

SIMATIC HMI TP2200 Comfort PRO for support arm (not extendable, flange top), neutral front, Comfort Panel, touch operation, 22" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 24 MB configuration memory, WEC 2013, configurable as of TIA Portal V16 Update 8 or V17 Update 6

| General information                                                   |                            |
|-----------------------------------------------------------------------|----------------------------|
| Product type designation                                              | TP2200 Comfort PRO         |
| Display                                                               |                            |
| Design of display                                                     | TFT                        |
| Screen diagonal                                                       | 21.5 in                    |
| Display width                                                         | 476 mm                     |
| Display height                                                        | 267.8 mm                   |
| Number of colors                                                      | 16 777 216                 |
| Resolution (pixels)                                                   |                            |
| • Horizontal image resolution                                         | 1 920 pixel                |
| • Vertical image resolution                                           | 1 080 pixel                |
| Backlighting                                                          |                            |
| • MTBF backlighting (at 25 °C)                                        | 30 000 h; At 25°C          |
| • Backlight dimmable                                                  | Yes; LED, dimmable         |
| Control elements                                                      |                            |
| Keyboard fonts                                                        |                            |
| • Function keys<br>— 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; Projective-capacitive |
| Expansions for operator control of the process                        |                            |
| • Direct keys (touch buttons as S7 input I/O)                         | 70                         |
| Installation type/mounting                                            |                            |
| Mounting                                                              | Support arm                |
| Mounting position                                                     | vertical                   |
| Mounting in portrait format possible                                  | No                         |
| 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)                                     | 1.6 A                      |
| Current consumption, max.                                             | 1.9 A                      |
| Starting current inrush I²t                                           | 0.5 A²·s                   |
| Power                                                                 |                            |
| Active power input, typ.                                              | 38.4 W                     |
| Processor                                                             |                            |
| Processor type                                                        | X86                        |
| Memory                                                                |                            |
| Flash                                                                 | Yes                        |
| RAM                                                                   | Yes                        |

|                                                         |                                                 |
|---------------------------------------------------------|-------------------------------------------------|
| Memory available for user data                          | 24 Mbyte                                        |
| <b>Type of output</b>                                   |                                                 |
| Info LED                                                | No                                              |
| Power LED                                               | No                                              |
| Error LED                                               | No                                              |
| Acoustics                                               |                                                 |
| • Buzzer                                                | No                                              |
| • Speaker                                               | Yes                                             |
| <b>Time of day</b>                                      |                                                 |
| Clock                                                   |                                                 |
| • Hardware clock (real-time)                            | Yes                                             |
| • Software clock                                        | 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 RS 422 interfaces                             | 0; together with RS 485                         |
| Number of RS 232 interfaces                             | 0                                               |
| Number of USB interfaces                                | 2; USB 2.0                                      |
| Number of 20 mA interfaces (TTY)                        | 0                                               |
| Number of parallel interfaces                           | 0                                               |
| Number of other interfaces                              | 0                                               |
| Number of SD card slots                                 | 2                                               |
| With software interfaces                                | No                                              |
| <b>Industrial Ethernet</b>                              |                                                 |
| • Industrial Ethernet status LED                        | 3                                               |
| • Number of ports of the integrated switch              | 2                                               |
| <b>Protocols</b>                                        |                                                 |
| PROFINET                                                | Yes                                             |
| Supports protocol for PROFINET IO                       | Yes                                             |
| IRT                                                     | Yes; WinCC V16 Update 8, V17 Update 6 or higher |
| PROFIBUS                                                | Yes                                             |
| EtherNet/IP                                             | Yes                                             |
| MPI                                                     | Yes                                             |
| <b>Protocols (Ethernet)</b>                             |                                                 |
| • TCP/IP                                                | Yes                                             |
| • DHCP                                                  | Yes                                             |
| • SNMP                                                  | Yes                                             |
| • DCP                                                   | Yes                                             |
| • LLDP                                                  | Yes                                             |
| <b>WEB characteristics</b>                              |                                                 |
| • HTTP                                                  | Yes                                             |
| • HTTPS                                                 | 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                                             |
| <b>Further protocols</b>                                |                                                 |
| • CAN                                                   | No                                              |
| • 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)                                                | IP65                               |
| NEMA (front)                                             |                                    |
| • Enclosure Type 4 at the front                          | Yes                                |
| • Enclosure Type 4x at the front                         | Yes                                |
| <b>Standards, approvals, certificates</b>                |                                    |
| CE mark                                                  | Yes                                |
| cULus                                                    | Yes                                |
| FM approval                                              | Yes                                |
| RCM (formerly C-TICK)                                    | Yes                                |
| KC approval                                              | Yes                                |
| <b>Use in hazardous areas</b>                            |                                    |
| • 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                       | No                                 |
| • cULus Class II Division 2                              | No                                 |
| • FM Class I Division 2                                  | No                                 |
| • FM Class II Division 2                                 | No                                 |
| <b>Marine approval</b>                                   |                                    |
| • Germanischer Lloyd (GL)                                | No                                 |
| • American Bureau of Shipping (ABS)                      | No                                 |
| • Bureau Veritas (BV)                                    | No                                 |
| • Det Norske Veritas (DNV)                               | No                                 |
| • Korean Register of Shipping (KRS)                      | No                                 |
| • Lloyds Register of Shipping (LRS)                      | No                                 |
| • Nippon Kaiji Kyokai (Class NK)                         | No                                 |
| • Polski Rejestr Statkow (PRS)                           | No                                 |
| • Chinese Classification Society (CCS)                   | No                                 |
| <b>Ambient conditions</b>                                |                                    |
| <b>Ambient temperature during operation</b>              |                                    |
| Operation (vertical installation)                        |                                    |
| — For vertical installation, min.                        | 0 °C                               |
| — For vertical installation, max.                        | 45 °C                              |
| Operation (max. tilt angle)                              |                                    |
| — At maximum tilt angle, min.                            | 0 °C                               |
| — At maximum tilt angle, max.                            | 40 °C                              |
| <b>Ambient temperature during storage/transportation</b> |                                    |
| • min.                                                   | -20 °C                             |
| • max.                                                   | 60 °C                              |
| <b>Relative humidity</b>                                 |                                    |
| • Operation, max.                                        | 90 %; no condensation              |
| <b>Operating systems</b>                                 |                                    |
| proprietary                                              | No                                 |
| pre-installed operating system                           |                                    |
| • Windows CE                                             | Yes; Windows Embedded Compact 2013 |
| <b>configuration / header</b>                            |                                    |
| Message indicator                                        | Yes                                |
| Alarm system (incl. buffer and acknowledgment)           | Yes                                |
| Process value display (output)                           | Yes                                |
| Process value default (input) possible                   | Yes                                |
| Recipe management                                        | Yes                                |
| <b>Configuration software</b>                            |                                    |
| • 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; V16 Update 8, V17 Update 6 or higher |
| • WinCC Advanced (TIA Portal)     | Yes; V16 Update 8, V17 Update 6 or higher |
| • WinCC Professional (TIA Portal) | Yes; V16 Update 8, V17 Update 6 or higher |

## 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                                                | 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     |
| • System messages HMI                                        | Yes     |
| • System event, more (SIMATIC S7, SINUMERIK, SIMOTION, ... ) | 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     |
| Variables                                                    |         |
| • Number of variables per device                             | 4 096   |
| • Number of variables per screen                             | 400     |
| • Limit values                                               | Yes     |
| • Multiplexing                                               | Yes     |
| • Structures                                                 | Yes     |
| • Arrays                                                     | Yes     |
| Images                                                       |         |
| • 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    |
| Image objects                          |        |
| • 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    |
| Complex image objects                  |        |
| • 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                        | Yes                                |
| 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                                    |                                    |
| 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                             | 527 mm                             |
| Height of housing front                                | 329 mm; Without basic adapter      |
| Overall depth                                          | 101 mm; Without basic adapter      |
| Weights                                                |                                    |
| Weight (without packaging)                             | 8.5 kg                             |

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