QuickPanel* View/Control Communication Module Hardware Users' Guide

QuickPanel View/Control Interface Card
for Data Highway Plus
IC754ABD001

April 2010
GFK-2483

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 Global Care	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 Interface Card 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 (EN55022) 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 including interference that may cause undesired operation.

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

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: Any changes or modifications to the product or installation that are not expressly approved by GE Intelligent Platforms could void the user's authority to operate the equipment under FCC rules.

The following statements are required to appear for Class 1, Div 2 Hazardous Locations.

1. WARNING – EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY TO CLASS 1, DIV. 2.

2. WARNING - EXPLOSION HAZARD – WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES.

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

Power, input and output (I/O) wiring must be in accordance with Class 1 Division 2 wiring methods, Article 501 4(b) of the National Electric Code, NFPA 70 and in accordance with the authority having jurisdiction.

Table of Contents

Introduction

The QuickPanel View/Control Interface Card for Data Highway Plus allows the operator interface to communicate on Data Highway Plus networks.

Configuration of the interface card in the QuickPanel View/Control is accomplished using Proficy™ Machine Edition. For a complete description of the features and capabilities of the interface card, please refer to the Proficy Machine Edition on-line help for the card.

Description

The top side of the Interface Card is shown below. It provides a host connector that connects the Interface Card with your QuickPanel View/Control operator interface. The DH+ bus cable is connected to the Interface Card through the DH+ connector. Three LED indicators display the status of the Interface Card.
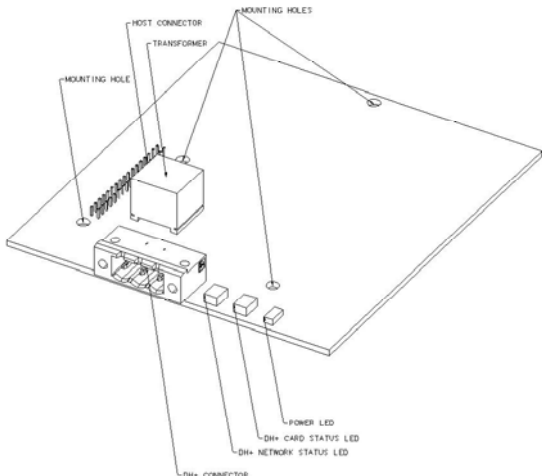
Indicators

The LEDs on the front of the Interface Card indicate the card's status.

| *LED*	*LED Status*	*Description*
Network Status	Green On - Solid	Interface Card is online and communicating with the DH+ network.
	Off	Interface Card is offline and not communicating with the DH+ network.
	Green/Red Alt blink	Interface Card is scanning the network in Auto-Baud mode trying to determine the network baud rate.
	Red On – Solid	Interface Card is online, but internal buffers are full.
	Red blinking	Duplicate node detected on the Network. Card is not communicating on the DH+ network.
	Green blinking	Interface card is trying to go online, but no other nodes found on network.
Card Status	Green On - solid	Firmware loaded and running on card.
	Red On – solid	Error initializing DPRAM.
PWR	Green On - solid	Power supplied to card.

DH+ Connector

The 3-pin male connector on the front of the Interface Card allows the card to connect to a typical Data Highway Plus network.

The mating plug is Phoenix Contact 1777992. The torque rating for the attaching screws is 4 to 6 inch-pounds.

DH+ CABLE CONNECTOR

SHIELD

CLEAR   BLUE
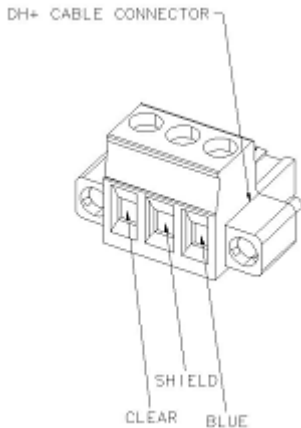
Installing a Communication Module

Warning: Always use anti-static precautions when accessing the mating connector or the interior of the unit.
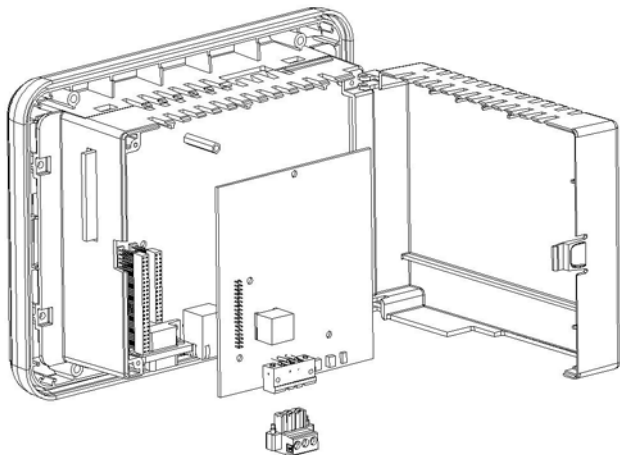
Note: The 6" model QuickPanel is shown. Other models are similar.

1. Disconnect the DC input power terminal block connector from your QuickPanel View/Control 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. The shorter connector, which is to the inside, is to be used.

   Caution: **Be sure to properly align pins in the dual connector upon insertion to avoid damage to the card or the QuickPanel View/Control unit.**

4. Install the three screws to secure the card in the unit.

5. Close the cover.

Note: To use this card with QuickPanel View/Control, Proficy Machine Edition software is required.

Please refer to the GE Intelligent Platforms Support web page http://www.ge-ip.com/support *for the latest service pack upgrades and specials.*

Connecting the Network

A Data Highway Plus network uses a Trunkline / Dropline configuration. Cabling is baseband shielded twin axial cable (Belden 9463) and is limited to 100 ft maximum on the droplines. The trunkline is limited based on the network baud rate as follows:

> 10,000 ft max @ 57.6kbps
>
> 5,000 ft max @ 115.2kbps
>
> 2,500 ft max @ 230.4kbps

Termination

A Data Highway Plus network should be terminated on both ends of the trunk line. The suggested impedances using Belden 9463 cabling are:

> 150Ω for 57.6kbps and 115.2kbps
>
> 82Ω for 230.4kbps

Shield connection

The shield connection of the connector should be connected throughout the network and grounded to frame ground at one location on the network. This means that it should not be connected to each connector on the network, but that shield should be tied together outside of the connector. The shield connection on the

Data Highway Plus network adapter connects directly to the earth
ground of the 24VDC power connector of the QuickPanel
View/Control.

Network Identification

The Data Highway Plus network adapter will answer a WHO
ACTIVE request on the DH+ network with the string 'KF2'. This
response cannot be changed.

AutoBaud

The AutoBaud function of the Data Highway Plus network adapter
allows the card to listen on the network to determine its baud rate
setting. The network adapter will listen at each baud rate for
approximately 3 seconds until it determines that it is listening to a
valid, active network. If it does not find an active network, it restarts
back listening again at each baud rate.

If the network is lost (such as by unplugging the cable) and the card
goes back to offline mode, the AutoBaud search restarts.

For quicker connection and reconnection times, it is suggest that the
actual known baud rate be configured and AutoBaud only used in
situations where the baud rate might be changing.

General Specifications

Environmental Conditions	

Temperature
    Operation
    Storage
	-10°C to 60°C
	-40°C to 85°C

Humidity	10 to 90% relative humidity (non-condensing)
Vibration (Operating)	IEC60068-2-6 10 - 57Hz, 0.012" peak-peak displacement 57 - 500Hz, 1.0g acceleration
Shock (Operating)	IEC60068-2-27 15g, 11ms (sine wave)

Product Certification

Description	*Agency Standard or Marking*	*Comments*
N.A. Safety for Hazardous Locations Class I, Div. 2, Groups A, B, C, D	UL1604/C-UL	Certification by Underwriter's Laboratories to UL standard and equivalent CSA standard
Explosive Atmospheres Directive European Safety for Hazardous Locations Equipment Group II, Category 3	ATEX	Certification in accordance with European Directives; Refer to Declaration of Conformity and Independent 3rd Party Assessment Certificate
Electromagnetic Compatibility Directive European EMC for Industrial Control Equipment	CE	Certification by Competent Body in accordance with European Directives; Refer to Declaration of Conformity