

# RS-232 Digital Relay I/O

Model 232DRIO

**B+B SMARTWORX**

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## PRODUCT FEATURES

- RS-232 Serial Communications
- CMOS/TTL Compatible Input and Outputs
- One 2500V Isolated Port
- Two Single Pole, Double Throw (SPDT) Relay Outputs
- LEDs Indicate Input and Relay Channel Status
- Screw Terminals for Easy Field Wiring

## OVERVIEW

Model 232DRIO provides a low-cost, easy to use solution for RS-232 serial port to discrete relay output applications. It offers one optically isolated input and two relay outputs. The General Purpose Control Module can be used to sense external ON/OFF conditions and to control a variety of devices. The 232DRIO includes a CD ROM with an instruction manual and demonstration programs written in QuickBASIC and C/C++.

## ORDERING INFORMATION

| MODEL NUMBER | DESCRIPTION              |
|--------------|--------------------------|
| 232DRIO      | RS-232 Digital Relay I/O |

## ACCESSORIES

**232CAMR** - DB25F to DB9M 6 inch adapter cord

**SM16-12-V-ST** - Power Supply, 12 VDC 6 Watt, Stripped and Tinned, International AC Input, International AC Blades

**9PAMF6** - DB9 Male to DB9 Female Serial Adapter Cable, 1.83 m (6 feet)

**9PAMF10** - DB9 Male to DB9 Female Serial Adapter Cable, 3.05 m (10 feet)

All product specifications are subject to change without notice.

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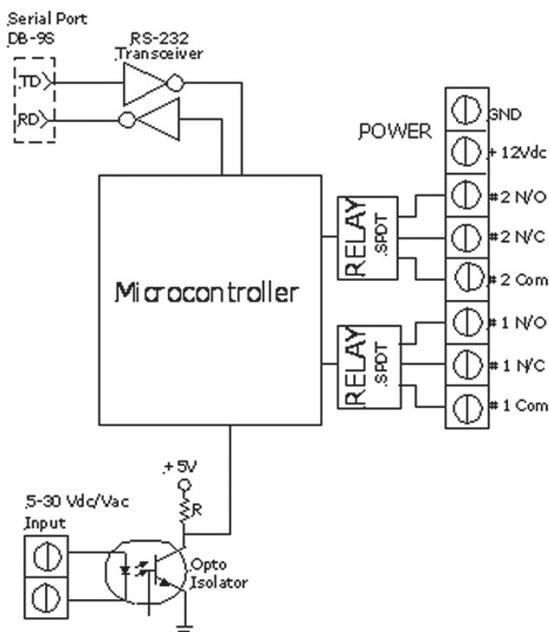


## SPECIFICATIONS

| COMMUNICATIONS                          |   |
|---|---|
| Standard                                | RS-232 (DCE)  |
| Baud Rate                               | 9600  |
| Format                                  | 8 data bits, 1 stop bit, no parity  |
| Connection                              | DB9 Female  |
| NON-POLARIZED, OPTICALLY ISOLATED INPUT |   |
| Channels                                | 1   |
| Indication Mode                         | Logic "0": LED On, Input Voltage High<br>Logic "1": LED Off, Input Voltage Low  |
| Electrical Characteristics              | Input Voltage Low: Less than 1.5VAC/VDC<br>Input Voltage High: 5 – 30 VAC/VDC @ 1 – 30 mA<br>Isolation Voltage: 2500 VAC RMS<br>Leakage Current: 10 micro A (maximum)   |
| RELAY OUTPUTS                           |   |
| Channels                                | 2 Electromechanical Relays  |
| Indication Mode                         | Logic "0": LED Off, Relays De-energized<br>Logic "1": LED On, Relays Energized  |
| Relay Ratings                           | Contact: 10 A @ 120 VAC, 8 A @ 30 VDC (resistive) (standard)<br>Switching Capacity: 1200 VA / 240 W (maximum)<br>Operating Voltage: 250 VAC / 125 VDC (maximum)<br>Carrying Current: 10A (AC), 8A (DC) – (standard) (maximum)<br>Permissible Load: 100mA @ 5 VDC<br>Relay Form: Form C, SPDT<br>Output Terminals: Normally Open or Normally Closed<br>Operating Time: 10 ms (maximum) (Mean 5.1 ms)<br>Mechanical Life: 10 million operations (minimum)<br>Load Dependent Life: 100 thousand operations (minimum) |

| POWER SUPPLY                   |   |
|--------------------------------|---|
| Input Voltage                  | 9 to 16 VDC   |
| Input Current                  | 100 mA  |
| Connection                     | Blue terminal block field wiring or DB9F Pin 9 (see manual) |
| ENVIRONMENT                    |   |
| Operating Temperature          | 32 to 158 °F (0 to 70 °C)                                   |
| Operating Humidity             | 0 to 95% Non-condensing                                     |
| Storage Temperature            | -4 to 158 °F (-20 to 70 °C)                                 |
| Dimensions                     | 11.7 x 6.1 x 3.3 cm (4.6 x 2.4 x 1.3 in)                    |
| MEANTIME BEFORE FAILURE (MTBF) |   |
| MTBF                           | 1,156,144 hours   |
| MTBF Calculation Method        | MIL217 Parts Count Reliability Prediction                   |

## WIRING DIAGRAM



## RS-232 DB9F PINOUT (WIRED AS DCE)

| Pin | Signal             | Direction |
|-----|--------------------|-----------|
| 2   | Receive Data (RD)  | Output    |
| 3   | Transmit Data (TD) | Input     |
| 5   | Signal Ground      | -         |
| 9*  | Power              | -         |

\*Note: Pin 9 is NOT required (refer to manual for more details).

## I/O LINE TERMINAL LAYOUT

| Blue Pin# | Function             | Black Pin# | Function            |
|-----------|----------------------|------------|---------------------|
| 1         | Ground Input Power   | 1          | Opto-isolated Input |
| 2         | +12VDC Input Power   | 2          | Opto-isolated Input |
| 3         | #2 – Normally Closed | Note       | Non-polarized       |
| 4         | #2 – Normally Open   |            | 0 - 30 VAC / VDC    |
| 5         | #2 – Common          |            |                     |
| 6         | #1 – Normally Closed |            |                     |
| 7         | #1 – Normally Open   |            |                     |
| 8         | #1 – Common          |            |                     |