DH485 Router

Datasheet

A-DH485R

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CONTENTS

aparian

1. PREFACE

1.1. ABOUT THIS DOCUMENT

This document contains the technical data for the DH485 Router. The DH485 Router provides intelligent routing between EtherNet/IP and DH485 which can help simplify the migration from PLC2, PLC3, PLC5, and SLC systems.

The DH485 Router can also be used to program SLC5/03 Rockwell Automation controllers from Ethernet to Serial. This is especially useful with certain legacy controllers that do not support Ethernet as well as applications where controllers need to be accessed remotely over serial radios.

The DH485 Router can also be used to connect newer PanelView Plus and PanelView 800 devices to a range of Rockwell Automation controllers. This is especially useful with newer PanelView Plus devices (supporting only Ethernet) which needs to connect to controllers (new and old) via serial.

1.2. FEATURES

The DH485 Router is able to transfer data from a DH485 device to a maximum of three 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 will redirect DF1 PCCC messages to a Logix controller at a preconfigured EtherNet/IP path. Logix PLC Mapping configuration is also required.	Remote Device
Reactive Tag	The DH485 Router will convert DF1 PCCC messages to Logix controller tag reads or tag writes. No Logix PLC Mapping configuration is required.	Remote Device
Scheduled Tag	The DH485 Router transfers data between a DH485 device and a number of Logix tags, in preconfigured scheduled manner. No Logix or remote device configuration is required.	DH485 Router
Unscheduled	The DH485 Router transfers messages received from a Logix Message instruction.	Logix (Msg)

Table 1 - Modes of Operation

In Transparent PCCC mode the user will be able to connect and program SLC5/03 Rockwell Automation controllers via the serial port (from Ethernet).

The DH485 Router 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.

Hereafter the DH485 Router will be referred to as the **module**.

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 uses RS485 for DH485 communication. The RS485 port also 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.

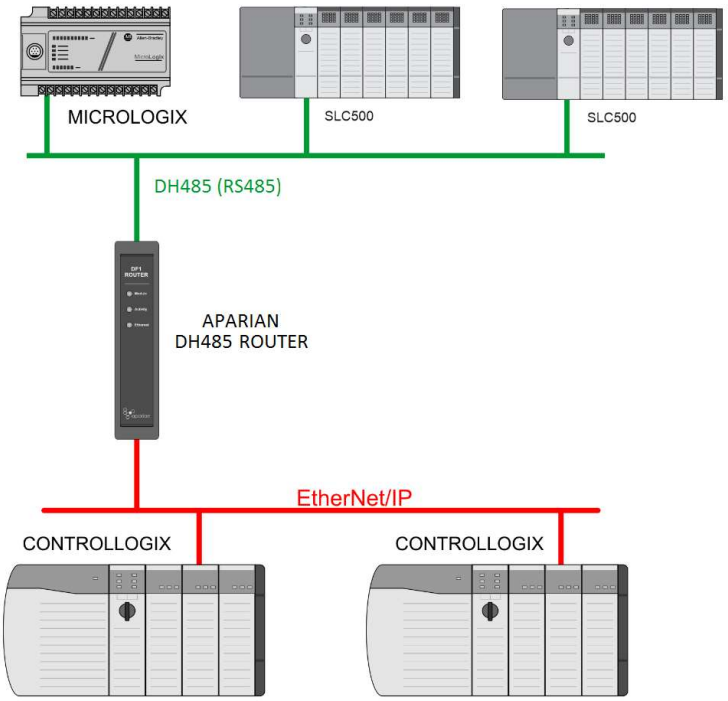

Figure 1 - Example of a typical network setup

The RS485 DH485 port will be connected to the legacy device and provide an interface for data exchange with the Allen-Bradley ControlLogix or CompactLogix platforms.

The DH485 Router 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 useful when upgrading to a newer ControlLogix processors. These systems can easily be upgraded using the DH485 Router without affecting the existing and often costly wireless infrastructure.

The DH485 Router 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.

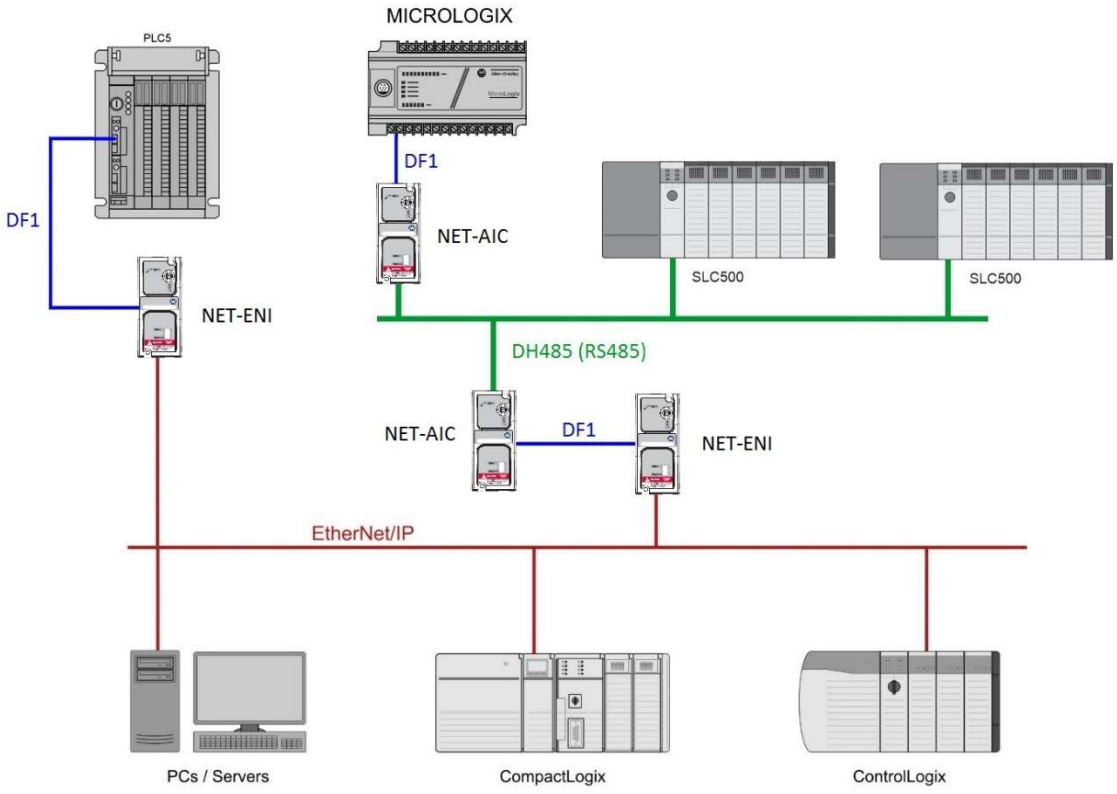

Figure 2 - Example of an old network setup

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

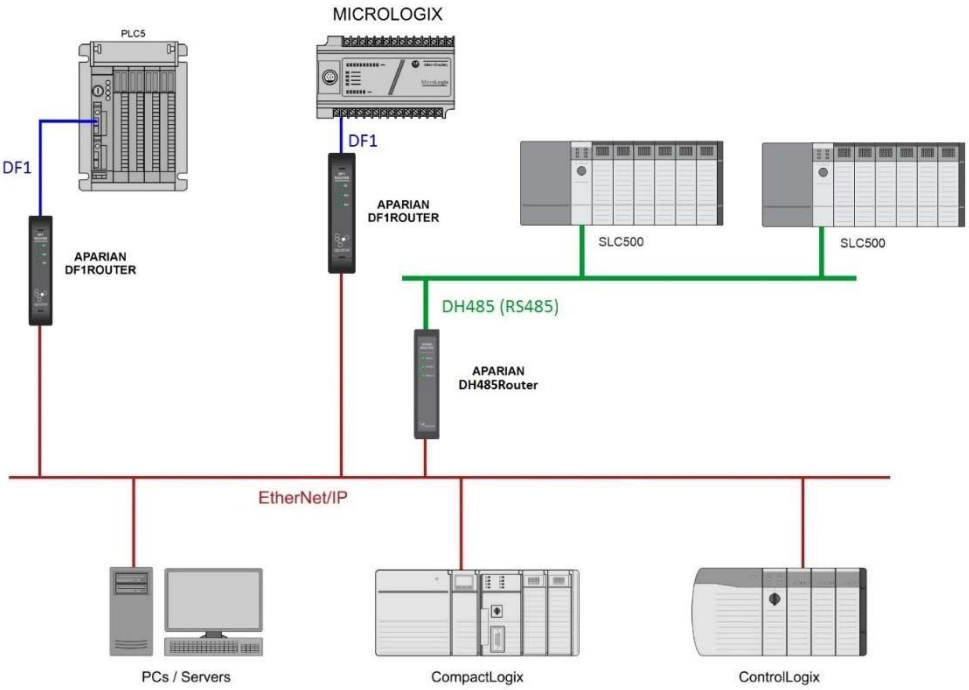

Figure 3 - Example of a new network setup

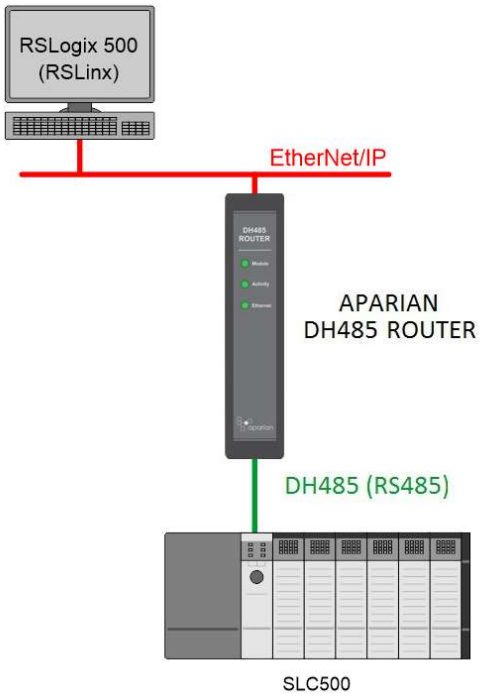

Figure 4 - Example of programming a SLC5/03 via the DH485 Router

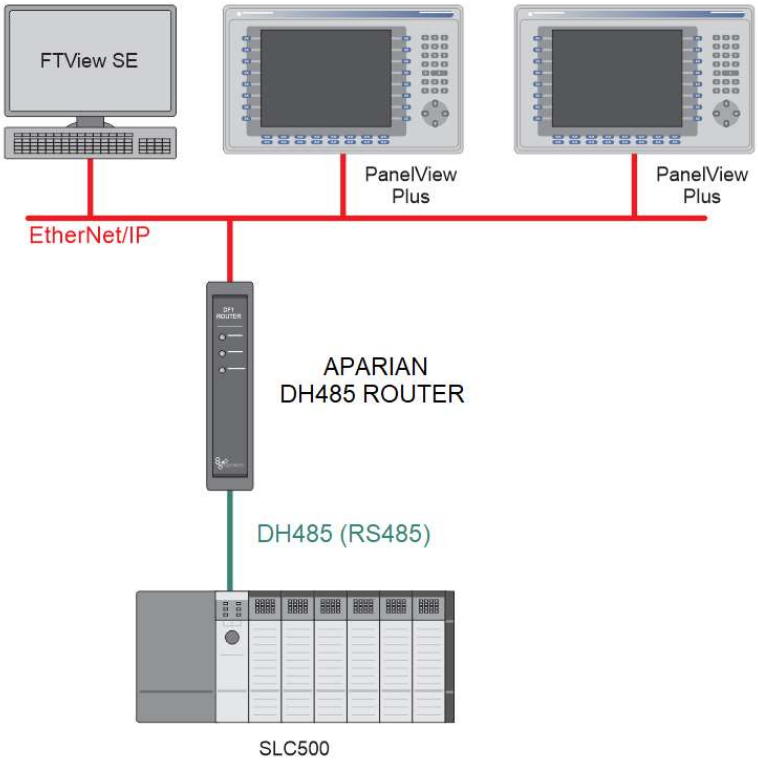

Figure 5 – Example of connecting a PanelView to a SLC500 Controlle via the DH485 Router

2. ETHERNET/IP NETWORK

Specification	Rating
Connector	RJ45
Conductors	CAT5 STP/UTP
ARP connections	Max 20
TCP connections	Max 20
CIP connections	Max 10
Communication rate	10/100Mbps
Duplex mode	Full / Half
Auto-MDIX support	Yes

Table 2 - Ethernet specification

3. DH485 NETWORK

Specification	Rating
Connector	4-way terminal
Conductor	24 – 18 AWG
Protocol	DH485
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	SLC5/03

Table 3 - DH485 specification

4. ELECTRICAL SPECIFICATIONS

Specification	Rating
Power requirements	Input: 10 – 28V DC, (70 mA @ 24 VDC / 130 mA @ 10 VDC)
Power consumption	1.7 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 4 - Electrical specification

5. CERTIFICATIONS

Certification	Mark
CE Mark	CE
UL Mark File: E494895	c UL us LISTED CLASS 1, DIV 2, GROUPS A, B, C, D

ODVA Conformance	EtherNet/IP™ * F/W 1.001
RoHS2 Compliant	RoHS2
RCM	

Table 5 – Certifications

6. DIMENSIONS

Below are the enclosure dimensions as well as the required DIN rail dimensions.

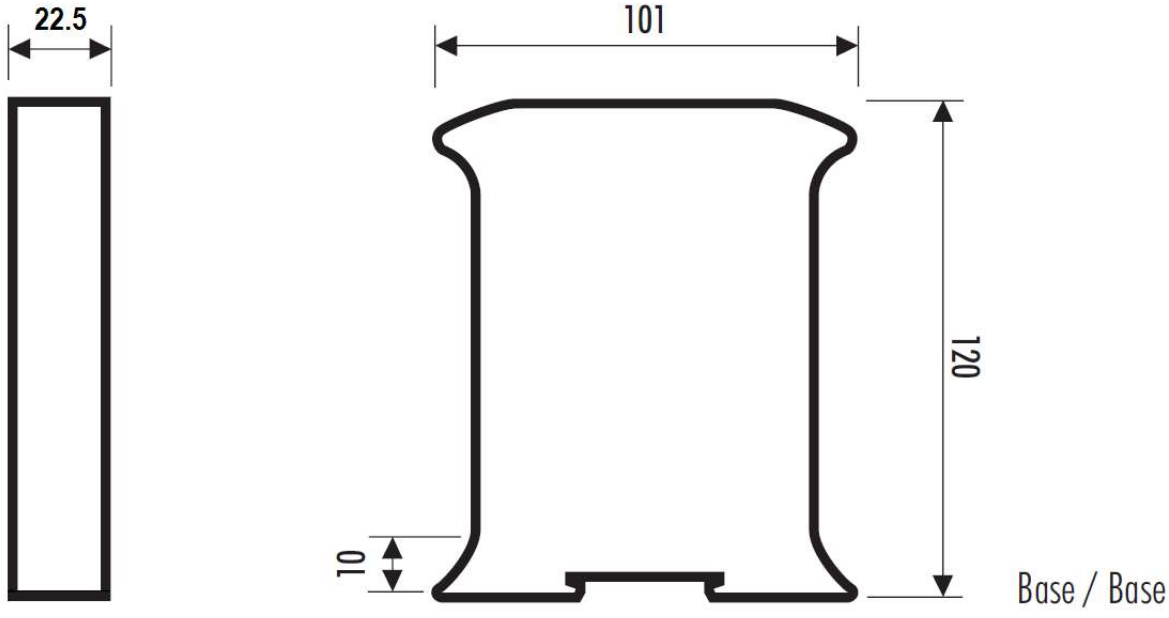

Figure 6 - DH485 Router enclosure dimensions

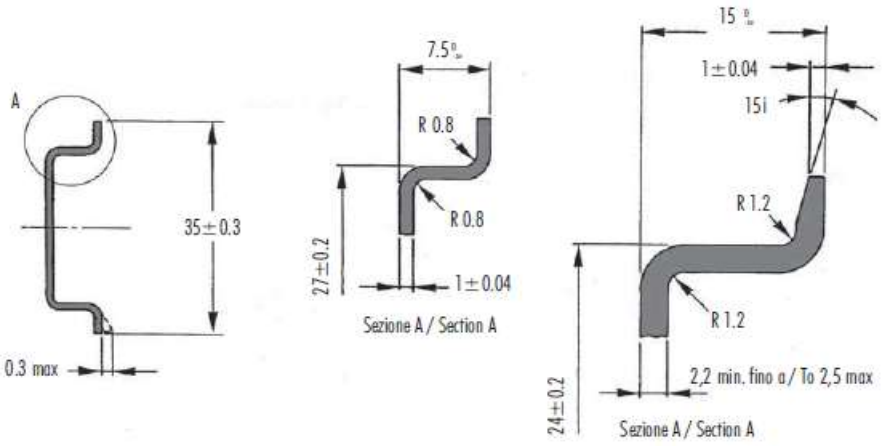

Figure 7 - Required DIN dimensions