

SIEMENS

English

SIMATIC S5

**Programmer
Multiplexer 757**

Instructions

C79000-Z8576-C367-04

Safety Guidelines

This manual contains notices which you should observe to ensure your own personal safety, as well as to protect the product and connected equipment. These notices are highlighted in the manual by a warning triangle and are marked as follows according to the level of danger:



Danger

indicates that death, severe personal injury or substantial property damage will result if proper precautions are not taken.

Warning

indicates that death, severe personal injury or substantial property damage can result if proper precautions are not taken.

Qualified Personnel

The device/system may only be set up and operated in conjunction with this manual.

Only **qualified personnel** should be allowed to install and work on this equipment. Qualified persons are defined as persons who are authorized to commission, to ground, and to tag circuits, equipment, and systems in accordance with established safety practices and standards.

Correct Usage

Note the following:



Warning

This device and its components may only be used for the applications described in the catalog or the technical description, and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens.

This product can only function correctly and safely if it is transported, stored, set up, and installed correctly, and operated and maintained as recommended.

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Disclaimer of Liability

We have checked the contents of this manual for agreement with the hardware and software described. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the data in this manual are reviewed regularly and any necessary corrections included in subsequent editions. Suggestions for improvement are welcomed.

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C79000-Z8576-C367

Instructions

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1 Notes on the CE Symbol



The following applies to the SIMATIC product described in this manual:

EMC Directive This product fulfils the requirements for the EC directive 89/336/EEC on “electromagnetic compatibility” and the following fields of application apply according to this CE symbol:

Field of Application	Requirement for	
	Emitted Interference	Noise Immunity
Residential, commercial and light industry	EN 50081-1: 1992	EN 50082-1: 1992
Industry	EN 50081-2: 1993	EN 50082-2: 1995

Low Voltage Directive This product fulfils the requirements for the EC directive 73/23/EEC on “low voltage” and was tested to EN60950:A2:1993.

Declaration of Conformity The EC declarations of conformity and the documentation relating to this are available to the authorities concerned, according to the above EC directive, from:

Siemens AG
Automation Group
AUT E 14
Postfach 1963
D-92209 Amberg

Products which do not display the CE symbol fulfil the requirements and standards set out in the “Technical Data” section of this manual.

Observing the Setup Guidelines The setup guidelines and notes on safety given in the manual must be observed on commissioning and during operation.

2 Installing the Device

When installing the device, it is essential that you observe the following points:

Ambient Temperature If the device is to be housed in a cabinet, you must ensure that the ambient temperature does not exceed a maximum of 50°C.

Ventilation Slots The ventilation slots on the device must be kept clear.

Installation Position The device must not be installed in a vertical position with the power supply from below. Any other installation position is permitted.



Caution
The power can only be disconnected by removing the power supply connector from the power circuit.
The power socket must be situated close to the device in an easily accessible position.

3 Area of Application

The multiplexer programming device (PG-MUX) is a current loop interface transfer switch, with which a maximum of eight modules in a SIMATIC S5 programmable logic controller can be operated from one central device.

On the input side, the PG-MUX has a 15-pin front connector with the same pin assignment as a CPU module of the S5-135 U programmable logic controller. Eight 25-pin programming device interfaces are available on the output side. Consequently, existing cable sets can be used.

A programming device which is compatible with SIMATIC S5 can be used as the central device. The PG-MUX can also be connected to the SINECH1 bus via the communications processor CP 535.

The PG-MUX must have its own power supply (230 V/120 V).

The required node is selected by means of a program using the bus selection procedure. This program is part of S5-DOS, which must be installed on the programming device used.

The programming device informs the PG-MUX by means of a message frame as to which node it would like to be connected with. If the node is available, the connection is switched through and the node number is acknowledged; if it is not available, no reaction occurs.

The user interface and messages relevant to the user depend on the S5-DOS utility "bus selection," which is described in detail in the programming device manuals.

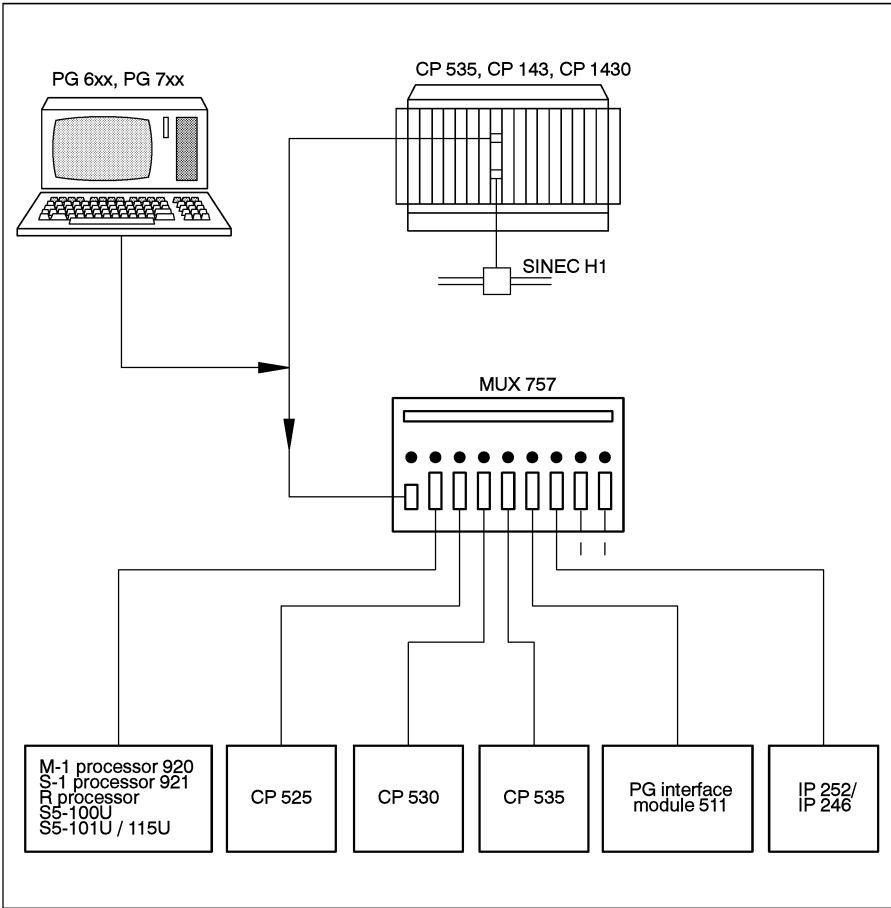
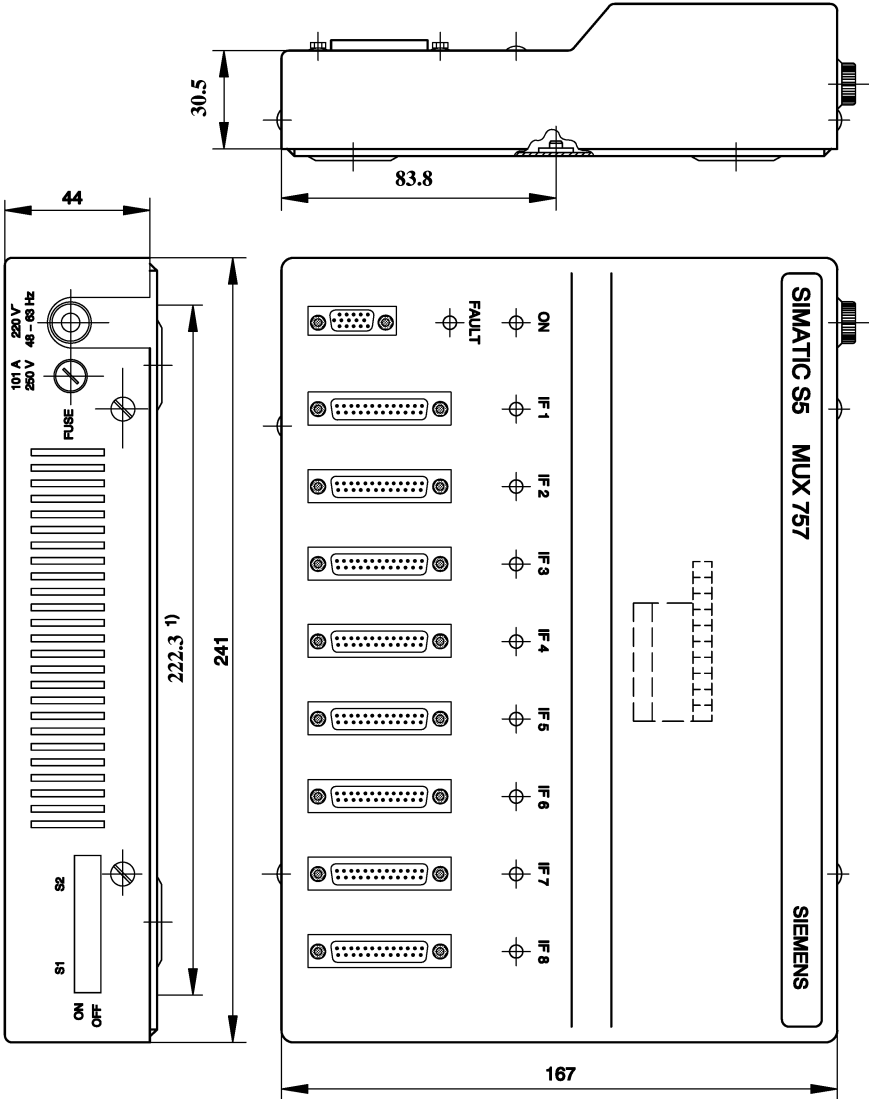


Figure 1-1 Example of the Possible Connections to the PG-MUX

3.1 Mechanical Design

The PG-MUX has a console-type housing measuring 241 mm x 167 mm x 44 mm. In the base of the housing are two M4 threaded holes to allow permanent installation in a cabinet. On the top of the device are one 15-pin and eight 25-pin socket connectors for interface connections. Each interface has a LED assigned to it. On the back of the device are DIL switches for assigning parameters to the PG-MUX, as well as a bushing for the mains cable and a device fuse. The mains cable is connected to a terminal block inside the housing. In order to switch over to a 120 V supply, the housing must be opened and two soldered jumpers changed.

The dimensions of the multiplexer programming device are displayed on the following page.



1) Distance between both mounting points. Threaded socket M4.

3.2 Controls and Displays

The PG-MUX has the following controls and displays:

LED "FAULT"(red)	Indicates a fault in the serial programming device interface.
LED "IF1" to "IF8" (green)	When one of these LEDs is lit, it indicates that the corresponding interface has been selected.
LED "ON" (green)	Indicates that the mains voltage is present.
DIL switches S1, S2	Used for setting the interface addresses.

4 Switch and Jumper Settings

4.1 Layout of Switches and Jumpers

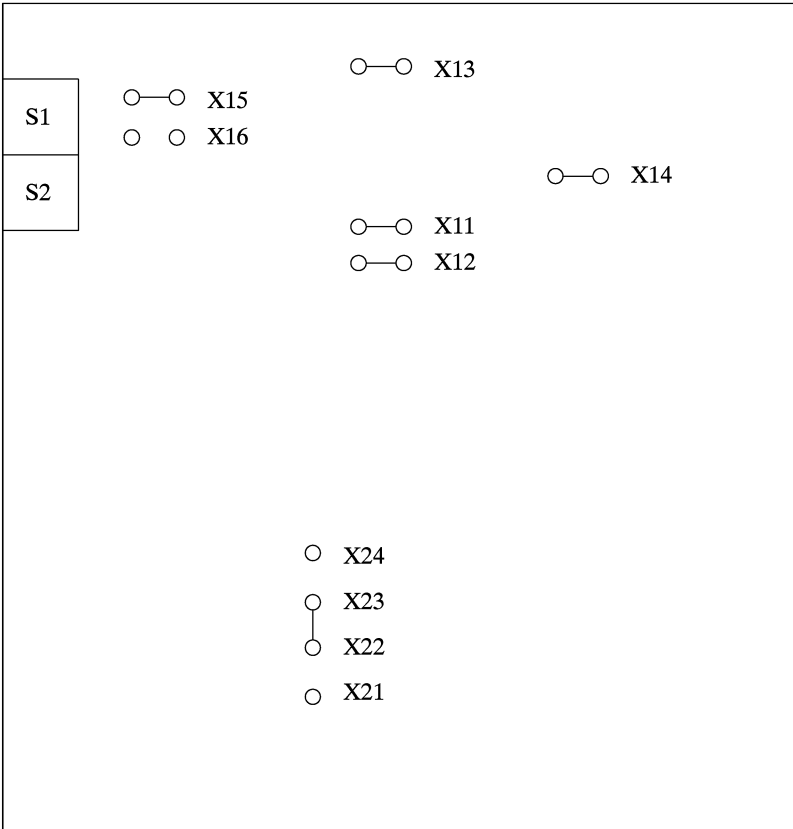


Figure 1-2 Jumper Settings shown as Delivered

4.2 Assigning Parameters to the Serial Interfaces

Node numbers are assigned to all interfaces to be operated by the PG-MUX. These numbers must be consecutive within the range between 1 and 31 (decimal). The lowest of these numbers is set in binary code with DIL switch S1. The maximum of eight numbers are assigned to interfaces IF 1 to IF 8 and to switch S2 - with the lowest number being assigned to switch S2.1 and IF 1 and the highest number to switch S2.8 and IF 8.

If interfaces are not connected, the corresponding numbers can be masked out using DIL switch S2. These numbers can then be reassigned.

DIL Switch S1 (Base Address)

DIL switch for setting the PG-MUX base address (binary):

Switch No.	Function
1	–
2	Significance 2^4
3	Significance 2^3
4	Significance 2^2
5	Significance 2^1
6	Significance 2^0

A base address between 1 and 31 is set using S1.2 to S1.6. The interfaces selected by the PG-MUX can be operated via this and the subsequent seven addresses. The base address results from the sum of the binary powers. The value is selected when the operating lever is set to “ON.”

Switch positions as delivered:	
Switch 1	OFF
Switch 2	OFF
Switch 3	OFF
Switch 4	OFF
Switch 5	OFF
Switch 6.....	ON(Base address=1)

When the DIL switch S1 setting has been altered, the PG-MUX must be switched off then on again for the base address to change correspondingly.

DIL Switch S2 (Masking out Addresses)

Switch	Base No.	IF No.
S2.1	+ 0	1
S2.2	+ 1	2
S2.3	+ 2	3
S2.4	+ 3	4
S2.5	+ 4	5
S2.6	+ 5	6
S2.7	+ 6	7
S2.8	+ 7	8

Interface addresses can be individually masked out using switches S2.1 to S2.8. This is advisable if the assigned interfaces are not being used. Masked out numbers can be used on other multiplexers.

A number is masked out when the corresponding operating lever is set to "OFF."

Switch positions as delivered:	
Switch 1	ON
Switch 2	ON
Switch 3	ON
Switch 4	ON
Switch 5	ON
Switch 6	ON
Switch 7	ON
Switch 8	ON

4.3 Changing from 230 V to 120 V

The power supply of the PG-MUX can be changed from 230 V to 120 V.



Caution

Disconnect the mains plug before opening the device. Alterations should only be carried out by qualified personnel.

To open the device, remove the four screws. The jumpers must then be resoldered as indicated in the diagram below, in accordance with the required supply voltage. You should take into account that a minimum creepage of 2 mm must be maintained between the soldered bases which are not joined by jumpers.

The fuse in the back panel of the device must also be replaced by the fuse in the accompanying set of accessories. The accessories also include a label which is to be stuck over the original label on the back of the device.

Soldering jumpers				
	X21	X22	X23	X24
230 V	*	*—*		*
120 V	*—*		*—*	

5 Transmission Cable

The transmission cable is a four-wire shielded cable.

The cable shield must be earthed at both ends. Lengths of up to 1000 m are permitted.

The following connecting cables are required:

Connection	Cable No.
PG 7xx – PG-MUX Input	6ES5 734-2...0
PG 6xx – PG-MUX Input	6ES5 731-1...0 ¹⁾
CP 535 – PG-MUX Input	6ES5 725-0...0
PG-MUX Output – S5-100 U	6ES5 731-1...0
PG-MUX Output – S5-101 U	6ES5 731-1...0
PG-MUX Output – S5-115 U	6ES5 731-1...0
PG-MUX Output – CP 525	6ES5 726-0...0
PG-MUX Output – CP 530	6ES5 731-1...0
PG-MUX Output – CP 535	6ES5 731-1...0
PG-MUX Output – IP 246	6ES5 731-1...0
PG-MUX Output – IP 252	6ES5 731-1...0
PG-MUX Output – M Processor	6ES5 731-1...0
PG-MUX Output – PG-AS 511	6ES5 731-0...0
PG-MUX Output – R Processor	6ES5 731-1...0
PG-MUX Output – S Processor	6ES5 731-1...0

... = length code (see catalog)

¹⁾ plus adapter 6ES5 731-2AG00

The cables should only be laid inside buildings.

6 Connector Pin Assignment

6.1 Front Connector, 15-Pin

Pin	Designation
1	Earth (Eext)
2	TTY (-) Receiver
3	+5 V
4	+24 V
5	0 V
6	TTY (+) Transmitter
7	TTY (-) Transmitter
8	Earth (Eext)
9	TTY (+) Receiver
10	+24 V earth (current sources (-) 20 mA)
11	Current sources (+) 20 mA
12	0 V
13	Current sources (+) 20 mA
14	+5 V
15	0 V

6.2 Front Connector, 25-Pin (X1 to X8)

Pin	Designation
1	
2	
3	
4	
5	
6	TTY (+) Receiver
7	
8	TTY (-) Receiver
9	
10	TTY (+) Transmitter
11	
12	TTY (-) Transmitter
13	
14	
15	
16	
17	
18	
19	
20	Current sources + 20 mA
21	24 V earth (Eext)
22	Current sources + 20 mA
23	24 V earth (Eext)
24	
25	

7 Technical Data

Class of protection	IP 30
Safety standard	EN 60950:1992+A1:1993+A2:1993
Operating temperature	0 to 50 °C 0 to 45 °C at 230 V + 10%
Temperature during transport and storage	-40 to 70 °C
Humidity class	95% relative humidity, no condensation
Operating altitude	Up to 3500 m above sea level
Weight	Approx. 1 kg
Type of construction	Console housing
Dimensions (w x h x d)	241 mm x 167 mm x 44 mm
Front connector	1 x 15-pin socket connector, 8 x 25-pin socket connector
Supply voltage	230 V + 6%/-15%, 120 V + 6%/-15% at 230 V + 10% a limited temperature range of 0 – 45 °C applies
Mains frequency	48 to 62 Hz
Power consumption at 230 V	Typically 70 mA
Power consumption at 120 V	Typically 140 mA
Transmission rate of serial interfaces	9600 bps
Transmission cable	4-wire line, shielded
Transmission link	1 km max at 9600 bps both at input and output

Programmer Multiplexer 757
C79000-Z8576-C367-04

To
Siemens AG
AUT E 146
Östliche Rheinbrückenstr. 50
76181 Karlsruhe

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Your Title: -----

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City: -----

Phone: -----

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|--|---|
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| <input type="checkbox"/> Chemical | <input type="checkbox"/> Plastic |
| <input type="checkbox"/> Electrical Engineering | <input type="checkbox"/> Pulp and Paper |
| <input type="checkbox"/> Food | <input type="checkbox"/> Textiles |
| <input type="checkbox"/> Leittechnik | <input type="checkbox"/> Transportation |
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| <input type="checkbox"/> Mechanical Engineering | |



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