

# VersaMax 5/12VDC Input Modules

October 2008

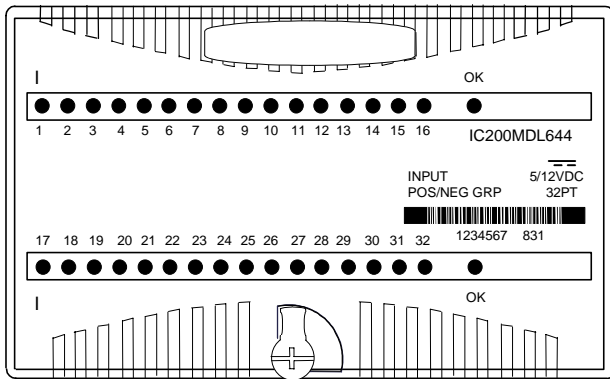
GFK-2545

## Product Description

Discrete input modules IC200MDL643 and BXIOID16512 provide two groups of 8 discrete inputs.

Discrete input modules IC200MDL644 (shown below) and BXIOID32512 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. The module supports positive and negative logic inputs. For the inputs to be compatible with TTL devices, the negative logic configuration should be used.



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.

## Configuration Parameters

The module's basic input on/off response time is 0.25ms.

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 0.25ms, 1.25ms, and 7.25ms respectively. The default is 1.0ms filter time (total response time is 1.25ms).

## Module Characteristics

Points	IC200MDL643, BXIOID16512: 16 (2 groups of 8) IC200MDL644, BXIOID32512: 32 (4 groups of 8)
Module ID	IC200MDL643, BXIOID16512: FFFF8008 IC200MDL644, BXIOID32512: 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)	IC200MDL643, BXIOID16512: 70mA maximum IC200MDL644, BXIOID32512: 140mA maximum
External power supply	None
Thermal derating	None
Configuration parameters	Input response times

## Input Characteristics

Input voltage	0 to +15VDC, +5/12 VDC nominal
User input current	1.8mA typ. @ 5VDC, 4.9mA typ. @ 12VDC
Input impedance	2.4K Ohm typ. @ 12VDC
On state voltage	+4.2 to +15VDC
Off state voltage	0 to +2.6VDC
On state current	1.45mA minimum
Off state current	0 to 0.7mA maximum
On response time	0.25ms maximum
Off response time	
Configurable filter time	0 ms, 1.0ms (default), or 7.0ms

## Product Revision History

Rev	Date	Description
IC200MDL643E BXIOID16512E IC200MDL644E BXIOID32512E	October 2008	Updated Power Supply OK signal circuitry.
IC200MDL643D BXIOID16512D IC200MDL644D BXIOID32512D	April 2005	Improvement to latching mechanism
IC200MDL643C IC200MDL644C	April 2004	Changed to V0 plastic for module housing.
IC200MDL643B IC200MDL644B	January 2004	ATEX approval for Group 2 Category 3 applications.
BXIOID16512C BXIOID32512C	January 2004	Changed to V0 plastic for module housing. ATEX approval for Group 2 Category 3 applications.
IC200MDL643A BXIOID16512A IC200MDL644A BXIOID32512A	November 1999	Initial product release

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## 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.

## 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 *

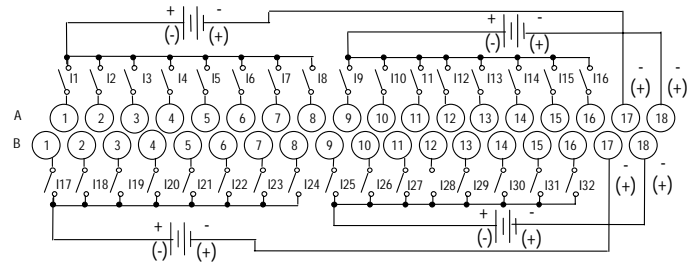
\* Inputs available on 32-point modules only.

The 32 inputs form groups of 8. Each group has a common connection. Each group may be wired for positive or negative logic inputs.

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.

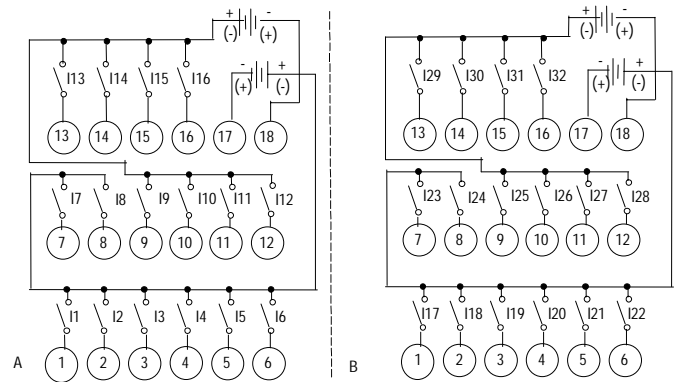
## Wiring Connections for Carriers with Two Rows of Terminals

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.



## 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.