# THREE-PHASE DIN RAIL MULTIFUNCTION ENERGY METER

**CED-4C**

## Product Overview

The CED-4C three-phase DIN rail multifunction energy meter is available in two versions: the CED-4CFAA (CT-Connected Type) and the CED-4CFBA (Direct Connection Type). Both versions accurately measure and display a comprehensive range of electrical parameters in single-phase 2-wire, three-phase 3-wire, and three-phase 4-wire systems, including voltage (V), current (A), active and reactive power (kW, kvar), frequency (Hz), active energy (kWh), reactive energy (kvarh), forward energy, reverse energy, total harmonic distortion, and more. Designed for real-time monitoring of electrical parameters, these meters offer multifunction capability, versatility, high stability, and long service life.

The CED-4CFAA (CT-Connected Type) accepts current and voltage inputs via external instrument transformers, making it suitable for both high- and low-voltage systems, with support for currents up to 9999 A and voltages up to 500 kV. Its RS485 communication interface supports data transmission intervals as short as 100 milliseconds.

## Features

- Compact design with a small footprint
- CED-4CFAA (CT-Connected Type): current input via direct connection to the CT secondary
- CED-4CFBA (Direct Connection Type): rated current up to 100 A
- Bidirectional metering; accurate measurement of forward and reverse energy
- Multifunction measurement with configurable cyclic display
- 2 pulse output terminals; configurable pulse constant, pulse width, and output unit
- Front-panel controls for easy configuration, with password protection for added security
- RS485 communication interface (supporting Modbus RTU protocol); baud rate up to 38,400 bps for remote monitoring and data transmission
- White backlit LCD display for easy reading
- DIN rail mounting for easy installation
- Compliant with CE, RoHS, and FCC standards

## Technical Specifications

| | CED-4CFAA | CED-4CFBA |
|---|---|---|
| Nominal Voltage (Un) | 3 × 230 / 400 VAC | 3 × 230 / 400 VAC |
| Operating Voltage | 80% ~ 120% of Un | 80% ~ 120% of Un |
| Auxiliary Power Supply | 85 - 275 VAC（AUX） | Self-powered from measured voltage |
| Insulation Withstand Voltage | 4 kV / 1 min | 4 kV / 1 min |
| Impulse Withstand Voltage | 6 kV, 1.2/50 μs | 6 kV, 1.2/50 μs |
| Operating Current Range | 0.4% Ib to Imax | 0.04 ~ 100 A |
| Operating Frequency Range | 50 or 60 Hz | 50 or 60 Hz |
| Power Consumption | ≤ 2 W, ≤ 10 VA | ≤ 2 W, ≤ 10 VA |
| Pulse Output Indicator | LED | LED |
| Meter Constant | 3200 imp/kWh | 400 imp/kWh |
| Display | 8-digit LCD multifunction display for electrical parameters | 8-digit LCD multifunction display for electrical parameters |
| Maximum Display Value | 9999999.9（kWh & kvarh） | 9999999.9（kWh & kvarh） |

## Accuracy

| | CED-4CFAA | CED-4CFBA |
|---|---|---|
| Voltage & Current | ± 0.5% | ± 0.5% |
| Frequency (Hz) | ± 0.2% | ± 0.2% |
| Power Factor (PF) | ± 1% | ± 1% |
| Active Power (kW) & Apparent Power (kVA) | ± 1% | ± 1% |
| Reactive Power (kvar) | ± 1% | ± 1% |
| Reactive Energy (kvarh) | Class 2 | Class 2 |
| Active Energy (kWh) | Class 1 | Class 1 |

## Performance Specifications

| | |
|---|---|
| Operating Humidity | ≤ 90% |
| Operating Temperature | -25°C ~ +55°C |
| Storage Temperature | -40°C ~ +70°C |
| Reference Operating Temperature | 23°C（± 2°C） |
| Standard | IEC 62053-21 |
| Accuracy Class | Class 1 |
| Overvoltage Category | CAT III 600V |
| Ingress Protection Rating | IP51 (Indoor Use) |

## Communication

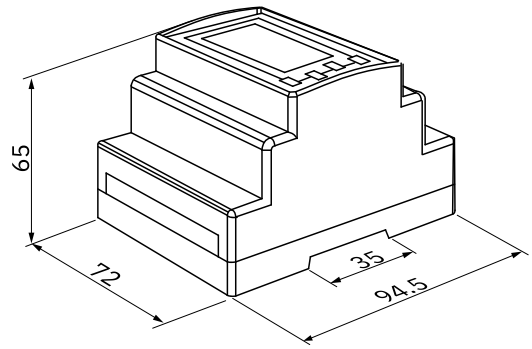
| | |
|---|---|
| Communication Interface | RS485 (half-duplex) |
| Communication Protocol | Modbus RTU |
| Baud Rate (bps) | 2400 / 4800 / 9600 (default) / 19200 / 38400 |
| Address Range | 1-247 |
| Maximum Number of Connected Units | 64 pcs |
| Transmission Distance | 1000 m |
| Parity Check | EVEN / ODD / NONE (default) |
| Data Bits | 8 |
| Stop Bits | 1 |

## Installation & Related Information

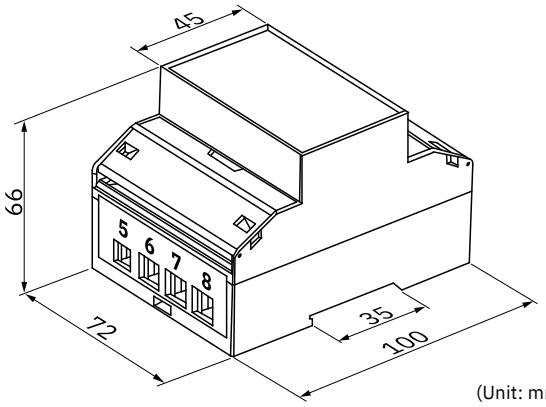
| | CED-4CFAA | CED-4CFBA |
|---|---|---|
| Mounting Method | DIN rail mounting (35 mm) | DIN rail mounting (35 mm) |
| Dimensions (mm) | 94.5 × 72 × 65 ( L × W × H ) | 100 × 72 × 66 ( L × W × H ) |
| Ingress Protection Rating | IP51 (Indoor Use) | IP51 (Indoor Use) |
| Weight (g) | 330 | 400 |

## Outline Dimensions

CED-4CFAA

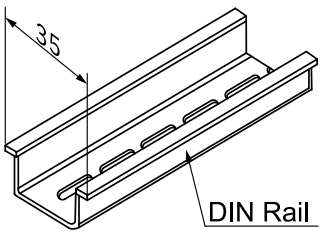


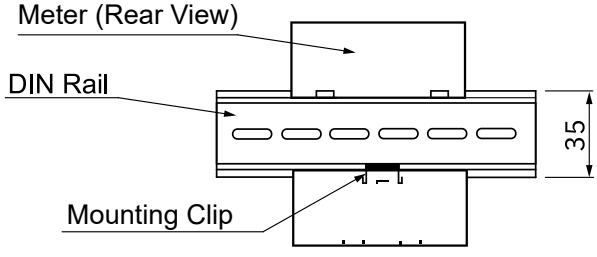

CED-4CFBA




(Unit: mm)

## DIN Rail Dimensions



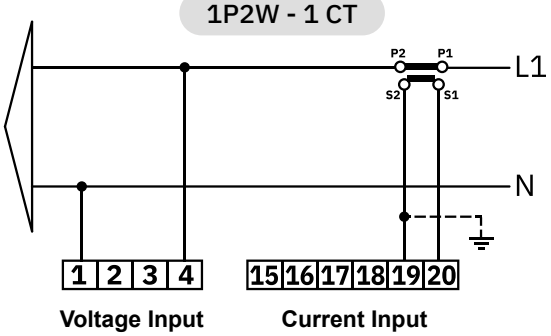




(Unit: mm)

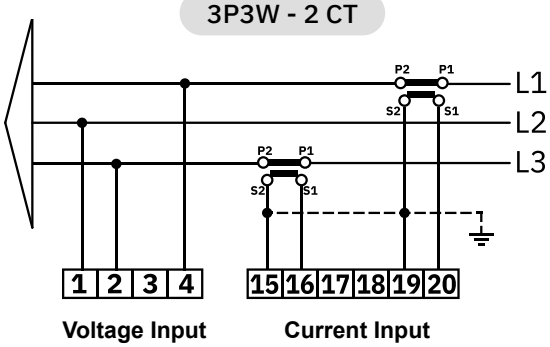
## Typical Wiring Configurations

### CED-4CFAA

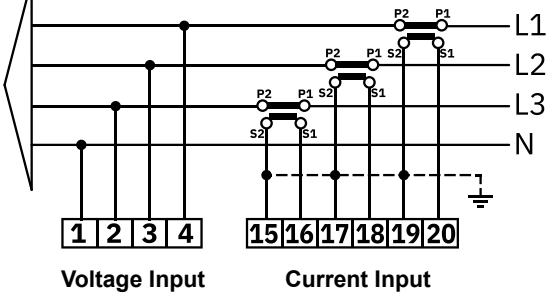
1P2W - 1 CT



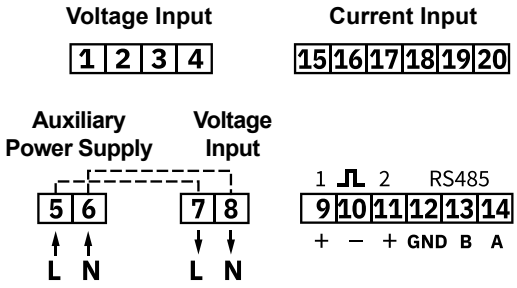

3P3W - 2 CT



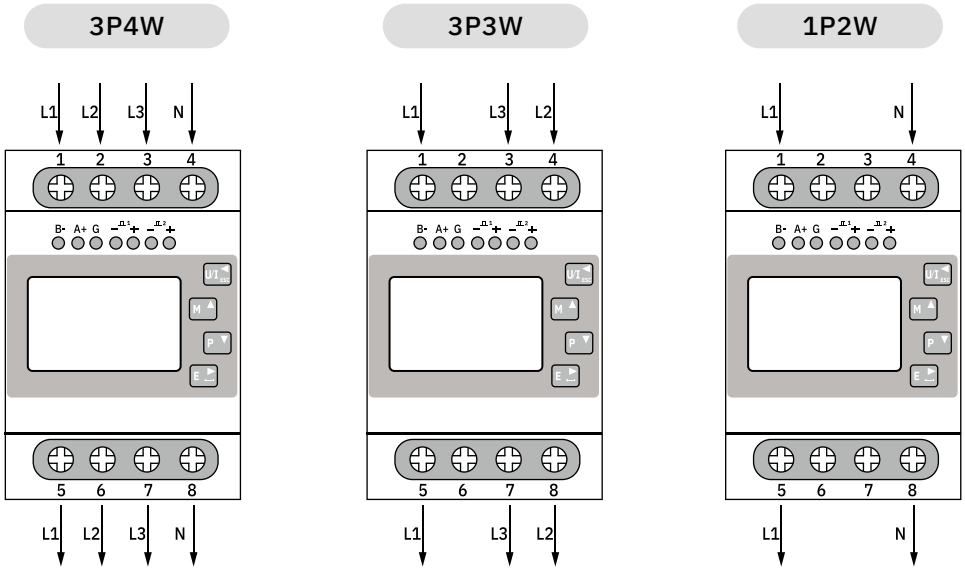

3P4W - 3 CT




Terminal Function Diagram




### CED-4CFBA

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