

PD- / PLC-Switcher user manual

(english)



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PD- / PLC-Switcher

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PD- / PLC-Switcher

1 Description

There are 2 different versions for the general application area :

PG switch

- PG switch I
- PG switch II
- PG switch III

AG switch

- AG switch I
- AG switch II
- AG switch I 4-fold

The above mentioned switch devices are specifically designed for the easy connection of two PGs to an AG (PG-Switch) or with a PG to two or four AGs (AG-Switch).

In an industrial metal case (prepared for the cabinet or panel mount) is integrated the entire electronics. The device can be attached directly to the panel. The connecting mechanism, pin assignment and electrical data match with the respective control specification so that the user can work directly with the usual cable to be connected to the device without special adapters, such as PGs and control devices.

Attention:

Before operating you must be connect the earthing PE at the casing!

As well read instructions carefully before use. For damage caused by incorrect connection or handling no liability is assumed.

1.1 PG-SWITCH I

- Coupling two PGs on an AG.
- Selection of PG1 and PG2 takes place over a case-mounted switch.
- By an LED the currently active PG interface is displayed.
- No external power supply: electronic is supplied from the PLC at the AG interface.
- To operate with all original and compatible programming devices.
- All the components are as usual connectable without additional adapters.
- Active PG interfaces (20mA are switched through each of the PLCs connected to the selected PG interface).

1.2 PG-SWITCH II

- Coupling two PGs on an AG.
- Selection of PG1 and PG2 takes place over a case-mounted 24VDC input.
(eg controllable by an output card of the PLC)

=> 24V off = PG1 active

=> 24V on = PG2 active

- By an LED the currently active PG interface is displayed.
- No external power supply: electronic is supplied from the PLC to the AG interface.
- To operate with all original and compatible programming devices.
- All the components are as usual connectable without additional adapters.

- Active PG interfaces (20mA are switched through each of the PLCs connected to the selected PG interface).

1.3 PG-SWITCH III

- Coupling two PGs on an AG.
- Selection of PG1 and PG2 takes place with a sensor which is integrated in the electronic. PG2 is active in idle state but as soon as a programming device is plugged into the PG1 interface, the PG-Switch III automatically switches to active PG1.
- By an LED the currently active PG interface is displayed. If the cable is pulled off again at the sensor interface, the interface function after 2 seconds falls back to PG1 interface.
- No external power supply: electronic is supplied from the PLC to the AG interface.
- To operate with all original and compatible programming devices.

ATTENTION!At the sensor interface PG1 can only be used active cables (eg PG-COM-cable, etc.). Passive cable, such as e.g. the PG-UNI-cable (or cable similar principle) are not detected by the sensor interface PG1.

- All the components are as usual connectable without additional adapters.
- Active PG2 interface (20mA are switched through from the PLC connected to the PG2 interface).

1.4 AG-SWITCH I

- Coupling of a PG on two AG's.
- Selection of AG1 and AG2 takes place over a case-mounted switch.
- By an LED the currently active AG interface is displayed.
- No external power supply: electronic is supplied from the PLC to the AG interface.
- To operate with all original and compatible programming devices.
- Active PG interface (20mA are switched through from the PLC connected to the AG1 interface to the PG interface).
- Active AG interfaces. All AG's are connected to the AG switch with a 15-pin. 1:1 cable.

1.5 AG-SWITCH II

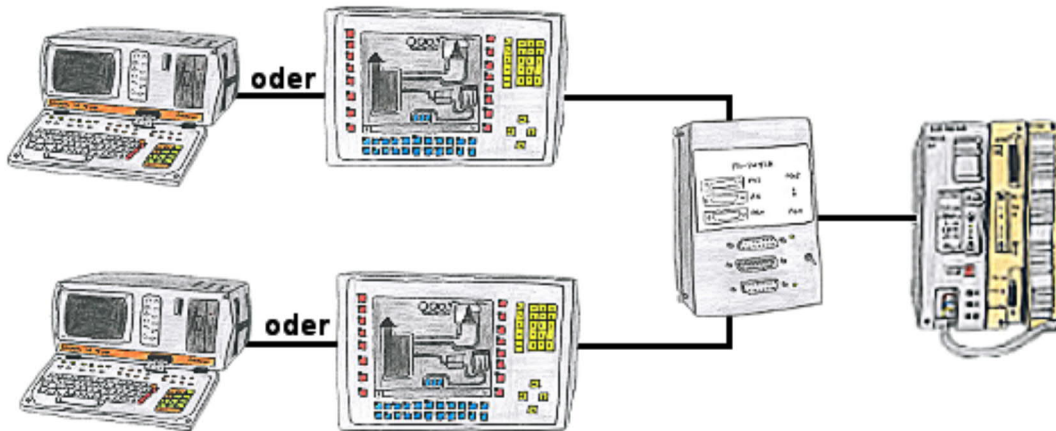
- Coupling of a PG on two AG's.
- Selection of AG1 and AG2 takes place over a case-mounted 24VDC input (eg controllable by an output card of the PLC)

24V off = AG1 active
24V on = AG2 active

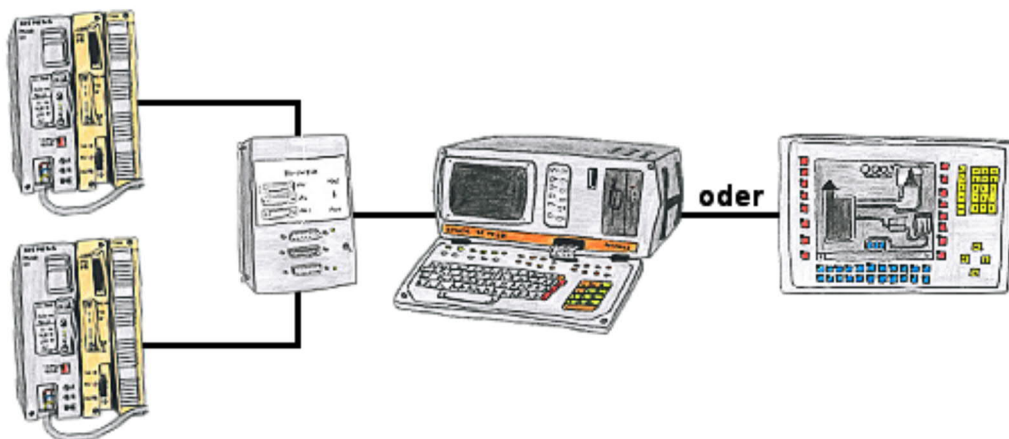
- By an LED the currently active AG interface is displayed.
 - No external power supply: electronic is supplied from the PLC to the AG interface.
 - To operate with all original and compatible programming devices.
 - Active PG interface (20mA from the PLC connected to the AG1 interface to the PG interface through).
 - Active AG interfaces. All AG's are connected to the AG switch with a 15-pin. 1:1 cable.
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- Coupling of a PG on four AGs.
 - Selection of AG1 to AG4 takes place via a case-mounted switch.
 - By an LED the currently active AG interface is displayed.
 - No external power supply: electronic is supplied from the PLC to the AG interface.
 - To operate with all original and compatible programming devices.
 - Active PG interface (20mA are switched through from the PLC connected to the AG1 interface to the PG interface).
 - Active AG interfaces. All AG's are connected to the AG switch with a 15-pin. 1:1 cable.

2 Connecting options

Interfaces-switch for the S5



Interfaces-switch for your PD / PC



3 Installation

3.1 Hardware

To ensure a trouble-free operation with the PG-PLC switches, these devices should be placed on the specially provided ground lug to the earth potential

To take the PG-AG switch into operation and to supply with voltage, the device is first connected with the PLC.

Then set the switch to the desired AG or PG interface or connect the 24V input with your PLC.

Now you can as usual access with your programming device or similar on the PLC and switch over to an alternative device or PLC.

4 Technical data

Supply voltage:	5V DC
Power consumption:	1 watt
Display:	LED-display for aktiv port
Handling/Configuration:	toggle or rotary switch for port selection
Interfaces:	to the PLC: 1 / 2 / 4 x TTY/20mA current loop (switch passiv, PLC aktiv)
	to the PD/PC: 1 / 2 x TTY/20mA current loop (100 % mechanically and electr. compatible)
Operating temperature:	0 - 55°C
Case:	EMC-dense metal case with mounting flange
Dimensions:	135 x 110 x 50 mm
Scope of delivery:	PG-Switch Cable 15pin 1to1 Power connector 2pins big

4.1 Pin assignment PG-SWITCH I / II / III

4.1.1 AG interface

This interface should be connected 1:1 with the PLC so that the multiplexer has its full function. The PG-MUX II is already internally wired to the AG-socket as an active transmitter and receiver. Therefore at least the pins must connected 1:1 2, 9, 6, 7 with the PLC.

Pin number	Short form	Designation	Direction
1	Mext	external mass	input
2	TTY OUT-	transmit data -	output
3	+5V	power supply +5V	input
4	+24V	power supply +24V	input
5	GND	internal mass	input
6	TTY IN +	receive data +	input
7	TTY IN -	receive data -	input
8	Mext	external mass	input
9	TTY OUT +	transmit data+	output
10	M24V	mass +24V	input
11	I-Tx	20mA power source transmitter	input
12	GND	internal mass	input
13	I-Rx	20mA power source receiver	input
14	+5V	power supply +5V	input
15	GND	internal mass	input

4.1.2 PG1/PG2 interface

This pinning corresponds to a PG interface with a Siemens S5.

Pin number	Short form	Designation	Direction
1	Mext	external mass	output
2	TTY IN –	receive data –	input
3	+5V	power supply +5V	output
4	+24V	power supply +24V	output
5	GND	internal mass	output
6	TTY OUT +	transmit data +	output
7	TTY OUT –	transmit data –	output
8	Mext	external mass	output
9	TTY IN +	receive data +	input
10	M24V	mass +24V	output
11	I-Tx	20mA power source transmitter *	output
12	GND	internal mass	output
13	I-Rx	20mA power source receiver *	output
14	+5V	power supply +5V	output
15	GND	internal mass	output

* not connected with PG-Switch III to the PG1 interface

4.2 Pin assignment AG-SWITCH I / II / I 4-fold

4.2.1 AG interface

This interface should be connected 1:1 with the PLC so that the multiplexer has its full function. The PG-MUX II is already internally wired to the AG-socket as an active transmitter and receiver. Therefore shall at least define pins 2, 9, 6, 7 1:1 with the PLC be connected. The supply voltage and current sources are however only the first of the SPS fed (AG1).

Pin number	Short form	Designation	Direction
1	Mext	external mass	input
2	TTY OUT–	transmit data –	output
3	+5V	power supply +5V *	input
4	+24V	power supply +24V *	input
5	GND	internal mass	input
6	TTY IN +	receive data +	input
7	TTY IN –	receive data –	input
8	Mext	external mass	input
9	TTY OUT +	transmit data +	output
10	M24V	mass +24V *	input
11	I-Tx	20mA power source transmitter *	input
12	GND	internal mass	input
13	I-Rx	20mA power source receiver *	input
14	+5V	power supply +5V *	input
15	GND	internal mass	input

* These pins are required at the switch only at the interface AG1

4.2.2 PG1/PG2 interface

This pinning corresponds to a PG interface with a Siemens S5.

Pin number	Short form	Designation	Direction
1	Mext	external mass	output
2	TTY IN –	receive data –	input
3	+5V	power supply +5V *	output
4	+24V	power supply +24V *	output
5	GND	internal mass	output
6	TTY OUT +	transmit data +	output
7	TTY OUT –	transmit data –	output
8	Mext	external mass	output
9	TTY IN +	receive data +	input
10	M24V	mass +24V	output
11	I-Tx	20mA power source transmitter *	output
12	GND	internal mass	output
13	I-Rx	20mA power source receiver *	output
14	+5V	power supply +5V *	output
15	GND	internal mass	output

* Currents and voltages are from the first PLC switched (AG1)

5 Troubleshooting

5.1 Troubleshooting

LED on the switch is dark

Check the connection cable to the 1. PLC (AG1).
+5 V on the PG interface of the 1. PLC (AG1) okay?

No communication at all PLCs

Requires the connected PG or PC voltages or current sources, which are not issued by the 1. SPS (AG1)?

Programming device works with disturbances

Earthing cable connected?
Is a cable connected to outside the guidelines?

The sensor switch is not responding (for PG-Switch III)

Requires the to be connected device / PC voltages for operating, which are from the 1. PLC (AG1) not be issued?

PG / PC 's are not supported that need power sources for the operation.
(see description of PG-Switch III)