General information	TP900 Comfort
Product type designation	1P900 Collifort
Display  Design of display	TFT
Design of display	
Screen diagonal	9 in
Display width	195 mm
Display height	117 mm
Number of colors	16 777 216
Resolution (pixels)	000 Pissal
Horizontal image resolution	800 Pixel
Vertical image resolution  Parallichting	480 Pixel
Backlighting (at 25 °C)	80 000 h
MTBF backlighting (at 25 °C)     Packlight dimmable	
<ul> <li>Backlight dimmable</li> <li>Control elements</li> </ul>	Yes; 0-100 %
Keyboard fonts  ● Function keys	
Number of function keys	0
Number of function keys with LEDs	0
-	No
• Keys with LED	
• System keys	No
Numeric keyboard	Yes; Onscreen keyboard
alphanumeric keyboard  Touch engration	Yes; Onscreen keyboard
Touch operation  ● Design as touch screen	Yes
Expansions for operator control of the process	162
• DP direct LEDs (LEDs as S7 output I/O)	
— F1Fx	0
• Direct keys (keys as S7 input I/O)	
— F1Fx	0
<ul> <li>Direct keys (touch buttons as S7 input I/O)</li> </ul>	40
Installation type/mounting	40
	vertical
Mounting position  Mounting in partrait format possible	
Mounting in portrait format possible	Yes
Mounting in landscape format possible	Yes
maximum permissible angle of inclination without external ventilation	35°
Supply voltage	
Type of supply voltage	DC
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
•	

permissible range, upper limit (DC)	28.8 V
Input current	20.0 ¥
Current consumption (rated value)	0.75 A
Starting current inrush I <sup>2</sup> t	0.5 A <sup>2</sup> ·s
Power	0.011 0
Active power input, typ.	18 W
Processor	
Processor type	X86
Memory	
Flash	Yes
RAM	Yes
Memory available for user data	12 Mbyte
Type of output	
Info LED	No
Power LED	No
Error LED	No
Acoustics	
• Buzzer	No
• Speaker	Yes
Time of day	
Clock	
• Hardware clock (real-time)	Yes
	Yes
• Hardware clock (real-time)	Yes Yes; Back-up duration typically 6
<ul><li> Hardware clock (real-time)</li><li> Software clock</li><li> retentive</li></ul>	Yes; Back-up duration typically 6 weeks
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable</li> </ul>	Yes Yes; Back-up duration typically 6
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> </ul>	Yes; Back-up duration typically 6 weeks Yes
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable</li> <li>Interfaces</li> <li>Number of industrial Ethernet interfaces</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch)
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> </ul>	Yes Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> <li>Number of USB interfaces</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0 2; USB 2.0
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> <li>Number of USB interfaces</li> <li>USB Mini B</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0 2; USB 2.0 1; 5-pole
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> <li>Number of USB interfaces</li> <li>USB Mini B</li> <li>Number of 20 mA interfaces (TTY)</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0 2; USB 2.0 1; 5-pole 0
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> <li>Number of USB interfaces</li> <li>USB Mini B</li> <li>Number of 20 mA interfaces (TTY)</li> <li>Number of parallel interfaces</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0 2; USB 2.0 1; 5-pole 0 0
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> <li>Number of USB interfaces</li> <li>USB Mini B</li> <li>Number of parallel interfaces</li> <li>Number of other interfaces</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0 2; USB 2.0 1; 5-pole 0 0
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> <li>Number of USB interfaces</li> <li>USB Mini B</li> <li>Number of 20 mA interfaces (TTY)</li> <li>Number of other interfaces</li> <li>Number of SD card slots</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0 2; USB 2.0 1; 5-pole 0 0 0
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> <li>Number of USB interfaces</li> <li>USB Mini B</li> <li>Number of 20 mA interfaces (TTY)</li> <li>Number of other interfaces</li> <li>Number of SD card slots</li> <li>With software interfaces</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0 2; USB 2.0 1; 5-pole 0 0
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> <li>Number of USB interfaces</li> <li>USB Mini B</li> <li>Number of 20 mA interfaces (TTY)</li> <li>Number of other interfaces</li> <li>Number of SD card slots</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0 2; USB 2.0 1; 5-pole 0 0 0
<ul> <li>Hardware clock (real-time)</li> <li>Software clock</li> <li>retentive</li> <li>synchronizable Interfaces</li> <li>Number of industrial Ethernet interfaces</li> <li>Number of RS 485 interfaces</li> <li>Number of RS 422 interfaces</li> <li>Number of RS 232 interfaces</li> <li>Number of USB interfaces</li> <li>USB Mini B</li> <li>Number of 20 mA interfaces (TTY)</li> <li>Number of parallel interfaces</li> <li>Number of SD card slots</li> <li>With software interfaces</li> <li>Industrial Ethernet</li> </ul>	Yes; Back-up duration typically 6 weeks Yes  1; 2 ports (switch) 1; RS 422 / 485 combined 0; together with RS 485 0 2; USB 2.0 1; 5-pole 0 0 0 2 No

PROFINET         Yes           Supports protocol for PROFINET IO         Yes           IRT         Yes; As of WinCC V12           PROFIBUS         Yes           MPI         Yes           Protocols (Ethernet)         Yes           • TCP/IP         Yes           • DHCP         Yes           • SNMP         Yes           • DCP         Yes           • LLDP         Yes           ***BE characteristics**         *****           • HTTP         Yes           • HTTPS         Yes           • HTTML         Yes           • ACTIVE X         Yes </th <th>Protocols</th> <th></th>	Protocols	
RT	PROFINET	Yes
PROFIBUS         Yes           MPI         Yes           Protocols (Ethernet)         Yes           TCP/IP         Yes           DHCP         Yes           SNMP         Yes           DCP         Yes           LLDP         Yes           WEB characteristics         WEB characteristics           HTTP         Yes           HTTPS         Yes           HTML         Yes           HTML         Yes           CSS         Yes           Active X         Yes           JavaScript         Yes           Java VM         No           Redundancy mode         Yes; As of WinCC V12           Further protocols         Yes           CAN         No           MRP         Yes; As of WinCC V12           Further protocols         Yes           CAN         No           MODBUS         Yes           EMC         Yes           Emission of radio interference acc, to EN 55 011         Yes           Limit class A, for use in inclustrial areas         Yes           Limit class A, for use in residential areas         Yes           Limit class of protection	Supports protocol for PROFINET IO	Yes
MPI         Yes           Protocols (Ethernet)         Yes           • TCP/IP         Yes           • DHCP         Yes           • SNMP         Yes           • DCP         Yes           • LLDP         Yes           WEB characteristics         WES           • HTTP         Yes           • HTTML         Yes           • HTML         Yes           • XMI.         Yes           • XMI.         Yes           • ACTIVE X         Yes           • JavaScript         Yes           • Java VM         No           Redundancy mode         Yes; As of WinCC V12           • MRP         Yes; As of WinCC V12           Further protocols         Yes           • CAN         No           • EtherNet/IP         Yes           • MODBUS         Yes           EMC         Emission of radio interference acc. to EN 55 011           • Limit class A, for use in industrial areas         No           • Limit class B, for use in inesidential areas         No           • Degree and class of protection         PG5           Functiosure Type 4x at the front         Yes           IP (crear) <th< td=""><td>IRT</td><td>Yes; As of WinCC V12</td></th<>	IRT	Yes; As of WinCC V12
Protocols (Ethemet)  • TCP/IP  • DHCP  DHCP  SNMP  SNMP  Pes  LLDP  Yes  LLDP  WEB characteristics  HTTP  HTTP  Yes  HTTRS  Yes  HTML  XML  XML  Yes  CSS  Active X  JavaScript  Java VM  Redundancy mode  MRP  SHERMEN Yes; As of WinCC V12  Further protocols  CAN  CAN  No  EtherNet/IP  MODBUS  EtherNet/IP  Limit class A, for use in industrial areas  Limit class B, for use in residential areas  Personal Canadards, approvals, certificates  Enclosure Type 4 at the front  IP (rear)  EtherNet/IP  Pes  CE mark  CE mark  CE mark  CULus  Yes  CCLUus  Yes  CES  CYES  Yes  Yes  Yes  Yes  CES  Yes  Yes  CES  CES  Yes  CES  Yes  CES  Yes  CES  Yes  CES  CES  CYES  YES  YES  YES  YES  YE	PROFIBUS	Yes
● TCP/IP         Yes           ● DHCP         Yes           ● SNMP         Yes           ● DCP         Yes           ● LLDP         Yes           WEB characteristics           ● HTTP         Yes           ● HTTP         Yes           ● HTML         Yes           ● HTML         Yes           ● HTML         Yes           ● XML         Yes           ● Active X         Yes           ● JavaScript         Yes           ● Java VM         No           Redundancy mode         Yes; As of WinCC V12           ● WRP         Yes; As of WinCC V12           Further protocols         O.           ● CAN         No           ● EtherNet/IP         Yes           ● MODBUS         Yes           EMC         Yes           EMC         Emission of radio interference acc. to EN 55 011           ● Limit class A, for use in industrial areas         Yes           ● Limit class B, for use in residential areas         No           Degree and class of protection         IPG5           Enclosure Type 4 at the front         Yes           Enclosure Type 4x at the front         Yes	MPI	Yes
● DHCP         Yes           ● DCP         Yes           ● LLDP         Yes           WEB characteristics           ● HTTP         Yes           ● HTTPS         Yes           ● HTML         Yes           ● XML         Yes           ● XML         Yes           ● Active X         Yes           ● JavaScript         Yes           ● Java VM         No           Redundancy mode           ● MRP         Yes; As of WinCC V12           Further protocols           ○ CAN         No           ● EtherNet/IP         Yes           ● MODBUS         Yes           EMC         Yes           Emission of radio interference acc. to EN 55 011         Yes           ● Limit class A, for use in industrial areas         No           Degree and class of protection         IP (at the front)           IP (at the front)         IP65           Enclosure Type 4 at the front         Yes           Enclosure Type 4x at the front         Yes           IP (rear)         IP20           Standards, approvals, certificates         Yes           CE mark         Yes <t< td=""><td>Protocols (Ethernet)</td><td></td></t<>	Protocols (Ethernet)	
• SNMP         Yes           • DCP         Yes           • LLDP         Yes           WEB characteristics           • HTTP         Yes           • HTTPS         Yes           • HTML         Yes           • XML         Yes           • XML         Yes           • Active X         Yes           • JavaScript         Yes           • Java VM         No           Redundancy mode         Yes; As of WinCC V12           • MRP         Yes; As of WinCC V12           Further protocols         Yes           • CAN         No           • EtherNet/IP         Yes           • MODBUS         Yes           • MC         Yes           • Limit class A, for use in industrial areas         No           • Limit class B, for use in industrial areas         No           • Limit class B, for use in residential areas         No           • Limit class B, for use in residential areas         Yes           • Limit class A, for use in industrial areas         No           • Limit class B, for use in residential areas         Yes           • Limit class B, for use in residential areas         No           • CE mark	• TCP/IP	Yes
● DCP         Yes           ▶ LLDP         Yes           ₩EB characteristics         Yes           ● HTTP         Yes           ● HTTPS         Yes           ● HTML         Yes           • XML         Yes           • CSS         Yes           • Active X         Yes           • Java Script         Yes           • Java VM         No           Redundancy mode         Yes; As of WinCC V12           • MRP         Yes; As of WinCC V12           Further protocols         Yes           • CAN         No           • EtherNet/IP         Yes           • MODBUS         Yes           EMC         Yes           • Limit class A, for use in industrial areas         No           • Limit class B, for use in industrial areas         No           • Limit class B, for use in residential areas         No           • Limit class B, for use in residential areas         Yes           • Limit class A, for use in industrial areas         No           • Limit class B, for use in residential areas         No           • Limit class B, for use in residential areas         No           • Limit class B, for use in residential areas         No </td <td>• DHCP</td> <td>Yes</td>	• DHCP	Yes
● LLDP         Yes           WEB characteristics           ● HTTP         Yes           ● HTTPS         Yes           ● HTML         Yes           ● XML         Yes           ● XML         Yes           ● Active X         Yes           ● JavaScript         Yes           ● Java VM         No           Redundancy mode         Yes; As of WinCC V12           ● MRP         Yes; As of WinCC V12           Further protocols         Yes           ● CAN         No           ● EtherNet/IP         Yes           ● MODBUS         Yes           EMC         Yes           Emission of radio interference acc. to EN 55 011         Yes           ● Limit class A, for use in industrial areas         No           Degree and class of protection         IP           IP (at the front)         IP65           Enclosure Type 4x at the front         Yes           IP (rear)         IP20           Standards, approvals, certificates         Yes           CE mark         Yes           CULus         Yes           RCM (formerly C-TICK)         Yes	• SNMP	Yes
WEB characteristics           ● HTTP         Yes           ● HTTPS         Yes           ● HTML         Yes           ● XML         Yes           ● XML         Yes           ● CSS         Yes           ● Active X         Yes           ● JavaScript         Yes           ● Java VM         No           Redundancy mode         Yes; As of WinCC V12           ● MRP         Yes; As of WinCC V12           Further protocols         Yes           ● CAN         No           ● EtherNet/IP         Yes           ● MODBUS         Yes           EMC         Yes           Emission of radio interference acc. to EN 55 011         Yes           ● Limit class A, for use in industrial areas         Yes           ● Limit class B, for use in residential areas         No           Degree and class of protection         IP (at the front)         IP65           Enclosure Type 4x at the front         Yes           IP (rear)         IP20           Standards, approvals, certificates         Yes           CE mark         Yes           CULus         Yes           RCM (formerly C-TICK)         Yes <td>• DCP</td> <td>Yes</td>	• DCP	Yes
<ul> <li>● HTTP</li> <li>● HTTPS</li> <li>● Yes</li> <li>● HTML</li> <li>● Yes</li> <li>● XML</li> <li>● XML</li> <li>● CSS</li> <li>● Active X</li> <li>● JavaScript</li> <li>● Java VM</li> <li>● MRP</li> <li>● MRP</li> <li>● CAN</li> <li>● CAN</li> <li>● EtherNet/IP</li> <li>● MODBUS</li> <li>● EMC</li> <li>Emission of radio interference acc. to EN 55 011</li> <li>● Limit class A, for use in industrial areas</li> <li>● Limit class B, for use in residential areas</li> <li>Pogere and class of protection</li> <li>IP (at the front)</li> <li>IP (at the front)</li> <li>Enclosure Type 4 at the front</li> <li>IP (rear)</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>Ves</li> <li>CE mark</li> <li>Ves</li> <li>CE mark</li> <li>CE mark</li> <li>CF mark</li> <li>CF mark</li> <li>CF mark</li> <li>CF mere</li> <li>Yes</li> <li>CF mark</li> <li>CF mark</li> <li>CF mark</li> <li>CF mere</li> <li>CF mere</li> <li>CF mere</li> <li>CF mark</li> <li>CF mere</li> <li>ME S</li> <li>CF mere</li> <li>MERE</li> <li>Mere</li></ul>	• LLDP	Yes
● HTTPS       Yes         ● HTML       Yes         ● XML       Yes         ● CSS       Yes         ● Active X       Yes         ● JavaScript       Yes         ● Java VM       No         Redundancy mode         *** Yes, As of WinCC V12         Eurther protocols         ● CAN       No         ● EtherNet/IP       Yes         ● MODBUS       Yes         EMC       ***         Emission of radio interference acc. to EN 55 011         ● Limit class A, for use in industrial areas       Yes         ● Limit class B, for use in industrial areas       No         Degree and class of protection       IP65         IP (at the front)       IP65         Enclosure Type 4 at the front       Yes         IP (rear)       IP20         Standards, approvals, certificates       Yes         CE mark       Yes         cULus       Yes         RCM (formerly C-TICK)       Yes	WEB characteristics	
● HTML         Yes           ● XML         Yes           ● CSS         Yes           ● Active X         Yes           ● JavaScript         Yes           ● Java VM         No           Redundancy mode           ● MRP         Yes; As of WinCC V12           Further protocols           ● CAN         No           ● EtherNet/IP         Yes           ● MODBUS         Yes           EMC         Yes           Limit class A, for use in industrial areas         Yes           ● Limit class B, for use in residential areas         No           Degree and class of protection         IP65           Enclosure Type 4 at the front         Yes           Enclosure Type 4x at the front         Yes           IP (rear)         IP20           Standards, approvals, certificates         Yes           CE mark         Yes           cULus         Yes           RCM (formerly C-TICK)         Yes	• HTTP	Yes
• XML       Yes         • Active X       Yes         • JavaScript       Yes         • Java VM       No         • MRP       Yes; As of WinCC V12         Further protocols       Ves         • CAN       No         • EtherNet/IP       Yes         • MODBUS       Yes         EMC       Yes         Emission of radio interference acc. to EN 55 011       Yes         • Limit class A, for use in industrial areas       Yes         • Limit class B, for use in residential areas       No         Degree and class of protection       IP (at the front)         IP (at the front)       IP65         Enclosure Type 4 at the front       Yes         IP (rear)       IP20         Standards, approvals, certificates       Yes         CE mark       Yes         cULus       Yes         RCM (formerly C-TICK)       Yes	• HTTPS	Yes
<ul> <li>CSS</li> <li>Active X</li> <li>JavaScript</li> <li>Java VM</li> <li>No</li> <li>Redundancy mode</li> <li>MRP</li> <li>Yes; As of WinCC V12</li> <li>Further protocols</li> <li>CAN</li> <li>EtherNet/IP</li> <li>MODBUS</li> <li>Yes</li> <li>MODBUS</li> <li>Yes</li> <li>EMC</li> <li>Emission of radio interference acc. to EN 55 011</li> <li>Limit class A, for use in industrial areas</li> <li>Limit class B, for use in residential areas</li> <li>Limit class of protection</li> <li>IP (at the front)</li> <li>Enclosure Type 4 at the front</li> <li>Yes</li> <li>Enclosure Type 4x at the front</li> <li>Yes</li> <li>IP20</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>Ves</li> <li>CULus</li> <li>Yes</li> <li>RCM (formerly C-TICK)</li> <li>Yes</li> </ul>	• HTML	Yes
● Active X  ● Java Script  ● Java VM  No  Redundancy mode  ● MRP  ● Yes; As of WinCC V12  Further protocols  ● CAN  ● EtherNet/IP  ● MODBUS  EMC  Emission of radio interference acc. to EN 55 011  ● Limit class A, for use in industrial areas  ● Limit class B, for use in residential areas  ● Limit class of protection  IP (at the front)  Enclosure Type 4 at the front  Enclosure Type 4 at the front  Yes  IP (rear)  Standards, approvals, certificates  CE mark  cULus  Redundancy  Yes  RCM (formerly C-TICK)  Pess  Pess  Pess  Pess  RCM (formerly C-TICK)  Pess  Pess  Pess  Pyes  Pyes  RCM (formerly C-TICK)	• XML	Yes
● Java VM  ● Java VM  Redundancy mode  ● MRP  ● Yes; As of WinCC V12  Further protocols  ● CAN  ● CAN  ● EtherNet/IP  ● MODBUS  EMC  Emission of radio interference acc. to EN 55 011  ● Limit class A, for use in industrial areas  ● Limit class B, for use in residential areas  Pegree and class of protection  IP (at the front)  Enclosure Type 4 at the front  Enclosure Type 4x at the front  Yes  IP (rear)  Standards, approvals, certificates  CE mark  CULus  Redundancy  No  No  No  Pegree  Peg	• CSS	Yes
● Java VM Redundancy mode  ● MRP Yes; As of WinCC V12  Further protocols  ● CAN No  ● EtherNet/IP Yes  ● MODBUS EMC  Emission of radio interference acc. to EN 55 011  ● Limit class A, for use in industrial areas Pegree and class of protection IP (at the front) IP (at the front) IP (at the front) IP (rear) Standards, approvals, certificates CE mark CULus RCM (formerly C-TICK)  No  No  No  No  No  No  No  No  Pes  Yes  No  IP20  Standards, approvals, certificates CE mark Ves  RCM (formerly C-TICK)  Yes  RCM (formerly C-TICK)	• Active X	Yes
Redundancy mode◆ MRPYes; As of WinCC V12Further protocols◆ CANNo● EtherNet/IPYes◆ MODBUSYesEMCTemission of radio interference acc. to EN 55 011◆ Limit class A, for use in industrial areasYes◆ Limit class B, for use in residential areasNoDegree and class of protectionIP65IP (at the front)IP65Enclosure Type 4 at the frontYesEnclosure Type 4x at the frontYesIP (rear)IP20Standards, approvals, certificatesYesCE markYesCULusYesRCM (formerly C-TICK)Yes	• JavaScript	Yes
<ul> <li>MRP     Further protocols </li> <li>CAN     No </li> <li>EtherNet/IP     Yes </li> <li>MODBUS     Yes </li> <li>EMC </li> <li>Emission of radio interference acc. to EN 55 011 </li> <li>Limit class A, for use in industrial areas     Ves </li> <li>Limit class B, for use in residential areas     No </li> <li>Degree and class of protection </li> <li>IP (at the front)     IP (at the front)     IP (at the front)     IP (rear)     IP (rear) </li> <li>Standards, approvals, certificates </li> <li>CE mark     CULus     RCM (formerly C-TICK) </li> </ul>	• Java VM	No
Further protocols	Redundancy mode	
<ul> <li>◆ CAN</li> <li>◆ EtherNet/IP</li> <li>◆ MODBUS</li> <li>★ MODBUS</li> <li>★ Yes</li> <li>★ EMC</li> <li>★ Limit class A, for use in industrial areas</li> <li>◆ Limit class B, for use in residential areas</li> <li>♦ Limit class B, for use in residential areas</li> <li>No</li> <li>Degree and class of protection</li> <li>IP (at the front)</li> <li>IP (at the front)</li> <li>Enclosure Type 4 at the front</li> <li>Yes</li> <li>Enclosure Type 4x at the front</li> <li>Yes</li> <li>IP (rear)</li> <li>IP20</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>Yes</li> <li>CULus</li> <li>Yes</li> <li>RCM (formerly C-TICK)</li> <li>Yes</li> </ul>		Yes; As of WinCC V12
<ul> <li>EtherNet/IP</li> <li>Yes</li> <li>MODBUS</li> <li>Yes</li> <li>EMC</li> <li>Emission of radio interference acc. to EN 55 011</li> <li>Limit class A, for use in industrial areas</li> <li>Limit class B, for use in residential areas</li> <li>No</li> <li>Degree and class of protection</li> <li>IP (at the front)</li> <li>IP65</li> <li>Enclosure Type 4 at the front</li> <li>Yes</li> <li>IP (rear)</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>CULus</li> <li>RCM (formerly C-TICK)</li> <li>Yes</li> </ul>	_	
<ul> <li>MODBUS</li> <li>EMC</li> <li>Emission of radio interference acc. to EN 55 011</li> <li>Limit class A, for use in industrial areas</li> <li>Limit class B, for use in residential areas</li> <li>No</li> <li>Degree and class of protection</li> <li>IP (at the front)</li> <li>IP65</li> <li>Enclosure Type 4 at the front</li> <li>Yes</li> <li>Enclosure Type 4x at the front</li> <li>Yes</li> <li>IP (rear)</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>CULus</li> <li>RCM (formerly C-TICK)</li> <li>Yes</li> </ul>	• CAN	No
EMC  Emission of radio interference acc. to EN 55 011  • Limit class A, for use in industrial areas Yes  • Limit class B, for use in residential areas No  Degree and class of protection  IP (at the front) IP65  Enclosure Type 4 at the front Yes  Enclosure Type 4x at the front Yes  IP (rear) IP20  Standards, approvals, certificates  CE mark Yes  CULus Yes  RCM (formerly C-TICK) Yes	• EtherNet/IP	Yes
Emission of radio interference acc. to EN 55 011	• MODBUS	Yes
<ul> <li>Limit class A, for use in industrial areas</li> <li>Limit class B, for use in residential areas</li> <li>No</li> <li>Degree and class of protection</li> <li>IP (at the front)</li> <li>Enclosure Type 4 at the front</li> <li>Yes</li> <li>Enclosure Type 4x at the front</li> <li>Yes</li> <li>IP (rear)</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>CULus</li> <li>RCM (formerly C-TICK)</li> <li>Yes</li> </ul>		
<ul> <li>◆ Limit class B, for use in residential areas</li> <li>Degree and class of protection</li> <li>IP (at the front)</li> <li>Enclosure Type 4 at the front</li> <li>Yes</li> <li>Enclosure Type 4x at the front</li> <li>Yes</li> <li>IP (rear)</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>CULus</li> <li>RCM (formerly C-TICK)</li> <li>No</li> <li>IP65</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> </ul>		
Degree and class of protection IP (at the front) Enclosure Type 4 at the front Yes Enclosure Type 4x at the front Yes IP (rear) Standards, approvals, certificates CE mark CULus RCM (formerly C-TICK) Yes		
IP (at the front) Enclosure Type 4 at the front Yes Enclosure Type 4x at the front Yes IP (rear) Standards, approvals, certificates CE mark CULus RCM (formerly C-TICK) IP65 Yes Yes Yes		No
Enclosure Type 4 at the front Enclosure Type 4x at the front Yes IP (rear) Standards, approvals, certificates CE mark CULus RCM (formerly C-TICK) Yes Yes		
Enclosure Type 4x at the front IP (rear) Standards, approvals, certificates CE mark CULus RCM (formerly C-TICK) Yes Yes		
IP (rear) IP20 Standards, approvals, certificates CE mark Yes cULus Yes RCM (formerly C-TICK) Yes	Enclosure Type 4 at the front	Yes
Standards, approvals, certificates CE mark CULus Yes RCM (formerly C-TICK) Yes	Enclosure Type 4x at the front	Yes
CE mark Yes cULus Yes RCM (formerly C-TICK) Yes	IP (rear)	IP20
cULus Yes RCM (formerly C-TICK) Yes		
RCM (formerly C-TICK)  Yes	CE mark	Yes
· · · · · · · · · · · · · · · · · · ·	cULus	Yes
KC approval Yes	RCM (formerly C-TICK)	Yes
	KC approval	Yes

Use in hazardous areas	
• ATEX Zone 2	Yes
• ATEX Zone 22	Yes
• IECEx Zone 2	Yes
• IECEx Zone 22	Yes
• cULus Class I Zone 1	No
• cULus Class I Zone 2, Division 2	Yes
• FM Class I Division 2	Yes
Marine approval	162
• Germanischer Lloyd (GL)	Yes
• American Bureau of Shipping (ABS)	Yes
Bureau Veritas (BV)	Yes
• Det Norske Veritas (DNV)	Yes
• Lloyds Register of Shipping (LRS)	Yes
Nippon Kaiji Kyokai (Class NK)	Yes
Polski Rejestr Statkow (PRS)	No
Ambient conditions	140
Ambient temperature during operation	
Operation (vertical installation)	
— For vertical installation, min.	0 °C
— For vertical installation, max.	50 °C; (55 °C, see entry ID: 64847814)
• Operation (max. tilt angle)	,
— At maximum tilt angle, min.	0 °C
— At maximum tilt angle, min.	40 °C
<ul> <li>Operation (vertical installation, portrait format)</li> </ul>	
— For vertical installation, min.	0 °C
— For vertical installation, max.	40 °C
Operation (max. tilt angle, portrait format)	
— At maximum tilt angle, min.	0 °C
— At maximum tilt angle, min.	35 °C
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	60 °C
Relative humidity	
Operation, max.	90 %; no condensation
Operating systems	
proprietary	No
pre-installed operating system	
• Windows CE	Yes
Configuration	
Message indicator	Yes

Alarm system (incl. buffer and acknowledgment)	Yes
Process value display (output)	Yes
Process value default (input) possible	Yes
Recipe management	Yes
Configuration software	100
• STEP 7 Basic (TIA Portal)	No
• STEP 7 Professional (TIA Portal)	No
WinCC flexible Compact	No
WinCC flexible Standard	No
WinCC flexible Advanced	No
• WinCC Basic (TIA Portal)	No
WinCC Comfort (TIA Portal)	Yes; from V11
WinCC Advanced (TIA Portal)	Yes; from V11
• WinCC Professional (TIA Portal)	Yes; from V11
Languages	
Online languages	
<ul> <li>Number of online/runtime languages</li> </ul>	32
Project languages	
• Languages per project	32
Functionality under WinCC (TIA Portal)	
Libraries	Yes
Applications/options	
• Web browser	Yes
Pocket Word	Yes
Pocket Excel	Yes
• PDF Viewer	Yes
Media Player	Yes
<ul> <li>SIMATIC WinCC Sm@rtServer</li> </ul>	Yes
SIMATIC WinCC Audit	Yes
Number of Visual Basic Scripts	Yes
Task planner	
• time-controlled	Yes
• task-controlled	Yes
Help system	
<ul> <li>Number of characters per info text</li> </ul>	70
Message system	
• Number of alarm classes	32
• Bit messages	
— Number of bit messages	4 000
<ul> <li>Analog messages</li> </ul>	
— Number of analog messages	200

• S7 alarm number procedure	Yes
• System messages HMI	Yes
• System messages, other (SIMATIC S7, Sinumerik, Simotion,	
etc.)	Yes
Number of characters per message	80
<ul> <li>Number of process values per message</li> </ul>	8
Acknowledgment groups	Yes
Message indicator	Yes
Message buffer	
— Number of entries	1 024
— Circulating buffer	Yes
— retentive	Yes
— maintenance-free	Yes
Recipe management	
<ul> <li>Number of recipes</li> </ul>	300
Data records per recipe	500
Entries per data record	1 000
• Size of internal recipe memory	2 Mbyte
Recipe memory expandable	Yes
Variables	
<ul> <li>Number of variables per device</li> </ul>	2 048
<ul> <li>Number of variables per screen</li> </ul>	400
• Limit values	Yes
Multiplexing	Yes
• Structures	Yes
• Arrays	Yes
Images	
<ul> <li>Number of configurable images</li> </ul>	500
<ul> <li>Permanent window/default</li> </ul>	Yes
Global image	Yes
Pop-up images	Yes
• Slide-in images	Yes
• Image selection by PLC	Yes
• Image number in the PLC	Yes
Image objects	
<ul> <li>Number of objects per image</li> </ul>	400
• Text fields	Yes
• I/O fields	Yes
• Graphic I/O fields (graphics list)	Yes
• Symbolic I/O fields (text list)	Yes
• Date/time fields	Yes

• Switches	Yes
• Buttons	Yes
• Graphic display	Yes
• Icons	Yes
Geometric objects	Yes
Complex image objects	100
Number of complex objects per screen	20
• Alarm view	Yes
• Trend view	Yes
• User view	Yes
• Status/control	Yes
• Sm@rtClient view	Yes
• Recipe view	Yes
• f(x) trend view	Yes
System diagnostics view	Yes
Media Player	Yes
• HTML browser	Yes
• PDF display	Yes
• IP camera display	Yes
Bar graphs	Yes
• Sliders	Yes
• Pointer instruments	Yes
Analog/digital clock	Yes
Lists	
<ul> <li>Number of text lists per project</li> </ul>	500
<ul> <li>Number of entries per text list</li> </ul>	500
<ul> <li>Number of graphics lists per project</li> </ul>	500
Number of entries per graphics list	500
Archiving	
Number of archives per device	50
Number of entries per archive	20 000
Message archive	Yes
Process value archive	Yes
• Archiving methods	
— Sequential archive	Yes
— Short-term archive	Yes
Memory location	
— Memory card	Yes
— USB memory	Yes
— Ethernet	Yes
Data storage format	

— CSV	Yes
— TXT	Yes
— RDB	Yes
Security	100
Number of user groups	50
Number of user rights	32
• Number of users	50
Password export/import	Yes
• SIMATIC Logon	Yes
Logging through printer	100
• Alarms	Yes
• Report (shift log)	Yes
• Hardcopy	Yes
• Electronic print to file	Yes; PDF, HTML
Character sets	
Keyboard fonts	
— US English	Yes
Transfer (upload/download)	
MPI/PROFIBUS DP	Yes
• USB	Yes
• Ethernet	Yes
• using external storage medium	Yes
Process coupling	
• S7-1200	Yes
• S7-1500	Yes
• S7-200	Yes
• S7-300/400	Yes
• LOGO!	Yes
• WinAC	Yes
• SINUMERIK	Yes; with SINUMERIK option
SINOWERIK	package
• SIMOTION	Yes
• Allen Bradley (EtherNet/IP)	Yes
• Allen Bradley (DF1)	Yes
• Mitsubishi (MC TCP/IP)	Yes
• Mitsubishi (FX)	Yes
• OMRON (FINS TCP)	No
<ul> <li>OMRON (LINK/Multilink)</li> </ul>	Yes
<ul> <li>Modicon (Modbus TCP/IP)</li> </ul>	Yes
• Modicon (Modbus)	Yes
OPC UA Client	Yes

OPC UA Server	Yes
Service tools/configuration aids	
Backup/Restore manually	Yes
Backup/Restore automatically	Yes
• Simulation	Yes
Device switchover	Yes
Peripherals/Options	
Peripherals	
• Printer	Yes
<ul> <li>SIMATIC HMI MM memory card: Multi Media Card</li> </ul>	Yes; Up to 128 MB
• SIMATIC HMI SD memory card: Secure Digital memory card	d Yes; Up to 2 GB
<ul> <li>SIMATIC HMI CF memory card Compact Flash Card</li> </ul>	No
• USB memory	Yes
• SIMATIC IPC USB Flashdrive (USB stick)	Yes; Up to 16 GB
SIMATIC HMI USB stick	Yes; Up to 8 GB
Network camera	Yes
Mechanics/material	
Enclosure material (front)	
• Plastic	No
• Aluminum	Yes
• Stainless steel	No
Dimensions	
Width of the housing front	274 mm
Height of housing front	190 mm
Mounting cutout, width	251 mm
Mounting cutout, height	166 mm
Overall depth	63 mm
Weights	
Weight without packaging	1.9 kg
Weight incl. packaging	2.6 kg