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Data sheet 6ES7554-1AA00-0AB0



SIMATIC S7-1500, TM FAST Field Adaptable High-Speed Technology, programmable with Intel(R) Quartus(R) Prime software, 8xDI, 8xDQ, 4xDIQ 24 V, 8xRS485 DIQ, for extremely short response time of less than 1 µs

General information	
Product type designation	TM FAST
Firmware version	V2.0
● FW update possible	Yes
Product function	
● I&M data	Yes; I&M0 to I&M3
● Isochronous mode	Yes
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	STEP 7 V17 with HSP or higher
● PROFINET from GSD version/GSD revision	GSDML V2.35
Installation type/mounting	
Rail mounting	Yes; S7-1500 mounting rail
Supply voltage	
Load voltage L+	
● Rated value (DC)	24 V
● permissible range, lower limit (DC)	19.2 V
● permissible range, upper limit (DC)	28.8 V
● Reverse polarity protection	Yes
Input current	
Current consumption, max.	100 mA; without load
Power	
Power consumption from the backplane bus	1.3 W
Power loss	
Power loss, typ.	4 W
Address area	
Address space per module	
● Inputs	32 byte
● Outputs	32 byte
Digital inputs	
Number of digital inputs	12; including 4 DIQs
Digital inputs, parameterizable	Yes
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Input voltage	
● Type of input voltage	DC
● Rated value (DC)	24 V
● for signal "0"	-5 ... +5 V
● for signal "1"	+11 to +30V
● permissible voltage at input, min.	-5 V; -5 V continuous, -30 V brief reverse polarity protection
● permissible voltage at input, max.	30 V

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Input current	
● for signal "1", typ.	2.5 mA
Input frequency	
● For signal interface 24 V asymmetrical	200 kHz
● For signal interface RS 422 symmetrical	5 MHz
● For signal interface TTL (5 V) asymmetrical	1 MHz
Input delay (for rated value of input voltage)	
● Minimum pulse width for program reactions	application specific below 1µs possible
for standard inputs	
— parameterizable	Yes; customer defined / 0.001 / 0.003 / 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms
Cable length	
● shielded, max.	100 m
Digital outputs	
Number of digital outputs	12; including 4 DIQs
Current-sinking	Yes; 8 push-pull outputs
Current-sourcing	Yes
Short-circuit protection	Yes; electronic/thermal
● Response threshold, typ.	0.2 A; for DQ; 0.9 A for DIQ
Switching capacity of the outputs	
● with resistive load, max.	0.1 A; 0.3 A for DIQs
Load resistance range	
● lower limit	240 Ω; 80 ohms for DIQs
● upper limit	12 kΩ
Output voltage	
● Type of output voltage	DC
● for signal "1", min.	23.2 V; L+ (-0.8 V), L+ (-1.3 V) for DIQs
Output current	
● for signal "1" rated value	0.1 A; 0.3 A for DIQs
● for signal "1" permissible range, max.	0.12 A; 0.36 A for DIQs
● for signal "1" minimum load current	2 mA
● for signal "0" residual current, max.	0.5 mA
Output delay with resistive load	
● "0" to "1", typ.	420 ns; for DQn
● "1" to "0", typ.	420 ns; for DQn
Switching frequency	
● with resistive load, max.	200 kHz; 1 kHz for DIQs
● For signal interface 24 V asymmetrical	200 kHz; 1 kHz for DIQs
● For signal interface RS 422 symmetrical	2 MHz
● For signal interface TTL (5 V) asymmetrical	200 kHz
Cable length	
● shielded, max.	30 m
Encoder	
Interface types	
● TTL 5 V	Yes; 8 channels (direction switchable)
● RS 422	Yes; 8 channels (direction switchable)
● Sourcing/sinking input	Yes
● Input characteristic curve in accordance with IEC 61131, type 3	Yes
Isochronous mode	
Bus cycle time (TDP), min.	250 µs
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
● Diagnostic alarm	Yes
Diagnoses	
● Monitoring the supply voltage	Yes
● Wire break	Yes; for RS485/RS422/TTL Input

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● Short-circuit	Yes; Thermal overload protection
● Group error	Yes
Diagnostics indication LED	
● RUN LED	Yes; green LED
● ERROR LED	Yes; red LED
● MAINT LED	Yes; Yellow LED
● Monitoring of the supply voltage (PWR-LED)	Yes; green LED
● Channel status display	Yes; green LED
● for channel diagnostics	Yes; red LED
Potential separation	
Potential separation channels	
● between the channels	No
● between the channels and backplane bus	Yes
● Between the channels and load voltage L+	No
Isolation	
Isolation tested with	707 V DC (type test)
Security	
signed firmware update	Yes
Ambient conditions	
Ambient temperature during operation	
● horizontal installation, min.	-30 °C
● horizontal installation, max.	60 °C
● vertical installation, min.	-30 °C
● vertical installation, max.	40 °C
Altitude during operation relating to sea level	
● Installation altitude above sea level, max.	5 000 m; restrictions for installation altitudes > 2 000 m, see ET 200MP system manual
Absolute humidity	
● dew point, min.	-60 °C; suitable for dry room applications
Decentralized operation	
to SIMATIC S7-300	Yes
to SIMATIC S7-400	Yes
to SIMATIC S7-1200	Yes
to SIMATIC S7-1500	Yes
to standard PROFINET controller	Yes
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	300 g

Classifications

	Version	Classification
eClass	16	27-24-22-05
eClass	14	27-24-22-05
eClass	12	27-24-22-05
eClass	9.1	27-24-22-05
eClass	9	27-24-22-05
eClass	8	27-24-22-05
eClass	7.1	27-24-22-05
eClass	6	27-24-22-05
ETIM	10	EC001422
ETIM	9	EC001422
ETIM	8	EC001422
ETIM	7	EC001422

Approvals / Certificates

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General Product Approval

Miscellaneous

General Product Approval | **For use in hazardous locations**

China RoHS | FM | CCC-Ex

For use in hazardous locations | **Environment**

Type Examination Certificate | Miscellaneous | CCC-Ex

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