



Datasheet

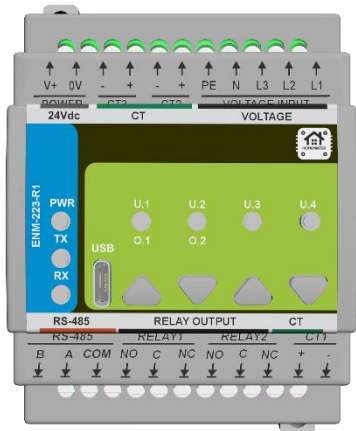
ENM-223-R1 Module

Part No. 0000006

About the product

The ENM-223-R1 is a high-precision, compact metering module designed for seamless integration with HomeMaster MicroPLC and MiniPLC systems. It provides real-time monitoring of 3-phase electrical parameters, supports load control, and is ideal for energy management, automation, and smart building applications.

With ESPHome support, the module is fully compatible with Home Assistant, enabling advanced lighting scenes, automation, and responsive control.



Electrical Data

Power supply	24VDC, USB-C female (5V DC via USB-C) for programming
Power consumption	typ. 1.85W, max. 3W
Raspberry PI	RP2350A
Outputs	2 digital output (relay with optocoupler and varistor surge protection), dry contact 250VAC 16A at $\cos\varphi = 1$, 250VAC 9A at $\cos\varphi = 0.4$ 30VDC 10A
Monitoring	3-Phase Energy Monitoring using the ATM90E32AS metering IC <ul style="list-style-type: none">Measures:<ul style="list-style-type: none">RMS & peak voltages and currentsActive, reactive, and apparent powerPower factor, phase angles, and frequency
RS485	Half-duplex, data rate 115,2 kbps, short-circuit current limited and protected against excessive power dissipation,

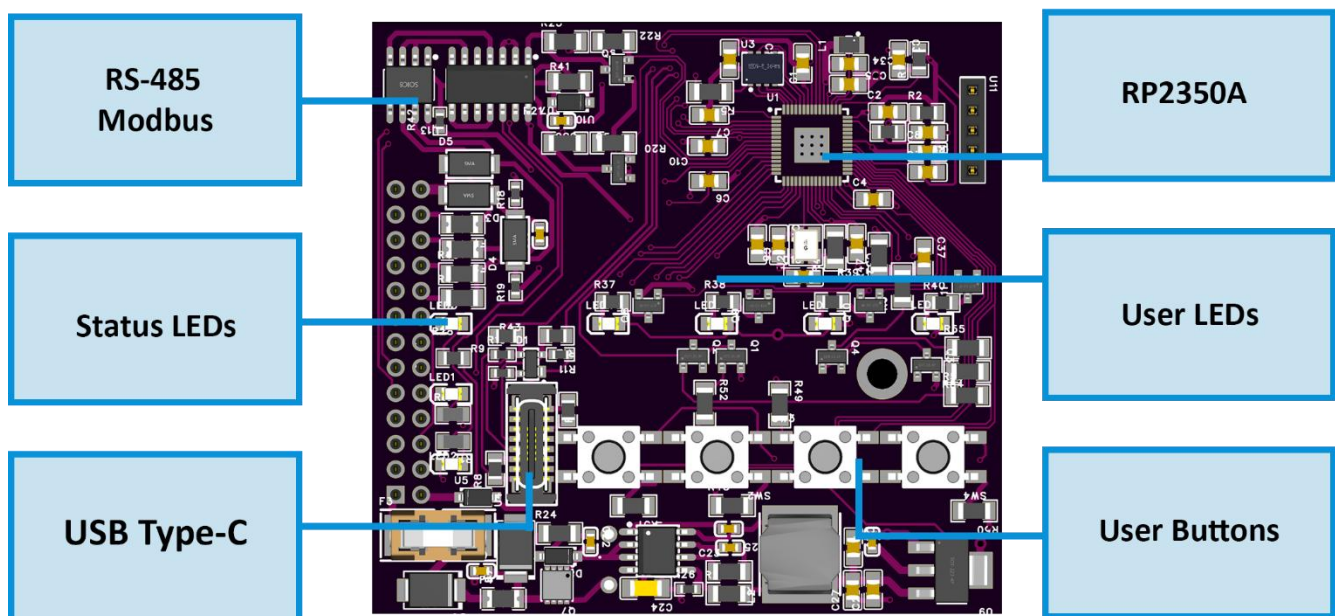
	fail-safe for open circuit, surge protected
CT support	External CT support: Works with 1 V or 333 mV RMS split-core transformers
USB	USB type-C USB Specification 2.0 compliant, ESD protected, Silicon Labs CP2102N USB-to-UART bridge controller, Virtual COM Port Device Drivers, Works with existing COM port Applications, Supported on Windows, Mac, and Linux
Real-time clock	PCF8563
Ambient temperature	0 ... 40°C / 32 ... 104°F
Humidity	max. 95% r.H. (non condensing)

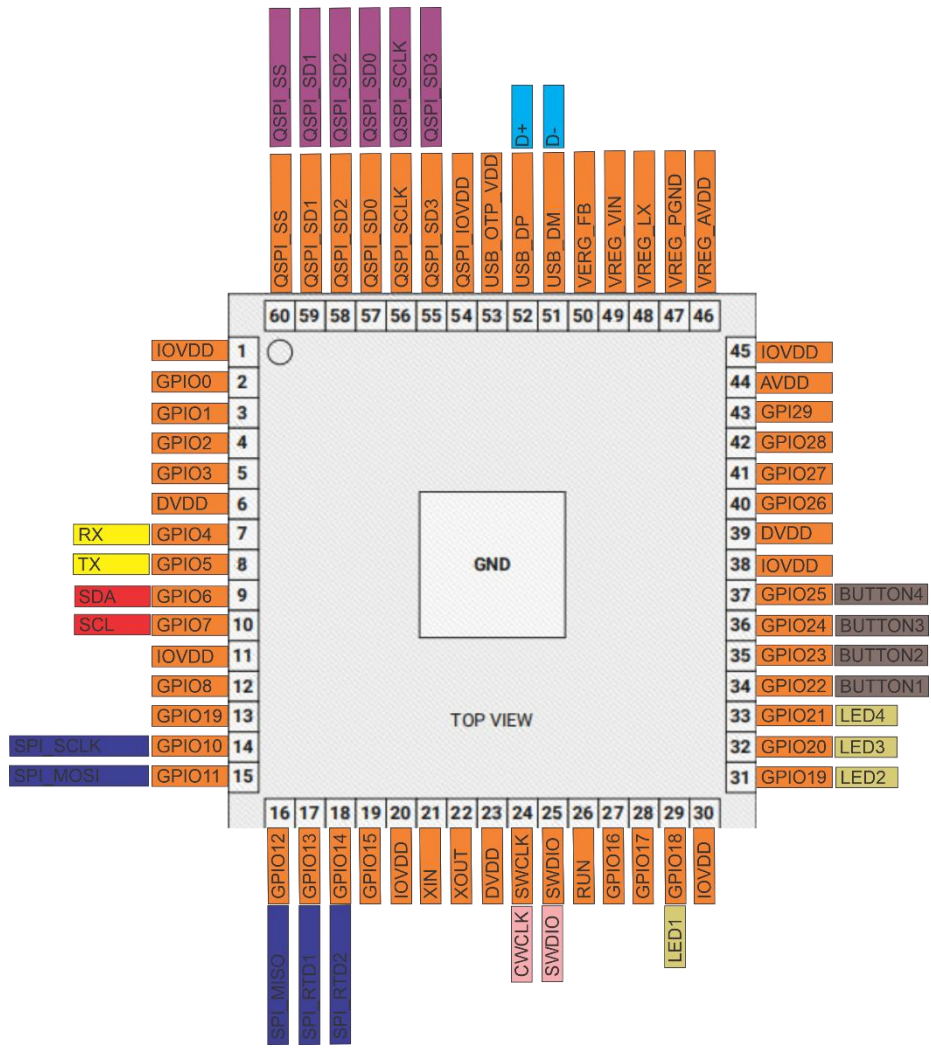
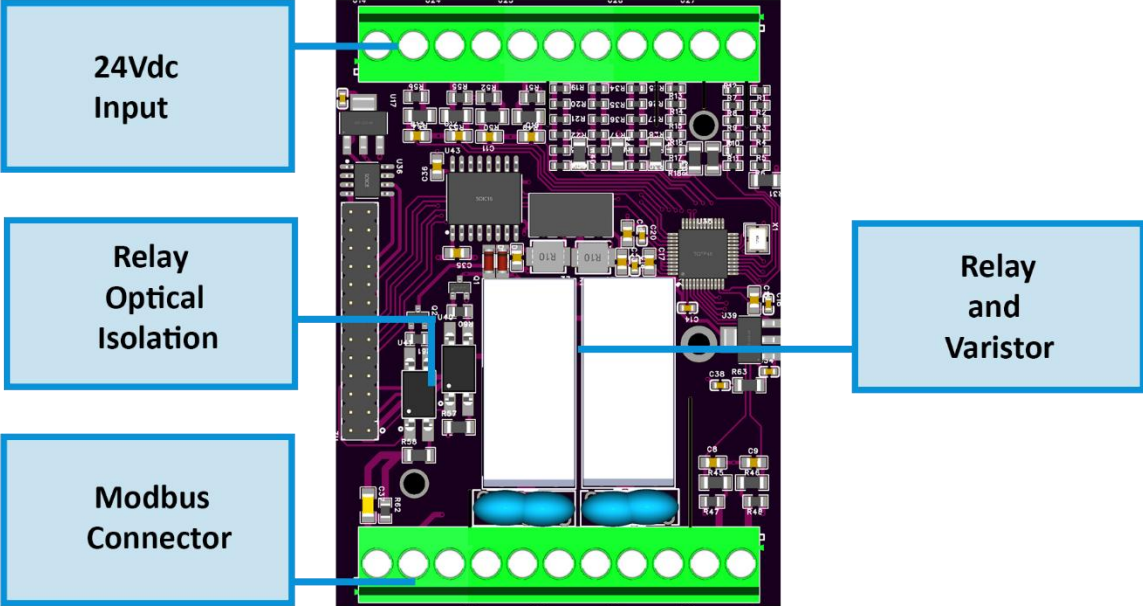
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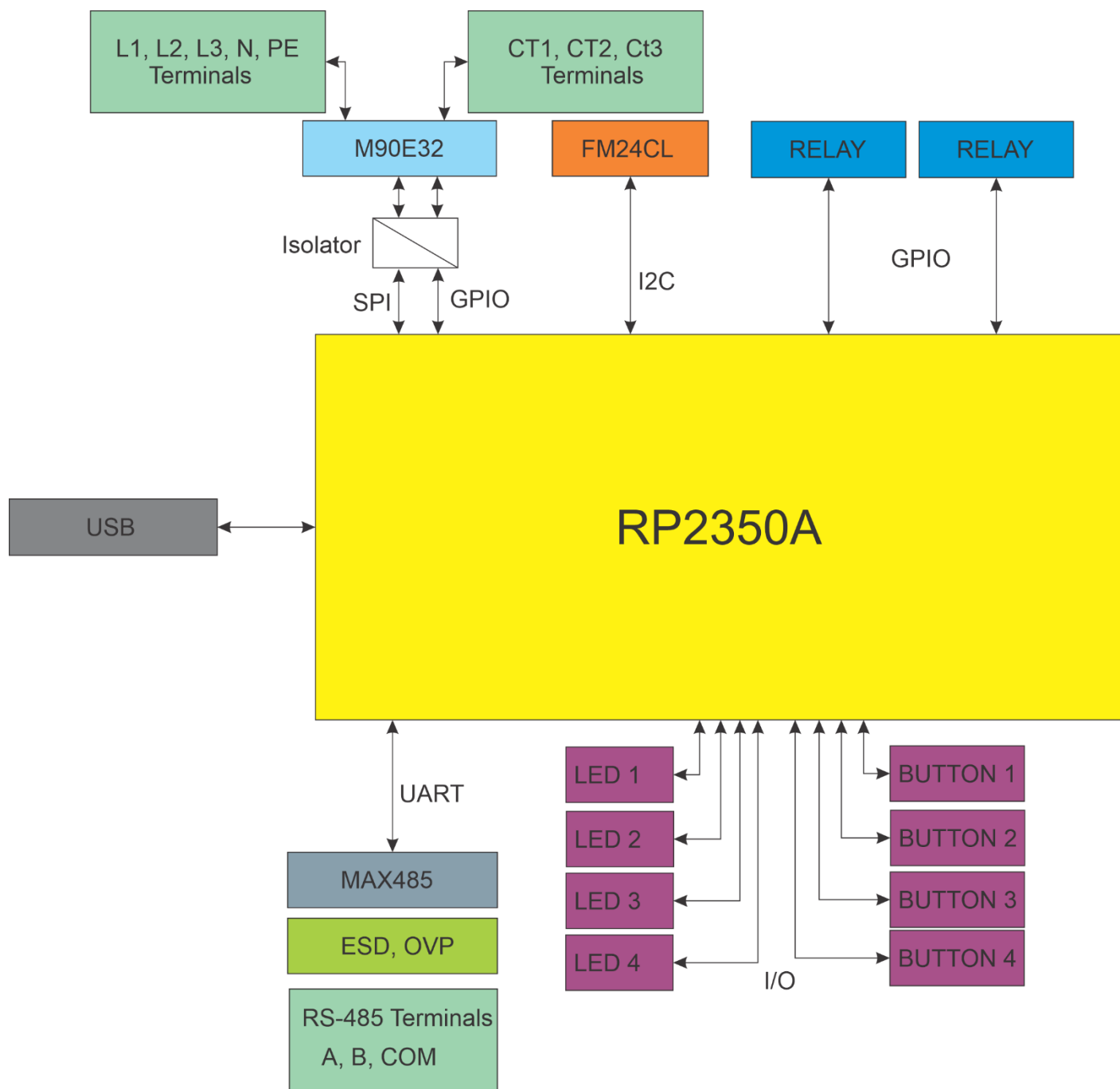
High loads at the digital outputs result in heat development, which can influence the lifetime in the long run. We recommend using coupling relays with loads greater than 5A.

Connections

Terminals	300V 20A 26-12 AWG 2.5mm2, Torque of terminal blocks 0.5 ... 0.6Nm /0.37 ... 0.44 lbf ft, Pitch: 5.08mm(.200")
WiFi antenna	SMA male
USB	USB type-C





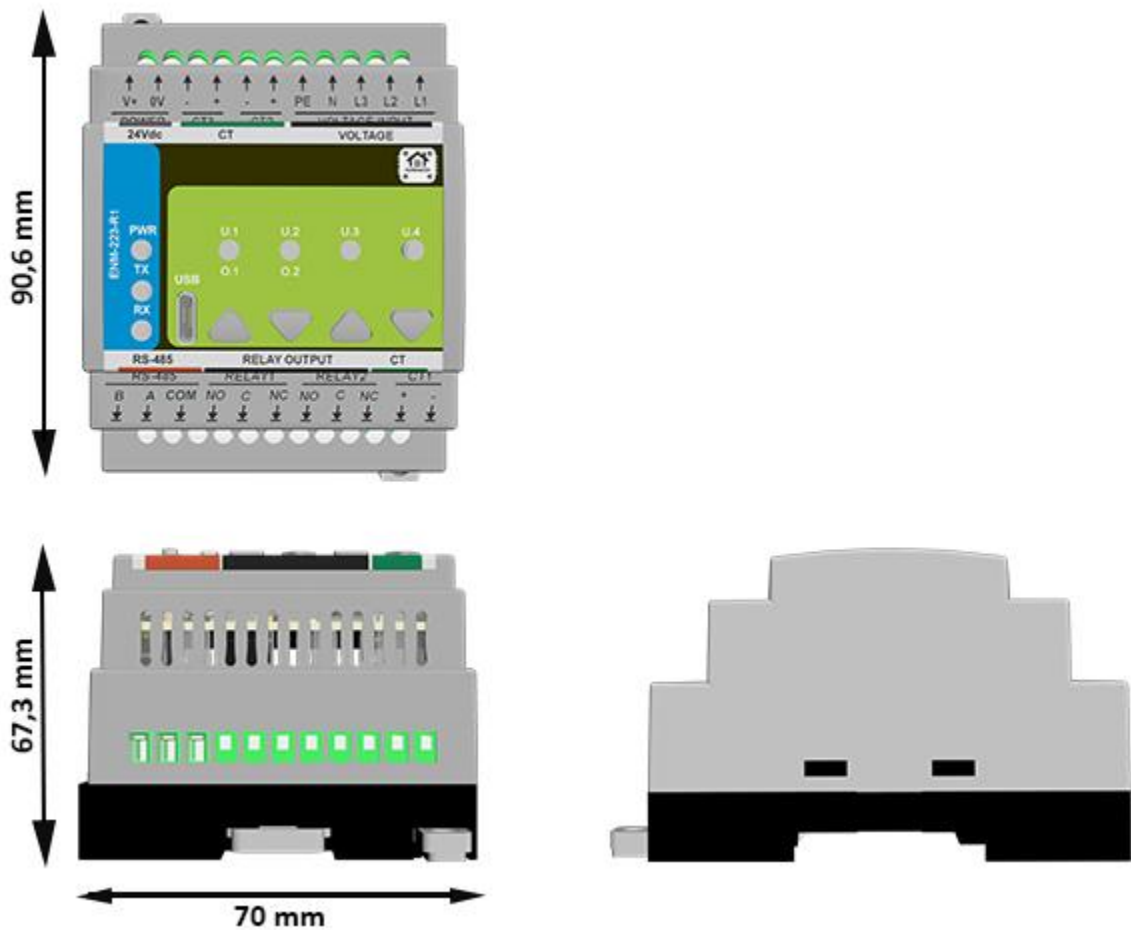


Product Characteristics

Mounting type	DIN rail according to EN50022, 35mm
Colors	Light Gray/Black, Smoke Panel
Material	PC/ABS/V0
Finish	Matte

Weight & Dimensions

Net weight	000g
Total weight	000g
Product dimensions	52.5 x 90 x 59mm (2.07 x 3.54 x 2.32in) (LxWxH), 9 division units
Pack size	0x0x0mm (0 x 0 x 0 in) (LxWxH),



Certifications & Standards

Safety rating	IP20
Operation	Type 1 (UL60730-1, CSA E60730-1)
Rated impulse voltage for digital output	2.5kV (UL60730-1, max. Altitude 2000m)
Degree of pollution	2
Certifications	CE, UL60730-1, CSA E60730-1

The ENM-223-R1 enables a variety of connected devices to work with HOMEMASTER technology.

See <https://www.home-master.eu> for more details.

Communication between iPhone, iPad, Apple Watch, HomePod, or Mac and the HomeKit- enabled ENM-223-R1 is secured by ESPHome and Home Assistant technology.

Installation must be carried out by a qualified electrician in accordance with the relevant regulations.

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Deligintei 18

Ploiesti

Romania

Tel: +40721389963

<http://www.home-master.eu>