

DeviceNet OPTION CARD FOR VLINX FIELDBUS GATEWAY



- CONFIGURED USING VLINX FIELDBUS GATEWAY MANAGER
- DIGITALLY ISOLATED DeviceNet PORT CAPABLE OF COMMUNICATING WITH ANY DeviceNet MASTER
- EASY INSTALLATION

GENERAL DESCRIPTION

The Vlinx Fieldbus Gateway contains a proprietary expansion port which provides a high speed, parallel architecture that extends the functionality and flexibility of the platform. This approach allows these products to evolve concurrently with the latest advances in communications and standards, without sacrificing performance. This high bandwidth channel has significantly greater throughput when compared to the traditional (external) serial gateway approach.

The VFG9000-DN option card adds a DeviceNet slave communication port to the series. This isolated card protects user equipment from potentially harmful ground loops while providing the ability to communicate to any high speed DeviceNet master. Additionally, the VFG9000-DN connector is pluggable for easy removal of the Fieldbus Gateway from the DeviceNet bus without disturbing communications with other devices on the bus.

The VFG9000-DN communication card is easily installed by removing the blank expansion port cover of your Fieldbus Gateway, and plugging the VFG9000-DN card into the expansion port. Configuration is simple using B&B Electronics' free Fieldbus Gateway Manager software.

SAFETY SUMMARY


All safety related regulations, local codes and instructions that appear in the literature or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Do not use the controller to directly command motors, valves, or other actuators not equipped with safeguards. To do so can be potentially harmful to persons or equipment in the event of a fault to the controller.



CAUTION: Risk of Danger.
 Read complete instructions prior to installation and operation of the unit.

 **WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2**

 **THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D, OR NON-HAZARDOUS LOCATIONS ONLY**

ORDERING INFORMATION

DESCRIPTION	PART NUMBER
DeviceNet option card for Fieldbus Gateway	VFG9000-DN

CONTENTS OF PACKAGE

- VFG9000-DN option card
- This hardware bulletin

SPECIFICATIONS

1. **POWER REQUIREMENTS:** 24 V @ 50 mA max. Power is supplied to the option card from the main board of the Fieldbus Gateway.

2. **COMMUNICATIONS:**

DeviceNet Port: The DeviceNet port has format and baud rates that are software programmable up to 500K baud and are digitally isolated. This port may be configured for various DeviceNet protocols. Check www.bb-elec.com for currently supported protocols.

Isolation from VFG9000-DN Communication ports Fieldbus Gateway: 1000 VDC for 1 minute.

3. **CERTIFICATIONS AND COMPLIANCES:**

Refer to main unit manual or "Agency Approvals" section of B&B Electronics' website for agency certifications.

ELECTROMAGNETIC COMPATIBILITY

Emissions and Immunity to EN 61326: Electrical Equipment for Measurement, Control and Laboratory use.

Reference Fieldbus Gateway unit for EMC specifications

4. **ENVIRONMENTAL CONDITIONS:**

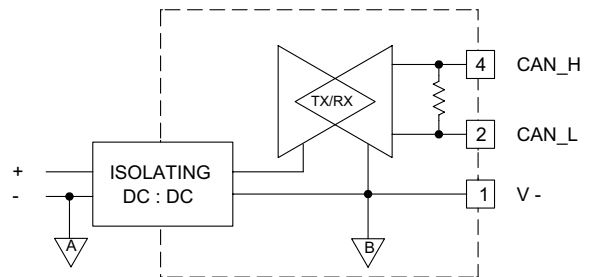
Refer to the specifications of the Fieldbus Gateway you are installing this card in.

5. **CONSTRUCTION:** For indoor use only. Installation Category II, Pollution Degree 2.

6. **INSTALLATION REQUIREMENTS:** See "Installing the VFG9000-DN Option card" for more details.

7. **WEIGHT:** 2.3 oz (65.2 g)

BLOCK DIAGRAM



INSTALLING THE VFG9000-DN OPTION CARD

1. Remove power from the unit
2. Insert a flat-bladed screwdriver into the slot at the top of the expansion port cover. Gently apply pressure on the screwdriver in an upward direction until the expansion port cover disengages from the unit as shown in Figure 1.
3. Verify that the option card knobs are in the "unlocked" position as shown in Figure 2.
4. Carefully insert the option card into the expansion port opening while aligning the card-edge connector on the option card with the main board's header, as shown in Figure 3. Once aligned, gently press on the front of the card until it is flush with the front of the case.
5. Turn the option card knobs to the locked position as shown in Figure 4.



Caution: The expansion and main circuit boards contain static sensitive components. Before handling the cards, discharge static charges from your body by touching a grounded bare metal object. Ideally, handle the cards at a static controlled clean workstation. Also, handle the cards by the edges only. Dirt, oil, or other contaminants that may contact the cards can adversely affect circuit operation.



Warning: Risk of Danger: Be sure to remove all power before removing the expansion port cover



WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS.

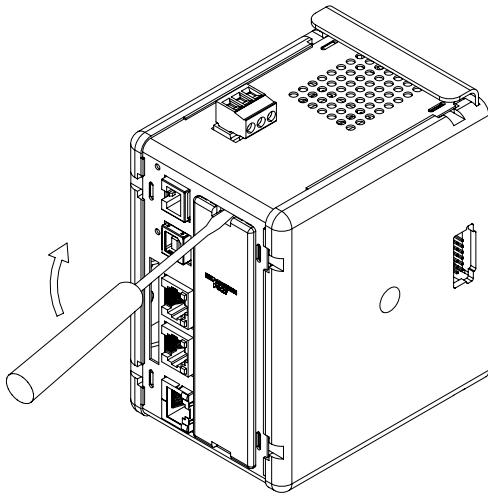


Figure 1

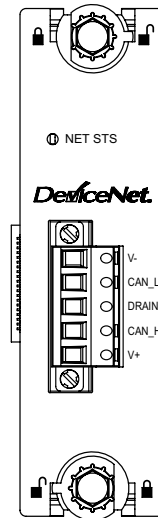


Figure 2

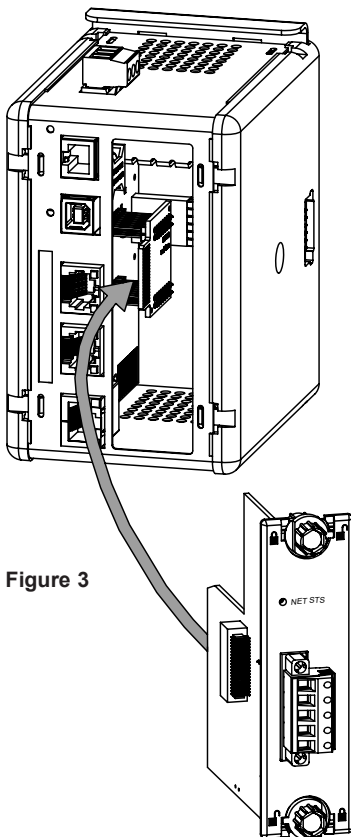


Figure 3

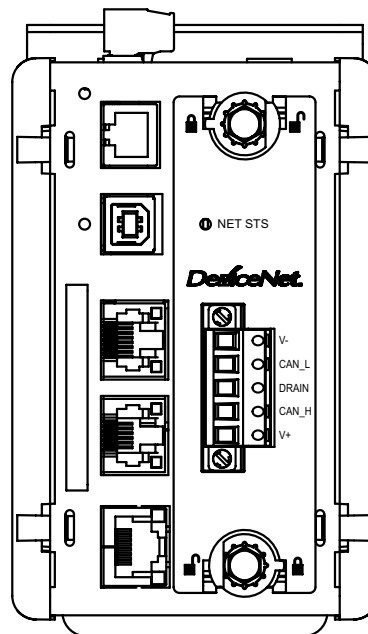
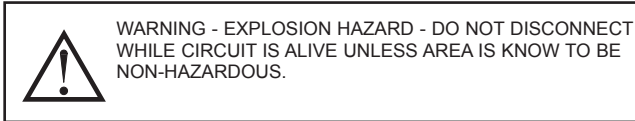


Figure 4

POWER SUPPLY REQUIREMENTS NEW AND EXISTING INSTALLATIONS

The VFG9000-DN option card draws all of its power from the main board of the Fieldbus Gateway. The specifications of the Fieldbus Gateway account for the power needs of an option card.



COMMUNICATING WITH THE VFG9000-DN OPTION CARD

CONFIGURING A VFG9000-DN OPTION CARD

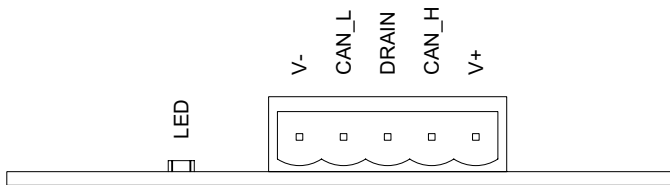
The VFG9000-DN is configured using Fieldbus Gateway Manager software. Updates to the software for new features and drivers are posted on the website as they become available. By configuring the VFG9000-DN using the latest version of the software, you are assured that your unit has the most up-to-date feature set. Fieldbus Gateway Manager software can configure the VFG9000-DN through the RS232 PGM port, USB port, Ethernet port, or CompactFlash socket on your Fieldbus Gateway. Additional information can be found in your Fieldbus Gateway hardware bulletin and the Fieldbus Gateway Manager user manual.

DeviceNet PORT PROTOCOLS

The VFG9000-DN option card has one DeviceNet port. This port may be configured for various DeviceNet protocols. Check www.bb-elec.com for currently supported protocols.

VFG9000-DN PORT PIN OUTS

Must use only NEC Class 2 or Limited Power Source (LPS) rated power supply.



V-

Position 1 of the pluggable connector provides a CAN ground connection. This terminal is isolated from the Fieldbus Gateway.

CAN_L

Position 2 of the pluggable connector provides the CAN_L bus line (active low). This terminal is isolated from the Fieldbus Gateway.

DRAIN (OPTIONAL)

Position 3 of the pluggable connector is provided for optional drain connections. This position is available only to tie drain wires together or to earth ground. There is no internal connection to earth ground. The DRAIN position is not connected to any circuitry internal to the VFG9000-DN option card or Fieldbus Gateway.

CAN_H

Position 4 of the pluggable connector provides the CAN_H bus line (active high). This terminal is isolated from the Fieldbus Gateway.

V+ (OPTIONAL 24 VDC)

Position 5 of the pluggable connector is provided for optional 24 VDC connections. This position is available only to tie 24 VDC wires together. The VFG9000-DN card neither provides 24 VDC power nor uses 24 VDC power through this connection. The V+ position is not connected to any circuitry internal to the VFG9000-DN option card or Fieldbus Gateway.

SOFTWARE/UNIT OPERATIONS LED

LED STATE	VFG9000-DN CARD INDICATION
OFF	Initializing
FLASHING GREEN	The device is online and is waiting on communications from other devices
GREEN	The device is online and has established communications with another device
FLASHING RED	One or more established communications have timed out
RED	The device has detected an error that has rendered it incapable of communicating on the network (duplicate MAC ID or bus activity).

TROUBLESHOOTING YOUR VFG9000-DN OPTION CARD

If for any reason you have trouble operating, connecting, or simply have questions concerning your new VFG9000-DN option card, contact B&B Electronics' technical support. For contact information, refer to the back page of this bulletin for phone and fax numbers.

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