

Zhejiang Yongtallong Electronic Co.,Ltd.

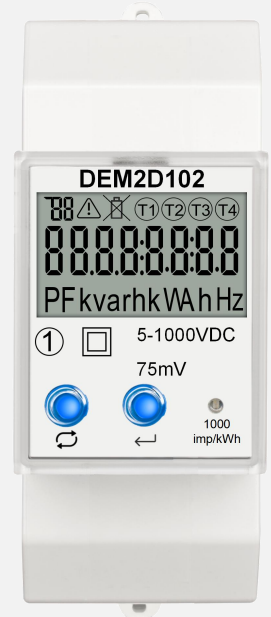
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Data Sheet

DEM2D DC meter Series

DIN Rail Multifunctional DC meter

- RS485 Communication support Modbus /DLT645 two protocols
 - Support Shunt connection way ,maximum support 2000A
 - With RS485 high baud rate ,maximum support 115200BPS
 - Overload alarm
 - Internal relay(Optional)
 - Internal Battery support Multi-tariff function and time (optional)
- DEM2D002: Auxiliary power supply AC/DC,No Battery, No tariff ,No relay
 - DEM2D102:Auxiliary power supply AC/DC,with Battery, with tariff ,with relay
 - DEM2D003 Auxiliary power supply DC,No Battery, No tariff ,No relay
 - DEM2D103:Auxiliary power supply DC,with Battery, with tariff ,with relay



Especially designed for EV chargers

DEM2D Single Phase DC Meter

The D619001 is a DC Meter Support measure the DC load directly connected to a shunt and based on shunt signal to maximum 2000A proving both it's accuracy and quality. allows this model to be used for EV charger

1. Brief Introduction

DEM2D Series is DC metering device that uses shunt sampling. Support RS485 communication, DLT 645/MODBUS protocol. Rail-mounted installation has the characteristics of good reliability, small size, beautiful appearance, and convenient installation.

2. Technical overview

2.1 Features

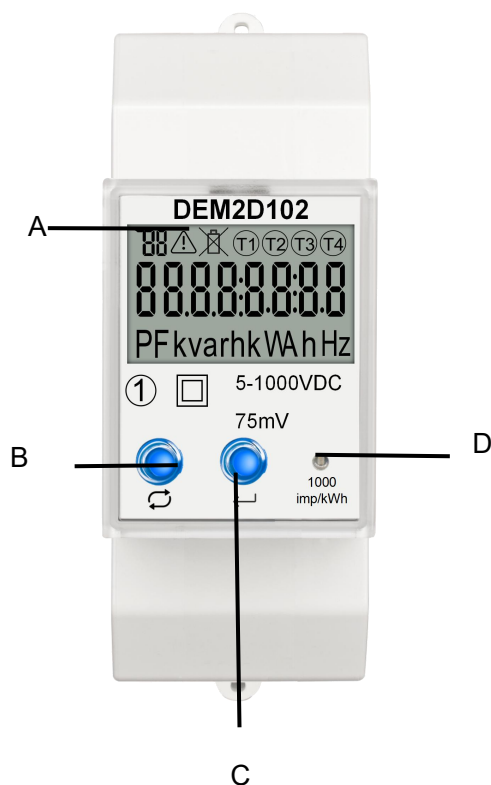
- RS485 communication: used for parameter setting, data reading; DTL645 protocol/Modbus Protocol
- DC metering: using shunt sampling, high measurement accuracy; can measure DC power, current, voltage,
- Alarm function: Over-current alarm: When the current exceeds the CT1 value set by the meter, an alarm event occurs, the meter LCD will show the alarm indicator, meanwhile the backlight show red.
- Display: LCD with backlight ,Support Various parameters display,energy data and Instantaneous parameters
- Firmware upgrade: RS485 local upgrade

2.2 Technical Parameters

Type	DEM2D002 D619004	DEM2D102 D619001	DEM2D003 D619003	DEM2D103 D619002
Voltage input:	DC 5V~1000V	DC 5V~1000V	DC 5V~1000V	DC 5V~1000V
Auxiliary power supply	85~265V AC or 85-265V DC	85~265V AC or 85-265V DC	DC 9-60V	DC 9-60V
Current:	Shunt connection method, the primary side current supports up to 2000A Connection signal :75mV	Shunt connection method, the primary side current supports up to 2000A Connection signal :75mV	Shunt connection method, the primary side current supports up to 2000A Connection signal :75mV	Shunt connection method, the primary side current supports up to 2000A Connection signal :75mV

Accuracy current:	0.5%	0.5%	0.5%	0.5%
Voltage Accuracy	0.5%	0.5%	0.5%	0.5%
Active Power Accuracy	1.0%	1.0%	1.0%	1.0%
Active Accuracy	Class 1.0	Class 1.0	Class 1.0	Class 1.0
Constant:	According to 1000imp/kWh, 1.2 times the maximum voltage and current, the pulse width is 1.2ms, corresponding to the current setting	According to 1000imp/kWh, 1.2 times the maximum voltage and current, the pulse width is 1.2ms, corresponding to the current setting	According to 1000imp/kWh, 1.2 times the maximum voltage and current, the pulse width is 1.2ms, corresponding to the current setting	According to 1000imp/kWh, 1.2 times the maximum voltage and current, the pulse width is 1.2ms, corresponding to the current setting
LCD:	LCD 6+2	LCD 6+2	LCD 6+2	LCD 6+2
Consumption:	≤8VA ≤0.4W	≤8VA ≤0.4W	≤8VA ≤0.4W	≤8VA ≤0.4W
Temperature:	-25 ~ 70℃	-25 ~ 70℃	-25 ~ 70℃	-25 ~ 70℃
Humidity:	≤95%	≤95%	≤95%	≤95%
AC withstand voltage	4400V/min	4400V/min	4400V/min	4400V/min
Impulse withstand voltage	6.4kV - 1.2/50μS waveform	6.4kV - 1.2/50μS waveform	6.4kV - 1.2/50μS waveform	6.4kV - 1.2/50μS waveform
Battery	NO	YES	NO	YES
Muti-tariff	NO	YES	NO	YES
Relay	NO	YES	NO	YES

3. Description



A LCD Display

B Program button, together with the button to do the Communication setting, the left button short press to turn to next page and long time press to step into setting page

C Page scrolling button, the right button short pressing to turn to previous page and long press to next main page

D impulse LED

Material

Base: PC+ABS alloy material

Cover: PC+ABS alloy material

Terminal cover: PC+ABS

4. Display

The display shows:

- Top row: Two blank digits, a warning triangle, a crossed-out battery symbol, and four temperature indicators (T1, T2, T3, T4).
- Second row: Eight digits with colons as separators (e.g., 88.88.88:88.88:88.88).
- Third row: Unit labels PF, kvarh, kWh, Hz.

LCD Display Content				
Page	Content	Unit	Format	Remarks
Main Scrolling Page				
1	Total active energy	kWh	6+2 000000.00	Only available for type with tariff
2	T1 Active Energy	kWh	6+2 000000.00	
3	T2 Active Energy	kWh	6+2 000000.00	
4	T3 Active Energy	kWh	6+2 000000.00	
5	T4 Active Energy	kWh	6+2 000000.00	
6	Voltage	V	4+2 0000.00	
7	current	A	4+3 0000.000	
8	Power	W	7+1 0000000.0	
Long press the right button to the second main page				
1	The SN DLT address first 8 digit		00000000	
2	The SN DLT address last 4 digit		0000	
3	Firmware version		1.1.0.1	
4	CT1 parameters		75 0200	Default 75mV 200A
5	constant		0000	Default 1000imp/kWh
6	Baudrate		000000	Default 115200
7	Communication parity		EVEN	
8	CRC code		crc c200	
9	Date		YYMMDDWW	
10	Time		HHMMSS	
Long press the right button to step into the third main page from second main page				
1	Resetable energy	kWh	6+2 000000.00	press the right button in this page ,and long press the left button to clear the energy
2	Forward active energy	kWh	6+2	

3	Reverse active energy	kWh	000000.00 6+2 000000.00	
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5. Connection Diagram

DEM2D002:



DEM2D102:



DEM2D003:

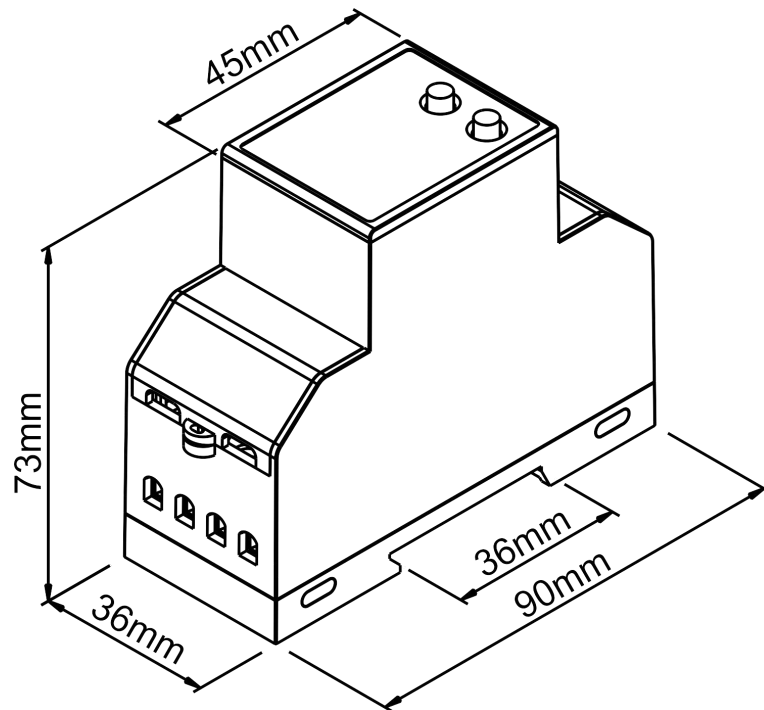


DEM2D103:



- 1&4 are voltage measuring interface ports (5-1000V DC)
- 5&6 are the auxiliary relay output port
- 9&10 are the external shunt sampling interface ports (default 75mV)
- 13&14 are auxiliary power supply ports
- 21&20 are the RS485 Port

6. Meter Dimension



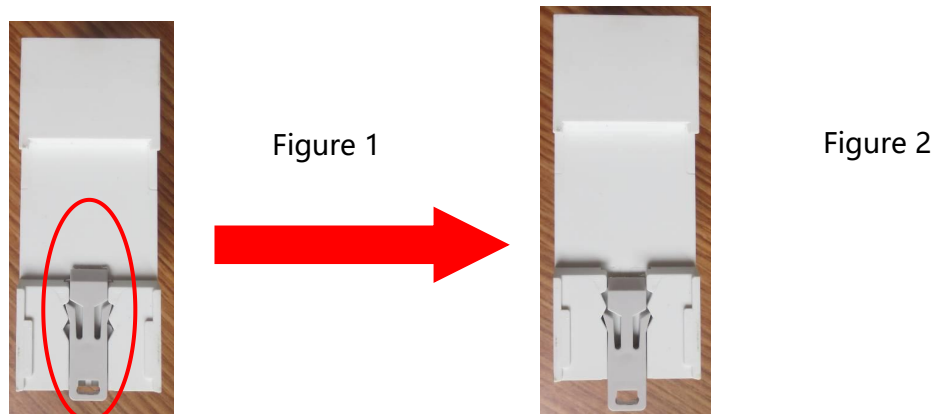
7. Installation

7.1 Installation instruction

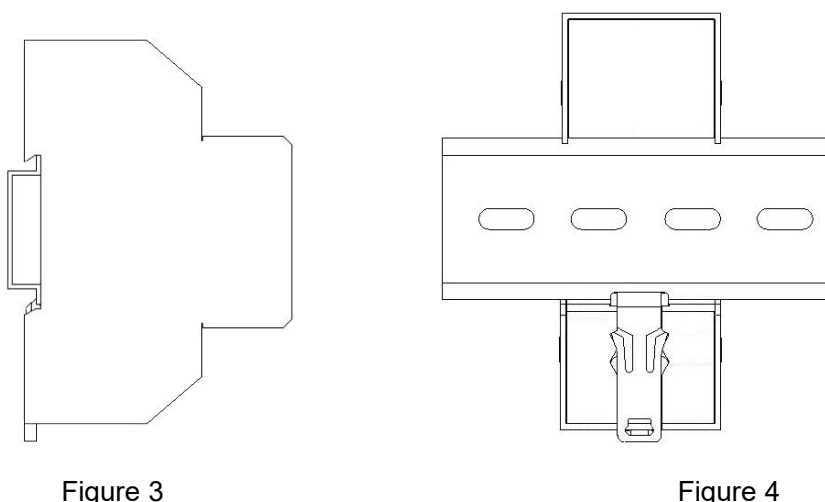
- Electric energy meter installation requires experienced electricians or professionals, and be sure to have read this user guide;
- During the installation process, if there is obvious damage to the shell due to severe impact or fall, please do not install or power on, and contact our company in time;
- The electric energy meter has passed the inspection before leaving the factory and can be directly installed and used;
- The electric energy meter should be installed in an indoor or outdoor electric meter box. The installation base should be fixed on a solid fire-resistant wall, and there is no corrosive gas in the air;
- The electric energy meter should be connected in accordance with the wiring diagram on the terminal button box, preferably with copper wire or copper terminal.

7.2 Installation

1. Take a standard rail (length is self-determined) and fix it at the position where the meter is to be installed;
2. Push the buckle at the bottom of the meter down to a position, as shown in Figure 1 and Figure 2;



Hang the meter on the guide rail as shown in Figure 3, and then push the buckle up to a position to clamp the meter on the guide rail. As shown in Figure 4;



4. The picture after the installation is completed (Figure 5); after the wiring is completed, seal the side cover of the meter with lead as required.

7.3 Installation and use

The voltage must be connected in strict accordance with the voltage level indicated on the label.

During installation, the wiring terminals must be tightened, and the metering device must be hung on a strong, fire-resistant, vibration-resistant screen. The metering device has a better display effect when

viewed from the bottom, so it should be installed vertically, and the best height is 1.8 meters. After wiring, seal the end cover.

Recommended wire (For your reference) :

Safe carrying capacity of rubber or plastic insulated wire(1)					
specification (mm)	nominal cross section (mm ²)	Safe carrying capacity (A)			
		BX	BLX	BV	BLV
1*1.13	1	20		18	
1*1.37	1.5	25		22	
1*1.76	2.5	33	25	30	23
1*2.24	4	42	33	40	30
1*2.73	6	55	42	50	40
7*1.33	10	80	55	75	55
7*1.76	16	105	80	100	75
7*2.12	25	140	105	130	100
7*2.50	35	170	140	160	125
19*1.83	50	225	170	205	150
19*2.14	75	280	225	255	185

19*2.50	95	340	280	320	240
Note: BX(BLX) copper (aluminum) core rubber insulated wire or BV(BLV) copper (aluminum) core PVC plastic insulated wire , widely used in 500V or less than 500V AC and DC power distribution system. The temperature for the data listed in the above table is 35℃ 、 the safe carrying capacity value for the wire on single coved.					

8. Safety Instructions

Information for Your Own Safety

This manual does not contain all of the safety measures for operation of this equipment (module, device) because special operating conditions, local code requirements or local regulations may necessitate further measures. However, it does contain information which must be adhered to for your own personal safety and to avoid damage to the equipment. This information is highlighted by a warning triangle with an exclamation mark or a lightning bolt depending on the severity of the warning.



Warning

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



Caution

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

Qualified personnel

Installation and operation of this equipment described in this manual may only be performed by qualified personal.

Only people that are authorized to install, connect and use this equipment and have the proper knowledge about labeling and grounding electrical equipment and circuits and can do so according to safety and regulatory standards are considered qualified personnel in the manual.

Use for the intend purpose

The equipment (device, module) may only be used for the application cases specified in the catalog and the user manual and only in connection with devices and components recommended and approved by YTL.

Exclusion of liability

We have checked the contents of this publication and every effort has been made to ensure that the descriptions are as accurate as possible. However, deviations from the description cannot be completely ruled out, so that no liability can be accepted for any errors or omissions in the information given. The data in this manual is checked regularly and the necessary corrections will be included in subsequent editions. If you have any suggestions, pls let us know.

Subject to technical modifications without notice.

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General Warning

After removing the packaging make sure the integrity of the unit. If in doubt don't use the equipment and contact technical staff.

Mounting of electric appliances must be carried out only by skilled electricians. It is imperative to observe the generally applicable safety measures.

In case of failure and /or malfunctioning of the device, turn off it. For any repair only contact technical staff. Failure to comply with the above may compromise the device safety.

Warranty

The manufactory will repair or exchange the products while the lead seal is still exited, within 18 months, when discovering the products not accordance with the technical specification.

Technical support

For any problems of our products please contact:

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