

Human Machine Interface (HMI)

SIMATIC TP 270

	6AV6 545-0CA10-0AX0	6AV6 545-0CC10-0AX0
Display		
- Display type	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
- Size	5.7"	10.4"
- Resolution (W x H in pixels)	320 x 240	640 x 480
- Colors	256 colors	256 colors
- MTBF of background lighting (at 25 °C)	approx. 40,000 hours	approx. 60,000 hours
Operating mode		
- Operator controls	Touch screen	Touch screen
- Operating options	Touch	Touch
- Function keys, programmable	none	none
- Membrane keyboard	No	No
- System keys	0	0
- Touch screen	Analog, resistive	Analog, resistive
- Numeric/alphanumeric input	Yes/Yes	Yes/Yes
- External mouse/keyboard/barcode reader	USB/USB/USB	USB/USB/USB
Type of output		
- LED colors	none	none
- Acoustics	Buzzer	Buzzer
Processor/HW		
- Processor	RISC 32 bits, 180 MHz	RISC 32 bits, 180 MHz
Operating systems		
- Operating system	Windows CE	Windows CE
Memory		
- Type	Flash/RAM	Flash/RAM
- Usable memory for project data	2028 KB user memory/without additional memory for options	2028 KB user memory/without additional memory for options
Interfaces (some only as options)		
- Interfaces	2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
- PC card slot	No	No
- CF card slot	1 x CF card slot	1 x CF card slot
- USB (universal serial bus)	1 x USB	1 x USB
- Ethernet	No	No
- SD/MMC SLOT	No	No
- Special interfaces	No	No
Supply voltage		
- Supply voltage	24 V DC	24 V DC
- Permissible range	+18 V to +30 V DC	+18 V to +30 V DC
- Rated current	0.6 A	0.6 A
- Power	15 W	15 W
- UPS can be connected (serial)	Yes	Yes
- Backup battery	Optional 3.6 V	Optional 3.6 V
Clock/type		
- Clock	Hardware clock	Hardware clock
Degree of protection		
Degree of protection		
- Front side	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)
- Rear side	IP20	IP20
Certification and standards (some only as options)		
- Certification (some only as options)	CE, GL, ABS, DNV, LRS, FM Class I Div. 2,	CE, GL, ABS, DNV, LRS, FM Class I Div. 2,

	UL, cULus, EX zone 2/22, C-TICK	UL, cULus, EX zone 2/22, C-TICK
Mechanical components/dimensions		
- Front panel W x H (mm)	212 x 156	335 x 275
- Mounting cutout/depth W x H x D (mm)	198 x 142/59 mm depth of unit	310 x 248/59 mm depth of unit
- Weight	1 kg	4.5 kg
- Casing type (front)	Mainly plastic	Mainly aluminum
- Mounting type	Mounting clamps	Mounting clamps
Environmental Conditions		
- Max. relative humidity (in %)	85%	85%
- Mounting position	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +35 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C
Expansions for operator-process communication (may only be an option)		
- DP direct keys (buttons as input peripherals)	4 bytes or coded	5 bytes or coded
- 24 V DC direct control key module/outputs	No	No
- CPI module for the connection of	No	No
Peripherals/applications/options		
- Peripherals	Printer, barcode reader	Printer, barcode reader
- Applications/options (with ProTool)	ProAgent	ProAgent
Miscellaneous		
- Free hotline	Yes	Yes
- Warranty period in years	1 year	1 year
Configuration		
- Configuration tool	ProTool	ProTool
- Configuration tool	WinCC flexible	WinCC flexible
Functionality (with WinCC flexible)		
- Task planner	Yes	Yes
- Help system	Yes	Yes
- Status/Control	with SIMATIC S5/S7	with SIMATIC S5/S7
Reports		
- Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
- Number of messages	4,000	4,000
- Discrete alarms	Yes	Yes
- Analog messages	Yes	Yes
- Message length (in characters)	70	70
- Number of process values per message	8	8
- Acknowledgement groups	99	99
- Message buffer	Ring buffer, 512 entries each	Ring buffer, 512 entries each
Recipes		
- Recipes	300	300
- Data records per recipe	500	500
- Entries/data record	1,000	1,000
- Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Process images/number		
- Process screens	300	300
Picture elements		
- Text objects	10,000 text elements	10,000 text elements
- Fields per screen	200	200
- Variables/screen	200	200
- Graphics objects	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics

- Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
- Number of bar graphs per project	3,000	3,000
- Number of curve diagrams per project	50	50
- Text orientation	Horizontal	Horizontal
- Online manipulation of curves	Compress/shift	Compress/shift
- Trigger	Bit/time	Bit/time
- Methods	Trend	Trend
- Alphanumeric fields	1,000	1,000
- Numeric fields	1,000	1,000
- Slides/project	0	0
- Analog displays/project	0	0
- Visible buttons/project	1,000	1,000
- Hidden buttons/project	1,000	1,000
- Status switches/project	1,000	1,000
- Selector switches/project	1,000	1,000
- Thumb-wheel switches/project	0	0
- Indicator lights/project	1,000	1,000
Attributes for dynamic objects		
- Color changes	Yes	Yes
- X/Y movement	Yes	Yes
- Hide	Yes	Yes
- Angle of rotation	No	No
Lists		
- Text lists	300	300
- Graphics lists	100	100
- Libraries	Yes	Yes
- Variables	1,000	1,000
- Initial values	1,000	1,000
- Multiplexing	Yes	Yes
- Structs	No	No
Archiving		
- Number of archives per project	20	20
- Number of process tags per archive	0	0
- Number of entries per archive	10,000	10,000
- Archive types	Sequence archive, short-term archive, alarm log, process value archive	Sequence archive, short-term archive, alarm log, process value archive
- Memory location	CF card, Ethernet	CF card, Ethernet
- Data storage format	CSV file, can be read, e.g., in MS Excel, MS Access	CSV file, can be read, e.g., in MS Excel, MS Access
- External evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
- Size of archive	Dependent on the memory space available on the external card/stick or spare hard disk memory via the network drive	Dependent on the memory space available on the external card/stick or spare hard disk memory via the network drive
- Online evaluation	Using trend curves	Using trend curves
Filter		
- Cyclic	No	No
- Tolerance	No	No
- Modification	No	No
Security		
- Number of user groups	10	10
- Exportable passwords	Yes	Yes
- Visual Basic script	Not possible	Not possible
Logging/printer driver		
- Printing/logging	Messages, report/log, color print, hardcopy	Messages, report/log, color print, hardcopy
- Printer driver	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
- Keyboard fonts	US English	US English
Languages		
- Online languages	5	5
- Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
- Character sets	Tahoma, ideographic languages, 2 further character sets can be loaded, all freely scalable	Tahoma, ideographic languages, 2 further character sets can be loaded, all freely scalable

Data carrier support (may only be an option)

- PC card	No	No
- CF card	Yes	Yes
- MMC card	No	No
- Applications/options (with WinCC flexible)	ProAgent	ProAgent

Expansion capability/openness

- OPP	Yes	Yes
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Transfer under ProTool (upload/download)

- Transfer of the configuration	MPI/Profibus DP, serial, USB, Ethernet (automatic transfer recognition)	MPI/Profibus DP, serial, USB, Ethernet (automatic transfer recognition)
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Functionality (under ProTool)

- Timer	Yes	Yes
- Password protection (number of levels)	9	9
- Help system	Yes	Yes
- PG functions (STATUS/CONTROL)	with SIMATIC S5/S7	with SIMATIC S5/S7
- PG function (status/control)	Yes	Yes

Reports

- Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
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Signaling system

- Event messages	2,000	2,000
- Alarm messages	2,000	2,000
- System Messages	Yes	Yes
- Message length (lines x characters)	1 x 70	1 x 70
- Number of process values in messages	8	8
- Acknowledgement groups	99	99
- Alarm indicator	Yes	Yes
- Acoustic feedback	No	No
- First-up/last-up value	Yes	Yes
- Message buffer	Ring buffer, 512 entries each	Ring buffer, 512 entries each

Recipes

- Recipes	300	300
- Data records per recipe	500	500
- Entries/data record	1,000	1,000
- Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable

Number

- Process screens	300	300
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Picture elements

- Text objects	10,000 text elements	10,000 text elements
- Number	10,000	10,000
- Fields per screen	200	200
- Variables per screen	200	200
- Graphics objects	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics
- Dynamic objects	Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons
- Number per project	1,000	1,000
- Number of bar graphs/project	1,000	1,000
- Direction	Vertical/horizontal	Vertical/horizontal
- Limit curves	Yes	Yes
- Number of curve diagrams per project	300	300
- Text orientation	Horizontal	Horizontal
- Online manipulation	Compress/shift	Compress/shift
- Trigger	Bit/time	Bit/time
- Methods	Trend/profile	Trend/profile
- Alphanumeric fields	2,048	2,048
- Numeric fields	2,048	2,048
- Date & time field	32	32
- Password fields	2,048	2,048
- Slides; slider/project	300	300

- Analog displays; gauge/project	300	300
- Visible buttons/project	2,048	2,048
- Hidden buttons/project	2,048	2,048
- Button status switches/project	2,048	2,048
- Selector switches/project	2,048	2,048
- Thumb-wheel switches/project	0	0
- Indicator lights/project	2,048	2,048
Attributes for dynamic objects		
- Color changes	Yes	Yes
- x/y movement	Yes	Yes
- Hide	Yes	Yes
- Angle of rotation	No	No
Lists		
- Text lists/project	500	500
- Graphics lists/project	400	400
- Libraries	Yes	Yes
- variables	2,048	2,048
- Initial values	2,048	2,048
- Limit values	Yes	Yes
- Multiplexing	Yes	Yes
Archiving		
- Number of archives per project	20	20
- Number of process tags per archive	20	20
- Number of entries per archive	500,000	500,000
- Archive types	Short-term archive, sequence archive, message archive, process-value archive	Short-term archive, sequence archive, message archive, process-value archive
- Memory location	Number of entries per archive, sequence archive	Number of entries per archive, sequence archive
- Data storage format	CSV file, can be read, e.g., in MS Excel, MS Access	CSV file, can be read, e.g., in MS Excel, MS Access
- External evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
- Size of archive	Dependent on the memory space available on the external card/stick or spare hard disk memory via the network drive	Dependent on the memory space available on the external card/stick or spare hard disk memory via the network drive
- Online evaluation	Using trend curves	Using trend curves
Filter		
- Cyclic	Yes	Yes
- Tolerance	Yes	Yes
- Modification	Yes	Yes
- Visual Basic script	Number = 50/number of lines per script = 20	Number = 50/number of lines per script = 20
Logging/printer driver		
- Print functions	Messages, shift log, color print, hardcopy	Messages, shift log, color print, hardcopy
- Drivers	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
- Language (keyboard fonts)	US English	US English
Languages		
- Online languages	5	5
- Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
- Character set	Arial, Courier New, Pro Tool standard, ideographic languages, 2 further character sets can be loaded, all freely scalable	Arial, Courier New, Pro Tool standard, ideographic languages, 2 further character sets can be loaded, all freely scalable
Data carrier support (may only be available as an option with ProTool)		
- PC card	No	No
- CF card	Yes	Yes
- MMC card	No	No
Expansion capability/openness		
- ActiveX controls	Yes	Yes
Transfer under ProTool (upload/download)		
- Transfer of the configuration	MPI/Profibus DP (if available), serial, USB, Ethernet, using external memory medium (automatic transfer recognition)	MPI/Profibus DP (if available), serial, USB, Ethernet, using external memory medium (automatic transfer recognition)