



Datasheet

ALM-173-R1 Module

Part No. 0000008

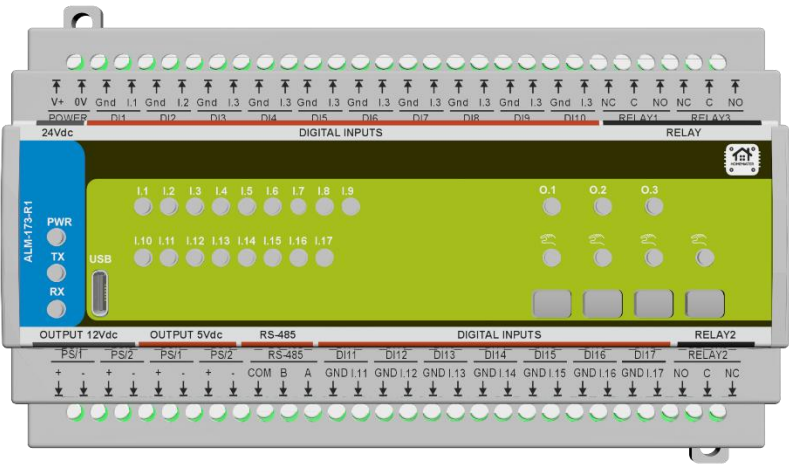
About the product

The ALM-173-R1 is a high-performance alarm expansion module designed for modular integration with HomeMaster MicroPLC and MiniPLC systems via RS-485 Modbus RTU. It enables seamless connection of alarm sensors and output devices for automation, security, and smart-building control.

Designed for seamless integration with ESPHome and Home Assistant, the gateway allows OTA updates, local LED indicators, and configuration via USB Type-C.

Electrical Data

Power supply	24VDC, USB-C female (5V DC via USB-C) for programming
Aux Power Outputs	12 V and 5 V (isolated)
Power consumption	typ. 1.85W, max. 3W
Raspberry PI	RP2350A
Digital Inputs	4 isolated, surge protected digital sourcing inputs
Outputs	3 digital output (relays with optocoupler and varistor surge protection), dry contact 250VAC 16A at $\cos\varphi = 1$, 250VAC 9A at $\cos\varphi = 0.4$ 30VDC 10A
RS-485	Half-duplex, data rate 115,2 kbps, short-circuit current limited and protected against excessive power dissipation, fail-safe for open circuit, surge protected
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



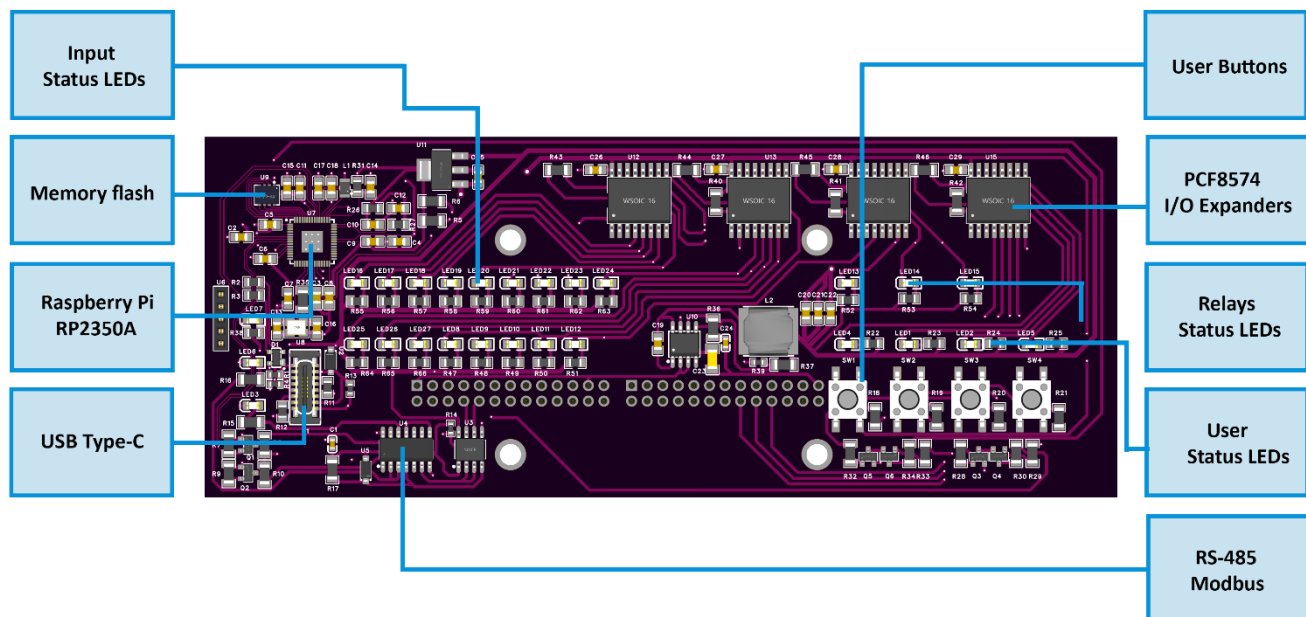
Real-time clock	PCF8563
Ambient temperature	0 ... 40°C / 32 ... 104°F
Humidity	max. 95% r.H. (non condensing)

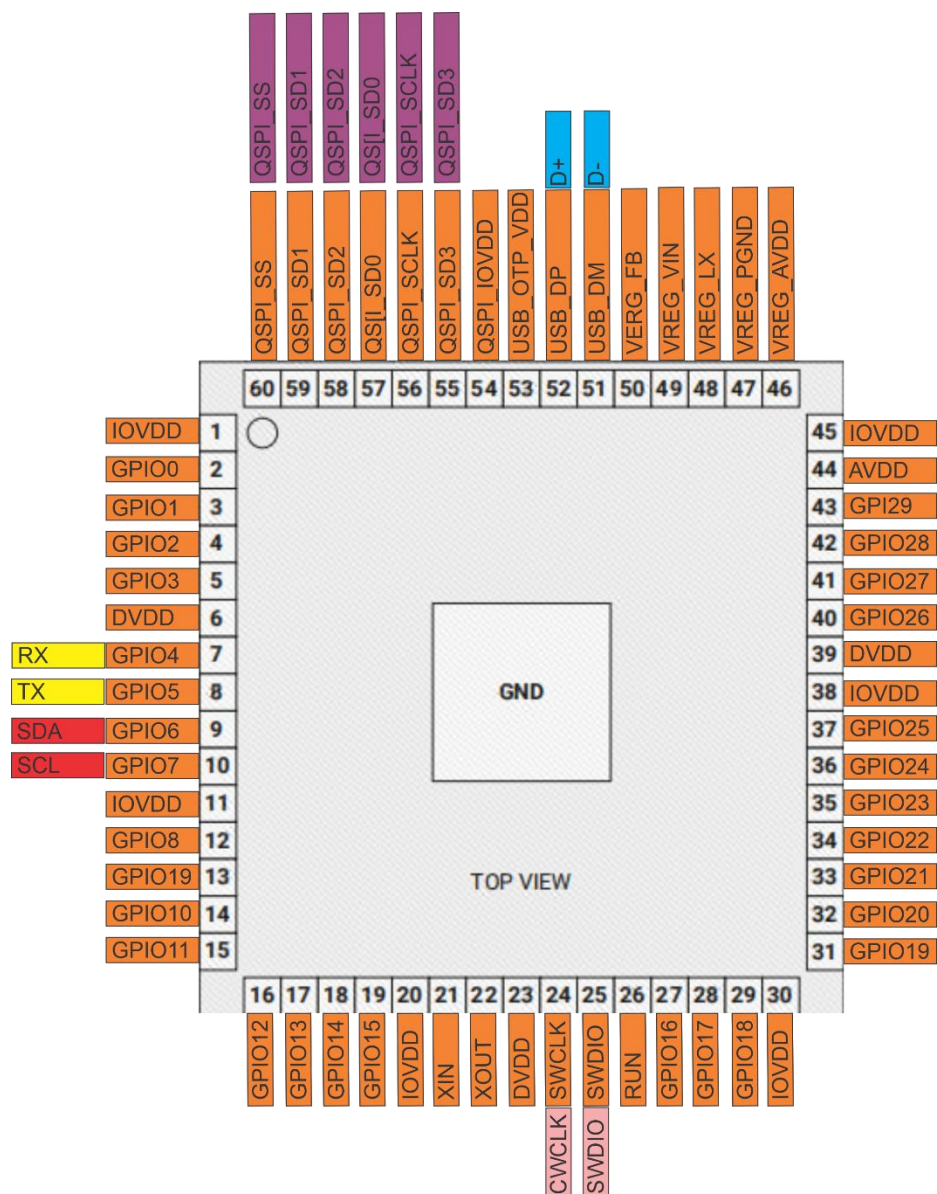
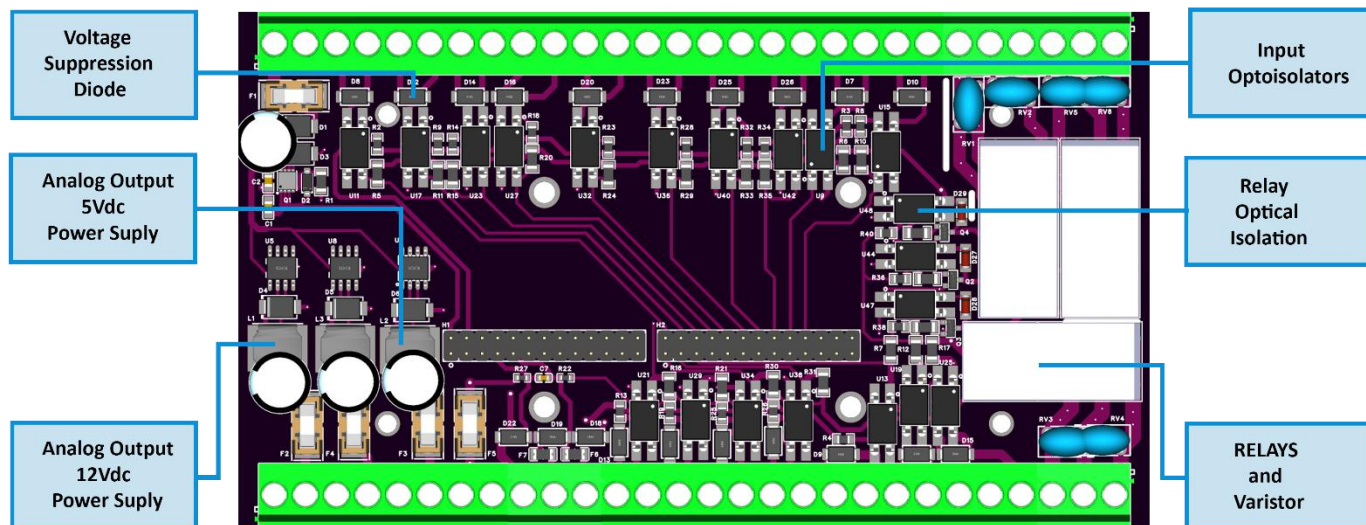
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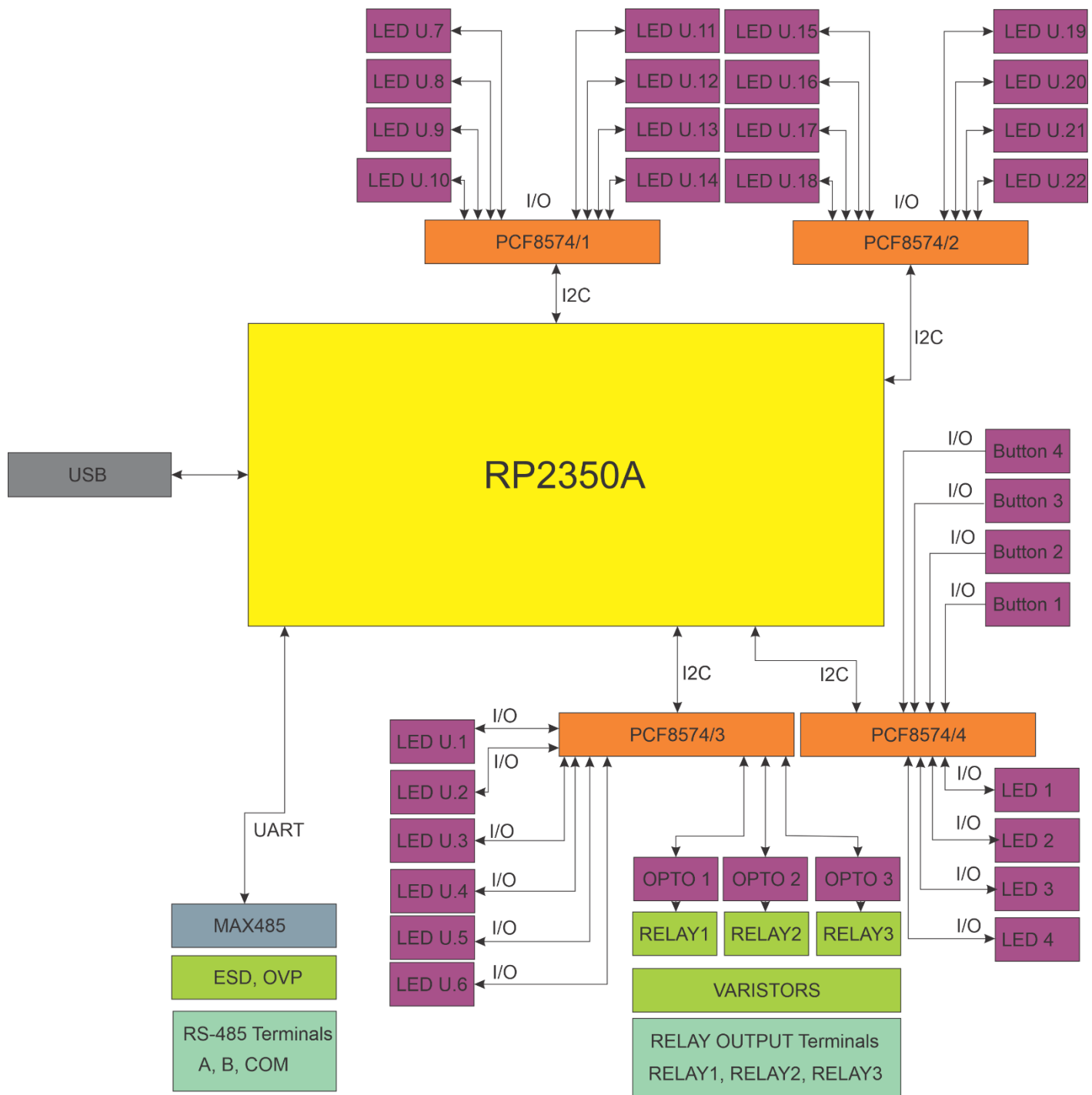
High loads at the digital outputs result in heat development, which can influence the lifetime in the long run. We recommend using coupling relays with loads greater than 5A.

Connections

Terminals	300V 20A 26-12 AWG 2.5mm ² , Torque of terminal blocks 0.5 ... 0.6Nm /0.37 ... 0.44 lbf ft, Pitch: 5.08mm(.200")
Wi-Fi antenna	SMA male
USB	USB type-C





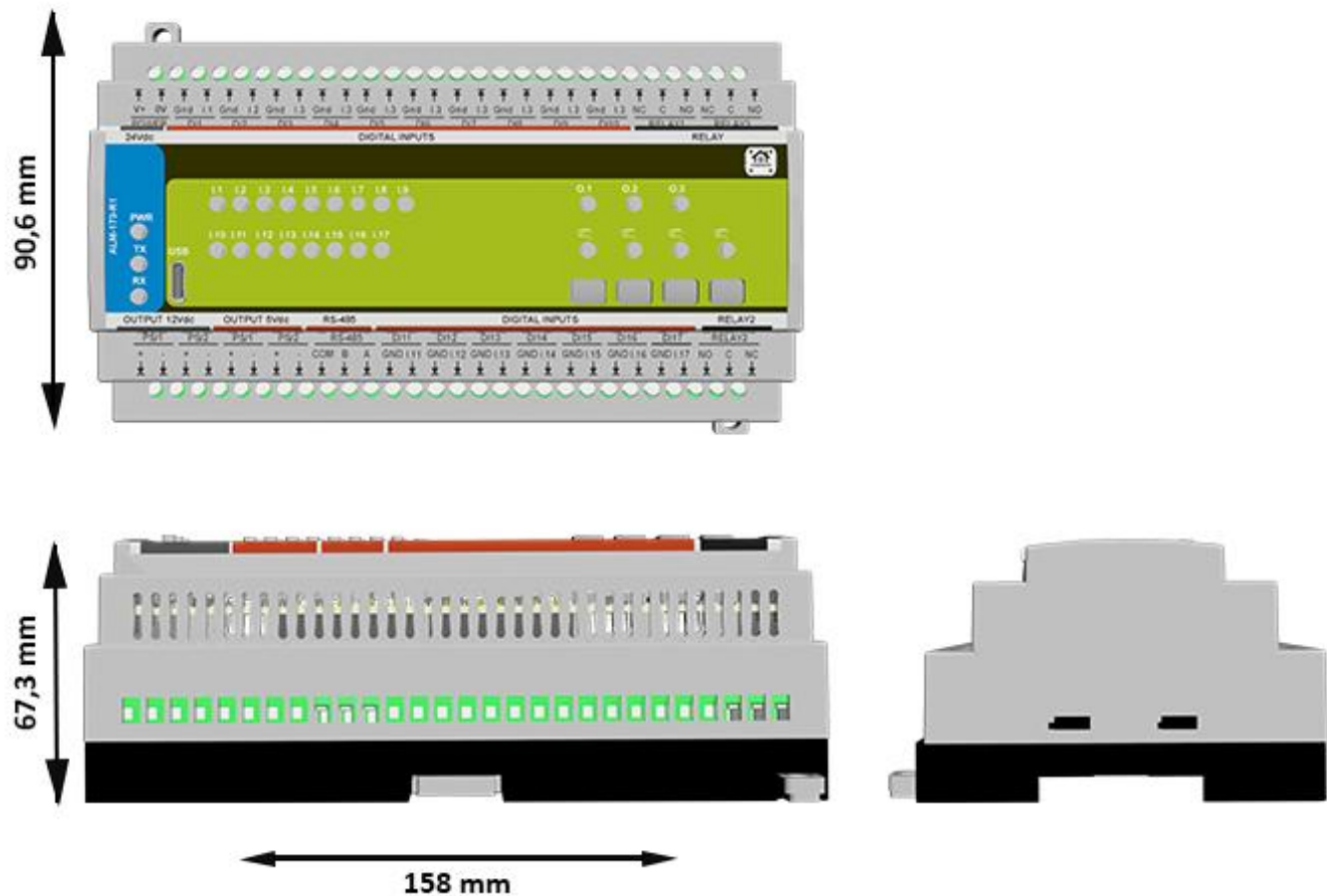


Product Characteristics

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

Weight & Dimensions

Net weight	420g
Total weight	580g
Product dimensions	157.4 x 91 x 58.4 mm (6.2 x 3.58 x 2.3 in) (LxWxH), 9 division units
Pack size	230x140x87mm (9 x 5.5 x 3.4 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 ESP32 MiniPLC 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 ESP32 MiniPLC 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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