

VersaMax 24VDC 0.5Amp Positive Logic with ESCP, Output Module

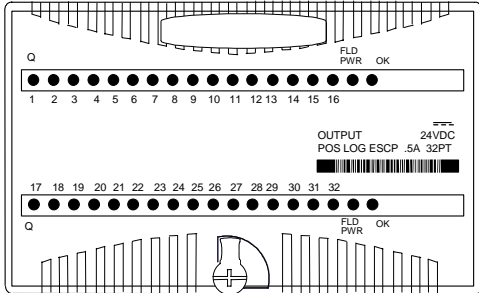
October 2008

GFK-2535

Discrete output modules IC200MDL741 and BXIOODP1624 provide one group of 16 discrete outputs.

Discrete output modules IC200MDL742 and BXIOODP3224, shown below, provides two groups of 16 discrete outputs.

Each point has electronic overcurrent protection and short circuit protection, and generates a fault if either condition exists. 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.



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. The LEDs are dependent on field power, but independent of load conditions.

Individual amber LEDs indicate overload conditions on each output.

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.

Diagnostics

The module reports the presence of any overloaded points to the system on a per-module basis. Amber LEDs indicate the overload conditions on a per-point basis. Once the overload condition is removed, normal operation is resumed.

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.

External Power Supply Requirements

The external power supply used to power the loads must provide sufficient field power for the module during short circuit events. When a load is shorted, an inadequate external power supply may allow field power to drop below the specified operating range, causing misoperation of the module. The external power supply must be capable of providing short circuit energy without degradation of output voltage levels. The amount of energy required depends on the number of simultaneously-short-circuited points that might occur. Refer to power supply short circuit operation specifications when selecting the power supply to be used with the loads.

Local energy storage (either batteries or capacitors) can be used to compensate for insufficient power supply characteristics. Additional best practices including minimizing wiring resistance from the external power supply to the module must be observed.

Module Characteristics

Points	IC200MDL741, BXIOODP1624: 1 group of 16 outputs IC200MDL742, BXIOODP3224: 2 groups of 16 outputs
Module ID	IC200MDL741, BXIOODP1624: FFFF8080 IC200MDL742, BXIOODP3224: 80808080
Isolation:	User input to logic (optical) and frame ground: 250VAC continuous; 1500VAC for 1 minute
	IC200MDL741, BXIOODP1624: Group to group: not applicable
	IC200MDL742, BXIOODP3224: 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 One amber LED per point shows individual point overloads FLD PWR LED indicates field power is present OK LED indicates backplane power is present
Backplane current consumption	IC200MDL741, BXIOODP1624: 5V output: 75mA maximum IC200MDL742, BXIOODP3224: 5V output: 150mA maximum
External power supply	+18 to +30VDC, +24VDC nominal
Thermal derating	See diagrams

Output Characteristics

Output voltage	+18 to +30VDC, +24VDC nominal
Output voltage drop	0.5V maximum
Load current	0.5A at 30VDC maximum (resistive) 2.0A inrush maximum for 100ms
Steady-state overcurrent trip point	1.6A typ., 0.7A to 2.5A max range
Output leakage current	0.5mA at 30VDC maximum
On and Off response time	0.5ms, maximum
Protection (each output)	Short circuit and overcurrent protection, free-wheeling diodes

Product Revision History

Rev	Date	Description
IC200MDL741F BXIOODP1624F IC200MDL742E BXIOODP3224E	October 2008	Updated Power Supply OK signal circuitry.
IC200MDL741E BXIOODP1624E IC200MDL742D BXIOODP3224D	April 2005	Improvement to latching mechanism
IC200MDL741D IC200MDL742C	April 2004	Changed to V0 plastic for module housing.
IC200MDL741C IC200MDL742B	January 2004	ATEX approval for Group 2 Category 3 applications.
BXIOODP1624D BXIOODP3224C	January 2004	Changed to V0 plastic for module housing. ATEX approval for Group 2 Category 3 applications.
IC200MDL741A BXIOODP1624A IC200MDL742A BXIOODP3224A	December 1998	Initial product release.

VersaMax 24VDC 0.5Amp Positive Logic with ESCP, Output Module

October 2008

GFK-2535

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	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.

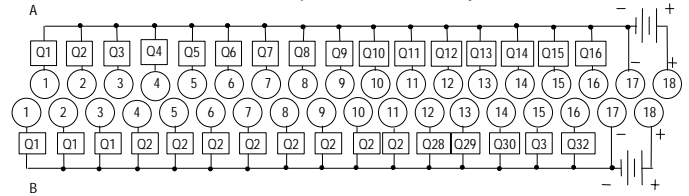
Each group of 16 outputs has a DC+ and a DC- terminal.

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.

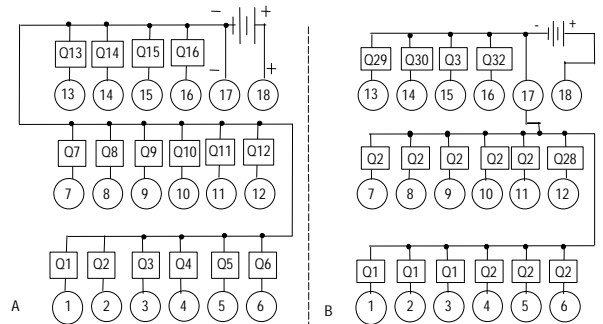
Wiring Connections for Carriers with Two Rows of Terminals

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.



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.

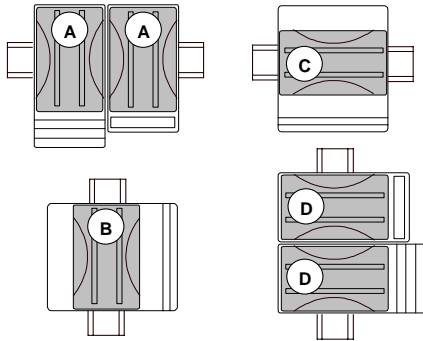
VersaMax 24VDC 0.5Amp Positive Logic with ESCP, Output Module

October 2008

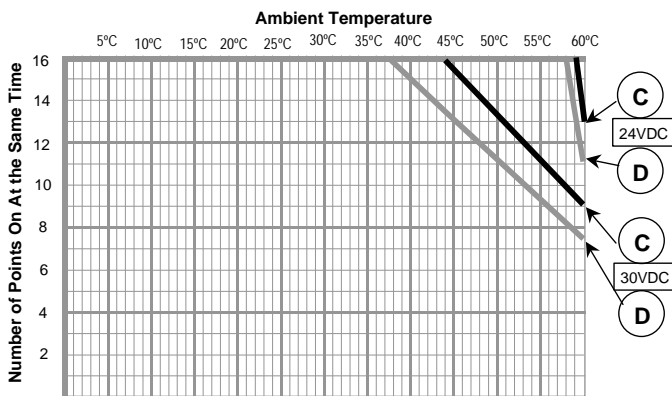
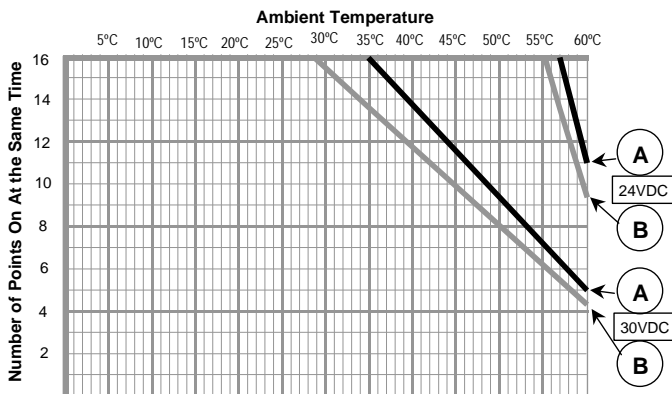
GFK-2535

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 below show example thermal deratings for the module at 24VDC and 30VDC with the maximum output current per point.



Thermal Derating Charts for Modules IC200MDL741, BXIOODP1624



Thermal Derating Charts for Modules IC200MDL742, BXIOODP3224

