6ES7552-1AA00-0AB0

Data sheet



SIMATIC S7-1500, TM Timer DIDQ 16x 24 V time-controlled digital inputs and outputs max. 8 DI, 16 DQ of which max. 16 with time stamp, Count, PWM, oversampling

General information	
Product type designation	TM Timer DIDQ 16x24V
Product function	
I&M data	Yes; I&M 0
 Isochronous mode 	Yes
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	V13 Update 3
Installation type/mounting	
Rail mounting	Yes; S7-1500 mounting rail
Supply voltage	
Load voltage 1L+	
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; against destruction
Load voltage 2L+	
 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; against destruction
Input current	
from load voltage 1L+ (without load), max.	40 mA; without load
from load voltage 2L+ (without load), max.	30 mA; without load
Encoder supply	
Number of outputs	8; max. depending on parameterization
24 V encoder supply	
• 24 V	Yes; L+ (-0.8 V)
 Short-circuit protection 	Yes
Output current, max.	1.2 A; Total current of all encoders / channels, max. 0.5 A per output
Power	
Power available from the backplane bus	1.3 W
Power loss	
Power loss, typ.	5 W
Address area	
Address space per module	
• Inputs	44 byte
 Outputs 	74 byte
Digital inputs	
Number of digital inputs	8; max. depending on parameterization

in groups of Digital inputs, parameterizable Input characteristic curve in accordance with IEC 61131, type 3 Digital input functions, parameterizable • Digital input with time stamp — Number, max. • Counter — Number, max. • Counter for incremental encoder — Number, max. • Counter for incremental encoder — Number, max. • Counter for incremental encoder — Number, max. • Digital input with oversampling — Number for digital input — Number for digital input — Number for digital input — Number, max. • HW enable for digital input — Number, max. • HW enable for digital output — Number, max. • Input voltage • Type of input voltage at input, min. • permissible voltage at input, min. • permissible voltage at input, max. • for signal "1", typ. • permissible voltage at input, win. • permissible voltage at input, win. • permissible voltage at input, max. • for signal "1", typ. • permissible voltage at input, max. • for signal "1", typ. • permissible voltage at input, max. • for signal "1", typ. • permissible voltage at input, max. • for signal "1", typ. • permissible voltage at input, max. • up the foliage of the foliag	
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Controlling a digital input Digital output functions, parameterizable Digital output with time stamp Yes Yes	
Digital output functions, parameterizable • Digital output with time stamp Yes	
Digital output with time stamp Yes	
— Number, max.	
PWM output Yes	
— Number, max.	
Digital output with oversampling Yes	
— Number, max.	
Switching capacity of the outputs	
• with resistive load, max. 0.5 A; 0.1 A with High Speed output	
• on lamp load, max. 5 W; 1 W with High Speed output	
Load resistance range	
• lower limit 48 Ω; 240 ohm with High Speed output	
• upper limit 12 kΩ	
Output voltage	
Type of output voltage DC	
• for signal "0", max. 1 V; With High Speed output	
● for signal "1", min. 23.2 V; L+ (-0.8 V)	
Output current	

for signal "1" rated value	0.5 A; 0.1 A with High Speed output, observe derating
for signal "1" permissible range, max.	0.6 A; 0.12 A with High Speed output, observe derating
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", max.	1 μs; With High Speed output, 5 μs with Standard output
• "1" to "0", max.	1 μs; With High Speed output, 6 μs with Standard output
Switching frequency	
with resistive load, max.	10 kHz
• on lamp load, max.	10 Hz
Total current of the outputs	
Current per group, max.	4 A
Current per module, max.	8 A; Observe derating
Cable length	4 000
• shielded, max.	1 000 m; depending on load and cable quality
unshielded, max.	600 m; depending on load and cable quality
Encoder	
Connectable encoders	
 Incremental encoder (asymmetrical) 	Yes
• 24 V initiator	Yes
• 2-wire sensor	Yes
 permissible quiescent current (2-wire sensor), 	1.5 mA
max.	
Encoder signals, incremental encoder (asymmetrical)	241/
Input voltage	24 V
Input frequency, max. Counting frequency, max.	50 kHz
Counting frequency, max. Coble length, chiefded, max.	200 kHz; with quadruple evaluation
 Cable length, shielded, max. 	600 m; Depending on input frequency, encoder and cable quality; max. 200 m at 50 kHz
 Incremental encoder with A/B tracks, 90° phase 	Yes
offset	
• pulse encoder	Yes
Interface types	
 Input characteristic curve in accordance with IEC 61131, type 3 	Yes
Isochronous mode	
Bus cycle time (TDP), min.	250 μs
Jitter, max.	1 μs
Interrupts/diagnostics/status information	
	Voc
Diagnostics function Substitute values connectable	Yes Yes
Alarms	tes
	Yes
Diagnostic alarm Diagnoses	165
Monitoring the supply voltage	Yes
Short-circuit	Yes
Diagnostics indication LED	100
• 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
Integrated Functions	
	Voc
Counter	Yes
Number of counters Counting frequency may	200 kHz; with quadruple evaluation
Counting frequency, max. Counting functions.	200 kHz; with quadruple evaluation
Counting functions	Voc
Continuous counting Position detection	Yes
Position detection • Incremental acquisition	Yes
	100
Potential separation	
Potential separation channels	

 between the channels and backplane bus 	Yes
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
 horizontal installation, min. 	0 °C
 horizontal installation, max. 	60 °C
 vertical installation, min. 	0 °C
 vertical installation, max. 	40 °C; Observe derating
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
Decentralized operation	
to SIMATIC S7-1500	Yes
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	320 g
last modified:	9/20/2021 🗗