GE Intelligent Platforms

Operator Interface Products

QuickPanel* View & QuickPanel Control

DeviceNet Master and Slave Communication Cards
Master: IC754DVNM01
Slave: IC754DVNS01
Hardware User's Guide, GFK-2270D

April 2010

Warnings, Cautions, and Notes as Used in this Publication

| Warning |

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

| Caution |

Caution notices are used where equipment might be damaged if care is not taken.

Note: Notes merely call attention to information that is especially significant to understanding and operating the equipment.

This document is based on information available at the time of its publication. While efforts have been made to be accurate, the information contained herein does not purport to cover all details or variations in hardware or software, nor to provide for every possible contingency in connection with installation, operation, or maintenance. Features may be described herein which are not present in all hardware and software systems. GE Intelligent Platforms assumes no obligation of notice to holders of this document with respect to changes subsequently made.

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General Contact Information

Online technical support and GlobalCare	http://www.ge-ip.com/support
Additional information	http://www.ge-ip.com/
Solution Provider	solutionprovider.ip@ge.com

Technical Support

If you have technical problems that cannot be resolved with the information in this guide, please contact us by telephone or email, or on the web at **www.ge-ip.com/support**

Americas

Online Technical Support	www.ge-ip.com/support
Phone	1-800-433-2682
International Americas Direct Dial	1-780-420-2010 (if toll free 800 option is unavailable)
Technical Support Email	support.ip@ge.com
Customer Care Email	customercare.ip@ge.com
Primary language of support	English

Europe, the Middle East, and Africa

Online Technical Support	www.ge-ip.com/support
Phone	+800-1-433-2682
EMEA Direct Dial	+352-26-722-780 (if toll free 800 option is unavailable or if dialing from a mobile telephone)
Technical Support Email	support.emea.ip@ge.com
Customer Care Email	customercare.emea.ip@ge.com
Primary languages of support	English, French, German, Italian, Czech, Spanish

Asia Pacific

Online Technical Support	www.ge-ip.com/support
Phone	+86-400-820-8208
	+86-21-3217-4826 (India, Indonesia, and Pakistan)
Technical Support Email	support.cn.ip@ge.com (China)
	support.jp.ip@ge.com (Japan)
	support.in.ip@ge.com (remaining Asia customers)
Customer Care Email	customercare.apo.ip@ge.com
	customercare.cn.ip@ge.com (China)

The Device Net Adapter has been tested and found to meet or exceed the requirements of U.S. (47 CFR 15), Canadian (ICES-003), Australian (AS/NZS 3548) and European (EN55011) regulations for Class A digital devices when installed in accordance with guidelines noted in this manual.

Note: This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note: This Class A digital apparatus complies with Canadian ICES-003.

Installation in Hazardous Locations

The following statements are required to appear for Class 1, Div 2 or Group II Category 3 Hazardous Locations:

Power, input and output (I/O) wiring must be in accordance with Class I, Div. 2 wiring methods, Article 501 4(b) of the National Electrical Code, NFPA 70 and in accordance with the authority having jurisdiction.

⚠ **Warning**

IC754DVNM01: The Mini-USB connector is *not* for connection with this system. Do not use, connect, or disconnect unless the area is known to be non-hazardous. Connection or disconnection in an explosive atmosphere could result in an explosion.

Warning

Communication cards IC754DVNS01 and IC754DVNM01 shall be provided with an isolating bus power interface. The isolation shall be secured by any R/C (FPQU2) component with a breakdown voltage of 3750 Volts.

ATEX markings are as follows per certificate 44A752225 U. The "U" denotes special conditions of use that these option cards be used only with GE QuickPanel View or Control OI.
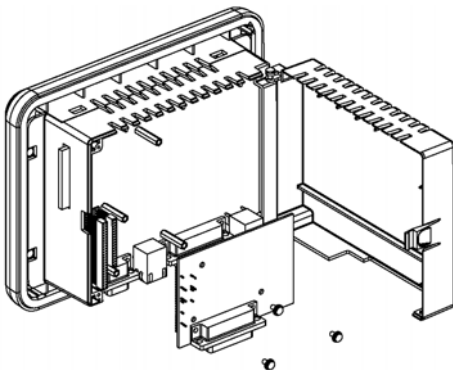
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Note: The USB port on the DeviceNet interface card is not used when installed in the QuickPanel View or QuickPanel Control. The USB port on the card is not activated for maintenance or other application purposes and should not be connected.

Installing a Communication Module

Warning

**Always use anti-static precautions when accessing the
mating connector or the interior of the unit.**

Note: The 6" model QuickPanel is shown. Other models are
similar.

1. Disconnect the DC input power terminal block connector from your QuickPanel unit before inserting the Communication Module.

2. Open the back cover.

3. Attach the Communication Module to the unit by plugging the module into the mating connectors on the back of the unit.

   Caution: Be sure to properly align pins in the dual connector upon insertion to avoid damage to the card or the QuickPanel unit.
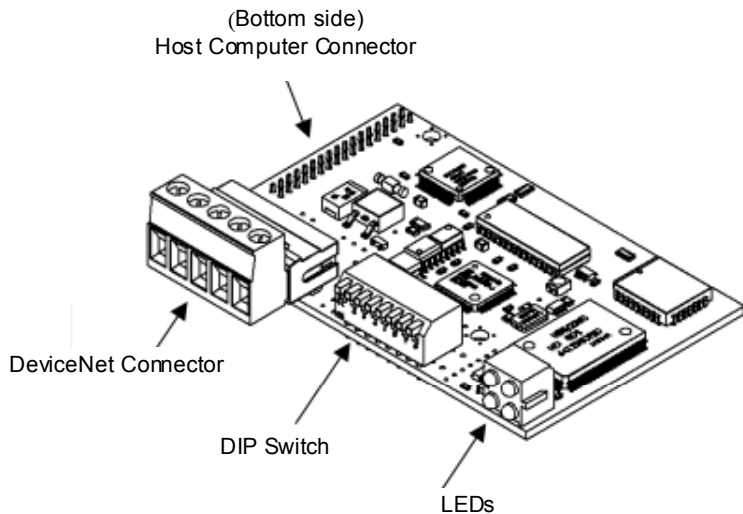
4. Install the three screws to secure the card in the unit.

5. Close the cover.

Note: To use this card with QuickPanel Control or View, Proficy® Machine Edition software is required. The Master card is supported in QuickPanel Control. The Slave card is supported only in QuickPanel View.
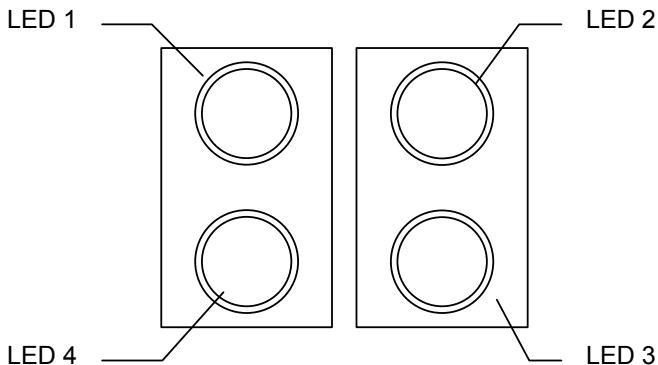
Overview

The DeviceNet module is shown on the next page. The host computer connector plugs into the expansion connector on the QuickPanel Control/View Operator Interface unit.

The DeviceNet connector provides communications via a DeviceNet fieldbus cable. DIP-switches are used to configure network baud rate and network address (MAC ID). The DeviceNet module has four LED indicators that display status.

(Bottom side)
Host Computer Connector

DeviceNet Connector

DIP Switch

LEDs

Indicators

The DeviceNet module has four LED indicators that are mounted on the front of the module. There is also an additional on-board watchdog LED. These are used for displaying the status of the module.

LED 1 ———   ——— LED 2

LED 4 ———   ——— LED 3

1. Not used	2. Network status
3. Module status	4. Operation mode

LED	*LED Status*	*Description*
2 Net work Ùæ••	Off	No power, not initialized or no connections established
	Flashing Green	On-line, no connections established
	Green	On-line, one or more connections are established
	Flashing Red	Minor fault, one or more connections have a minor fault
	Red	Critical link failure
3 Module Ùtatus	Off	No power or not initialized
	Green	Module status is OK
	Flashing Red	Minor Fault
	Red	Major Fault
4 Operation { [å^	Off	No power or not initialized
	Green	Run mode
	Flashing Green	Idle Mode

DeviceNet Network Connector

The DeviceNet FieldBus card has a 5.08mm, five-position screw connector. The pinout is as follows:

1	V-
2	CANL
3	SHIELD
4	CANH
5	V+

Wiring

UL recognized (AVLV2), rated 300V, 105°C min
30–12 AWG, 5–7 in-lbs (0.6–0.8 N-m)
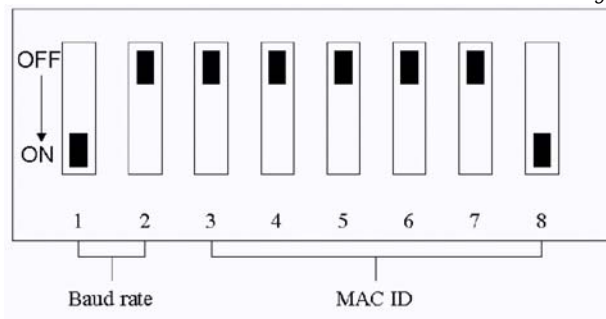
Configuration

Configuration of Baud Rate and MAC ID

In a DeviceNet network, each node in the network has a MAC ID (the address in the network). The MAC ID is a number between 0 and 63. Each node's MAC ID has to be unique, since it is used to address the node.

In a DeviceNet network it is also possible to configure the Baud rate. The following Baud rates are possible to use in the network: 125, 250, and 500 kBit/sec. All nodes in the network have to communicate with the same Baud rate.

The MAC ID and baud rate are set by a DIP switch. The switch is mounted at the front of the module.

DIP switches 1 and 2 are used to configure the Baud rate and DIP switches 3 to 8 are used to configure the node address (MAC ID). The DIP-switch configuration is set according to the description on the next page.

Baud rate | MAC ID

On = 1, 0 = Off

Baud Rate (Kbit/sec)	DIP 1-2
125	0 0
250	0 1
500	1 0
Reserved	1 1

Address	DIP 3-8
0	0 0 0 0 0 0
1	0 0 0 0 0 1
2	0 0 0 0 1 0
3	0 0 0 0 1 1
.	
.	
.	
62	1 1 1 1 1 0
63	1 1 1 1 1 1

Design Specifications

Network:

Protocol	**Master:**
	Complete DeviceNet 2.0 scanner implementation according to ODVA latest standards
	Group 2 Client/Server/UCMM support
	Slave:
	DeviceNet Specification version: Vol. 1: 2.0, Vol. 2: 2.0
	Configuration test version: A-12
Data Rate	Supports operation at 125, 250 & 500 Kbaud
Supported Connection Types	Strobe I/O, Poll I/O, Cyclic I/O, Change-of-State (COS) I/O
Messaging Type	Explicit
Termination	External termination required at the end of the network cable

Environmental:

Storage Temperature	-25° to 85°C
Operating Temperature	0° to 60°C
Operating Humidity	5 to 90% (non-condensing)