

ControlNet Router

Datasheet

A-CNTR

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1. PREFACE

1.1. ABOUT THIS DOCUMENT

This document contains the technical data for the ControlNet Router. The ControlNet Router provides intelligent data routing between ControlNet and EtherNet/IP or Ethernet PCCC (CSP) allowing the user to connect new PanelView Plus devices (with no ControlNet interface) to existing ControlNet networks. The support for Ethernet PCCC (CSP) allows the module to emulate a PLC5 providing a legacy interface for PanelViews and other devices over scheduled ControlNet (as shown below).

1.2. FEATURES

The ControlNet Router provides an interface between newer PanelView Plus HMIs (without any ControlNet interface) and existing ControlNet networks using either Unscheduled or Scheduled ControlNet. The ControlNet Router supports redundant ControlNet.

When using unscheduled ControlNet, the ControlNet Router can be used as a drop-in replacement for existing legacy PanelView HMI's by simply changing the RSLinx path.

When using scheduled ControlNet, the ControlNet Router can be configured to allow for up to 400 bytes of input data and 400 bytes of output data per PanelView to exchange with the Logix Controller. The ControlNet Router will emulate a PLC5 controller which is used by the PanelView HMI to map PLC5 Files (e.g. N7 or F8) to the Logix input and output assembly over scheduled ControlNet. The consumed (ControlNet) data can be mapped to a PLC5 type address file, N9 and F10, and then read by an Ethernet device e.g. a PanelView. Similarly, the produced (ControlNet) data can also be mapped to a PLC5 type address file, N7 and F8, to which an Ethernet device could write.

The module also provides a range of statistics on Ethernet and ControlNet to assist with fault finding. A built-in webserver provides detailed diagnostics of system configuration and operation, including the display of ControlNet operation and communication statistics, without the need for any additional software.

The ControlNet Router is configured using the Aparian Slate application. This program can be downloaded from www.aparian.com free of charge.

1.3. ARCHITECTURE

The figure below provides an example of the typical network setup when using unscheduled ControlNet, where the ControlNet Router acts as a target device on the ControlNet network.

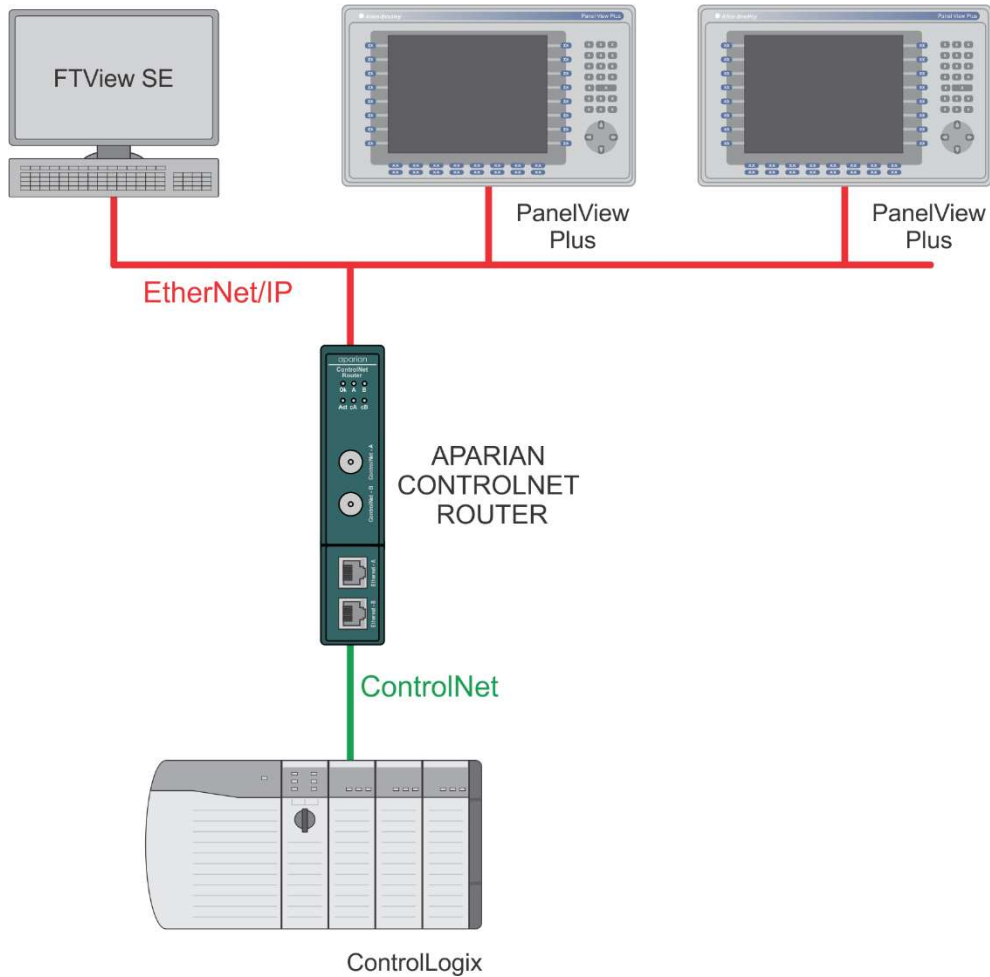


Figure 1.1. - Example of a typical network setup in PLC Emulation mode

In this example, the ControlNet Router will relay requests from the PanelView HMI to the Logix Controller allowing the newer PanelView Plus (with Ethernet only) to access the Logix Controller tags over an existing ControlNet network.

2. TECHNICAL SPECIFICATIONS

2.1. DIMENSIONS

Below are the enclosure dimensions as well as the required DIN rail dimensions. All dimensions are in millimetres.

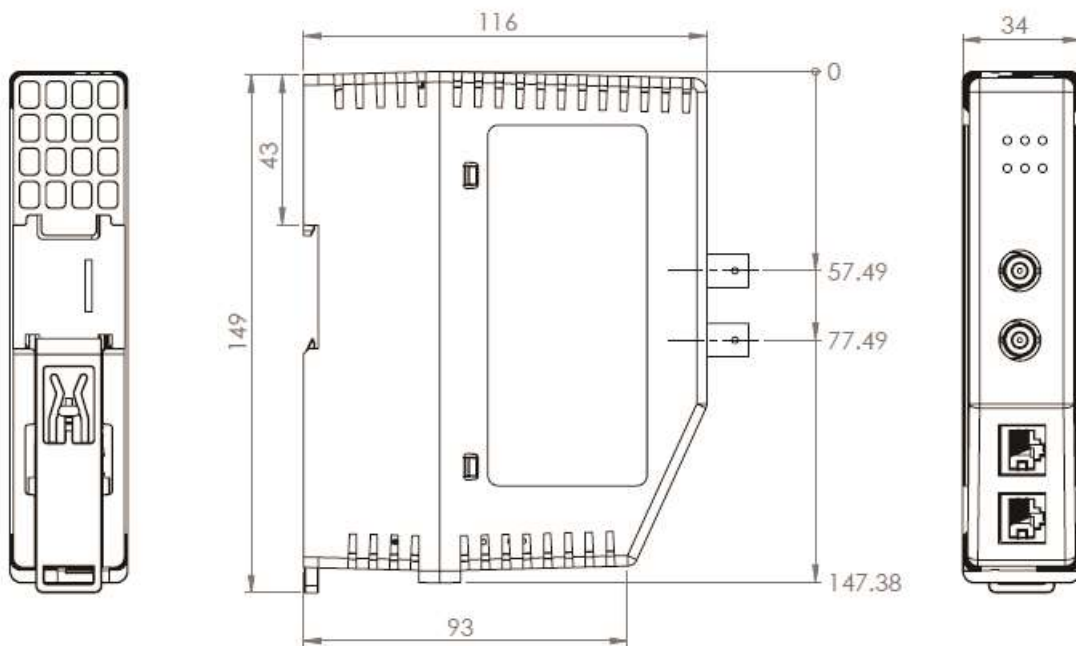


Figure 2.1 – ControlNet Router enclosure dimensions

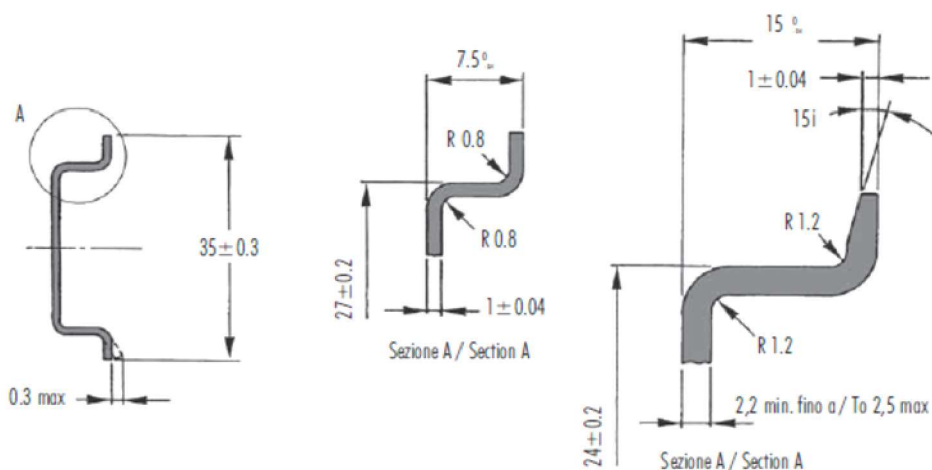


Figure 2.2 - Required DIN Rail dimensions

2.2. ELECTRICAL

| Specification | Rating |
|-----------------------|--------------------------------------|
| Power requirements | Input: 10 – 36V DC, (85 mA @ 24 VDC) |
| Power consumption | 2 W |
| Connector | 3-way terminal |
| Conductors | 24 – 18 AWG |
| Enclosure rating | IP20, NEMA/UL Open Type |
| Temperature | -20 – 70 °C |
| Earth connection | Yes, terminal based |
| Emissions | IEC61000-6-4 |
| ESD Immunity | EN 61000-4-2 |
| Radiated RF Immunity | IEC 61000-4-3 |
| EFT/B Immunity | EFT: IEC 61000-4-4 |
| Surge Immunity | Surge: IEC 61000-4-5 |
| Conducted RF Immunity | IEC 61000-4-6 |

Table 2.1 - Electrical specification

2.3. ETHERNET

| Specification | Rating |
|--------------------|-------------------------|
| Connector | RJ45 |
| Conductors | CAT5 STP/UTP |
| ARP connections | Max 40 |
| TCP connections | Max 40 |
| CIP connections | Max 10 |
| Communication rate | 10/100Mbps |
| Duplex mode | Full/Half |
| Auto-MDIX support | Yes |
| Embedded switch | Yes, 2 x Ethernet ports |

Table 2.2 - Ethernet specification

2.4. CONTROLNET

| Specification | Rating |
|-------------------------------|-----------------------------------------------------------------------------------------------------------|
| Connectors | 2 x BNC connectors (ControlNet A and B). |
| Conductors | Quad shield RG-6 coaxial cable |
| Unscheduled Routed Client Max | 40 |
| Scheduled Connection | Max Input Size – 408 bytes (400 bytes mapped data) Max Output Size – 404 bytes (400 bytes mapped data) |

Table 2.3 – ControlNet specification

2.5. PCCC

| Specification | Rating |
|----------------------|------------|
| Max PCCC Connections | 10 |
| Max PCCC Payload | 1000 bytes |

Table 2.4 – PCCC specification

2.6. CERTIFICATIONS




| Certification | Mark |
|------------------|-----------------------------------------------------------------------------------------------------|
| CE Mark |  |
| RoHS2 Compliant |  |
| ODVA Conformance |  * F/W 1.001 |

Table 2.5 – Certifications