

Key Features

- Internal temperature display from -40 C to 80 C.
- External temperature display from 0 C to 100 C.
- Humidity display from 0% to 100%.
- Smoke detection for fire-warning applications.
- Connection for shock and vibration sensors.
- Door sensor input for detecting open or closed rack doors.
- Power outage detection when connected to an external adapter.
- Smart and semi-smart control of two PWM fans.
- External relay switching for auxiliary equipment.
- 6 to 60 V DC operating voltage.
- Web-based information display.
- SNMP communication support.
- Fan rotation speed display and fan failure detection.
- Tested in hot, humid, dry, and other demanding climates.



Designed for rack monitoring, fan control, environmental sensing, and remote supervision.



Connection Method

- LAN connection and communication.
- Web-based display of module information.
- SNMP V1 support.
- Stable and reliable network communication using the ENC28J60 controller.
- Automatic network reset if communication is interrupted.

Sensors

- Equipped with a DHT22 sensor for temperature and humidity measurement.
- Equipped with an MQ2 sensor for smoke and fire detection.
- Optional wired LM35 external temperature sensor.
- Inputs for different sensors, switches, door contacts, and vibration sensors.
- Power outage detection when the module is connected through the proper adapter.

Operating Voltage

- Module operation from 6 to 60 V DC.
- Approximate module consumption: 3 W.
- Protected against reverse polarity.
- Fan output designed for high-current fan operation up to 5 A.

Power outage detection

To detect an AC power outage, connect the module to mains power after the UPS using a 5 to 9 V adapter.

Customization

The technical team can customize the module for other communication methods and additional sensors.



Module Capabilities

- Smart fan control.
- Semi-smart fan control within a configurable temperature range.
- Fan speed display.
- Fan speed measurement.
- Fan failure alarm.
- Environmental status display.
- Fan speed limiting for lower night-time noise.
- Periodic monitoring reports.

PWM Fan Wiring

- + : Power wire
- - : Ground wire
- P : PWM control wire
- T : Tachometer wire

Rayan Nivand PWM modules can control and drive compatible PWM fans with operating voltages from 6 to 60 V. Select the proper supply voltage for your fan and connect the fan wires according to the wiring guide.

About PWM Fans

PWM, or pulse-width modulation, fans are widely used in IT and telecommunication equipment. DC fans with PWM control can start and run at controlled speeds without always operating at 100% rotation.

These fans are available in different voltages, including 12 V, 24 V, 48 V, and other ratings, with different speeds, shapes, and use cases such as axial, radial, and centrifugal fans.

Optimized fan control can significantly reduce operating noise and decrease wear on air filters and the fans themselves. The module is also protected against unusual tachometer-wire voltages found in some fans.