



SIPLUS HMI TP1500 Comfort Outdoor based on 6AV2124-0QC13-0AX0 with conformal coating, -30...+60 °C, TP1500 Comfort Outdoor, Comfort Panel, touch operation, 15" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, configurable WinCC Comfort V13 SP1 and higher, HSP

General information	
Product type designation	TP1500 Outdoor
Display	
Design of display	TFT, bonded, daylight-readable
Screen diagonal	15.4 in
Display width	331.2 mm
Display height	207 mm
Number of colors	16 777 216
Resolution (pixels)	
• Horizontal image resolution	1 280 pixel
• Vertical image resolution	800 pixel
Backlighting	
• MTBF backlighting (at 25 °C)	50 000 h
• Backlight dimmable	Yes; LED, can be dimmed manually or automatically
Control elements	
Keyboard fonts	
• Function keys	
— Number of function keys	0
— Number of function keys with LEDs	0
• Keys with LED	No
• System keys	No
• Numeric keyboard	Yes; Onscreen keyboard
• alphanumeric keyboard	Yes; Onscreen keyboard
Touch operation	
• Design as touch screen	Yes; Analog-resistive
Expansions for operator control of the process	
• DP direct LEDs (LEDs as S7 output I/O)	
— F1...Fx	0
• Direct keys (keys as S7 input I/O)	
— F1...Fx	0
• Direct keys (touch buttons as S7 input I/O)	40
Installation type/mounting	
Mounting position	vertical
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
<b>Input current</b>	
Current consumption (rated value)	1.3 A
Starting current inrush I <sup>st</sup>	0.5 A <sup>2</sup> ·s
<b>Power</b>	
Active power input, typ.	32 W
<b>Processor</b>	
Processor type	X86
<b>Memory</b>	
Flash	Yes
RAM	Yes
Memory available for user data	12 Mbyte
<b>Type of output</b>	
Info LED	No
Power LED	No
Error LED	No
Acoustics	
• Buzzer	No
• Speaker	Yes
<b>Time of day</b>	
Clock	
• Hardware clock (real-time)	Yes
• Software clock	No
• retentive	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	2
Number of RS 485 interfaces	1; RS 422 / 485 combined
Number of RS 422 interfaces	1
Number of RS 232 interfaces	0
Number of USB interfaces	2; USB 2.0
• USB Mini B	1; 5-pole
Number of 20 mA interfaces (TTY)	0
Number of parallel interfaces	0
Number of other interfaces	0
Number of SD card slots	2
With software interfaces	No
<b>Industrial Ethernet</b>	
• Industrial Ethernet status LED	2
• Number of ports of the integrated switch	2
<b>Protocols</b>	
PROFINET	Yes
Supports protocol for PROFINET IO	Yes
IRT	Yes
PROFIBUS	Yes
EtherNet/IP	Yes
MPI	Yes
<b>Protocols (Ethernet)</b>	
• TCP/IP	Yes
• DHCP	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
<b>WEB characteristics</b>	
• HTTP	Yes
• HTTPS	No
• HTML	Yes
• XML	No
• CSS	Yes
• Active X	No
• JavaScript	Yes
• Java VM	No

<b>Redundancy mode</b>	
Media redundancy	
— MRP	Yes
<b>Further protocols</b>	
• CAN	No
• MODBUS	Yes
<b>EMC</b>	
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
<b>Degree and class of protection</b>	
IP (at the front)	IP66
IP (rear)	IP20
NEMA (front)	
• Enclosure Type 4 at the front	Yes
• Enclosure Type 4x at the front	Yes
<b>Standards, approvals, certificates</b>	
Marine approval	
• Compass working clearance	5 m
<b>Ambient conditions</b>	
Suited for indoor use	Yes
Suited for outdoor use	Yes; Powder-coated, UV resistant
Ambient temperature during operation	
Operation (vertical installation)	
— For vertical installation, min.	-30 °C; = Tmin
— For vertical installation, max.	60 °C; (55 °C, see entry ID: 64847814)
Operation (max. tilt angle)	
— At maximum tilt angle, min.	-30 °C; = Tmin
— At maximum tilt angle, max.	50 °C; = Tmax
Operation (vertical installation, portrait format)	
— For vertical installation, min.	-30 °C; = Tmin
— For vertical installation, max.	50 °C; = Tmax
Operation (max. tilt angle, portrait format)	
— At maximum tilt angle, min.	-30 °C; = Tmin
— At maximum tilt angle, max.	45 °C; = Tmax
Ambient temperature during storage/transportation	
• min.	-30 °C
• max.	70 °C
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	5 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
Relative humidity	
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning when condensation present), vertical mounting position
<b>Resistance</b>	
Coolants and lubricants	
— Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	
— to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
— to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
— to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *
Usage in industrial process technology	

— Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)
— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
<b>Remark</b>	
— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	* The supplied plug covers must remain in place over the unused interfaces during operation!
<b>Conformal coating</b>	
<ul style="list-style-type: none"> <li>• Coatings for printed circuit board assemblies acc. to EN 61086</li> <li>• Protection against fouling acc. to EN 60664-3</li> <li>• Military testing according to MIL-I-46058C, Amendment 7</li> <li>• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	<p>Yes; Class 2 for high reliability</p> <p>Yes; Type 1 protection</p> <p>Yes; Discoloration of coating possible during service life</p> <p>Yes; Conformal coating, Class A</p>
<b>Operating systems</b>	
proprietary	No
<b>pre-installed operating system</b>	
<ul style="list-style-type: none"> <li>• Windows CE</li> </ul>	Yes
<b>configuration / header</b>	
Message indicator	Yes
Alarm system (incl. buffer and acknowledgment)	Yes
Process value display (output)	Yes
Process value default (input) possible	Yes
Recipe management	Yes
<b>Configuration software</b>	
<ul style="list-style-type: none"> <li>• STEP 7 Basic (TIA Portal)</li> <li>• STEP 7 Professional (TIA Portal)</li> <li>• WinCC flexible Compact</li> <li>• WinCC flexible Standard</li> <li>• WinCC flexible Advanced</li> <li>• WinCC Basic (TIA Portal)</li> <li>• WinCC Comfort (TIA Portal)</li> <li>• WinCC Advanced (TIA Portal)</li> <li>• WinCC Professional (TIA Portal)</li> </ul>	<p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<b>Languages</b>	
<b>Online languages</b>	
<ul style="list-style-type: none"> <li>• Number of online/runtime languages</li> </ul>	32
<b>Project languages</b>	
<ul style="list-style-type: none"> <li>• Languages per project</li> </ul>	32
<b>Functionality under WinCC (TIA Portal)</b>	
Libraries	Yes
Applications/options	
<ul style="list-style-type: none"> <li>• Web browser</li> <li>• Pocket Word</li> <li>• Pocket Excel</li> <li>• PDF Viewer</li> <li>• Media Player</li> <li>• SIMATIC WinCC Sm@rtServer</li> <li>• SIMATIC WinCC Audit</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
Number of Visual Basic Scripts	Yes
Task planner	
<ul style="list-style-type: none"> <li>• time-controlled</li> <li>• task-controlled</li> </ul>	<p>Yes</p> <p>Yes</p>
<b>Message system</b>	
<ul style="list-style-type: none"> <li>• Number of alarm classes</li> <li>• Bit messages <ul style="list-style-type: none"> <li>— Number of bit messages</li> </ul> </li> <li>• Analog messages <ul style="list-style-type: none"> <li>— Number of analog messages</li> </ul> </li> <li>• S7 alarm number procedure</li> <li>• System messages HMI</li> </ul>	<p>32</p> <p>4 000</p> <p>200</p> <p>Yes</p> <p>Yes</p>

<ul style="list-style-type: none"> <li>• System event, more (SIMATIC S7, SINUMERIK, SIMOTION, ... )</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Number of characters per message</li> </ul>	80
<ul style="list-style-type: none"> <li>• Number of process values per message</li> </ul>	8
<ul style="list-style-type: none"> <li>• Acknowledgment groups</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Message indicator</li> </ul>	Yes
<b>Recipe management</b>	
<ul style="list-style-type: none"> <li>• Number of recipes</li> </ul>	300
<ul style="list-style-type: none"> <li>• Data records per recipe</li> </ul>	500
<ul style="list-style-type: none"> <li>• Entries per data record</li> </ul>	1 000
<ul style="list-style-type: none"> <li>• Size of internal recipe memory</li> </ul>	2 Mbyte
<ul style="list-style-type: none"> <li>• Recipe memory expandable</li> </ul>	Yes
<b>Variables</b>	
<ul style="list-style-type: none"> <li>• Number of variables per device</li> </ul>	2 048
<ul style="list-style-type: none"> <li>• Number of variables per screen</li> </ul>	400
<ul style="list-style-type: none"> <li>• Limit values</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Multiplexing</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Structures</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Arrays</li> </ul>	Yes
<b>Images</b>	
<ul style="list-style-type: none"> <li>• Number of configurable images</li> </ul>	500
<ul style="list-style-type: none"> <li>• Permanent window/default</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Global image</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Image selection by PLC</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Image number in the PLC</li> </ul>	Yes
<b>Image objects</b>	
<ul style="list-style-type: none"> <li>• Number of objects per image</li> </ul>	400
<ul style="list-style-type: none"> <li>• Text fields</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• I/O fields</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Graphic I/O fields (graphics list)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Symbolic I/O fields (text list)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Date/time fields</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Switches</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Buttons</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Graphic display</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Icons</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Geometric objects</li> </ul>	Yes
<b>Complex image objects</b>	
<ul style="list-style-type: none"> <li>• Number of complex objects per screen</li> </ul>	20
<ul style="list-style-type: none"> <li>• Alarm view</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Trend view</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• User view</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Status/control</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Sm@rtClient view</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Recipe view</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• f(x) trend view</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• System diagnostics view</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Media Player</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• IP camera display</li> </ul>	Yes; Webcam type see FAQs
<ul style="list-style-type: none"> <li>• Bar graphs</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Sliders</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Pointer instruments</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Analog/digital clock</li> </ul>	Yes
<b>Lists</b>	
<ul style="list-style-type: none"> <li>• Number of text lists per project</li> </ul>	500
<ul style="list-style-type: none"> <li>• Number of entries per text list</li> </ul>	500
<ul style="list-style-type: none"> <li>• Number of graphics lists per project</li> </ul>	500
<ul style="list-style-type: none"> <li>• Number of entries per graphics list</li> </ul>	500
<b>Archiving</b>	
<ul style="list-style-type: none"> <li>• Number of archives per device</li> </ul>	50
<ul style="list-style-type: none"> <li>• Number of entries per archive</li> </ul>	20 000
<ul style="list-style-type: none"> <li>• Message archive</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Process value archive</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Archiving methods</li> </ul>	

— 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
<b>Security</b>	
• Number of user groups	50
• Number of user rights	32
• Number of users	50
• Password export/import	Yes
• SIMATIC Logon	Yes
<b>Logging through printer</b>	
• Alarms	Yes
• Report (shift log)	Yes
• Hardcopy	Yes
• Electronic print to file	Yes; PDF, HTML
<b>Character sets</b>	
• Keyboard fonts	
— US English	Yes
<b>Transfer (upload/download)</b>	
• MPI/PROFIBUS DP	Yes
• USB	Yes
• Ethernet	Yes
• using external storage medium	Yes; Backup/restore
<b>Process coupling</b>	
• S7-1200	Yes
• S7-1500	Yes
• S7-200	Yes
• S7-300/400	Yes
• LOGO!	Yes
• WinAC	Yes
• SINUMERIK	Yes; with SINUMERIK option package
• SIMOTION	Yes
• Allen Bradley (EtherNet/IP)	Yes
• Allen Bradley (DF1)	Yes
• Mitsubishi (MC TCP/IP)	Yes
• Mitsubishi (FX)	Yes
• OMRON (FINS TCP)	No
• OMRON (LINK/Multilink)	Yes
• Modicon (Modbus TCP/IP)	Yes
• Modicon (Modbus)	Yes
• OPC UA Client	Yes
• OPC UA Server	Yes
<b>Service tools/configuration aids</b>	
• Backup/Restore manually	Yes
• Backup/Restore automatically	Yes
• Simulation	Yes
• Device switchover	Yes
<b>Peripherals/Options</b>	
Printer	Yes
SIMATIC HMI MM memory card: Multi Media Card	Yes
SIMATIC HMI SD memory card: Secure Digital memory card	Yes
SIMATIC HMI CF memory card Compact Flash Card	No
USB memory	Yes
SIMATIC IPC USB Flashdrive (USB stick)	Yes
SIMATIC HMI USB stick	Yes
Network camera	Yes; See FAQ Entry ID: 62383298 and entry ID: 65647473
<b>Mechanics/material</b>	

Enclosure material (front)	
• Plastic	No
• Aluminum	Yes; Powder-coated, UV resistant
• Stainless steel	No

### Dimensions

Width of the housing front	415 mm
Height of housing front	310 mm
Mounting cutout, width	396 mm
Mounting cutout, height	291 mm
Overall depth	77 mm

### Weights

Weight (without packaging)	4 kg
Weight (with packaging)	6.2 kg

### Other

Note:	Power, quantity structure and performance correspond to a standard 12" Comfort Panel
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**last modified:** 10/7/2021 