

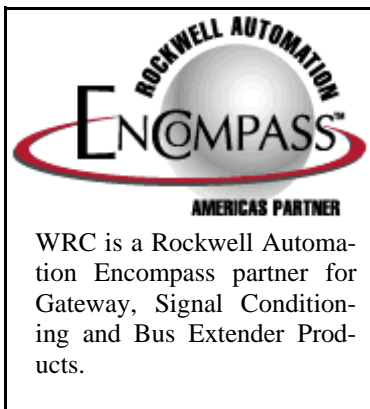


WReCon - LITE

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Western Reserve Controls introduces W5-OIB Flexible Manufacturing Cell Interface



Western Reserve Controls announces the W5-OIB **Flexible Manufacturing Cell Interface**. W5-OIB is a unique DeviceNet integration of operator displays, auxiliary I/O, lighted keypads and a **torque sensor for fastening devices such as Ingersoll Rand Versatec Electric Screwdrivers**.

The standard configuration consists of:

- 8 — character 15 - segment LED display supporting user defined alpha/numeric messages
- 16 — lighted pushbuttons to select operator functions and to monitor event status.
- 24 digital inputs — 24 Vdc



WRC products are manufactured in Akron, Ohio



- 24 digital outputs — 24 Vdc @ 0.5 amp
- A single-segment cadence stack light.
- An adjustable volume audible alarm.
- Two (2) — 240 Vac fused 3-amp outputs with integral torque sensing for automated screwdrivers.

Enclosure size is 6" wide x 8" long x 2 1/2" H, with external mounting tabs and powder coat finish.

Configuration in the field is sup-

ported by a separate control button used to scroll through menus to aid in the selection of various options. Field Configuration Options can be placed under password control if desired.

Field connections are provided by positive locking round connectors selected to match industry convention. Separate connectors are provided for:

- DeviceNet
- 24 Vdc power for auxiliary I/O
- 120/240 Vac power
- Auxiliary inputs
- Auxiliary outputs

Polled, Change of State, and Cyclic messages are supported.

W5-OIB was conceived of by Delphi Thermal as a key element of their Manufacturing Cell Strategy. Under PLC/PC control, along with additional sensors in a Manufacturing Cell, the W5-OIB displays the part to be worked, the next step in the process, can drive indicators located above bins to guide operators directly to parts, confirm that the correct part was selected, provides a cadence light, monitors the torque applied to the fastener,

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automatically stop the process when properly torques, report the process, time, operator, and torque condition back to the system for quality logging purposes, provide controls to the operator to request the next part, to indicate operation complete, and to request assistance.

All in one, 6" x 8" x 2 1/2" metal enclosure.

Operating Modes:

Configuration Mode

Configuration mode will allow the setting of the DeviceNet node address and communication baud rate. The configuration mode will be enabled by pressing the mode button during the power-up cycle of the OIB. Once in configuration mode, an indication of the current baud rate should be displayed. For example, the display could read "BR=AUTO". At this point, the baud rate can be changed by pressing pushbuttons as if operating a phone pad. After the baud rate is set, the mode pushbutton can be pressed to toggle the display in order to set the communication baud rate. Once the mode pushbutton is pressed, an indication of the current node address should be displayed. For example, the display could read "ADD=63". Again, the pushbutton matrix can be used as a phone pad in order to enter the new node address. Configuration mode can be exited by pressing and holding the mode pushbutton for a five second period. If

the OIB is powered off before the configuration mode is exited, then the configuration changes should be discarded.

Model Mode

The default mode of the OIB display will be model mode. Model mode can be entered via three paths: by initially powering the OIB, by exiting configuration mode, or by exiting screwdriver mode.

When in model mode, the LED devices will display the ASCII characters that correspond to the decimal values stored in DeviceNet output byte numbers 4-11. For example, if DeviceNet output byte 4 contained a decimal value of "65", then the left-most LED would display the alpha-numerical character "A". Similarly, if DeviceNet output byte 5 contained a value of "66", the second LED from the left would display the alpha-numeric character "B". This scheme will allow the DeviceNet master to drive the display of any standard ASCII character with a decimal value between 0 and 127. A special character, such as NUL, should appear as a space.

Screwdriver Mode

Screwdriver mode will provide the real-time status of the signals associated with screwdrivers 1 and 2. Pressing the mode pushbutton for 5 seconds while the display is in model mode will cause the display to toggle to the screwdriver mode. Screwdriver mode can be exited by pressing the mode pushbutton. When in screwdriver mode, the display will provide the real-time status of screwdriver 1 and screwdriver 2, simultaneously. In order to accomplish this task, each LED will display an alphabetic or numeric char-

acter

Operator Keypad

The OIB has the capability to support 16 lighted pushbuttons, screwdriver relays, a cadence light, and a Sonalert alarm. Currently defined are the following:

- Energize Screwdriver #1
- Print Label
- Teardown
- Energize Screwdriver #2
- Scan Label
- Model Select
- Part Passed
- Logistic Support
- Maintenance Support
- Quality Support
- Fault
- Five (5) spares

Screwdriver Functions:



**Ingersall Rand Versatec Electric
Screwdriver Integrated with a WRC W5-OIB**

Two screwdriver interfaces are provided each incorporating a 240 Vac 3 amp output integrated with a Delphi proprietary torque sensor. The following modes are reported back to the PLC/PC host.

- Screwdriver #1 Forward
- Screwdriver #1 Reverse
- Screwdriver #1 Torque
- Screwdriver #2 Forward
- Screwdriver #2 Reverse
- Screwdriver #2 Torque
- Two (2) Spares