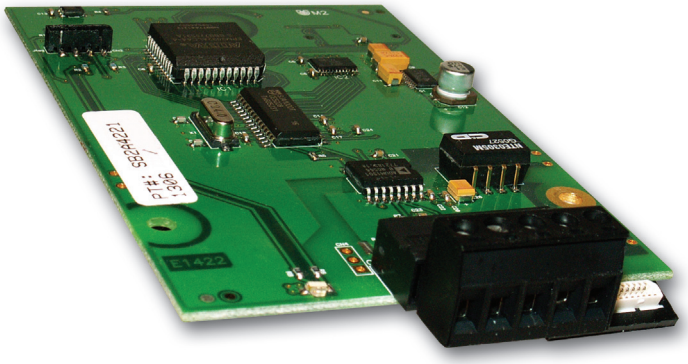
invensys
Eurotherm

PGX-PBUS

PenGUIn™ machine-HMI

MODEL



Profibus Option Card for PG Operator Interface Terminals

Specification Sheet

- Adds Profibus DP connectivity to any PG Operator Interface
- Powered by the PG Operator Interface
- Installation and connection hardware included with card

General Description

The PG proprietary expansion slot provides a high speed, parallel architecture that extends the functionality and flexibility of the PG series HMI. This approach allows the PG series 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 PGX-PBUS option card adds Profibus DP connectivity to any PG series HMI. This allows a high speed exchange of blocks of data, at data rates up to 12 MBaud, between the hosting PG and a Master PLC on a Profibus network. The DP suffix refers to "Decentralized Periphery", which is used to describe distributed I/O devices connected via a fast serial data link with a central controller.

The card is easily installed by removing the rear cover of your PG operator interface, attaching the card using three screws and connecting a single cable.

Contents of Package

- PGX-PBUS Option Card with pluggable DB9F connector
- Cable already attached to PGX-PBUS option card
- Hardware pack consisting of three screws

GSD File

The GSD file and associated bitmap are part of the GUIcon installation. Both files can be found on your PC's hard drive at C:\Program Files\GUIcon.

Specification

Power Requirements

Power is supplied to the option card from the main board of your PG operator interface.

Communications

Profibus port:	Fieldbus Type: Profibus DP EN 50 170, I. The Profibus port has a format and baud rates that are software programmable up to 12M baud and are digitally isolated.

Environmental Conditions

Operating Temperature Range:	0 to 50°C
Storage Temperature Range:	–20 to 80°C
Operating & Storage Humidity:	80% maximum relative humidity (non-condensing) from 0 to 50°C
Altitude:	Up to 2000 meters

Certifications and Compliances

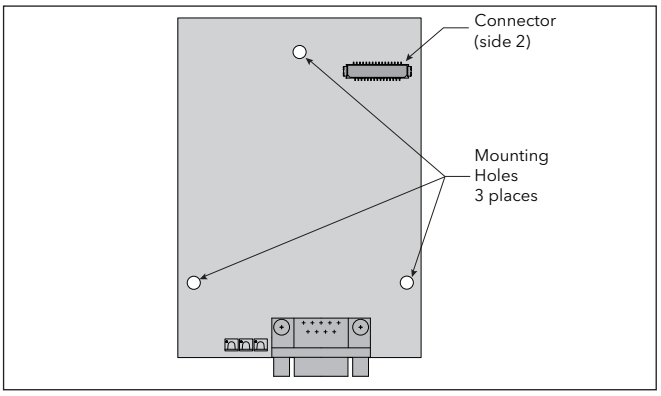
Safety:	For safety summary see page 4
Electrimagnetic Compatibility	Emissions and Immunity to EN 61326: Electrical Equipment for Measurement, Control and Laboratory use
Immunity to Industrial Locations	Reference PG unit for immunity specifications

Construction

Installation Category I, Pollution Degree 2.

Installation Requirements

Card must be installed inside the rear cover of a PG operator interface with the hardware provided. See "Installing the PGX-PBUS Option Card" for more details.



Installing the PGX-PBUS Option Card

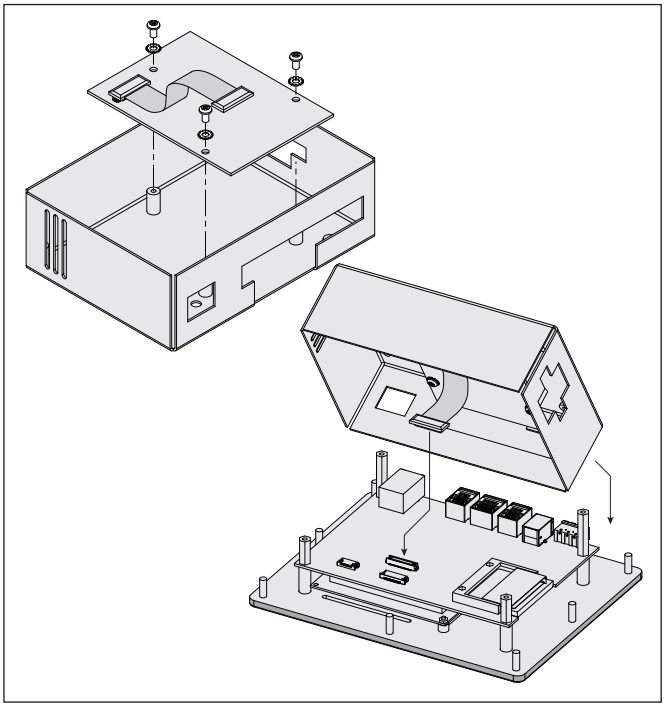
Mounting Instructions

Each PGX-PBUS option card comes with three screws for attaching the option card to the inside of the PG operator interface's rear cover. To install the option card remove all power and I/O communications cables from the unit. The PG operator interface literature contains instructions for removing the rear cover, refer to the "Battery & Time Keeping" section.

Using the three screws provided connect the option card to the rear cover as shown in the figure below.

Connect the cable from the option card to CN11 on the main board of the PG operator interface as shown in the figure below. Be sure both ends of the cables are firmly seated into their appropriate connector housing.

Carefully replace the rear cover by reversing the instructions for removing the rear cover.

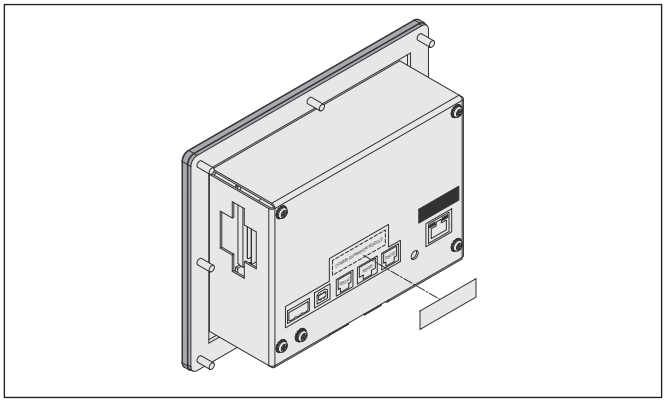


CAUTION - THE OPTION AND MAIN CIRCUIT BOARDS CONTAIN STATIC SENSITIVE COMPONENTS. BEFORE HANDLING THE CARDS, DISCHARGE STATIC CHARGES FROM YOUR BODY BY TOUCHING A GROUNDED BARE METAL OBJECT. IDEALLY, HANDLE THE CARDS AT A STATIC CONTROLLED CLEAN WORKSTATION. ALSO, HANDLE THE CARDS BY THE EDGES ONLY. DIRT, OIL, OR OTHER CONTAMINANTS THAT MAY CONTACT THE CARDS CAN ADVERSELY AFFECT CIRCUIT OPERATION.

WARNING - DEPENDING UPON THE PG OPERATOR INTERFACE, HIGH VOLTAGE MAY BE PRESENT INSIDE THE OPERATOR INTERFACE. BE SURE TO REMOVE ALL POWER BEFORE REMOVING THE REAR COVER OF THE OPERATOR INTERFACE. EMISSIONS EN 55011 CLASS A.

The Option Card Label

Place the option card label on your rear cover in the space indicated by the dashed lines and labeled "COMMS EXPANSION MODULE."



Power Supply Requirements

New and existing installations

The PGX-PBUS option card draws all of its power from the main board of your PG operator interface. The specifications of your PG operator interface account for the power needs of an option card.

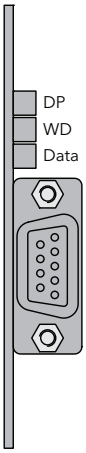
Communicating with the PGX-DNET Option Card

Configuring a PGX-PBUS Option Card

The PGX-PBUS is configured using GUIcon software. GUIcon is available as a free download from www.eurotherm.com. Updates to GUIcon for new features and drivers are posted on the website as they become available. By configuring the PGX-PBUS using the latest version of GUIcon, you are assured that your unit has the most up-to-date feature set. GUIcon software can configure the PGX-PBUS card through the RS232 PGM port, USB port, Ethernet port, or CompactFlash socket on your PG operator interface. Additional information can be found in your PG hardware bulletin and the GUIcon user manual.

To enable the option card, click on the left hand pane of the Communications window and highlight the PG icon. In the right pane, click the Option Card Selection Edit button to show the selection dialog and select the Profibus Option Card from the list. The Profibus Option Card will then appear in the left hand pane, installed in the tree of available ports.

PGX-DNET Port Pin Outs



Configuring the Driver

To select a driver, click on the left hand pane of the Communications window and highlight the Profibus Interface icon. In the right hand pane, click the Driver Selection Edit button to show the Driver Selection dialog and select the Profibus DP driver from the list.

- The Station Address of the Profibus node is the only property that needs to be configured. This should be a unique address on the Profibus Network in the range 1..125.

Configuring the Data Tags

A Profibus master exchanges data with slaves as separate input and output blocks. Data transfer direction is described with respect to the Profibus Network such that input data is transferred to the network, or written by the PG and output data is transferred from the network or read by the PG. This is important when it comes to configuring the data access for each tag mapped to a Profibus data block.

Mapping Tags to a Data Block

Profibus data blocks have no concept or knowledge of data type or structure – they are described by a size in bytes. GUIcon's Tag based approach to data allows for data of mixed type, bytes, 16-bit words and 32-bit words to be mapped into a single data block. To map a data tag to a Profibus Data block, click in the left hand pane of the Data Tags window, highlight the required Data Tag icon. In the right hand pane click the Data Mapping button and select the Profibus device to show the Select Address for Profibus DP dialog.

- The Block Type defines whether the tag will be read from (Output Block) or written to (Input Block) the Profibus network
- The Data Offset is the byte address of the Data Tag within the Data Block
- The Data Type is the actual size in bytes of the data that will be mapped into the Data Block.

Configuring Data Access

As described above, Data Tags are mapped to either an Input Block and are Write only, or an Output Block and are Read Only. The Access must be selected to reflect this.

Software/Unit Operation

Data (Red)	WD (Green)	DP D(Red)	Description
Off	Slow alternating flash	Slow alternating flash	Baud search
Off	Off	On	Baud control
Off	Slow flash	Fast flash	Waiting for parameter telegram
Off	Fast flash	Slow flash	Waiting for configuration telegram
On	Off	Off	Data exchange

GUIcon Software

GUIcon software is available as a free download from www.eurotherm.com. The latest version of the software is always available from the web site, and updating your copy is free.

Troubleshooting your PGX-DNET Option Card

If for any reason you have trouble operating, connecting, or simply have questions concerning your new PGX-PBUS option card, contact the Eurotherm™ technical support

Ordering Information

Model No	Description	Part Number
Profibus	option card for PG operator interfaces	PGX-PBUS

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.

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

WARNING - TEXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS.

WARNING - EXPLOSION HAZARD - SUBSTITUTION OF ANY COMPONENT MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.

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

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