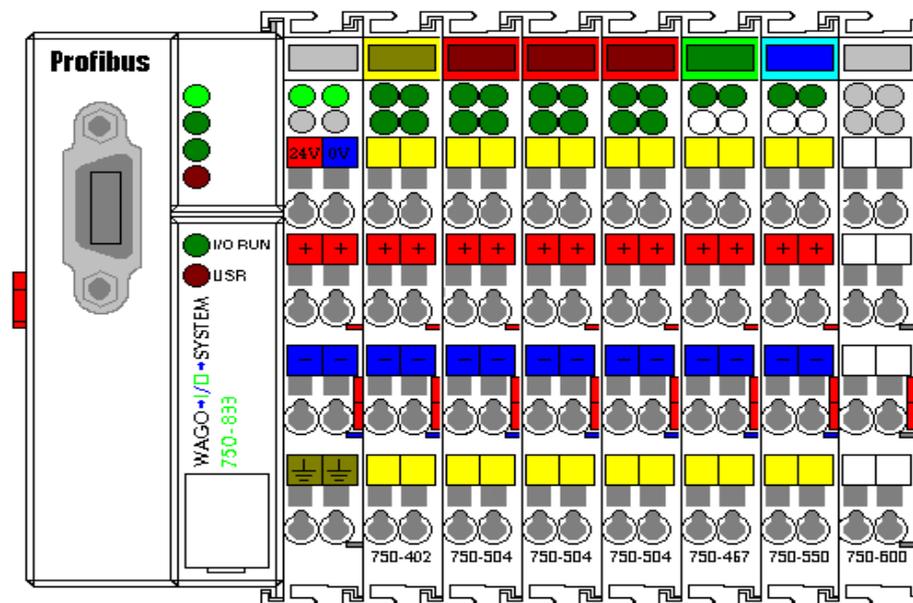


WAGO I/O SYSTEM 750

750-833 Profibus PFC

Configuring & Networking



Application note

A202201, English
Version 1.0.0

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Every conceivable measure has been taken to ensure the correctness and completeness of this documentation. However, as errors can never be fully excluded we would appreciate any information or ideas at any time.

We wish to point out that the software and hardware terms as well as the trademarks of companies used and/or mentioned in the present manual are generally trademark or patent protected.

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1 Important comments

To ensure fast installation and start-up of the units described in this manual, we strongly recommend that the following information and explanation is carefully read and adhered to.

1.1 Legal principles

1.1.1 Copyright

This manual is copyrighted, together with all figures and illustrations contained therein. Any use of this manual which infringes the copyright provisions stipulated herein, is not permitted. Reproduction, translation and electronic and photo-technical archiving and amendments require the written consent of WAGO Kontakttechnik GmbH. Non-observance will entail the right of claims for damages.

1.1.2 Personnel qualification

The use of the product detailed in this manual is exclusively geared to specialists having qualifications in PLC programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the valid standards. WAGO Kontakttechnik GmbH declines all liability resulting from improper action and damage to WAGO products and third party products due to non-observance of the information contained in this manual.

1.1.3 Intended use

For each individual application, the components supplied are to work with a dedicated hardware and software configuration. Modifications are only admitted within the framework of the possibilities documented in the manuals. All other changes to the hardware and/or software and the non-conforming use of the components entail the exclusion of liability on part of WAGO Kontakttechnik GmbH.

Please direct any requirements pertaining to a modified and/or new hardware or software configuration directly to WAGO Kontakttechnik GmbH.

1.2 Range of validity

This application note is based on the stated hardware and software of the specific manufacturer as well as the correspondent documentation. This application note is therefore only valid for the described installation.

New hardware and software versions may need to be handled differently. Please note the detailed description in the specific manuals.

2 Description

This document is to be used with the example node from the document PFC 101 Get Started Quick. The following describes Configuring and networking the example node using the software and equipment listed below.

Profibus a GSD file WAGO 756.GSD for the 750-833 PFC. This file can be downloaded from the web site www.wago.com

This Document was written using SST 5136-DP Software and SST-PFC PCMCIA card.

WAGO modules used in the example:

750-833	1	Profibus PFC Buscoupler
750-402	1	4 Point 24Vdc Input module
750-504	3	4 point output modules
750-550	1	2 Channel Analog 0-10Vdc Output module
750-467	1	2 Channel Analog 0-10Vdc Input module
750-600	1	End module

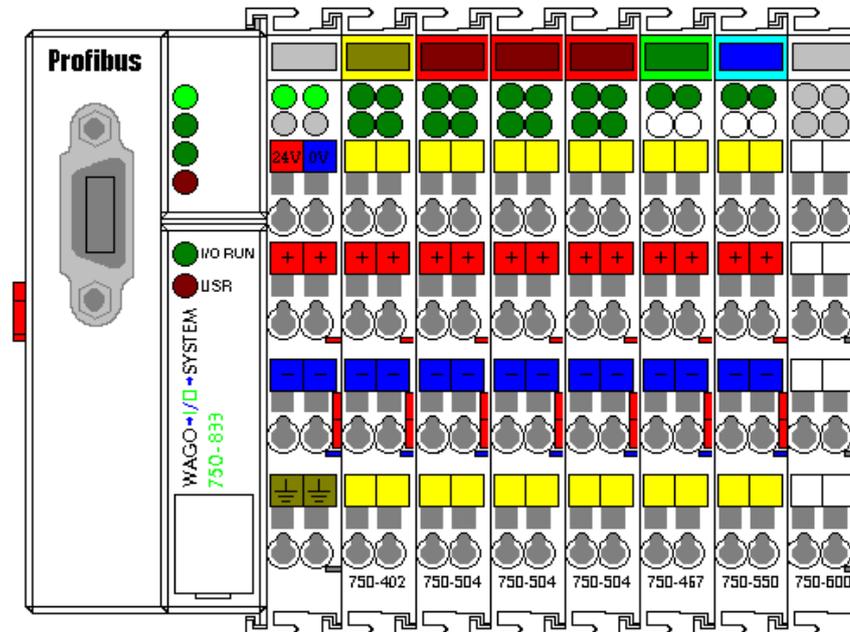
For other details about WAGO Profibus & 750- 833 please refer to the WAGO Manual 750-131.

The Files and Programs in this document can be downloaded from the web site www.wago.com

3 Reference Material

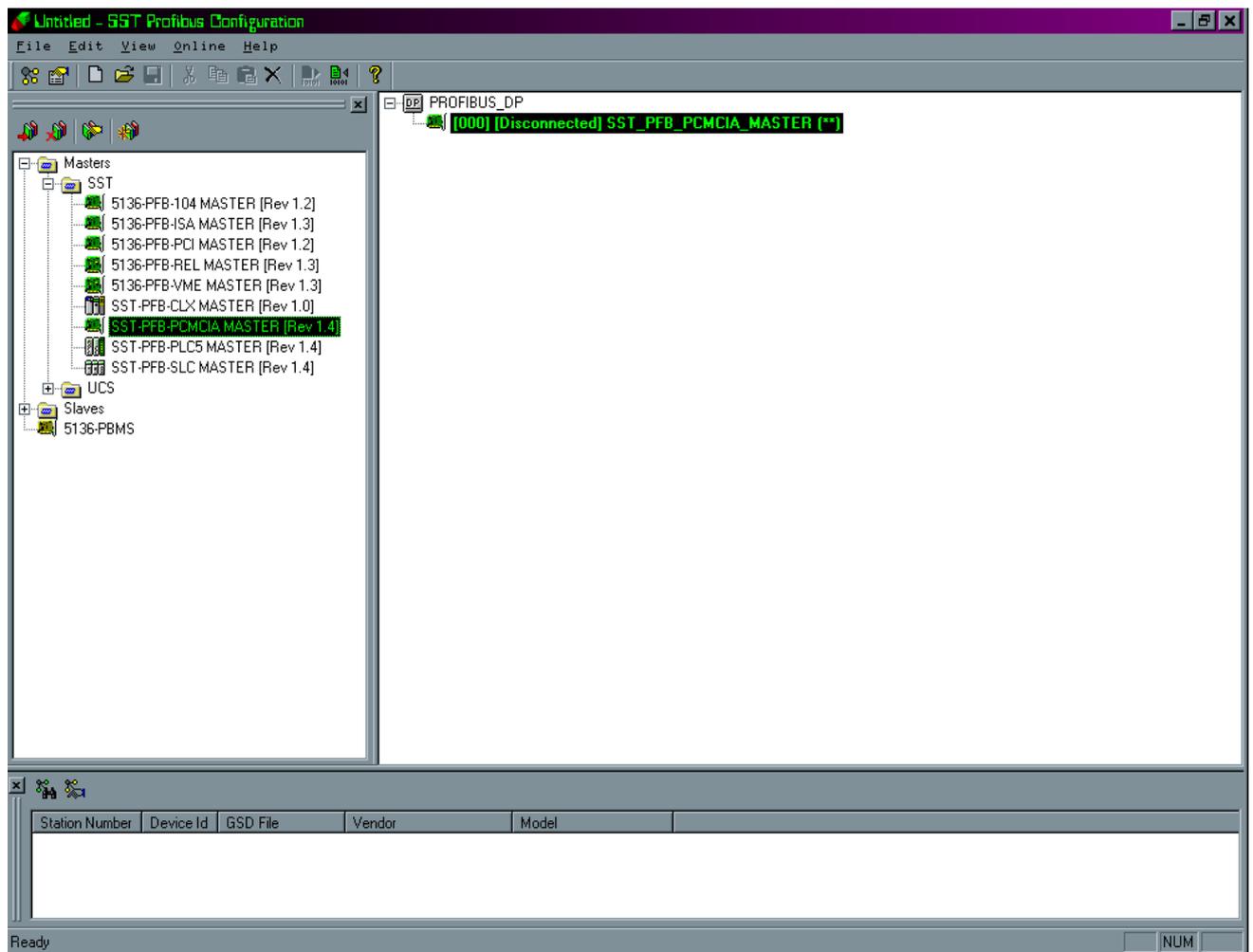
3.1 Networking & Configuring a Profibus Network

The modules are placed in the node as follows:



Start the PROFIBUS Configuration software.

Load the GSD file into the Configuration software.



3.2 Main Configuration Window

Click on the **MASTERS** Folder. Other folders may be displayed.

Click on the **SST** folder.

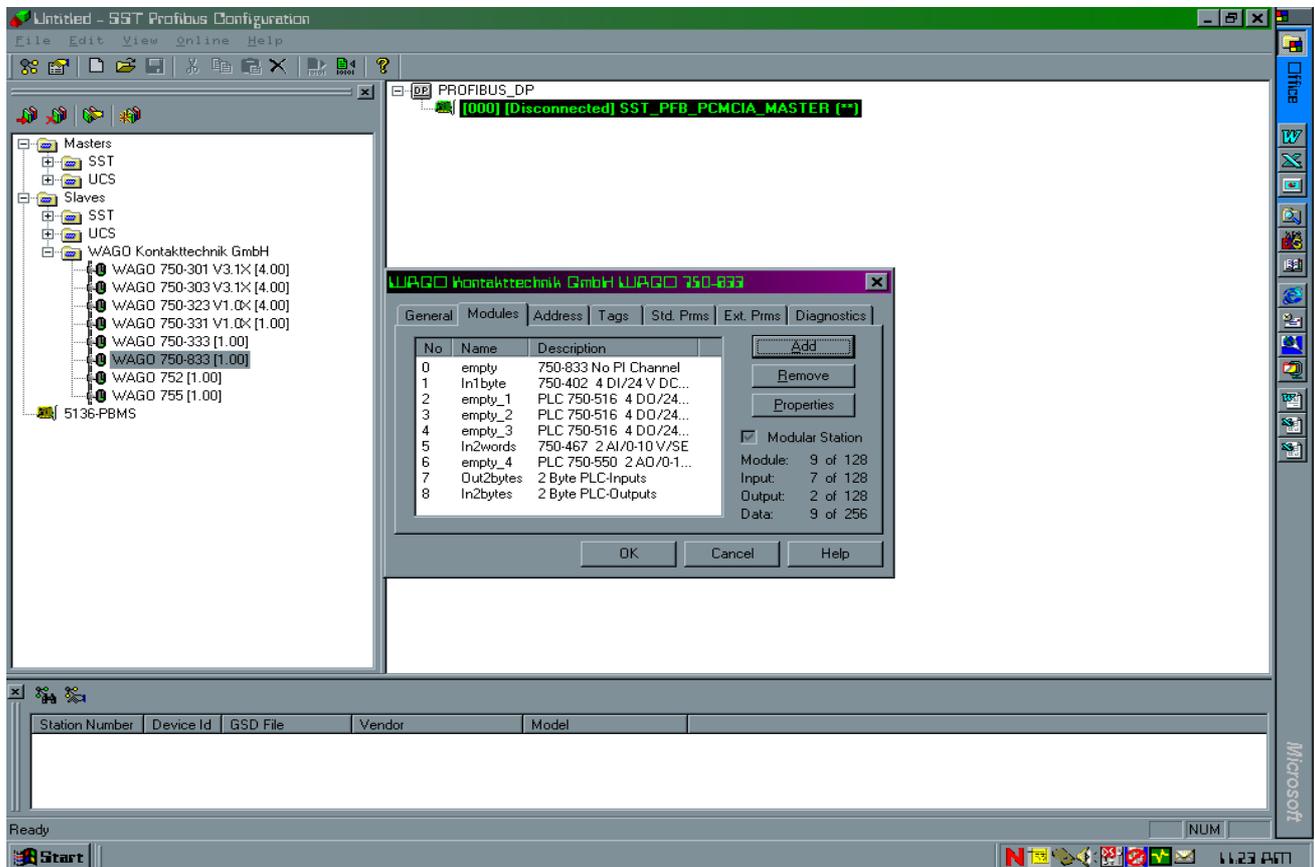
The SST folder will display a list of Profibus cards.

Select the Profibus card that will be used as the Profibus Master.

Once the Master Profibus card parameters are entered click OK, the Profibus card should now be displayed to the right in the configuration window.

Click on the **SLAVES** folder. Other folders may be displayed.

Click on the **WAGO** Folder. The open folder will display a list of the WAGO Profibus buscouplers.



3.2.1 Slave Configuration

Click on the **750-833** to Open the Node configuration window.

Set the **Station Number** for the Node to be configured.

(Example Node is Station #3 on the rotary switches. This is the Station Number in the configuration software)

Click on the **Modules** Tab to configure the Modules of the Node.

Note:

The Modules must be entered into the configuration table as they are placed in the node.

The Profibus configuration would be entered as the following.

750-833	Buscoupler
750-402	4Point Input
PLC750-516	4Point Virtual Output
PLC750-516	4Point Virtual Output
PLC750-516	4Point Virtual Output
750_467	0-10Vdc Analog Input
PLC750-550	0-10Vdc Virtural Analog Output
2-byte PLC Inputs	2 bytes of Network Outputs
2-byte PLC Output	2 bytes of Network Inputs

In Profibus all modules have to be in the configuration of the node. If the modules are not in the configuration, there will be an error. The configuration must be correct before Profibus will run.

PFC Inputs can be read directly by the Profibus Master without re-addressing.

750-402 This is a digital input and can be read by Profibus and the PFC.

PLC750-516 The PLC750-516 is a virtual place holder in the configuration. If the 750-516 parameter was used the Profibus Master would have control of the Output, not the PFC. Since the PLC750-516 is a virtual place holder, Profibus does not have control of the output. The PFC program should have control of the output.

750-467 This is an Analog input and can be read by Profibus directly and the PFC.

PLC750-550 The PLC750-550 is a virtual place holder in configuration. The PFC program has control over the Analog output not the Profibus master.

2-byte PLC inputs This allocates 2 bytes of outputs to the PFC. This is used to pass data from the Profibus Master to a PFC memory location. The first memory location in the PFC data that can be read for this function is PFC Register %IW256.

If more data is to be passed from the Master to the PFC, select a larger number of bytes for the configuration.

2-byte PLC output This allocates 2 bytes of inputs from the PFC. This is used to pass data from the PFC to the Profibus Master.

The first memory location in the PFC to place data to be written to the master for this function is %QW256.

Note: PLC inputs writes to the PFC memory outputs. PLC Outputs reads from the PFC memory inputs.

Note: The 750-5xx parameter allocates 1 byte of real output data.

A 4 point output module uses a half byte. The next 4 point output would use the *750-5xx parameter because it will fill the last half of the byte as a real output module place holder.

750-xxx 1 byte Real World I/O

***750-xxx** Real World I/O Place Holder

PLC750-xxx Virtual place holder

2-byte PLC inputs 2 bytes of Network Outputs

2-byte PLC outputs 2 bytes of Network Inputs

3.3 PFC Module Addressing

- 1: Analogs and Specialty modules are addressed first
- 2: Digital modules follow after the Analog & Specialty modules
- 3: PFC Addressing is sequential
- 4: PFC Addressing starts at word 0

750-833 PFC I/O Addressing is as follows

Inputs	Addr	Variables	Output	Addr	Variables
750-467	%IW0	AICHAN1	750-550	%QW0	AOCHAN1
	%IW1	AICHAN2		%QW1	AOCHAN2
750-402	%IX2.0	INPUT0	750-516	%QX2.0	OUTPUT0
	%IX2.1	INPUT1		%QX2.1	OUTPUT1
	%IX2.2	INPUT2		%QX2.2	OUTPUT2
	%IX2.3	INPUT3		%QX2.3	OUTPUT3
			750-516	%QX2.4	OUTPUT4
				%QX2.5	OUTPUT5
				%QX2.6	OUTPUT6
				%QX2.7	OUTPUT7
			750-516	%QX2.8	OUTPUT8
				%QX2.9	OUTPUT9
				%QX2.10	OUTPUT10
				%QX2.11	OUTPUT11

750-600 End Module (No Memory Allocation needed)

3.3.1 Example Internal Variables

Input256 First Memory location the Profibus Master places data to the PFC is %IW256.

Output256 First Memory location to place data in the PFC to send to the Profibus Master is %QW256.

833test program was developed to verify that the Profibus configuration is correct and data can pass between the Profibus master and the 750-833 PFC.

Enter the following program into the PFC. When the PFC has been programmed and downloaded, run the program. Configure the Profibus Master and download, then start the Profibus DP Monitor communications program.

833 test program

Rung 1:

INPUT0 is the first Input from the digital input module.

OUTPUT0 is the first Output from the first digital output module.

When INPUT0 is On, OUTPUT0 turns On. The PFC has control of the output.

If the Profibus Master is configured correctly the output will turn on when the input turns on. If the output does not turn on, check the configuration to be sure that a PLC750-xxx output was configured for the output module. If a 750-xxx was used in the configuration, Profibus will take control of the output and not let the PFC control the output. The I/O can be monitored by WAGO-Pro32 online.

Rung 2:

INPUT256 (%IW256) is the first memory location that **2-byte PLC inputs** places 2 bytes of Network data for outputs. Using the ADD operator to add 0 to INPUT256, transfers the data from INPUT256 to AOCHAN1 (%QW0) which is assigned to channel 1 of the analog output module. If channel 1 of the analog output is wired to channel 1 of the analog input module, the Profibus DP Monitor tool will display channel 1 analog input values.

Changing the value in the Profibus DP Monitor TX will change the value in INPUT256.

Rung3:

This rung is used to clock the up counter in rung 4.

Rung4:

Every time the timer RESET is true, it adds one count to the up counter.

OUTPUT256 (%QW256) is the first memory location of the PFC to place data to Be sent to Profibus DP Monitor. Compare the data of OUTPUT256 with the Profibus Master, the data should count up with the PFC.

The PFC program and Profibus configuration is a small example to demonstrate how to configure Profibus and the PFC to pass data.

If one of these steps are not working correctly, check the configuration of the Profibus master and the addressing in the PFC.



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