

Carel DN33V9MR20 Universal Controller: Reliable DIN-Rail Control For Modern HVAC Systems

Category: Equipment

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The **Carel DN33V9MR20** is a compact universal electronic controller designed for DIN-rail mounting, widely used in refrigeration, air-conditioning and process cooling where accurate temperature and universal input management are required. Its robust construction, broad power-supply range and flexible I/O configuration make it a trusted choice for OEMs and technicians looking for stable control with a small footprint.

Key technical overview

The DN33V9MR20 belongs to Carel's IR33/DN33 "Universale" family, supporting multiple sensor types and control strategies in a single platform. It is supplied for **DIN-rail mounting**, with front-panel protection rated IP40 and overall device protection IP10, matching the markings visible on the housing.

- Power supply: 12-24 Vac or 12-30 Vdc, allowing integration in low-voltage cabinets and retrofit projects.
- Inputs: 2 analogue inputs (2AI) and 2 digital inputs (2DI), suitable for NTC/PTC probes, Pt1000, 0-5 V or 0-20 mA depending on configuration.
- Outputs: 1 relay / digital output (1DO) with buzzer and infrared receiver (BUZ, IR) for local and remote interaction.

Main functions and applications

Carel designed the DN33 line to manage temperature but also humidity, pressure and other signals when paired with compatible sensors, giving OEMs a single platform for various units. The controller can operate in "direct" or "reverse" mode, meaning it can drive cooling or heating stages depending on how the measured value must react to set-point deviations.

- Typical applications include refrigerated cabinets, small chillers, air-handling units and process cooling panels where space is limited but high functionality is required.
- Two independent control loops are available in the IR33/DN33 architecture, enabling simultaneous management of, for example, temperature and defrost or auxiliary outputs when used with multistage variants.

Installation and wiring highlights

The body of the DN33V9MR20, as seen in the image, shows clearly printed terminal numbers and internal diagrams that simplify cabinet work for technicians. DIN-rail mounting speeds up installation while the plug-in terminals, shared with the IR33 series, help reduce downtime during replacement or servicing.

- The front label identifies the product code **DN33V9MR20**, manufacturing date and revision, which technicians should record for maintenance history and firmware compatibility.
- Wiring diagrams on the housing indicate the correct connection of power supply, analogue probes, digital inputs and relay output, minimising wiring errors in the field.

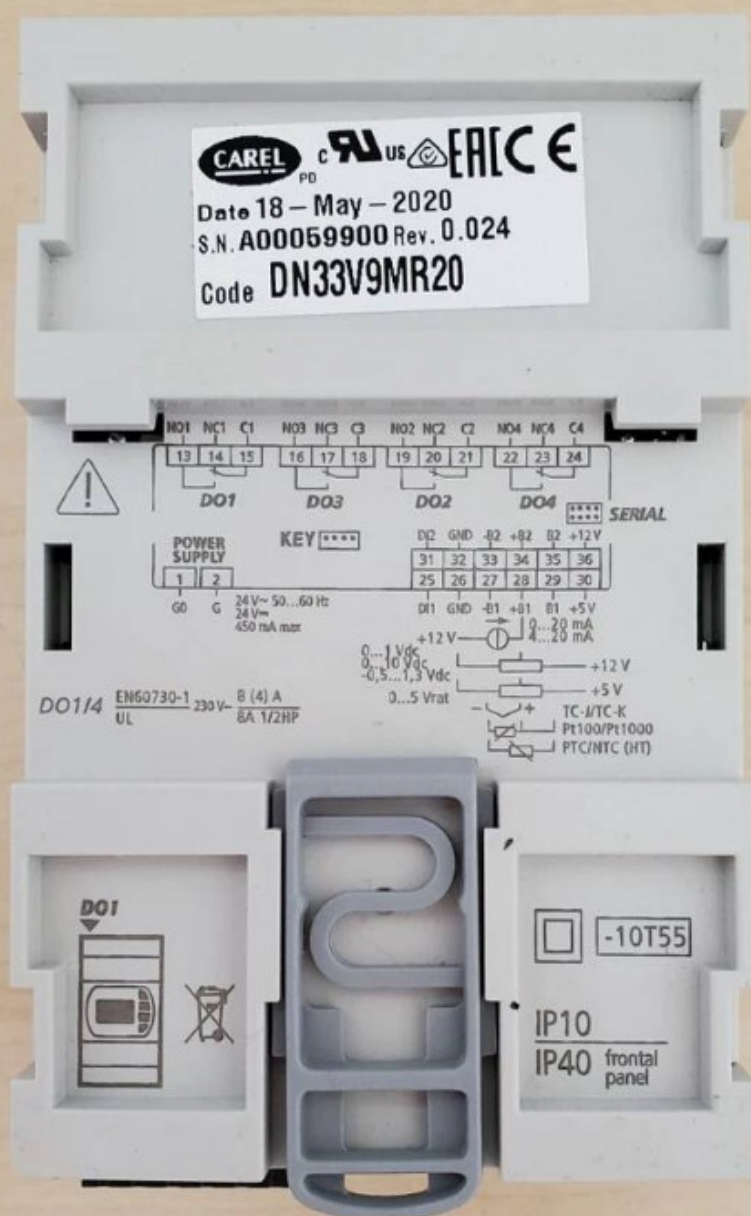
User interface and integration

Although the DN33V9MR20 is a DIN-rail model without an integrated front keypad, it is compatible with Carel’s external user interfaces and programming key, allowing quick parameter upload and cloning across multiple controllers. Infrared reception and an acoustic buzzer provide simple local feedback for alarms and set-point adjustments when used with the appropriate accessories.

- The series supports RS-485 networking on selected variants, enabling connection to supervisory systems for remote monitoring and data logging in supermarkets or industrial plants.
- Standard Carel parameter maps give installers access to control modes, sensor calibration, alarm thresholds and defrost strategies, ensuring the DN33V9MR20 can be tuned precisely to each HVAC or refrigeration application.

Technical data table

Feature	DN33V9MR20 specification
Mounting	DIN-rail, compact housing DN33 series
Power supply	12-24 Vac, 12-30 Vdc (multi-voltage)
Analogue inputs	2 AI (NTC/PTC, Pt1000, 0-5 V, 0-20 mA, depending on configuration)
Digital inputs	2 DI for door switches, compressor status or alarms
Outputs	1 relay / digital output with buzzer and IR receiver
Protection	Front panel IP40, complete controller IP10
Typical uses	Refrigerated cabinets, small chillers, HVAC units, process temperature control



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