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Data sheet 6AV2144-6QC10-0AL1

SIMATIC HMI TP1500 Comfort, Comfort Panel, Alfa Laval design, touch operation, alarm LED, 15" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 24 MB configuration memory, Windows CE 6.0 (Microsoft support including security updates discontinued)

General information	
Product type designation	TP1500 Comfort
Display	
Design of display	TFT
Screen diagonal	15.4 in
Display width	331.2 mm
Display height	207 mm
Number of colors	16 777 216
Resolution (pixels)	
● Horizontal image resolution	1 280 pixel
● Vertical image resolution	800 pixel
Backlighting	
● MTBF backlighting (at 25 °C)	80 000 h
● Backlight dimmable	Yes; 0-100 %
Control elements	
Keyboard	
● 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
Expansions for operator control of the process	
● 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)	1.7 A
Starting current inrush I²t	0.5 A²·s
Power	
Active power input, typ.	41 W
Processor	
Processor type	X86
Storage	
Flash	Yes
RAM	Yes
Memory available for user data	24 Mbyte
Type of output	
Info LED	Yes

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Power LED	No
Error LED	No
Acoustics	
● Buzzer	No
● Speaker	Yes
Time of day	
Clock	
● Hardware clock (real-time)	Yes
● Software clock	Yes
● retentive	Yes; Back-up duration typically 6 weeks
● synchronizable	Yes
Interfaces	
Number of industrial Ethernet interfaces	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 SD card slots	2
With software interfaces	No
Industrial Ethernet	
● Industrial Ethernet status LED	3
● Number of ports of the integrated switch	2
Protocols	
PROFINET	Yes
Supports protocol for PROFINET IO	Yes
IRT	Yes
PROFIBUS	Yes
EtherNet/IP	Yes
MPI	Yes
Protocols (Ethernet)	
● TCP/IP	Yes
● DHCP	Yes
● SNMP	Yes
● DCP	Yes
● LLDP	Yes
WEB characteristics	
● HTTP	Yes
● HTTPS	Yes
● HTML	Yes
● XML	Yes
● CSS	Yes
● Active X	Yes
● JavaScript	Yes
● Java VM	No
Redundancy mode	
Media redundancy	
— MRP	Yes
Further protocols	
● CAN	No
● MODBUS	Yes
Interrupts/diagnostics/status information	
Diagnoses	
● Diagnostic information readable	Yes; S7 controller
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

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Degree and class of protection	
IP (at the front)	IP65
IP (rear)	IP20
NEMA (front)	
● Enclosure Type 4 at the front	Yes
● Enclosure Type 4x at the front	Yes
Standards, approvals, certificates	
CE mark	Yes
cULus	Yes; Corresponds to UL 508
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
● cULus Class I Zone 1	Yes; in preparation
● cULus Class I Zone 2, Division 2	Yes; in preparation
● cULus Class II Division 2	Yes; in preparation
Marine approval	
● Germanischer Lloyd (GL)	Yes; in preparation
● American Bureau of Shipping (ABS)	Yes; in preparation
● Bureau Veritas (BV)	Yes; in preparation
● Det Norske Veritas (DNV)	Yes; in preparation
● Korean Register of Shipping (KRS)	Yes; in preparation
● Lloyds Register of Shipping (LRS)	Yes; in preparation
● Nippon Kaiji Kyokai (Class NK)	Yes; in preparation
● Polski Rejestr Statkow (PRS)	Yes; in preparation
● Chinese Classification Society (CCS)	Yes; in preparation
Ambient conditions	
Suited for indoor use	Yes
Suited for outdoor use	No
Ambient temperature during operation	
Operation (vertical installation)	
— For vertical installation, min.	0 °C
— For vertical installation, max.	55 °C; (55 °C, see entry ID: 64847814)
Operation (max. tilt angle)	
— At maximum tilt angle, min.	0 °C
— At maximum tilt angle, max.	45 °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.	40 °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; Windows Embedded Compact 2013
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

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● 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
● WinCC Advanced (TIA Portal)	Yes
● WinCC Professional (TIA Portal)	Yes
Languages	
Online languages	
● Number of online/runtime languages	2
Project languages	
● Languages per project	2
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 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

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● 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

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— 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 as from WinCC V15 or higher
● SIMOTION	Yes
● Allen Bradley (EtherNet/IP)	Yes
● Allen Bradley (DF1)	Yes
● Mitsubishi (MC TCP/IP)	Yes
● Mitsubishi (FX)	Yes
● OMRON (FINS TCP)	Yes
● OMRON (Host Link)	Yes
● Modicon (Modbus TCP/IP)	Yes
● Modicon (Modbus RTU)	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

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Dimensions	
Width of the housing front	415 mm
Height of housing front	310 mm
Mounting cutout, width	396 mm
Mounting cutout, height	291 mm
mounting depth	75 mm
Weights	
Weight (without packaging)	4.7 kg

Classifications

	Version	Classification
eClass	16	27-33-02-01
eClass	14	27-33-02-01
eClass	12	27-33-02-01
eClass	9.1	27-33-02-01
eClass	9	27-33-02-01
eClass	8	27-24-23-02
eClass	7.1	27-24-23-02
eClass	6	27-24-23-02
ETIM	10	EC001412
ETIM	9	EC001412
ETIM	8	EC001412
ETIM	7	EC001412

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