



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Operating Instructions

ControlCare SPC350

15" and 19" Panel PCs with P View Software

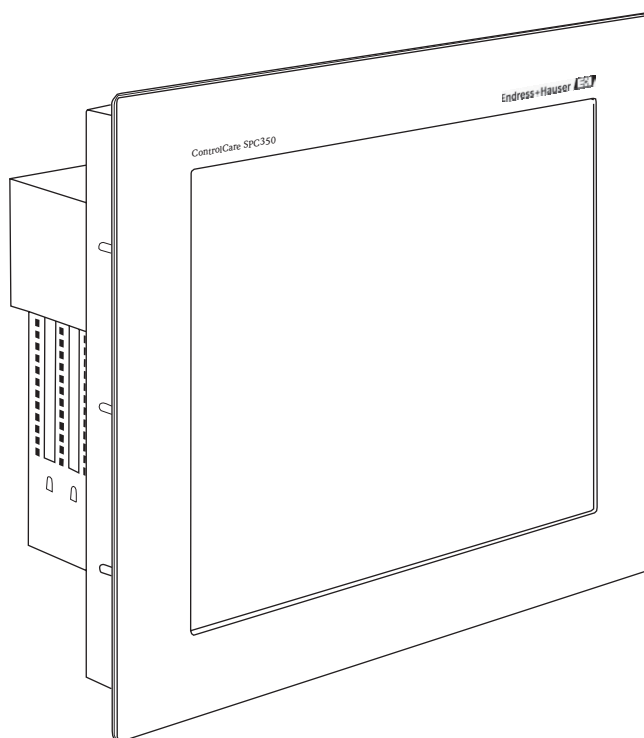


Table of Contents

Revision History	2	5.5	External interfaces	16
Registered Trademarks	2	5.5.1	Serial port COM1 [RS-232]	16
1 Safety	3	5.5.2	Ethernet ports	16
1.1 Designated used	3	5.5.3	USB ports	16
1.2 Installation, commissioning and operation	3	5.5.4	VGA port	17
1.3 Operational safety	3	5.5.5	PS/2 mouse port	17
1.4 Declaration of conformity	3	5.5.6	PS/2 keyboard port	17
1.5 Technical improvement	3	5.5.7	PROFIBUS DP port	18
1.6 Conventions and icons	4	5.5.8	Parallel LPT1 port	18
2 Identification	5	6 Commissioning and Operation	19	
2.1 Unpacking	5	6.1	Start-up	19
2.1.1 Visual check	5	6.2	Operation	19
2.1.2 Scope of delivery	5	6.3	Maintenance	19
2.1.3 Storage and transport	5	6.3.1	Display backlights	19
2.2 Device name	6	7 Technical Data	20	
3 Function and System Design	7	7.1	Panel PC Specification	20
3.1 Function	7	7.2	Operating Conditions	21
3.2 System design	7	7.3	Mechanical Construction	21
4 Mechanical Installation	8	7.4	Certificates and Approvals	21
4.1 Location	8	Index	24	
4.1.1 Temperature	8			
4.1.2 Ventilation	8			
4.2 Installation of the 15" monitor	9			
4.2.1 Cut-out	9			
4.2.2 Fastening and sealing	9			
4.3 Installation of the 19" monitor	10			
4.3.1 Cut-out	10			
4.3.2 Fastening and sealing	10			
5 Electrical Installation	11			
5.1 General precautions	11			
5.2 Power supply 15" monitor	12			
5.2.1 24 VDC power supply	12			
5.2.2 Plug connector	12			
5.3 Power supply 19" monitor	13			
5.3.1 230 VAC plug connector	13			
5.4 Peripherals	14			
5.4.1 Access 15" monitor	14			
5.4.2 Access 19" monitor	14			
5.4.3 Keyboard	15			
5.4.4 Mouse	15			
5.4.5 Printer	15			
5.4.6 Monitor	15			
5.4.7 Ethernet network	15			
5.4.8 Hardware extensions	15			

Revision History

Product version	Manual	Changes	Remarks
1.00.xx	BA046S/04/en/03.06	Original	

Registered Trademarks

PROFIBUS®

Registered trademark of the PROFIBUS User Organisation, Karlsruhe Germany.

FOUNDATION™ Fieldbus

Trademark of the Fieldbus Foundation, Austin, TX 78759, USA

HART®

Registered trademark of the HART Communication Foundation, Houston, USA

Microsoft®, Windows®, Windows 2000®, Windows XP® and the Microsoft logo are registered trademarks of the Microsoft Corporation.

Acrobat Reader® is a registered trade mark of the Adobe Systems Incorporated.

All other brand and product names are trademarks or registered trademarks of the companies and organisations in question

1 Safety

1.1 Designated used

ControlCare Panel PC SPC350 is an industrial computer with integrated 15" or 19" touchscreen as well as P View server software. The device can also be used as a P View client or Web-client. The Panel PC may be used only as described in this manual and only with the components recommended by Endress+Hauser, which where necessary must have appropriate certification.

1.2 Installation, commissioning and operation

ControlCare Panel PC SPC350 must be installed, connected, operated and maintained according to the instructions in this manual: personnel must be authorised and suitably qualified.

Prerequisites for proper and safe operation of the product are its correct transport, correct storage, installation and mounting as well as careful operation and maintenance.

1.3 Operational safety

Operational environment

ControlCare Panel PC SPC350 fulfils the harmonised, European standards (EN) for the various environments in which is designed to operate. The permissible operating conditions as described in the technical data must be upheld.

Explosion hazardous areas

The device may not be installed in explosion hazardous areas.

Repair

Do not open the device housing. It contains no components that need be maintained or can be repaired by the user. In the event of a fault or defect, return the device to the manufacturer. Opening the device housing invalidates the guarantee.

1.4 Declaration of conformity

CE Mark

ControlCare Panel PC SPC350 fulfils the requirements of the EU Directive 89/336/EEC "Electromagnetic Compatibility" (EMC Directive).

- Interference emission: EN 50022:1998 Classe A (Product standard ITE)
EN 50011:1998 Group 1 Classe A (Product standard ISM)
- Interference Immunity: EN 50082-2:1996 for version with 15" monitor
IEC 61000-6-2: 1999 for version with 19" monitor
Interference Immunity: Industrial Environment



A declaration in accordance with the above-mention standards has been issued and can be acquired from Endress+Hauser Process Solutions AG.




1.5 Technical improvement

Endress+Hauser reserves the right to make technical improvements to its software and equipment at any time and without prior notification. Where such improvements have no effect on the operation of the equipment, they are not documented. If the improvements effect operation, a new version of the operating instructions is normally issued.




1.6 Conventions and icons

In order to highlight safety relevant or alternative operating procedures in the manual, the following conventions have been used, each indicated by a corresponding icon in the margin.






Safety conventions

Icon	Meaning
	A note highlights actions or procedures which, if not performed correctly, may indirectly affect operation or may lead to an instrument response which is not planned
	Caution! Caution highlights actions or procedures which, if not performed correctly, may lead to personal injury or incorrect functioning of the instrument
	Warning! A warning highlights actions or procedures which, if not performed correctly, will lead to personal injury, a safety hazard or destruction of the instrument

Explosion protection

Icon	Meaning
	Device certified for use in explosion hazardous area If the device has this symbol embossed on its name plate it can be installed in an explosion hazardous area in accordance with the specifications in the certificate or in a safe area
	Explosion hazardous area Symbol used in drawings to indicate explosion hazardous areas. Devices located in and wiring entering areas with the designation “explosion hazardous areas” must conform with the stated type of protection
	Safe area (non-explosion hazardous area) Symbol used in drawings to indicate, if necessary, non-explosion hazardous areas. Devices located in safe areas still require a certificate if their outputs run into explosion hazardous areas.

Electrical symbols

Icon	Meaning
	Direct voltage A terminal to which or from which a direct current or voltage may be applied or supplied
	Alternating voltage A terminal to which or from which an alternating (sine-wave) current or voltage may be applied or supplied
	Grounded terminal A grounded terminal, which as far as the operator is concerned, is already grounded by means of an earth grounding system
	Protective grounding (earth) terminal A terminal which must be connected to earth ground prior to making any other connection to the equipment
	Equipotential connection (earth bonding) A connection made to the plant grounding system which may be of type e.g. neutral star or equipotential line according to national or company practice

2 Identification

2.1 Unpacking

2.1.1 Visual check

When unpacking:

- Check the packaging of the ControlCare Panel PC SPC350 for visible transport damage
- To avoid damage when unpacking, remove the packing material with care
- Keep the original packing for any further transport of the ControlCare Panel PC SPC350
- Store the accompanying documents in a safe place

If you find that the Panel PC has been damaged in any way, do not put it into operation. In this case, contact your Endress+Hauser Sales Center. Return the device, where possible in the original packing, to us.

2.1.2 Scope of delivery

Before installing the device, please check that the delivery is complete and undamaged. The scope of delivery comprises:

- ControlCare Panel PC SPC350 with preinstalled P View software
- CD-ROM with operating instructions

Options:

- Keyboard with trackball
- Keyboard and mouse
- External floppy drive
- External DVD-RW drive

2.1.3 Storage and transport

Although ControlCare Panel PC SPC350 is of robust construction, some of its components are sensitive to heavy vibrations and shocks. For this reason, the ControlCare Panel PC SPC350 must be protected against excessive mechanical loads.

The device may only be transported in its original packing, complete with shock-absorbing components. Make sure that no condensation can form on or within the device when it is transported in cold weather or is subject to extreme temperature differences.

2.2 Device name

The device name and order code are to be found on the nameplate, which is located at the rear of the housing.

Endress+Hauser

ControlCare Panel PC SPC350-19

Order Code: SPC350-19 B3MEM11

Ser.-No.: 1M300024AB0

P : 160 VA

U : 90 - 260 V AC

f : 47 - 63 Hz

I : max 2 A

T : +5°C to +45°C

Front: IP 65

Rear: IP 20

CE

HW: 1.00.00

CH-4153 Reinach, Switzerland

— Name

— Device information

— Technical data

— Barcode

The device type can be derived from the product code by using the table below:

SPC350 ControlCare Panel PC as P View Server or Client, as appropriate									
SPC350	Monitor Size								
	15	15"							
	19	19"							
	Memory Extension								
	A	512 MB							
	B	1024 MB							
	Hard Disk								
	1	40 MB							
	2	100 MB							
	Keyboard								
	A	No keyboard							
	C	Compact keyboard with trackball							
	M	Keyboard and optical mouse							
	Hardware Extension								
	A	Without							
	B	Floppy drive via USB							
	C	DVD-RW via USB							
	PROFIBUS								
	A	No PROFIBUS							
	M	PROFIBUS Master							
	Slot Extension								
	1	Not used							
	Additional option								
	1	Not used							

3 Function and System Design

3.1 Function

ControlCare SPC350 is an industrial PC with preinstalled operating system, Internet Explorer and P View Server software. The device can also be used as a P View client or Web-client. It is supplied as part of a packaged solution that also includes a P View SCADA application.

The P View SCADA application acquires process data from the system network via OPC server. The data is then visualized in various HMI pages that are designed according to customer specifications. Since P View supports a client-server architecture, the HMI pages can be viewed in every P View client connected to the system.

The P View client or P View Web-client and the P View server communicate via Ethernet in Intranet/Internet, which can be protected with firewalls or other safety mechanisms. This allows safe, worldwide access to the HMI pages of the P View server.

Depending upon user requirements, the P View client is automatically started and the connection to the server established when the Panel PC is switched on. It is also possible to select the HMI pages that are to be displayed at a particular client. Operation and navigation is via the touchscreen.

3.2 System design

Fig. 3-1 shows a monitoring system with the 19" ControlCare Panel PC acting as P View server. Process values are collected from the system and made available to the P View clients running in the other stations. The Web-client can be installed in an internal or external network.

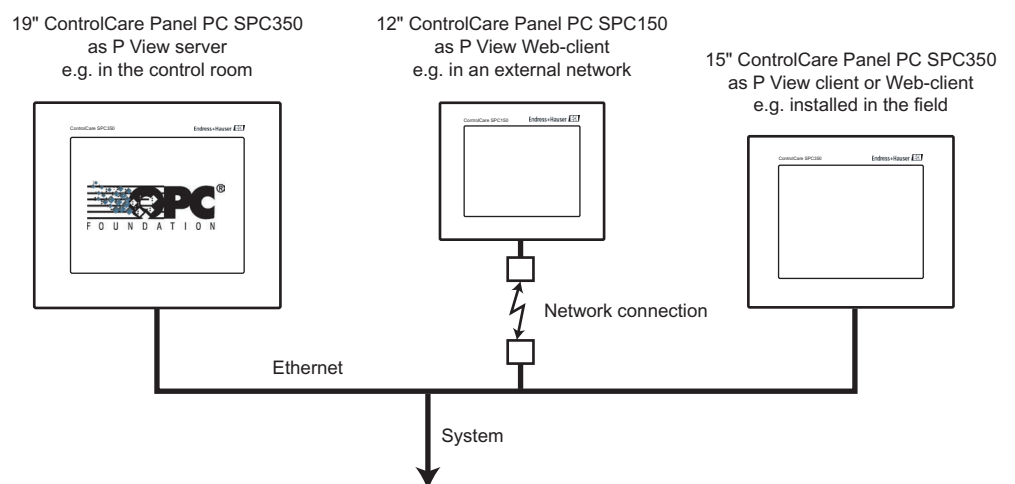


Fig. 3-1: Example of system design with P View server, client and Web-client

4 Mechanical Installation

4.1 Location

ControlCare Panel PCs are designed for use in industrial environments and can be mounted in racks, cabinets, cabinet doors, consoles or control panels. They are approved for use in closed rooms. When installing, please observe the specifications in Chapter 7, Technical Data.

4.1.1 Temperature

The Panel PC may not be subjected to direct sunlight or other source of light.

Before installing or commissioning:

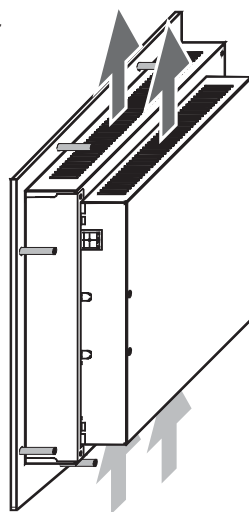
- Allow the device enough time to adapt to room temperature.
- If there is any danger of condensation, make sure that the device is absolutely dry before switching it on.

4.1.2 Ventilation

The temperature of the surrounding air during operation may not exceed +45°C (110°F). It is important that the device does not overheat during operation.

- Ventilation slits at the top and bottom of the housing allow air to circulate and cool the device during operation. Ensure that these slits are always free.
- If the device is mounted in a panel, housing etc., it is important that there is no accumulation of heat.
- Ensure that there is sufficient volume for the exchange of air within cabinets or consoles. The clearance around the sides of the Panel PC must be min. 50 mm (2"), at the back min. 20 mm (0.8").
- In the case of closed industrial housings, care should be taken that the air inside can circulate. The maximum permissible temperature for such a constellation is dependent on the ability of the housing to conduct heat and the circulation of the air inside. In all cases it must be ensured that the temperature of the surrounding air does not exceed +45°C (110°F).
- For the 19" monitor, the filter mat must be cleaned or exchanged from time to time.

15" Monitor



19" Monitor

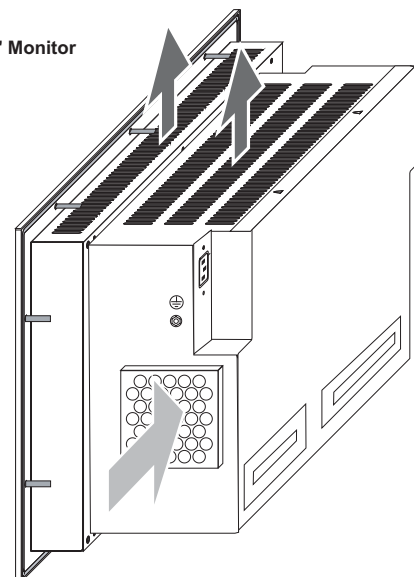


Fig. 4-1: Ventilation

4.2 Installation of the 15" monitor

4.2.1 Cut-out

Fig. 4-2 shows the dimensions in mm (in) for the cut-out

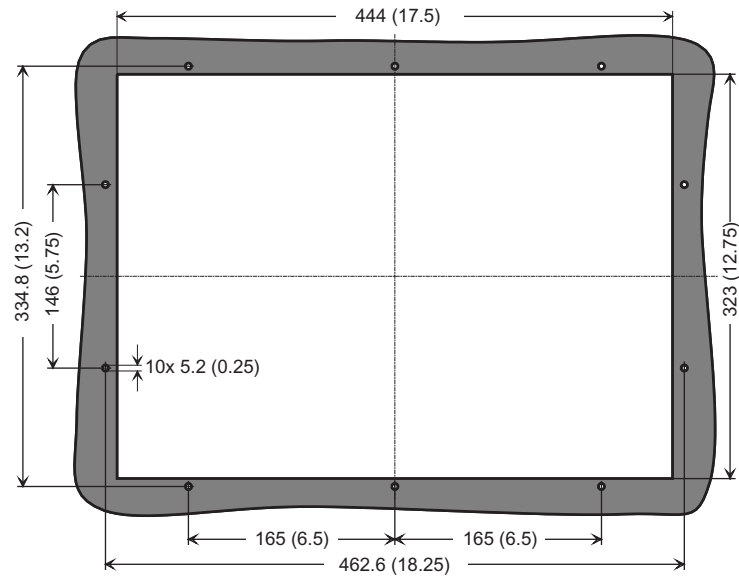


Fig. 4-2: Dimensions in mm (in) for the 15" monitor cut-out

4.2.2 Fastening and sealing

Eight threaded post bolts FHS-M5-25 (PEM) on the rear of the front panel are used to fasten the monitor in place. A 4 mm (0.2") dia. cellular rubber gasket in a machined 2 mm (0.1") groove provides the seal.

- The cut-out for installation should be selected such that it is stabilized by the bracing in the cabinet or panel. If necessary, bracing must be installed.
- Degree of protection IP 65 is attained only for plate thickness of 2 mm (0.1") or greater. It must also be insured that the panel is correctly installed by skilled personnel using the M5 nuts provided and that the rubber gasket is properly seated.

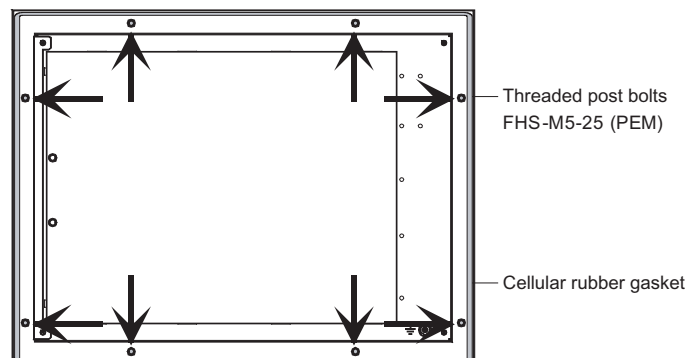


Fig. 4-3: Fastening and sealing

4.3 Installation of the 19" monitor

The monitor must be installed vertically ($\pm 5^\circ$). If it is installed at any other angle, the approval in accordance with EN 60950 is no longer valid.

4.3.1 Cut-out

Fig. 4-4 shows the dimensions in mm (in) for the cut-out

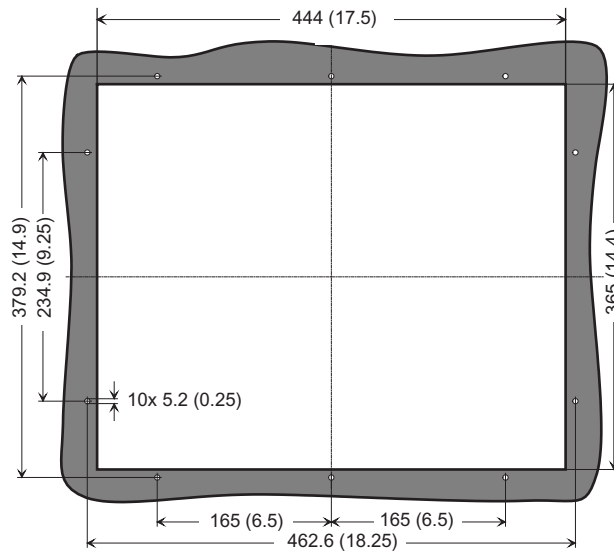


Fig. 4-4: Dimensions in mm (in) for the 19" monitor cut-out

4.3.2 Fastening and sealing

Ten threaded post bolts FHS-M5-25 (PEM) on the rear of the front panel are used to fasten the monitor in place. A 4 mm (0.2") dia. cellular rubber gasket in a machined 2 mm (0.1") groove provides the seal.

- The cut-out for installation should be selected such that it is stabilized by the bracing in the cabinet or panel. If necessary, bracing must be installed.
- Degree of protection IP 65 is attained only for plate thickness of 2 mm (0.1") or greater. It must also be insured that the panel is correctly installed by skilled personnel using the M5 nuts provided and that the rubber gasket is properly seated.

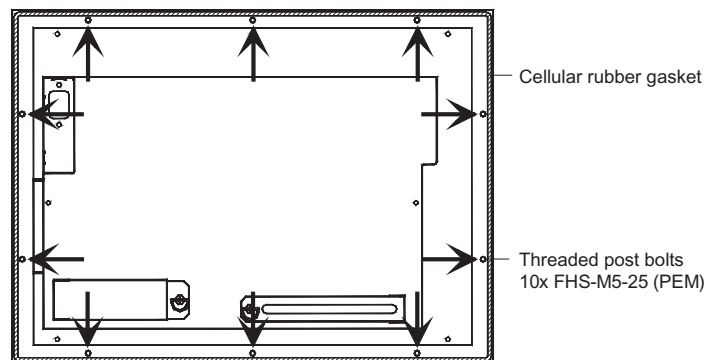


Fig. 4-5: Fastening and sealing

5 Electrical Installation

ControlCare Panel PC SPC350 with 15" monitor or 19" monitor is an "IT system" in accordance with EN 60950, with supply voltage of 24 VDC or 230 VAC respectively.

5.1 General precautions

Connection for interference free operation:

- The EMC approval requires that signal connections are made with shielded cables and metal connectors only.
- To ensure optimal electrical shielding, all plugged connections are to be screwed or locked into position.
- Signal cables may not be laid in the same cable trays as power cables.
- Before commissioning the system, check all cable connections.
- Ensure that the permissible values for voltages and signals are upheld.

Safe discharge of electrical disturbances:

- Connect the Panel PC and cabinet by the shortest possible route to a central earth.
- Ensure good electrical connection between Panel PC and cabinet (low-impedance).
- Use an earth connection conductor of minimum 2.5 mm² (0.1 in²) diameter.

Special precautions for 230 VAC devices:

- Connect the Panel PC to a socket with a ground contact.
- To disconnect the Panel PC from the power supply, pull out the plug.
- Where a building power socket is used, check that it is easily accessible and as near as possible to the Panel PC.
- For cabinet mounting, a central circuit-breaker must be provided.
- The plug on the power cord is classified as a circuit-breaker as per EN 60950.
- Pull out the plug before opening the device.

Special precautions for 24 VDC devices:

- The panel PC may be connected to a safety extra low voltage (SELV) circuit only.
- The circuit transformer must fulfil the pertinent standards.

5.2 Power supply 15" monitor

Before connecting up:

- Check that the power supply has the correct voltage.
- Protective earth: Connect the grounding point on the housing to the cabinet earth.
A M4x10 grounding point is to be found on the bottom right of the housing, see Fig. 5-1.

View from housing side:

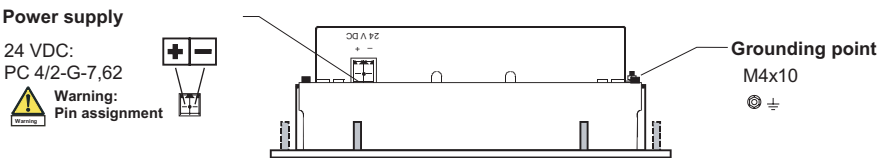


Fig. 5-1: Power connections, 15" monitor

5.2.1 24 VDC power supply

ControlCare Panel PC SPC350 with 15" monitor requires a 24 VDC (18–36 VDC) power supply. The power supply must fulfil the requirements of a safely extra low voltage (SELV) circuit to EN 60950.

5.2.2 Plug connector

The 24 VDC socket for the plug connector is to be found on the righthand side of the housing.

Socket		PC 4/2-G-7,62 2-pole, pitch: 7.62 mm Phoenix Contact
Plug		PC 4/2-ST-7,62 2-pole, pitch: 7.62 mm Phoenix Contact

Fig. 5-2: Plug connector for 24 VDC

To prepare the Panel PC for operation:

- Connect a 2-core cable to the plug supplied and insert it into socket in the Panel PC housing. Note the polarity.
- Connect the other end of the cable to a 24 VDC power supply that fulfils the requirements of a safely extra low voltage (SELV) circuit to EN 60950.

5.3 Power supply 19" monitor

Before connecting up:

- Check that the power supply has the correct voltage.
- Protective earth: Connect the grounding point on the housing to the cabinet earth.
A M4x10 grounding point is to be found on the lefthand side of the housing, see Fig. 5-3.

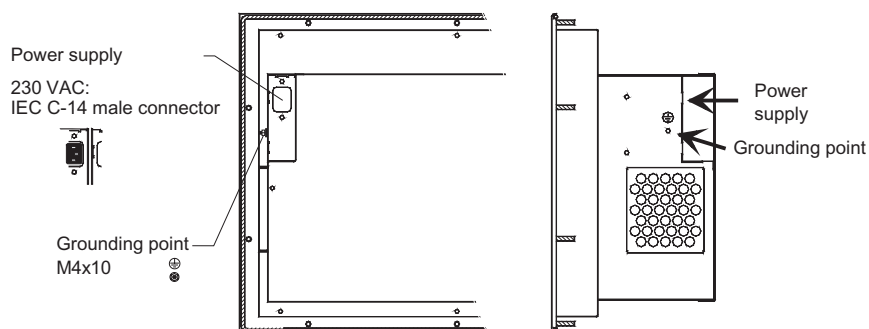


Fig. 5-3: Power connections, 19" monitor

5.3.1 230 VAC plug connector

IEC 320 connector receptacle (3-pole, male C-14 connector)

	<p>The AC/DC power pack requires a power supply of 230 VAC (90...260 VAC), autorange</p>
--	--

To prepare the Panel PC for operation:

- Plug the IEC 320 connector on the detachable IEC cord set supplied into the receptacle on the rear of the housing.
- Plug the line connector at the other end of the cord set into a line socket with a functioning ground contact.

5.4 Peripherals

ControlCare Panel PC SPC350 offers a number of ports to which peripherals can be connected.

- When using commercial peripherals (USB, PS/2 etc.), it should be noted that their immunity to electromagnetic interference is normally sufficient for an office environment only.
- Commercial peripherals are suitable for use during commissioning and service. If an external mouse and keyboard are required during operation, care should be taken that they have a EMC approval (CE mark) for use in an industrial environment.
- An external keyboard and the touchscreen can be used in parallel.

5.4.1 Access 15" monitor

The connectors for the peripherals are to be found on the lefthand side of the housing, see Fig. 5-4:

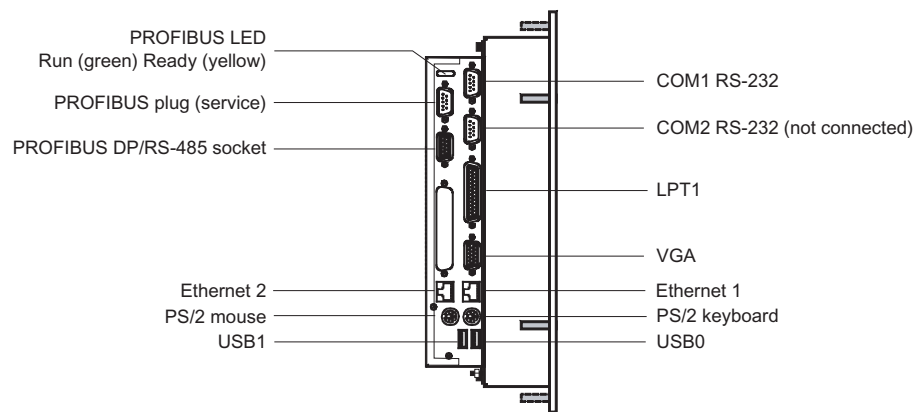


Fig. 5-4: Peripheral connectors, 15" monitor

5.4.2 Access 19" monitor

The connectors for the peripherals are to be found on the lefthand side of the housing, see Fig. 5-5:

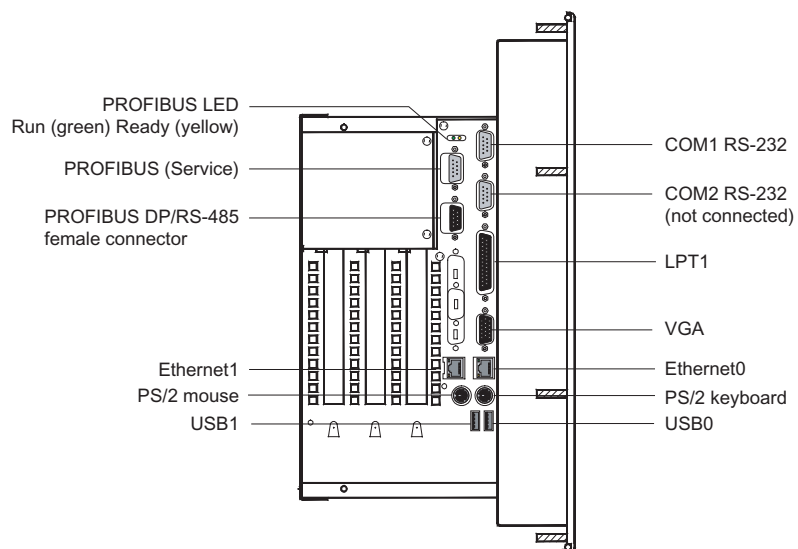


Fig. 5-5: Peripheral connectors, 19" monitor

5.4.3 Keyboard

Various keyboard types can be connected to the ControlCare Panel PC SPC350:

- PS/2 keyboard
connected to the PS/2 keyboard socket.
- USB keyboard
connected to the USB port:
for first-time use it is usually necessary to install a USB keyboard driver.

5.4.4 Mouse

Various mouse types can be connected to the ControlCare Panel PC SPC350:

- Serial mouse
connected to the COM1 interface: the corresponding mouse driver must be installed and configured.
- PS/2 mouse (or pointing device)
connected to the PS/2 mouse socket.
- USB mouse
connected to the USB port:
for first-time use it is usually necessary to install a USB mouse driver.

5.4.5 Printer

A printer can be connected to the LPT1 interface.

5.4.6 Monitor

An external monitor or various other display types can be connected to the VGA interface.



Note

- It is possible that the use of an external monitor cause an loss of touchscreen picture quality.
- We recommend that external monitors are used for service and diagnosis only.

5.4.7 Ethernet network

ControlCare Panel PC SPC350 is connected to an Ethernet network via the RJ-45 socket.

- For computer-computer connections, use a crossed Ethernet cable.
- For computer-switch connections, use a standard Ethernet cable.

5.4.8 Hardware extensions

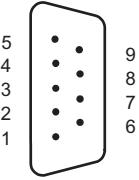
A floppy or DVD-RW drive can be connected to the USB port. The following options are available:

- External floppy drive
- External DVD-RW drive.

5.5 External interfaces

5.5.1 Serial port COM1 [RS-232]

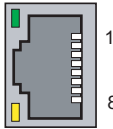
ControlCare Panel PC SPC350 has a serial port (RS-232, V24) with a 9-pin Sub-D male connector labelled "COM 1".

Sub-D male connector 9-pin	Pin	Signal	Description	Input/ Output
	1	DCD	Data Carrier Detect	I
	2	RxD	Receive Data	I
	3	TxD	Transmit Data	O
	4	DTR	Data Terminal Ready	O
	5	GND	Signal Ground	—
	6	DSR	Data Set Ready	I
	7	RTS	Request to Send	O
	8	CTS	Clear to Send	I
	9	RI	Ring Indicator	I

Tab. 5-1: COM1 [RS-232 serial port]

5.5.2 Ethernet ports


ControlCare Panel PC SPC350 has two Ethernet ports with RJ-45 10Base-T female connector labelled "Ethernet". The controller supports transmission rates of 10 MBit/s and 100 MBit/s.

10Base-T RJ-45 CAT5	Pin	Signal	Description	Input/Output
	1	TxD+	10Base-T Transmit	Differential Output
	2	TxD-	10Base-T Transmit	Differential Output
	3	RxD+	10Base-T Receive	Differential Input
	4	N.C.	not connected	—
	5	N.C.	not connected	—
	6	RxD-	10Base-T Receive	Differential Input
	7	N.C.	not connected	—
	8	N.C.	not connected	—
		LED green	Link	
		LED yellow	Activity	

Tab. 5-2: Ethernet

5.5.3 USB ports

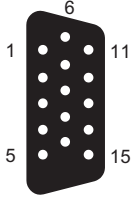
ControlCare Panel PC SPC350 has two Type A 4-pin USB receptacles (double-decker) labelled "USB A" and "USB B",

USB Type A 4-pin	USB A		USB B		Description
	1	VCC	1	VCC	Power (+5V / 0,5A)
	2	USB0-	2	USB1-	Data
	3	USB0+	3	USB1+	Data
	4	GND	4	GND	Ground

Tab. 5-3: USB [double]

5.5.4 VGA port


ControlCare Panel PC SPC350 has a 15-pin HD-Sub-D port labelled "VGA".

HD-Sub-D female connector, 15-pin	Pin	Signal	Pin	Signal	Pin	Signal
	1	RED	6	GND	11	N.C.
	2	GREEN	7	GND	12	DDC DAT
	3	BLUE	8	GND	13	HSYNC
	4	N.C.	9	VCC_VGA (+5V)	14	VSYNC
	5	GND	10	GND	15	DDC CLK

Tab. 5-4: VGA [CRT]

5.5.5 PS/2 mouse port


ControlCare Panel PC SPC350 has a 6-pin MiniDIN port labelled "PS/2 mouse" for the connection of an external PS/2 mouse.

MiniDIN female connector, 6-pin	Pin	Signal	Description	Input/Output
	1	MSDAT	Mouse Data	I/O
	2	N.C.	Not connected	—
	3	GND	Ground	—
	4	VCC_PS/2 (+5V)	Power	O
	5	MSCLK	Mouse Clock	I/O
	6	N.C.	Not connected	—

Tab. 5-5: PS/2 mouse

5.5.6 PS/2 keyboard port

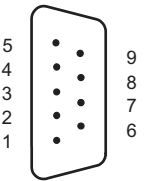
ControlCare Panel PC SPC350 has a 6-pin MiniDIN port labelled "PS/2 keyb" for the connection of an external PS/2 keyboard.

MiniDIN female connector, 6-pin	Pin	Signal	Description	Input/Output
	1	KBDAT	Keyboard Data	I/O
	2	MSDAT	Mouse Data	—
	3	GND	Ground	—
	4	VCC_PS/2 (+5V)	Power	O
	5	KBCLK	Keyboard Clock	I/O
	6	MSCLK	Mouse Clock	—

Tab. 5-6: PS/2 keyboard

5.5.7
PROFIBUS DP port

ControlCare Panel PC SPC350 has an optional 9-pin Sub-D port labelled "PROFIBUS" for the connection to a PROFIBUS DP network. The PC is configured as a PROFIBUS DP master .

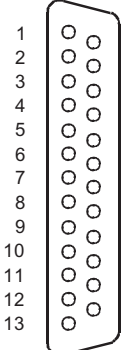
Sub-D female connector, 9-pin	Pin	Description	Signal	I/O
	1	—	Not connected	—
	2	—	Not connected	—
	3	RxD/TxD-P	Data Line	In/Out
	4	CNTR-P	Repeater Control Signal	Out
	5	DGND	Data Reference Potential	—
	6	VP	Power Supply positive	—
	7	—	Not connected	—
	8	RxD/TxD-N	Data Line inverse	In/Out
	9	—	Not connected	—

Tab. 5-7: PROFIBUS DP (RS-485) port

The second PROFIBUS DP port is for service purposes only.

5.5.8
Parallel LPT1 port

ControlCare Panel PC SPC350 has a parallel LPT1 port that is PC/AT compatible, the signals of which conform to the Centronics standard. Connection is via a 25-pin Sub-D socket labelled "LPT1".

Sub-D-Buchse, 25-polig	Pin	Signal	Bedeutung	I/O	Pin	Signal	Bedeutung	I/O
	1	STB-	Strobe	Out	14	AFD-	Auto Feed	Out
	2	PD0	Datenbit 0	I/O	15	ERR-	Error	In
	3	PD1	Datenbit 1	I/O	16	INIT-	Init Printer	Out
	4	PD2	Datenbit 2	I/O	17	SLIN-	Select Input	Out
	5	PD3	Datenbit 3	I/O	18	GND	Signal Ground	—
	6	PD4	Datenbit 4	I/O	19	GND	Signal Ground	—
	7	PD5	Datenbit 5	I/O	20	GND	Signal Ground	—
	8	PD6	Datenbit 6	I/O	21	GND	Signal Ground	—
	9	PD7	Datenbit 7	I/O	22	GND	Signal Ground	—
	10	ACK-	Acknowledge	In	23	GND	Signal Ground	—
	11	BUSY+	Busy	In	24	GND	Signal Ground	—
	12	PE+	Paper End	In	25	GND	Signal Ground	—
	13	SLCT+	Select	In				

Tab. 5-8: LPT1 parallel printer port

6 Commissioning and Operation

6.1 Start-up

The operating system Microsoft Windows XP Professional MUI, Microsoft Internet Explorer and the P View software are preinstalled on the ControlCare Panel PC SPC350.

The P View server and clients or Web-clients communicate via Ethernet. In the case of a client, the P View internal communication protocol is used, in the case of a Web-client, Internet Explorer. Depending upon user specifications, the clients or Web-clients are started and the connection to the server established automatically when the Panel PC is switched on. Alternatively, the Web-client connection is made, as in Internet, by entering the P View server URL in Internet Explorer.

6.2 Operation

Operation and navigation is done with the touchscreen at the front of the Panel PC. Functions are called and views changed by touching the corresponding buttons and menu bars on the graphical user interface.

The function and operation of the HMI pages is described in an application-specific operating manual that is supplied with the associated P View SCADA application.



Caution

- Do not use metallic or pointed objects to operate the touchscreen – they will damage it.

6.3 Maintenance

Fans, drives and the display backlight should be checked for correct function at regular intervals.

6.3.1 Display backlights

The display backlights have a limited useful life. Their life time depends upon the conditions under which they are operated, e.g. on/off cycle times, operating temperature, symmetry of the lamp supply voltage. The times indicated below are typical values taken from the manufacturer's data sheets. We recommend that the backlights are replaced after this time has elapsed.

Property	Operating conditions
Life time of display backlights (MTBF)	min. 50.000 h

When it becomes necessary to exchange the backlights, please contact your Endress+Hauser Service department for more information.

7 Technical Data

7.1 Panel PC Specification

General

Attribute	15" ControlCare Panel PC SPC350	19" ControlCare Panel PC SPC350
CPU	Pentium III 1266 MHz	Pentium III 1266 MHz
Memory	512 MB SDRAM (standard) 1024 MB SDRAM (option)	512 MB SDRAM (standard) 1024 MB SDRAM (option)
Hard disk drive	40 GB (standard) 100 GB (optional)	40 GB (standard) 100 GB (optional)
Floppy-disk drive (3½")	Optional, via USB port	Optional, via USB port
DVD-RW drive	Optional, via USB port	Optional, via USB port

Display

Attribute	15" ControlCare Panel PC SPC350	19" ControlCare Panel PC SPC350
Screen size	15.0" diagonal	19" diagonal
Type	Active matrix LCD TFT color	Active matrix LCD TFT color
Resolution	1024 x 768 pixel, XGA	1280 x 1024 pixel
Operation	Touchscreen	Touchscreen

External interfaces

Attribute	15" ControlCare Panel PC SPC350	19" ControlCare Panel PC SPC350
Communication	1x serial RS-232C (COM1)	1x serial RS-232C (COM1)
	2x Ethernet 10/100 Base T	2x Ethernet 10/100 Base T
	PROFIBUS card (optional)	PROFIBUS card (optional)
Accessories	1x VGA (for external screen)	1x VGA (for external screen)
	1x PS/2 (for mouse)	1x PS/2 (for mouse)
	1x PS/2 (for keyboard)	1x PS/2 (for keyboard)
	1x parallel LPT (for printer)	1x parallel LPT (for printer)
	2x USB 1.1	2x USB 1.1

Software

Attribute	15" ControlCare Panel PC SPC350	19" ControlCare Panel PC SPC350
Operating system	Windows XP Professional MUI	Windows XP Professional MUI
ControlCare P View	Server, client or Web-client, according to application	Server, client or Web-client, according to application

Power Supply

Attribute	15" ControlCare Panel PC SPC350	19" ControlCare Panel PC SPC350
Power supply	18...36 VDC (SELV)	90...260 VAC (autorange)
Protection to IEC 60950	–	Class I
Power consumption	Max. 100 W	Max. 160 VA

7.2 Operating Conditions

Mechanical

Attribute	15" ControlCare Panel PC SPC350	19" ControlCare Panel PC SPC350
Degree of protection	Front IP 65 Rear: IP 20	Front: IP 65 Rear: IP 20
Vibrational resistance	to IEC 60068-2-6 10 Hz to 58 Hz: ±0.075 mm DA 58 Hz to 150 Hz: 10 m/s ²	to IEC 60068-2-6 ±0.075 mm DA 10 m/s ²
Shock resistance	to IEC 60068-2-7 10g, 11 ms, 3 shocks	to IEC 60068-2-7 10g, 11 ms, 3 shocks

Environmental

Attribute	15" ControlCare Panel PC SPC350	19" ControlCare Panel PC SPC350
Ambient temperature Operation: Storage:	with natural convection +5°C to +45°C (vertical) -20°C to +60°C	
Relative humidity	max. 50% at +40°C, non-condensing max. 90% at +20°C, non-condensing	
Surrounding air	free from corrosive gases	
EMC Interference emission: Interference immunity:	to Directive89/336/EWG EN 55011/EN 55022, limit Class A IEC 50082-2: 1996	to Directive89/336/EWG EN 55011/EN 55022, limit Class A IEC 61000-6-2: 1999

7.3 Mechanical Construction

General

Attribute	15" ControlCare Panel PC SPC350	19" ControlCare Panel PC SPC350
Mounting	Designed for mounting in panel, cabinet or industrial monitor enclosure	
Front panel	Steel baseplate with laminated plastic foil	Aluminium baseplate with laminated plastic foil
Housing	1 mm galvanized steel plate	1 mm galvanized steel plate
Cooling	CPU and device cooler	CPU and device cooler
Weight	7.3 kg	12.7 kg
Overall dimensions	483mm x 355mm x 90mm (19" x 14" x 3.5") for details see Page 6	483mm x 400mm x 206mm (19" x 15.5" x 8.1") for details see Page 7

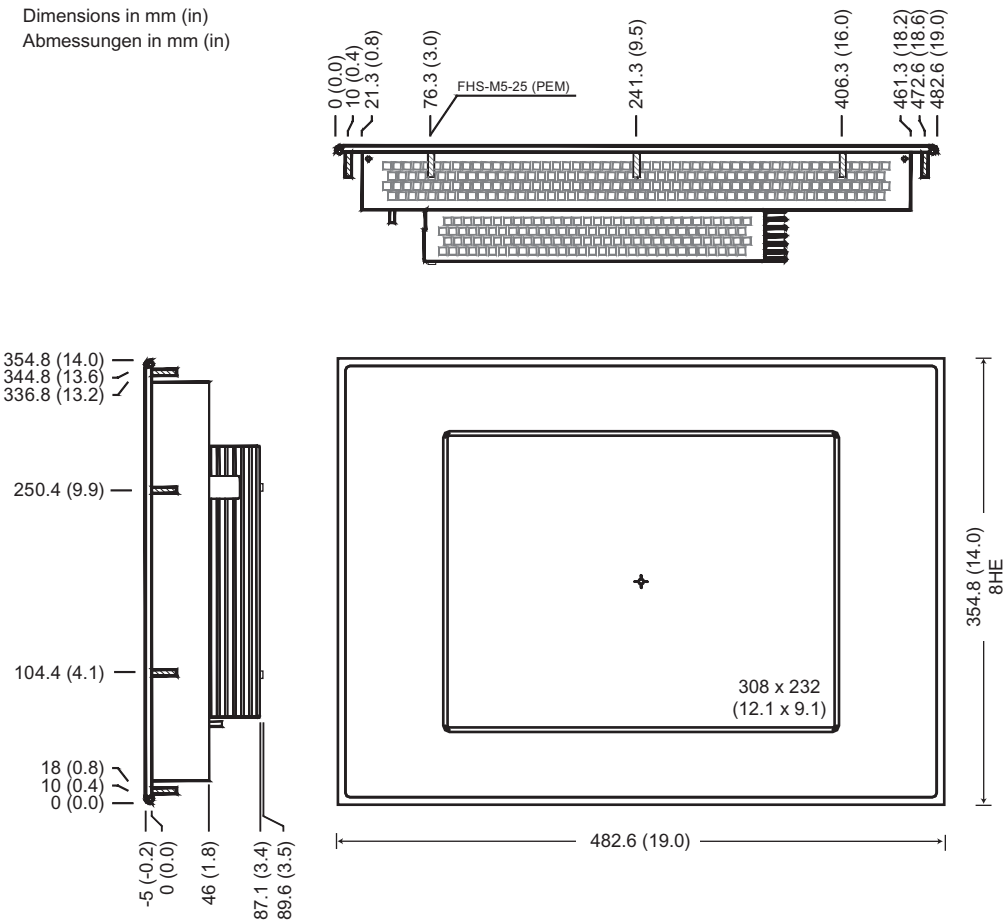
7.4 Certificates and Approvals

Approval

Attribute	15" ControlCare Panel PC SPC350	19" ControlCare Panel PC SPC350
CE Certificate	EMC conformity	EMC conformity
UL Certificate	yes	yes

ControlCare Panel PC SPC350, 15" Monitor

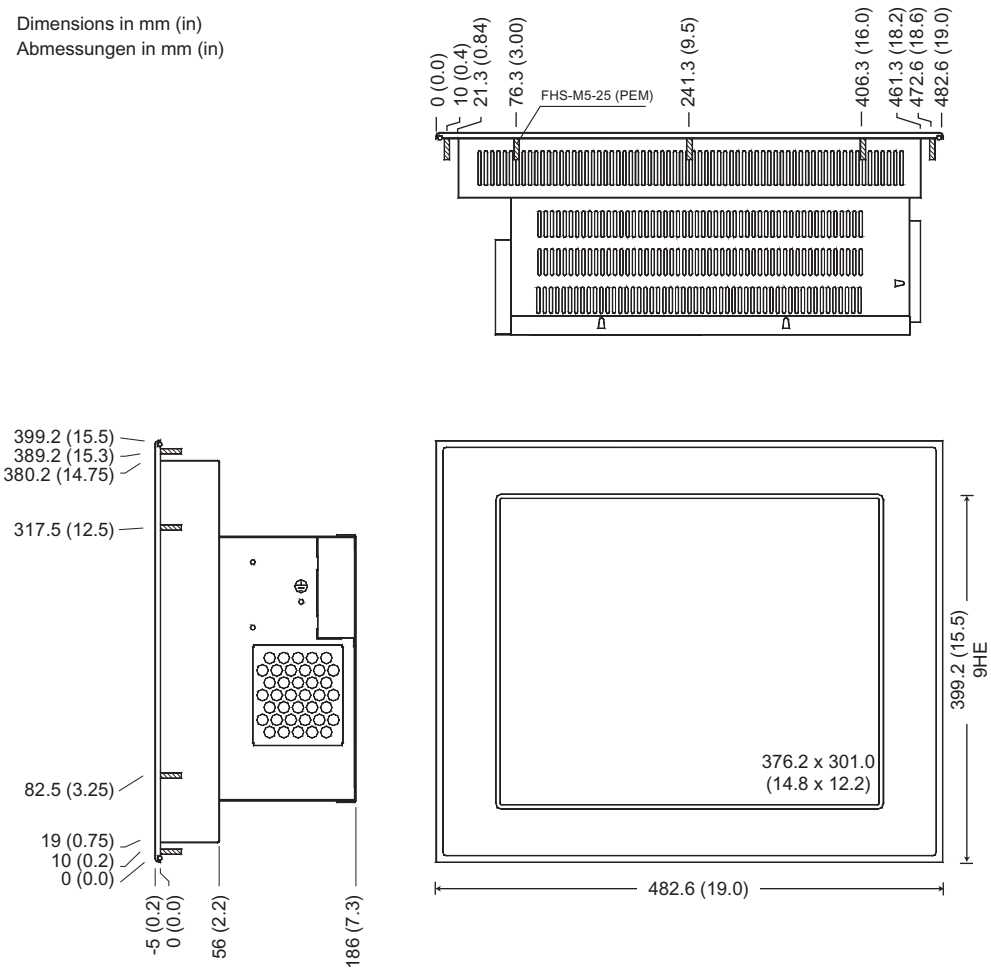
Dimensions



ControlCare Panel PC SPC350, 19" Monitor

Dimensions

Dimensions in mm (in)
Abmessungen in mm (in)



Index

!

15" Monitor 22

19" Monitor 23

C

Commissioning 3

Cut-out 9, 10

D

Device name 6

Dimensions 22, 23

E

Electrical symbols 4

Ethernet network 15

Ethernet port 16

Explosion protection 4

F

Fastening 9, 10

Function 7

H

Hardware extensions 15

I

Identification 5

Installation 3, 11

K

Keyboard 15

L

Location 8

M

Maintenance 19

Monitor 15

Mouse 15

O

Operation 3, 19

P

Printer 15

PS/2 keyboard port 17

S

Safety conventions 4

Scope of delivery 5

Sealing 9, 10

Serial interface 16

SPC350 22, 23

Specification 20

Start-up 19

System design 7

T

Technical data 20

Temperature 8

U

USB port 16

V

Ventilation 8

VGA port 17

www.endress.com/worldwide
