

# DEM SERIES DIN-RAIL ENERGY METER

DIN-RAIL ENERGY METER



## Introduction

DEM series design for DIN-Rail mounting, suit for residential energy metering and smart energy project. DEM series has Modbus-RTU and pulse output communication allows seamless integration with data acquisition systems.

Various sub-models available, optional prepaid (IC card), wireless data transmit (4G/5G, Rolar etc.), expansion modules are available in built-in and external versions. Combines high performance smart energy meter, ease of integration to provide a cost-effective power and energy metering solution. Featuring a LCD display designed to simplify setup and local reading of meter data.

## Main Features

- 35mm DIN-rail installation.
- High precision measurement.
- Large LCD screen with backlight.
- RS485 port built-in with Modbus-RTU.
- 80A current direct input, 0.04A start current.
- Built-in energy pulse output and alarm output.
- Compatible with both 50Hz and 60Hz systems.
- IEC 62053-21 1.0 Class / IEC 62053-22 0.5 class.
- Optional multiple tariffs and prepaid billing functions.
- 10-400VAC direct voltage input, optional VTs connect.
- Tamper-proof design approved for revenue applications.
- Optional multiple types CTs input: 5A/1A, 333mV, 100mA.
- Universal series power supply (85-265VAC/DC), 20-60VDC optional.

## Measurement Function

Model	DEM-2M1D	DEM-3M1C	DEM-4M1D	DEM-4M3C	DEM-7M3D
<b>Parameters</b>					
Basic parameters <sup>(1)</sup>	●	●	●	●	●
4-quadrant energy	●	●	●	●	●
Max demands	-	-	○	○	○
Multi-tariffs	-	-	○	○	○
RTC	-	-	○	○	○
<b>Others</b>					
RS485 modbus	●	●	●	●	●
Pulse port	1600imp/kwh	1600imp/kwh	1600imp/kwh	1600imp/kwh	1600imp/kwh
Digital output	-	-	-	○	●
Prepaid functions	-	-	○	-	○
Remote control	-	-	○	-	○
Wireless function	-	-	○	-	○

● With this function ○ Optional function - Without this function

(1) Basic parameters: Voltage, Current, Frequency, Total power factor, Active power, Reactive power.

## Ordering Information



Num.	Code	Description
1	2M	2 Modules width Din-rail
	3M	3 Modules width Din-rail
	4M	4 Modules width Din-rail
	7M	7 Modules width Din-rail
2	1	Single-phase
	3	Three-phases
3	D	Direct access
	C	Use external CT

## Technical Characteristics

Model	DEM-2M1D	DEM-3M1C	DEM-4M1D	DEM-4M3C	DEM-7M3D
<b>Basic parameter</b>					
Wiring method	Single-phase,1P2W			Three-phases,3P4W	
Power supply	Self-powered	85-265 VAC/DC	Self-powered	85-265 VAC/DC	Self-powered
Display capacity	9,999,999 KWh	9,999,999 MWh	99,999,999 KWh	99,999,999 MWh	99,999,999 KWh
Voltage rating	230V	100V, 230V	230V	100V, 230V	100V, 220V, 380V
Current	0.04-10(80)A	5A or.../1A CTs	0.04-10(80)A	5A or.../1A CTs	0.04-10(80)A
<b>Measurement accuracy</b>					
Current	0.5%	0.2%	0.5%	0.2%	0.5%
Voltage	0.5%	0.2%	0.5%	0.2%	0.5%
Active energy	Class 1	Class 0.5	Class 1	Class 0.5	Class 1
Reactive energy	Class 2	Class 1	Class 2	Class 1	Class 2
<b>Others</b>					
Module number	2	3	4	4	7
Weight	130g	170g	230g	250g	310g
Temperature	-25°C to 55°C				
IP protection	IP40 front panel and IP20 casing				

# DEM-NX MODULAR MULTI-FUNCTION DIN-RAIL ENERGY METER

■ DIN-RAIL ENERGY METER



## ■ Introduction

DEM-NX modular multifunction energy meter is Blue Jay new generation din-rail energy meter. This flexible modular design product can expand max 64 channels metering point, plus 16 points I/O port for on-site control.

Optional 100mA or 333mV CT connect, provide max 0.5 class metering accuracy. RS485 interface or Ethernet interface or extra IoT module valid for different project.

## ■ Main Features

- 1.6 inch dot matrix LCD screen.
- Optional IoT expand module.
- Precision metering & sub-billing.
- Optional ethernet expand module.
- RS-485 modbus/RTU communications.
- Core unit provide 15W (12Vdc) drive capacity.
- Universal series power supply (85-265VAC/DC).
- Class 0.2/0.5 basic parameter and class 1 for active energy.
- Flexible combination of up to 40\*3P3P/3P4W or 120\*1P2W branch circuit metering.

## ■ Application

- SCADA. EMS. DCS integrators.
- Medium and low pressure systems.
- All power parameter measurement.
- Energy measurement and electrical fire monitor and control.
- Transformers, capacitors and electric motors distributed detection.

## ■ Ordering Information

Model	Description	Specification
DEM-NC	Core unit	85-265Vac/dc, 2* RS485 12V (15W) load capacity
DEM-N32	Three phases metering unit	12Vdc AUX, 1* RS485 2 Channels three phase
DEM-N16	Single phase metering unit	12Vdc AUX, 1* RS485 6 Channels single phase
DEM-NWL	LoRa communication module	12Vdc AUX, 1* RS485 LoRa 2.4G
DEM-NW4G	4G communication module	12Vdc AUX, 1* RS485 4G telecom signal, LTE

## Technical Characteristics

Current measurement (TRMS)	
Rating of CT secondary	100mA, 50mA, 2.5mA
Measurement range	0 ... 11 KA
Input consumption	<0.1 VA
Accuracy	0.5% (IEC61557-12)
Impedance	<10 MΩ
Overload capacity	1.2 times of rating, continuous 10 times of rating, 10s
Voltage measurement (TRMS)	
Measurement range	18 ... 300 VAC
PT secondary	100VAC / 400VAC
Input consumption	<0.1 VA
Accuracy	0.5% (IEC61557-12)
Impedance	>1 MΩ
Overload capacity	1.2 times of rating, continuous 2 times of rating, 1s
Frequency measurement	
Measurement range	45 ... 65 Hz
Accuracy	±0.02 Hz
Energy accuracy	
Active energy	Class 1.0 (IEC 62053-22)
Reactive energy	Class 2.0 (IEC 62053-23)
Power supply (DEM-NC)	
Rating	DC/AC 85~265 ± 10 %
Frequency	50 / 60 Hz
Consumption	< 10 VA
Power supply (Expand unit)	
Rated	12 VDC
Consumption	<0.9W
Communication	
Link method	RS485 (2/3 wires half duplex)
Protocol	Modbus RTU
MODBUS speed	4800/9600 bauds
Safty	
Isolation withstand voltage	AC 1KV/1min