



SIMATIC ET 200SP, TM PTO 2x24 V, interface module for stepper drives, 2 channels pulse train output, PTO: 24 V, 2 DI, 1 DQ 24 V DC per channel, suitable for BU type A0

Figure similar

General information	
Product type designation	TM PTO 2x24V
usable BaseUnits	BU type A0
Color code for module-specific color-coded label	CC00
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3
<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>	STEP 7 V17 with HSP or higher
<ul style="list-style-type: none"> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	One GSD file each, Revision 3 and 5 and higher
<ul style="list-style-type: none"> <li>PROFINET from GSD version/GSD revision</li> </ul>	GSDML V2.35
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
Input current	
Current consumption, max.	50 mA; without load
Power loss	
Power loss, typ.	1.5 W
Address area	
Address space per module	
<ul style="list-style-type: none"> <li>Inputs</li> </ul>	32 byte
<ul style="list-style-type: none"> <li>Outputs</li> </ul>	16 byte
Hardware configuration	
Automatic encoding	Yes
<ul style="list-style-type: none"> <li>Mechanical coding element</li> </ul>	Yes
Digital inputs	
Number of digital inputs	6; 3 per channel
Digital inputs, parameterizable	Yes
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Digital input functions, parameterizable	
<ul style="list-style-type: none"> <li>Synchronization</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Probe</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Drive ready</li> </ul>	Yes
Input voltage	

<ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>for signal "0"</li> <li>for signal "1"</li> <li>permissible voltage at input, min.</li> <li>permissible voltage at input, max.</li> </ul>	24 V -5 ... +5 V +11 to +30V -30 V; -5 V continuous, -30 V brief reverse polarity protection 30 V
<b>Input current</b>	
<ul style="list-style-type: none"> <li>for signal "1", typ.</li> </ul>	2.5 mA
<b>Input delay (for rated value of input voltage)</b>	
for standard inputs	
— parameterizable	Yes; none / 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>shielded, max.</li> <li>unshielded, max.</li> </ul>	1 000 m 600 m
<b>Digital outputs</b>	
Number of digital outputs	6; 3 per channel
Current-sinking	Yes; push-pull outputs for 24 V PTO outputs
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes; electronic/thermal
<ul style="list-style-type: none"> <li>Response threshold, typ.</li> </ul>	1 A
Controlling a digital input	Yes
<b>Digital output functions, parameterizable</b>	
<ul style="list-style-type: none"> <li>PTO (pulse train output) signal interface</li> <li>— 24 V asymmetrical</li> <li>PTO (pulse train output) signal type</li> <li>— Pulse and direction</li> <li>— Count up, count down</li> <li>— Incremental encoder (A, B phase shift)</li> <li>— Incremental encoder (A, B phase shift, quadruple)</li> </ul>	Yes Yes Yes Yes Yes Yes
<b>Switching capacity of the outputs</b>	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> <li>on lamp load, max.</li> </ul>	0.1 A; 0.5 A for CHn.ED 1 W; 5 W for CHn.ED
<b>Load resistance range</b>	
<ul style="list-style-type: none"> <li>lower limit</li> <li>upper limit</li> </ul>	240 Ω; 48 ohms for CHn.ED 12 kΩ
<b>Output voltage</b>	
<ul style="list-style-type: none"> <li>for signal "1", min.</li> </ul>	23.2 V; L+ (-1.3 V), L+ (-0.8 V) for CHn.ED
<b>Output current</b>	
<ul style="list-style-type: none"> <li>for signal "1" rated value</li> <li>for signal "1" permissible range, max.</li> <li>for signal "1" minimum load current</li> <li>for signal "0" residual current, max.</li> </ul>	0.1 A; 0.5 A for CHn.ED 0.12 A; 0.6 A for CHn.ED 2 mA 0.5 mA
<b>Switching frequency</b>	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> <li>with inductive load, max.</li> <li>on lamp load, max.</li> <li>For signal interface 24 V asymmetrical</li> </ul>	10 kHz 0.5 Hz; According to IEC 60947-5-1, DC-13 10 Hz 200 kHz; For 24 V PTO outputs
<b>Total current of the outputs</b>	
<ul style="list-style-type: none"> <li>Current per module, max.</li> </ul>	1.4 A
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>shielded, max.</li> </ul>	600 m; Up to 10 kHz, 50 m at 200 kHz
<b>Interfaces</b>	
Number of RS 485 interfaces	0
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>Diagnostic alarm</li> </ul>	Yes
<b>Diagnoses</b>	
<ul style="list-style-type: none"> <li>Monitoring the supply voltage</li> <li>Short-circuit</li> </ul>	Yes Yes

<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>Monitoring of the supply voltage (PWR-LED)</li> <li>Channel status display</li> <li>for module diagnostics</li> </ul>	Yes; green PWR LED Yes; green LED Yes; green/red DIAG LED
<b>Potential separation</b>	
<b>Potential separation channels</b>	
<ul style="list-style-type: none"> <li>between the channels and backplane bus</li> </ul>	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>	
<ul style="list-style-type: none"> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> </ul>	-30 °C 60 °C; Observe derating -30 °C 50 °C; Observe derating
<b>Altitude during operation relating to sea level</b>	
<ul style="list-style-type: none"> <li>Installation altitude above sea level, max.</li> </ul>	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
<b>Absolute humidity</b>	
<ul style="list-style-type: none"> <li>dew point, min.</li> </ul>	-60 °C; suitable for dry room applications
<b>Decentralized operation</b>	
to SIMATIC S7-300	Yes; Via control and feedback interface
to SIMATIC S7-400	Yes; Via control and feedback interface
to SIMATIC S7-1200	Yes
to SIMATIC S7-1500	Yes
to standard PROFIBUS master	Yes; Via control and feedback interface
to standard PROFINET controller	Yes; Via control and feedback interface
<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

<b>Approvals / Certificates</b>	
<b>General Product Approval</b>	



[Miscellaneous](#)

[Manufacturer Declaration](#)



General Product Approval      EMV      For use in hazardous locations



[CCC-Ex](#)

[FM](#)

For use in hazardous locations



[Type Examination Certificate](#)

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