**General Specifications**
- Operating Temperature: 32°F to 122°F (0°C to 50°C)
- Storage Temperature: -20°F to 140°F (-29°C to 60°C)
- Humidity: 5 to 95% (non-condensing)
- Environmental Air: NEMA Type 3R, Panel Mount
- Vibration: IC660IB262-2 (Test F1)
- Shock: IC660IB262-27 (Test E1)
- Enclosure Type: Open Equipment
- Agency Approvals: UL1577-1, UL file E160589 Canada and USA
- Screw Type: NEMA 3R/304
- EU Directive: See the “EU Directive” topic in the Help File
- Weight: 1lb (0.45kg)

**Power Supply Specifications**
- Terminal Voltage Range: 125VAC-480VAC
- Input Voltage Tolerance*: ±10% (85-132VAC & 180-264VAC)
- Maximum Input Voltage Ripple: ±10% (400Hz)
- Maximum Input Power: 1500W
- Cost Start Inrush Current: 5A
- Maximum Inrush Current (Start): 20A
- Internal Input Protection: Surge Protection and Undervoltage
- Real Distillation: 8.7W Max
- Voltage Withdrawal (Dielectric): 1500VAC Power Inputs to Ground

**CPU Specifications**
- Program Changing Memory: 512 KB RAM
- User Data Memory Type: Battery Backed RAM, User configurable
- Pluggable Option Module: RS-232, RS-485, EtherCAT 10/100 BASE-T
- Expansion Modules: 2 expansion modules max
- Real Time Clock Accuracy: ±0.56 sec per day typical at 25°C
- Function: Universal max at 60°C
- Programming Software: Do-more Designer – Ver. 2.0 or higher
- Programming Cable Options: BX-PMN-CBL

**Built-in RS-232/485 Port Specifications**
- Description*: 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 (Slave)
- ASCII (In & Out)
- 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, 1 Stop Bit
- Replacement Connector: AEC Part BX-10EB03

**CPU Mode Switch Functions**
- RUN position: CPU is forced into RUN Mode if no errors are encountered.
- TERM position: CPU PROGRAM mode is available. In the RUN mode, the mode of operation can be changed through the Do-more Designer Software.
- STOP position: CPU is forced into STOP Mode.

**Terminal Block Connection Options**
- BX-RTB10: Terminal Block Kit, 90-degree screw type. Fits all BRX 10-point PLCs and 16 point Expansion I/O Modules. Kit includes (2) 10-pin 3.8mm plugs.
- BX-RTB10-1: Terminal Block Kit, 90-degree screw type. Fits all BRX 10-point PLCs and 16 point Expansion I/O Modules. Kit includes (2) 10-pin 3.8mm plugs.
- ZL-BX-CBL30: ZL-Link I/O cable, 20-pin terminal block to 24-pin connector, 24AWG, Male/Male (4.76 ft. (1.44 m))
- ZL-BX-CBL30-1: ZL-Link I/O cable, 20-pin terminal block to 24-pin connector, 24AWG, Male/Female (6.6 ft. (2.01 m))
- ZL-BX-CBL30-2: ZL-Link I/O cable, 20-pin terminal block to 24-pin connector, 24AWG, Male/Male (6.6 ft. (2.01 m))
- ZL-BX-CBL30-2F: ZL-Link I/O cable, 20-pin terminal block to female connector, 24AWG, Male/Female (6.6 ft. (2.01 m))
- ZL-BX-DT10: ZL-Link I/O cable, 20-pin terminal block to female connector, 24AWG, Male/Female (2.5 ft. (0.76 m))
- ZL-BX-CBL20: 20-pin terminal block to pigtail connection, 24AWG, Male/Male (2.5 ft. (0.76 m))
- ZL-BX-CBL20-2P: 20-pin terminal block to pigtail connection, 24AWG, Male/Female (2.5 ft. (0.76 m))
- ZL-BX-CBL20-2: 20-pin terminal block to pigtail connection, 24AWG, Male/Male (2.5 ft. (0.76 m))
- ZL-BX-CBL20-2P: 20-pin terminal block to pigtail connection, 24AWG, Male/Female (2.5 ft. (0.76 m))
- BX-RTB03S: Spring Clamp (0.2mm pitch)

**Programming Cable Options**
- BX-HH232: RS-232, 115200 bps, No Parity, 8 Data Bits, 1 Stop Bit
- BX-HH485: RS-485, 115200 bps, No Parity, 8 Data Bits, 1 Stop Bit

**Built-in Ethernet Specifications**
- Port Name:ETHERNET
- Description: Standard transformer isolated Ethernet port with built-in surge protection.
- Transfer Rate: 100Mbps (Yellow LED) and 1000Mbps (Green LED)
- Port Status LED: Status LED is illuminated by CED flashes when port is active (ACT).
- Supported Protocols: Do-more Protocol (Default)
- Modbus TCP/IP (Client & Server), EtherCAT (Master & Slave), K-Sequence (Slave), ASCII (In & Out), SMTP (Email), SNTP (Time Server), TCP/IP, UDP/IP (Raw packet)
- Cable Recommendation: CEE-ENT-xx from AutomationDirect.com

**CPU Status Indicators**
- PWR: CPU Power on
- ERR: CPU fault
- RUN: CPU is running
- MEM: CPU memory
- I/O: CPU I/O
- LINK: CPU link

**Terminals**
- PB1: Power I/O
- PB2: Data I/O

**Dimensions**
- Terminal Block Connector Specifications
  - Connector Type: Screw Type-180°
  - Screw torque: 0.2 N·m
  - Wire gauge (Single Wire): 30-16 AWG
  - Wire gauge (Dual Wire): 24AWG Sub-cable
  - Wire Strip Length: 2meter (6.6ft).

<table>
<thead>
<tr>
<th>Pinout</th>
<th>H232</th>
<th>RS485</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin 1</td>
<td>GND</td>
<td>GND</td>
</tr>
<tr>
<td>Pin 2</td>
<td>RX</td>
<td>-</td>
</tr>
<tr>
<td>Pin 3</td>
<td>TX</td>
<td>D+</td>
</tr>
</tbody>
</table>

**Built-in RS-485 Port Specifications**
- Description*: Non-isolated port that can communicate via RS-485 (software selectable). Includes ESD protection and built-in surge protection.
- Data Rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200
- Default Settings: RS-485 uses 9.19272-XXX from AutomationDirect.com
- Replacement Connector: AEC Part BX-10EB03

**Programming Cable Options**
- BX-BX-CBL10-2: 10pin Terminal Block, Fits all BRX 10-point PLCs
- BX-RTB03: Spring Clamp (0.2mm pitch)

**CPU Status Indicators**
- PWR: CPU Power on
- RUN: CPU is running
- MEM: CPU memory
- I/O: CPU I/O
- LINK: CPU link

**Programming Cable Options**
- BX-HH232: RS-232, 115200 bps, No Parity, 8 Data Bits, 1 Stop Bit
- BX-HH485: RS-485, 115200 bps, No Parity, 8 Data Bits, 1 Stop Bit

**Built-in Ethernet Specifications**
- Port Name:ETHERNET
- Description: Standard transformer isolated Ethernet port with built-in surge protection.
- Transfer Rate: 100Mbps (Yellow LED) and 1000Mbps (Green LED)
- Port Status LED: Status LED is illuminated by CED flashes when port is active (ACT).
- Supported Protocols: Do-more Protocol (Default)
- Modbus TCP/IP (Client & Server), EtherCAT (Master & Slave), K-Sequence (Slave), ASCII (In & Out), SMTP (Email), SNTP (Time Server), TCP/IP, UDP/IP (Raw packet)
- Cable Recommendation: CEE-ENT-xx from AutomationDirect.com

** nerv.**
- Note: This device cannot be Hot Swapped.
**Discrete Input Specifications**

**Input**
- Total Inputs per Module
- High Speed - All inputs may be used as standard inputs
- Common
- Nominal Voltage Rating: 12-24 VAC/DC
- Input Voltage Range: 9-30 VAC/DC
- Input Current Range: 30 VAC/DC
- DC Frequency: 0-250 kHz
- Maximum Voltage: 9-24 VAC/DC
- Input Impedance: 10 kΩ
- Minimum ON Current: 5.0 mA
- Maximum OFF Current: 2.0 mA
- On Voltage Level: > 2.0 VAC/DC
- OFF Voltage Level: < 2.0 VAC/DC
- Status Indicators: Logic Side, Green

**Discrete Output Specifications**

**Output**
- Output Type: Sinking
- Total Outputs per Module: 4 Total – 2 High Speed (Y0, Y1) + 2 Standard (Y2, Y3)
- Common: 0.25 kΩ;padding/capacitance isolated
- Maximum Current per Channel: 1 A
- Minimum Output Voltage Rating: 12-24 VDC
- Operating Voltage Range: 9-30 VDC
- Maximum Voltage: 36 VDC
- Maximum Output Current: 0.5 A per output, no derating over temperature range
- Maximum Leakage Current: 10 mA
- Maximum Switching Frequency: 400 kHz
- Status Indicators: Logic Side, Green

**High Speed Input (HSI) Functions**

<table>
<thead>
<tr>
<th>Input Function</th>
<th>Input Required</th>
<th>1D</th>
<th>1H</th>
<th>1D-1H</th>
<th>3H</th>
<th>3H-1H</th>
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</thead>
<tbody>
<tr>
<td>High-Speed Counting</td>
<td>1</td>
<td>2</td>
<td>Up Down counters</td>
<td>2</td>
<td>2</td>
<td>Pulse/Direction (Bidirectional) counters</td>
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<td>Position Scaling</td>
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<td>Quadrate</td>
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<td>Quadrate (A and B) counters</td>
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<td>Frequency</td>
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<td>Single Input (pulse) times</td>
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<td>2</td>
<td>Single Input (pulse) times</td>
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<td>2</td>
<td>Single Input (pulse) times</td>
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<tr>
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<td>2</td>
<td>Single Input (pulse) times</td>
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<tr>
<td>Time</td>
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<td>2</td>
<td>Single Input (pulse) times</td>
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<td>2</td>
<td>Single Input (pulse) times</td>
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**High Speed Output (HSO) Functions**

<table>
<thead>
<tr>
<th>Output Function</th>
<th>Output Required</th>
<th>1D</th>
<th>1H</th>
<th>1D-1H</th>
<th>3H</th>
<th>3H-1H</th>
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<td>Axis Profile (position, velocity, mode, travel)</td>
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<td>2</td>
<td>Axis Profile (position, velocity, mode, travel)</td>
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<td>2</td>
<td>Jogging</td>
</tr>
</tbody>
</table>

**Discrete Input Wiring**

1. Standard inputs may be used with high-speed functions, but at lower response frequencies of approximately 120 Hz.
2. Inputs may be used as standard inputs.
3. Inputs may be used as high-speed inputs.

**Discrete Output Wiring**

1. Standard outputs may be used with high-speed functions, but at lower response frequencies of approximately 120 Hz.
2. Outputs may be used as standard outputs.
3. Outputs may be used as high-speed outputs.