# DEM SERIES DIN-RAIL ENERGY METER

## Introduction

The DEM series is a high-performance DIN-rail energy meter designed for residential energy monitoring and smart energy projects. Equipped with Modbus-RTU and pulse output communication, the series also supports advanced wireless connectivity, including WiFi, 4G, LoRa, and IoT protocols, enabling seamless integration with modern data acquisition and energy management systems.

A wide range of sub-models and expansion modules offers flexible configuration options. Combining precision metering with ease of integration, the DEM series delivers a cost-effective, reliable solution for power and energy measurement. The intuitive LCD interface provides clear local readings and simplifies installation and setup.

## Main Features

- Wide-range power supply: 85–265VAC/DC;
- Compact 35mm DIN-rail mounting for seamless integration;
- High-precision measurement with 0.5s sampling rate;
- Large backlit LCD for clear, intuitive display;
- RS485 communication supporting Modbus-RTU protocol;
- Advanced wireless connectivity: optional WiFi, 4G, LoRa, IoT...;
- Direct current input up to 80A, starting from 0.04A;
- Built-in energy pulse output and configurable alarm output;
- Compatible with both 50Hz and 60Hz electrical systems;
- Direct voltage input 10–400VAC, optional connection via voltage transformers;
- Tamper-proof design certified for revenue-grade applications;

## Measurement Function

| Model | DEM-2M1D | DEM-3M1C | DEM-4M1D | DEM-7M3D | DEM-4MC | DEM-6MC |
|---|---|---|---|---|---|---|
| **Parameters** | | | | | | |
| Basic para. (1) | ● | ● | ● | ● | ● | ● |
| 4-quad. energy | ● | ● | ● | ● | ● | ● |
| Built-in CT(80A) | ● | - | ● | ● | - | - |
| External CT(5A) | - | ● | - | - | ● | ● |
| Harmonic distortion | - | - | - | ○ | ● | ● |
| Individual harmonic | - | - | - | 2-31st | 2-31st | 2-63rd |
| Time of use (TOU) | - | - | ○ | ○ | ○ | ○ |
| Max demands | - | - | ○ | ○ | ○ | ○ |
| SOE record | - | - | - | ○ | - | ○ |
| Curr./volt unbalance | - | - | - | ○ | ○ | ○ |
| Curr./volt deviation | - | - | - | ○ | ○ | ○ |
| **I/O module** | | | | | | |
| DI/DO | - | - | - | ○ | ○ | ● |
| PO (Pulse output) | ● | ● | ● | ● | ● | ● |
| **Communication** | | | | | | |
| RS485 modbus | ● | ● | ● | ● | ● | ● |
| Remote control | - | - | ○ | ○ | ○ | ○ |
| Wireless function (WiFi, 4G, LoRa, IoT...) | - | - | ○ | ○ | ○ | ● |

●With this function ○Optional function -Without this function

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

## Ordering Information

DEM- [1][2][3]

- [1] Access method
- [2] Phase number
- [3] Module number

| Num. | Code | Description |
|---|---|---|
| [1] | 2M | 2 Modules width Din-rail |
| | 3M | 3 Modules width Din-rail |
| | 4M | 4 Modules width Din-rail |
| | 6M | 6 Modules width Din-rail |
| | 7M | 7 Modules width Din-rail |
| [2] | Blank | Both Single-phase and Three-phases |
| | 1 | Single-phase |
| | 3 | Three-phases |
| [3] | D | Direct access |
| | C | Use external CT |

## Technical Characteristics

| Model | DEM-2M1D | DEM-3M1C | DEM-4M1D | DEM-7M3D | DEM-4MC | DEM-6MC |
|---|---|---|---|---|---|---|
| **Basic parameter** | | | | | | |
| Wiring method | Single-phase,1P2W | | | 1P2W，Three-phases,3P3W/ 3P4W | | |
| Power supply | Self-powered | 85-265 VAC/DC | Self-powered | Self-powered | 85-265VAC/DC | |
| Display capacity | 9,999,999 KWh | 9,999,999 MWh | 99,999,999 KWh | 99,999,999 KWh | 99,999,999 MWh | |
| Voltage rating | 18...250 VAC (L-N) | | | | | |
| Current | 0.04-10(80)A | 5A or.../1A CTs | 0.04-10(80)A | 0.04-10(80)A | 5A or.../1A CTs | |
| **Elctrical power measurement (IEC 61557-12)** | | | | | | |
| Current, voltage | 0.5s% | 0.5s% | 0.5s% | 0.5s% | 0.2% | |
| Power | 0.5% | 0.5% | Active: class 1.0<br>Reactive: class 2.0 | 0.5% | 0.5% | 0.2% |
| **Energy accuracy (IEC 62053-22/ 23)** | | | | | | |
| Active energy | Class 1.0 | Class 0.5s | Class 1.0 | | Class 0.5 | Class 0.5s |
| Reactive energy | Class 2.0 | Class 1.0 | Class 2.0 | | Class 1.0 | Class 1.0 |
| **Others** | | | | | | |
| Module width | 2 | 3 | 4 | 7 | 4 | 6 |
| Weight | 130g | 170g | 230g | 310g | 250g | 300g |
| Temperature | -25°C to 55°C | | | | | |
| IP protection | IP40 front panel and IP20 casing | | | | | |
| Dielectric strength | 2 kV at 50Hz for 1 min | | | | | |