DH485 Router/B

Datasheet

A- DH485R /B

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1. PREFACE

1.1. ABOUT THIS DOCUMENT

This document contains the technical data for the DH485 Router/B.

1.2. FEATURES

The DH485 Router/B provides intelligent data routing between EtherNet/IP and DH485 which can help simplify the migration from MicroLogix and SLC systems to ControlLogix or CompactLogix platforms, where a DH485 interface is required.

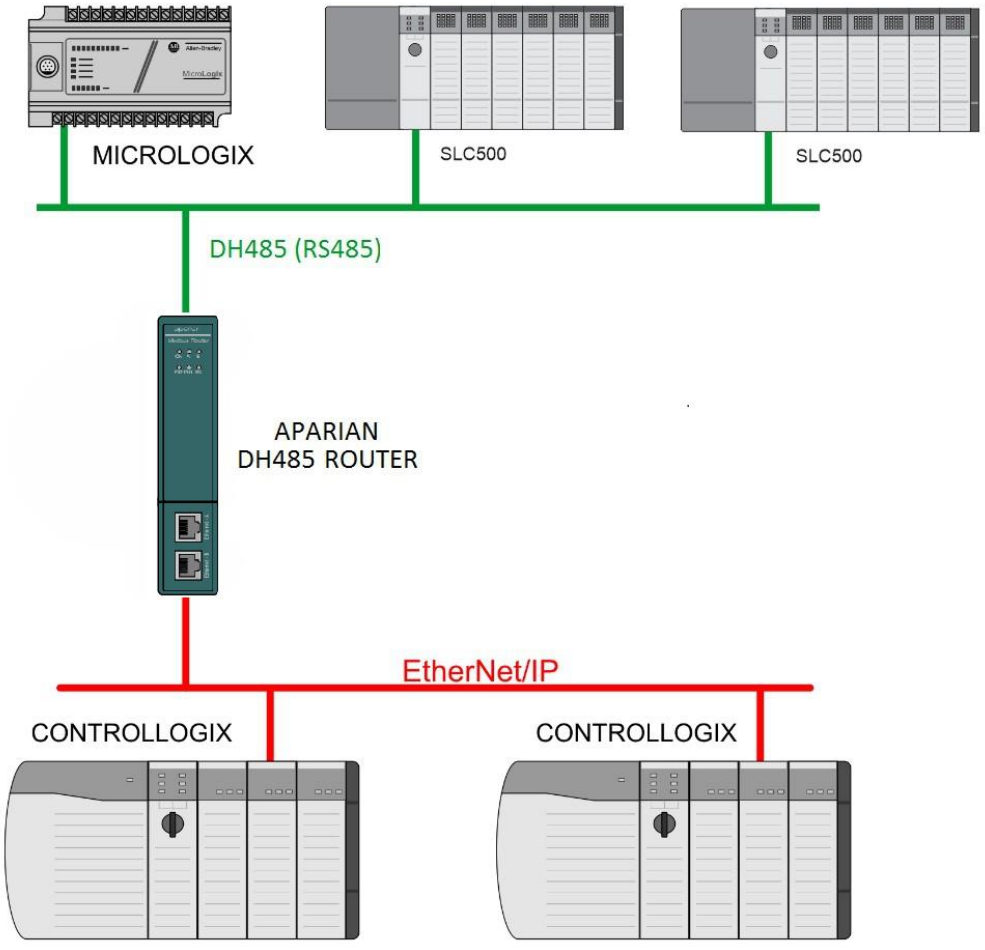


Figure 1.1. - Example of a typical network setup

The DH485 Router/B can also be used to program Allen-Bradley SLC5/03 PLCs via Ethernet. This is especially useful with certain legacy controllers that do not support Ethernet.

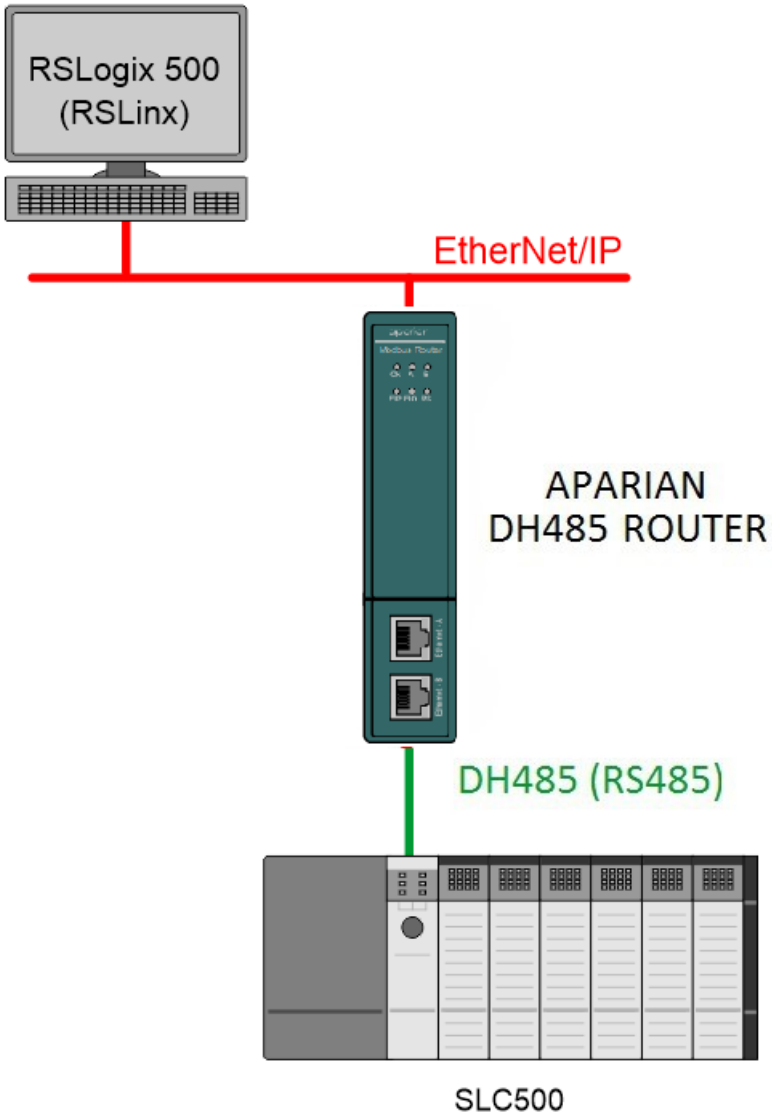


Figure 1.2. – Example of Programming a SLC5/03 Controller via the DH485 Router/B

The DH485 Router/B can also be used to connect newer PanelView Plus and PanelView 800 devices to a range of Rockwell Automation controllers. This is especially useful where newer PanelView Plus devices (supporting only Ethernet) are required to connect to controllers (new and old) via DH485.

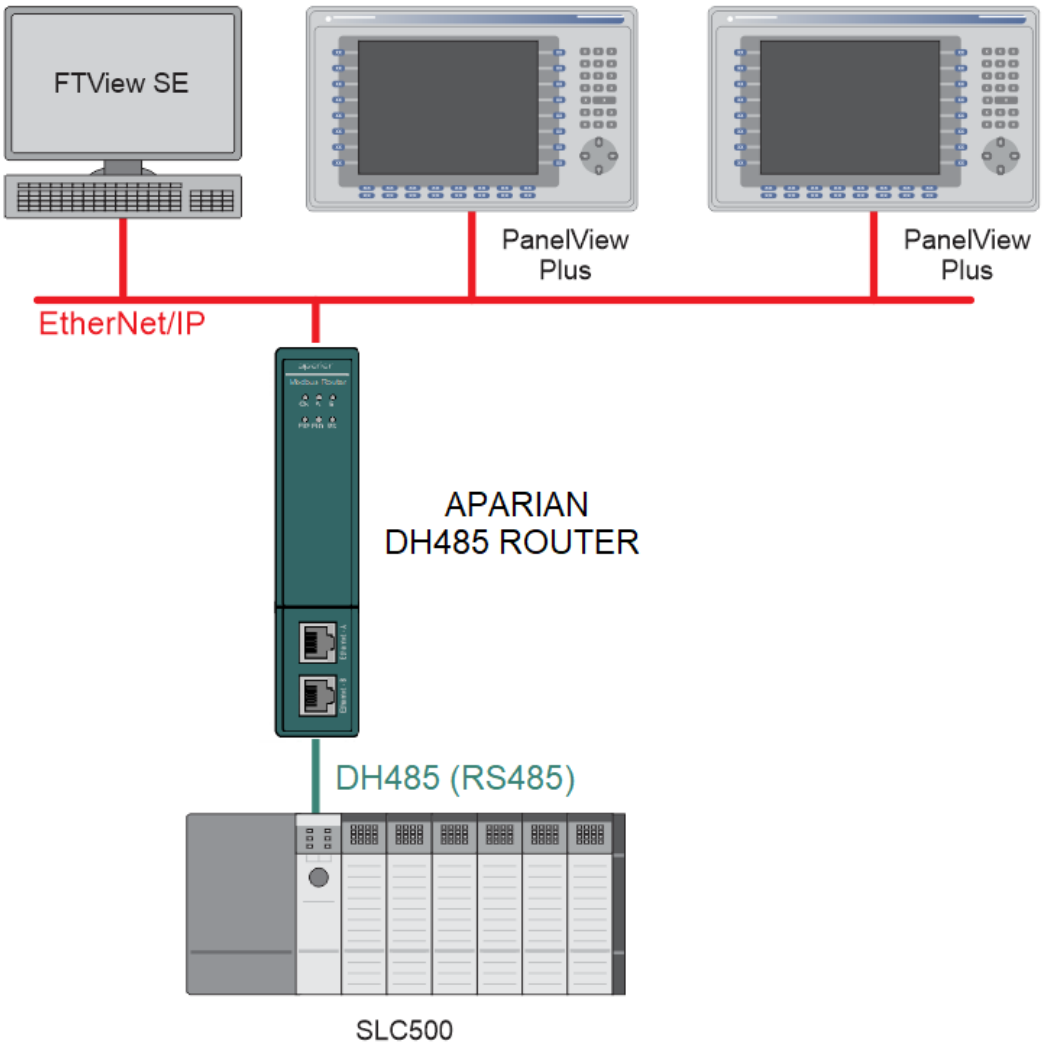


Figure 1.3. – Example of connecting a PanelView to a SLC500 Controller via the DH485 Router/B

The DH485 Router/B is able to transfer data from a DH485 device to a maximum of eight Logix controllers. The module operates in one of four modes, simplifying the configuration for all applications.

Mode	Description	Message Initiator
Transparent PCCC	The DH485 Router/B will redirect DH485 PCCC messages to a Logix controller at a preconfigured EtherNet/IP path. Logix PLC Mapping configuration may also be required. **This mode also enables remote programming using RSLogix 500.**	Remote Device
Reactive Tag	The DH485 Router/B will convert DH485 PCCC messages to Logix controller tag reads or tag writes. No Logix PLC Mapping configuration is required.	Remote Device
Scheduled Tag	The DH485 Router/B transfers data between a DH485 device and a number of Logix tags, using a preconfigured scheduled.	DH485 Router/B

	No Logix or remote device configuration is required.	
Unscheduled	The DH485 Router/B transfers messages received from a Logix Message Instruction.	Logix (Msg)
AIC	This will allow the user to connect a RS232 device (e.g. MicroLogix 1400) to a the DH485 network via the isolated RS485 port of the DH485 Router/B. This can be used as a direct replacement for the discontinued NET-AIC module.	N/A

Table 1.1. – Modes of Operation

In Transparent PCCC mode the user will be able to connect to, and program, SLC5/03 PLCs.

The DH485 Router/B is configured using the Aparian Slate application. This program can be downloaded from www.aparian.com free of charge. Slate offers various configuration methods, including a controller tag browser.

The module can operate in both a Logix "owned" and standalone mode. With a Logix connection the input and output assemblies will provide additional diagnostics information which will be available in the Logix controller environment.

The module's RS485 port is used for DH485 communication and uses a terminal block for convenient installation.

A built-in webserver provides detailed diagnostics of system configuration and operation, including the display of received DH485 communication packets, without the need for any additional software.

1.3. ARCHITECTURE

The figure below provides an example of the typical network setup.

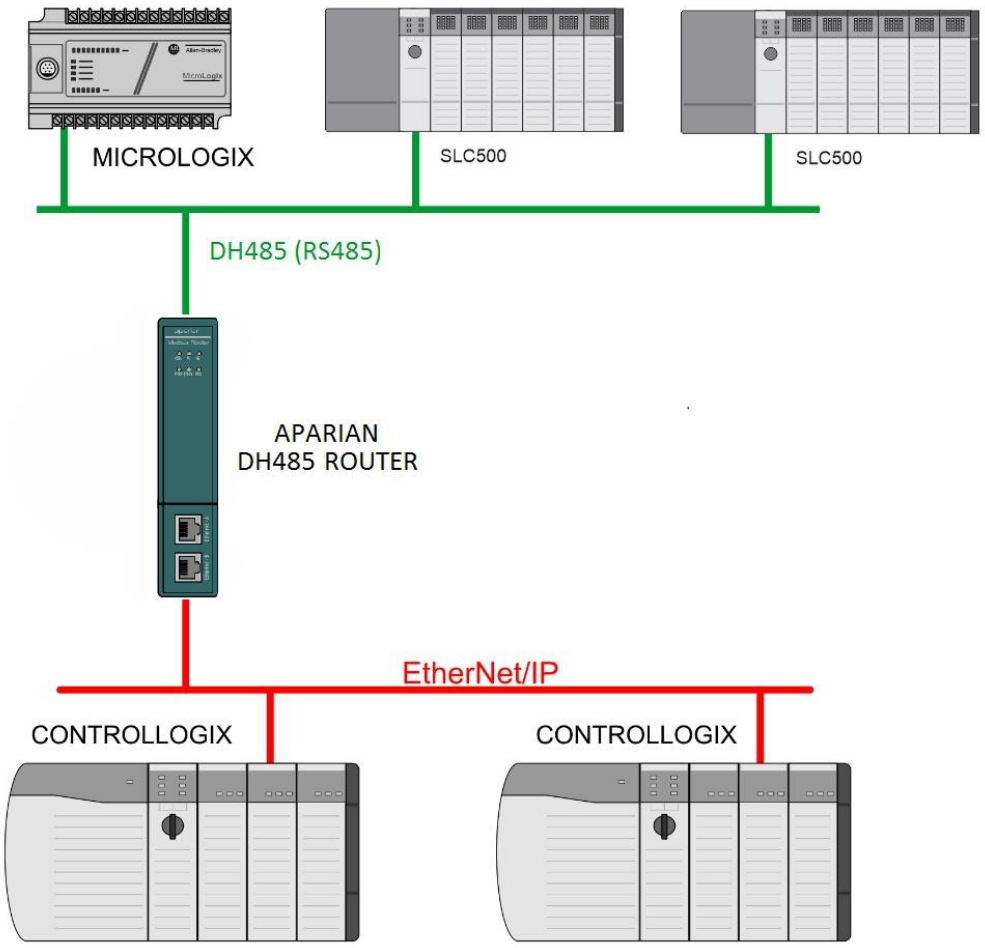


Figure 1.4. - Example of a typical network setup

By converting and redirecting DH485 messages from legacy devices to EtherNet/IP, the module provides an interface for data exchange to Allen-Bradley ControlLogix and CompactLogix platforms.

The DH485 Router/B can be used in redundant Logix controller systems.

Systems that rely on a central ControlLogix communicating to a number of remote DH485 devices, e.g. MicroLogix and SLC stations, may find the DH485 Router/B useful when upgrading to newer ControlLogix processors. These systems can easily be upgraded using the DH485 Router/B without affecting the existing and often costly wireless infrastructure.

The DH485 Router/B in conjunction with the DF1 Router can be used to replace both 1761-NET-ENI and 1761-NET-AIC. The old network architecture used the NET-ENI and NET-AIC to allow the user to use Ethernet to connect to various SLC, PLC5, and MicroLogix controllers as shown below.

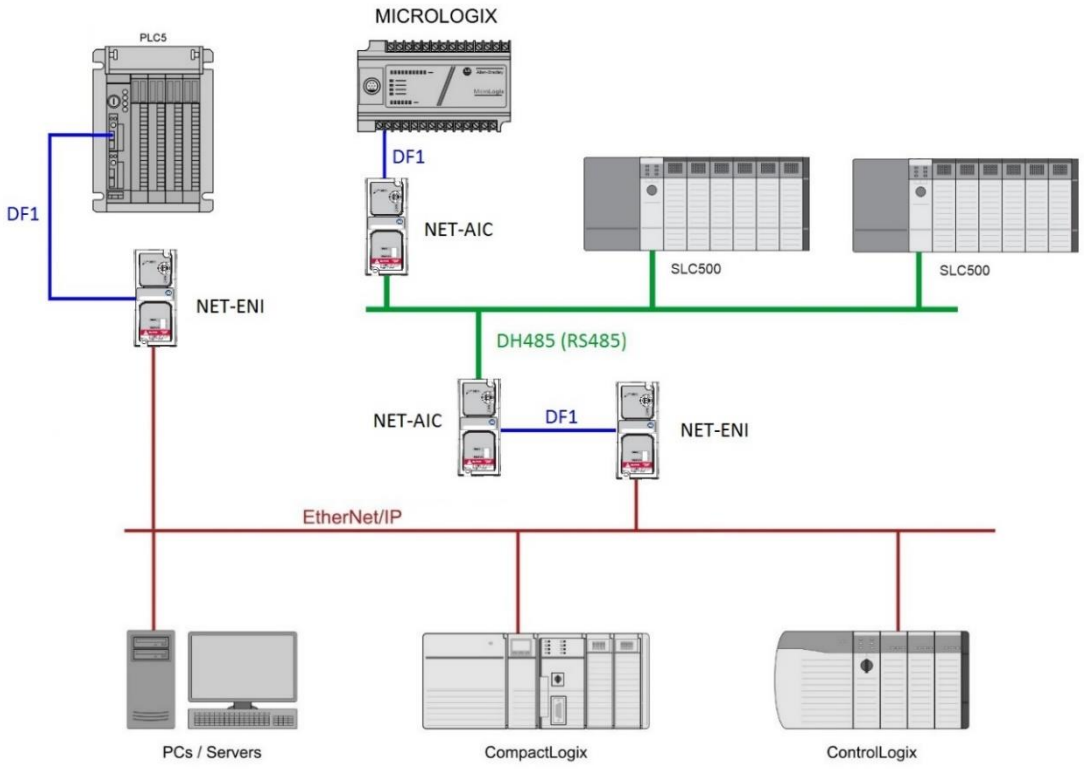


Figure 1.5. - Example of an old network setup

The DH485 Router/B and DF1 Router allows the user to directly route the DF1 and DH485 networks to EtherNet/IP as shown below:

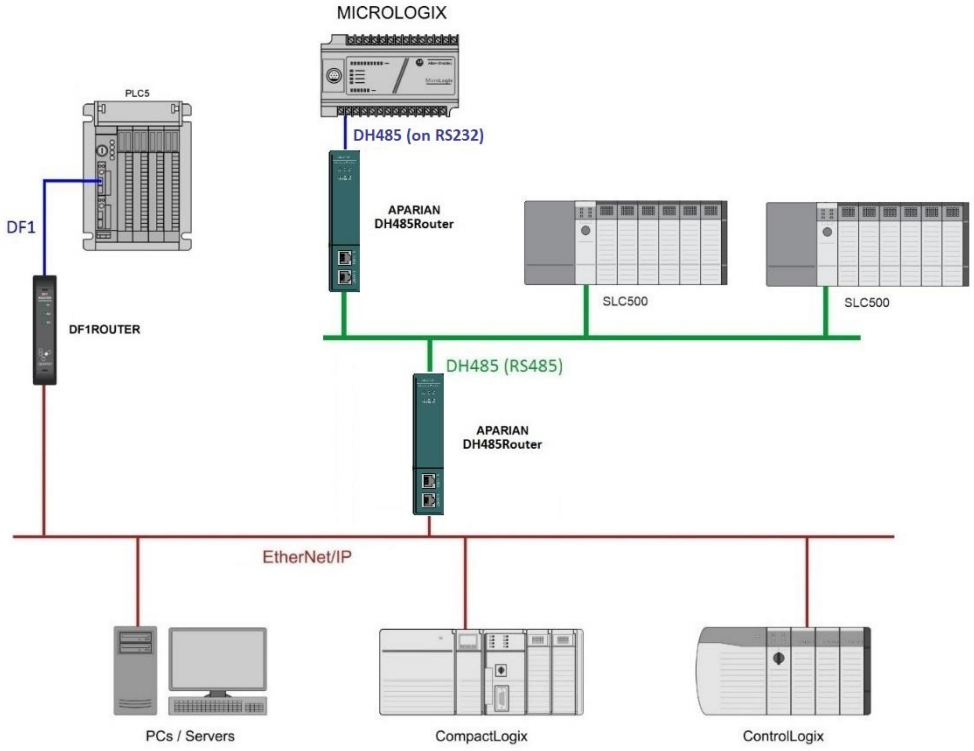


Figure 1.6. - Example of a new network setup

2. TECHNICAL SPECIFICATIONS

2.1. DIMENSIONS

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

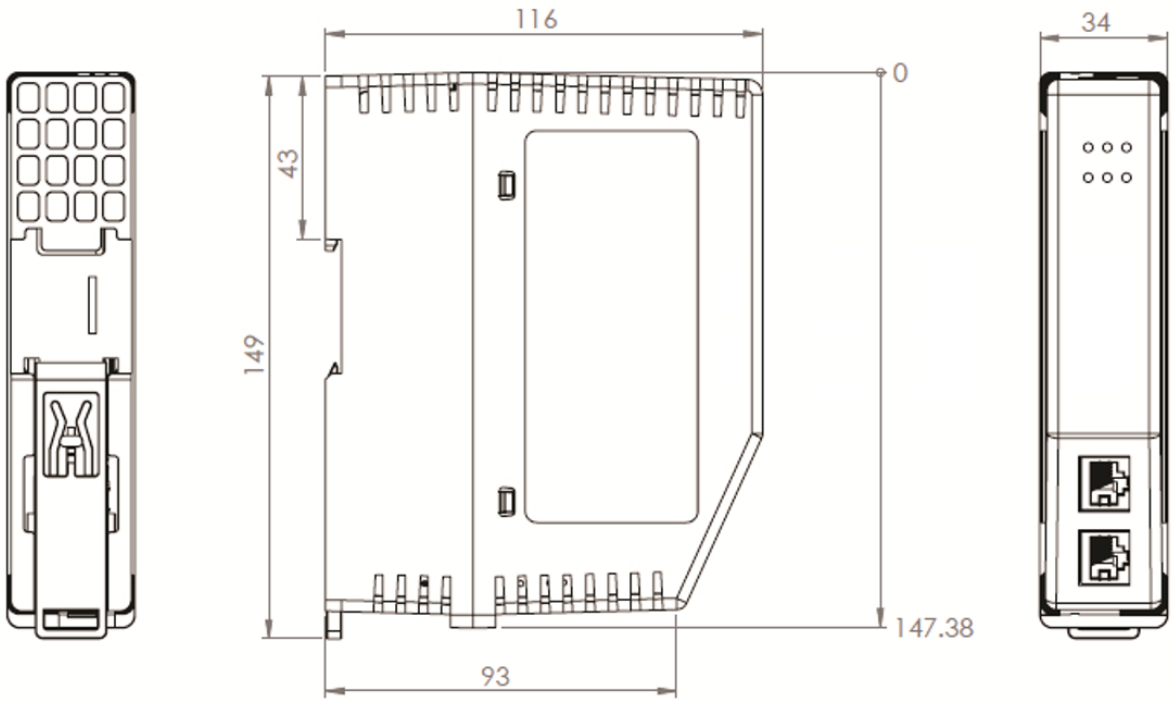


Figure 2.1 – DH485 Router/B enclosure dimensions

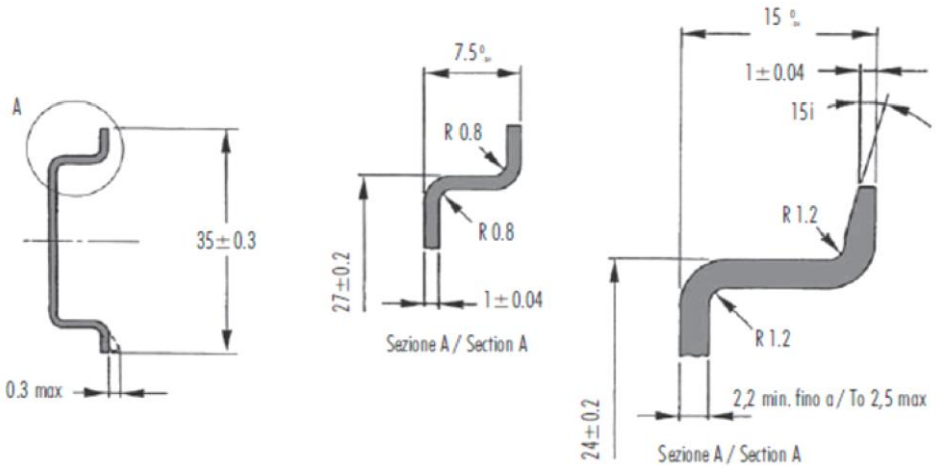


Figure 2.2 - Required DIN Rail dimensions

2.2. ELECTRICAL

Specification	Rating
Power requirements	Input: 10 – 32V DC, (67 mA @ 24 VDC)
Voltage Fluctuations	Voltage fluctuations < ±10% Transient Over-voltages up to the levels of OVERVOLTAGE CATEGORY I
Power consumption	1.7 W 173 mA maximum
Connector	3-way terminal
Conductors	24 – 18 AWG
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. ENVIRONMENTAL

Specification	Rating
Enclosure rating	IP20, NEMA/UL Open Type Indoor use only
Temperature	-20 – 70 °C
Relative Humidity	5% to 90% - No condensation
Pollution Degree	2
Altitude	< 2000 m

Table 2.2 - Environmental specification

2.4. 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
Controller Support	ControlLogix, CompactLogix, MicroLogix, SLC
Embedded switch	Yes, 2 x Ethernet ports

Table 2.3 - Ethernet specification

2.5. SERIAL PORT (RS232)

Specification	Rating
RS232 Connector	9-way terminal (shared with RS485)
RS232 Conductor	24 – 18 AWG
Electrical Isolation	1000 Vdc

Table 2.4 – RS232 Serial Port specification

2.6. SERIAL PORT (RS485)

Specification	Rating
RS485 Connector	9-way terminal (shared with RS485)
RS485 Conductor	24 – 18 AWG
Electrical Isolation	1500 Vrms for 1 minute.

Table 2.5 – RS485 Serial Port specification

2.7. DH485

Specification	Rating
Protocol	DH485
Physical Port	RS485 or RS232
BAUD	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Parity	Even
Data bits	8
Stop bits	1
Error detection	CRC
Transparent mode mapping	Max 20 routes
Logix Tag mode mapping	Max 20 routes
Reactive Tag Mode Message Support	PLC-5 Typed Read, PLC-5 Typed Write, SLC Typed Read, SLC Typed Write
Scheduled Tag Mode Message Support	PLC-5 Typed Read, PLC-5 Typed Write, SLC Typed Read, SLC Typed Write
Rockwell Automation Controller programming support	SLC5xx range

Table 2.6 - DH485 specification

2.8. CERTIFICATIONS

Certification	Mark
CE Mark	CE
RoHS2 Compliant	RoHS2
UL Mark File: E494895	c UL us LISTED CLASS 1, DIV 2, GROUPS A, B, C, D
ODVA Conformance	EtherNet/IP™

UKCA	

Table 2.7 – Certifications