Automation & Control Solutions

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ToolLink™ CDN466

DEVICENET™ SERIAL GATEWAYS

The ToolLink gateways connect RS232-based equipment directly to a DeviceNet industrial network. The ToolLink gateways offer streamlined functionality to simplify out-of-box configuration and run-time operation in DeviceNet applications.

The ToolLink gateways are powered directly from the isolated DeviceNet interface. The ToolLink CDN466 contains an RS232 port. The serial interface is buffered for full-duplex operation, supporting user-selectable data rates, parity, and hardware or software flow control. Their EDS file contains all the information required to configure over DeviceNet, using standard network configuration software programs. Several example PLC programs are available to simplify application development.

Features & Benefits

- Quickly connects any serial device to DeviceNet
  — RS232 model available
- Powered directly from DeviceNet 11-28VDC, no external supply required
- Fully isolated DeviceNet interface eliminates ground loops
- Supports DeviceNet Polled I/O Messaging, allowing for optimized network bandwidth
- Fully configurable serial port connects to most any serial device
- Selectable delimiters (time-out, fixed length, character string) for framing received message packets
- Quicker application development with simplified pass-through messaging

Applications

- Barcode Scanners
- Vision Systems
- Weigh Scales
- Power Supplies
- Operator Interfaces
- Message Displays
- Intelligent Field Sensors & Actuators
- ASCII Serial Equipment

Type CDN466 (RS232 to DeviceNet)

DeviceNet Interface

Data Rates	125K, 250K, 500K bits-per-second Rotary switch or software selectable
MAC ID	0 to 63 Rotary switch or software selectable
Power Supply	11-28VDC, 200mA max.
Loss of Ground	full protection circuitry
Reverse Polarity	-30VDC max.
CAN Signal Levels	ISO 11898
Connector	5-pin male microconnector
Mode	DeviceNet Group 2 Only Slave
I/O Messaging	Polled
Input Message Size	4 to 68 bytes (4 overhead, 0 to 64 RX Message data), software selectable
Output Message Size	4 to 68 bytes (4 overhead, 0 to 64 TX Message data), software selectable
Data Format	Software selectable data word formats [high/low byte] or [low/high byte]

RS232 Interface

Data Rates	300, 600, 1200, 2400, 4800, 9600, 19200 bits-per-second Rotary switch or software selectable
Parity	Even, Odd, None. Software selectable. Automatic parity strip.
Data Bits	8 data bits with no parity, 7 data bits with parity
Flow Control	RTS/CTS, XON/XOFF, None Software selectable
RX Message Framing	Software selectable framing options:
Time Out	Inter-byte delay fixed at 4 byte-times
Fixed Length	0 to 64 byte message lengths
Start/Stop Delimiters	0 to 4 byte start-string and 0 to 4 byte stop-string
Handshake	Optional RX Message handshake to control data transfer rates over DeviceNet
TX Buffer Size	128 bytes
RX Buffer Size	128 bytes
Isolation	500V, between RS232 and DeviceNet interfaces
ESD Protection	±10 kV
Overload Protection	±30 V
Short Circuit	Indefinite
Output Signal Levels	±7.9 V (typical)
Connector	DB9 male

Environmental

Operating Temperature	0 to 70°C
Storage Temperature	-40 to 85°C
Dimensions	3.25 x 2.37 x 1.08 inches (82.6 x 60.2 x 27.4 mm) 0.5 inch (12.7 mm) mounting tabs
Mounting Holes	0.1875 inch (4.76 mm) diameter

Specifications

STS	RXC	TXA	LENGTH	DATA

STS = Status Byte
Bit 7 = RX Buffer Empty
Bit 6 = RX Buffer Overflow
Bit 5 = RX Parity Error (automatically resets with new RX message)
Bit 4 = TX Buffer Empty
Bit 3 = TX Buffer Overflow

RXC = Receive Message Counter. Gateway increments RXC when new RX Message is in Data field.

TXA = Transmit Message Acknowledge. Gateway sets TXA equal to TXC after TX Message is transmitted.

LENGTH = Number of valid RX Message bytes in the Data field.

DATA = Fixed length field (0-64 bytes). Contains RX Message bytes (left justified). Unused bytes are set to 0x00.

DeviceNet Input Message Format

CMD	RXA	TXC	LENGTH	DATA

CMD = Command Byte
Bit 6 = Clear RX Buffer (set bit to clear overflow error)
Bit 3 = Clear TX Buffer (set bit to clear overflow error)

RXA = Receive Message Acknowledge. Optional RX handshake byte. Application sets RXA equal to RXC after processing last received message.

TXC = Transmit Message Counter. Application increments TXC when new TX Message is in Data field.

LENGTH = Number of valid TX Message bytes in Data field.

DATA = Field length field (0-64 bytes). Contains TX Message bytes (left justified).

DeviceNet Output Message Format

DeviceNet Connector (5 pin Male micro)		
PIN	**NAME**	**FUNCTION**
1	Drain	shield wire
2	Bus+	11-28 VDC
3	Bus-	common
4	CAN H	data signal (H)
5	CAN L	data signal (L)

RS232 Connector (DB9 Male)		
PIN	**NAME**	**FUNCTION**
1	NC	no connect
2	RXD	receive data
3	TXD	transmit data
4	DTR/DTS	loopback to pin 6
5	SGND	signal ground
6	DTR/DTS	loopback to pin 4
7	RTS	request to send
8	CTS	clear to send
9	NC	no connect

PinOuts — DeviceNet and RS232

Ordering Information

Description	P/N
ToolLink CDN466 (RS232 to DeviceNet Gateway)	CDN466

Please contact your local MKS office for price and availability information.

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