

VersaMax 24VDC Input Modules

October 2008

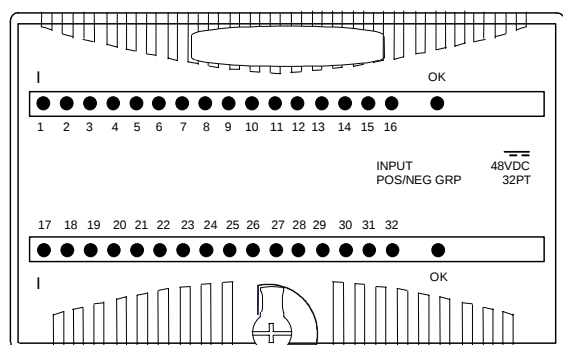
GFK-2546

Product Description

Discrete input modules IC200MDL640 and BXIOID1624 provide two groups of 8 discrete inputs.

Discrete input module IC200MDL650 (shown below) and BXIOIX3224 provide four groups of 8 discrete inputs.

Inputs in each group can be either positive logic inputs that receive current from input devices and return the current on the common, or negative-logic inputs that receive current from the common and return current to the input device. Input devices are connected between the input terminals and common terminals.



Note: Negative-logic functionality requires module version IC200MDL650C / BXIOID3225C or higher.

Power for module operation comes from the backplane.

Intelligent processing for the module is performed by the CPU or NIU.

LED Indicators

Individual green LEDs indicate the on/off state of each input point.

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.

(total response time is 1.5ms).

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	IC200MDL640, BXIOIS1624: 16 (2 groups of 8) IC200MDL650, BXIOID3224: 32 (4 groups of 8)
Module ID	IC200MDL640, BXIOIS1624: FFFF8008 IC200MDL650, BXIOID3224: 80088008
Isolation:	User input to logic (optical) and frame ground: 250VAC continuous; 1500VAC for 1 minute Group to Group: 250VAC continuous; 1500VAC for 1 minute Point to point: None
LED indicators	One LED per point shows individual point ON/OFF status OK LED indicates backplane power is present
Backplane current consumption (5V output)	IC200MDL640, BXIOIS1624: 25mA maximum IC200MDL650, BXIOID3224: 50mA maximum
External power supply	None
Thermal derating	IC200MDL640, BXIOIS1624: No derating IC200MDL650, BXIOID3224: See chart
Configuration parameters	Input response times

Input Characteristics

Input voltage	0 to +30VDC, +24VDC nominal
On state voltage	+15 to +30VDC
Off state voltage	0 to +5VDC
On state current	2.0 to 5.5mA
Off state current	0 to 0.5mA
On response time	0.5ms maximum
Off response time	
Configurable filter time	0 ms, 1.0ms (default), or 7.0ms
Input impedance	10kOhms maximum

Product Revision History

Rev	Date	Description
IC200MDL640G / BXIOID1624G IC200MDL650G / BXIOID3224G	October 2008	Updated Power Supply OK signal circuitry.
IC200MDL640F / BXIOID1624F IC200MDL650F / BXIOID3224F	April 2005	Improvement to latching mechanism
IC200MDL640E IC200MDL650E	April 2004	Changed to V0 plastic for module housing.
BXIOID1624E BXIOID3224E	January 2004	Changed to V0 plastic for module housing. ATEX approval for Group 2 Category 3 applications.
IC200MDL640D IC200MDL650D	January 2004	ATEX approval for Group 2 Category 3 applications.
IC200MDL640C / BXIOID1624C IC200MDL650C / BXIOID3224C	November 1999	Added operation with negative logic inputs.
IC200MDL640A / BXIOID1624A IC200MDL650A / BXIOID3224A	September 1998	Original product release

Configuration Parameters

The module's basic input on/off response time is 0.5ms.

For some applications, it may be preferable to add additional filtering to compensate for conditions such as noise spikes or switch bounce. Input filter times of 0ms, 1.0ms, or 7.0ms are selectable via software configuration, for total response times of 0.5ms, 1.5ms, and 7.5ms respectively. The default is 1.0ms filter time

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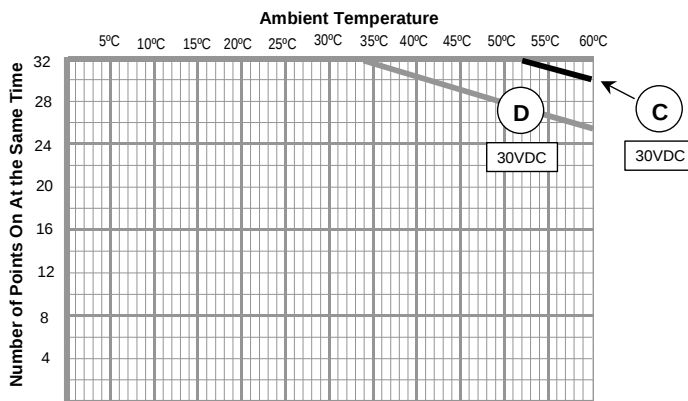
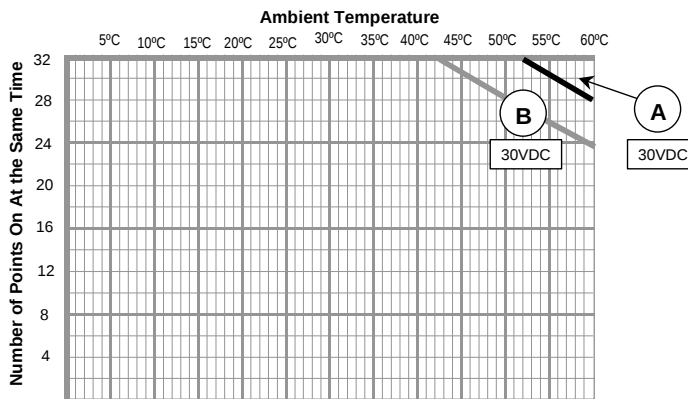
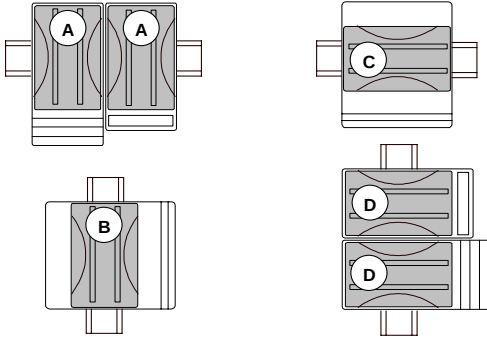
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Thermal Derating

No derating is required for the 16-point modules, or for the 32-point modules at 24VDC in any orientation.

For 32-point modules at 30VDC, 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.



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.

Field Wiring Terminals

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

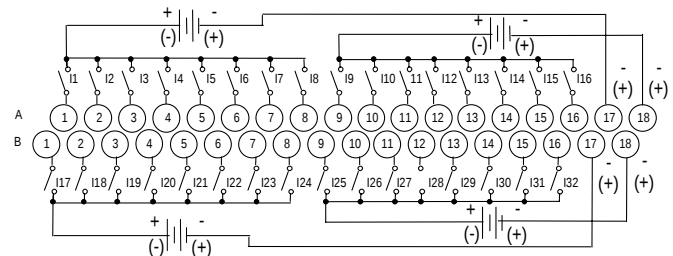
* Inputs available on 32-point modules only.

The 32 inputs form groups of 8. Each group has a common connection. Each group may be wired for positive or negative logic inputs. Note: Negative-logic functionality requires module version -C or higher.

For the 16-point modules, if additional bussed terminals are needed, the B terminals can be made available using a shorting bar. The shorting bar has a maximum current-carrying capacity of 2 Amps per point. See the *VersaMax I/O Modules Manual*, GFK-1504 for information about using a shorting bar.

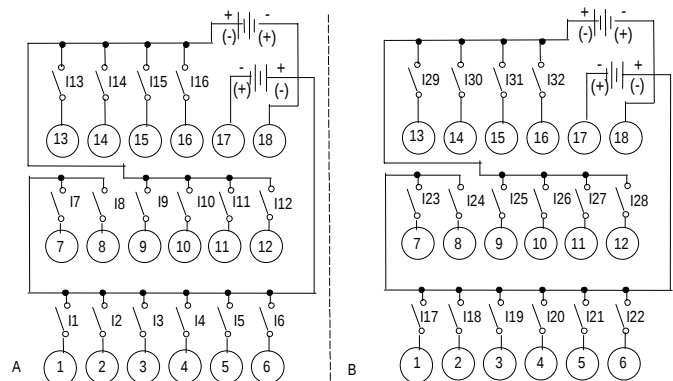
Wiring Connections for Carriers with Two Rows of Terminals

Row B connections shown below are for 32-point modules only.



Wiring Connections for Carriers with Three Rows of Terminals

Side B connections shown below are for 32-point modules only.



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