



SIMATIC HMI, TP900 Basic Keyless; Basic Panel, neutral design, touch operation, 9" TFT display, 65536 colors, PROFINET interface, configurable from WinCC Basic V13/ STEP 7 Basic V13, contains open-source software, which is provided free of charge see enclosed CD

| General information                                                   |                                          |
|-----------------------------------------------------------------------|------------------------------------------|
| Product type designation                                              | TP900 Basic Keyless                      |
| Display                                                               |                                          |
| Design of display                                                     | TFT widescreen display, LED backlighting |
| Screen diagonal                                                       | 9 in                                     |
| Display width                                                         | 198 mm                                   |
| Display height                                                        | 111.7 mm                                 |
| Number of colors                                                      | 65 536                                   |
| Resolution (pixels)                                                   |                                          |
| • Horizontal image resolution                                         | 800 pixel                                |
| • Vertical image resolution                                           | 480 pixel                                |
| Backlighting                                                          |                                          |
| • MTBF backlighting (at 25 °C)                                        | 20 000 h                                 |
| • Backlight dimmable                                                  | Yes                                      |
| Control elements                                                      |                                          |
| Keyboard fonts                                                        |                                          |
| • Function keys                                                       | No                                       |
| — 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                   |
| Touch operation                                                       |                                          |
| • Design as touch screen                                              | Yes; Analog-resistive                    |
| • Design as multi-touch screen                                        | No                                       |
| • Monitor keyboard                                                    | Yes                                      |
| 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)                                     | 230 mA                                   |

|                                                  |                                         |
|--------------------------------------------------|-----------------------------------------|
| Starting current inrush I <sup>2</sup> t         | 0.2 A <sup>2</sup> ·s                   |
| <b>Processor</b>                                 |                                         |
| Processor type                                   | ARM                                     |
| <b>Memory</b>                                    |                                         |
| Flash                                            | Yes                                     |
| RAM                                              | Yes                                     |
| Memory available for user data                   | 10 Mbyte                                |
| <b>Type of output</b>                            |                                         |
| Acoustics                                        | Buzzer                                  |
| • Buzzer                                         | Yes                                     |
| • Speaker                                        | No                                      |
| <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         | 1                                       |
| Number of RS 485 interfaces                      | 0                                       |
| Number of RS 422 interfaces                      | 0                                       |
| Number of RS 232 interfaces                      | 0                                       |
| Number of USB interfaces                         | 1; USB 2.0, up to 16 GB respectively    |
| Number of 20 mA interfaces (TTY)                 | 0                                       |
| Number of parallel interfaces                    | 0                                       |
| Number of other interfaces                       | 0                                       |
| Number of SD card slots                          | 0                                       |
| With software interfaces                         | No                                      |
| <b>Industrial Ethernet</b>                       |                                         |
| • Industrial Ethernet status LED                 | 2                                       |
| • Number of ports of the integrated switch       | 0                                       |
| <b>Protocols</b>                                 |                                         |
| PROFINET                                         | Yes                                     |
| Supports protocol for PROFINET IO                | No                                      |
| IRT                                              | No                                      |
| PROFIBUS                                         | No                                      |
| EtherNet/IP                                      | Yes                                     |
| MPI                                              | No                                      |
| <b>Protocols (Ethernet)</b>                      |                                         |
| • TCP/IP                                         | Yes                                     |
| • DHCP                                           | Yes                                     |
| • SNMP                                           | Yes                                     |
| • DCP                                            | Yes                                     |
| • LLDP                                           | Yes                                     |
| <b>WEB characteristics</b>                       |                                         |
| • HTTP                                           | No                                      |
| • HTML                                           | No                                      |
| <b>Redundancy mode</b>                           |                                         |
| Media redundancy                                 |                                         |
| — MRP                                            | No                                      |
| <b>Further protocols</b>                         |                                         |
| • CAN                                            | No                                      |
| • MODBUS                                         | Yes; Modicon (MODBUS TCP/IP)            |
| <b>Interrupts/diagnostics/status information</b> |                                         |
| Diagnoses                                        |                                         |
| • Diagnostic information readable                | No                                      |
| <b>EMC</b>                                       |                                         |
| 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                                      |

|                                                    |                                              |
|----------------------------------------------------|----------------------------------------------|
| <b>Degree and class of protection</b>              |                                              |
| IP (at the front)                                  | IP65                                         |
| IP (rear)                                          | IP20                                         |
| NEMA (front)                                       |                                              |
| • Enclosure Type 4 at the front                    | Yes                                          |
| • Enclosure Type 4x at the front                   | Yes                                          |
| <b>Standards, approvals, certificates</b>          |                                              |
| CE mark                                            | Yes                                          |
| <b>Ambient conditions</b>                          |                                              |
| Ambient temperature during operation               |                                              |
| Operation (vertical installation)                  |                                              |
| — For vertical installation, min.                  | 0 °C                                         |
| — For vertical installation, max.                  | 50 °C                                        |
| Operation (max. tilt angle)                        |                                              |
| — At maximum tilt angle, min.                      | 0 °C                                         |
| — At maximum tilt angle, max.                      | 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, max.                      | 35 °C                                        |
| Ambient temperature during storage/transportation  |                                              |
| • min.                                             | -20 °C                                       |
| • max.                                             | 60 °C                                        |
| Relative humidity                                  |                                              |
| • Operation, max.                                  | 90 %; no condensation                        |
| <b>Operating systems</b>                           |                                              |
| proprietary                                        | Yes                                          |
| pre-installed operating system                     |                                              |
| • Windows CE                                       | No                                           |
| <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                                          |
| Configuration software                             |                                              |
| • STEP 7 Basic (TIA Portal)                        | Yes; via integrated WinCC Basic (TIA Portal) |
| • STEP 7 Professional (TIA Portal)                 | Yes; via integrated WinCC Basic (TIA Portal) |
| • WinCC flexible Compact                           | No                                           |
| • WinCC flexible Standard                          | No                                           |
| • WinCC flexible Advanced                          | No                                           |
| • WinCC Basic (TIA Portal)                         | Yes                                          |
| • WinCC Comfort (TIA Portal)                       | Yes                                          |
| • WinCC Advanced (TIA Portal)                      | Yes                                          |
| • WinCC Professional (TIA Portal)                  | Yes                                          |
| <b>Languages</b>                                   |                                              |
| Online languages                                   |                                              |
| • Number of online/runtime languages               | 10                                           |
| Project languages                                  |                                              |
| • Languages per project                            | 32                                           |
| <b>Functionality under WinCC (TIA Portal)</b>      |                                              |
| Libraries                                          | Yes                                          |
| Applications/options                               |                                              |
| • Web browser                                      | No                                           |
| • SIMATIC WinCC Sm@rtServer                        | No                                           |
| Number of Visual Basic Scripts                     | No                                           |
| Task planner                                       |                                              |
| • time-controlled                                  | No                                           |

|                                                              |                                                               |
|--------------------------------------------------------------|---------------------------------------------------------------|
| • task-controlled                                            | Yes                                                           |
| Help system                                                  | Yes                                                           |
| • Number of characters per info text                         | 500                                                           |
| Message system                                               |                                                               |
| • Number of alarm classes                                    | 32                                                            |
| • Bit messages                                               |                                                               |
| — Number of bit messages                                     | 1 000                                                         |
| • Analog messages                                            |                                                               |
| — Number of analog messages                                  | 25                                                            |
| • S7 alarm number procedure                                  | No                                                            |
| • System messages HMI                                        | Yes                                                           |
| • System event, more (SIMATIC S7, SINUMERIK, SIMOTION, ... ) | Yes; System message buffer of the SIMATIC S7-1200 and S7-1500 |
| • Number of characters per message                           | 80                                                            |
| • Number of process values per message                       | 8                                                             |
| • Acknowledgment groups                                      | Yes                                                           |
| • Message indicator                                          | Yes                                                           |
| • Message buffer                                             |                                                               |
| — Number of entries                                          | 256                                                           |
| — Circulating buffer                                         | Yes                                                           |
| — retentive                                                  | Yes                                                           |
| — maintenance-free                                           | Yes                                                           |
| Recipe management                                            |                                                               |
| • Number of recipes                                          | 50                                                            |
| • Data records per recipe                                    | 100                                                           |
| • Entries per data record                                    | 100                                                           |
| • Size of internal recipe memory                             | 256 kbyte                                                     |
| Variables                                                    |                                                               |
| • Number of variables per device                             | 800                                                           |
| • Number of variables per screen                             | 100                                                           |
| • Limit values                                               | Yes                                                           |
| • Multiplexing                                               | Yes                                                           |
| • Structures                                                 | No                                                            |
| • Arrays                                                     | Yes                                                           |
| Images                                                       |                                                               |
| • Number of configurable images                              | 100                                                           |
| • Permanent window/default                                   | Yes                                                           |
| • Global image                                               | Yes                                                           |
| • Image selection by PLC                                     | Yes                                                           |
| • Image number in the PLC                                    | Yes                                                           |
| Image objects                                                |                                                               |
| • 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                                        |                                                               |
| • Alarm view                                                 | Yes                                                           |
| • Trend view                                                 | Yes                                                           |
| • User view                                                  | Yes                                                           |
| • Status/control                                             | No                                                            |
| • Sm@rtClient view                                           | No                                                            |
| • Recipe view                                                | Yes                                                           |
| • f(x) trend view                                            | No                                                            |
| • System diagnostics view                                    | Yes                                                           |
| • Media Player                                               | No                                                            |

|                                                        |                           |
|--------------------------------------------------------|---------------------------|
| • HTML browser                                         | No                        |
| • PDF display                                          | No                        |
| • IP camera display                                    | No                        |
| • Bar graphs                                           | Yes                       |
| • Sliders                                              | No                        |
| • Pointer instruments                                  | No                        |
| • Analog/digital clock                                 | No                        |
| <b>Archiving</b>                                       |                           |
| • Number of archives per device                        | 2                         |
| • Number of entries per archive                        | 10 000                    |
| • Message archive                                      | Yes                       |
| • Process value archive                                | Yes                       |
| • Archiving methods                                    |                           |
| — Sequential archive                                   | Yes                       |
| — Short-term archive                                   | Yes                       |
| • Memory location                                      |                           |
| — Memory card                                          | No                        |
| — USB memory                                           | Yes                       |
| — Ethernet                                             | No                        |
| • Data storage format                                  |                           |
| — CSV                                                  | No                        |
| — TXT                                                  | Yes                       |
| — RDB                                                  | No                        |
| <b>Security</b>                                        |                           |
| • Number of user groups                                | 50                        |
| • Password export/import                               | Yes; Possible via ProSave |
| • SIMATIC Logon                                        | No                        |
| <b>Character sets</b>                                  |                           |
| • Keyboard fonts                                       |                           |
| — US English                                           | Yes                       |
| <b>Transfer (upload/download)</b>                      |                           |
| • MPI/PROFIBUS DP                                      | No                        |
| • USB                                                  | No                        |
| • Ethernet                                             | Yes                       |
| • using external storage medium                        | Yes; Backup/restore       |
| <b>Process coupling</b>                                |                           |
| • S7-1200                                              | Yes                       |
| • S7-1500                                              | Yes                       |
| • S7-200                                               | Yes                       |
| • S7-300/400                                           | Yes                       |
| • LOGO!                                                | Yes                       |
| • WinAC                                                | Yes                       |
| • SIMOTION                                             | Yes                       |
| • Allen Bradley (EtherNet/IP)                          | Yes                       |
| • Allen Bradley (DF1)                                  | No                        |
| • Mitsubishi (MC TCP/IP)                               | Yes                       |
| • Mitsubishi (FX)                                      | No                        |
| • OMRON (FINS TCP)                                     | No                        |
| • OMRON (LINK/Multilink)                               | No                        |
| • Modicon (Modbus TCP/IP)                              | Yes                       |
| • Modicon (Modbus)                                     | No                        |
| <b>Service tools/configuration aids</b>                |                           |
| • Backup/Restore manually                              | Yes                       |
| • Backup/Restore automatically                         | No                        |
| • Simulation                                           | Yes                       |
| • Device switchover                                    | Yes                       |
| <b>Peripherals/Options</b>                             |                           |
| Printer                                                | No                        |
| SIMATIC HMI MM memory card: Multi Media Card           | No                        |
| SIMATIC HMI SD memory card: Secure Digital memory card | No                        |
| SIMATIC HMI CF memory card Compact Flash Card          | No                        |

|                                        |                                          |
|----------------------------------------|------------------------------------------|
| USB memory                             | Yes; USB storage medium can be connected |
| SIMATIC IPC USB Flashdrive (USB stick) | No                                       |
| SIMATIC HMI USB stick                  | No                                       |
| <b>Mechanics/material</b>              |                                          |
| Enclosure material (front)             |                                          |
| • Plastic                              | Yes                                      |
| • Aluminum                             | No                                       |
| • Stainless steel                      | No                                       |
| <b>Dimensions</b>                      |                                          |
| Width of the housing front             | 267 mm                                   |
| Height of housing front                | 182 mm                                   |
| Mounting cutout, width                 | 251 mm                                   |
| Mounting cutout, height                | 166 mm                                   |
| Overall depth                          | 55 mm                                    |
| <b>Weights</b>                         |                                          |
| Weight (without packaging)             | 1 130 g                                  |
| Weight (with packaging)                | 1 393 g                                  |

**last modified:**

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