



NO: 13040501.0167.00

DDS3366D-J Single-Phase Electronic Energy Meter Manual



Guangdong Yada Electronics Co., Ltd.



Danger and warning

Before installing, operating or maintaining the equipment, please read this manual carefully, get it and gradually get familiar with the equipment. This document is not an operating manual for non-trainees, and our company is not responsible for any problems arising out of its normal use.



Risk of electric shock, fire or explosion

- There is a power hazard in some parts of this equipment. Please operate in strict accordance with the specifications.
- Before maintenance and overhaul, the equipment must be powered off and grounded.
- All mechanical parts, doors and covers should be returned to their original position before the equipment is energized.
- Equipment maintenance and installation work can only be performed by qualified personnel.

If you do not pay attention to these precautions, it may cause serious injury.

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Chapter 1 Product Introduction

1.1 Overview

The DDS3366D-J single-phase electronic energy meter is a highly compact measuring instrument integrating measurement, metering, LCD display, and communication functions. It measures electrical parameters including energy consumption, voltage, current, power, and power factor. It features an RS-485 communication interface, supporting both DL/T645-2007 and Modbus-RTU dual communication protocols.

The product's performance indicators comply with the national standard GB/T17215.321-2008 and the power industry standard DL/T614-2007 for energy meters.

It adopts a high-precision metering chip and a high-speed MCU data processing unit, enabling high-accuracy, wide-range metering. With an LCD display, it offers high reliability, high overload capacity, excellent stability, low power consumption, and automatic data backup during power outages. The RS485 communication interface enables data exchange with a host computer, offering advantages such as compact size, high accuracy, good reliability, and easy installation.

Designed for DIN35mm rail mounting, it can be installed in

distribution cabinets and small distribution boxes. It is suitable for branch metering of individual devices, campus dormitories, rental homes, and large public buildings, and can also be used for energy management assessment in enterprises and institutions.

1.2 Function Introduction

Function	Description
Real-time Measurement	Voltage and current measurement
	Active power, reactive power, apparent power measurement, power factor, frequency
Energy Metering	Forward and reverse active energy metering, and combined active energy metering (default combination = forward + reverse)
	Time-of-use (TOU) energy metering, accumulating energy separately by periods: peak, on-peak, flat, off-peak, deep off-peak active energy
	Storage of energy data for the last 12 settlement days
Multi-Rate TOU	Supports up to: 14 annual time zones, 8 daily schedules, 14 daily time periods, 5 tariff rates
Event Recording	Saves the last 10 programming records
	Saves the last 10 time calibration records
LCD Display	6-digit segment LCD display, with two modes: automatic cycling and key-controlled display
	Displays electrical parameters: energy, voltage, current, power, time, date, etc.

	Units use national statutory measurement units, e.g., kW, kWh, V, A
Communication	1 RS485 interface, supporting both DL/T645-2007 and Modbus-RTU protocols. - Modbus protocol allows reading real-time electrical parameters (voltage, current, power, etc.), current and 12 months' settlement active energy and TOU energy. - Supports configuration of the 1st daily schedule in the 1st tariff set, and meter reset function. See corresponding protocol documents for details.
Pulse Output	Active pulse output and second pulse output (multiplexed with active pulse, select-able via software setting; default is active pulse)
Key Programming	Key-controlled page-turning display, key-based parameter configuration (e.g., meter address, baud rate)

Chapter 2 Installation

2.1 Installation prevention, preparation

Please read before starting the installation

This chapter contains important safety precautions that you must follow before installing, servicing, or servicing electrical equipment. Read and follow the following safety precautions carefully.



There is a risk of **electric shock, fire, or explosion**.

Therefore, only qualified personnel are permitted to install this equipment.

Work must only begin after reading and understanding all instructions in this manual. Before installation, inspection, testing, or maintenance, disconnect all power sources. Please wire the device strictly according to the wiring diagram provided in the manual, and carefully verify all connections after completion. Personnel must be aware of potential hazards, wear appropriate personal protective equipment (PPE), and double-check all wiring and installation work for correctness. When installing or removing the meter, confirm that the main power supply, test signal sources, and all related power circuits are completely disconnected.

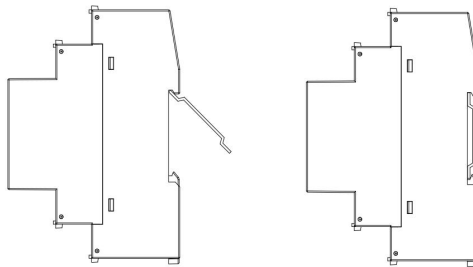
2.2 Installation Information

2.2.1 Installation environment and location

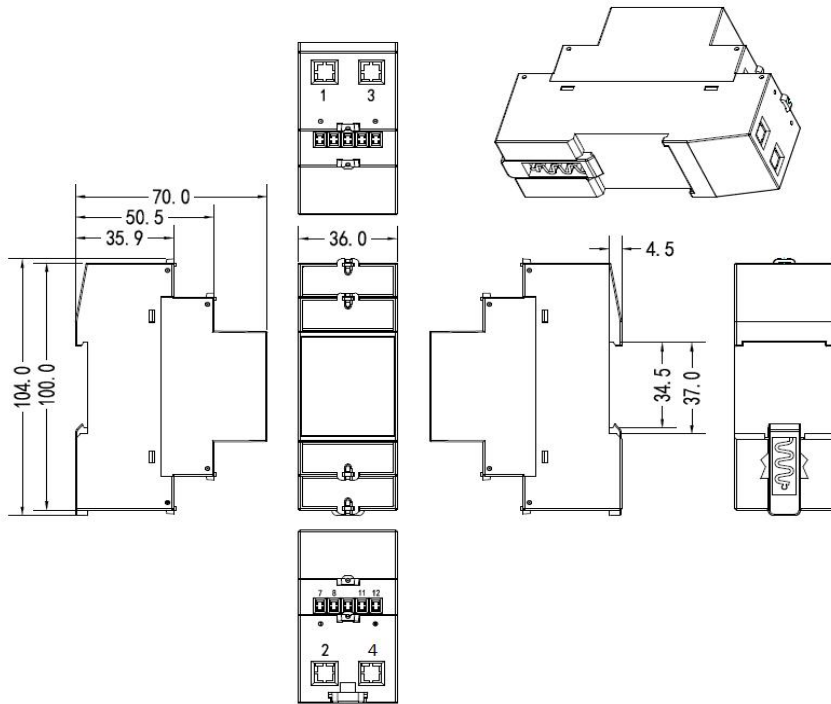
The meter should be installed in dry, clean, away from heat and strong electromagnetic fields. The meter location is usually installed in the switch cabinet, which can protect the device from oil, dirt, dust, corrosive gas or other harmful substances. During installation, please pay attention to the convenience of maintenance. There is enough space to place the relevant lines, terminal blocks, short boards and other necessary equipment.

2.2.2 Installation Method

- (1) The meter uses DIN rail mounting, compatible with the standard DIN35mm rail (unit: mm).
- (2) Confirm that the rail is securely fixed and free of any obstructions above or below that may interfere with installation.
- (3) Snap the meter directly onto the DIN rail.



2.2.3 Installation Dimensions (Unit: mm; Tolerance: ± 0.5)

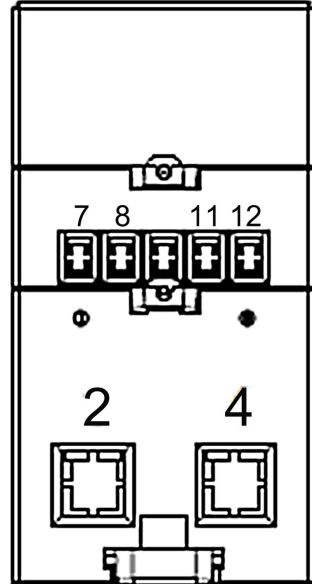
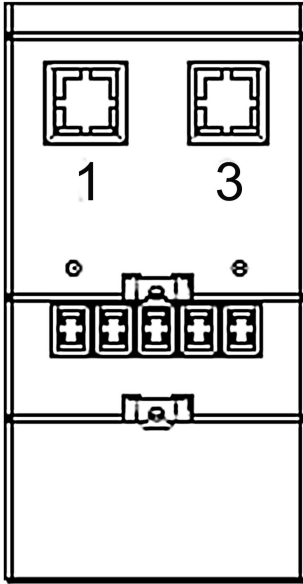


Overall Dimensions: 104 × 36 × 70 mm

Mounting Method: 35 mm standard DIN rail mounting

Weight: Approximately 0.15 kg

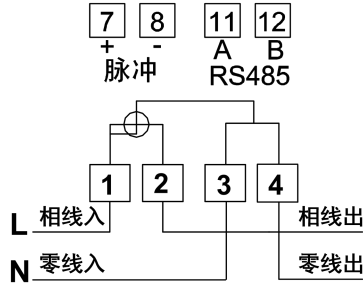
2.3 Terminal Definition



Terminal No.	Definition	Terminal No.	Definition
1	Line In (Phase In)	7	Energy Pulse + / Second Pulse + (Multiplexed)
2	Line Out (Phase Out)	8	Energy Pulse - / Second Pulse - (Multiplexed)
3	Neutral In	11	RS485-A
4	Neutral Out	12	RS485-B

2.4 Wiring Diagrams

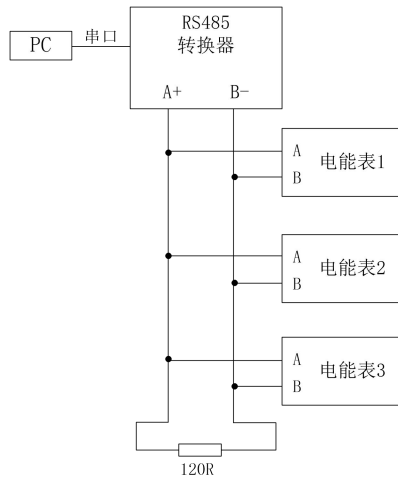
2.4.1 Terminal Wiring Diagram



2.4.2 Communication

The RS-485 communication port is marked with terminals A and B.

RS-485 communication allows up to 32 meters to be connected on a single bus, which connects to the host computer via an RS-485 converter. The communication cable can use standard shielded twisted pair (STP) with a total length not exceeding 1200 meters. The polarity of the RS-485 port on each device must be connected correctly. If the shielded twisted pair is long, it is recommended to connect a 120Ω terminating resistor at the end to improve communication reliability.



Chapter 3 Usage and Operation

3.1 Keypad Definition

The keypad consists of 3 buttons: 、、

: Switch screens upward. In setting mode: Increment the digit by 1.

: Switch screens downward. In setting mode: Move digit position.

: Enter the next-level screen. 设 In setting mode: Confirm modification or confirm the data entry.

3.2 Display Instructions

3.2.1 Data Display Screen Description

Interface switching is performed using the  and  buttons.

No.	Display Interface	Description
0		All Segments On
1		Current Total Active Energy

2		Current On-Peak Active Energy
3		Current Peak Active Energy
4		Current Flat Active Energy
5		Current Off-Peak Active Energy
6		Current Voltage
7		Current Current
8		Current Active Power
9		Current Reactive Power
10		Current Apparent Power
11		Current Power Factor

12			Date
13			Time

Notes:

1. When the  is lit, it indicates that data communication via RS485 is in progress.
2. When one of the tariff symbols , , ,  is lit, it indicates the current active tariff period.

3.2.2 Parameter Setting Screen Instructions

Press and hold the  for 2 seconds to enter the parameter setting screen. Enter the password 3366 and press  again to confirm. Once in the setting interface:

1. You can view communication parameters and their values.
2. If changes are needed, you can modify the parameters directly. After entering the password once in the setting screen, subsequent modifications do not require re-entering the password.

Enter password 3366, press to confirm and enter the settings menu	Return to main menu display

Modbus-RTU Address Setting	Modbus-RTU Address (value display)

	DL/T645-2007 Address (High 4 digits)
	DL/T645-2007 Address (Middle 4 digits)
DL/T645-2007 Address Setting	
	DL/T645-2007 Address (Low 4 digits)

	Set to 19200 Even、19200 Odd or		

	19200 None		
			
	Set to 9600 Even、9600 Odd or 9600 None		
			
	Set to 4800 Even、4800 Odd or 4800 None		
			
	Ste to 2400 Even、2400 Odd or 2400 None		
			
Communication Baud Rate and Parity Settings	Set to 1200 Even、1200 Odd or 1200 None		

	
Voltage Transformer Ratio Setting	PT (Voltage Transformer) ratio setting value
	
Current Transformer Ratio Setting (Reserved)	CT (Current Transformer) ratio setting value (reserved for future use)

Chapter 4 Technical Specifications

4.1 Accuracy

The meter meets the accuracy requirements in the following table:

Current Range	Power Factor	Basic Error
$0.05I_b \leq I < 0.1I_b$	1.0	± 1.0
$0.1I_b \leq I < I_{max}$	1.0	± 1.5
$0.1I_b \leq I < 0.2I_b$	0.5 (inductive)	± 1.0
$0.2I_b \leq I < I_{max}$	0.5 (inductive)	± 1.5

4.2 Specifications

Reference Voltage (U_n)	220V
Reference Current	5(40)A、10(60)A
Pulse Constant	1600imp/kWh、800imp/kWh
Accuracy Class	Class 1

4.3 Operating Range

Parameter	Normal Operating Range	Limit Operating Range
Voltage	$0.9U_n \sim 1.1U_n$	$0.8U_n \sim 1.2U_n$
Frequency	45Hz~60Hz	45Hz~60Hz

4.4 Environmental Conditions

Environmental Conditions

Storage Temperature: -40℃~70℃	Operating Temperature: -20℃~55℃ Limit Temperature: -25℃~60℃
Humidity: 20%RH~75%RH	

4.5 Power Consumption

Circuit	Power Consumption
Voltage Circuit	<1.5W, 6VA
Current Circuit	≤1VA

Note: Exceeding the rated voltage/current range may damage the meter. Long-term operation at full scale may also cause damage to your equipment. Our company is not liable for any accuracy changes caused by operation outside the rated range.

4.6 Communication

DL/T645-2007 Protocol and MODBUS-RTU Communication Protocol	
Communication Port: RS485 2-wire, half-duplex	Baud Rate: 1200bps~19200bps (Default: 2400bps)
Parity: None / Odd / Even (Factory Default: Even, E-8-1)	Communication Address: DL/T645-2007: Defaults to meter serial number (12-digit BCD code) MODBUS-RTU: Default address 01

4.7 Electrical Characteristics

Electrical Characteristics	
Creep	When 115% of the reference

	voltage is applied with no current in the current circuit, the meter shall not output more than one pulse during the specified test period.
Starting	At rated voltage, when the load current rises to 0.004lb, the meter shall output pulses or energy representative signals within the specified time.

4.8 Electromagnetic Compatibility

Electromagnetic Compatibility	
Electrical Fast Transient/Burst Immunity	Standard: GB/T 17626.4; IEC 61000-4-4 Level: IV (2kV for communication ports, 4kV for other ports)
Electrostatic Discharge (ESD) Immunity	Standard: GB/T 17626.2; IEC 61000-4-2 Level: III (6kV contact discharge, 8kV air discharge)
Surge (Lightning) Immunity	Standard: GB/T 17626.5; IEC 61000-4-5 Level: IV (4kV for power circuits, 1kV for signal circuits)
Radiated Radio-Frequency Electromagnetic Field Immunity	Standard: GB/T 17626.6; IEC 61000-4-6 Level: III (10V/m)

Chapter 5 Maintenance and Troubleshooting

5.1 Troubleshooting

Symptom	Possible Cause	Recommended Solution
No display after power-on	Power not supplied to the device	Check that the correct operating voltage is applied to the device.
Measurement data is inaccurate or shows 0 after applying signal	Incorrect voltage measurement	Verify that the voltage signal is within the device's measurement range.
	Incorrect current measurement	Verify that the current signal is within the device's measurement range.
	Incorrect power measurement	Verify that the signal is within the device's measurement range.
Host computer cannot communicate with the device	Incorrect communication parameters	- Check that the communication address is correct. - Check that the baud rate is correct. - Check that the parity setting is correct.
	Communication link affected	- Check for duplicate device addresses on the same bus. - Check if the communication cable is

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		disconnected.
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Note: If you encounter problems that cannot be resolved, please contact our after-sales service department promptly.

Chapter 6 Quality Assurance

6.1 Quality Assurance

All new meters sold to users have a warranty period of 24 months. We provide free quality assurance for failures caused by design, materials, and process defects. If the product is confirmed to meet the above warranty conditions, YADA is responsible for free repair.

6.2 Warranty Limitations

The following issues are not covered by the free warranty:

Damage caused by improper installation, use, or storage.

Abnormal operating and application conditions beyond the product specifications.

Meters repaired by unauthorized agencies or personnel.

Meters beyond the free warranty period.

Note: The images above are for reference only. The actual product shall prevail



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