CPU Specifications

Programmable Option Module

RS-232, RS-485, Ethernet 10/100 BASE-T (1 Mbps throughput max), USB 2.0 Type B

Expansion Modules

2 expansion modules max

Built-in RS-232/485 Port Specifications

Port Name

Built-in RS-232/485 Port Specifications

Macular RTU (Master & Slave)

K-Sequence

Data Rates

1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200

Default Settings

RS-232, 115200 bps, No Parity, 8 Data Bits, 1 Stop Bit, Station #1

Port Type

1 port terminal strip, 3.5mm pitch

Port Status LED

Green LED is illuminated when active for TXD and RXD

Cable Recommendations

RS-232 use L19772-XXX from AutomationDirect.com

RS-485 use L19827-XXX from AutomationDirect.com

Replacement Connector

ADP Part # BX-RTB03S

Terminal Block Connector Specifications

Part Number

BX-RTB10

Connector Type

TX: 180°

RX: 180°

Pinout  RS232 RS485

Pin 1  GND  GND

Pin 2  TX  RX

Pin 3  RX  TX

Pin 4  DATA+  DATA-

Pin 5  DATA-  DATA+

Pin 6  CTS  RTS

Pin 7  RTS  CTS

Pin 8  GND  GND

Connectors

EC350V-03P-BK

EC381V-10-BK

ESC381V-10-BK

EC350V-03P-BK

ZL-RTB20

ZL-BX-CBL20-2P

ZL-BX-CBL20-2

ZL-BX-CBL20-1

ZL-BX-CBL20

BX-RTB10-1

User Data Memory Type

FLASH memory

Non-isolated serial port that can communicate via RS-232 or RS-485 (software selectable). Includes ESD protection and built-in surge protection.

Supported Protocols

Do-more Protocol (Default)

Modbus RTU (Master & Slave)

K-Sequence


CPU Status Indicators

Front Panel Components

Note: This device cannot be Hot Swapped.

WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

Equipment damage or serious injury to personnel can result from the failures to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation. If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call Technical Support at 770-944-4200.

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**High Speed Input (HSI) Functions**

<table>
<thead>
<tr>
<th>Input Function</th>
<th>Inputs Requested</th>
<th>IO Type</th>
<th>IO Type</th>
<th>IO Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Speed Counting</td>
<td>1</td>
<td>Short-circuit</td>
<td>Short-circuit</td>
<td>Short-circuit</td>
</tr>
<tr>
<td>Position Scaling</td>
<td>2</td>
<td>Dual/Dual couplers</td>
<td>Dual/Dual couplers</td>
<td>Dual/Dual couplers</td>
</tr>
<tr>
<td>Frequency</td>
<td>2</td>
<td>Quadrature and B couplers</td>
<td>Quadrature and B couplers</td>
<td>Quadrature and B couplers</td>
</tr>
<tr>
<td>Measurement</td>
<td>1</td>
<td>Single Input (Quad)</td>
<td>Single Input (Quad)</td>
<td>Single Input (Quad)</td>
</tr>
<tr>
<td>Interval</td>
<td>2</td>
<td>Dual Input (Quad)</td>
<td>Dual Input (Quad)</td>
<td>Dual Input (Quad)</td>
</tr>
<tr>
<td>Measurement</td>
<td>1</td>
<td>Single Input (Quad)</td>
<td>Single Input (Quad)</td>
<td>Single Input (Quad)</td>
</tr>
<tr>
<td>Pulse/Direction Outputs</td>
<td>4</td>
<td>Programmable Pulse Outputs</td>
<td>Programmable Pulse Outputs</td>
<td>Programmable Pulse Outputs</td>
</tr>
<tr>
<td>Intermittent</td>
<td>4</td>
<td>Non-intermittent</td>
<td>Non-intermittent</td>
<td>Non-intermittent</td>
</tr>
<tr>
<td>Intermittent</td>
<td>0</td>
<td>Time-interrupt</td>
<td>Time-interrupt</td>
<td>Time-interrupt</td>
</tr>
<tr>
<td>Integrated</td>
<td>1</td>
<td>Mach-interrupt</td>
<td>Mach-interrupt</td>
<td>Mach-interrupt</td>
</tr>
</tbody>
</table>

1. Standard inputs may be used with high-speed functions, but at lower response frequencies of approximately 120Hz.
2. Table-Driven Outputs are triggered by an Auto Position or a high-speed counter/timer accumulator value. It requires the selection of 1 discrete output. (see HSIO Note 1 below)

**Discrete Input Specifications**

<table>
<thead>
<tr>
<th>Input Type</th>
<th>Sink/Source</th>
<th>Total Inputs per Module</th>
<th>High Speed – All inputs may be used as standard inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>2 (2 points/common)</td>
<td>Isolated</td>
<td>Nominal Voltage Rating 12-24 VAC/DC</td>
</tr>
<tr>
<td>Input Voltage Range</td>
<td>0-30 VAC/DC</td>
<td>Maximum Voltage</td>
<td>DC Frequency 0-256kHz - High Speed</td>
</tr>
<tr>
<td>Minimum Pulse Width</td>
<td>0.5 µs - High Speed</td>
<td>AC Frequency</td>
<td>Minimum Input Current 3A</td>
</tr>
<tr>
<td>AC Voltage</td>
<td>12-24VDC</td>
<td>Maximum Output Current</td>
<td>Maximum Leakage Current 1.5µA (DC), 300µA (AC) due to RC snubber</td>
</tr>
<tr>
<td>Status Indicators</td>
<td>Logic Side, Green</td>
<td>Maximum Switching Frequency</td>
<td>Status Indicators Logic Side, Green</td>
</tr>
</tbody>
</table>

**Discrete Output Specifications**

<table>
<thead>
<tr>
<th>Output Type</th>
<th>Relay Form A (SPST)</th>
<th>Total Outputs per Module</th>
<th>High Speed – All outputs may be used as standard outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>4</td>
<td>Relay Form A (SPST)</td>
<td>Relay Form A (SPST)</td>
</tr>
<tr>
<td>Maximum Current per common</td>
<td>1A</td>
<td>Maximum Voltage</td>
<td>Maximum Voltage 60VDC, 264VAC</td>
</tr>
<tr>
<td>Nominal Voltage Ratings</td>
<td>12-48 VDC, 24-240 VAC</td>
<td>Minimum Output Current</td>
<td>Minimum Output Current 6mA @ 24VAC/DC</td>
</tr>
<tr>
<td>Operating Voltage Range</td>
<td>0-40 VDC, 0-240 VAC</td>
<td>Maximum Leakage Current</td>
<td>Maximum Leakage Current 1.5µA (DC), 300µA (AC) due to RC snubber</td>
</tr>
<tr>
<td>Status Indicators</td>
<td>Logic Side, Green</td>
<td>Maximum Switching Frequency</td>
<td>Status Indicators Logic Side, Green</td>
</tr>
</tbody>
</table>

**Discrete Output Wiring**

<table>
<thead>
<tr>
<th>Supply Power Wiring</th>
<th>Discrete Output Wiring</th>
<th>Discrete Input Wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Input</td>
<td>yXn</td>
<td>Relay Output</td>
</tr>
<tr>
<td>DC Power</td>
<td>yXn</td>
<td>Discrete Input Wiring</td>
</tr>
<tr>
<td>Class 2 or LPS User Supplied Power</td>
<td>yXn</td>
<td></td>
</tr>
</tbody>
</table>

**I/O Wiring**

- **Input Wiring**: Sink/Source
- **Output Wiring**: Sink/Source

**NOTE**: Only POM modules can be hot-swapped.

**Status Indicators**

- **OFF Voltage Level**
- **ON Voltage Level**
- **Maximum OFF Current**
- **Maximum Input Current**
- **Maximum Output Current**
- **Maximum Voltage**
- **Operating Voltage Range**
- **Nominal Voltage Ratings**
- **Commons**
- **Input Type**
- **Discrete Output Specifications**
- **Discrete Input Specifications**

**Discrete Input Specifications**

- **Input Type** Sink/Source
- **Total Inputs per Module** All Inputs may be used as standard inputs
- **Commons** 2 (2 points/common) Isolated
- **Nominal Voltage Rating** 12-24 VAC/DC
- **Input Voltage Range** 0-30 VAC/DC
- **Maximum Voltage** 30 VAC/DC
- **DC Frequency** 0-256kHz - High Speed
- **Minimum Pulse Width** 0.5 ms - High Speed
- **AC Frequency** 12-24VDC
- **Minimum Input Current** 3A
- **Maximum Output Current** 2A
- **Maximum Leakage Current** 1.5µA (DC), 300µA (AC) due to RC snubber
- **Status Indicators** Logic Side, Green

**Discrete Output Specifications**

- **Output Type** Relay Form A (SPST)
- **Total Outputs per Module** 4 Relay
- **Commons** 2 (2 points/common) Isolated
- **Nominal Voltage Ratings** 12-48 VDC, 24-240 VAC
- **Operating Voltage Range** 0-40 VDC, 0-240 VAC
- **Maximum Voltage** 60VDC, 264VAC
- **Minimum Output Current** 6mA @ 24VAC/DC
- **Maximum Leakage Current** 1.5µA (DC), 300µA (AC) due to RC snubber
- **Status Indicators** Logic Side, Green

**High Speed Input (HSI) Functions**

- **Input Function** High-Speed Counting, Position Scaling, Frequency, Measurement
- **Inputs Requested** 1, 2, 3, 4
- **IO Type** Up counters, Dual/Dual couplers, Quadrature and B couplers, Single Input (Quad)"