

SIPLUS HMI TP700 OUTDOOR RAIL -25°C...60°C T1 with 70°C for 10 min with conformal coating Based on: 6AV2124-0GC13-0AX0 . TP700 Comfort Outdoor, Comfort Panel, Touch operation, 7" 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	SIPLUS HMI TP700 Comfort Outdoor
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### Display

Design of display	TFT, bonded, daylight-readable
Screen diagonal	7 in
Display width	152.4 mm
Display height	91.4 mm
Number of colors	16 777 216

### Resolution (pixels)

- |                               |           |
|-------------------------------|-----------|
| • Horizontal image resolution | 800 Pixel |
| • Vertical image resolution   | 480 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                      |
| • 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) | 32 |

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

Input current	
Current consumption (rated value)	0.7 A
Starting current inrush I <sup>2</sup> t	0.5 A <sup>2</sup> ·s

Power	
Active power input, typ.	17 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
• Software clock	No
• retentive	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes

Interfaces	
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
<ul style="list-style-type: none"> <li>• USB Mini B</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• Industrial Ethernet status LED</li> </ul>	2
<ul style="list-style-type: none"> <li>• Number of ports of the integrated switch</li> </ul>	2
<b>Protocols</b>	
PROFINET	Yes
Supports protocol for PROFINET IO	Yes
IRT	Yes
MRP	Yes
PROFIBUS	Yes
MPI	Yes
<b>Protocols (Ethernet)</b>	
<ul style="list-style-type: none"> <li>• TCP/IP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• DHCP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• SNMP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• DCP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• LLDP</li> </ul>	Yes
<b>WEB characteristics</b>	
<ul style="list-style-type: none"> <li>• HTTP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• HTTPS</li> </ul>	No
<ul style="list-style-type: none"> <li>• HTML</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• XML</li> </ul>	No
<ul style="list-style-type: none"> <li>• CSS</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Active X</li> </ul>	No
<ul style="list-style-type: none"> <li>• JavaScript</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Java VM</li> </ul>	No
<b>Further protocols</b>	
<ul style="list-style-type: none"> <li>• CAN</li> </ul>	No
<ul style="list-style-type: none"> <li>• EtherNet/IP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• MODBUS</li> </ul>	Yes
<b>Isolation</b>	
Isolation tested with	707 V DC (type test) and according to EN 50155 (routine test)
<b>EMC</b>	
Emission of radio interference acc. to EN 55 011	
<ul style="list-style-type: none"> <li>• Limit class A, for use in industrial areas</li> </ul>	Yes

- Limit class B, for use in residential areas

No

### Degree and class of protection

IP (at the front)	IP66
Enclosure Type 4 at the front	Yes
Enclosure Type 4x at the front	Yes
IP (rear)	IP20

### Standards, approvals, certificates

CE mark	Yes
<b>Railway application</b>	
• EN 50121-3-2	Yes; EMC for rail vehicles
• EN 50121-4	Yes; EMC for signal and telecommunications systems
• EN 50124-1	Yes; Railway applications - overvoltage category OV2; pollution degree PD2; rated surge voltage UNi = 0.5 kV; UNm = 24 V DC
• EN 50125-1	Yes; Rail vehicles - see ambient conditions
• EN 50125-2	Yes; Stationary electrical equipment - see ambient conditions
• EN 50125-3	Yes; Signal and telecommunications systems - see ambient conditions; vibrations and shocks: Application point outside of tracks (1 m to 3 m away from track)
• EN 50155	Yes; Rail vehicles - temperature class T1, horizontal and vertical mounting position, salt spray class ST2
• EN 61373	Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B

### Ambient conditions

<b>Ambient temperature during operation</b>	
• Operation (vertical installation)	
— For vertical installation, min.	-30 °C
— For vertical installation, max.	60 °C; (55 °C, see entry ID: 64847814)
• Operation (max. tilt angle)	
— At maximum tilt angle, min.	-30 °C
— At maximum tilt angle, min.	50 °C
• Operation (vertical installation, portrait format)	
— For vertical installation, min.	-30 °C
— For vertical installation, max.	50 °C
• Operation (max. tilt angle, portrait format)	
— At maximum tilt angle, min.	-30 °C
— At maximum tilt angle, min.	45 °C
<b>Ambient temperature during storage/transportation</b>	
• min.	-30 °C
• max.	70 °C
<b>Altitude during operation relating to sea level</b>	
• Installation altitude above sea level, max.	2 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m)

<b>Relative humidity</b>	
<ul style="list-style-type: none"> <li>• With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
<b>Resistance</b>	
<b>Coolants and lubricants</b>	
— Resistant to commercially available coolants and lubricants	Yes
<b>Use in stationary industrial systems</b>	
— 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, *
<b>Use on land craft, rail vehicles and special-purpose vehicles</b>	
— to biologically active substances according to EN 60721-3-5	Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request
— to chemically active substances according to EN 60721-3-5	Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 50155 (ST2); *
— to mechanically active substances according to EN 60721-3-5	Yes; Class 5S3 incl. sand, dust; *
<b>from supply voltage 1L+</b>	
— Note regarding classification of environmental conditions acc. to EN 60721	* The supplied plug covers must remain in place over the unused interfaces during operation!
<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</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> </ul>	 No No No No No No Yes Yes

- WinCC Professional (TIA Portal)

Yes

## Languages

### Online languages

- Number of online/runtime languages

32

### Project languages

- Languages per project

32

## Functionality under WinCC (TIA Portal)

### Libraries

Yes

### Applications/options

- Web browser
- Pocket Word
- Pocket Excel
- PDF Viewer
- Media Player
- SIMATIC WinCC Sm@rtServer
- SIMATIC WinCC Audit

Yes

Yes

Yes

Yes

Yes

Yes

Yes

### Number of Visual Basic Scripts

Yes

### Task planner

- time-controlled
- task-controlled

Yes

Yes

### Help system

- Number of characters per info text

70

### Message system

- Number of alarm classes
- Bit messages
  - Number of bit messages
- Analog messages
  - Number of analog messages
- S7 alarm number procedure
- System messages HMI
- System messages, other (SIMATIC S7, Sinumerik, Simotion, etc.)
- Number of characters per message
- Number of process values per message
- Acknowledgment groups
- Message indicator
- Message buffer
  - Number of entries
  - Circulating buffer
  - retentive
  - maintenance-free

32

4 000

200

Yes

Yes

Yes

80

8

Yes

Yes

1 024

Yes

Yes

Yes

Recipe management	
• Number of recipes	300
• Data records per recipe	500
• Entries per data record	1 000
• Size of internal recipe memory	2 Mbyte
• Recipe memory expandable	Yes
Variables	
• Number of variables per device	2 048
• Number of variables per screen	400
• Limit values	Yes
• Multiplexing	Yes
• Structures	Yes
• Arrays	Yes
Images	
• Number of configurable images	500
• Permanent window/default	Yes
• Global image	Yes
• Image selection by PLC	Yes
• Image number in the PLC	Yes
Image objects	
• Number of objects per image	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	
• 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
• Bar graphs	Yes
• Sliders	Yes
• Pointer instruments	Yes
• Analog/digital clock	Yes
<b>Lists</b>	
• Number of text lists per project	500
• Number of entries per text list	500
• Number of graphics lists per project	500
• Number of entries per graphics list	500
<b>Archiving</b>	
• 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
<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>	
<b>Peripherals</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

## Mechanics/material

### Enclosure material (front)

- Plastic
- Aluminum
- Stainless steel

No

Yes; Powder-coated, UV resistant

No

## Dimensions

Width of the housing front

214 mm

Height of housing front

158 mm

Mounting cutout, width

197 mm

Mounting cutout, height

141 mm

Overall depth

67 mm

## Weights

Weight without packaging

1.5 kg

Weight incl. packaging

1.7 kg

## Other

Note:

For use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A Online Support article 109736776

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