W5-JDC4

The W5-JDC4 is a DeviceNet-to-serial link communications gateway that provides a flexible DeviceNet interface to as many as four different channels of ASCII devices. A wide variety of serial ASCII devices can be easily connected as DeviceNet slaves, with independent communications to and set up for each channel.

The W5-JDC4 does not interpret the data being transmitted across it, and so the transferred messages may contain data of any nature or definition. This allows you to use the same gateway for a many different DeviceNet-serial interface applications.

Packaging is a metal enclosure designed to meet the requirements of the Semiconductor Special Interest Group and designed for panel mounting using tabs.

Using the W5-JDC4 you may communicate with the connected peripheral devices in the same fashion as the other DeviceNet products in the system. Data may be read/written using either I/O or explicit messaging. Typically real-time data is read and written as I/O by the DeviceNet Master via Polled, Change-of-State or Cyclic I/O and parameters are read and written with the Explicit Messaging technique. However, you may also read and write serial data via explicit messages.

The W5-JDC4 is defined as a Communications Adapter device on the DeviceNet system. It has four 9-pin D-sub connectors for connection to the RS232 interface port on your devices and two 5-pin "micro" connectors for connections to the DeviceNet network. The W5-JDC4 has one assigned DeviceNet address, which is set by two 10-position rotary switches on the unit. There is also one rotary switch for the DeviceNet baud rate.

Other W5-JDC4 parameters are software-configurable. Each W5-JDC4 has 2 standard green/red DeviceNet LED's for module status and network status and two green LED's for each serial port to indicate RS232 transmit and receive activity.

The W5-JDC4 has the following features:

- Translates messages and data between DeviceNet and a serial peripheral device
- Up to 4 serial devices can be connected simultaneously
- ODVA Group 2 Only Slave
- ODVA Conformance tested to DeviceNet Spec 2.0
- Defined as a DeviceNet Communications Device Profile 12 (Chex)
- Autobaud operation on DeviceNet
- I/O Messaging of Serial Data
- Poll
- COS
- Cyclic
- Explicit Messaging
- Serial data
- Configuration data
- Pad mode option
- Byte swapping option
- Transaction header or data only mode option
- Master-Slave handshake option
- Software Configurable Parameters for serial port operation
- Address selection via DIP switches
- Panel mount with stand-offs
- 2 micro DeviceNet connectors — 1 male and 1 female
- 4 DB9 RS-232 Connectors — male

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W5-JDC4 features —*continued*

- 2 standard DeviceNet module and network status LED's
- 8 serial transmit and receive LED's
- Powered from DeviceNet 11- 25 Vdc network power
- ASCII string length up to 50 bytes
- Serial port baud rate up to 115.2k baud Typical Applications
- Weigh scales
- Bar code readers and scanners
- Display panels
- Robots
- Drives
- Motion controllers
- Operator stations / HMI

Specifications

Product:	W5-JDC4 4-Port DeviceNet-Serial Gateway
Description:	Communications gateway between a serial capable device over an RS232 interface and a DeviceNet network.
Device Type:	Communications Adapter, 12 (0C hex)
Device Profile:	Identity Object
Vendor ID:	9
DeviceNet Conformance:	Designed to conform to the ODVA DeviceNet Specification Volume I and II, Version 2.0.
DeviceNet Communications:	Predefined Master/Slave Connection Set, Group 2 Only Server
DeviceNet:	Baud rate selection: rotary switch or software
Address selection:	rotary switch or software
Cable Connection:	Micro-connector
Status Indicators:	Network Status, Module Status
Serial port:	- configurable per port
Baud rate:	1200, 2400, 4800, 9600, 19.2k, 38.4k, 57.6k, 115.2k baud (software selectable)
Parity:	Odd/even/none (software selectable)
Data bits:	7 or 8 (software selectable)
Serial port connection:	9-Pin D-Sub
Status Indicators:	Rx, TX
Network Isolation:	500V
Max Power:	3.75 watts: 340 mA @ 11 Vdc – 150 mA @ 25 Vdc unregulated power supply
Mounting:	Panel Mount 4 hole positions on side—mounting tabs
Size:	Length: 7.00", width: 4.25", height: 1.85" to the top of the connectors
Operating Temp:	0-60 oC
Humidity:	0-95% RH, non-condensing

1782-JDC

The 1782-JDC is a family of DeviceNet-to-serial link communications gateways that provide a flexible DeviceNet interface to a wide variety of ASCII devices.

The JDC allows the user to easily and conveniently connect and integrate peripheral products with either RS232 or RS485 serial ports into a DeviceNet system.

Using the JDC, you may communicate with the connected peripheral devices in the same fashion as the other DeviceNet products in the system. Data may be read/written using either I/O polling or explicit messaging. Typically realtime data is read and written as I/O by the DeviceNet Master via Polled I/O and parameters are read and written with the Explicit Messaging technique.

The 1782-JDC-1, -2, and –3 have an easy set-up arrangement with only 10 parameters. Users comment frequently that they can get the device up and running in just a few minutes. In addition, these versions support data transfers of up to 124 bytes.

The newest member of the family, the 1782-JDCE series, supports real-time data to be read and written with the Explicit Messaging technique. This is useful in some panel display applications. This version has additional parameters to configure and is limited to data transfers of 50 bytes.

Another new feature on all versions is a mode which automatically provides byteswapping for 16-bit or 32-bit length data messages. This is useful with some PLCs.

The 1782-JDC is defined as a Communications Adapter device on the DeviceNet system. It has a 3-pin plug connector for connection to a RS232 or RS485 interface port on your device and a 5-pin pluggable DeviceNet connector for connections to the DeviceNet network. Baud rate selection is done automatically by the device when it is powered up on a network. The 1782-JDC has one assigned DeviceNet address, which is set by a 6-position DIP switch on the unit.

Other JDC parameters are software- configurable and are changed from their default values by third-party DeviceNet configuration tools. Each 1782- JDC has 2 standard green/red DeviceNet LED's for module status and network status and two green LED's to indicate RS485/232 transmit and receive activity.

The RS232 version may be used for point-to-point connection to a single serial device.

The RS485 version may be connected in a point-to-point fashion to a single device, or to multiple devices in the standard RS485 convention.

The JDC is a general-purpose gateway that is completely device- independent. The JDC does not interpret the data being transmitted across it, and so the transferred messages may contain data of any nature or definition. This allows you to use the same device for a wide variety of DeviceNet-serial interface applications.

FEATURES

- Translates messages and data between DeviceNet and a serial peripheral device
- ODVA Conformance tested to DeviceNet Spec 2.0
- Defined as a DeviceNet Communications Device Profile 12 (Chex)
- Autobaud operation
- Polled I/O, Change-of-State I/ O and Explicit Messaging
- Software Configurable Parameters for serial port operation
- Special mode performs byte swapping of serial message for AB PLC compatibility
- Address selection via DIP switches
- DIN rail mount
- Pluggable 5-pin DeviceNet connection
- Pluggable RS-485 2-pin connection / RS-232 3 Pin Connection

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FEATURES —*continued*

- 2 standard DeviceNet module and network status LED's
- 2 serial transmit and receive LED's
- Powered from DeviceNet 11- 25 Vdc network power
- ASCII string length up to 124 bytes on all models except JDCE which is limited to 50 bytes
- Serial port baud rate up to 38.4k baud
- Optional isolated RS232 interface Enhancements to 1782-JDCE
- Explicit messaging to serial devices
- Start of String Delimiter
- Expanded Byte Swap options
- Data only mode
- Master/Slave handshake option

MODEL NUMBERS

- 1782-JDC-1: Isolated RS232 Interface
- 1782-JDC-2: RS485 Interface
- 1782-JDC-4: RS422 Interface
- 1782-JDCE-1: Isolated RS232 Interface with support for Explicit Data Messages

SPECIAL NOTE:

Users of 1782-JDC with Revision Number 6._, - replacements should be ordered as 1782-JDCE!

Contact Technical Support if you have any questions.

SPECIFICATIONS

See next page.

Product:	1781-JDC DeviceNet-Serial Gateway
Description:	Communications gateway between a serial capable device over an RS232 or RS485 interface and a DeviceNet network.
Device Type:	Communications Adapter, C_{hex} , (12)
Device Profile:	Identity Object Message Router Object DeviceNet Object Connection Object
Product Revision:	
DeviceNet Conformance:	Designed to conform to the ODVA DeviceNet Specification Volume I and II, Version 2.0.
DeviceNet Communications:	Predefined Master/Slave Connection Set, Group 2 Only Server
DeviceNet:	Autobaud operation (default)
Address selection:	Address number 0 to 63, switch selectable (default = 63)
Cable Connection:	JDC: 5-pin pluggable header (male) Phoenix Contact MSTBA 2.5/5-G-5.08/AU or equivalent DeviceNet Cable: 5-contact plug (female contacts)
Status Indicators:	Module Status: green/red bi-color LED
Serial port:	1200, 2400, 4800, 9600, 19.2k, 38.4k baud
Parity:	Odd/even/none (software selectable)
Data bits:	7 or 8 (software selectable)
Serial port connection:	9-Pin D-Sub
Status Indicators:	Transmit Active: green LED
Network Isolation:	2500V (optional)
Max Power:	1.75 watts: 160 mA @ 11 Vdc – 70 mA @ 25 Vdc unregulated power supply
Mounting:	DIN rail mount, EN 50022
Size:	depth: 3.54" (90mm) width: .98" (25mm) height: 3.11" (79mm)
Operating Temp:	0-60° C
Humidity:	0-95% RH, non-condensing

1782-JDM

WRC's 1782-JDM Gateway provides a direct interface between Modbus and DeviceNet.

FEATURES

- Simple DeviceNet connectivity for serial devices like bar code scanners, weigh scales, robots, displays, or drives.
- Provides DeviceNet connectivity for Modbus protocol Devices
- Implements poll I/O for simple regular communication
- Quick disconnect serial cable terminations
- Transmit and receive serial status LED's
- Implements explicit messaging for set up and parameters
- 5-pin pluggable DeviceNet connection
- Isolated RS232 (1782-JDM-1)
- Isolated RS485 (1782-JDM-2)
- Isolated RS422 (1782-JDM-4)
- Standard DeviceNet module status and network status LEDs
- For custom protocol versions, call WRC

Custom and OEM designs for interfaces, I/O, and networks are available through WRCoutsource™. Contact sales@wrc.cc for more information.

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1782-JDO and 1782-JDP

Modernize Opto22 installation with DeviceNet gateways

GOT
- Optomux™? B1 Brainboard? B2 Brainboard?
- Pamux™? B4 Brainboard?

WANT DeviceNet?

WRC has the solution!

With Western Reserve Controls' family of DeviceNet Gateways, you can keep your older, legacy OPTO 22 I/O in place while you replace your obsolete controller with a modern DeviceNet Network, PLC, HMI software, HMI devices as well as SCADA software.

We understand the cost and risk of dismantling and rewiring an older I/O system. On the other hand, the advantages of moving to a modern DeviceNet—based network are numerous:

- Higher Reliability
- Improved System Performance
- Support and new products from over 300 vendors
- Future growth potential
- Modern software tools
- Modern PLCs and industrial controllers
- Modern HMI devices
- Ability to incorporate new and different types of devices from a multitude of manufacturers

Yet the expense, risk and plain inconvenience of taking out hundreds of I/O points could become an overwhelming burden.

To address this, Western Reserve Controls has expanded their line of DeviceNet network Gateways to include Optomux and Pamux.

Other members of WRC's Gateway family include 1782-JDC DeviceNet/ ASCII Gateway, 1782-JDM DeviceNet to Modbus Gateway, W5-JDC4 4-port Gateway.

WRC's 1782-JDO Gateway provides a direct interface between Optomux and DeviceNet. Both B1 and B2 Optomux brainboards are supported for addressing up to 64 nodes and speeds up to 38.4 Kb.

With B1 brainboards, you can read input status, write to the outputs. With the B2 brainboard, you can read analog inputs and write analog outputs.

WRC's 1782-JDP Gateway provides a direct interface between PAMUX B4 brainboards and DeviceNet. You can read input status and write to discrete outputs. There is no need to disturb the field wiring or power supplies — however, a replacement ribbon cable is included.

1782-JDP will update its I/O image table every 5 milliseconds.

Do you need to replace or expand your Opto22 I/O modules? WRC's family of opto-coupled I/O modules are high reliability, drop-in replacements. Quads, standards, WRC4 (G4) as well as WRC's exclusive Slim line are available to assist you.

Custom and OEM designs for interfaces, I/O, and networks are available through WRCoutsource™. Contact sales@wrc.cc for more information.

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