

# TS8000



Profibus DP Option  
8000/PB/00  
HA471482 Issue 1

---

© Copyright SSD Drives, Inc. 2004

All rights strictly reserved. No part of this document may be stored in a retrieval system, or transmitted in any form or by any means to persons not employed by an SSD Drives company without written permission from SSD Drives, Inc.

Although every effort has been taken to ensure the accuracy of this document it may be necessary, without notice, to make amendments or correct omissions. SSD Drives cannot accept responsibility for damage, injury, or expenses resulting there from.

Companies, names and data used as examples herein are fictitious unless otherwise stated. All trademarks and copyrights are acknowledged as the property of their respective owners.

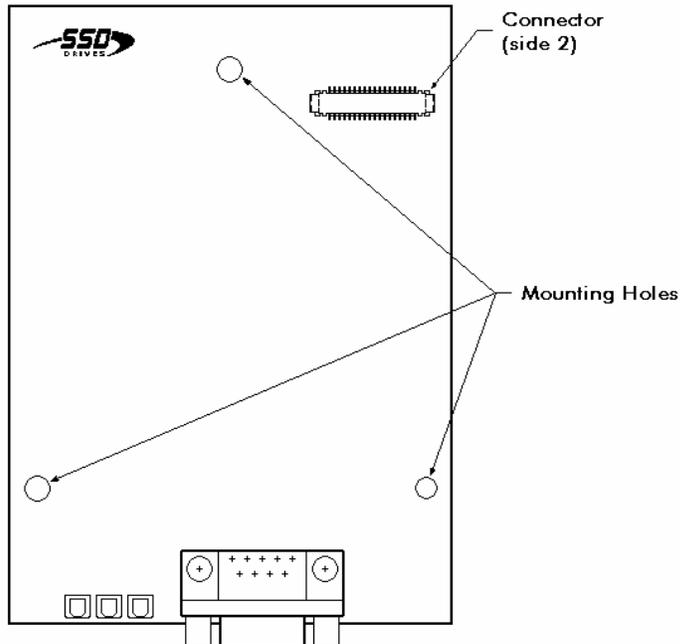
---

## Table of Contents

<b>Product Overview</b> .....	<b>3</b>
General Description .....	3
Safety Information .....	4
Contents Of Package .....	4
<b>Specifications</b> .....	<b>5</b>
Power Requirements .....	5
Communications .....	5
Electromagnetic Compatibility .....	5
Environmental Conditions .....	5
Construction .....	5
Installation Requirements .....	5
<b>Installation Instructions</b> .....	<b>7</b>
The Option Card Label .....	8
Power Supply Requirements .....	8
<b>Communications</b> .....	<b>9</b>
Configuring An Option Card .....	9
Configuring The Driver .....	9
Configuring The Data Tags .....	9
Configuring Data Access .....	9
<b>Software / Unit Operations</b> .....	<b>11</b>
LEDs .....	11
Troubleshooting The Option Card .....	11



## Product Overview



- **Configured with DSI8000 software.**
- **Digitally isolated Profibus DP Port** capable of communicating with a Profibus DP Master.
- **Powered and configured from TS8000 operator interface terminals.**
- **Installation and connection hardware included with card.**

## General Description

The TS8000 expansion card slot provides a high-speed parallel architecture that extends the functionality and flexibility of the TS8000 series HMI. This approach allows the TS8000 series to evolve concurrently with the latest advances in communication standards, without sacrificing performance. This high bandwidth channel has significantly greater throughput when compared to the traditional (external) serial gateway approach.

The 8000/PB/00 option card is easily installed by removing the rear cover of the TS8000 operator interface, attaching the card using three screws and connecting a single cable. Adding this card gives the operator interface Profibus DP connectivity. This allows a high speed exchange of blocks of data, at rates up to 12 Mbaud, between the hosting TS8000 and a Profibus DP Master. 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.

## Safety Information

All safety related regulations, local codes and instructions that appear in the manual 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 process 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.

## Contents Of Package

The option card will come shipped with the following additional equipment:

- 8000/PB/00 option card with pluggable DB9F connector.
- Bus cable (attached to option card).
- Hardware mounting packet.

## Specifications

The following specifications pertain to the TS8000 series option cards. SSD Drives retains the right to modify specifications at any time, without prior notice.

### Power Requirements

Power is supplied to the option card from the main board of the TS8000 operator interface.

### Communications

**Profibus Port:** Fieldbus type: Profibus-DP EN 50 170, I. Format and baud rates are software programmable up to 12Mb and are digitally isolated.

### Electromagnetic Compatibility

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

### Environmental Conditions

**Operating Temperature Range:** 0 to 50 deg C.

**Storage Temperature Range:** -20 to 80 deg C.

**Operating and Storage Humidity:** 80% maximum relative humidity (non-condensing) from 0 to 50 deg C.

**Altitude:** Up to 2000 meters.

### Construction

Installation Category I, Pollution Degree 2.

### Installation Requirements

Card must be installed inside the rear cover of a TS8000 series HMI with the hardware provided.



## Installation Instructions

The following specifications pertain to the TS8000 series option cards. SSD Drives retains the right to modify specifications at any time, without prior notice.



**Caution – Risk Of Electric Shock:** The inverter board, attached to the mounting plate, supplies the high voltage necessary to operate the backlight. Touching the inverter board may result in injury. Please exercise caution while working inside of the unit.



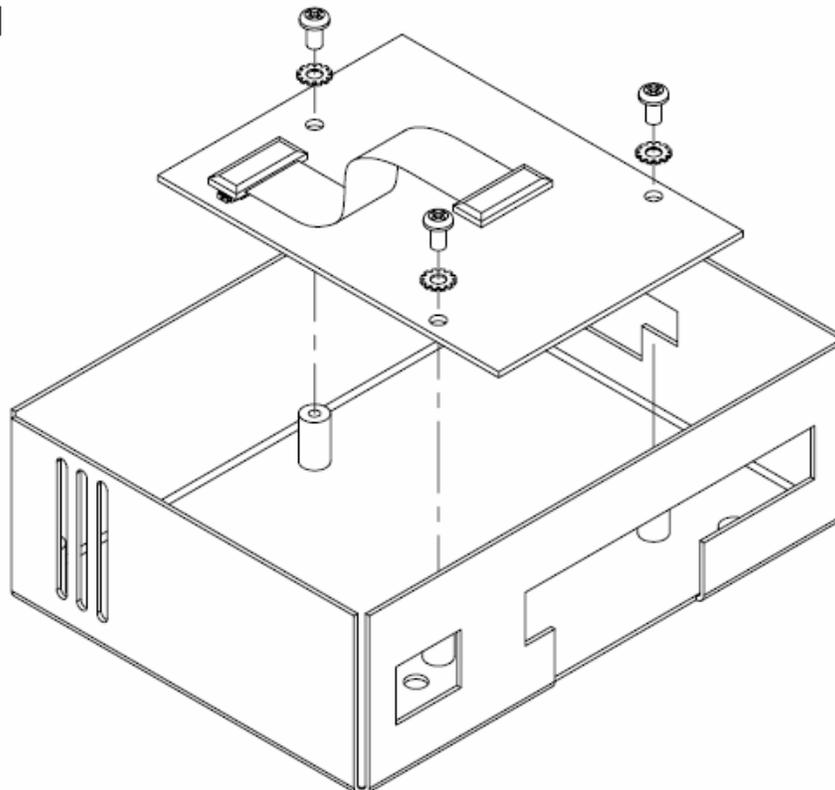
**Caution:** The circuit board contains static sensitive components. Before handling the operator interface without the rear cover attached, discharge static charges from your body by touching a grounded bare metal object. Ideally, handle the operator interface at a static controlled, clean workstation. Do not touch the surface areas of the circuit board. Dirt, oil, or other contaminants may adversely affect circuit operation.

Each TS8000 option card comes with a cable for communication and three screws for attaching the option card to the inside of the TS8000's rear cover.

To install the option card, remove all power and I/O communication cables from the unit. The TS8000 – Getting Started manual (HA471056U001) contains instructions for removing the rear cover. Refer to the "Battery And Timekeeping" section.

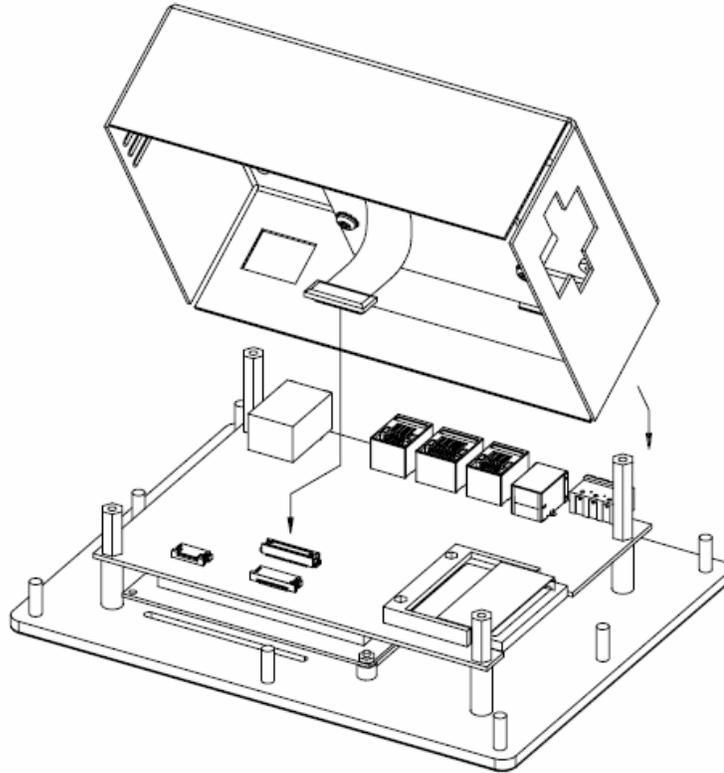
Using the three screws provided, connect the option card to the rear cover as shown in Figure 1 below.

**Figure 1**



Connect the cable from the option card to CN11 on the main board of the TS8000 as shown in Figure 2. Be sure that both ends of the cable are firmly seated into their appropriate connector housings.

**Figure 2**



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

### The Option Card Label

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

### Power Supply Requirements

The option card draws all of its power from the main board of the TS8000 HMI. The specifications of the TS8000 account for the power needs of the option card.

## Communications

The following specifications pertain to the TS8000 series option cards. SSD Drives retains the right to modify specifications at any time, without prior notice.

### Configuring An Option Card

The option card is configured using DSI8000 software. DSI is included in the software CD that comes packaged with each unit, or is also available from SSD Drives. Updates to DSI8000 are posted on the SSD Drives website as they are made available. By configuring the option card using the latest version of DSI8000, you are assured that the unit has the most up-to-date feature set. DSI software can configure the option card through the RS-232 PGM port, USB port, Ethernet Port, or the CompactFlash socket.

### 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 and select the Profibus DP driver from the list. The Station Address is the only property that needs to be configured. This should be a unique address on the Profibus Network in the range of 0 – 126.

### 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 (written by the TS8000) and Output Data is transferred from the network (read by the TS8000). This is important when it comes to configuring the data access for each tag mapped to a Profibus 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 Operations

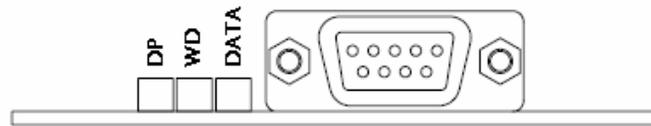
The following specifications pertain to the TS8000 series option cards. SSD Drives retains the right to modify specifications at any time, without prior notice.

### LEDs

The card has three LED's that are visible through the Expansion Card slot that give state information, as described below:

#### 8000/PB/00 LED Status

DATA (Red)	WD (Green)	DP (Red)	Description
OFF	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



### Troubleshooting The Option Card

If for any reason you have trouble operating, connecting, or simply have questions concerning your new TS8000 option card, contact SSD Drives technical support.

#### Limited Warranty

SSD Drives warrants the goods against defects in design, materials, and workmanship for the period of 12 months from the date of delivery on the terms detailed in SSD Drives Standard Conditions of Sale IA058393C.

SSD Drives reserves the right to change the content and product specification without notice.



UK  
SSD Drives Ltd  
New Courtwick Lane  
Littlehampton  
West Sussex BN17 7RZ  
Tel: +44 (0)1903 737000  
Fax: +44 (0)1903 737100

CANADA  
SSD Drives Inc  
880 Laurentian Drive  
Burlington  
Ontario L7N 3V6  
Tel: +1 (905) 333 7787  
Fax: +1 (905) 632 0107

CHINA  
SSD Drives Ltd  
Room 1603, Hua Teng Edifice  
302# Jin Song San Qu  
Chaoyang District,  
Beijing 100021  
P.R. China

DENMARK  
SSD Drives AB  
Enghavevej 11  
DK-7100  
Vejle  
Tel: +45 (0)70 201311  
Fax: +45 (0)70 201312

FRANCE  
SSD Drives SAS  
15 Avenue de Norvège  
Villebon sur Yvette  
F-91953 Courtaboeuf Cedex  
Paris  
Tel: +33 - 1 69 18 51 51  
Fax: +33 - 1 69 18 51 59

GERMANY  
SSD Drives GmbH  
Von-Humboldt-Strasse 10  
64646 Heppenheim  
Tel: +49 (6252) 798200  
Fax: +49 (6252) 798205

ITALY  
SSD Drives SPA  
Via Gran Sasso 9  
20030 Lentate Sul Seveso  
Milano  
Tel: +39 (0362) 557308  
Fax: +39 (0362) 557312

SWEDEN  
SSD Drives AB  
Montörgaten 7, SE-302 60  
Halmstad  
Tel: +46 (0)35-17 73 00  
Fax: +46 (0)35-10 84 07

U.S.A.  
SSD Drives Inc  
9225 Forsyth Park Drive  
Charlotte  
North Carolina 28273  
Tel: +1 (704) 588 3246  
Fax: +1 (704) 588 3249

01/11/04

Local availability and service support also in:

ARGENTINA • AUSTRALIA • AUSTRIA • BELGIUM • BRAZIL • CHILE • CHINA • COLOMBIA • CYPRUS  
CZECH REPUBLIC • EGYPT • GREECE • HONG KONG • HUNGARY • ICELAND • INDONESIA • IRAN  
IRELAND • ISRAEL • JAPAN • KENYA • KOREA • LITHUANIA • MALAYSIA • MOROCCO • NETHERLANDS  
NEW ZEALAND • NORWAY • PHILIPPINES • POLAND • PORTUGAL • ROMANIA • SINGAPORE • SOUTH AFRICA  
SPAIN • SWITZERLAND • TAIWAN • THAILAND • TURKEY • UNITED ARAB EMIRATES

Local Address

[www.SSDdrives.com](http://www.SSDdrives.com)



TS8000 Profibus Option Card