VersaMax 16 24VDC Inputs, 16 12/24VDC Outputs Module

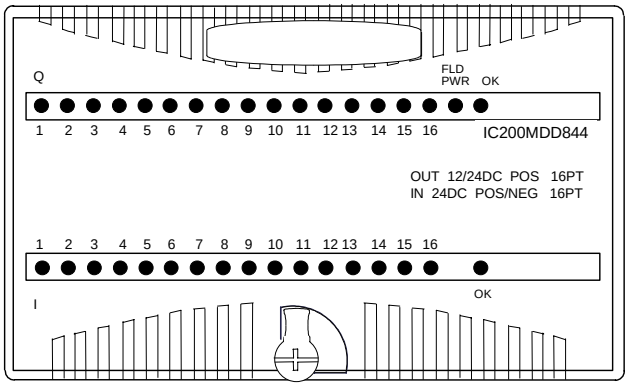
October 2008 GFK-2538

Product Description

Discrete input/output module IC200MDD844 (shown below) / BXIOMD1624 provides one group of 16 discrete outputs and two groups of 8 discrete inputs.

The outputs are positive or sourcing type outputs. They switch the loads to the positive side of the DC supply and thus supply current to the loads.

Inputs are positive logic; they receive current from input devices and return the current on the common. Input devices are connected between the input terminals and common terminals.



Note: Negative logic input functionality and 12V output functionality require module version -C or higher.

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.

LED Indicators

Individual green LEDs indicate the on/off state of the output points and input points. Operation of the output LEDs is dependent on field power, but independent of load conditions. Individual amber LEDs indicate overload conditions on each output point. 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.

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 (total response time is 1.5ms).

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.

Module Characteristics

Points	1 group of 16 outputs 2 groups of 8 inputs
Module ID	80088080
Isolation: User input to logic (optical) and to frame ground Group to group Point to point	 250VAC continuous; 1500VAC for 1 minute 250VAC continuous; 1500VAC for 1 minute None
LED indicators	One 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	5V output: 70mA maximum
External power supply	+10.2 to +30VDC, +12/24VDC nominal
Thermal derating	See diagram
Configuration parameters	Input response time

Input Characteristics

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

Output Characteristics

Output voltage	+10.2 to +30VDC, +12/24VDC nominal
Output voltage drop	0.3V
Load current	0.5 Amp at 30VDC maximum (resistive) 2.0 Amps maximum for 100ms inrush
Output leakage current	0.5mA at 30VDC maximum
On response time Off response time	0.2ms maximum 1.0ms maximum
Protection	No internal fuses

VersaMax 16 24VDC Inputs, 16 12/24VDC Outputs Module

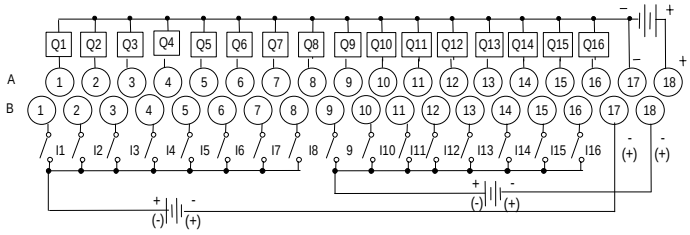
October 2008 GFK-2538

Field Wiring Terminals

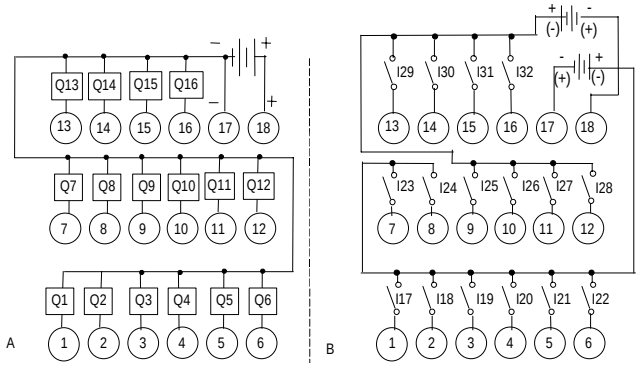
Terminal	Connection	Terminal	Connection
A1	Output 1	B1	Input 1
A2	Output 2	B2	Input 2
A3	Output 3	B3	Input 3
A4	Output 4	B4	Input 4
A5	Output 5	B5	Input 5
A6	Output 6	B6	Input 6
A7	Output 7	B7	Input 7
A8	Output 8	B8	Input 8
A9	Output 9	B9	Input 9
A10	Output 10	B10	Input 10
A11	Output 11	B11	Input 11
A12	Output 12	B12	Input 12
A13	Output 13	B13	Input 13
A14	Output 14	B14	Input 14
A15	Output 15	B15	Input 15
A16	Output 16	B16	Input 16
A17	DC -	B17	Inputs 1-8 Return
A18	DC +	B18	Inputs 9-16 Return

The 16 outputs form one group, each with a DC+ and a DC- terminal. The 16 inputs form two groups of 8. Each group has a common return. When wiring outputs to inductive loads, use of external suppression circuits is recommended.

Wiring Connections for Carriers with Two Rows of Terminals



Wiring Connections for Carriers with Three Rows of Terminals



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.

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.

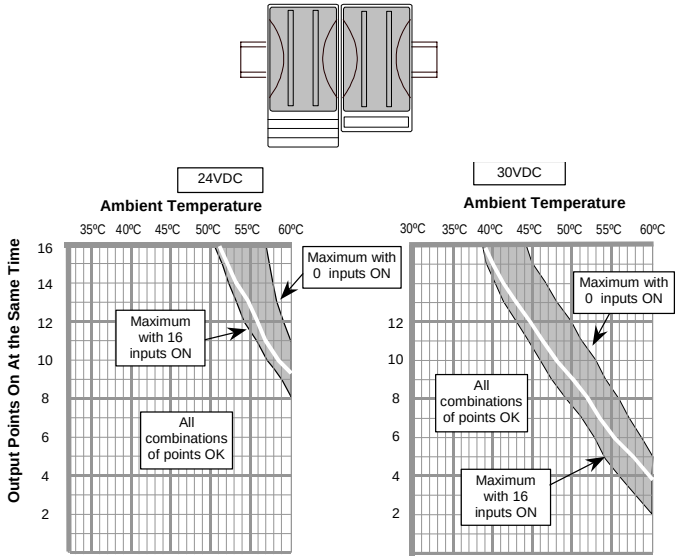
Product Revision History

Rev	*Date*	*Description*
IC200MDD844G BXIOMD1624G	October 2008	Updated Power Supply OK signal circuitry.
IC200MDD844F BXIOMD1624F	April 2005	Improvement to latching mechanism
IC200MDD844E	April 2004	Changed to V0 plastic for module housing.
BXIOMD1624E	January 2004	Changed to V0 plastic for module housing. ATEX approval for Group 2 Category 3 applications.
IC200MDD844D	January 2004	ATEX approval for Group 2 Category 3 applications.
IC200MDD844C BXIOMD1624C	November 1999	Added support for 12VDC outputs, and negative logic inputs.
IC200MDD844A BXIOMD1624A	September 1998	Initial product release.

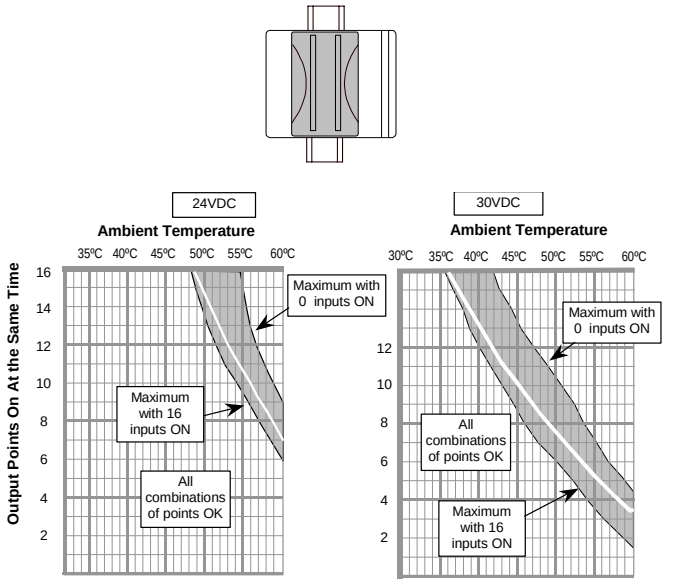
Thermal Derating

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. The charts that follow show thermal deratings for this module at 24V and 30V. The shaded bands are temperature ranges that represent allowable combinations of input points for the indicated number of outputs points. All combinations of points are permissible at lower temperatures. The narrow white line within each range shows maximum temperature when the number of output points equals the number of input points that are on at the same time.

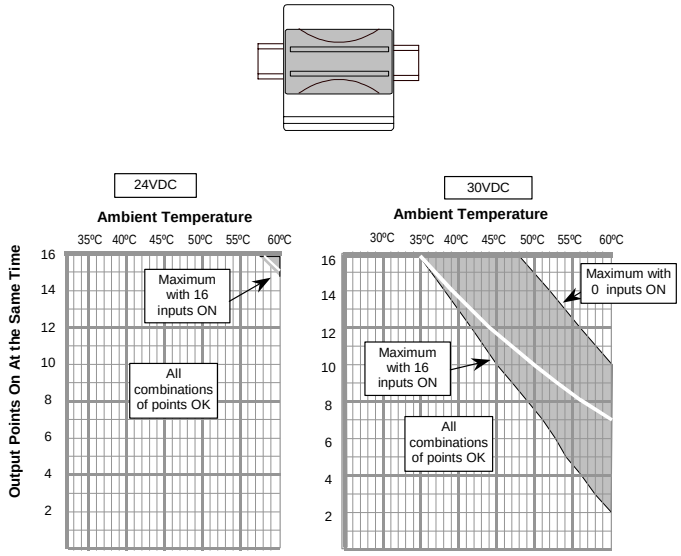
Vertical Modules on Horizontal DIN Rail



Vertical Modules on Vertical DIN Rail



Horizontal Modules on Horizontal DIN Rail



Horizontal Modules on Vertical DIN Rail