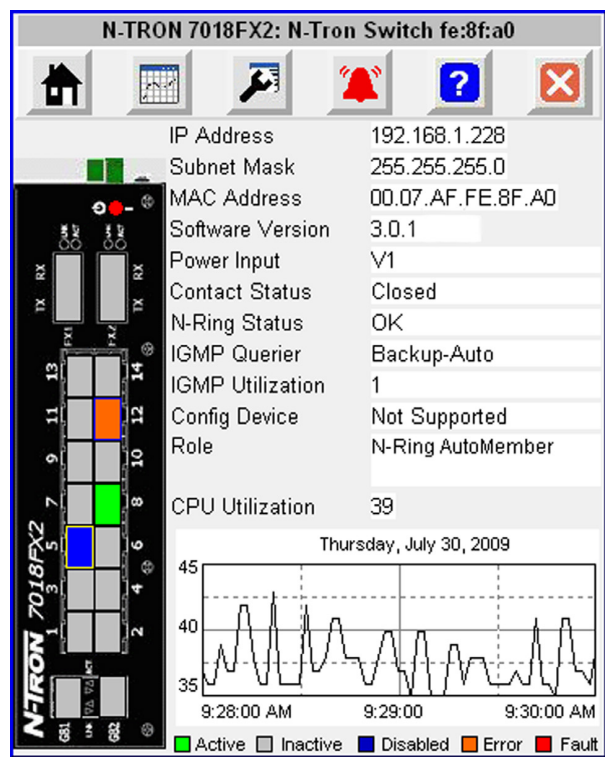


## Common Industrial Protocol (CIP)

EtherNet/IP,™ better known as the Common Industrial Protocol (CIP), was designed for use in process control and industrial automation applications. CIP was designed to provide consistent device access to eliminate the need for vendor specific software for configuration and monitoring of individual devices. With embedded support for CIP, N-Tron switches deliver information and configuration access directly to Programmable Logic Controllers (PLC's) and HMI's (Human Machine Interface) through standard CIP messaging. Switch status, trending and configuration are easily viewed from a PanelView Plus with screen resolutions of 640 x 480 and higher. In addition to CIP, N-Tron's robust fully managed feature set includes:

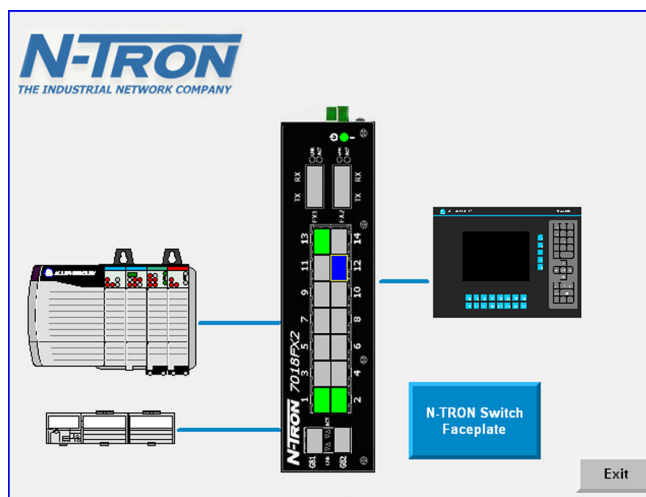
- IGMP Auto Configuration
- VLAN
- QoS
- Trunking
- Port Mirroring
- RSTP
- DHCP
- Web Browser Management
- SNMP v1, v2, v3
- N-View™ Monitoring Technology
- Extended Environmental specifications: up to -40°C to 85°C
- Configurable Alarm Contact and Bi-Color Fault LED
- N-Ring Technology
- N-Link Redundant N-Ring Coupling

EtherNet/IP with CIP Messaging is a standard feature on the N-Tron fully managed switch series. CIP tags, sample projects, and diagnostic faceplates for FactoryTalk® View ME/SE software are provided for quick setup and configuration in RSLogix 5000 environments (requires RSLogix 5000 version 17 and higher).



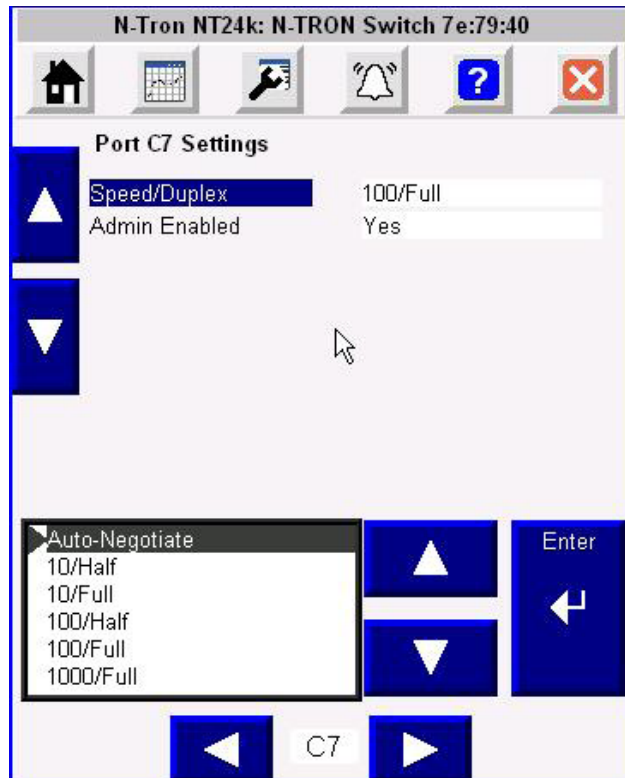
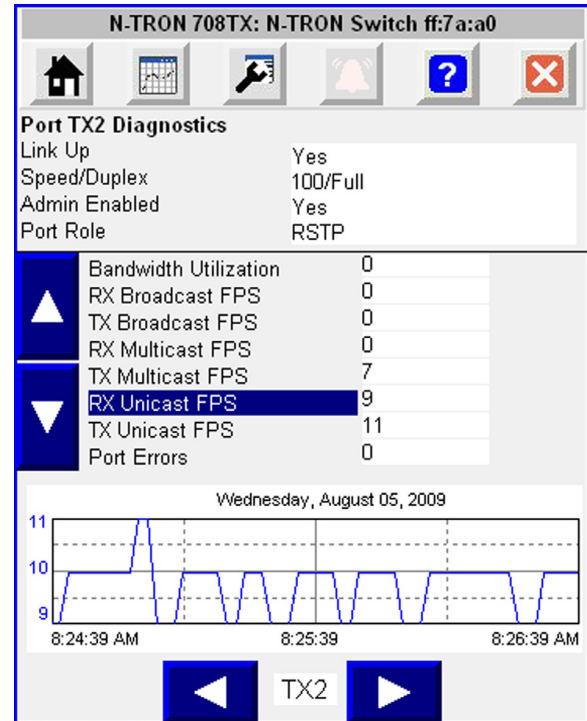
Quickly view switch status on the **Home** Display

- IP Address
- Subnet mask
- MAC Address
- Software Version
- Power Input Status
- N-Ring Status
- IGMP Querier Status
- IGMP Utilization
- Device Role
- CPU Utilization

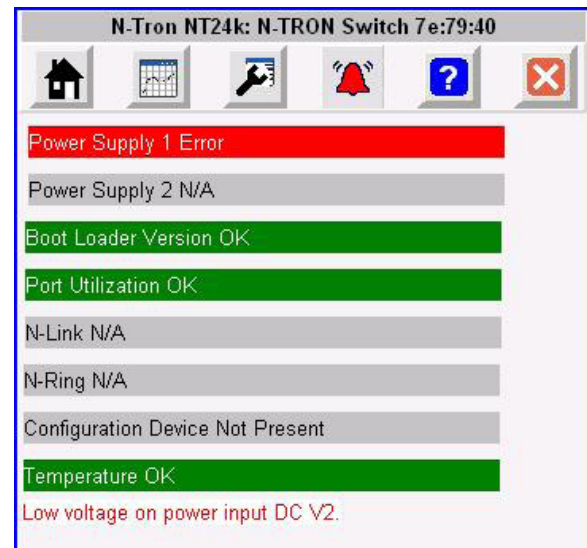


Port **Diagnostics** provides individual port status

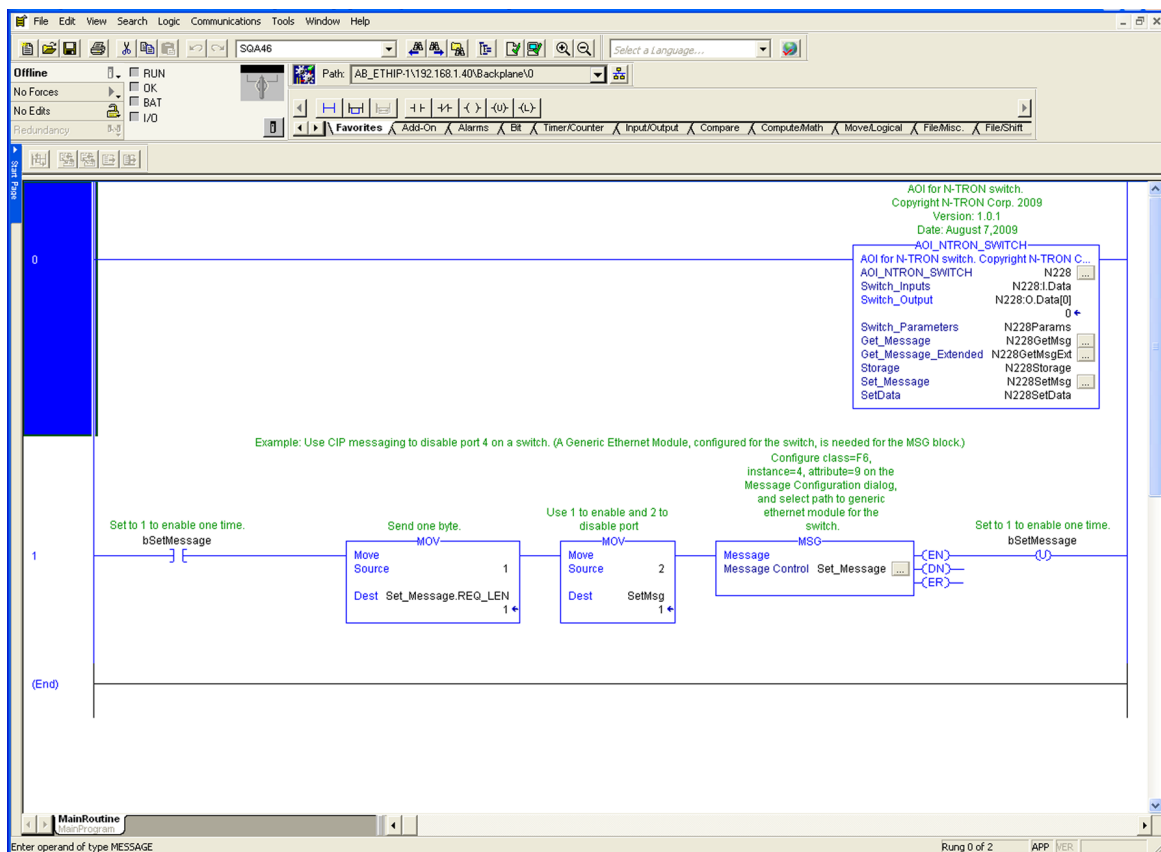
- Link Status
- Speed and Duplex setting
- Admin Enabled
- Port Role
- Trend Analysis
  - > Bandwidth utilization
  - > Broadcast transmit and receive in frames per second
  - > Multicast transmit and receive in frames per second
  - > Unicast transmit and receive in frames per second
  - > Port Errors



Easily Change Port **Settings** or View **Alarm** Status



# ▶▶▶ EtherNet/IP™ with CIP™ Messaging Specifications



Ladder logic samples are included.

### CIP Status View

CIP Status Enabled

| Identity Information |                                     |
|----------------------|-------------------------------------|
| Product Name         | N-Tron NT24k                        |
| Vendor               | 1006 (N-Tron Corporation)           |
| Device Type          | 0x0C (hex) (Communications Adapter) |
| Major Revision       | 1                                   |
| Minor Revision       | 1                                   |
| Serial Number        | 0xAF7D95C0 (hex)                    |

| Connection Information          |   |
|---------------------------------|---|
| Number of Multicast Connections | 1 |
| Number of Unicast Connections   | 0 |

| Connection Summary |                  |      |                 |                 |                |              |
|--------------------|------------------|------|-----------------|-----------------|----------------|--------------|
| Transport Class    | Connection State | RPI  | Config Assembly | Output Assembly | Input Assembly | Peer Address |
| 1                  | established      | 1000 | 103             | 102             | 101            | 192.168.1.40 |

Refresh

CIP configuration and status are also available via a web browser.

### CIP Configuration View

USER: admin | ACCESS: Admin | LOGOUT

HELP | SUPPORT WEBSITE | SUPPORT EMAIL

- Product Information
- Configuration
- Fault
- File Transfer
- System
- User Management
- Advanced
  - Bridging
  - CIP
  - Configuration
  - Status
  - IGMP
  - N-Link
  - N-Ring

| CIP Status         |         |
|--------------------|---------|
| CIP Status         | Enabled |
| Multicast RPI (ms) | 300     |
| Unicast RPI (ms)   | 300     |

Modify Refresh

CIP tags include:

## Ethernet Link Tags

Interface\_Speed  
Interface\_Flags  
Physical\_Address  
InOctets  
InUcastPackets  
InNucastPacket  
InDiscards  
InErrors  
InUnknownProtos  
OutOctets  
OutUcastPackets  
OutNucastPacket  
OutDiscards  
OutErrors  
Alignment\_Errors  
FCS\_Errors  
Single\_Collisions  
Multiple\_Collisions  
SQE\_Test\_Errors  
Deferred\_Transmissions  
Late\_Collisions  
MAC\_Transmit\_Errors  
Carrier\_Sense\_Errors  
Frame\_Too\_Long  
MAC\_Receive\_Errors  
Control\_Bits  
Forced\_Interface\_Speed  
Interface\_Type  
Interface\_State  
Admin\_State  
Interface\_Label  
Interface\_Description  
Interface\_Utilization  
Utilization\_Alarm\_Upper\_Threshold  
Utilization\_Alarm\_Lower\_Threshold  
Broadcast\_Limit  
TX\_Unicast\_Packet\_Rate  
RX\_Unicast\_Packet\_Rate  
TX\_Multicast\_Packet\_Rate  
RX\_Multicast\_Packet\_Rate  
TX\_Broadcast\_Packet\_Rate  
RX\_Broadcast\_Packet\_Rate  
TX\_Multicast\_Packets  
RX\_Multicast\_Packets  
TX\_Broadcast\_Packets  
RX\_Broadcast\_Packets  
Port\_Role

## Switch Tags

Device\_Uptime  
Port\_Count  
Valid\_Ports  
Global\_Admin\_Status  
Global\_Link\_Status  
System\_Faults  
IGMP\_Querier\_Status  
IGMP\_Version  
IGMP\_Resource\_Usage  
IGMP\_Active\_Querier  
CPU\_Usage  
Class1\_Connections  
Class3\_Connections  
Temperature\_Alarm\_Upper\_Threshold  
Temperature\_Alarm\_Lower\_Threshold  
Contact\_Status  
Temperature\_C  
Temperature\_F  
Reset\_MIB\_Counts  
Device\_MAC\_Address  
Device\_Role  
Config\_Device\_Status  
System\_Configuration  
System\_Firmware\_Version\_String  
System\_Boot\_Loader\_Version\_String  
System\_Fault\_String

## Faults Tags

Faults  
Power\_Supply\_1  
Power\_Supply\_2  
NRing\_Full  
NRing\_Part\_Low  
NRing\_Part\_High  
NRing\_Part\_Multiple\_Managers  
System  
Config\_Device  
Nlink  
Boot\_Loader\_Version  
Port\_Utilization  
Temperature

## TCP/IP Interface Tags

Status  
Configuration\_Capability  
Configuration\_Control  
Path\_Size  
Object\_Path\_1  
Object\_Path\_2  
IP\_Address  
Network\_Mask  
Gateway\_Address  
Name\_Server\_1  
Name\_Server\_2  
Domain\_Name  
Host\_Name

## CIP Identity

Vendor\_ID  
Device\_Type  
Product\_Code  
Major\_Revision  
Minor\_Revision  
Status  
Serial\_Number  
Product\_Name  
Assigned\_Name  
Geographic\_Location

## Generic Inputs

Admin\_Status (1-64)  
Link\_Status (1-64)  
Utilization\_Alarm (1-64)  
Class1\_Connections  
Class3\_Connections  
Configuration\_Control  
Temperature\_C  
Temperature\_F  
CPU\_Utilization  
Contact\_Status  
Utilization (1-64)  
Update\_Counter



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