



SIMATIC ET 200SP, TM timer DIDQ 10x 24V time-controlled digital inputs and outputs 4 DI, 6DQ with time stamp Count, PWM, oversampling

General information	
Product type designation	TM Timer DIDQ 10x24V
HW functional status	From FS03
usable BaseUnits	BU type A0
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M 0
<ul style="list-style-type: none"> <li>Isochronous mode</li> </ul>	Yes
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V13 Update 3
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP3 / -
Supply voltage	
Rated value (DC)	24 V
Load voltage L+	
<ul style="list-style-type: none"> <li>Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>permissible range, lower limit (DC)</li> </ul>	19.2 V
<ul style="list-style-type: none"> <li>permissible range, upper limit (DC)</li> </ul>	28.8 V
<ul style="list-style-type: none"> <li>Reverse polarity protection</li> </ul>	Yes; against destruction
Input current	
Current consumption, max.	50 mA; without load
Encoder supply	
Number of outputs	1
24 V encoder supply	
<ul style="list-style-type: none"> <li>24 V</li> </ul>	Yes; L+ (-0.8 V)
<ul style="list-style-type: none"> <li>Short-circuit protection</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Output current, max.</li> </ul>	500 mA; Observe derating
Power loss	
Power loss, typ.	1.5 W
Address area	
Address space per module	
<ul style="list-style-type: none"> <li>Inputs</li> </ul>	26 byte
<ul style="list-style-type: none"> <li>Outputs</li> </ul>	32 byte
Hardware configuration	
Automatic encoding	Yes
<ul style="list-style-type: none"> <li>Mechanical coding element</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Type of mechanical coding element</li> </ul>	type B
Digital inputs	
Number of digital inputs	4
Digital inputs, parameterizable	Yes
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Digital input functions, parameterizable	

• Digital input with time stamp	Yes
— Number, max.	4
• Counter	Yes
— Number, max.	3
• Counter for incremental encoder	Yes
— Number, max.	1
• Digital input with oversampling	Yes
— Number, max.	4
• HW enable for digital input	Yes
— Number, max.	1
• HW enable for digital output	Yes
— Number, max.	3
<b>Input voltage</b>	
• 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.	-30 V; -5 V continuous, -30 V brief reverse polarity protection
• permissible voltage at input, max.	30 V
<b>Input current</b>	
• for signal "1", typ.	2.5 mA
<b>Input delay (for rated value of input voltage)</b>	
• Minimum pulse width for program reactions	3 µs for parameterization "none"
for standard inputs	
— parameterizable	Yes; none / 0.05 / 0.1 / 0.4 / 0.8 ms
<b>Cable length</b>	
• shielded, max.	1 000 m; Depending on sensor, cable quality and rate of change
• unshielded, max.	600 m; Depending on sensor, cable quality and rate of change
<b>Digital outputs</b>	
Type of digital output	Transistor
Number of digital outputs	6
Current-sinking	Yes; With High Speed output
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes; electronic/thermal
• Response threshold, typ.	1.7 A with Standard output, 0.5 A with High Speed output
Limitation of inductive shutdown voltage to	-0.8 V
<b>Digital output functions, parameterizable</b>	
• Digital output with time stamp	Yes
— Number, max.	6
• PWM output	Yes
— Number, max.	6
• Digital output with oversampling	Yes
— Number, max.	6
<b>Switching capacity of the outputs</b>	
• 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
<b>Load resistance range</b>	
• lower limit	48 Ω; 240 ohm with High Speed output
• upper limit	12 kΩ
<b>Output voltage</b>	
• 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)
<b>Output current</b>	
• 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
<b>Output delay with resistive load</b>	
• "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
<b>Switching frequency</b>	
• with resistive load, max.	10 kHz
• on lamp load, max.	10 Hz
<b>Total current of the outputs</b>	
• Current per module, max.	3.5 A; Observe derating
<b>Cable length</b>	
• shielded, max.	1 000 m; depending on load and cable quality
• unshielded, max.	600 m; depending on load and cable quality
<b>Encoder</b>	
<b>Connectable encoders</b>	
• Incremental encoder (asymmetrical)	Yes
• 24 V initiator	Yes
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
<b>Encoder signals, incremental encoder (asymmetrical)</b>	
• Input voltage	24 V
• Input frequency, max.	50 kHz
• Counting frequency, 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 offset	Yes
• pulse encoder	Yes
<b>Interface types</b>	
• Input characteristic curve in accordance with IEC 61131, type 3	Yes
<b>Interfaces</b>	
Number of RS 485 interfaces	0
<b>Isochronous mode</b>	
Bus cycle time (TDP), min.	375 µs
Jitter, max.	1 µs
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
Substitute values connectable	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnoses</b>	
• Monitoring the supply voltage	Yes
• Short-circuit	Yes
<b>Diagnostics indication LED</b>	
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
• Channel status display	Yes
• for module diagnostics	Yes; green/red DIAG LED
<b>Integrated Functions</b>	
Counter	Yes
• Number of counters	3
• Counting frequency, max.	200 kHz; with quadruple evaluation
<b>Counting functions</b>	
• Continuous counting	Yes
<b>Potential separation</b>	
<b>Potential separation channels</b>	
• between the channels and backplane bus	Yes
<b>Isolation</b>	
Isolation tested with	707 V DC (type test)
<b>Standards, approvals, certificates</b>	
Suitable for safety functions	No
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
• horizontal installation, min.	-30 °C
• horizontal installation, max.	60 °C; Observe derating
• vertical installation, min.	-30 °C

• vertical installation, max.	50 °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 200SP system manual
<b>Decentralized operation</b>	
to SIMATIC S7-1500	Yes
<b>Dimensions</b>	
Width	15 mm
Height	73 mm
Depth	58 mm
<b>Weights</b>	
Weight, approx.	45 g
<b>Classifications</b>	

	Version	Classification
eClass	14	27-24-26-05
eClass	12	27-24-26-05
eClass	9.1	27-24-26-05
eClass	9	27-24-26-05
eClass	8	27-24-26-05
eClass	7.1	27-24-26-05
eClass	6	27-24-26-05
ETIM	10	EC001601
ETIM	9	EC001601
ETIM	8	EC001601
ETIM	7	EC001601
IDEA	4	3567
UNSPSC	15	32-15-17-05

**Approvals / Certificates**

**General Product Approval**



[Miscellaneous](#)

[Manufacturer Declaration](#)



**For use in hazardous locations**



[CCC-Ex](#)

[FM](#)



[Miscellaneous](#)

**For use in hazardous locations** | **Maritime application**

[Type Examination Certificate](#)



[NK / Nippon Kaiji Kyokai](#)

**Maritime application**



[CCS \(China Classification Society\)](#)



last modified:

10/23/2025

