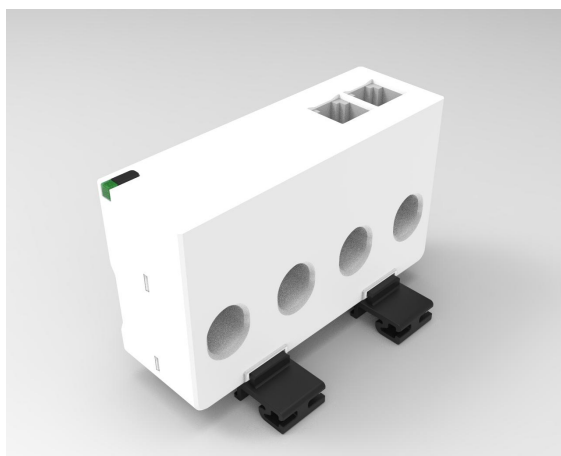
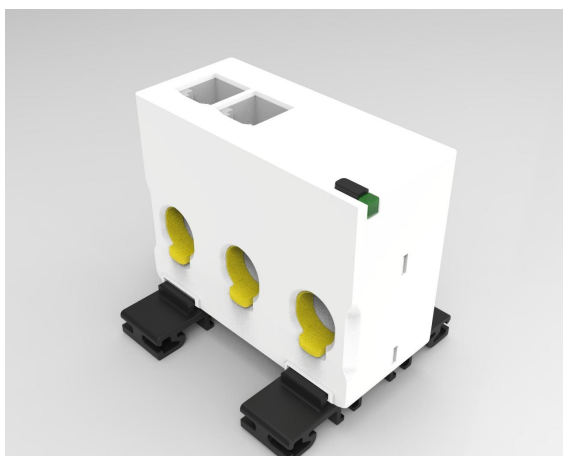
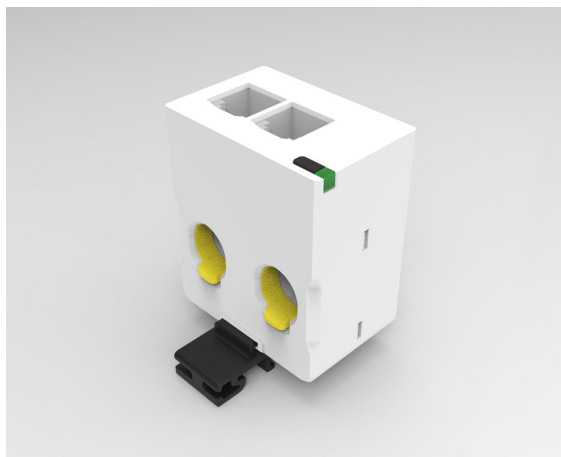
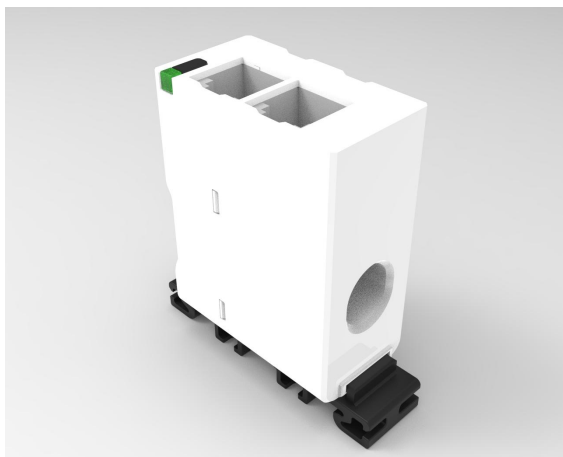


Energy Metering Module

Enertrek_M10\M20\M30\M40

User Manual

08/2025



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1 Overview

1.1 Function Overview

The current acquisition and measurement module features an integrated current transformer capable of measuring currents up to 63A. It supports single-phase (1P/2P) and three-phase (3P/4P) installations, and can be installed directly above or below the protective device. When used in conjunction with the voltage module, it enables comprehensive monitoring of electrical energy measurement and the operating status and power quality of electrical devices.

Models:

- Enertrek-M10
- Enertrek-M20
- Enertrek-M30
- Enertrek-M40

Main functions:

- Parameter measurement, U_{ab} , U_{bc} , U_{ca} , V_a , V_b , V_c , f
- ModBUS communication;
- Enertrek BUS (RJ12) communication and power supply;

1.2 Main Features

Application		M-10	M-20	M-30	M-40
Basic Parameters	Number of current inputs	1	1	3	3
	Basic current (Ib)	10A	10A	10A	10A
	Maximum current (Imax)	63A	63A	63A	63A
	Available load types	1P 1P+N	1P+N 2P/2P+N	3P 3P+N	3P+N
Metering	±kWh, ±kvarh, kVAh	•	•	•	•
Multi-parameter Measurement	I1, I2, I3, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•
	P, Q, S, PF per phase	•	•	•	•
Specifications	Width	18mm	36mm	54mm	72mm

2 Product Advantages

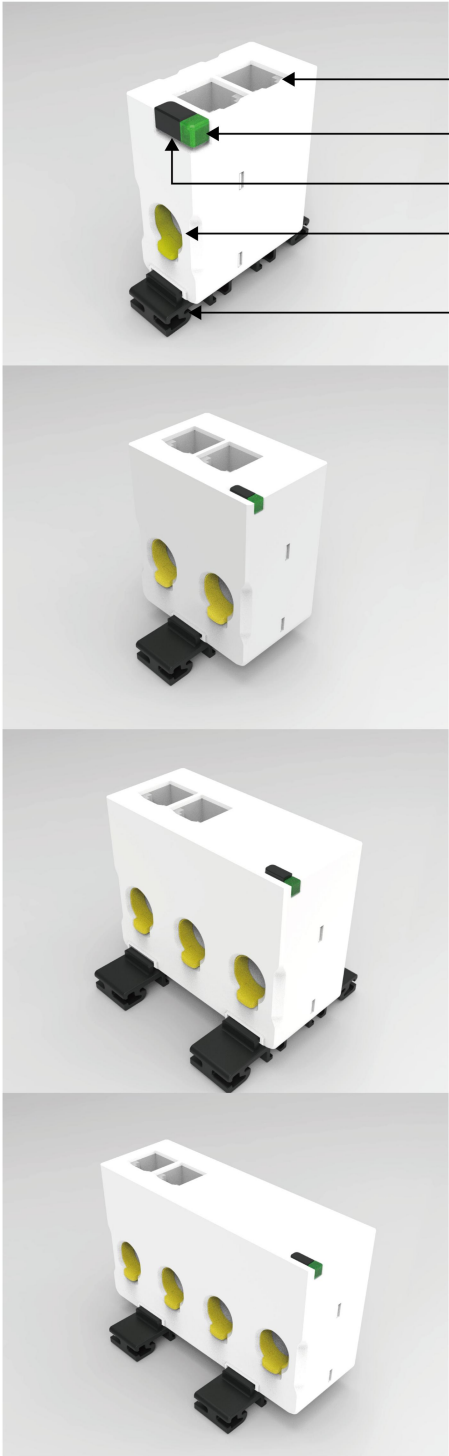
2.1 Functions and Advantages

Functions	Advantages
Plug and play design	• Save wiring time: the current transformer is integrated into the module. • Quick connection: Modules can be quickly connected via the Enertrek BUS (RJ12) interface. • Flexible installation: Can be installed above or below the protection device.
Compact design	• 1:1 modular design, more suitable for circuit breaker use. • Supports full-specification module options such as 1P, 1P+N, 3P, 3P+N, etc.
Multi-circuit monitoring	• Multiple M modules can be used in a measurement system to monitor more than 20 circuits under one V module, meeting the monitoring needs of a large number of loads.
Accurate measurement	• Meet the metering standards, active energy accuracy: class 0.5. • Provide high-precision current and energy metering over the full current range.

Compact and easy to install	• The metering module supports DIN-rail installation or can be directly fixed to the upper and lower ports of the circuit breaker, suitable for space-constrained environments, with flexible and convenient installation.
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3 Description

3.1 Energy Metering Module

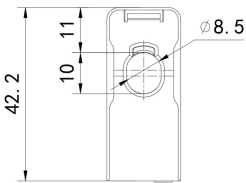
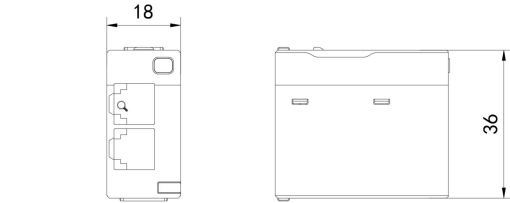


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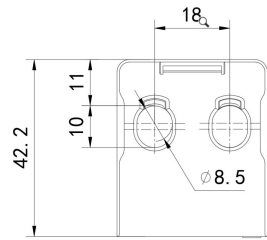
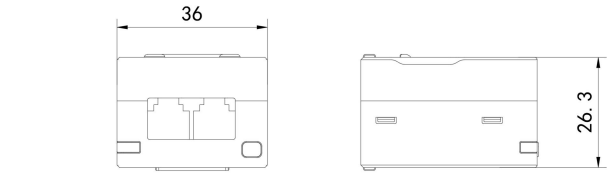
- 1. Configuration button
- 2. Device status LED
- 3. Temperature acquisition
- 4. RJ12 cascade interface
- 5. Installation buckle

4 Hardware

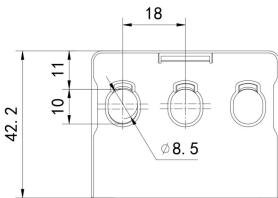
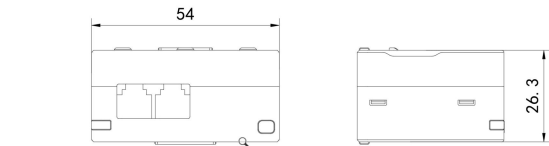
4.1 Dimensions (mm)



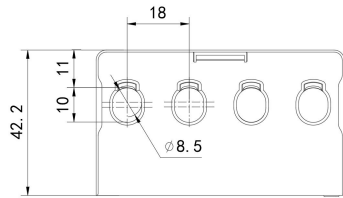
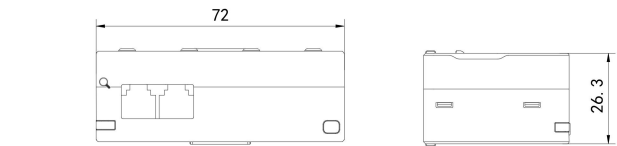
Enertrek_M10



Enertrek_M20



Enertrek_M30



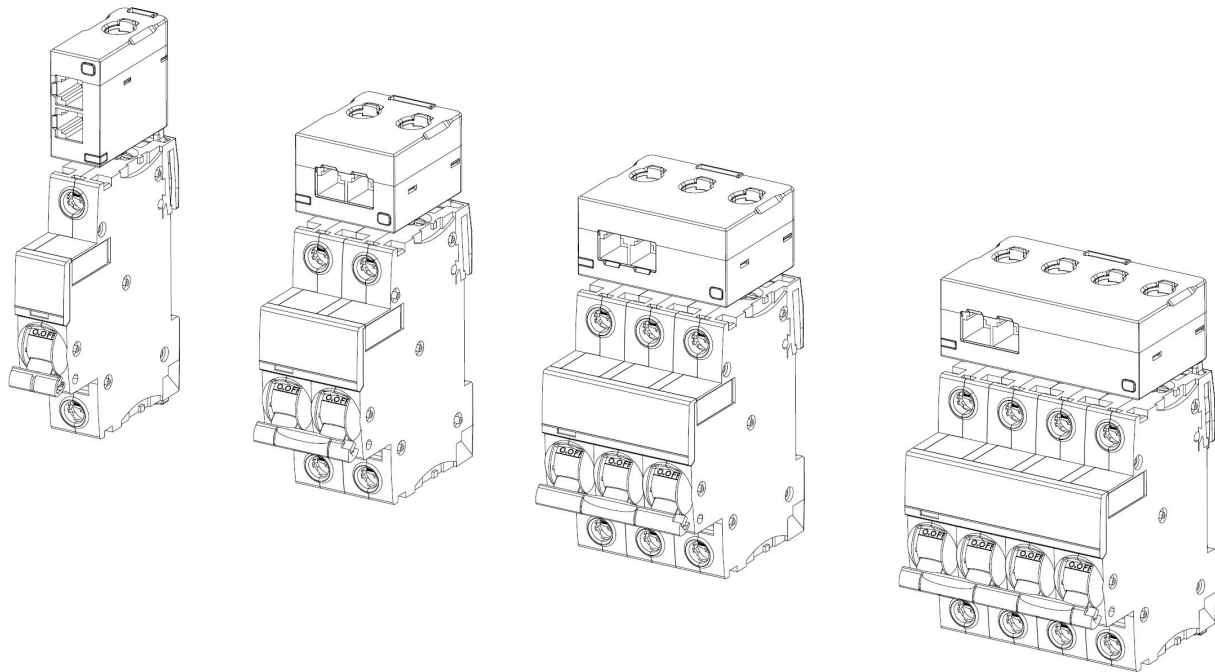
Enertrek_M40

5 Installation and Wiring

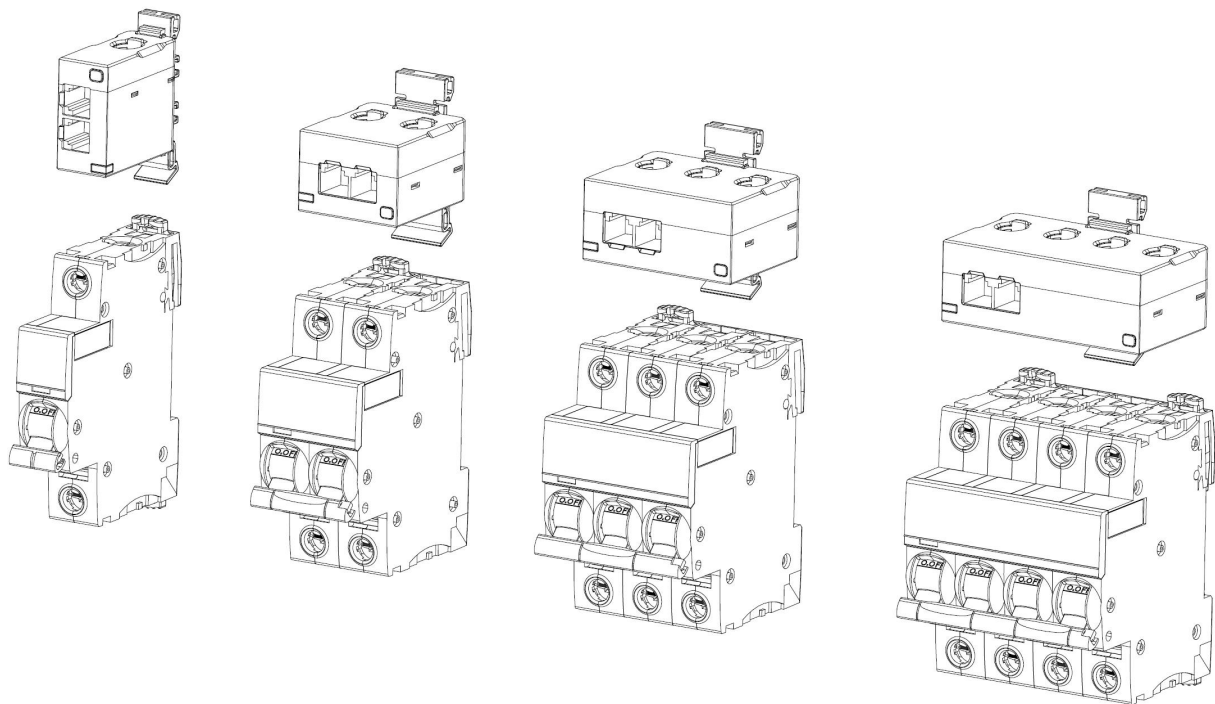
5.1 Installation Diagram

1.Enertrek M can securely mount the cable on the device through the buckle inside the

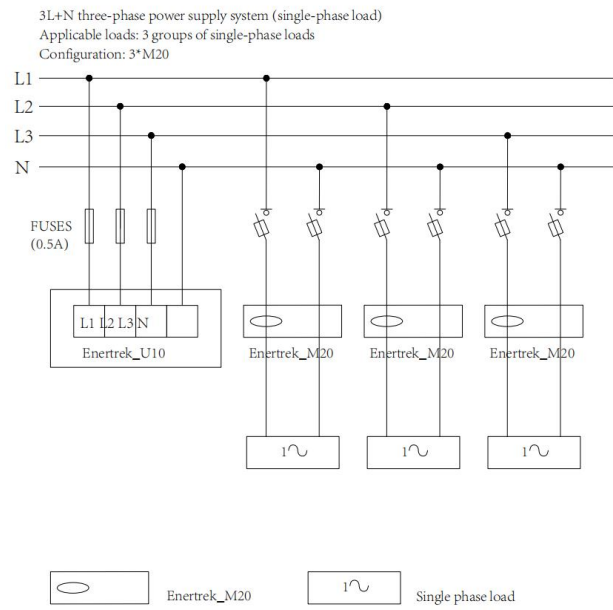
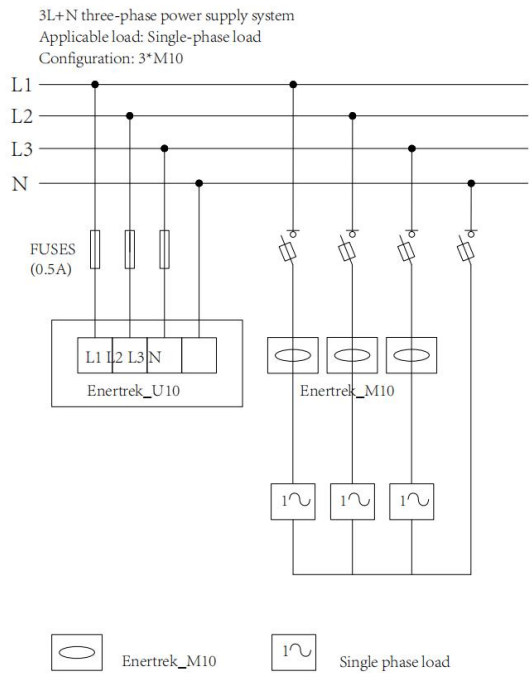
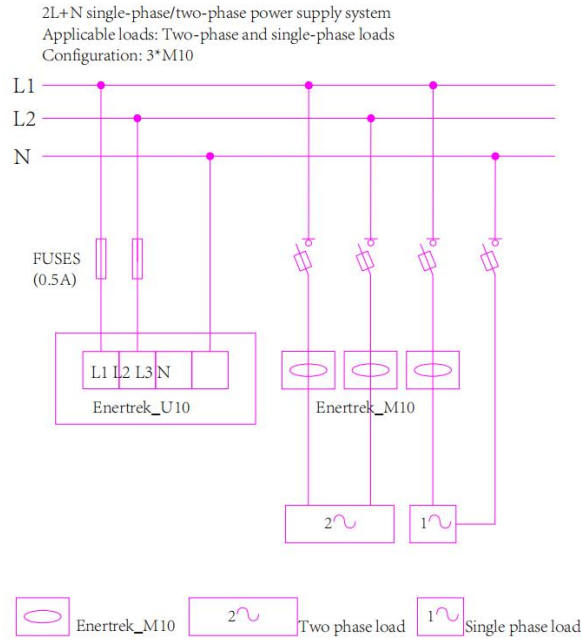
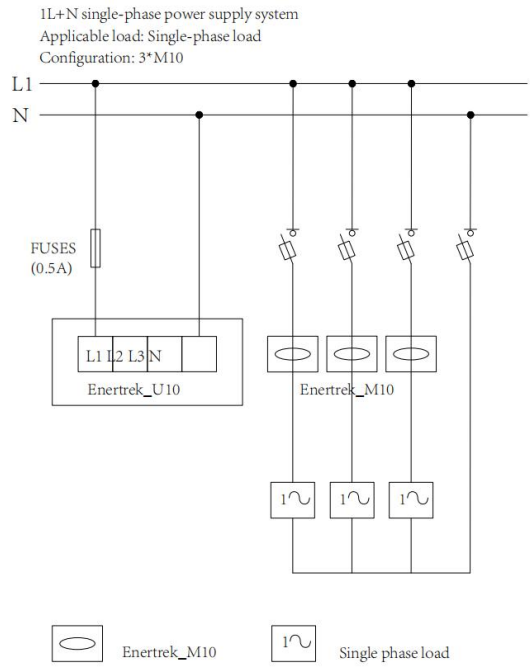
module, simplifying the installation process.

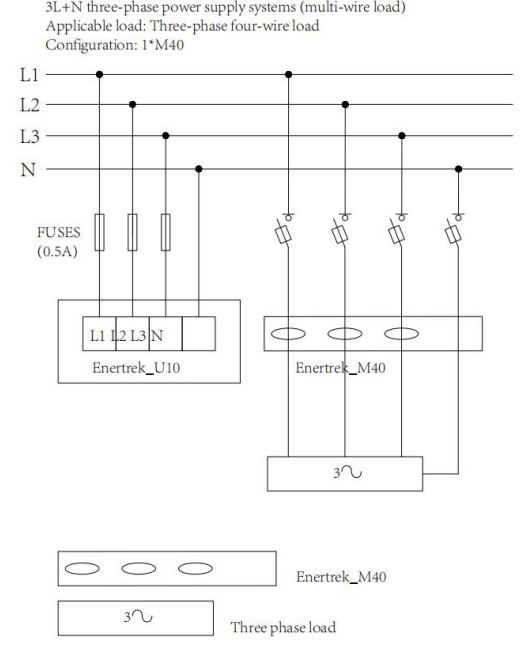
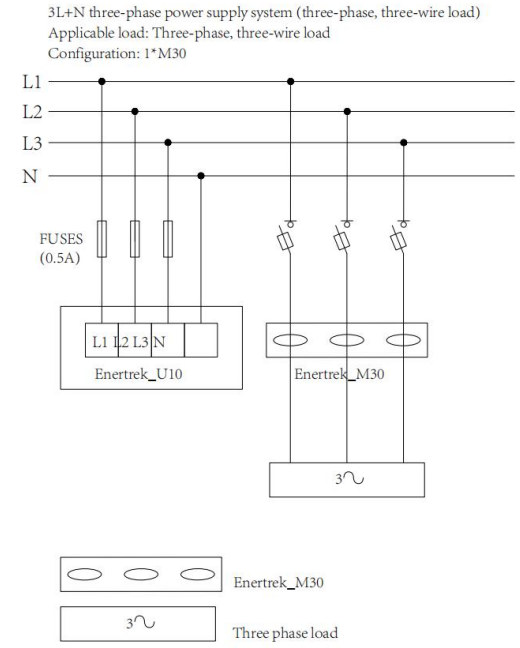
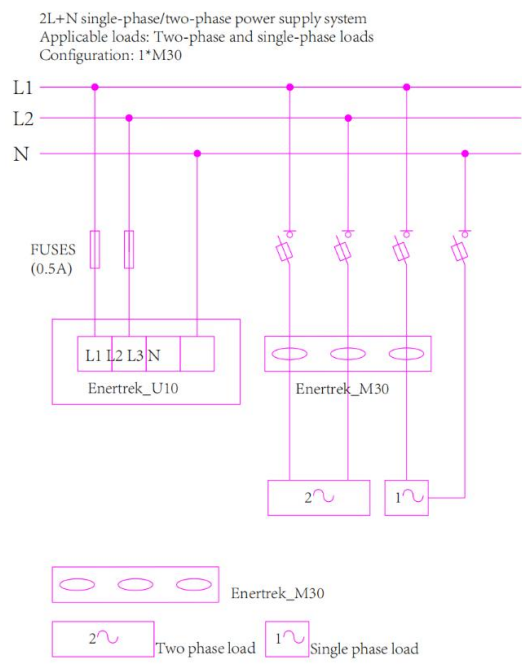
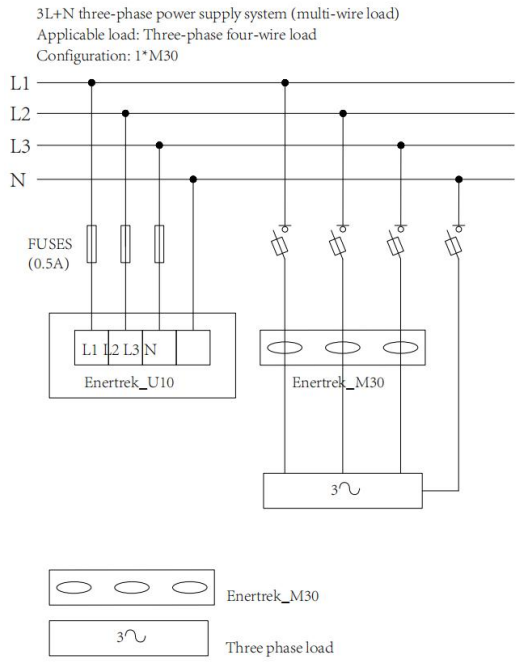


2.Enertrek_M can be easily installed on DIN rails through special buckles, or fixed with screws, making installation more convenient and flexible.



5.2 Wiring





6 LED Indicator

Running LED indicator:

Name	LED indication	Status
Running indicator (green, red)	Green light flashes (1 flash/second)	The device is running normally
	Red light flashes	Serial data transmission or reception

7 Electrical Characteristics

7.1 Measurement Characteristics

Characteristics	Value
Measure current	
Current transformer	Built-in integrated current transformer
Basic current Ib	10A
Maximum current Imax	63A
Current measurement accuracy	Class 0.2
Measure energy	
Active energy accuracy	Class 0.5
Reactive energy accuracy	Class 1

7.2 Mechanical Characteristics

Characteristics	Value
Shell type	DIN rail or backplane mounting
Protection grade	IP20
Weight	g
Power consumption	0.35 VA

7.3 Environmental Characteristics

Characteristics	Value
Operating temperature	-1 ~ 55 °C

Storage temperature	-25 ~ 70 °C
Relative humidity	5% ~ 95% non-condensing
Altitude	Below 2000 meters above sea level

7.4 Communication Specifications

Characteristics	Value
Enertrek BUS(RJ12)	
Function	Connection between U, M modules and system interface
Cable type	Cable with RJ12 connector
Protocol	Enertrek internal communication protocol based on DC-PLC