

Where are the current declarations of conformity to be found for SIMATIC HMI panels?

OP 277 6"	6AV6643-0BA01-1AX.	22067721
Touch Panels	MLFB	CE declaration of conformity (multilingual)
TP 170A BLUE	6AV6545-0BA15-2AX.	22067721
TP 170B BLUE	6AV6545-0BB15-2AX.	22067721
TP 170B	6AV6545-0BC15-2AX.	22067721
TP 177A	6AV6642-0AA11-0AX.	22067721
TP 177B PN/DP	6AV6642-0BA01-1AX.	22067721
TP 177B PN	6AV6642-0BB01-1AX.	22067721
TP 177B DP	6AV6642-0BC01-1AX.	22067721
TP 177B PN/DP INOX	6AV6642-8BA10-0AA.	22067721
TP 177B 4" PN/DP	6AV6642-0BD01-3AX.	22067721
TP 270 6"	6AV6545-0CA10-0AX.	22067721
TP 270 10"	6AV6545-0CC10-0AX.	22067721
TP 270 10" INOX	6AV6545-8CC10-0AA.	22067721
TP 277 6"	6AV6643-0AA01-1AX.	22067721
Multi Panels	MLFB	CE declaration of conformity (multilingual)
MP 177	6AV6642-0EA01-3AX.	22067721
MP 270 10" Key	6AV6542-0AG10-0AX.	22067721
MP 270 10" Touch	6AV6545-0AG10-0AX.	22067721
MP 270 6" Touch	6AV6545-0AH10-0AX.	22067721
MP 277 8" Touch	6AV6643-0CB01-1AX.	22067721
MP 277 10" Touch	6AV6643-0CD01-1AX.	22067721
MP 277 8" Key	6AV6643-0DB01-1AX.	22067721
MP 277 10" Key	6AV6643-0DD01-1AX.	22067721
MP 277 10" Touch INOX	6AV6643-0ED01-2AX.	22067721
MP 370 12" Key	6AV6542-0DA10-0AX.	22067721
MP 370 12" Touch	6AV6545-0DA10-0AX.	22067721
MP 370 15" Touch	6AV6545-0DB10-0AX.	22067721
MP 370 15" Touch INOX	6AV6545-8DB10-0AA.	22067721
MP 377 12" Touch	6AV6644-0AA01-2AX.	22067721
MP 377 15" Touch	6AV6644-0AB01-2AX.	22067721
MP 377 19" Touch	6AV6644-0AC01-2AX.	22067721
MP 377 12" Key	6AV6644-0BA01-2AX.	22067721
MP 377 15" Touch INOX	6AV6644-0CB01-2AX.	22067721
MP 377 PRO 15" Touch	6AV6644-2AB01-2AX.	22067721
MP 377 15" Touch Daylight	6AV6644-8AB20-0AA.	22067721
Mobile Panels	MLFB	CE declaration of conformity (multilingual)
Mobile Panel 170	6AV6545-4B..	15389493
Mobile Panel 177 DP	6AV6645-0A..	21964134
Mobile Panel 177 PN	6AV6645-0B..	21964134
Mobile Panel 277	6AV6645-0C..	27065810
Mobile Panel 277 10"	6AV6645-0BE02-0AX0	27065810
Mobile Panel 277 IWLAN	6AV6645-0DE01-0AX0	35211768
Mobile Panel 277 IWLAN	6AV6645-0DD01-0AX0	35211768
Mobile Panel 277F IWLAN	6AV6645-0DB01-0AX0	35211768
Mobile Panel 277F IWLAN	6AV6645-0DC01-0AX0	35211768
Mobile Panel 277F IWLAN PROFIsafe mit Zustimmungstaster und Not-Halt-Taster	6AV6645-0EB01-0AX1	46593961

SIMATIC HMI

HMI device
TP 270, OP 270, MP 270B
(WinCC flexible)

Operating Instructions

Order number 6AV6691-1DD01-0AB0

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Installation and connection

4.1 Check shipment

Inventory the contents of the shipment. Check for visible signs of damage which may have occurred during shipment.

Notice

Do not install damaged parts. If parts are damaged, contact ...

Keep the documentation supplied. This belongs to the HMI device and may be required when commissioning in the future.

4.2 Installation of the HMI device

4.2.1 Installing the MP 270B Keys or OP 270

Prior to installation

If you want to change the labels on the softkeys, change the labeling strips before installing the HMI device.

Installation in 19" cabinets/racks

Refer to the information provided by the respective cabinet or rack manufacturer to install the device in a 19" cabinet/rack.

Installation dimensions of standard 19" cabinets:

- Width: 19" (482.6 mm)
- Height: 7 HE (310 mm)

Secure the HMI device to the rails using four screws

Installation in front panels

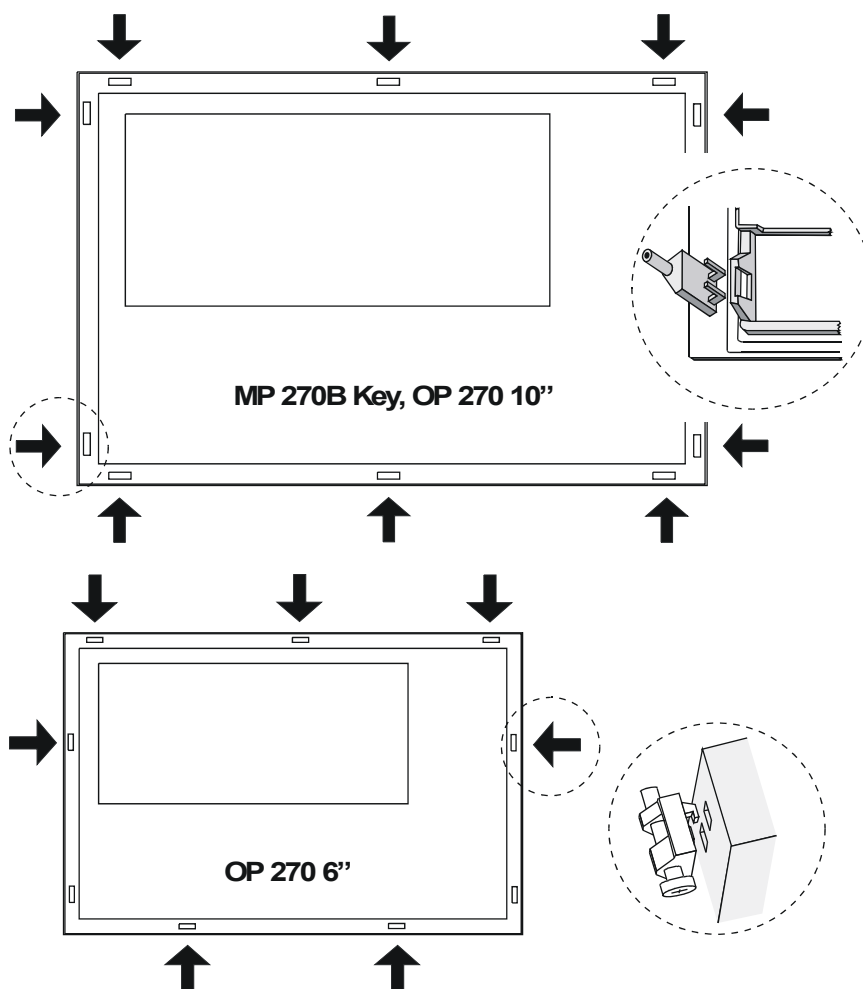
The MP 270B Keys and OP 270 can be secured in the installation cut-out using spring terminals. When secured using spring terminals, no additional holes for securing the device are required in the front panel.

Spring terminals used in conjunction with an outer seal can achieve IP65 degree of protection. Screwed supports achieve the degree of protection IP54.

Installing the MP 270B Keys or OP 270 in the front panel:

1. Check that the installation seal is fitted on the HMI device.
Do not mount the installation seal turned inside out. This can lead to gaps in the installation cut-out.
2. Working from the front, insert the HMI device into the installation cut-out.
3. Insert the hooks of the spring terminals into the corresponding recesses in the housing of the HMI device.

The individual positions are indicated in the figures below by means of arrows.



If necessary, the OP 270 6" can be additionally held by two further spring terminals inserted in the two bottom recesses on the side of the HMI device. They are not supplied with the OP 270 6" .

4.3 Connecting the HMI device

4.3.1 Conditions

Requirements

The following condition must be fulfilled before the HMI device is connected electrically:

- The HMI device must be installed according to the information provided in these operating instructions.

Electrical connections

Connect the HMI device in the following sequence:

1. Potential equalization line
2. PLC
3. Configuration computer as necessary
4. Peripheral equipment as necessary
5. Power supply

Notice

Connection sequence

Carefully follow the sequence of HMI device connections. Failure to do so may result in damage to the HMI device.

When disconnecting the connections, it is essential to proceed in the reverse sequence.

4.3.2 Interfaces

Interfaces

The figure below illustrates the arrangement of the interfaces on underside of the HMI device, exemplified by the MP 270B 10" Keys.

Notice

In the case of the TP 270 and OP 270, the interfaces for the PC card and Ethernet interface on-board are missing. To enable an Ethernet connection, the devices require a CF card.

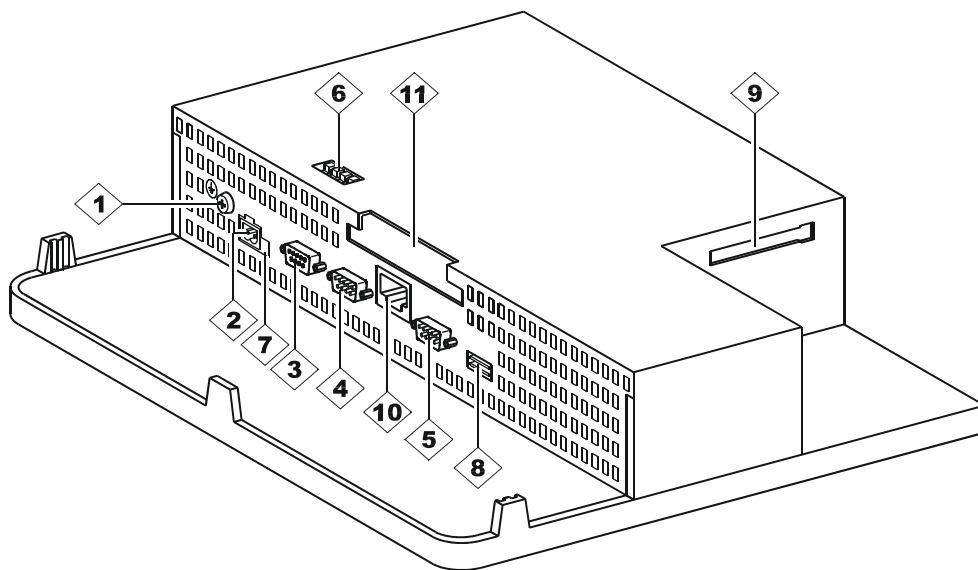


Figure 4-1 Arrangement of the interfaces (example, MP 270B 10" Keys)

No.	Description	Application
1	Ground connection	For connection to rack ground
2	Power supply	Connection to power supply +24 V DC)
3	Interface IF1B	RS 422/RS 485 (floating) for PLC, PC, PU
4	Interface IF1A	RS 232 for PLC
5	Interface IF2	RS 232 for PC, PU, printer
6	Switch	To configure interface IF1B
7	Battery connection	Connection for optional backup battery
8	USB interface	Connection for external keyboard, mouse, etc.
9	Slot B	For CF card
10	Ethernet interface (for MP 270B only)	Connection of an RJ45 Ethernet line
11	Slot A (for MP 270B only)	For PC card

4.3.3 Connecting the potential equalization

Ground connection



Connect the grounding connection of the HMI device to the rack ground. Use the grounding screw provided and a conducting cable with a diameter of at least 2.5 mm².

Potential difference

Potential differences can occur between separate system parts which leads to high equalizing currents. An example would be when line shields are applied on both sides and grounding occurs on different system parts.

The cause of potential differences could be different mains power feed.

General requirements of potential equalization

Potential equalization lines must be installed to reduce potential differences to an extent that guarantee problem-free operation of the electronic components. Observe the following when setting up potential equalizations:

- The lower the impedance of the potential equalization lead or the larger the cross-section of the potential equalization lead, the higher the efficiency of the potential equalization.
- If two system parts are connected to each other by shielded data lines whose shielding on both sides is connected to the grounding/protective conductor, the impedance of the additionally laid potential equalization lead may be at the most 10% of the shield impedance.
- The cross-section of a potential equalization line must be sized for the maximum equalizing current which flows. In practice, potential equalization lines between cabinets with a minimum cross-section of 16 mm² have proven sufficient.
- Use potential equalization lines made of copper or galvanized steel. Connect the potential equalization lines to the grounding/protective conductor with large area contact and protect them from corrosion.
- Clamp the shielding of the data line on the HMI device flush and as close as possible to the potential equalization rail using cable clips.
- Lay the potential equalization and data lines parallel to each other and within the minimum distance of each other (refer to following Figure, Point 6).

Notice

Potential equalization line

Cable shields are not suitable for potential equalization. Only use the intended potential cable prescribed. Potential cable, for example, must have a minimum cross-section of 16 mm². When setting up MPI and PROFIBUS DP networks, ensure cables with a sufficient cross-section are used otherwise the interface modules may be damaged or even destroyed.

4.3.5 Connecting the PLC

Connection configuration

The figure below illustrates the basic connection possibilities between the HMI device and PLC. Standard cables are available for the connections shown (refer to the ST80 catalog).

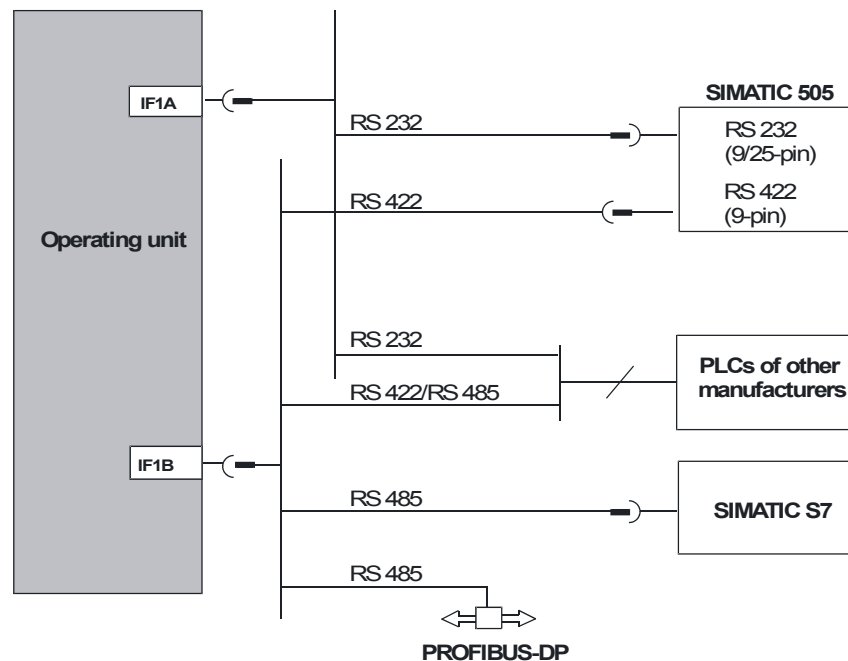


Figure 4-5 Connection configuration for PLCs

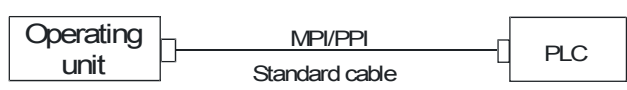
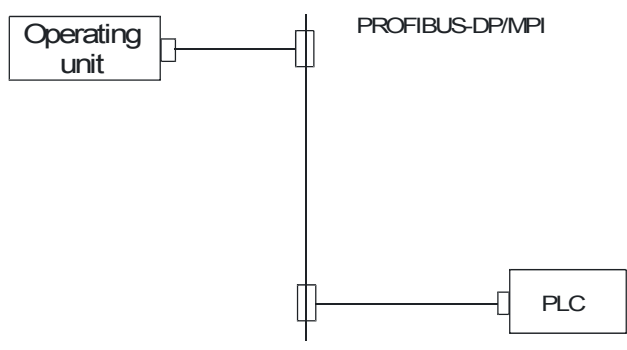
- **SIMATIC S7**
Use only the approved cables for connection to a SIMATIC S7.
- **IF1A / IF1B**
To enable communication using the serial interface, connect either the IF1A (RS 232) or IF1B (RS 422/485), but not both. The IF1B interface can be configured using a switch.
- **PROFIBUS DP**
Any PROFIBUS-DP bus terminal can be used.

Configure interface IF1B

The IF1B interface can be configured via the switch on the back of the HMI device. This switches over the RS-422 received data and the RTS signal for RS485.

By default, the switch is set for the SIMATIC S7 PLC.

The following table shows the permissible switch settings.

Communication	Switch settings
	 No RTS on connector This is the switch setting on delivery.
	 ON
	 ON RTS on Pin 4 (default)
	 ON RTS on Pin 9 (as PU)
	 ON No RTS on connector

Compressing the internal program memory with SIMATIC S5



Warning

In the case of the SIMATIC S5, compressing the PLC's internal program memory ("Compress" PU function, integrated FB COMPR) is not permitted if an HMI device is connected. When memory is compressed, the absolute addresses of the blocks in the program memory change. Since the HMI device only reads the address list during startup, it does not recognize the address change and accesses the wrong memory areas.

If you cannot avoid compressing memory during operation, turn off the HMI device before running the compress function.

4.3.6 Connecting the configuration computer

Connection configuration

The figure below illustrates how to connect a configuration computer (PU or PC) to the HMI device for transferring project data.

Standard cables are available for the connections shown (refer to the ST80 catalog).

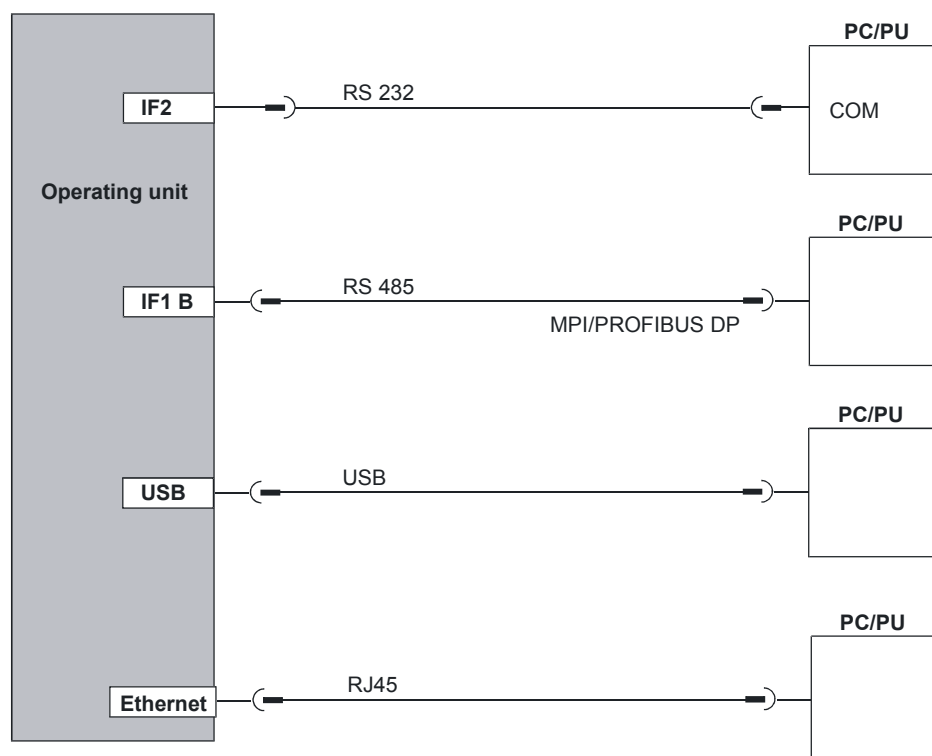


Figure 4-6 Connection configuration for configuration computer

Prepare and backup project

7.1 Transfer project to the HMI device

7.1.1 Commissioning for the first time

Introduction

There is no configuration on the HMI device when commissioning for the first time. In order to transfer the necessary project data and the runtime software from the configuration computer to the HMI device, proceed as follows, observing the sequence.

Notice

When starting the first time, observe the safety information on reverse poling.

Caution

Always terminate the runtime software before switching off the voltage supply in order to prevent loss of data.

Press the operating element linked to the "StopRuntime" system function in the project to stop runtime. Wait until the HMI device displays the loader and then switch off the power supply.

Note

During the commissioning phase, it is possible to connect an external USB keyboard or mouse via the USB interface.

7.4.2 Backup and Restore

Introduction

Using WinCC flexible or the ProSave Service Tool, it is possible to backup and restore projects, recipes and passwords.

If the service tool was installed with WinCC flexible, it can be opened on the configuration computer with the command "SIMATIC > ProSave" in the "Start" menu.

ProSave is an executable program which can run without WinCC flexible. ProSave can, thus, be run without a WinCC flexible license.

Requirements

- The HMI device is connected to a configuration computer.
- WinCC flexible or ProSave must have been installed on the configuration computer.

Notice

Close all open applications on the configuration computer before starting Backup or Restore.

Backup

During the backup process, the project is transferred from the HMI device Flash memory to the configuration computer.

There are two ways to make a backup copy:

- Backup using standalone ProSave
- Backup using WinCC flexible

Notice

Licenses on the HMI device are not saved in this case.

The procedure for the backup differs in terms of the operations performed on the configuration computer.

12.2 Technical data

Technical data

Housing	MP 270B 10" Keys / OP 270 10"	MP 270B 10" Touch / TP 270 10"	OP 270 6"	MP 270B 6" Touch / TP 270 6"
External dimensions (W x H) in mm	483 x 310	335 x 275	308 x 204	212 x 156
Installation cutout (W x H) in mm	436 ⁺¹ x 295 ⁺¹	310 ⁺¹ x 248 ⁺¹	282 ⁺¹ x 178 ⁺¹	198 ⁺¹ x 142 ⁺¹
Installation depth	55 mm		59 mm	
Degree of protection				
Front	IP65/NEMA 4x Indoor/NEMA 12			
Rear panel	IP20			
Weight	Approx. 6 kg	Approx. 4,5 kg		Approx. 1 kg

Processor	
Type	64 bit RISC CPU

Memory	MP 270B	OP 270 / TP 270
Memory for configuration	4 MB	2 MB
Bulk storage		
Slot for CF card	e.g. ATA Flash card	
Slot for PC card	E.g. • ATA Flash card • SRAM cards • NE 2000-compatible Ethernet card	

Software	
Operating system	Microsoft Windows CE

Technical data

12.2 Technical data

Color display	MP 270B 10" Keys	MP 270B 10"/6" Touch	OP 270 10" / OP 270 6"	TP 270 10" / TP 270 6"
Type	TFT LCD	TFT LCD with touch panel	CSTN LCD	CSTN LCD with touch panel
Active screen diagonal	10,4 "	10,4 " / 5,7 "	10,4 " / 5,7 "	10,4 " / 5,7"
Resolution (pixels)	640 x 480 (VGA)	640 x 480 (VGA) / 320 x 240 (QVGA)	640 x 480 (VGA) / 320 x 240 (QVGA)	
Possible colors	256			
Back-lighting	CCFL tubes			
Half brightness life ¹⁾	50000 h	50000 h	60000 h / 40000 h	60000 h / 40000 h

- 1) Time period the brightness of the lighting tube only achieves 50% of its original value. The specified value depends on the operating temperature.

Keyboard	MP 270B 10" Keys / OP 270 10"	OP 270 6"
Type	Membrane keyboard	
System keys with dedicated functions	38 (3 with LEDs)	36 (3 with LEDs)
Configurable function keys		
Number	36 (28 with LEDs)	24 (18 with LEDs)
for local assignment	20	14
Labeling	System-specific with e-establish strips	System-specific with e-establish strips

Acoustic acknowledgement	MP 270B Touch / TP 270
In the case of touch control	× (can be disabled)

Power supply	OP 270 6" / TP 270 6"	MP 270B 6" Touch	MP 270B / OP 270 10" / TP 270 10"
Rated voltage	+24 V DC		
Permissible range	+24 V DC -15%, +20%		
Max. permissible transients	35 V (500 msec)		
Time between two transients	Min. 50 s		
Power consumption			
Typical	Approx. 0,6 A	Approx. 0,8 A	Approx. 0,9 A
Max. constant current	Approx. 0,9 A	Approx. 1,0 A	Approx. 1,0 A
Power on current surge I ² t	Approx. 0.5 A ² s	Approx. 0.5 A ² s	Approx. 0.5 A ² s
Fuse, internal	Electronic		

IF2

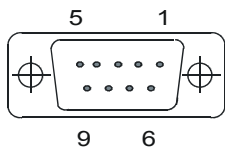


Table 12-3 9-pin Sub-D plug (pin)

Pin	RS 232
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	N.C.

Ethernet interface (MP 270B only)

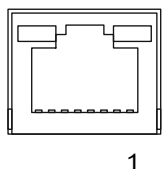


Table 12-4 RJ45 plug connection

Pin	RJ45
1	10BaseT: TX+
2	10BaseT: TX-
3	10BaseT: RX+
4	-
5	-
6	10BaseT: RX-
7	-
8	-