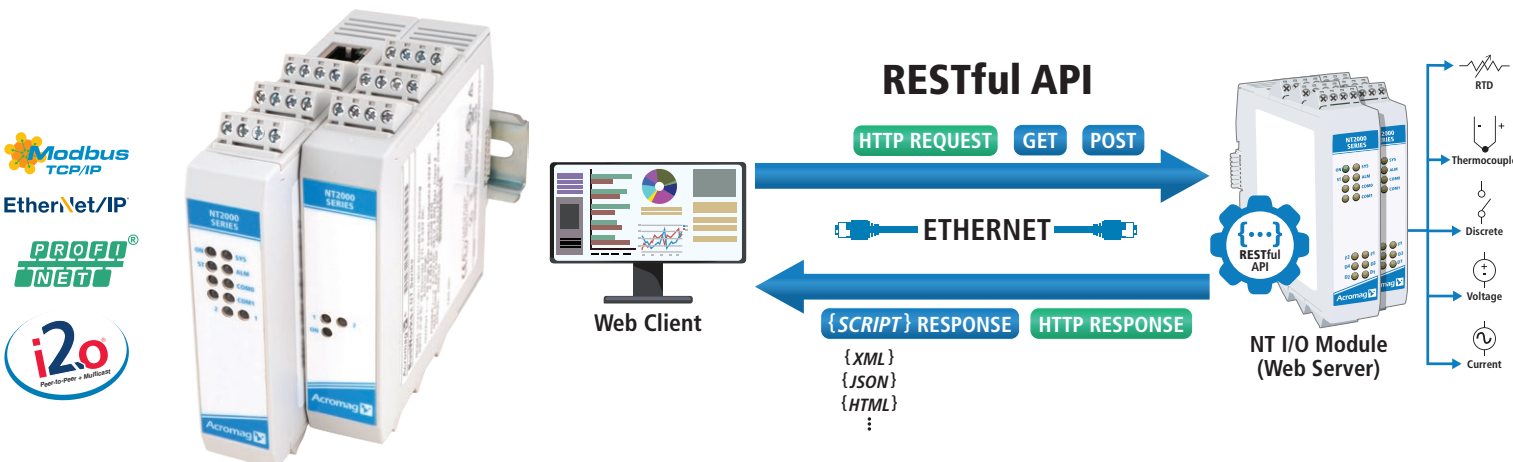


# Ethernet I/O: BusWorks® NT Series

**NT2000 Series:** Ethernet I/O Modules with RESTful API Support



Easy development of web-based services ♦ Fast, secure, lightweight communication ♦ XML, JSON, HTML data format

Acromag's [BusWorks® NT series remote I/O modules](#) now offer a RESTful API (Representational State Transfer Application Program Interface) to simplify development of web-based services. The NT I/O module system firmware embeds the API to support reading/writing of I/O data. Web services can use HTTP POST and GET requests to exchange information with the NT's I/O server. This approach allows devices to easily and securely communicate with each other over the world-wide web along a common Ethernet interface. Applications for BusWorks NT Ethernet I/O modules include remote data acquisition, status monitoring, actuator control, predictive maintenance, energy management, and more.

REST API is a very popular web interface method because it relies solely on the shared universal HTTP protocol standard on Ethernet. Developers can use XML, JSON, HTML, or other languages to build mobile app projects, IoT Internet of Things data interfaces, and more.

The RESTful API is very fast and consumes less bandwidth. It is also very cost-effective since developers can use the same API request across many environments without third-party tools.

NTE Ethernet I/O models have dual RJ45 ports and a webserver allowing remote system controllers to read or write data on connected sensors and actuators. Each I/O module offers up to 16 input or output channels for voltage, current, temperature, and relay control signals. Attaching up to three NTX expansion I/O modules can interface an additional 48 channels with a mix of I/O functions networked on a single IP address.

In addition to the new RESTful API, each module will also support OPC UA and MQTT interfaces plus three industrial Ethernet protocols (Modbus TCP, Ethernet/IP, PROFINET) which are selectable using any web browser to configure the network settings and I/O operation.

## Key Features & Benefits

- RESTful APIs use common web technologies to present data models and functions in a standard format.
- Popular client-server model using standard HTTP methods like GET and POST.
- Supports data formats like JSON, XML, and HTML.
- Well-suited for building mobile apps and Internet of Things (IoT) applications.
- Scalable, flexible, and efficient API that works smoothly across many different platforms.

```
H:\>curl -X GET 192.168.0.10/webif/slots/1/analog-input/1_sessionID=311309446
{"status":1, "channelNumber": 1, "analogInputValue": 537.400, "units":"Ω"}

H:\>curl -X POST -d "newValue=5.0" 192.168.0.10/webif/slots/1/analog-output/1_sessionID=365732339 {"status":1, "message":"Value was successfully changed."}
```

Request/response examples for GET and PUT commands.

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