

SIMATIC HMI KP400 Comfort, Comfort Panel, key operation, 4" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 4 MB configuration memory, Windows CE 6.0, configurable from WinCC Comfort V11



| General information            |               |
|--------------------------------|---------------|
| Product type designation       | KP400 Comfort |
| Display                        |               |
| Design of display              | TFT           |
| Screen diagonal                | 4.3 in        |
| Display width                  | 95 mm         |
| Display height                 | 53.8 mm       |
| Number of colors               | 16 777 216    |
| Resolution (pixels)            |               |
| • Horizontal image resolution  | 480 Pixel     |
| • Vertical image resolution    | 272 Pixel     |
| Backlighting                   |               |
| • MTBF backlighting (at 25 °C) | 80 000 h      |
| • Backlight dimmable           | Yes; 0-100 %  |
| Control elements               |               |
| Keyboard fonts                 |               |
| • Function keys                |               |
| — Number of function keys      | 8             |

|                                                                       |                              |
|-----------------------------------------------------------------------|------------------------------|
| • Keys with LED                                                       | Yes                          |
| • System keys                                                         | Yes                          |
| • Numeric keyboard                                                    | Yes                          |
| • alphanumeric keyboard                                               | Yes; similar to mobile phone |
| <b>Touch operation</b>                                                |                              |
| • Design as touch screen                                              | No                           |
| <b>Expansions for operator control of the process</b>                 |                              |
| • DP direct LEDs (LEDs as S7 output I/O)<br>— F1...Fx                 | 8                            |
| • Direct keys (keys as S7 input I/O)<br>— F1...Fx                     | 8                            |
| • Direct keys (touch buttons as S7 input I/O)                         | 0                            |
| <b>Installation type/mounting</b>                                     |                              |
| Mounting position                                                     | vertical                     |
| Mounting in portrait format possible                                  | No                           |
| Mounting in landscape format possible                                 | Yes                          |
| maximum permissible angle of inclination without external ventilation | 35°                          |
| <b>Supply voltage</b>                                                 |                              |
| Type of supply voltage                                                | DC                           |
| Rated value (DC)                                                      | 24 V                         |
| permissible range, lower limit (DC)                                   | 19.2 V                       |
| permissible range, upper limit (DC)                                   | 28.8 V                       |
| <b>Input current</b>                                                  |                              |
| Current consumption (rated value)                                     | 0.13 A                       |
| Starting current inrush I <sup>2</sup> t                              | 0.5 A <sup>2</sup> ·s        |
| <b>Power</b>                                                          |                              |
| Active power input, typ.                                              | 3.1 W                        |
| <b>Processor</b>                                                      |                              |
| Processor type                                                        | ARM                          |
| <b>Memory</b>                                                         |                              |
| Flash                                                                 | Yes                          |
| RAM                                                                   | Yes                          |
| Memory available for user data                                        | 4 Mbyte                      |
| <b>Type of output</b>                                                 |                              |
| Info LED                                                              | Yes                          |
| Power LED                                                             | No                           |
| Error LED                                                             | No                           |
| Acoustics<br>• Buzzer                                                 | Yes                          |

|                                            |                                         |
|--------------------------------------------|-----------------------------------------|
| • Speaker                                  | No                                      |
| <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   | 1                                       |
| Number of RS 485 interfaces                | 1; RS 422/485 combined                  |
| Number of RS 422 interfaces                | 1                                       |
| Number of RS 232 interfaces                | 0                                       |
| Number of USB interfaces                   | 1; USB 2.0                              |
| • USB Mini B                               | 1; 5-pole                               |
| Number of 20 mA interfaces (TTY)           | 0                                       |
| Number of parallel interfaces              | 0                                       |
| Number of other interfaces                 | 0                                       |
| Number of SD card slots                    | 2                                       |
| With software interfaces                   | No                                      |
| <b>Industrial Ethernet</b>                 |                                         |
| • Industrial Ethernet status LED           | 2                                       |
| • Number of ports of the integrated switch | 1; No switch integrated                 |
| <b>Protocols</b>                           |                                         |
| PROFINET                                   | Yes                                     |
| Supports protocol for PROFINET IO          | Yes                                     |
| IRT                                        | No                                      |
| MRP                                        | No                                      |
| PROFIBUS                                   | Yes                                     |
| MPI                                        | Yes                                     |
| <b>Protocols (Ethernet)</b>                |                                         |
| • TCP/IP                                   | Yes                                     |
| • DHCP                                     | Yes                                     |
| • SNMP                                     | Yes                                     |
| • DCP                                      | Yes                                     |
| • LLDP                                     | Yes                                     |
| <b>WEB characteristics</b>                 |                                         |
| • HTTP                                     | Yes                                     |
| • HTTPS                                    | No                                      |
| • HTML                                     | Yes                                     |
| • XML                                      | No                                      |
| • CSS                                      | Yes                                     |

|                                                  |      |
|--------------------------------------------------|------|
| • Active X                                       | No   |
| • JavaScript                                     | Yes  |
| • Java VM                                        | No   |
| Further protocols                                |      |
| • CAN                                            | No   |
| • EtherNet/IP                                    | Yes  |
| • MODBUS                                         | 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)                        | Yes  |
| • American Bureau of Shipping (ABS)              | Yes  |
| • Bureau Veritas (BV)                            | Yes  |
| • Det Norske Veritas (DNV)                       | Yes  |
| • Lloyds Register of Shipping (LRS)              | Yes  |
| • Nippon Kaiji Kyokai (Class NK)                 | Yes  |
| • Polski Rejestr Statkow (PRS)                   | No   |
| Use in hazardous areas                           |      |
| • ATEX Zone 2                                    | Yes  |
| • ATEX Zone 22                                   | Yes  |
| • IECEx Zone 2                                   | Yes  |
| • IECEx Zone 22                                  | Yes  |
| • cULus Class I Zone 1                           | No   |
| • cULus Class I Zone 2, Division 2               | Yes  |
| • FM Class I Division 2                          | Yes  |
| Ambient conditions                               |      |
| 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, min.                        | 40 °C                 |
| • Operation (vertical installation, portrait format) |                       |
| — For vertical installation, min.                    | 0 °C                  |
| — For vertical installation, max.                    | 40 °C                 |
| • Operation (max. tilt angle, portrait format)       |                       |
| — At maximum tilt angle, min.                        | 0 °C                  |
| — At maximum tilt angle, min.                        | 35 °C                 |
| Ambient temperature during storage/transportation    |                       |
| • min.                                               | -20 °C                |
| • max.                                               | 60 °C                 |
| Relative humidity                                    |                       |
| • Operation, max.                                    | 90 %; no condensation |
| Operating systems                                    |                       |
| proprietary                                          | No                    |
| pre-installed operating system                       |                       |
| • Windows CE                                         | Yes                   |
| Configuration                                        |                       |
| Message indicator                                    | Yes                   |
| Alarm system (incl. buffer and acknowledgment)       | Yes                   |
| Process value display (output)                       | Yes                   |
| Process value default (input) possible               | Yes                   |
| Recipe management                                    | Yes                   |
| Configuration software                               |                       |
| • STEP 7 Basic (TIA Portal)                          | No                    |
| • STEP 7 Professional (TIA Portal)                   | No                    |
| • WinCC flexible Compact                             | No                    |
| • WinCC flexible Standard                            | No                    |
| • WinCC flexible Advanced                            | No                    |
| • WinCC Basic (TIA Portal)                           | No                    |
| • WinCC Comfort (TIA Portal)                         | Yes; from V11         |
| • WinCC Advanced (TIA Portal)                        | Yes; from V11         |
| • WinCC Professional (TIA Portal)                    | Yes; from V11         |
| Languages                                            |                       |
| 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                             | 70        |
| Message system                                                   |           |
| • Number of alarm classes                                        | 32        |
| • Bit messages                                                   |           |
| — Number of bit messages                                         | 2 000     |
| • Analog messages                                                |           |
| — Number of analog messages                                      | 50        |
| • 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                                              | 256       |
| — Circulating buffer                                             | Yes       |
| — retentive                                                      | Yes       |
| — maintenance-free                                               | Yes       |
| Recipe management                                                |           |
| • Number of recipes                                              | 100       |
| • Data records per recipe                                        | 200       |
| • Entries per data record                                        | 200       |
| • Size of internal recipe memory                                 | 512 kbyte |
| • Recipe memory expandable                                       | Yes       |

|                                        |       |
|----------------------------------------|-------|
| <b>Variables</b>                       |       |
| • Number of variables per device       | 1 024 |
| • Number of variables per screen       | 50    |
| • Limit values                         | Yes   |
| • Multiplexing                         | Yes   |
| • Structures                           | Yes   |
| • Arrays                               | Yes   |
| <b>Images</b>                          |       |
| • Number of configurable images        | 500   |
| • Permanent window/default             | Yes   |
| • Global image                         | Yes   |
| • Pop-up images                        | Yes   |
| • Slide-in images                      | Yes   |
| • Image selection by PLC               | Yes   |
| • Image number in the PLC              | Yes   |
| <b>Image objects</b>                   |       |
| • Number of objects per image          | 50    |
| • 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 | 5     |
| • 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                         | No    |
| • PDF display                          | Yes   |
| • IP camera display                    | Yes   |

|                                        |                |
|----------------------------------------|----------------|
| • Bar graphs                           | Yes            |
| • Sliders                              | Yes            |
| • Pointer instruments                  | Yes            |
| • Analog/digital clock                 | Yes            |
| <b>Lists</b>                           |                |
| • Number of text lists per project     | 300            |
| • Number of entries per text list      | 30             |
| • Number of graphics lists per project | 100            |
| • Number of entries per graphics list  | 30             |
| <b>Archiving</b>                       |                |
| • Number of archives per device        | 10             |
| • 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                          | Yes            |
| — USB memory                           | Yes            |
| — Ethernet                             | Yes            |
| • Data storage format                  |                |
| — CSV                                  | Yes            |
| — TXT                                  | Yes            |
| — RDB                                  | Yes            |
| <b>Security</b>                        |                |
| • Number of user groups                | 50             |
| • Number of user rights                | 32             |
| • Number of users                      | 50             |
| • Password export/import               | Yes            |
| • SIMATIC Logon                        | Yes            |
| <b>Logging through printer</b>         |                |
| • Alarms                               | Yes            |
| • Report (shift log)                   | Yes            |
| • Hardcopy                             | Yes            |
| • Electronic print to file             | Yes; PDF, HTML |
| <b>Character sets</b>                  |                |
| • Keyboard fonts                       |                |
| — US English                           | Yes            |
| <b>Transfer (upload/download)</b>      |                |
| • 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                                      |                                    |
| 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                  | Yes |
| • Aluminum                 | No  |
| • Stainless steel          | No  |

#### Dimensions

|                            |        |
|----------------------------|--------|
| Width of the housing front | 152 mm |
| Height of housing front    | 188 mm |
| Mounting cutout, width     | 135 mm |
| Mounting cutout, height    | 171 mm |
| Overall depth              | 49 mm  |

#### Weights

|                          |        |
|--------------------------|--------|
| Weight without packaging | 0.8 kg |
| Weight incl. packaging   | 0.9 kg |

**last modified:** 05/22/2018 