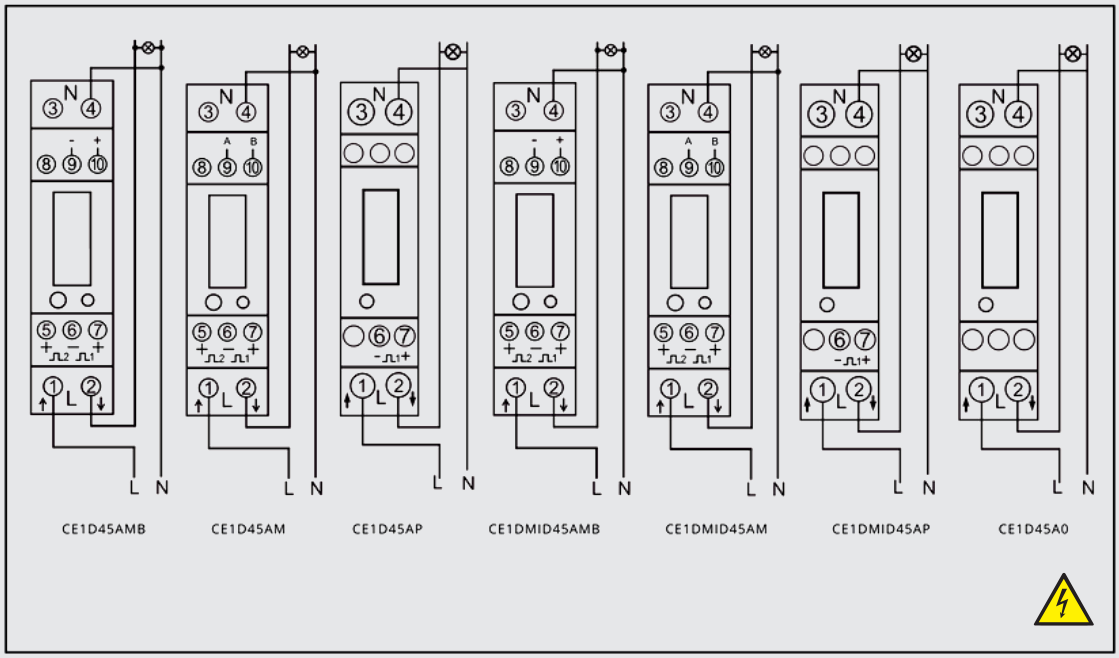






Height: 118 mm	Depth: 64 mm
Width: 18 mm	Weight:: 0,1 Kg

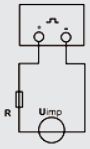
Wiring diagrams



1 - 2 3 - 4	8 mm MAX 1 x 10 mm² 1 x 10 mm² 1 x 10 mm²	max 1,5 Nm 4mm PZ1
5 - 6 - 7 8 - 9 - 10	5 mm MAX 1 x 0,5 mm² 1 x 0,5 mm² 1 x 1,5 mm²	max 0,2 Nm 3mm PZ0

COMMUNICATION

The meter is equipped with pulse output, which is fully isolated fromthe inside circuit. That generates pulses in proportion to the measured energy. The pulse output is polarity dependent, passive transistor output requiring an external voltage source for correct operation. For this external voltage source, the voltage shall be 5-27VDC, and the maximum input current shall be 27mA DC.



ATTENTION: Pulse output must be fed as shown in the wiring diagram on the left.
Scrupulously respect polarities and the connection mode.
Opto-coupler with potential-free SPST-NO Contact.

Contact Range: 5-27 V DC Max.
Current input: 27 mA DC

Pulse output for CE1D45AP/CE1DMID45AP:
Pulse constant: 1000imp/kWh; Pulse width: 80ms

Pulse Output for CE1D45AMB/CE1DMID45AMB/CE1D45AM/ CE1DMID45AM:
Mbus and ModBus vers. provide two pulse outputs. Both pulse outputs are passive type. Pulse output 1 is configurable.
The pulse output can be set to generate pulses to represent total/import/export kWh or kVArh.
The default is export kWh. Pulse width: 50(default)/100/200 ms.
The pulse constant can be set to: 1000(default)/100/10/1imp/kWh/kVArh.
Pulse output 2 is non-configurable. It is fixed to import kWh.
The constant is 1000imp/kWh. Pulse width: 100ms.

RS485 Output for CE1D45AMB/CE1DMID45AMB:
The meter provides a RS485 port for remote communication. Modbus RTU is the protocol applied.
For Modbus RTU, the following RS485 communication parameters can be configured via Modbus communication or from the Set-up Mode.

- Baud rate: 2.4k, 4.8k, 9.6k, 19.2k, 38.4k bps
- Parity: None/Even/Odd
- Stop bits: 1 or 2
- Modbus Address: 001 to 247

Default parameters for communication:

- Baud rate: 19.2k bps
- Parity: Even
- Stop bit: 1
- Modbus address: 0x05

Mbus Communication for CE1D45AM/CE1DMID45AM - EN13757-3:
The meter provides an Mbus port for remote communication. The protocol fully comply with EN13757-3.
The following communication parameters can be configured via Mbus communication or from the Set-up Mode.

- Baud rate: 600, 1200, 2400, 4800, 9600 bps
- Parity: None/Even/Odd
- Stop bits: 1 or 2
- Mbus primary address: nnn - 3 digits number from 001 to 250
- Mbus secondary address: 00 00 00 00 to 99 99 99 99

Default parameters for communication:

- Baud rate: 2400 bps
- Parity: Even
- Stop bit: 1
- Mbus primary address: 0x01
- Mbus secondary address: last 8 digits of SN

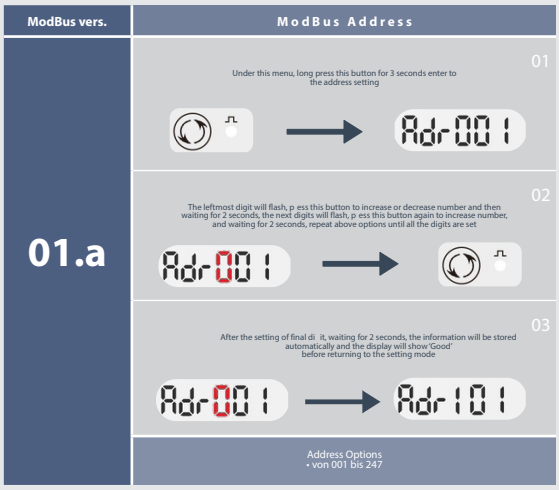
PROGRAMMING

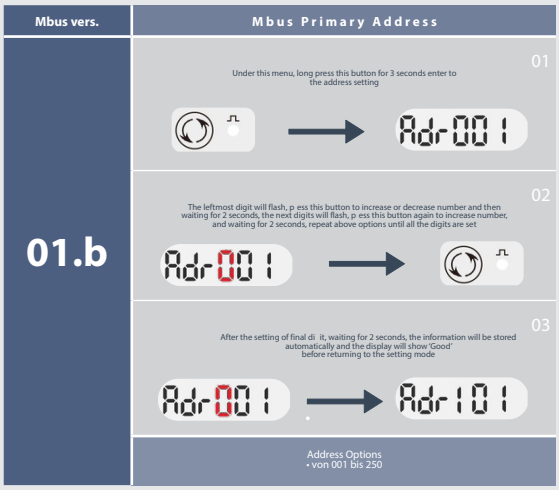
Key Guide

	Keep pressing the button for 3 seconds, the meter will enter set-up mode

Settings Screens

01.a	**ModBus Address**
01.b	**Mbus Primary Address**
02.a	**ModBus Baud Rate**
02.b	**Mbus Baud Rate**
03	**Parity** (ModBus and Mbus vers.)
04	**Stop Bits** (ModBus and Mbus vers.)
05	**Mbus Secondary Address - High**
06	**Mbus Secondary Address - Low**





CONTENTS

ModBus vers.	ModBus Baud Rate
02.a	01 Under this menu, long press this button for 3 seconds enter to the set-up mode  02 The digits will flash, p ess this button to choose 'Baud Rate Options', then waiting for 2 seconds  03 After the setting of final di it, waiting for 2 seconds, the information will be stored automatically and the display will show 'Good' before returning to the setting mode  Baud Rate Options • 2.4k, 4.8k, 9.6k, 19.2k, 38.4k bps

ModBus vers.	Mbus Baud Rate
02.b	01 Under this menu, long press this button for 3 seconds enter to the set-up mode  02 The digits will flash, p ess this button to choose 'Baud Rate Options', then waiting for 2 seconds  03 After the setting of final di it, waiting for 2 seconds, the information will be stored automatically and the display will show 'Good' before returning to the setting mode  Baud Rate Options • 600, 1200, 2400, 4800, 9600 bps

Modbus/Mbus vers.	Parity
03	01 Under this menu, long press this button for 3 seconds enter to the set-up mode  02 The digit will flash, p ess this button to choose 'Parity Options', then waiting for 2 seconds.  03 After the setting of final di it, waiting for 2 seconds, the information will be stored automatically and the display will show 'Good' before returning to the setting mode  Parity Options • None (n) • Even (E) • Odd (o)

Modbus/Mbus vers.	Stop Bits
04	01 Under this menu, long press this button for 3 seconds enter to the set-up mode  02 The digit will flash, p ess this button to choose 'Stop Bits Options', then waiting for 2 seconds.  03 After the setting of final di it, waiting for 2 seconds, the information will be stored automatically and the display will show 'Good' before returning to the setting mode  Stop Bits Options • 1 • 2

Mbus vers.	Mbus Secondary Address - High
05	01 Under this menu, long press this button for 3 seconds enter to the set-up mode  02 The leftmost digit will flash, p ess this button to increase or decrease number and then waiting for 2 seconds, the next digits will flash, p ess this button again to increase number, and waiting for 2 seconds, repeat above options until all the digits are set  03 After the setting of final di it, waiting for 2 seconds, the information will be stored automatically and the display will show 'Good' before returning to the setting mode  Address Options • 00 00 bis 99 99

Mbus vers.	Mbus Secondary Address - Low
06	01 Under this menu, long press this button for 3 seconds enter to the set-up mode  02 The leftmost digit will flash, p ess this button to increase or decrease number and then waiting for 2 seconds, the next digits will flash, p ess this button again to increase number, and waiting for 2 seconds, repeat above options until all the digits are set  03 After the setting of final di it, waiting for 2 seconds, the information will be stored automatically and the display will show 'Good' before returning to the setting mode  Address Options • 00 00 bis 99 99

USE

Display Start-up Screens

Basic/Pulse vers. — Inizialization - FullScreen

01.a

ModBus/Mbus vers. — Inizialization - FullScreen

01.b

Tutti i modelli — Software Version

02.a

Basic/Pulse vers. — Software Version

02.b

Tutti i modelli — Software Version

02.c

Tutti i modelli — CRC high bit

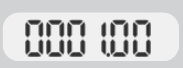
03

Tutti i modelli — CRC Low Bit

04

Basic/Pulse vers. — Active Energy

05.a



ModBus/Mbus vers. — Total Active Energy

05.b

Display Screens

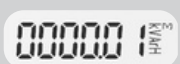
01.a	**Active Energy** (Basic and Pulse vers.)
01.b	**Total Active Energy** (ModBus and Mbus vers.)
02	**Import Active Energy** (ModBus and Mbus vers.)
03	**Export Active Energy** (ModBus and Mbus vers.)
04	**Total Reactive Energy** (ModBus and Mbus vers.)
05	**Voltage** (ModBus and Mbus vers.)
06	**Current** (ModBus and Mbus vers.)
07	**Active Power** (ModBus and Mbus vers.)
08	**Frequency** (ModBus and Mbus vers.)
09	**Power Factor** (ModBus and Mbus vers.)
10.a	**Modbus Address**
10.b	**Mbus Primary Address**
11.a	**ModBus BaudRate**
11.b	**Mbus Baud Rate**
12	**Parity** (ModBus and Mbus vers.)
13	**Mbus Secondary Address - High**
14	**Mbus Secondary Address - Low**

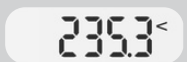
Basic/Pulse vers.	Active Energy	
01.a		Active energy

ModBus/Mbus vers.	Total Active Energy	
01.b		Total active energy

ModBus/Mbus vers.	Import Active Energy	
02		Import active energy

ModBus/Mbus vers.	Export Active Energy	
03		Export active energy

ModBus/Mbus vers.	Total Reactive Energy	
04		Total reactive energy

ModBus/Mbus vers.	Voltage	
05		Voltage

CONTENTS

ModBus/Mbus vers.	Current
06	 Current

ModBus/Mbus vers.	Active Power
07	 Active power

ModBus/Mbus vers.	Frequency
08	 Frequency

ModBus/Mbus vers.	Power Factor
09	 Power factor

ModBus vers.	ModBus Address
10.a	 Modbus address

Mbus vers.	Mbus Primary Address
10.b	 Mbus primary address

ModBus vers.	ModBus Baud Rate
11.a	 Baud rate

Mbus vers.	Mbus Baud Rate
11.b	 Baud rate

ModBus/Mbus vers.	Parity
12	 Parity

Mbus vers.	Mbus Secondary Address - High
13	 Mbus secondary address - High

Mbus vers.	Mbus Secondary Address - Low
14	 Mbus secondary address - Low

TECHNICALSPECIFICATIONS

Display	
Type	All devices are equipped with a LCD with backlit, except for model CE1D45A0, which features a standard LCD display.
Caratteristiche elettriche	
Voltage AC (Un)	230V
Voltage range	176~276V AC (Basic/Pulse vers.) 100~277V AC (Modbus/Mbus vers.)
	0.15-5(45)A (Max. 45A)
Current input	<2W/10VA
Voltage Circuit	<1VA
Current Circuit	50/60Hz
Frequency	4KV for 1 minute
AC voltage withstand	6KV~1.2uS waveform
Impulse voltage withstand	30Imax for 0.01s
Overcurrent withstand	1000/100/10/1imp/kWh/kVArh (conf.)
Pulse output 1	1000imp/kWh (no conf.)
Pulse output 2	99999.9kWh/kVArh
Max. Reading	
Accuracy (IEC/EN61557-12)	
Voltage	cl. 0.5
Current	cl. 0.5
Frequency	cl. 0.2
Power factor	cl. 1
Active power	cl. 1
Reactive power	cl. 1
Apparent power	cl. 1
Environment	
Reference temperature	23°C±2°C
Installation category	CATIII
Relative Humidity	0 to 95%, non-condensing
Altitude	Up to 2000m
Location	Dry
Warm up time	3s
Mechanical characteristics	
Weight	0.1 kg
Din rail dimensions	18x118x64 (WxHxD) DIN 43880
Mounting	DIN rail 35mm (wall or Mounting cabinet mounting)
Protection class:	
- Terminal protection index against solid bodies and liquids	IP20 (IEC/EN 60529).
- Housing protection index against solid bodies and liquids	IP51 (IEC/EN 60529).
Material	Self-extinguishing UL94V-0
Class II	Front panel with cover plate
Level of pollution	2
Protection class against external mechanical impacts	IK02 (IEC/EN 62052-31)
Mechanical environment	M1
Electromagnetic environment	E2
Climatic characteristics	
Operating room temperatures	T min. = - 40 °C; T max. = + 70 °C
Storage room temperatures	T min. = - 40 °C; T max. = + 80 °C
Diagnostic	
Current output diagnostic	Open circuit
Voltage output diagnostic	Low output load

CONFORMITY AND CERTIFICATIONS

European Directives:
2014/30/EU
2014/32/EU
2014/35/EU

According to the standard:
Low voltage Directive IEC/EN 61010-1.
EMC compatibility: EN/IEC 62052-11 / EN 50470-3

Active energy: Class 0.5 Wh (EN 62053-21)
Class C (EN 50470-3) (MID version)
Reactive energy: Class 2 varh (EN 62053-23)

Respecting the environment - Conformity with CEE Directives: Compliance with the 2011/65/EU Directive, as modified y the 2015/863/EU Directive (RoHS), on the restriction of the use of certain hazardous substances in electrical and electronic equipment. Conformity with the REACH Regulation (1907/2006): at the date of publication of this document no substance in the annex XIV is found in these products.

RAEE Directive (2012/19/EU): the sale of this product includes a contribution to the appointed enviromental bodies of each European country incharge of handling, at the end of their life, the products falling within the scope of the EU Directive on Electrical and Electronic Equipment Waste.

Plastic materials:
Plastic materials without Halogens.
Parts marking according to standards ISO 11469 and ISO 1043.

Packaging:
Packaging designed and produced in accordance with Decree 98-638 of 20/07/98 and Directive 94/62/CE.

CE

APPENDIX

Mbus protocol

1. Initialization slave

Format:

Start	C Field	A Field	Check Sum	Stop
10	40	XX	CS	16

XX=1 to FF

The address field serves to address the recipient in the calling direction,and to identify the sender of information in the receiving direction. The size of this field is one Byte, and can therefore take values from 0 to 255. The addresses 2 to 250 can be allocated to the individual slaves, up to a maximum of 250. Unconfigu ed slaves are given the address 1 at manufacture and as a rule are allocated one of these addresses when connected to the M-us. The addresses 254 (FE) is used to transmit information to all participants (Broadcast). The latter case naturally results in collisions when two or more slaves are connected,and should only be used for test purposes. The address 253 (FD) indicates that the addressing has been performed in the Network Layer instead of Data Link Layer, the FD used when using the second level address. The remaining addresses 251 and 252 have been kept for future applications.

1.1 How to initialize a meter which you don't know the address

Master to slave: 10 40 fe 3e 16
Slave to master: e5 (success)

1.2 Remove the secondary address matching symbol of all the meters on BUS.

Master to slave: 10 40 fd 3d 16
Slave : No answer

1.3 How to Initialize a Slave with specific address

Example: Address 02
Master to slave: 10 40 01 41 16
Slave to master: e5

2. How to Set Baud Rate

2.1 Point to point baud-rate setting command format(Control Frame)

Format:

Start	L-Field	L-Field	Start	C-Field	A-Field	CI-Field	Check Sum	Stop
68H	03	03	68H	53/73	fe	b8~bd	CS	16

L - Field-------Byte length
C - Field-------ControlField,FunctionField
A - Field-------AddressField

CI - Field--------control information field
Check Sum-----The Check Sum is calculated from the arithmetical sum of the data mentioned above, without taking carry digits into account.

B9-------600
BA-------1200
BB-------2400
BC-------4800
BD-------9600

Example:
(1) How to change Baudrate to 2400bps
Master to slave: 68 03 03 68 53 fe bb 0c 16
Slave to master: e5

(2) How to change Baudrate to 9600
Master to slave: 68 03 03 68 53 fe bd 0E 16
Slave to master: e5

3. How to Set primary address

3.1 How to set the address of a Slave to 02

Format:

Start	L-Field	L-Field	Start	C-Field	A-Field	CI-Field	DIF	VIF	Address Data	Check Sum	Stop
68H	06	06	68H	53/73	fe	51	01	7A	XX	CS	16

Example:
Master to slave: 68 06 06 68 53 fe 51 01 7a 02 1e 16
Slave to master: e5

3.2 How to change Address from 02 to 03

Formato:

Start	L-Field	L-Field	Start	C-Field	A-Field	CI-Field	DIF	VIF	Address Data	Check Sum	Stop
68H	06	06	68H	53/73	XX	51	01	7A	YY	CS	16

XX--current primary Address
YY--new primary address
Master to slave: 68 06 06 68 73 02 51 01 7A 03 42 16
Slave to master :e5

3.3 How to Set primary address to 02 by using secondary address

For example:
secondary address: 12345678

Step1 - Initialize the slave
Master to slave: 10 40 fe 3e 16
Slave to master: e5

Step2 - Check the secondary address. After receiving the command, the Slave will check if the secondary address in the command is same with its secondary address or not.
Master to slave: 68 0B 0B 68 73 FD 52 78 56 34 12 FF FF FF FF D2 16
FD---the primary Address used when you use secondary address to read data.
78 56 34 12 ---the meter's secondary address is 12 34 56 78
Master to slave: e5 (success)

Step3 - Change the primary address to 02
Master to slave: 68 06 06 68 73 FD 51 01 7A 02 3D
02---- new primary address
Slave to master: e5

4. Set the complete identification of the slave
(ID=12345678, Man=166E (PAD), Gen=1, Med=02 (energy))

Start	L-Field	L-Field	Start	C-Field	A-Field	CI-Field	DIF	VIF	Identific tion No	Manufacturer ID	Generation	Medium	Check Sum	Stop
68H	0D	0D	68H	53/73	fe	51	07	79	4 byte	2 byte	1 byte	1 byte	CS	16

Master to slave: 68 0D 0D 68 53 FE 51 07 79 78 56 34 12 24 40 01 02 9D 16
Slave to master: e5

5. How to read out of Energy information
5.1 Use primary address 01 to read Energy information
Format:
Master to slave: 10 7B/5B adr cs 16
Slave to master: Variable data structure
Example: 10 7B 01 7C 16

5.2 How to read out a meter's Energy information by using broadcast address 254 (FE)
Master to slave: 10 7b/5b fe cs 16
Slave to master: Variable data structure
Example: 10 5B FE 59 16

5.3 How to read out the meter's Energy information by using secondary Address

For example:

Secondary address: 12 34 56 78

Step1 - Initialize the slave

Master to slave: 10 40 fe 3e 16

Slave to master: No answer

Step2 - Check the secondary address.

After receiving the command, the Slave will check if the secondary address in the command is same with its secondary address or not.

Master to slave:68 0b 0b 68 73 fd 52 78 56 34 12 FF FF FF FF d2 16

Slave to master: E5

Step3 - Read the Energy information

Master to slave: 10 7b fd 78 16

Slave to master:

DIF=====Coding of the Data Information Field

VIF=====Codes for Value Information Field

bytes	Parameters	data structure	Notice
4	header telegram	68 len len 68	header of RSP_UD telegram
3		08 0A 72	C field =08 address A CI field 72
4		78 56 34 12	Identification number =12345678
2		6E 16	Manufacturer ID 166E
1		01	Generation 1
1		02	electricity
1		xx	ACCESS NO
1		00	STATUS
2		00 00	Signature
8	Current total active energy	8C	DIF: 8digit BCD
		80	DIFE:
		40	DIFE:unit 2
		04	VIF: 10wh (0.01Kwh)
		78 56 34 12	123456.78kwh
6	Current import active energy	0C	DIF: 8digit BCD
		04	VIF: 10wh (0.01Kwh)
		78 56 34 12	123456.78kwh
7	Current export active energy	8C	DIF: 8digit BCD
		40	DIFE:unit 1
		04	VIF: 10wh (0.01Kwh)
		78 56 34 12	123456.78kwh
10	Current resettable total active energy	8C	DIF: 8digit BCD
		80	DIFE
		40	DIFE:unit 2
		84	VIF: 10wh (0.01Kwh)
		ff	VIFE next byte is manufacturer specific
		72	VIFE resettable energy
		78 56 34 12	123456.78kwh
8	Current resettable import active energy	0C	DIF: 8digit BCD
		84(1)	VIF: 10wh (0.01Kwh)
		ff	VIFE next byte is manufacturer specific
		72	VIFE resettable energy
		78 56 34 12	123456.78kwh
9	Current resettable export active energy	8C	DIF: 8digit BCD
		40	DIFE:unit 1
		84	VIF: 10wh (0.01Kwh)
		ff	VIFE next byte is manufacturer specific

		72	VIFE resettable energy
		78 56 34 12	123456.78kwh
9	Current total reactive energy	8C	DIF: 8digit BCD
		80	DIFE
		40	DIFE:unit 2
		FB	VIF:fB
		02	VIFE: 1 KVArh
		78 56 34 12	12345678kVarh
7	Current import reactive energy	0C	DIF: 8digit BCD
		FB	VIF:fB
		02	VIFE: 1 KVArh
		78 56 34 12	12345678kVarh
8	Current export reactive energy	8C	DIF: 8digit BCD
		40	DIFE:unit 1
		FB	VIF:fB
		02	VIFE: 1 KVArh
		78 56 34 12	12345678kVarh
11	Current total resettable reactive energy	8C	DIF: 8digit BCD
		80	DIFE
		40	DIFE:unit 2
		FB	VIF:fB
		82	VIFE: 1KVArh
		FF	VIFE next byte is manufacturer specific
		72	VIFE resettable energy
		78 56 34 12	12345678kVarh
9	Current resettable import reactive energy	0C	DIF: 8digit BCD
		FB	VIF:fB
		82	VIFE: 1KVArh
		FF	VIFE next byte is manufacturer specific
		72	VIFE resettable energy
		78 56 34 12	12345678kVar
10	Current resettable export reactive energy	8C	DIF: 8digit BCD
		40	DIFE:unit 1
		FB	VIF:fB
		82	VIFE: 1KVArh
		FF	VIFE next byte is manufacturer specific
		72	VIFE resettable energy
		78 56 34 12	12345678kVar
1	CHECK SUM	CS	
1	End	16	

(1) VIF=FB,VIFE=01,unit = MWH

Note

IME
A Group brand | legrand

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