### General Specifications
- **Operating Temperature:** -30° to 85°C (-22° to 185°F)
- **Input Power:** 28-16 AWG
- **Output Power:** 28-16 AWG
- **Heat Dissipation:** 3.5 W
- **Noise Immunity:** 600 V/μs
- **Agency Approvals:** CE-Compliant EN61512-1-2
- **Safety Standards:** NEMA ICS3-304
- **Dimensions:** 4.25″ x 2.25″ (19mm x 57.2mm)
- **Weight:** 0.75 lb (340g)

### CPU Specifications
- **Flash Memory:** 1 MB
- **RAM:** 1 MB
- **Real Time Clock:** < ±10%
- **RS-232, RS-485 Serial Port:** 115200 bps, No Parity, 8 Data Bits, 1 Stop
- **Built-in EtherCAT Option:** Available
- **LED Indicators:**
  - **PWR:** Green
  - **RUN:** Green
  - **CPU Status Indicators:**
    - GREEN: CPU ON
    - ORANGE: CPU OFF
  - **CPU Type:** C5E-STxxx-xx

### Built-in RS-232/485 Port Specifications
- **Port Description:** Non-isolated serial port that can communicate via RS-232 or RS-485 (software selectable)
- **Supported Protocols:**
  - Do-more Protocol (Default)
  - Modbus RTU (Master & Slave)
  - K-Sequence (Slave)
  - ASCII (In & Out)
- **Data Rates:**
  - RS-232: 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200
  - RS-485: 9600, 19200, 38400, 57600, and 115200
- **Pinout:**
  - RX: D+ 28784, UDP
  - TX: D- 28784, UDP
  - GND: 28784, UDP
  - **Note:** When using RS-485, a terminator resistor is built in and software selectable.

### Terminal Block Connection Options
- **Part Number:** BX-RTB18
  - **Function:** Terminal Block Kit, 90-degree screw type, includes 6-pin 5mm plugs, (1) 3-pin 5mm plugs.
  - **Part Number:** BX-RTB18-1
  - **Function:** Terminal Block Kit, 180-degree spring clamp type, includes 24AWG connectors, (1) 5-pin 5mm plugs, (2) 3-pin 5mm plugs.
  - **Part Number:** BX-CBL15
  - **Function:** UIOP PLC I/O cable, 15-position terminal block to 24-pin connector, ZWAWG: 0.5 meter (1.8 ft.), 2 required.
  - **Part Number:** BX-CBL15-15
  - **Function:** UIOP PLC I/O cable, 15-position terminal block to 24-pin connector, ZWAWG: 1 meter (3.3 ft.), 2 required.
  - **Part Number:** BX-CBL15-25
  - **Function:** UIOP PLC I/O cable, 15-position terminal block to 24-pin connector, ZWAWG: 2 meter (6.6 ft.), 2 required.
  - **Part Number:** BX-CBL15-2P
  - **Function:** UIOP PLC I/O cable, 15-position terminal block to 24-pin connector, ZWAWG: 2 meter (6.6 ft.), 2 required.
  - **Part Number:** BX-RTB20
  - **Function:** User Defined Feasibility Module, 20 pole, 35mm DIN mount, 2 required.
  - **Part Number:** BX-RTB20-4
  - **Function:** User Defined Feasibility Module, 20 pole, 35mm DIN mount, 2 required.

### Built-in Ethernet Specifications
- **Port Name:** Ethernet Port
- **Description:** Standard transformer isolated Ethernet port with built-in surge protection.
- **Transfer Rate:** 100Base-TX (Yellow LED) and 10Base-T (Green LED)
- **Port List LED:** Flashing when port is active (ACT).
- **Built-in EtherCAT Option:** Available
- **Cable Recommendation:** CSE-ET200r from AutomationDirect.com

### CPU Mode Switch Functions
- **RNL function:** CPU is forced into RUN Mode if no errors are encountered.
- **RPM function:** CPU can be switched to the OverDrive Designer Software.
- **STOP function:** CPU is forced into STOP Mode.

### Power Supply Specifications
- **Nominal Voltage Range:** 12-24 VDC
- **Input Voltage Ripple:** vibe
- **Maximum Input Voltage:** 30V AC
- **Input Current:** 1500VAC Power Inputs to Ground
- **Voltage Withstand:** 5A, 2ms
- **Calculated Power:** 30VAC Power
- **Heat Dissipation:** 2.3 W
- **Certifications:** CE-Compliant EN61512-1-2
- **Agency Approvals:** UL61010-2  - UL File # E185989 Canada and USA

### Hot-Swapping Information
- **Note:** Hot Swapping is not supported. This device cannot be Hot Swapped.

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**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 this equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and that the equipment, installation, and operation are in compliance with the latest revision of these codes.

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**Important:** This publication is based on information that was available at the time it was printed. AutomationDirect.com reserves the right to make changes to the products and/or publications at any time without notice and without any obligation. This publication may also discuss features that may not be available in certain revisions of the product.

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**Technical Support:** 770-844-4200
**Sales:** 800-633-0405

www.do-moreplcs.com
Your Automation Foundation™
Discrete Input Specifications

- Input Type: Sink/Source
- Total Inputs per Module: 10
- High Speed – All inputs may be used as standard inputs
- Comm: 2.95 mm (2 points) tapped
- Nominal Voltage Rating: 12–24 VAC/DC
- Input Voltage Range: 9–30 VAC/DC
- Maximum Voltage: 30 VAC
- DC Frequency: 0–250kHz - High Speed
- Minimum Pulse Width: 0.5 μs - High Speed
- AC Frequency: 50/60 Hz
- AC Frequency: 0–250kHz
- Input Impedance: 340 Ω
- Input Current (Typical): 24 mA
- Maximum Input Current: 12 mA
- Maximum Offset Current: 0.2 mA
- OFF Voltage Level: 1.0 VAC
- ON Voltage Level: 1.2 VAC
- Status Indicators: Logic Side, Green

Discrete Output Specifications

- Output Type: Sinking
- Total Outputs per Module: 8
- Total – 4 High Speed (Y0, “Y”, “Y”)
- All outputs may be used as standard outputs
- Comm: 2.95 mm (2 points) un-tapped
- Maximum Current per Common: 2A
- Maximum Current per Common: 2A
- Maximum Voltage: 36 VDC
- Maximum Voltage: 36 VDC
- Maximum Current per Output: 0.5A per output, no derating over temperature range
- Maximum Leakage Current: 1mA
- Maximum Switching Frequency: 10kHz
- Status Indicators: Logic Side, Green

High Speed Input (HSI) Functions

1. Standard outputs may be used for high-speed functions, but at lower response frequencies of approximately 110kHz. Use of relay outputs is not recommended.
2. Multi-Axis (A and B with Z) counters and quadrature (A and B) counters are required.

High Speed Output (HSO) Functions

1. Standard outputs may be used for high-speed functions, but at lower response frequencies of approximately 110kHz. Use of relay outputs is not recommended.
2. This is the total number of functions. A combination of high-speed outputs and standard outputs may be used up to this total.

I/O Wiring

Discrete Input Wiring

- Sinking Input

Discrete Output Wiring

- Sinking Output

Sourcing Input

Supply Power Wiring

Analog Input Specifications

- Inputs per Module: 1
- Input Voltage Range: Software selectable ±10V, ±5V, 0–10V, 0–5V
- Input Voltage Range: Software selectable ±10V, ±5V, 0–10V, 0–5V
- Resolution: 16 bit @ ±10V, ±20mA
- Conversion Time: 1.2 ms
- Input Impedance/Current: 240Ω

Analog Output Specifications

- Outputs per Module: 1
- Output Voltage Range: Software selectable ±10V, ±5V, 0–10V, 0–5V
- Output Current Range: Software selectable ±10V, ±5V, 0–10V, 0–5V
- Maximum Output Impedance: 1kΩ
- Maximum Output Impedance: 1kΩ
- Resolution: 16 bit @ ±10V, ±20mA

PWM pulse width modulation outputs

< 2.0 VAC/VDC

249Ω

3

Timer interrupts

4

Ethernet Port

9–30 VAC/DC

Pulse/Direction (Bidirectional) counters

1kΩ

Up/Down counters

3kΩ @ 24VDC

Sink/Source

Quadrature (A and B) counters

Virtual axis

Function

PTO quadrature (A and B) output

Up counters

0–250kHz - High Speed

Logic Side, Green

> 9.0 VAC/VDC

Sinking

RX/D-

Match register interrupts

0.1mA @ 24VDC

0.5 A per output, no derating over temperature range

4

Status Indicators

OFF Voltage Level

Maximum Input Current

Input Impedance

DC Frequency

Maximum Voltage

Input Voltage Range

Resolution

Settling Time

Maximum Current Load Impedance

Output Current Range

Minimum Voltage Load Impedance

Output Voltage Range

Minimum Output Current

Maximum Voltage

Operating Voltage Range

Discrete Output Specifications

- Outputs per Module: 1
- Output Voltage Range: Software selectable ±10V, ±5V, 0–10V, 0–5V
- Output Current Range: Software selectable ±10V, ±5V, 0–10V, 0–5V
- Maximum Output Impedance: 1kΩ
- Maximum Output Impedance: 1kΩ
- Resolution: 16 bit @ ±10V, ±20mA

Software Selectable

±20mA, 4-20 mA

Software Selectable

±10V, ±5V, 0–10V, 0–5V

Discrete Input Wiring

Sinking Input

Supply Power Wiring

AC Input

36VDC

Case of 2 (4 points/common) Isolated

2 (4 points/common) Isolated

8 Total – 4 High Speed (Y0..Y3)*

Analog Current Sinking Input Circuits

- 2-Wire Current Transmitter
- 3-Wire Transmitter

Analog Voltage Input Circuits

- 4-Wire Voltage Input Transmitter
- 4-Wire Transmitter

Analog Output Wiring

- Current Source Output
- Voltage Output

Discretely selective

High-Speed Output (HSO) Functions

1. Software selectable per channel.

High-Speed Input (HSI) Functions

1. Software selectable per channel.

NOTE: An Edzard 5500-32-R 0.032A fast-acting fuse is recommended for all analog voltage inputs, analog outputs, and current loops.

Analog Voltage Input Circuits

- 4-Wire Voltage Input Transmitter
- 4-Wire Transmitter

Analog Output Wiring

- Current Source Output
- Voltage Output

Discretely selective

High-Speed Output (HSO) Functions

1. Software selectable per channel.

High-Speed Input (HSI) Functions

1. Software selectable per channel.

NOTE: An Edzard 5500-32-R 0.032A fast-acting fuse is recommended for all analog voltage inputs, analog outputs, and current loops.

Analog Current Sinking Input Circuits

- 2-Wire Current Transmitter
- 3-Wire Transmitter

Analog Voltage Input Circuits

- 4-Wire Voltage Input Transmitter
- 4-Wire Transmitter

Analog Output Wiring

- Current Source Output
- Voltage Output

Discretely selective

High-Speed Output (HSO) Functions

1. Software selectable per channel.

High-Speed Input (HSI) Functions

1. Software selectable per channel.

NOTE: An Edzard 5500-32-R 0.032A fast-acting fuse is recommended for all analog voltage inputs, analog outputs, and current loops.

Analog Current Sinking Input Circuits

- 2-Wire Current Transmitter
- 3-Wire Transmitter

Analog Voltage Input Circuits

- 4-Wire Voltage Input Transmitter
- 4-Wire Transmitter

Analog Output Wiring

- Current Source Output
- Voltage Output

Discretely selective

High-Speed Output (HSO) Functions

1. Software selectable per channel.

High-Speed Input (HSI) Functions

1. Software selectable per channel.

NOTE: An Edzard 5500-32-R 0.032A fast-acting fuse is recommended for all analog voltage inputs, analog outputs, and current loops.