

## Data sheet

**6AV2124-0UC02-0AX0**

SIMATIC HMI TP1900 COMFORT, COMFORT PANEL, TOUCH OPERATION, 19" WIDESCREEN-TFT-DISPLAY, 16 MIL. COLORS, PROFINET INTERFACE, MPI/PROFIBUS DP INTERFACE, 24 MB USER MEMORY, WINDOWS CE 6.0, CONFIGURABLE FROM WINCC COMFORT V11 SP2



### General information

|                          |                            |
|--------------------------|----------------------------|
| Product type designation | SIMATIC HMI TP1900 Comfort |
|--------------------------|----------------------------|

### Display

|                   |            |
|-------------------|------------|
| Design of display | TFT        |
| Screen diagonal   | 18.5 in    |
| Display width     | 409.8 mm   |
| Display height    | 230.4 mm   |
| Number of colors  | 16 777 216 |

### Resolution (pixels)

|                               |             |
|-------------------------------|-------------|
| • Horizontal image resolution | 1 366 Pixel |
| • Vertical image resolution   | 768 Pixel   |

### Backlighting

|                                |              |
|--------------------------------|--------------|
| • MTBF backlighting (at 25 °C) | 50 000 h     |
| • Backlight dimmable           | Yes; 0-100 % |

### Control elements

#### Keyboard fonts

|                           |   |
|---------------------------|---|
| • Function keys           |   |
| — Number of function keys | 0 |

|                                                                       |                       |
|-----------------------------------------------------------------------|-----------------------|
| • Keys with LED                                                       | No                    |
| • System keys                                                         | No                    |
| • Numeric/alphabetical input                                          |                       |
| — Numeric keyboard                                                    | Yes                   |
| — alphanumeric keyboard                                               | Yes                   |
| Touch operation                                                       |                       |
| • Design as touch screen                                              | Yes                   |
| 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                |
| Input current                                                         |                       |
| Current consumption (rated value)                                     | 1.3 A                 |
| Starting current inrush I <sup>2</sup> t                              | 0.5 A <sup>2</sup> ·s |
| Power                                                                 |                       |
| Power consumption, typ.                                               | 32 W                  |
| Processor                                                             |                       |
| Processor type                                                        | X86                   |
| Memory                                                                |                       |
| Flash                                                                 | Yes                   |
| RAM                                                                   | Yes                   |
| Memory available for user data                                        | 24 Mbyte              |
| Type of output                                                        |                       |
| 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)               | Yes                                     |
| • Software clock                           | Yes                                     |
| • retentive                                | Yes; Back-up duration typically 6 weeks |
| • synchronizable                           | Yes                                     |
| <b>Interfaces</b>                          |                                         |
| Number of industrial Ethernet interfaces   | 2; 2 ports (switch) + independent port  |
| 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 20 mA interfaces (TTY)           | 0                                       |
| Number of RS 232 interfaces                | 0                                       |
| Number of RS 422 interfaces                | 0; together with RS485                  |
| 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           | 3                                       |
| • Number of ports of the integrated switch | 2                                       |
| <b>Protocols</b>                           |                                         |
| PROFINET                                   | Yes                                     |
| Supports protocol for PROFINET IO          | Yes                                     |
| IRT                                        | Yes; As of WinCC V12                    |
| MRP                                        | Yes                                     |
| 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                                    | Yes                                     |
| • HTML                                     | Yes                                     |
| • XML                                      | Yes                                     |

|                                                  |      |
|--------------------------------------------------|------|
| • CSS                                            | Yes  |
| • Active X                                       | Yes  |
| • JavaScript                                     | Yes  |
| • Java VM                                        | No   |
| Further protocols                                |      |
| • CAN                                            | No   |
| • MODBUS                                         | Yes  |
| • EtherNet/IP                                    | 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                   |      |
| 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  |
| KC approval                                      | 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   |
| • IECEx Zone 2                                   | No   |
| • IECEx Zone 22                                  | No   |
| • cULus Class I Zone 1                           | No   |
| • cULus Class I Zone 2, Division 2               | Yes  |
| • FM Class I Division 2                          | Yes  |
| Ambient conditions                               |      |
| Ambient temperature during operation             |      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Operation (vertical installation) <ul style="list-style-type: none"> <li>— For vertical installation, min.</li> <li>— For vertical installation, max.</li> </ul> </li> <li>• Operation (max. tilt angle) <ul style="list-style-type: none"> <li>— At maximum tilt angle, min.</li> <li>— At maximum tilt angle, min.</li> </ul> </li> <li>• Operation (vertical installation, portrait format) <ul style="list-style-type: none"> <li>— For vertical installation, min.</li> <li>— For vertical installation, max.</li> </ul> </li> <li>• Operation (max. tilt angle, portrait format) <ul style="list-style-type: none"> <li>— At maximum tilt angle, min.</li> <li>— At maximum tilt angle, min.</li> </ul> </li> </ul> | 0 °C<br>45 °C<br><br>0 °C<br>40 °C<br><br>0 °C<br>40 °C<br><br>0 °C<br>35 °C                                   |
| Ambient temperature during storage/transportation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                |
| <ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -20 °C<br>60 °C                                                                                                |
| Relative humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                |
| <ul style="list-style-type: none"> <li>• Operation, max.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 90 %; no condensation                                                                                          |
| Operating systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                |
| proprietary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No                                                                                                             |
| pre-installed operating system                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                |
| <ul style="list-style-type: none"> <li>• Windows CE</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                                                                                                            |
| Configuration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                |
| Message indicator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                                            |
| Alarm logging system (incl. buffer and acknowledgment)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                                                                                                            |
| Process value display (output)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                                                                                                            |
| Process value default (input) possible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                                                                                                            |
| Recipe management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                                            |
| Configuration software                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                |
| <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>                                                                                                                                                                                                                                                                                                                                                                      | No<br>No<br>No<br>No<br>No<br>No<br>Yes; V11 SP2 or higher<br>Yes; V11 SP2 or higher<br>Yes; V11 SP2 or higher |
| Languages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                |
| Online languages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                |
| <ul style="list-style-type: none"> <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   |
| • 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                             | 320   |
| Message system                                                   |       |
| • Number of alarm classes                                        | 32    |
| • Bit messages                                                   |       |
| — Number of bit messages                                         | 6 000 |
| • 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   |
| Recipe management                                                |       |
| • Number of recipes                                              | 500   |
| • Data records per recipe                                        | 1 000 |
| • Entries per data record                                        | 2 000 |

|                                        |         |
|----------------------------------------|---------|
| • Size of internal recipe memory       | 4 Mbyte |
| • Recipe memory expandable             | Yes     |
| <b>Variables</b>                       |         |
| • Number of variables per device       | 4 096   |
| • Number of variables per screen       | 400     |
| • Limit values                         | Yes     |
| • Multiplexing                         | Yes     |
| • Structures                           | Yes     |
| • Arrays                               | Yes     |
| <b>Images</b>                          |         |
| • Number of configurable images        | 750     |
| • 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          | 600     |
| • 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 | 40      |
| • 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                                  |                |
| • 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            |
| Archiving                              |                |
| • Number of archives per device        | 50             |
| • Number of entries per archive        | 50 000         |
| • 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                               |                |
| • Number of user groups                | 50             |
| • Number of user rights                | 32             |
| • Number of users                      | 50             |
| • Password export/import               | Yes            |
| • SIMATIC Logon                        | Yes            |
| Logging through printer                |                |
| • 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                          | No                                 |
| Process coupling                                         |                                    |
| • 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                                |
| Service tools/configuration aids                         |                                    |
| • Backup/Restore manually                                | Yes                                |
| • Backup/Restore automatically                           | Yes                                |
| • Simulation                                             | Yes                                |
| • Device switchover                                      | Yes                                |
| Peripherals/Options                                      |                                    |
| Peripherals                                              |                                    |
| • 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
- Aluminum
- Stainless steel

No

Yes

No

## Dimensions

Width of the housing front

483 mm

Height of housing front

337 mm

Mounting cutout, width

465 mm

Mounting cutout, height

319 mm

Overall depth

75 mm

## Weights

Weight without packaging

6.5 kg

**last modified:**

07/07/2016