DATASHEET

J1939 Router/B
A-J1939R/B

The A-J1939R/B provides intelligent data routing between either EtherNet/IP™, Modbus TCP/IP®, or Modbus® RTU to a J1939 network. This allows the user to integrate J1939 devices into a Rockwell Automation Logix platform (e.g., ControlLogix® or CompactLogix™) or any Modbus Client or Server device.

The A-J1939R/B provides auto extraction and scaling of SPNs (Suspect Parameter Number) that can be mapped to Logix UDTs Tags. The A-J1939R/B allows the user to select standard specification defined PGNs (e.g., PGN 61444-Electronic Engine Controller 1) from a list in the Slate software. The user can then export a Logix UDT from the Slate software which maps the PGN selected.

Features

❖ EtherNet/IP Target or Originator with support for Class 1 connections

❖ Supports Modbus TCP/IP (Ethernet) and Modbus RTU (Serial) Client/Server

❖ Direct-to-Tag Technology

❖ Dual Ethernet ports with support for DLR (Device Level Ring)

❖ Support for NTP (Network Time Protocol) for external clock synchronization

❖ Advanced Diagnostics, including packet capture

❖ Support for pass-through or explicit messaging

Configuration

❖ The Slate Configuration Utility software is used for configuration and troubleshooting of the router. The stand-alone configuration utility allows users to define the setup and configuration of the J1939 router and its connections with controllers and devices.

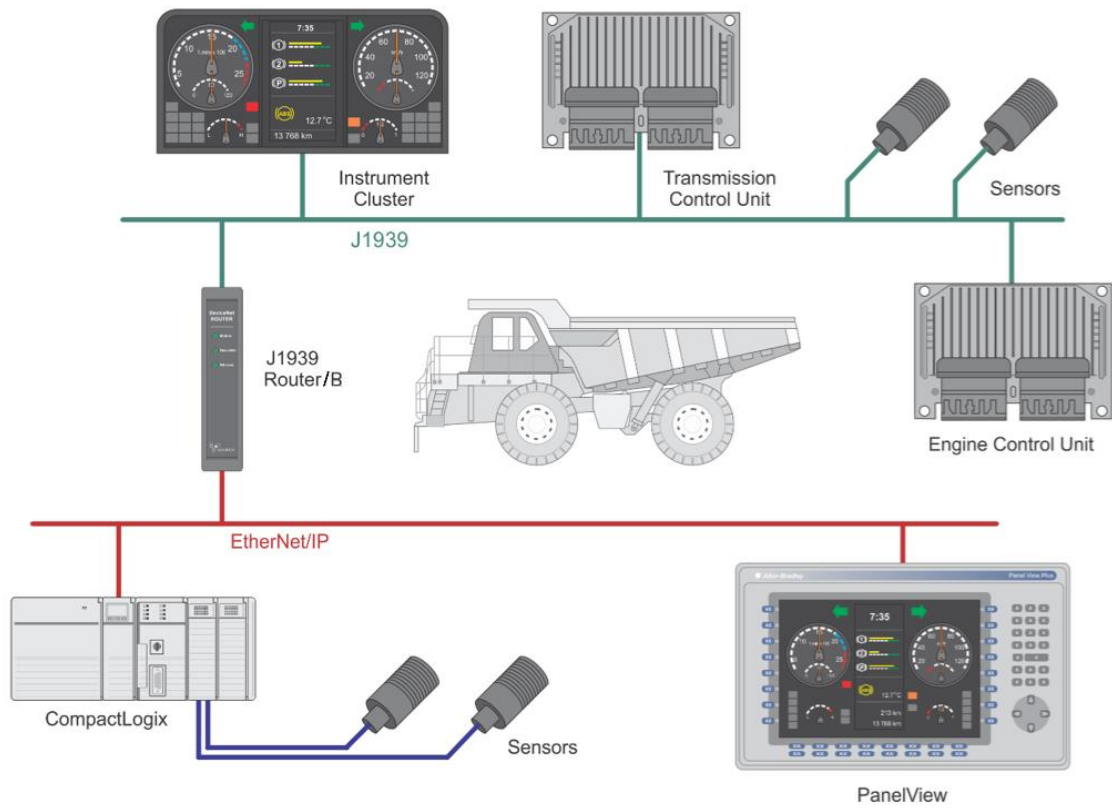❖ The Slate Configuration Utility software can be downloaded from www.prosoft-technology.com

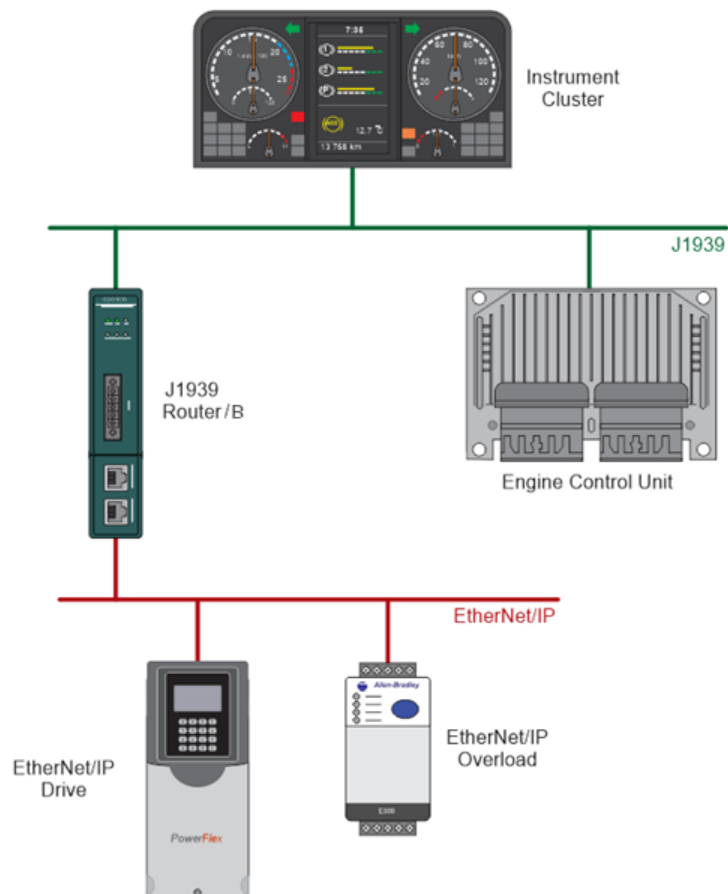**Figure 1 – Typical architecture using the J1939 Router**

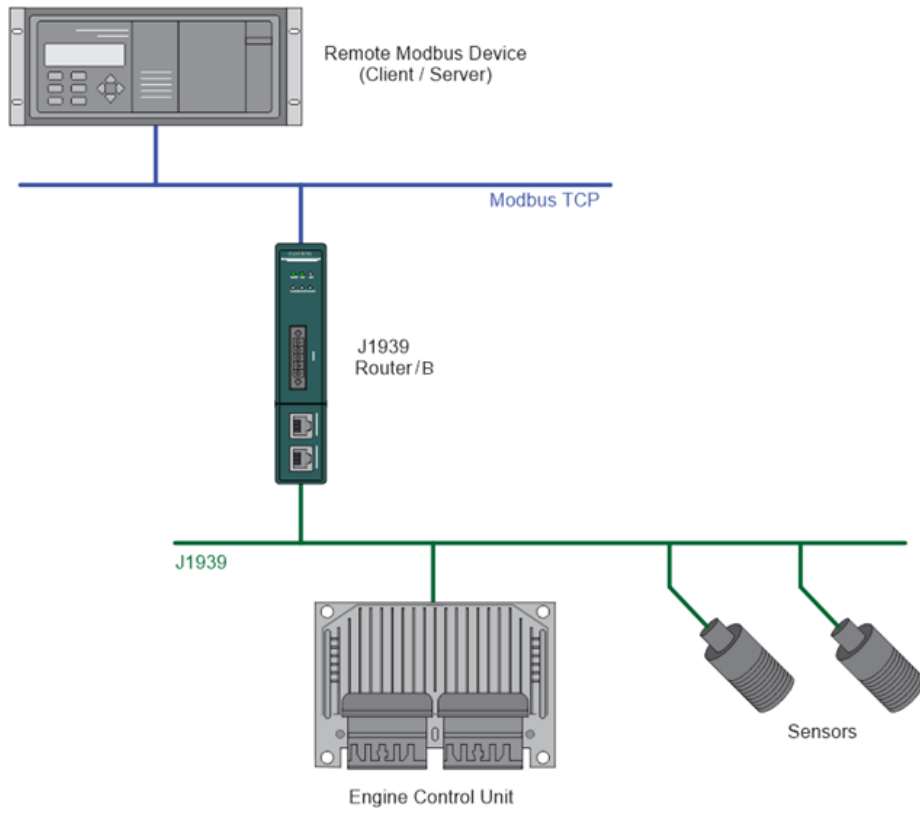**Figure 2 – Example of connecting EtherNet/IP IO to an existing J1939 network**

Figure 3 – Example of connecting J1939 devices to a Modbus TCP/IP Client or Server

Specifications

Hardware

Specification	Rating
Power Supply	Input: 10 to 32 VDC
Power Consumption	2.2 W (Max.) Current: 180 mA @ 10 V Current: 85 mA @ 24 V
Dimensions (H x W x D)	149.0 x 34.0 x 116.0 mm (5.86 x 1.34 x 4.56 in)
Connector	3-way terminal
Conductors	24 to 18 AWG
Enclosure Rating	IP20, NEMA/UL Open Type
Temperature	-20 to 70 °C
Humidity	0 to 95% RH, non-condensing
Earth Connection	Yes, terminal based
Emissions	IEC 61000-6-4
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

Ethernet Ports

Specification	Rating
Connector	RJ45
Conductors	CAT5 STP/UTP
ARP Connections	Max 100
TCP Connections	Max 100
CIP Connections	Max 15
Communication Rate	10/100 Mbps
Duplex Mode	Full / Half
Auto-MDIX Support	Yes
Embedded Switch	Yes, 2x Ethernet ports
Device Level Ring (DLR)	Supported
Network Time Protocol (NTP)	Supported

Serial Port (RS232)

Specification	Rating
RS232 Connector	9-way terminal (shared with RS485)
RS232 Conductor	24 to 18 AWG
Electrical Isolation	1000 VDC
Baud Rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Parity	None, Even, Odd
Data Bits	8
Stop Bits	1

Serial Port (RS485)

Specification	Rating
RS485 Connector	9-way terminal (shared with RS485)
RS485 Conductor	24 to 18 AWG
Electrical Isolation	1500 Vrms for 1 minute
Baud Rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Parity	None, Even, Odd
Data Bits	8
Stop Bits	1

J1939 Network

Specification	Rating
Connector	5-way terminal, 5.08mm pitch.
Functions	Produce and Consume
Max PGN Mapping	100 (Produce and Consume)
Passthrough Messaging	Supported
Supported Baud Rates	250k and 500k
CAN Terminator	120 Ω - Software Enabled
Arbitrary Address Capable	Yes
Support for multi-packets	Yes
Configurable J1939 Name	Yes
PGN Live List	Supported

EtherNet/IP Target

Specification	Rating
Class 1 Cyclic connection count	4
Logix Direct-to-Tag Supported	Yes

EtherNet/IP Originator

Specification	Rating
Class 1 Cyclic Connections Supported	Yes
Class 3 / UCMM Connections Supported	Yes
Class 1 Connection Count	10
Class 3 / UCMM Target Device Count	10
Class 3 / UCMM Mapping Count	50

Modbus Client

Specification	Rating
Modes Supported	Modbus TCP/IP, Modbus RTU232, Modbus RTU485
Modbus RTU485 Termination	125 Ω - Software Enabled
Max. Modbus Server Devices	20
Max. Modbus Mapping	100
Mapping Ranges	Holding Register 0 to 65535 Input Register 0 to 65535 Input Status 0 to 65535 Coil Status 0 to 65535
Base Offset	Modbus (Base 0) PLC (Base 1)
Configurable Modbus TCP/IP Port	Yes
Data Reformatting Supported	BB AA BB AA DD CC CC DD AA BB DD CC BB AA

Modbus Server

Specification	Rating
Modes Supported	Modbus TCP/IP, Modbus RTU232, Modbus RTU485 (simultaneous)
Modbus RTU485 Termination	Software set
Mapping Ranges	Holding Register 0 to 65535 Input Register 0 to 65535 Input Status 0 to 65535 Coil Status 0 to 65535
Base Offset	Modbus (Base 0) PLC (Base 1)
Configurable Modbus TCP/IP Port	Yes

Agency Approvals & Certifications

Please visit our website: www.prosoft-technology.com