

3SB3 / PROFIBUS DP Individual Interface User Description

Version V1.0

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Exclusion of Liability

We have checked whether the contents of this publication conform with the hardware and software described. It is however impossible to exclude variances, so that we are unable to guarantee absolute conformity. The information in the publication is reviewed regularly, however. Any necessary corrections are included in subsequent editions. We are grateful for any suggestions on improvement.

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Description of 3SB3 / PROFIBUS DP Individual Interface

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1 CE Marking

1.1 EU Directive EMC 89/336/EEC

The following applies for the interface module described in this instruction manual: Products that bear the CE marking fulfill the requirements laid down in EU Directive 89/336/EEC "Electromagnetic compatibility" and the harmonized European Standards (EN) contained therein.

In compliance with Article 10 of the above EU Directive, the EU declarations of conformity can be viewed by the authorities responsible at:

Siemens Aktiengesellschaft
A&D CD SV TG
Werner von Siemens Str. 48
92220 Amberg
Germany

1.2 Field of application

The interface modules are designed for industrial applications and fulfill the following requirements:

Field of application	Requirements regarding	
	Spurious emission	Noise immunity
Industry	EN 50081-2 : 1993	EN 50082-2 : 1995

The interface modules can also be used in residential buildings (office and commercial buildings, small businesses) providing that individual authorization has been obtained beforehand:

Field of application	Requirements regarding	
	Spurious emission	Noise immunity
Residential buildings	Individual authorization	EN 50082-1: 1992

Individual authorization must be obtained from the appropriate authority or testing agency. In Germany, this authorization is issued by the Federal Ministry of Posts and Telecommunications and its various departments.

1.3 Installation guidelines

The 3SB3 / PROFIBUS DP individual interface fulfils the requirements, if:

1. the installation guidelines in the instruction manual are adhered to when the equipment is installed and operated,

2. the following rules for installing the equipment and for work carried out on the control cubicles are observed.

1.3.1 Installing the equipment

Interface modules must be installed in electrical operating rooms or enclosed housings (e.g. metal or plastic switchboxes).

The device and the switchbox (metal box), or at least the DIN rail that the interface module was snapped onto (plastic box), must also be grounded.

1.3.2 Work carried out on control cubicles

To protect the modules against electrostatic discharges, employees must discharge themselves electrostatically before opening control cubicles or switchboxes.

1.4 Information for manufacturers of machinery

1.4.1 General

The 3SB3 / PROFIBUS DP individual interface is not a machine in the sense of the EU Machinery Directive 89/392/EEC. It does not, therefore, require a separate declaration of conformity as defined in the Directive.

1.4.2 EU Machinery Directive 89/392/EEC

The EU Machinery Directive 89/392/EEC stipulates the requirements that must be fulfilled by a machine. The term "machine" refers to the total number of connected components or devices that make up a complete system (see also EN292-1, Paragraph 3.1).

The 3SB3 / PROFIBUS DP individual interface is part of the electrical equipment of a machine and must, therefore, be included in the declaration of conformity by the manufacturer of the machine.

2 General

The 3SB3 / PROFIBUS DP individual interface is used to connect 3SB3 actuators to the PROFIBUS DP. A total of 64 actuators can be connected. These can be of different types and can be connected to up to four ribbon cable lines. The following individual modules are available:

- 3SB3402-6A 1 lamp
- 3SB3402-6B 1 lamp + 1 NO contact
- 3SB3402-6C 1 lamp + 2 NO contacts
- 3SB3402-6D 1 NO contact
- 3SB3402-6H 2 NO contacts
- 3SB3402-6K 1 NO contact (lamp test)

Standard configuration tools can be used for configuration purposes. The 3SB3 / PROFIBUS DP individual interface is configured as a modular slave. Using the configuration screen, you can set the configuration for the connected modules. The configured lamps are represented as outputs and the NO contacts as inputs in the process image. The lamp test (3SB3402-6K) is also ORed to all the outputs (lamps). When the lamp test is activated, all the outputs are set.

2.1 Configuration examples

The following examples show a typical configuration that includes some of the components mentioned above. The PROFIBUS address used is 3; the baud rate is 1.5 MBd. Four individual modules are connected to each of two lines, and a lamp test module to a third line. 2 x "1 NO contact" (3SB3402-6D) and 2 x "1 lamp" (3SB3402-6A) are connected to the first line (LINE 1). The line address is set by means of a coding switch at the rear of the module. In this example, 0 to 3 have been chosen as the addresses for the four modules.

2 x "1 lamp + 1 NO contact" (3SB3402-6B) (address 1 and 2) and 2 x "2 NO contacts" (3SB3402-6H) (address 3 and 4) are connected to line 2 (LINE 2).

3 Module settings

3.1 Setting the slave address

The slave address is set by means of a DIP switch on top of the device. Addresses between 0 and 127 can be set for the slave.

Note:

Please note, however, that you should only set addresses between 1 and 124 as other addresses are not permissible for PROFIBUS DP.

Changes to the address will cause the device to be restarted.

To set the addresses, please refer to the markings on the DIP switch. OFF means addend = 0. ON means that the appropriate addend must be added.

Example:

Setting the DP slave address to 3

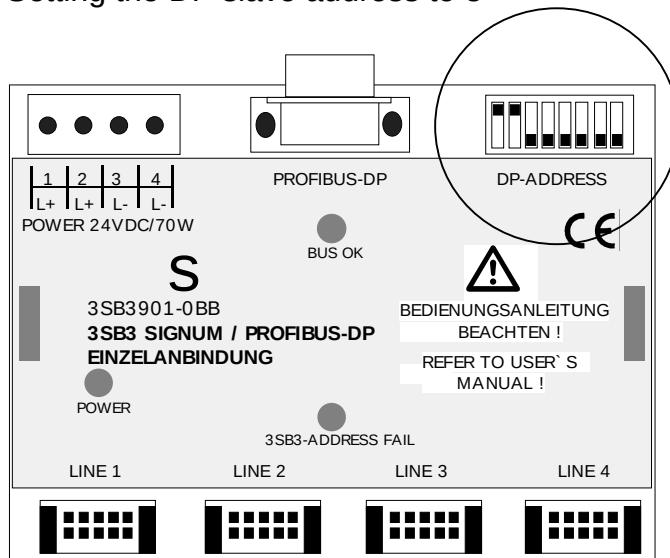


Fig. 1: Front side of the device - setting the PROFIBUS DP address

The diagram on the left shows the 3SB3 / PROFIBUS DP individual interface. On the top right, you can see the address that has been set (3). Sum of the address:

$$1 \times 2^0 + 1 \times 2^1 + 0 \times 2^2 + \dots$$

$$0 \times 2^6 =$$

$$1 + 2 + 0 + \dots + 0 = 3$$

DIP switch number 8 is not assigned.

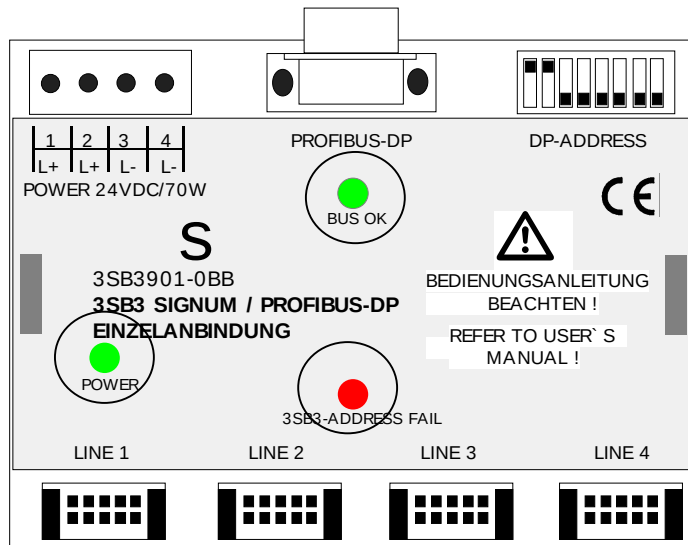
3.2 *Setting the line addresses of the individual modules*

You set the line addresses of the modules on the back of the elements using DIP switches. You can set the addresses "0" to "F" (hex). No further settings for switching with modules are necessary on the DP slave (3SB3901-0BB). The DP slave recognizes connected modules automatically.

Note:

Please note that each address may be set only once on each line. The device continuously checks to determine whether an address has been assigned more than once. If an address is assigned more than once, the LED "3SB3-ADDRESS FAIL" lights up.

4 LED indicators



The diagram on the left shows the 3SB3 / PROFIBUS DP individual interface which has 3 LEDs on its front side.

These LEDs are described below:

Fig. 2: Front side of the 3SB3 / PROFIBUS DP individual interface

LED	Color	Meaning	Possible causes of errors and remedies
POWER	green	Check 24 V supply	ON: 24 V supply is connected and functioning correctly OFF: 24 V supply is not connected
PROFIBUS DP	green	PROFIBUS DP status display	ON: Device is exchanging data with the master (normal operation) Flashing: Device is waiting to exchange data with the master.
3SB3-ADDRESS FAIL	red	Address setting of the connected modules	ON: The addresses of the connected modules have collided. Two modules on one line are set to the same line address or a module is defective. OFF: A line address has not been assigned twice.

5 Startup

Note:

The 3SB3 / PROFIBUS DP individual interface must only be started up by trained personnel who must ensure that the safety regulations are adhered to!

5.1 Required components

You will require the following components to start up the 3SB3 / PROFIBUS DP individual interface:

- 1 x 3SB3 / PROFIBUS DP individual interface (DP slave, ribbon cable and modules)
- 1 x connector for PROFIBUS DP (see *Catalog ST PI*)
- PROFIBUS DP bus cable (see *Catalog ST PI*)
- 1 x 24 V DC supply voltage
- Configuration tool for the DP master(s) of the PROFIBUS DP network

5.2 Installation

The 3SB3 / PROFIBUS DP individual interface has degree of protection IP 20. It is, therefore, suitable for installation in control cubicles or switchboxes. The device is simply snapped onto a 35mm DIN rail.

5.3 Startup

To ensure that the 3SB3 / PROFIBUS DP individual interface functions correctly, it is essential that you carry out the following steps during startup:

- *Setting the PROFIBUS DP address*

You use the DIP switch on the front of the device (top right) to set the slave address (see Section 3.1 Setting the slave address).

Note:

Please note that you should only set addresses between 1 and 124 as other addresses are not permissible for PROFIBUS DP. Please also note that the addresses set for the hardware must match the addresses parameterized in the configuration.

- *Connection to the PROFIBUS DP network*

Connect the 3SB3 / PROFIBUS DP individual interface to the network via the PROFIBUS DP interface. Use a shielded cable. Please note the following when you are connecting the shield.

- *Shield connection*

Use only the plugs specified in the Catalog ST PI to connect the PROFIBUS DP. These plugs provide good contact with the shield.

Immediately after the bus cable shield enters the control cubicle or the switchbox, it must be supported by a terminal element and grounded over a large area.

Please also observe the relevant installation guidelines for PROFIBUS DP.

- *Connecting the 24 V supply voltage*

Connect the 24 V supply voltage to the appropriate terminals and ensure that the polarity is correct.

- *Connecting the 3SB3 modules*

The modules are connected to the DP slave by means of prefabricated ribbon cables (3SB3901-0BA). Make sure that the polarity is correct when connecting the modules and the DP slave. You can see whether the polarity is correct from the shape of the connectors.

Note:

Do not attempt to plug in connectors with the wrong polarity by using force. Avoid plugging the connectors into the individual modules several times, since this can cause the interlocks to break off. If, in spite of this, an interlock does break off, you can attach the ribbon cable to the module or to a nearby fixed part of the housing using cable ties.

Alternatively, you can use a 10 x 0.14 mm² ribbon cable and the 10-pole socket connectors supplied with the modules (crimp connection) to form a connecting cable.

Note:

Please make sure that the polarity of the socket connectors is correct when you crimp these onto the ribbon cable. The socket connectors must always be installed in such a way that pin 1 is connected to pin 1 and pin 2 to pin 2 (etc.) of all the other socket connectors of the ribbon cable.

To relieve the mechanical load on the connectors, the connecting cable must be attached (at regular intervals) to parts/components that can withstand mechanical loads. Cable ties, for example, can be used for this purpose. Using connectors as the sole means of attaching the ribbon cables to the modules is only adequate if:

- a module is connected to each connector when prefabricated ribbon cables are used

- the connectors are no more than 20 cm apart if you are using ribbon cables that you have preassembled yourself (in this case too, a module must be connected to each connector).

Note:

When installing the ribbon cables, you should ensure that:

- the ribbon cable is always close to grounded components,
- the total length of the ribbon cable connected to the slave does not exceed 12 m,
- the length of an individual ribbon cable does not exceed 5 m.

- *Configuration*

A GSD file is supplied with the 3SB3 / PROFIBUS DP individual interface for configuration purposes. You integrate this file in your configuration tool. More detailed information is available on this for STEP 7 and COM PROFIBUS, the two configuration tools from Siemens.

Note:

The current GSD file is supplied on disk, together with the 3SB3 / PROFIBUS DP individual interface.

If necessary, you can download the GSD file free of charge from:

- Mailbox: (+49) 911 / 73 79 72
- Internet: **<http://www.ad.siemens.de>**
then go to
Support, Training & Services
Customer Support: SIMATIC
Product Support
Profibus GSD files
search for "3SB3"

Or directly at:

http://www.ad.siemens.de/csi_e/gsd

6 Configuration via COM PROFIBUS

6.1 Handling the GSD file and type file

A disk is supplied with the 3SB3 / PROFIBUS DP individual interface which contains the GSD file.

You will need this file to integrate the 3SB3 / PROFIBUS DP individual interface in the COM.

File	To be used for
SIEM808E.GSD (GSD file)	COM PROFIBUS $\geq$ V3.0

If the version of the GSD file on the disk is more recent than the one in the COM PROFIBUS GSD directory, you should copy the file *SIEM808E.GSD* from the disk to the directory *C:\COMPB33\GSD* (target directory in which you have installed the COM PROFIBUS).

Copy the bitmap files *SI808E_N.BMP*, *SI808E_S.BMP* and *SI808E_D.BMP* to the directory *C:\COMPB33\BITMAPS* (target directory in which you have installed the COM PROFIBUS).

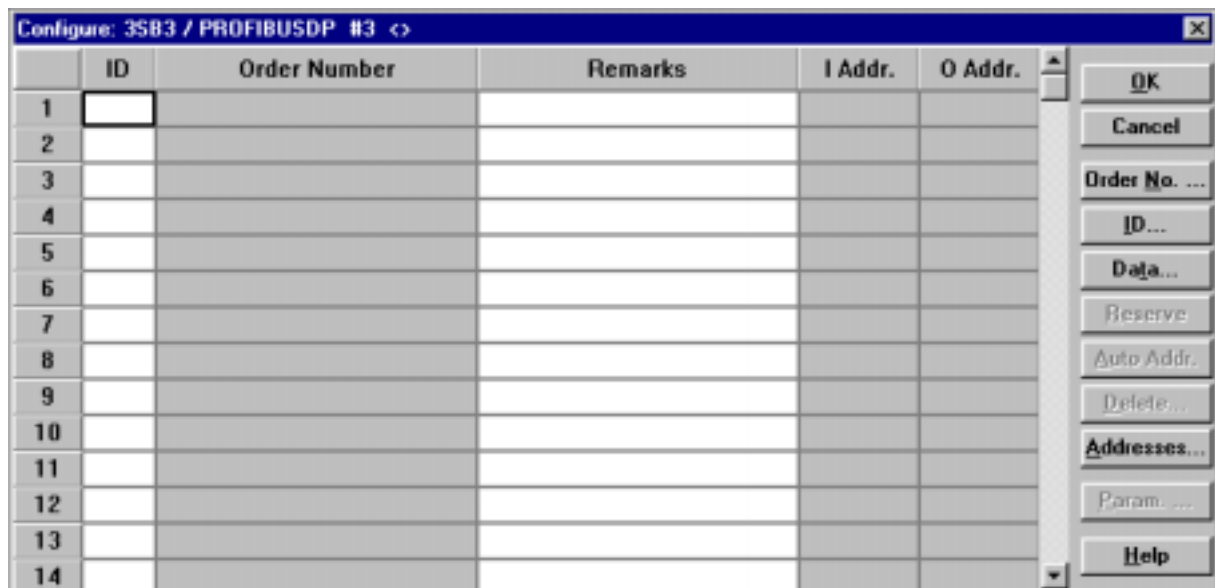
6.2 Configuration example

The following section shows you how to parameterize and configure the 3SB3 / PROFIBUS DP individual interface via COM PROFIBUS using an IM308-C as an example.

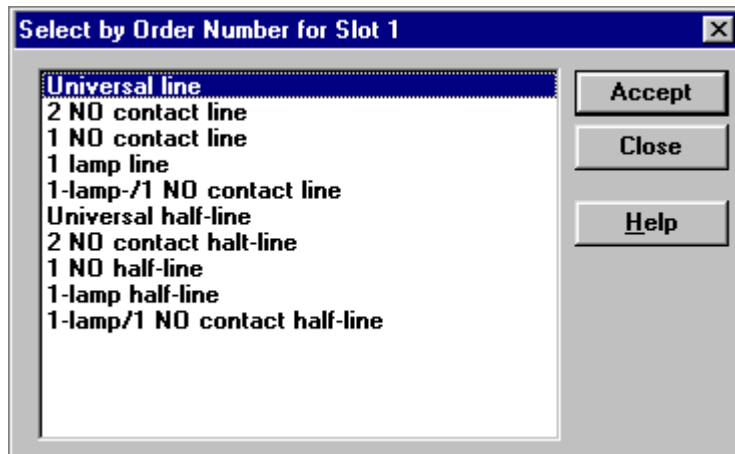
First, start the COM PROFIBUS and create a new master system by choosing "File" and "New". Then choose the IM308-C. In the menu bar on the right, click the button "Other". A dialog box then appears which contains the 3SB3 / PROFIBUS DP individual interface. To choose the 3SB3 / PROFIBUS DP individual interface, double-click the line "3SB3 / PROFIBUS DP 3SB3901-0BB". The station is then connected to the master system.



By double-clicking this station, you open the "Slave Parameters" dialog box. Next click the "Configure" button. The "Configure: 3SB3 / PROFIBUS DP" dialog box then appears on the screen.



Now position the cursor on the "ID" field and click the "Order Number" button. The „Select by Order Number for Slot“ dialog box then appears.



Here, you can choose the elements you want to connect to the line to be chosen. Proceed using the following table.

Line/module	1 NO contact 3SB3402-6D	1 lamp 3SB3402-6A	1 lamp / 1 NO contact 3SB3402-6B	2 NO contacts 3SB3402-6H	1 lamp / 2 NO contacts 3SB3402-6C	1 NO contact (lamp test) 3SB3402-6K	Inputs full line (half line)	Outputs full line (half line)
1 NO contact line	X					X	1 word (1 byte)	-
1 lamp line		X					-	1 word (1 byte)
1 lamp / 1 NO contact line	X	X	X			X	1 word (1 byte)	1 word (1 byte)
2 NO contact lines	X			X		X	2 words (2 bytes)	-
Universal line	X	X	X	X	X	X	2 words (2 bytes)	1 word (1 byte)

Example: you want to connect a number of pushbuttons and LEDs to the line, for which you use the modules "1 NO contact" (3SB3402-6D) and "1 lamp" (3SB3402-6A). In accordance with the table, you can connect this combination to the lines "1 lamp / 1 NO contact line" and "Universal line". The option you choose will depend on whether you want to take up as little space as possible in the process image (in which case, you choose the first option), or whether you would prefer to have the option of connecting additional modules later on (in which case, you choose the universal line). The two columns on the right of the table show how much of the process image is assigned to the respective module.

In the example here, you choose "1 lamp / 1 NO contact half line". You choose the "Universal half line" as the second line, since modules of the type "1 lamp / 1 NO contact" and "2 NO contacts" can only be set simultaneously on the universal line. You choose a "1 NO contact line" as the third line. Since you only want to connect four modules max. to each line, a half line is sufficient here. If between 9 and 16 modules are connected to a line, you cannot choose a half line.

You choose the line either by double-clicking it or first selecting it by clicking the mouse button once and then clicking the "Accept" button. When you have finished entering the lines, you click the "Close" button. The following screen then appears:

	ID	Order Number	Remarks	I Addr.	O Addr.
1	193	1-lamp/1 NO contact half-line			
11	000				
10	000				
2	193	Universal half-line			
21	001				
20	000				
3	065	1 NO contact line			
31	064				
4					
5					
6					
7					
8					
9					

To configure the modules connected to the line, you click the "Param..." button. The "1 lamp / 1 NO contact half line" configured beforehand, which supports 8 line addresses, is then displayed. (The full lines support 16 line addresses).

When you double-click the "empty" field, a dialog box appears containing the elements that can be connected to this line type:

Element type at address 0

- empty
- 1 NO contact
- 1 lamp
- 1 lamp / 1 NO contact
- 1 NO contact (lamp test)

Parameter Value: 0000

Here, you choose "1 NO contact" for the modules connected to line 1 with the addresses 0 and 1. For the elements with the addresses 2 and 3, you choose "1 lamp". You choose these elements by double-clicking the element type or by selecting it and confirming with "OK". You choose 2 x "1 Lamp / 1 NO contact"

and 2 x "2 NO contacts" for the modules connected to line 2. You then choose "1 NO contact (lamp test)" for line 3.

The following dialog box then appears as a result of the entries you have made for line 1:

	Parameter Name	Value
0	Element type at address 0	1 NO contact
0	Element type at address 1	1 NO contact
1	Element type at address 2	1 lamp
1	Element type at address 3	1 lamp
2	Element type at address 4	empty
2	Element type at address 5	empty
3	Element type at address 6	empty
3	Element type at address 7	empty

Buttons: OK, Cancel, Select..., Hex..., Delete, Help

The “ID” and “Order Number” fields are then completed automatically on the basis of the modules (lines) that were set in the “Configure” dialog box. A place holder is also created for both the output and the input address. In the case of the “1 NO contact line”, a place holder is created only for the input address.

You enter other data areas by positioning the cursor on the appropriate “ID” field and double-clicking it. In the “ID” dialog box that appears, you can enter the type and required length of the data.

You can now complete the fields that have been reserved for the input and output addresses either manually or using the automatic addressing function of the COM. The advantage of the automatic addressing function is that the COM manages the addresses itself, thereby ensuring that the address space is used as efficiently as possible.

To use this function, click the “I Addr.” button followed by the “Auto Addr.” button. The COM enters the next free address automatically. You then repeat this procedure for the output address (O Addr.)

Please note that these address fields remain empty when the FB IM308C is used.

You have now finished configuring the 3SB3 / PROFIBUS DP individual interface. Close all of the dialog boxes, save the file and export it to a memory card.

7 Configuration via STEP 7

7.1 Handling the GSD file

A disk is supplied with the 3SB3 / PROFIBUS DP individual interface which contains the GSD file.

You will require this file to integrate the 3SB3 / PROFIBUS DP individual interface in STEP 7:

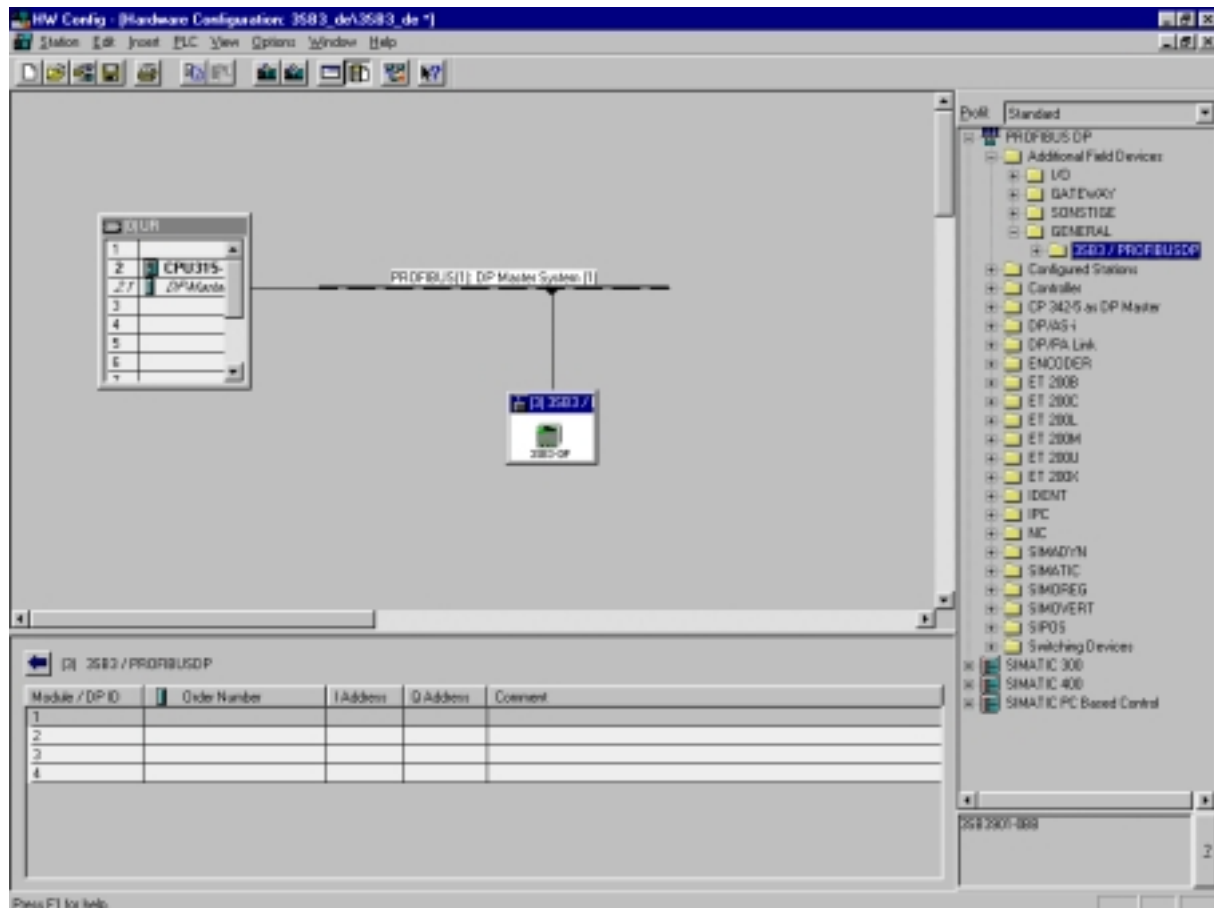
File	To be used for
SIEM808E.GSD (GSD file)	STEP 7 ≥ V3.0

If the version of the GSD file on the disk is more recent than the one in the STEP 7 GSD directory, please copy the file *SIEM808E.GSD* from the disk to the directory *C:\STEP7\S7DATA\GSD* (target directory in which you have installed STEP 7). Copy the bitmap files *SI808E_N.BMP*, *SI808E_S.BMP* and *SI808E_D.BMP* to the directory *C:\STEP7\S7DATA\NSBMP* (target directory in which you have installed STEP 7).

7.2 Configuration example

The following example shows you how to configure the 3SB3 / PROFIBUS DP individual interface using STEP 7 V4.02.

First, create a project in the usual way. In the example here, the DP master is a CPU 315-2 DP. The following description starts at the point at which the necessary preparations have already been made and the master system has been opened.

**Note:**

Please note that you have to update the STEP 7 module catalog after importing the GSD file.

After you have started "HW Config", choose "Options" and "Update Catalog". The 3SB3 / PROFIBUS DP individual interface is then displayed in the module catalog. Alternatively, you can copy the file and update the catalog via "Install new DDB Files".

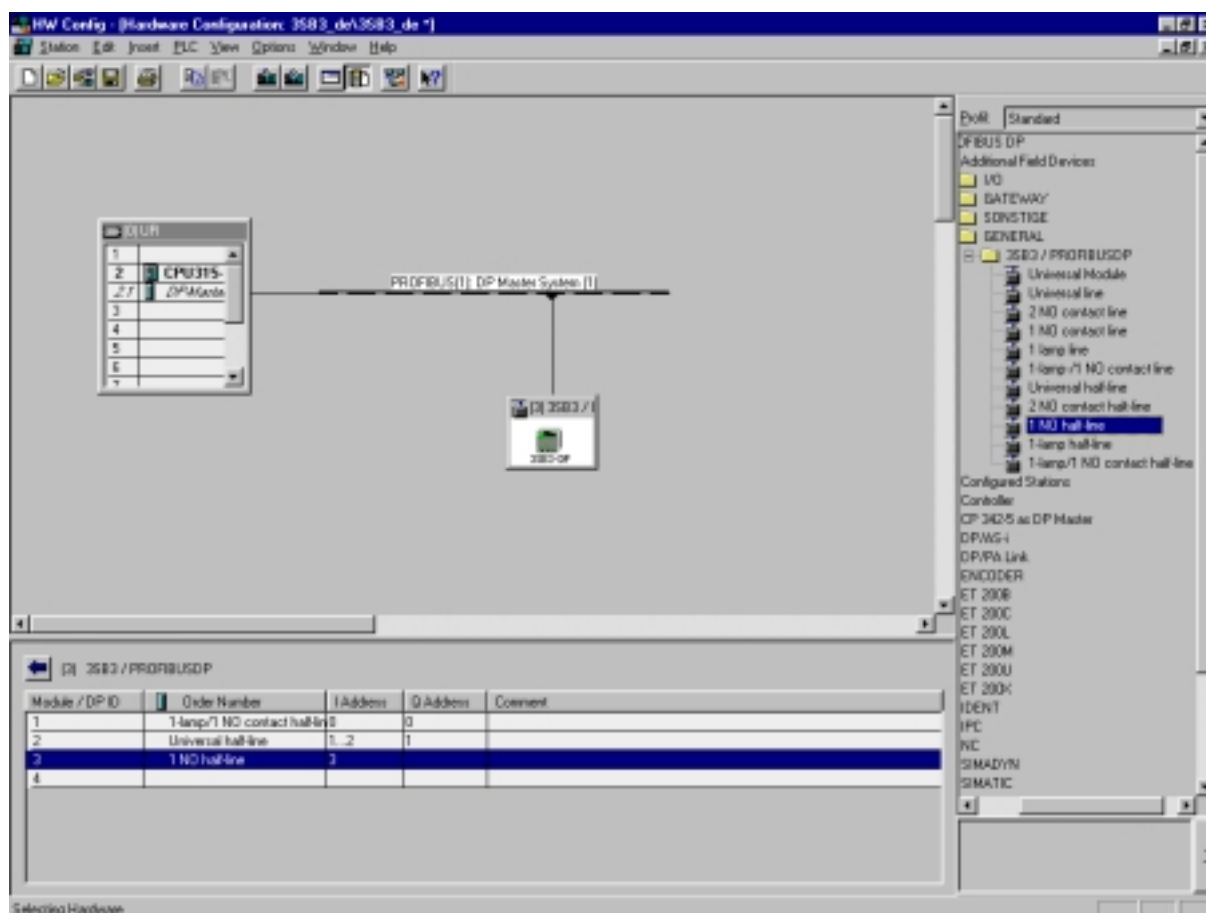
You only have to carry out this step the **first** time you work with the 3SB3 / PROFIBUS DP individual interface.

Now open the module catalog. The 3SB3 / PROFIBUS DP individual interface is stored in:

PROFIBUS DP -> Additional Field Devices -> General ->
3SB3 / PROFIBUS DP

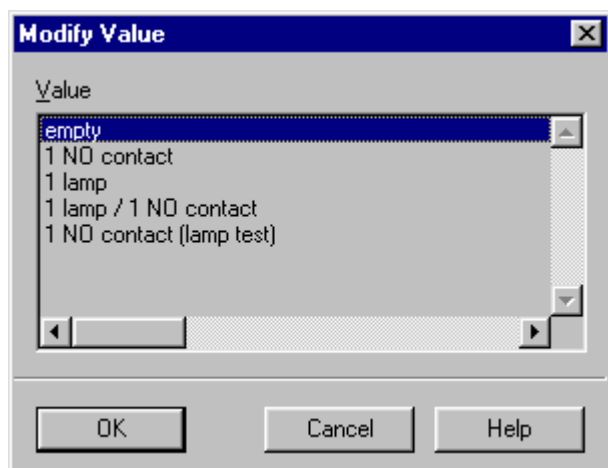
Now drag the 3SB3 / PROFIBUS DP individual interface from the module catalog to the DP master system. The interface is connected automatically and the “Object Properties – Properties – PROFIBUS Node 3SB3 / PROFIBUS DP” dialog box appears. You use this dialog box to set the slave address. In the example here, address 3 has been chosen for the 3SB3 / PROFIBUS DP individual interface.

Open the module catalog of the 3SB3 / PROFIBUS DP individual interface by clicking the plus sign to the left of it. The available line types are then displayed. Using drag + drop, insert the line types “1 lamp / 1 NO contact half line”, “Universal half line” and “1 NO contact half line” in the first three slots of the 3SB3 / PROFIBUS DP individual interface. The result of this can be seen in the screen below.



To configure the connected modules, you have to parameterize the lines. To do so, double-click the individual lines. The “DP Slave Properties” dialog box is then displayed in which you choose “Assigning Parameters”. By double-clicking the parameters, you can display the modules that can be connected to the relevant line type.

In the example, a “1 lamp / 1 NO contact half line” was chosen as line 1. The following dialog box is displayed for this:



Choose "1 NO contact" by double-clicking it or selecting it and confirming with "OK". Repeat the procedure for the parameters "element type at address 1" to "element type at address 3" and for lines 2 and 3.

For line 2 choose:

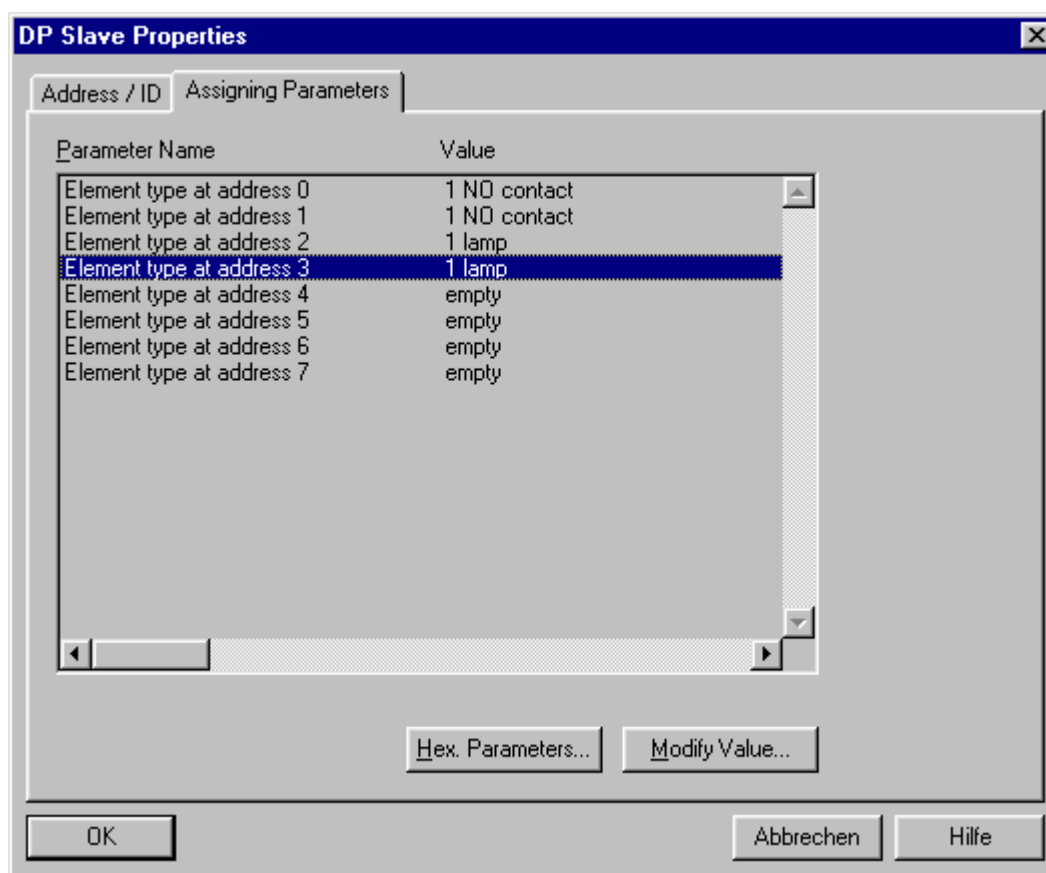
2 x "1 lamp + 1 NO contact"

2 x "2 NO contacts"

For line 3 choose:

1 x "1 NO contact (lamp test)"

The following display then appears after you have parameterized the line:



When you insert the lines, the addresses are assigned automatically. You can change these manually later on, if necessary.

Now load the hardware configuration in the station. Should any problems occur, please refer to Chapter 8 "Diagnosis".

8 Diagnosis

The diagnostic frame comprises a total of 10 bytes and includes the standard diagnosis (bytes 0 to 5) and the device-specific diagnosis (bytes 6 to 10).

8.1 DP standard component

The first 6 bytes of the diagnostic frame (bytes 0 to 5) correspond to the DP standard component. The structure of the standard component is described below:

0	Station status 1
1	Station status 2
2	Station status 3
3	Master PROFIBUS address
4	Manufacturer's identification (high byte)
5	Manufacturer's identification (low byte)
6...243	Additional slave-specific diagnosis

Station status:

Byte/Bit	Value	Contents
Bit 0.0	1	Cannot access slave.
Bit 0.1	1	Slave not ready for data exchange.
Bit 0.2	1	Configuration data is incorrect.
Bit 0.3	1	Slave diagnosis available.
Bit 0.4	1	Required function not supported.
Bit 0.5	1	Implausible answer from slave.
Bit 0.6	1	Incorrect parameterization frame.
Bit 0.7	1	Slave has been parameterized by a different DP master to the master currently attempting to access it.

Station status 2:

Byte/Bit	Value	Contents
Bit 1.0	1	Slave must be reparameterized.
Bit 1.1	1	Static diagnosis is available.
Bit 1.2	1	Reserved
Bit 1.3	1	Threshold monitoring activated.
Bit 1.4	1	FREEZE mode activated.
Bit 1.5	1	SYNC mode activated.
Bit 1.6	0	Reserved
Bit 1.7	0	Slave deactivated.

Bytes 2 to 5 of the DP standard diagnosis

Byte 2		Reserved
Byte 3		This byte contains the station number of the DP master that parameterized the DP slave. The station number is preset to FF (hex) at startup.
Byte 4	80 _H	Bytes 4 and 5 contain the manufacturer's identification.
Byte 5	70 _H	Bytes 4 and 5 contain the manufacturer's identification.

8.2 Device-specific diagnosis

The device-specific diagnosis is assigned to bytes 6 to 9. The 3SB3 / PROFIBUS DP individual interface provides the user with the following data:

Byte 6	05 (hex)	Header of the device-specific diagnosis, including length specification. Length: 4 bytes, including header.
Byte 7	00 (hex) XY (hex)	No lamps defective. The lamp on line X with the line address Y is defective.
Byte 8	00 (hex) XY (hex)	None of the line addresses has been assigned several times. Address Y has been assigned several times on line X.
Byte 9	00 (hex) XY (hex)	The connected modules match the configuration. The module on line X with the line address Y does not match the configuration, or the module is not functioning correctly.

During startup, you can analyze the diagnostics data to determine whether all the modules are connected to the slave properly and whether the correct addresses have been set.

When an installation is in operation, you can determine whether a lamp or a module has failed by analyzing the diagnosis.

8.2.1 Interpreting the displayed diagnosis

All the lines and line addresses are checked independently of the configuration. The possible errors that can occur are categorized according three different priorities:

1. Address errors: a check is first carried out to determine whether any addresses have been assigned more than once. If this is the case, the line concerned is entered in the diagnosis with the appropriate line address. If several addresses have been assigned more than once, the first of these is entered in the diagnosis. Once the first address assignment has been corrected, the next address is entered or the diagnosis is deleted.
Displayed address errors can be caused by defective modules, e.g. if the address decoder in the module is defective.
2. Type errors: if no multiple assignments are detected for a line address, a consistency check is performed on the configuration with the connected hardware. Possible causes of any errors displayed are module types that have not been connected correctly or defective modules.
3. Lamp errors: if neither an address error nor a type error is detected for a line address, a test is carried out to determine whether a configured lamp is actually present and operational. In order to carry out this test, the lamp is switched off for a short period of time. To avoid the lamp flashing constantly, the lamp functional test is only carried out every 20 seconds.

8.3 Examples of evaluating the diagnosis

Depending on the master system used, there are a number of different ways of evaluating the diagnostic data of the slave.

SIMATIC S5 – IM 308-C:

In your control program, call up the FB IM308C with the SD function (slave diagnosis). The diagnostic data is stored in the data area specified, (in this case: data area 10 as of data word 0).

```
      : SPA FB 192
Name  : IM308C
DPAD : KH F800
IMST : KY 0,3
FCT  : KC SD
GCGR: KM 00000000 00000000
TYP  : KY 0,10
STAD : KF +0
LENG : KF -1
ERR  : MW 20
```

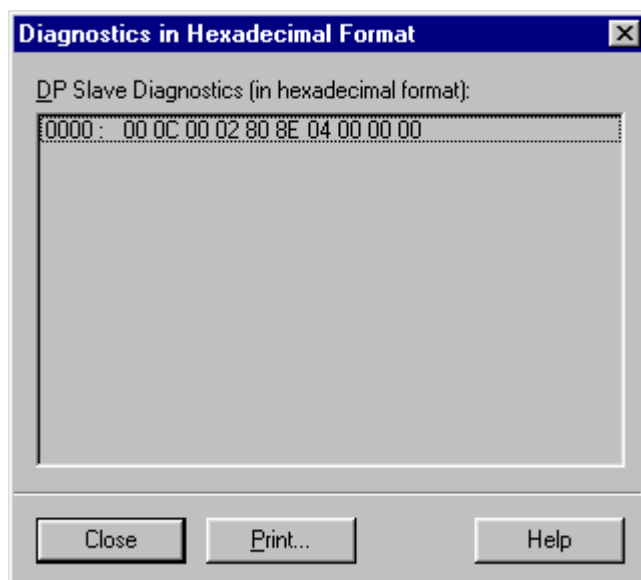
You also have the option of analyzing the diagnostic data of the slave using the COM PROFIBUS online functions. To do so, position the mouse on the 3SB3 / PROFIBUS DP individual interface and click the right mouse button. In the menu that appears, click "DP Slave Diagnostics". A dialog box is then displayed in which you can see the appropriate diagnostic data.

SIMATIC S7

In the "Projekt <Online>" dialog box, open the Window "Hardware Configuration: online 3SB3" dialog box by double-clicking the "Hardware" folder. Select the appropriate slave (3SB3 / PROFIBUS DP individual interface) with the right mouse button. In the menu that appears, click "Module Information". The following dialog box is then displayed if the data is transmitted correctly:



The field “Standard Slave Diagnostics” contains a plain-text message for the diagnostic data. The following dialog box is displayed when you click the “Hex. Format” button:



You can evaluate this data using the tables in Sections 7.1 and 7.2.

9 Connections

9.1 Connector pin assignments of the PROFIBUS DP RS485 interface

Pin no.	Name	Function
1	n.c.	Reserved
2	n.c.	Reserved
3	RxD/TxD-P	Data line B
4	RTS	Request To Send
5	M5V2	Data reference potential (of station)
6	P5V2	Supply plus (of station)
7	n.c.	Reserved
8	RxD/TxD-N	Data line A
9	n.c.	Reserved

9.2 Connector pin assignments of the power supply (X3)

Pin no.	Name	Function
1	L+	24 V power supply (plus)
2	L+	24 V power supply (plus)
3	L-	Ground
24	L-	Ground

10 Technical data

10.1 Electrical

Supply voltage:	24 V DC (18 ... 30 V)
Power consumption (without lamps):	Typ. 100 mA (90 ... 150 mA)
Interfaces:	RS485 for PROFIBUS-DP 4 x module interface
Isolated:	Yes
EMC noise immunity:	To EN 50082/2/95
EMC spurious emission:	To EN 50081/1/93

10.2 Mechanical design

Degree of protection:	IP 20
Dimensions (W x H x D):	90 mm x 75 mm x 40 mm
Weight:	Approx. 100 g
Installation:	Snap onto 35 mm DIN rail (to DIN 50022)

10.3 Environmental conditions

Operating temperature:	0°C to 55°C, operation without fan
Relative humidity:	15% to 95%, without condensation
Storage temperature:	-20°C to +85°C
Mounting position:	Vertical

10.4 Order number

3SB3 / PROFIBUS DP individual interface:	3SB3901-0BB
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11 Contact persons

11.1 Personal contact persons

If you have any questions relating to the product, please contact your local Siemens representative. If you have any further questions, you can also contact us directly at:

For questions relating to PROFIBUS:

SIMATIC Hotline:

Tel.: (+49) 911 / 895 - 7000

Fax: (+49) 911 / 895 - 7002 or -7001

For questions relating to 3SB3 devices:

Technical Support:

Tel.: (+49) 9131 / 7-43833

Fax: (+49) 9131 / 7-43899

e-mail: nst.technical-support@erl7.siemens.de

When you contact us, please have the following information ready:

- Order number of the device
- Release of the device
- Configuration of the installation, particularly the data of the DP master
- Order number and version of the configuration software used
- (Number of the SIMATIC Card for Premium Hotline customers)

11.2 Siemens online

You can also access up-to-date information via the Internet (or Intranet) and via our mailbox anywhere at any time:

- Mailbox with up-to-date GSD files:
(+49) 911 / 73 79 72

- Internet:

<http://www.ad.siemens.de>

then go to

Support, Training & Services

Customer Support: SIMATIC

FAQ's, Tips and Tricks, Downloads

GSD files

Or at: http://www.ad.siemens.de/csi_e/gsd

11.3 Other addresses

*PROFIBUS Integration Center and Testing Laboratory
Wuerzburger Str. 121
90766 Fuerth
Germany
Tel.: (+49) 911 / 750 - 2080 or -2079
FAX: (+49) 911 / 750 - 2100*

*PROFIBUS Nutzerorganisation e.V.
Haid-und-Neu-Str. 7
76131 Karlsruhe
Germany
Tel.: (+49) 721 / 9658 - 590
FAX: (+49) 721 / 9658 - 589
Internet: <http://www.profibus.de>*

12 References

If you would like to find out more about PROFIBUS DP and require more in-depth information, we recommend that you read the following books and manuals:

12.1 German

PROFIBUS-DP Schnelleinstieg; M. Popp; PROFIBUS Nutzerorganisation e.V.;
Order. No. 4071

Handbuch für PROFIBUS-Netze (German edition); Siemens AG; Order No. 6GK1
970-5CA10-0AA0

European Standard EN50170 Volume 2

12.2 English

The rapid way to PROFIBUS-DP; M. Popp; PROFIBUS Nutzerorganisation e.V.;
Order. No. 4072

Manual for PROFIBUS-Networks (English edition); Siemens AG; Order No. 6GK1
970-5CA10-0AA1

EN50170 Volume 2