



Control Corporation is an expert device connectivity manufacturer and provider of networking products, specializing in industrial Ethernet gateways and intelligent embedded device connectivity products. These products support a wide range of industrial, security, power utility and traffic automation applications. The company's RocketPort® multi-port serial cards, DeviceMaster® Ethernet device servers, and RocketLinx™ industrial grade Ethernet and Power over Ethernet switch product lines are sold through regional, national, and international distributors and by thousands of resellers and integrators worldwide.

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# ETHERNET SWITCH - UNMANAGED

## DIVISION 27 – COMMUNICATIONS

27 20 00 Data Communications

27 21 29 Data Communications Switches and Hubs

### Notes to Specifier:

1. Where several alternative parameters or specifications exist, or where, the specifier has the option of inserting text, such choices are presented in **[bold text]**.
2. Explanatory notes and comments are presented in **colored** text.

## PART 1 GENERAL

### 1.01 SUMMARY

- A. *Section includes a 6-Port Ethernet network switch, allowing Ethernet devices to communicate with one another, shipped in a fixed configuration, with only alarms being user configurable.*
- B. *Product - 6-Port Industrial PoE unmanaged switch with four 10/100BASE-TX PoE injector ports and two 10/100/1000BASE-TX uplink ports*
- C. *Related Requirements*
  1. **[Insert relevant related requirements]**

### 1.02 REFERENCES

- A. *Abbreviations*
  1. MTBF - Mean Time Between Failures
  2. PoE - Power over Ethernet
  3. QoS - Quality of Service
  4. VoIP - Voice over IP
- B. *Reference Standards*
  1. IEEE 802.3 Ethernet Standards
    - a. IEEE 802.3i - 10BASE-T
    - b. IEEE 802.3u - 100BASE-TX,
    - c. IEEE 802.3ab - 1000BASE-TX
    - d. IEEE 802.3af Power over Ethernet
    - e. IEEE 802.3x Flow Control and Back-Pressure
    - f. IEEE 802.1p Class of Service
  2. Emissions
    - a. FCC Part 15 Subpart B, Class A limit
    - b. Canadian EMC Requirement ICES-003
    - c. European Standard EN55022
  3. Immunity - European Standard EN55024
    - a. IEC61000-4-2/EN61000-4-2: ESD
    - b. IEC61000-4-3/EN61000-4-3: RF
    - c. IEC61000-4-4/EN61000-4-4: Fast Transient/Burst
    - d. IEC61000-4-5/EN61000-4-5: Surge

- e. IEC61000-4-6/EN61000-4-6: Conducted Disturbance
- f. IEC61000-4-8/EN61000-4-8: Magnetic Field
- g. IEC61000-4-11/EN61000-4-11: DIPS and Voltage Variations
- 4. Safety
  - a. IEC 60950/EN60950
  - b. CSA C22.2 No. 60950/UL60950 Third Edition
- 5. ROHS - European Standard: 2002/95/EC Directive (RoHS)

### **1.03 SUBMITTALS**

- A. *Product Data*
  - 1. Manufacturer's printed or electronic data sheets
  - 2. Manufacturer's installation and operation manuals
  - 3. Warranty Documentation

### **1.04 QUALIFICATIONS**

- A. *Manufacturer of system shall have a minimum of three years' experience of successful installation of systems equivalent in function to the system proposed herein.*
- B. *Installation contractor shall be authorized to install service and maintain the system by the system manufacturer.*

### **1.05 WARRANTY**

- A. *Manufacturer shall support a minimum limited warranty of five years.*

END OF SECTION

## PART 2 PRODUCTS

### 2.01 SOFTWARE

- A. *Manufacturer:* Comtrol Corporation  
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- B. *Model* 7106-VB

### 2.02 DESCRIPTION

- A. *General* - The Ethernet Switch ("Switch") shall be a 6-Port device, four of which are 10/100BASE-TX capable of PoE injection and two are 10/100/1000BASE-TX Gigabit Ethernet capable uplink ports.
1. The Switch shall have a 32 Gbps internal switching fabric
  2. The Switch shall support at least 8000 MAC addresses in its internal memory
  3. The Switch shall support an MTBF of greater than 20 years
- B. *Power over Ethernet (PoE)*
1. The four PoE ports shall be fully IEEE 802.3af compliant
  2. The Switch shall support a total PoE power consumption of 65 watts, under all input voltage ranges specified by the manufacturer
- C. *Quality of Service (QoS)* - The Switch shall fully support QoS in accordance with IEEE 802.1p for optimization of video and voice over the network
- D. *Alarms*
1. The Switch shall contain an alarm relay for failure and event notification rated for 1 Amp at 24 VDC.
  2. Each Switch port shall have an Alarm capability, configured via DIP switch to automatically trigger on connection issues when ports are connected to an auto-negotiation 10/100 full-duplex device.
- E. *Indicators* - The Switch shall provide visual indication of the following:
1. input voltage
  2. port failure condition
  3. delivery of power from a PoE port
  4. device connected to port
  5. full-duplex mode
  6. collision of frames in half-duplex mode
  7. port speed
- F. *Voltage Input*
1. The Switch shall be powered by 12-24 VDC via 4-pin industrial terminal block
- G. *Enclosure*
1. The Switch shall be packaged in industrial-grade aluminum IP30 housing
  2. The Switch shall provide for DIN rail or wall-mount installation
- H. *Environmental*
1. The Switch operating temperature range shall be -20° to +60°C
  2. The Switch shall operate in a non-condensing humidity range of 0 - 95%

END OF SECTION

**PART 3 EXECUTION**

**3.01 INSTALLERS**

- A. The Installer must demonstrate sufficient network knowledge to the satisfaction of the Owner's representative.

**3.02 STORAGE**

- A. The Switch shall be stored in an environment where temperature is in the range of -40° to +80°C and humidity is 0 - 95%

**3.03 INSTALLATION**

- A. Before permanent installation of the system, the system shall be tested in a configuration equivalent to the final system.

END OF SECTION