

VersaMax 5/12/24VDC 0.5Amp Negative Logic Output Module

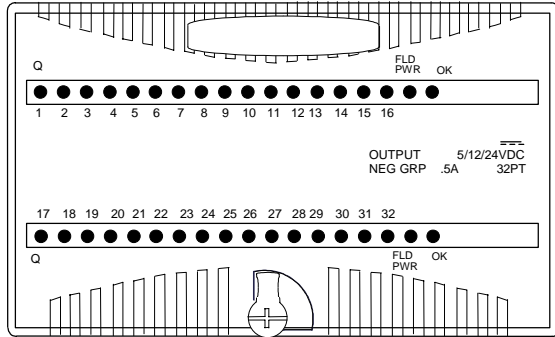
October 2008

GFK-2536

Discrete output modules IC200MDL743 and BXI0ODN1624 provide one group of 16 discrete outputs.

Discrete output modules IC200MDL744 (shown below) and BXI0ODN3224 provide two groups of 16 discrete outputs.

The outputs are negative or sinking type outputs. They switch the loads to the negative (return) side of the DC supply and thus receive current from the loads.



An external DC power supply must be provided to switch power to the loads.

Intelligent processing for this module is performed by the CPU or NIU. The module receives 32 bits of discrete output data.

LED Indicators

Individual green LEDs indicate the on/off state of the output points. The LEDs are powered from the backplane. LED operation is dependent on the application of valid field power, but independent of load conditions.

The green FLD PWR LED is on when field power is applied to the module.

The green OK LED is on when backplane power is present to the module.

Preinstallation Check

Carefully inspect all shipping containers for damage. If any equipment is damaged, notify the delivery service immediately. Save the damaged shipping container for inspection by the delivery service. After unpacking the equipment, record all serial numbers. Save the shipping containers and packing material in case it is necessary to transport or ship any part of the system.

Installation in Hazardous Locations

- EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C & D, DIV. 2 HAZARDOUS LOCATIONS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D OR NON-HAZARDOUS LOCATIONS ONLY
- WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2;
- WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES; AND
- WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

Module Characteristics

| | |
|-------------------------------|--|
| Points | IC200MDL743, BXI0ODN1624: 1 group of 16 outputs IC200MDL744, BXI0ODN3224: 2 groups of 16 outputs |
| Module ID | IC200MDL742, BXI0ODN1624: FFFF8080 IC200MDL744, BXI0ODN3224: 80808080 |
| Isolation: | User input to logic (optical) and frame ground: 250VAC continuous; 1500VAC for 1 minute |
| | IC200MDL742, BXI0ODN1624: Group to group: not applicable |
| | IC200MDL744, BXI0ODN3224: Group to group: 250VAC continuous; 1500VAC for 1 minute |
| | Point to point: none |
| LED indicators | One green LED per point shows individual point on/off state FLD PWR LED indicates field power is present OK LED indicates backplane power is present |
| Backplane current consumption | IC200MDL742, BXI0ODN1624: 5V output: 70mA maximum IC200MDL744, BXI0ODN3224: 5V output: 140mA maximum |
| External power supply | 5VDC-TTL mode: +4.75 to +5.25VDC, +5VDC nominal 12/24VDC mode: +10.2 to +30VDC, +12/24VDC nominal |
| Thermal derating | IC200MDL743, BXI0ODN1624: none IC200MDL744, BXI0ODN3224: See diagrams |

Output Characteristics

| | |
|------------------------|--|
| Output voltage | 5VDC-TTL mode: +4.75 to +5.25VDC, +5VDC nominal 12/24VDC mode: +10.2 to +30VDC, +12/24VDC nominal |
| Output voltage drop | 5VDC-TTL mode: 0.4V maximum 12/24VDC mode: 0.3V maximum |
| Load current | 5VDC-TTL mode: 25mA maximum 12/24VDC mode: 0.5A at 30VDC maximum (resistive) 2.0A inrush maximum for 100ms |
| Output leakage current | 0.5mA at 30VDC maximum |
| On response time | 0.2ms maximum |
| Off response time | 1.0ms maximum |
| Protection | No internal fuses |

Product Revision History

| Rev | Date | Description |
|--|----------------|--|
| IC200MDL743E BXI0ODN1624E IC200MDL744E BXI0ODN3224E | October 2008 | Updated Power Supply OK signal circuitry. |
| IC200MDL743D BXI0ODN1624D IC200MDL744D BXI0ODN3224D | April 2005 | Improvement to latching mechanism |
| IC200MDL743C IC200MDL744C | April 2004 | Changed to V0 plastic for module housing. |
| BXI0ODN1624C BXI0ODN3224C | January 2004 | Changed to V0 plastic for module housing. ATEX approval for Group 2 Category 3 applications. |
| IC200MDL743B IC200MDL744B | January 2004 | ATEX approval for Group 2 Category 3 applications. |
| IC200MDL743A BXI0ODN1624A IC200MDL744A BXI0ODN3224A | September 2000 | Initial product release. |

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Field Wiring Terminals

| Terminal | Connection | Terminal | Connection |
|----------|------------|----------|-------------|
| A1 | Output 1 | B1 | Output 17 * |
| A2 | Output 2 | B2 | Output 18 * |
| A3 | Output 3 | B3 | Output 19 * |
| A4 | Output 4 | B4 | Output 20 * |
| A5 | Output 5 | B5 | Output 21 * |
| A6 | Output 6 | B6 | Output 22 * |
| A7 | Output 7 | B7 | Output 23 * |
| A8 | Output 8 | B8 | Output 24 * |
| A9 | Output 9 | B9 | Output 25 * |
| A10 | Output 10 | B10 | Output 26 * |
| A11 | Output 11 | B11 | Output 27 * |
| A12 | Output 12 | B12 | Output 28 * |
| A13 | Output 13 | B13 | Output 29 * |
| A14 | Output 14 | B14 | Output 30 * |
| A15 | Output 15 | B15 | Output 31 * |
| A16 | Output 16 | B16 | Output 32 * |
| A17 | DC - | B17 | DC - * |
| A18 | DC + | B18 | DC + * |

* Inputs for 32-point modules only.

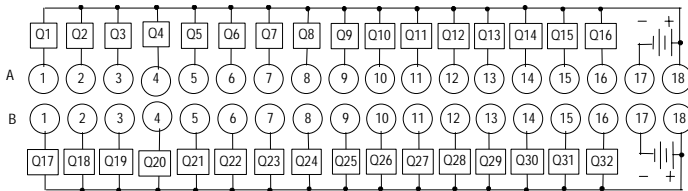
Each group of 16 outputs has a DC+ and a DC- terminal.

When wiring outputs to inductive loads, use of external suppression circuits is recommended. See chapter 2, "Installing Wiring for I/O Devices-Wiring to Inductive Loads" in the *VersaMax I/O System Manual*, GFK-1504, for more information.

For modules IC200MDL741 and BXIOODP1624, if additional bussed terminals are needed, the B terminals can be made available by using a shorting bar. The shorting bar has a maximum current-carrying capacity of 2A per point. See chapter 2 of the *VersaMax I/O System Manual*, for additional information about the shorting bar.

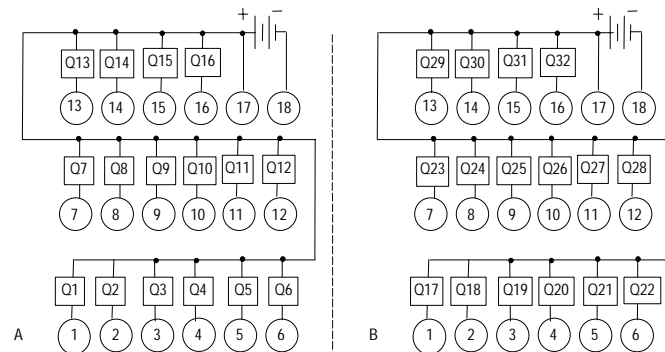
Wiring Connections for Carriers with Two Rows of Terminals

Row B connections are for 32-point modules only.



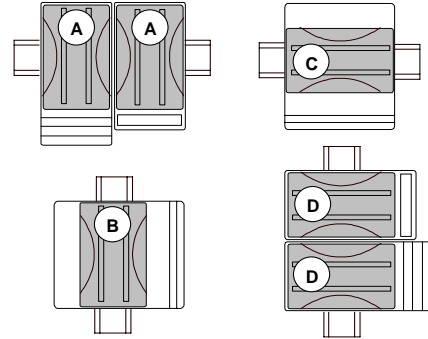
Wiring Connections for Carriers with Three Rows of Terminals

Side B connections are for 32-point modules only.



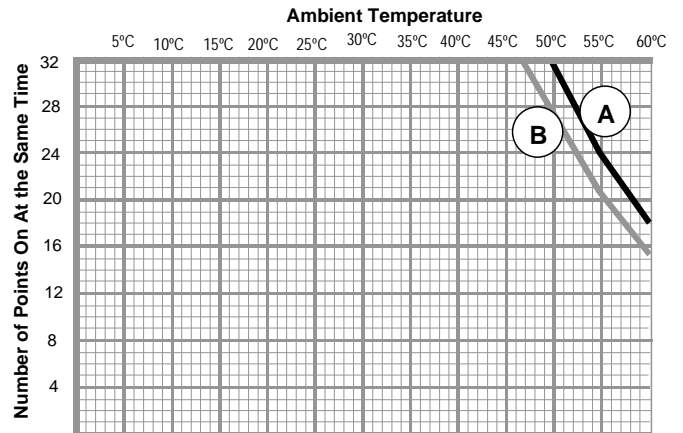
Thermal Derating

The number of points that can be on at the same time depends on the ambient temperature, the external voltage, and the orientation of the module and DIN rail.

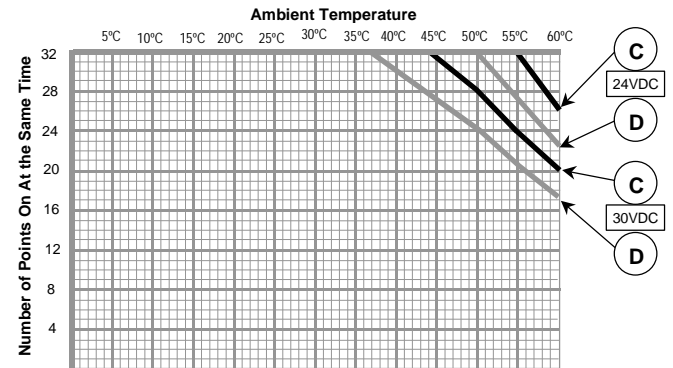


Thermal Derating Charts for Modules IC200MDL744, BXIOODN3224

No derating at 24VDC with modules mounted vertically. Derating at 30VDC for modules mounted vertically is shown below.



Deratings for modules mounted horizontally at 24VAC and 30VDC shown below.



Operating Note

If hot insertion of a module is done improperly, the operation of other modules on the same backplane may be disrupted. See *Installing a Module on a Carrier* in the *VersaMax Modules Manual*, GFK-1504.