

SIPLUS HMI TP900 COMFORT 9" FOR MEDIAL STRESS WITH CONFORMAL COATING BASED ON 6AV2124-0JC01-0AX0



## Product type designation

### Display

|                   |            |
|-------------------|------------|
| Design of display | TFT        |
| Screen diagonal   | 9 in       |
| Display width     | 195 mm     |
| Display height    | 117 mm     |
| Number of colors  | 16 777 216 |

### Resolution (pixels)

- |                               |     |
|-------------------------------|-----|
| • Horizontal image resolution | 800 |
| • Vertical image resolution   | 480 |

### Backlighting

- |                                |              |
|--------------------------------|--------------|
| • MTBF backlighting (at 25 °C) | 80 000 h     |
| • Dimmable backlight           | Yes; 0-100 % |

### Control elements

#### Keyboard

- |                              |    |
|------------------------------|----|
| • Number of function keys    | 0  |
| • Keys with LED              | No |
| • System keys                | No |
| • Numeric/alphabetical input |    |

|   |   |
|---|---|
| — Numeric keyboard                                    | Yes; Onscreen keyboard                  |
| — Alphanumeric keyboard                               | Yes; Onscreen keyboard                  |
| <b>Touch operation</b>                                |   |
| • Design as touch screen                              | Yes                                     |
| <b>Expansions for operator control of the process</b> |   |
| • 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                                      |
| <b>Installation type/mounting</b>                     |   |
| Mounting in portrait format possible                  | Yes                                     |
| Mounting in landscape format possible                 | Yes                                     |
| <b>Supply voltage</b>                                 |   |
| 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)                     | 0.75 A                                  |
| Inrush current A <sup>2</sup> s                       | 0.5 A <sup>2</sup> s                    |
| <b>Power</b>  |   |
| Power consumption, typ.                               | 18 W                                    |
| <b>Memory</b>   |   |
| Flash   | Yes                                     |
| RAM   | Yes                                     |
| Usable memory 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>                                    |   |
| <b>Clock</b>  |   |
| • Hardware clock (real-time clock)                    | Yes                                     |
| • Software clock                                      | No                                      |
| • Battery-backed                                      | Yes; Back-up duration typically 6 weeks |
| • Synchronizable                                      | Yes                                     |
| <b>Interfaces</b>                                     |   |

|  |                        |
|--|------------------------|
| Number of RS 485 interfaces                      | 1; RS 422/485 combined |
| Number of USB interfaces                         | 2; USB 2.0             |
| Number of USB Mini B interfaces                  | 1; 5-pole              |
| Number of SD card slots                          | 2                      |
| Number of parallel interfaces                    | 0                      |
| Number of 20 mA interfaces (TTY)                 | 0                      |
| Number of RS 232 interfaces                      | 0                      |
| Number of RS 422 interfaces                      | 1                      |
| Number of other interfaces                       | 0                      |
| With software interfaces                         | No                     |
| <b>Industrial Ethernet</b>                       |                        |
| • Number of industrial Ethernet interfaces       | 2                      |
| • Industrial Ethernet status LED                 | 2                      |
| • Number of ports of the integrated switch       | 2                      |
| <b>Protocols</b>                                 |                        |
| PROFINET   | Yes                    |
| PROFINET IO                                      | Yes                    |
| IRT supported                                    | Yes; As of WinCC V12   |
| MRP supported                                    | Yes; As of WinCC V12   |
| PROFIBUS   | 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>Further protocols</b>                         |                        |
| • CAN  | No                     |
| • MODBUS   | Yes                    |
| • Supports protocol for EtherNet/IP              | Yes                    |
| <b>Interrupts/diagnostics/status information</b> |                        |
| <b>Diagnostic messages</b>                       |                        |
| • Diagnostic information readable                | Yes; S7 controller     |

## 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 |
| KC approval           | Yes |
| cULus                 | Yes |
| RCM (formerly C-TICK) | Yes |

### Marine approval

- |                                     |    |
|-------------------------------------|----|
| • Germanischer Lloyd (GL)           | No |
| • American Bureau of Shipping (ABS) | No |
| • Bureau Veritas (BV)               | No |
| • Det Norske Veritas (DNV)          | No |
| • Lloyds Register of Shipping (LRS) | No |
| • Nippon Kaiji Kyokai (Class NK)    | No |
| • Polski Rejestr Statkow (PRS)      | No |

### Use in hazardous areas

- |                                    |     |
|------------------------------------|-----|
| • ATEX Zone 2                      | No  |
| • ATEX Zone 22                     | No  |
| • cULus Class I Zone 1             | No  |
| • cULus Class I Zone 2, Division 2 | Yes |
| • FM Class I Division 2            | No  |

## Ambient conditions

|   |          |
|---|----------|
| Mounting position   | vertical |
| maximum permissible angle of inclination without external ventilation | 35°      |

### Operating temperature

- |  |               |
|--|---------------|
| • Operation (vertical installation)                  |               |
| — in vertical mounting position, minimum             | 0 °C; = Tmin  |
| — in vertical mounting position, maximum             | 50 °C; = Tmax |
| • Operation (max. tilt angle)                        |               |
| — at maximum tilt angle, minimum                     | 0 °C; = Tmin  |
| — at maximum tilt angle, maximum                     | 40 °C; = Tmax |
| • Operation (vertical installation, portrait format) |               |
| — in vertical mounting position, minimum             | 0 °C; = Tmin  |
| — in vertical mounting position, maximum             | 40 °C; = Tmax |
| • Operation (max. tilt angle, portrait format)       |               |

|  |   |
|--|---|
| — at maximum tilt angle, minimum   | 0 °C; = Tmin  |
| — at maximum tilt angle, maximum   | 35 °C; = Tmax   |
| <b>Storage/transport temperature</b>   |   |
| • Min.   | -20 °C  |
| • max.   | 60 °C   |
| <b>Extended ambient conditions</b>   |   |
| • Relative to ambient temperature-atmospheric pressure-installation altitude | Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m) |
| <b>Relative humidity</b>   |   |
| — with condensation, tested in accordance with IEC 60068-2-38, maximum       | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions)   |
| <b>Resistance</b>  |   |
| — against biologically active substances / conformity with EN 60721-3-3      | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!                                      |
| — against chemically active substances / conformity with EN 60721-3-3        | Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!                      |
| — against mechanically active substances / conformity with EN 60721-3-3      | Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!   |
| <b>Operating systems</b>   |   |
| proprietary  | No  |
| <b>Executable with configuration operating system</b>                        |   |
| • other  | No  |
| <b>Configuration</b>   |   |
| Message indicator  | Yes   |
| With alarm logging system (incl. buffer and acknowledgment)                  | Yes   |
| Process value display (output)   | Yes   |
| Process value default (input) possible                                       | Yes   |
| Recipe administration  | Yes   |
| <b>Configuration software</b>  |   |
| • 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   |
| <b>Languages</b>   |   |

| Online languages                       |     |
|--|-----|
| • Number of online/runtime languages   | 32  |
| Languages                              |     |
| • Languages per project                | 32  |
| • Languages                            |     |
| — D                                    | Yes |
| — GB                                   | Yes |
| — F                                    | Yes |
| — I                                    | Yes |
| — E                                    | Yes |
| — Chinese traditional                  | Yes |
| — Chinese simplified                   | Yes |
| — DK                                   | Yes |
| — FIN                                  | Yes |
| — GR                                   | Yes |
| — J                                    | Yes |
| — KP / ROK                             | Yes |
| — NL                                   | Yes |
| — N                                    | Yes |
| — PL                                   | Yes |
| — P                                    | Yes |
| — RUS                                  | Yes |
| — S                                    | Yes |
| — CZ                                   | Yes |
| — SK                                   | Yes |
| — TR                                   | Yes |
| — H                                    | Yes |
| Functionality under WinCC (TIA Portal) |     |
| Libraries                              | Yes |
| Applications/options                   |     |
| • Internet Explorer                    | Yes |
| • Pocket Word                          | Yes |
| • Pocket Excel                         | Yes |
| • PDF Viewer                           | Yes |
| • Media Player                         | Yes |
| • SIMATIC WinCC Sm@rtServer            | Yes |
| • SIMATIC WinCC Audit                  | Yes |
| Number of Visual Basic Scripts         | Yes |
| Task planner                           |     |
| • time-controlled                      | Yes |
| • task-controlled                      | Yes |
| Help system                            |     |
| • Number of characters per info text   | 70  |

| Message system   |         |
|--|---------|
| • Number of alarm classes  | 32      |
| • Number of bit messages   | 4 000   |
| • 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      |
| • Number of process values per message                           | 8       |
| • Acknowledgment groups  | Yes     |
| • Message indicator  | Yes     |
| • Message buffer   |         |
| — Number of entries  | 1 024   |
| — Circulating buffer   | Yes     |
| — retentive  | Yes     |
| — maintenance-free   | Yes     |
| Recipe administration  |         |
| • 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     |
| • Structs  | Yes     |
| • Arrays   | Yes     |
| Images   |         |
| • Number of configurable images                                  | 500     |
| • Permanent window/default                                       | Yes     |
| • Global image   | Yes     |
| • Start screen configurable                                      | 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 view                         | Yes    |
| • Icons                                | Yes    |
| • Geometric objects                    | Yes    |
| <b>Complex image objects</b>           |        |
| • 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                                |                                    |
| — US American (English)                   | Yes                                |
| • Character sets                          |                                    |
| — Tahoma                                  | Yes                                |
| — Arial                                   | Yes                                |
| — Courier New                             | Yes                                |
| — WinCC flexible Standard                 | Yes                                |
| — Ideographic languages                   | Yes                                |
| • Font size freely scalable               | Yes                                |
| • Additional character sets can be loaded | Yes                                |
| <b>Transfer (upload/download)</b>         |                                    |
| • MPI/PROFIBUS DP                         | Yes                                |
| • USB                                     | Yes                                |
| • Ethernet                                | Yes                                |
| • using external storage medium           | No                                 |
| <b>Process coupling</b>                   |                                    |
| • S7-1200                                 | Yes                                |
| • S7-1500                                 | Yes                                |
| • S7-200                                  | Yes                                |
| • S7-300/400                              | Yes                                |
| • LOGO!                                   | Yes                                |
| • Win AC                                  | Yes                                |
| • SINUMERIK                               | Yes; with SINUMERIK option package |
| • SIMOTION                                | No; With WinCC, subsequent version |
| • 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> |     |
| • Clean screen                          | Yes |
| • Touch calibration                     | Yes |
| • Backup/restore                        | Yes |
| • Backup/Restore automatically          | Yes |
| • Simulation                            | Yes |
| • Device switchover                     | Yes |
| • Delta transfer                        | Yes |

### I/O / Options

|                    |     |
|--------------------|-----|
| <b>I/O devices</b> |     |
| • Printer          | Yes |
| • MultiMediaCard   | Yes |
| • SD card          | Yes |
| • USB memory       | Yes |
| • Network camera   | Yes |

### Mechanics/material

|                                |     |
|--------------------------------|-----|
| <b>Type of housing (front)</b> |     |
| • plastic                      | No  |
| • aluminum                     | Yes |
| • Stainless steel              | No  |

### Dimensions

|   |        |
|---|--------|
| Width of the housing front                      | 274 mm |
| Height of housing front                         | 190 mm |
| <b>Mounting cutout/device depth (W x H x T)</b> |        |
| • Mounting cutout, width                        | 251 mm |
| • Mounting cutout, height                       | 166 mm |
| Device depth                                    | 63 mm  |

### Weights

|                       |            |
|-----------------------|------------|
| Without packaging     | 1.9 kg     |
| With packaging        | 2.6 kg     |
| <b>last modified:</b> | 21.10.2014 |