



## 16 Channel Ethernet Relay Board

This datasheet provides information about the 16-Channel Ethernet Relay Module. It is a versatile tool designed to seamlessly integrate into your Internet of Things (IoT), industrial automation, and home automation applications. This module empowers you with remote control over various devices, offering exceptional functionality for tasks such as irrigation system management, light control, and industrial process automation.

Equipped with 16 SPST (Single Pole Single Throw) mechanical relays, the module enables independent switching of individual circuits. Leveraging MQTT, a lightweight messaging protocol ideal for Machine-to-Machine (M2M) communication, the module facilitates effortless integration into your existing network infrastructure.

This datasheet offers a complete summary of the module's functions, including technical specifications, and compatibility details. Configuration is conveniently done through a user-friendly USB serial interface, eliminating the need for complicated software installations. The module is compatible with popular home automation platforms such as *Home Assistant*, *Node-RED*, *FHEM*, *Domoticz* and *OpenHAB*, ensuring seamless integration into your preferred ecosystem.



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## Specifications

Number of control channels	16	Terminal connection	NC-COM-NO
Terminal rating (AC)	250V - 9A	Terminal rating (DC)	30V - 9A
Contact change time	10ms	Insulation resistance	100MΩ
Supply voltage	5V DC	Recommended power supply	5V - 3A DC
Maximum current	800mA	Power terminal	Screw connector
Ethernet interface	10/100	Configuration interface	USB Serial
Communication protocol	MQTT	Configuration system	Terminal
Supported protocols	ARP / IP ICMP DHCP	Configuration software	PuTTY, Termité, Minicom, Picocom, GTKTerm
Communication software	Node-RED, Home Assistant, OpenHAB, FHEM Domoticz, Custom		
Dimensions	189.5mm x 85.1mm	Weight	268g
Operating conditions	0°C to 60°C Humidity 10 - 85% RH (non-condensing)	Storage conditions	-40°C to 70°C Humidity 5 - 95% RH (non-condensing)

## Customization

Our 16-Channel Ethernet Relay Module can be tailored to meet the specific needs of your project. We offer a range of customization and support options to ensure the module integrates seamlessly into your existing infrastructure.

We understand that a *one-size-fits-all* approach might not be suitable for your requirements. Our customization options allow you to adapt the module's communication protocols, including incorporating alternative protocols beyond the standard MQTT offering.

**OEM Integration:** For Original Equipment Manufacturers (OEMs), we can customize the module to align with your product line's branding and design requirements. This may involve modifications to the PCB dimensions or connector placement for better integration into your larger system.

**Hardware and Software Solutions:** In addition to the module itself, we provide custom hardware and software solutions to complement it. This includes interfacing the module with your existing hardware or software setups, creating customized drivers, and offering ongoing technical support.

By taking advantage of our customization and support options, you can optimize the 16-Channel Ethernet Relay Module to meet your specific needs. Feel free to contact our technical support team to discuss your requirements and explore how we can tailor a solution for you.

## Application example

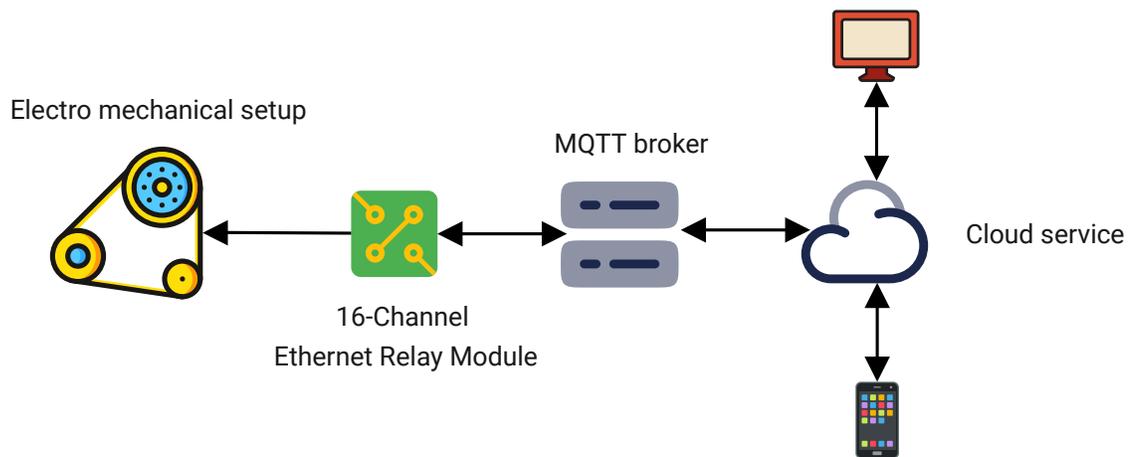
The 16-Channel Ethernet Relay Module, coupled with an MQTT broker and cloud service, offers a compelling solution for remote control of various devices within an Internet of Things (IoT) application.

**Network Connectivity:** The Relay Module establishes a connection to your local network via Ethernet.

**MQTT Broker Integration:** The module leverages MQTT, a lightweight messaging protocol, to communicate with an MQTT broker running on your network or a cloud-based service. This broker acts as a central hub, facilitating message exchange between the module and user interfaces.

**Cloud Service Connection:** The MQTT broker seamlessly integrates with a cloud service hosted by a third-party provider or established on your own infrastructure. This cloud service acts as a bridge between the broker and user interfaces.

**User Interface Access:** Users can access the cloud service through a user-friendly interface on their PCs or mobile devices (via a dedicated mobile application). This interface provides a graphical representation of the relay board's channels, allowing users to visualize their current state (on/off) and remotely activate or deactivate them.



When a user interacts with the interface, a command is transmitted through the cloud service to the MQTT broker. The broker, in turn, relays the command to the 16-Channel Ethernet Relay Module. The module interprets the command and activates or deactivates the corresponding relay channel, triggering the connected devices (motors, linear actuators, etc.) to perform their designated actions.

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