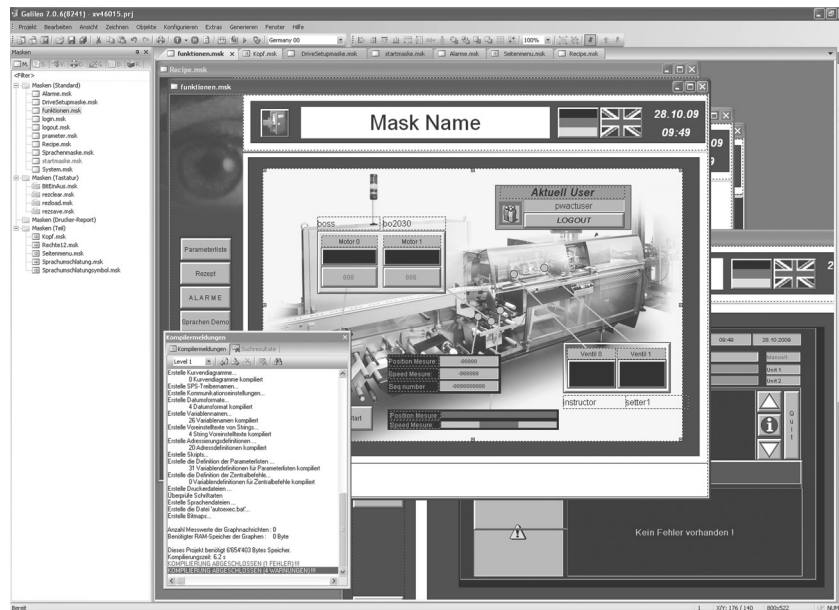


## Communication Simatic S7-200 PPI





# Imprint

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## Original instructions

The German version of this document is the original instructions.

## Editor

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## Proper use

**Hardware, software, operating systems and drivers must only be used for the applications specified and only in conjunction with the components recommended by Eaton Automation AG.**

## Warning!

**No warranty claims will be recognized for faults arising from the improper handling of devices and modules.**

**The devices, even by means of communication, should not be used for the implementation of any safety functions relating to the protection of personnel and machinery.**

**No liability is accepted for claims for damages arising from a failure or functional defect in the device.**

**All data specified in this document does not represent warranted properties in the legal sense.**



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## 1 GENERAL

### 1.1 AIM AND PURPOSE OF THIS DOCUMENT

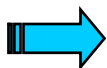
This documentation describes the connection of a MICRO PANEL to the PPI interface of a SIMATIC S7-200 PLC.

**Refer to your MICRO PANEL user manual for further information on connecting, commissioning and operating the MICRO PANEL.**

It is assumed that the following software is already installed and that you are familiar with its operation:

- SIMATIC STEP 7 MICRO WIN PLC programming software from Siemens
- Galileo HMI programming software

Refer to the Galileo documentation or the Online Help for more information on Galileo and GRS.



The dialogs shown from Galileo are from Version 5.3.7.

### 1.2 LIST OF DOCUMENTS

Document	Doc. No.
[1] System Description Networks in Brief	MN05010009Z
[2] System Description Windows CE	MN05010007Z

(this list of documents is not final)



## 2 OPERATING PRINCIPLE

### 2.1 OVERVIEW

This documentation describes the following possible communication method:

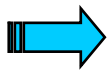
- Siemens – PPI (OnBoard)  
for MICRO PANELs with an OnBoard PROFIBUS interface.

### 2.2 HARDWARE REQUIREMENTS

This communication requires a MICRO PANEL with an OnBoard PROFIBUS interface.

Refer to the document “Installation instructions, General Wiring Instructions” under the section PROFIBUS for information on the communication cable [\[1\]](#).

At least 40 additional license points must be available on the device, regardless of the number of connections!



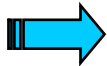
If you have any questions on license products, please contact your local MICRO PANEL sales distributor.



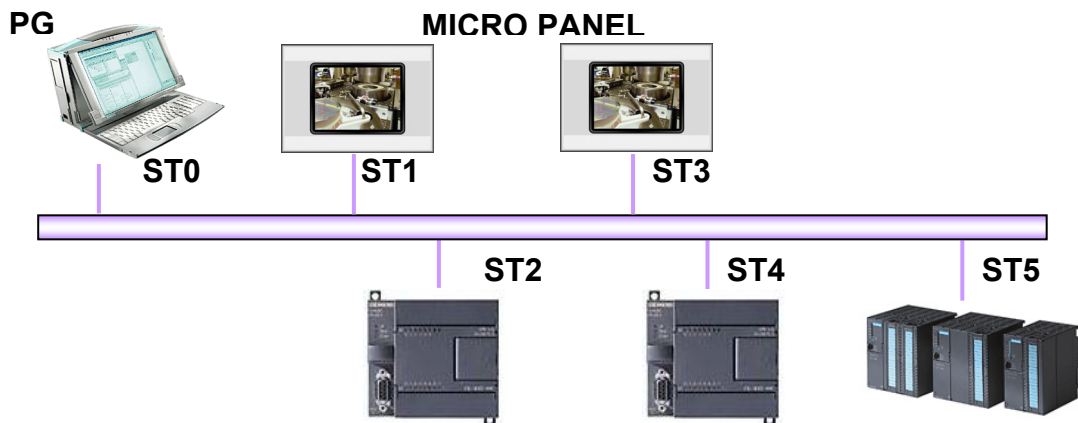
### 2.3 MICRO PANEL IN THE PROFIBUS NETWORK

The connection to the SIMATIC S7-200 is made directly at the programming port of the CPU (PPI) supporting the PPI protocol. No function blocks have to be activated. As soon as the MICRO PANEL is connected to the network, this is indicated with the configured station number in the PG device under "Communication". However it is not possible to make a connection to this station using the programming device. The MICRO PANEL is represented as "UNKNOWN Address: n".

The MICRO PANEL can establish an active connection simultaneously with several MPI stations (SIMATIC S7-200 PLC).

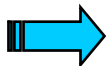


The connection of several MICRO PANELs and S7-200 stations depends on different factors. Baud rate and the number of stations have a direct effect on communication and may cause communication errors (timeouts) if low baud rates are set.



The following are the standard address settings in the network:

- Address 0 is reserved for the SIMATIC PG.
- Address 1 is the default setting for an **O**perator **P**anel (MMI)
- Address 2 is the default setting for a PLC
- Address 3 up to HSA (highest station address) available as required



Both the MPI and the PPI protocol can be used in the same network, e.g. ST1 with ST2 and ST4 via PPI and ST3 with ST5 via MPI. For this the baud rate and the HSA must be the same for all stations in the network.



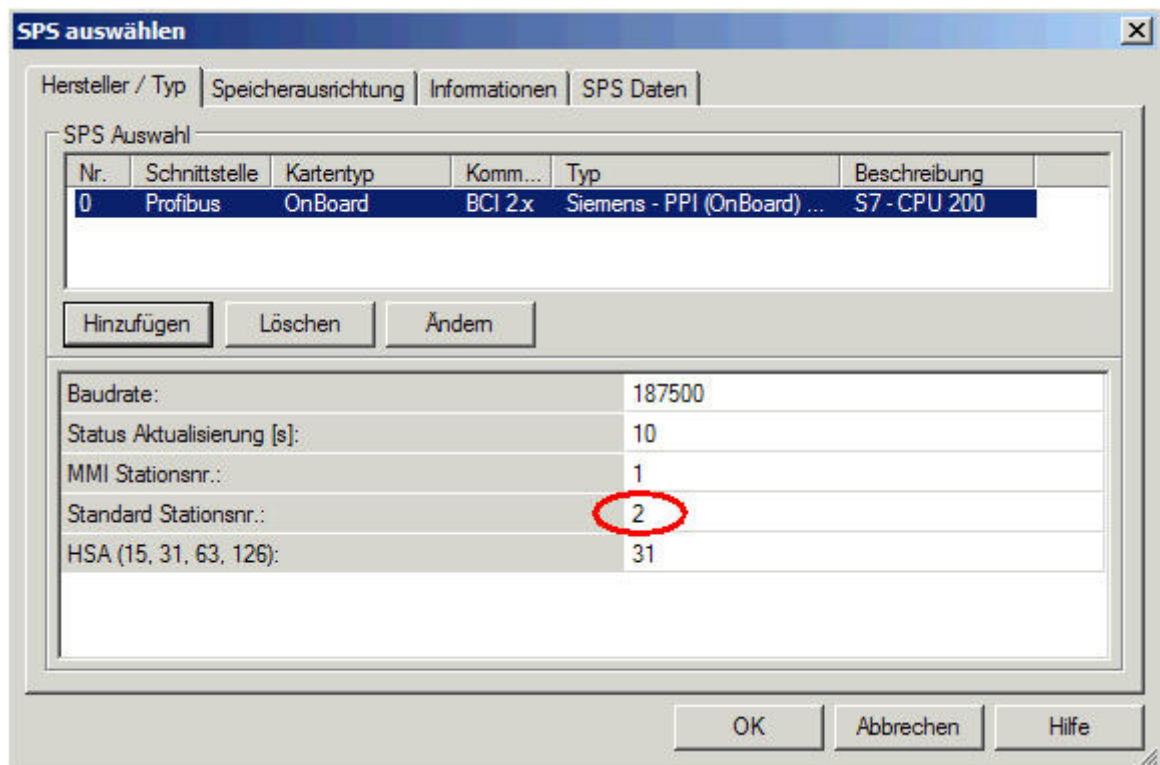
### 2.4 ADDRESSING

The addressing is implemented using the SIMATIC syntax and all commonly available data types are supported.

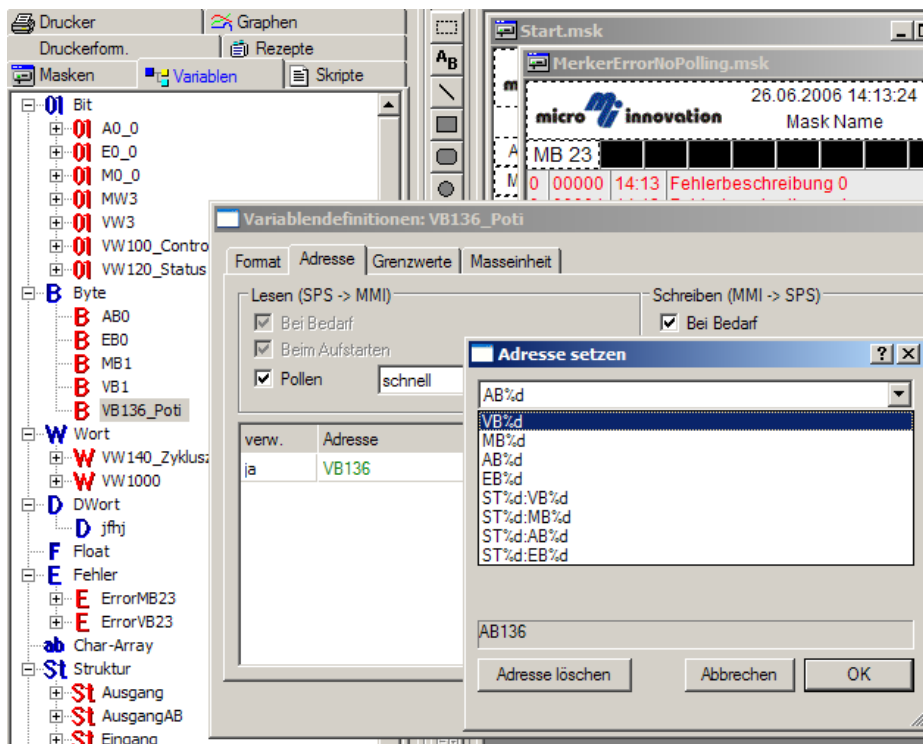
Addressing format without station number	Data area
<b>A</b> %d.%d	Output (digital)
<b>AB</b> %d.%d	
<b>E</b> %d.%d	Input (digital)
<b>EB</b> %d.%d	
<b>M</b> %d.%d	Marker
<b>MB</b> %d.%d	
<b>MW</b> %d.%d	
<b>MD</b> %d.%d	
<b>V</b> %d.%d	Variable memory
<b>VB</b> %d.%d	
<b>VW</b> %d.%d	
<b>VD</b> %d.%d	
Addressing format with station number	Data area
<b>ST</b> %d: <b>A</b> %d.%d	Output (digital)
<b>ST</b> %d: <b>AB</b> %d.%d	
<b>ST</b> %d: <b>E</b> %d.%d	Input (digital)
<b>ST</b> %d: <b>EB</b> %d.%d	
<b>ST</b> %d: <b>M</b> %d.%d	Marker
<b>ST</b> %d: <b>MB</b> %d.%d	
<b>ST</b> %d: <b>MW</b> %d.%d	
<b>ST</b> %d: <b>MD</b> %d.%d	
<b>ST</b> %d: <b>V</b> %d.%d	Variable memory
<b>ST</b> %d: <b>VB</b> %d.%d	
<b>ST</b> %d: <b>VW</b> %d.%d	
<b>ST</b> %d: <b>VD</b> %d.%d	

The placeholder %d represents a decimal number which must be entered for addressing the individual tag variables. The ST entry defines the station number in the network. If no station number is specified in the address, the standard station number from the Select PLC dialog is used.





If a station number is specified in the address, the standard station number from the Select PLC dialog is not relevant for this tag variable.



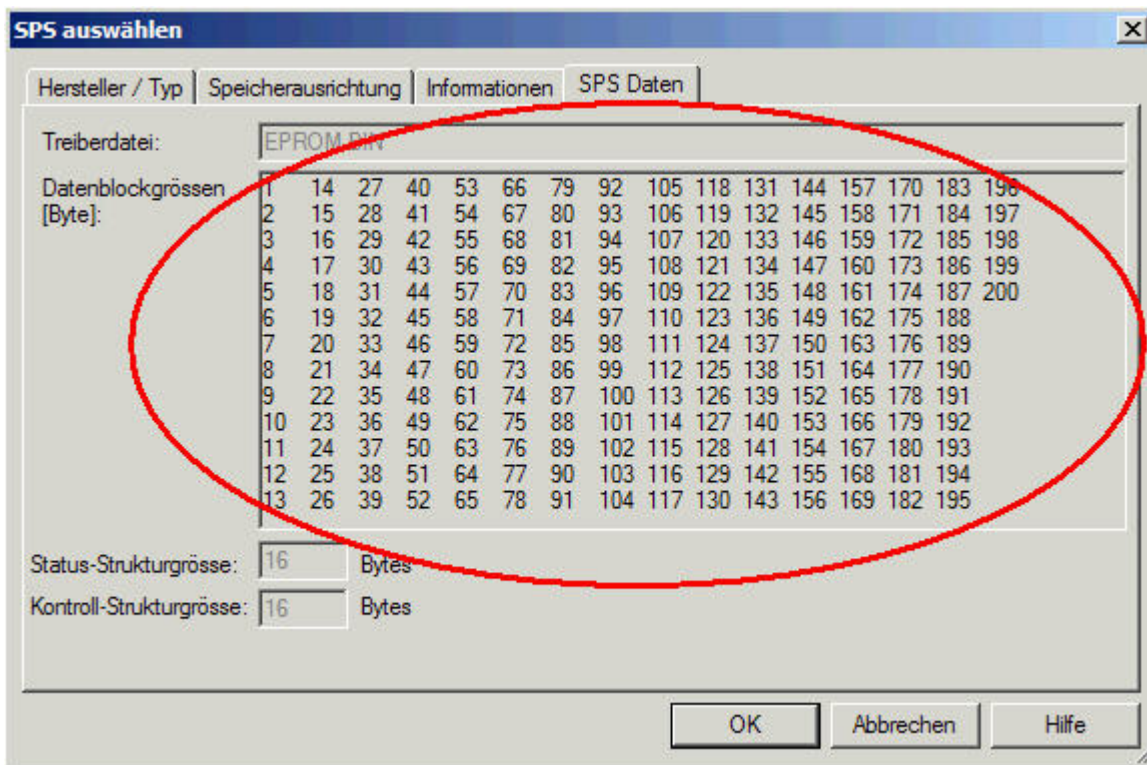


## 2 Operating Principle

### 2.5 DATA BLOCK SIZE

The smallest possible format is 8-bit or 1-byte format. Single bit communication is therefore not possible. The maximum size of a data block is 200 bytes. The structure and array size defined in Galileo is therefore restricted to this maximum value.

The PLC Data tab in the Select PLC... dialog shows all the data block sizes that are supported.



### 2.6 MEMORY ALIGNMENT

See Galileo Online Help.



## 3 SELECT PLC

### 3.1 BAUD RATE

9.6 KB, 19.2 KB and 187.5 KB are supported. The baud rate must match the baud rate setting of all stations in the network.

### 3.2 HIGHEST STATION ADDRESS (HSA)

The highest station address setting is used to optimize the PROFIBUS network. This must correspond to the setting of the highest station address of the subnet in STEP7 Micro/WIN in the CPU configuration for a CPU interface. Permissible values are: 15,31,63 and 126.

### 3.3 STATUS REFRESH

See Galileo Online Help.

### 3.4 MMI STATION NUMBER

Station number of the MICRO PANEL in the PROFIBUS network. This must be set between 1 and the HSA. It must also be ensured that each station is assigned a unique address.

In all cases check with the PG device under "Communication" which addresses have already been assigned.

### 3.5 STANDARD STATION NUMBER

See Addressing.

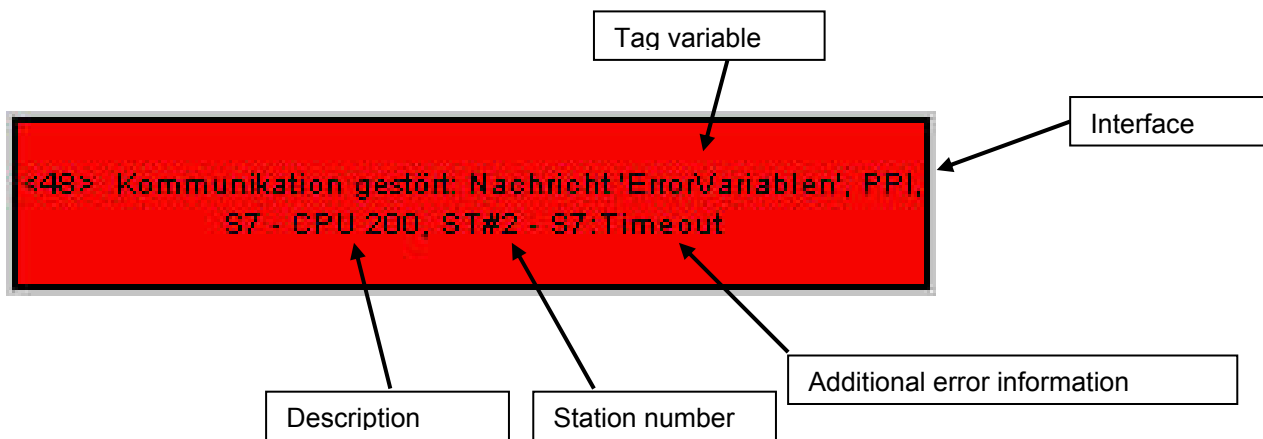


### 4 COMMUNICATION ERRORS

#### 4.1 ERROR MESSAGES

Different system error messages are generated in response to any communication errors that occur. These system error messages provide different information:

- The tag variable name indicates the variable in which a problem was found.
- The interface information indicates the MICRO PANEL interface on which the problem was found.
- The station number after ST\* corresponds to the address of the affected PLC (CPU).
- The additional information may indicate the possible cause of an error in plain text. This information can, however, also be generated from lower software layers. Its content cannot therefore always be interpreted without an in-depth knowledge of the system. The troubleshooting procedure is nevertheless the same in all cases.



#### 4.2 RECTIFICATION

Checking the following points is recommended:

- Check the cabling and the connections on the MICRO PANEL and the PLC.
- Check the baud rate and HSA settings. These settings must be the same on all stations.
- Check the station addresses in the network. Is the station number indicated in the system error message present or available in the PROFIBUS network? An address must only be present once.
- Is the address of the tag variable indicated in the system error message present in the corresponding station?
- Is the communication overloaded?
- Is the PLC (CPU) accessible via the PG device?

If the problem continues, contact our Customer Support at [automation@eaton.com](mailto:automation@eaton.com)