

SIMATIC HMI TP900 Comfort, Comfort Panel, Touch operation, 9" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, (Microsoft Support included Security updates discontinued) configurable from WinCC Comfort V11



### General information

|                          |               |
|--------------------------|---------------|
| Product type designation | TP900 Comfort |
|--------------------------|---------------|

### 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 Pixel |
| • Vertical image resolution   | 480 Pixel |

### Backlighting

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

### 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 |
| <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 position   | vertical               |
| Mounting in portrait format possible                                  | Yes                    |
| Mounting in landscape format possible                                 | Yes                    |
| maximum permissible angle of inclination without external ventilation | 35°                    |
| <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                 |
| Starting current inrush I <sup>2</sup> t                              | 0.5 A <sup>2</sup> ·s  |
| <b>Power</b>  |                        |
| Active power input, typ.  | 18 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

## Time of day

### Clock

- Hardware clock (real-time) Yes
- Software clock Yes
- retentive Yes; Back-up duration typically 6 weeks
- synchronizable Yes

## Interfaces

|  |                          |
|--|--------------------------|
| Number of industrial Ethernet interfaces                       | 1; 2 ports (switch)      |
| Number of RS 485 interfaces                                    | 1; RS 422 / 485 combined |
| Number of RS 422 interfaces                                    | 0; together with RS 485  |
| 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                       |

### Industrial Ethernet

- Industrial Ethernet status LED 2
- Number of ports of the integrated switch 2

## Protocols

|                                   |                      |
|-----------------------------------|----------------------|
| PROFINET                          | Yes                  |
| Supports protocol for PROFINET IO | Yes                  |
| IRT                               | Yes; As of WinCC V12 |
| PROFIBUS                          | Yes                  |
| MPI                               | Yes                  |

### Protocols (Ethernet)

- TCP/IP Yes
- DHCP Yes
- SNMP Yes
- DCP Yes
- LLDP Yes

### WEB characteristics

- HTTP Yes
- HTTPS Yes
- HTML Yes
- XML Yes
- CSS Yes

|   |                      |
|---|----------------------|
| • Active X  | Yes                  |
| • JavaScript  | Yes                  |
| • Java VM   | No                   |
| <b>Redundancy mode</b>                                  |                      |
| <b>Media redundancy</b>                                 |                      |
| — MRP   | Yes; As of WinCC V12 |
| <b>Further protocols</b>                                |                      |
| • CAN   | No                   |
| • EtherNet/IP   | Yes                  |
| • MODBUS  | Yes                  |
| <b>EMC</b>  |                      |
| <b>Emission of radio interference acc. to EN 55 011</b> |                      |
| • 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)                                       | IP65                 |
| IP (rear)   | IP20                 |
| <b>NEMA (front)</b>                                     |                      |
| • Enclosure Type 4 at the front                         | Yes                  |
| • Enclosure Type 4x at the front                        | Yes                  |
| <b>Standards, approvals, certificates</b>               |                      |
| CE mark   | Yes                  |
| cULus   | Yes                  |
| RCM (formerly C-TICK)                                   | Yes                  |
| KC approval   | Yes                  |
| <b>Use in hazardous areas</b>                           |                      |
| • 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                  |
| <b>Marine approval</b>                                  |                      |
| • 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

### 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
- Operation (vertical installation, portrait format)
  - 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

- 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

|  |       |
|--|-------|
| <b>Online languages</b>  |       |
| • Number of online/runtime languages                             | 32    |
| <b>Project languages</b>   |       |
| • Languages per project  | 32    |
| <b>Functionality under WinCC (TIA Portal)</b>                    |       |
| Libraries  | Yes   |
| Applications/options   |       |
| • Web browser  | 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    |
| <b>Message system</b>  |       |
| • Number of alarm classes  | 32    |
| • Bit messages   |       |
| — Number of bit messages   | 4 000 |
| • Analog messages  |       |
| — 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   |
| <b>Recipe management</b>   |       |
| • 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     |
| <b>Variables</b>                       |         |
| • Number of variables per device       | 2 048   |
| • Number of variables per screen       | 400     |
| • Limit values                         | Yes     |
| • Multiplexing                         | Yes     |
| • Structures                           | Yes     |
| • Arrays                               | Yes     |
| <b>Images</b>                          |         |
| • Number of configurable images        | 500     |
| • Permanent window/default             | Yes     |
| • Global image                         | Yes     |
| • Pop-up images                        | Yes     |
| • Slide-in images                      | Yes     |
| • Image selection by PLC               | Yes     |
| • Image number in the PLC              | Yes     |
| <b>Image objects</b>                   |         |
| • 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     |
| <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            |
| • HTML browser                         | Yes            |
| • PDF display                          | Yes            |
| • IP camera display                    | 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>                  |                |



|  |                                    |
|--|------------------------------------|
| <ul style="list-style-type: none"> <li>• Keyboard fonts <ul style="list-style-type: none"> <li>— US English</li> </ul> </li> </ul> | Yes                                |
| <b>Transfer (upload/download)</b>  |                                    |
| <ul style="list-style-type: none"> <li>• MPI/PROFIBUS DP</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• USB</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• Ethernet</li> </ul>   | Yes                                |
| <ul style="list-style-type: none"> <li>• using external storage medium</li> </ul>  | Yes                                |
| <b>Process coupling</b>  |                                    |
| <ul style="list-style-type: none"> <li>• S7-1200</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• S7-1500</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• S7-200</li> </ul>   | Yes                                |
| <ul style="list-style-type: none"> <li>• S7-300/400</li> </ul>   | Yes                                |
| <ul style="list-style-type: none"> <li>• LOGO!</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• WinAC</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• SINUMERIK</li> </ul>  | Yes; with SINUMERIK option package |
| <ul style="list-style-type: none"> <li>• SIMOTION</li> </ul>   | Yes                                |
| <ul style="list-style-type: none"> <li>• Allen Bradley (EtherNet/IP)</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• Allen Bradley (DF1)</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• Mitsubishi (MC TCP/IP)</li> </ul>   | Yes                                |
| <ul style="list-style-type: none"> <li>• Mitsubishi (FX)</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• OMRON (FINS TCP)</li> </ul>   | No                                 |
| <ul style="list-style-type: none"> <li>• OMRON (LINK/Multilink)</li> </ul>   | Yes                                |
| <ul style="list-style-type: none"> <li>• Modicon (Modbus TCP/IP)</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• Modicon (Modbus)</li> </ul>   | Yes                                |
| <ul style="list-style-type: none"> <li>• OPC UA Client</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• OPC UA Server</li> </ul>  | Yes                                |
| <b>Service tools/configuration aids</b>  |                                    |
| <ul style="list-style-type: none"> <li>• Backup/Restore manually</li> </ul>  | Yes                                |
| <ul style="list-style-type: none"> <li>• Backup/Restore automatically</li> </ul>   | Yes                                |
| <ul style="list-style-type: none"> <li>• Simulation</li> </ul>   | Yes                                |
| <ul style="list-style-type: none"> <li>• Device switchover</li> </ul>  | Yes                                |
| <b>Peripherals/Options</b>   |                                    |
| Printer  | Yes                                |
| SIMATIC HMI MM memory card: Multi Media Card   | Yes; Up to 128 MB                  |
| SIMATIC HMI SD memory card: Secure Digital memory card   | Yes; Up to 2 GB                    |
| SIMATIC HMI CF memory card Compact Flash Card  | 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 |

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