



SIMATIC ET 200SP, digital input module, DI 8x 24 V DC High Speed, Pack quantity: 1 unit, three alternative operating modes: DI, Oversampling, 4x counters, suitable for BU type A0, Color code CC01

General information	
Product type designation	DI 8x24 V DC HS
HW functional status	from FS04
Firmware version	V1.0.2
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	Yes
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC01
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>	V13 SP1
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP3 / -
<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 V2.3
Operating mode	
<ul style="list-style-type: none"> <li>DI</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Counter</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Oversampling</li> </ul>	Yes
<ul style="list-style-type: none"> <li>MSI</li> </ul>	No
Supply voltage	
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.	70 mA; without sensor supply
Encoder supply	
24 V encoder supply	
<ul style="list-style-type: none"> <li>24 V</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Short-circuit protection</li> </ul>	Yes; per module, electronic
<ul style="list-style-type: none"> <li>Output current, max.</li> </ul>	700 mA
Power loss	
Power loss, typ.	1.5 W
Address area	
Address space per module	
<ul style="list-style-type: none"> <li>Address space per module, max.</li> </ul>	45 byte
<ul style="list-style-type: none"> <li>Inputs</li> </ul>	32 byte; 1 byte + 1 byte for QI information in DI mode; 32 bytes in Oversampling mode; 25 bytes in Counter mode
<ul style="list-style-type: none"> <li>Outputs</li> </ul>	20 byte; In count mode

Hardware configuration	
Automatic encoding	Yes
<ul style="list-style-type: none"> <li>• Mechanical coding element</li> <li>• Type of mechanical coding element</li> </ul>	Yes Type A
Selection of BaseUnit for connection variants	
<ul style="list-style-type: none"> <li>• 1-wire connection</li> <li>• 2-wire connection</li> <li>• 3-wire connection</li> <li>• 4-wire connection</li> </ul>	BU type A0 BU type A0 BU type A0 with AUX terminals BU type A0 + external terminals
Digital inputs	
Number of digital inputs	8
Source/sink input	P-reading
Pulse extension	Yes
<ul style="list-style-type: none"> <li>• Length</li> </ul>	2 s; 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s
Digital input functions, parameterizable	
<ul style="list-style-type: none"> <li>• Gate start/stop</li> <li>• Freely usable digital input</li> <li>• Counter               <ul style="list-style-type: none"> <li>— Number, max.</li> <li>— Counting frequency, max.</li> <li>— Counting width</li> <li>— Counting direction up/down</li> </ul> </li> <li>• Digital input with oversampling               <ul style="list-style-type: none"> <li>— Number, max.</li> <li>— Values per cycle, max.</li> <li>— Resolution, min.</li> </ul> </li> </ul>	Yes Yes Yes 4 10 kHz 32 bit Yes Yes 8 32 7.8125 $\mu$ s
Input voltage	
<ul style="list-style-type: none"> <li>• Rated value (DC)</li> <li>• for signal "0"</li> <li>• for signal "1"</li> </ul>	24 V -30 to +5 V +11 to +30V
Input current	
<ul style="list-style-type: none"> <li>• for signal "1", typ.</li> </ul>	6 mA
Input delay (for rated value of input voltage)	
for standard inputs	
<ul style="list-style-type: none"> <li>— parameterizable</li> </ul>	Yes; none / 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms
for interrupt inputs	
<ul style="list-style-type: none"> <li>— parameterizable</li> </ul>	Yes
for technological functions	
<ul style="list-style-type: none"> <li>— parameterizable</li> </ul>	Yes
Cable length	
<ul style="list-style-type: none"> <li>• shielded, max.</li> <li>• unshielded, max.</li> </ul>	50 m 50 m
Encoder	
Connectable encoders	
<ul style="list-style-type: none"> <li>• 2-wire sensor               <ul style="list-style-type: none"> <li>— permissible quiescent current (2-wire sensor), max.</li> </ul> </li> </ul>	Yes 1.5 mA
Isochronous mode	
Bus cycle time (TDP), min.	125 $\mu$ s
Jitter, max.	5 $\mu$ s
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
<ul style="list-style-type: none"> <li>• Diagnostic alarm</li> <li>• Hardware interrupt</li> </ul>	Yes Yes
Diagnoses	
<ul style="list-style-type: none"> <li>• Diagnostic information readable</li> <li>• Monitoring the supply voltage               <ul style="list-style-type: none"> <li>— parameterizable</li> </ul> </li> <li>• Monitoring of encoder power supply</li> <li>• Wire-break</li> <li>• Short-circuit</li> </ul>	Yes Yes Yes Yes; Module-wise No Yes; Module-wise
Diagnostics indication LED	

• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
• Channel status display	Yes; green LED
• for channel diagnostics	No
• for module diagnostics	Yes; green/red DIAG LED

#### Potential separation

##### Potential separation channels

• between the channels	No
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	No

#### Isolation

Isolation tested with	707 V DC (type test)
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#### Standards, approvals, certificates

Suitable for safety functions	No
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#### Ambient conditions

##### Ambient temperature during operation

• horizontal installation, min.	-30 °C; < 0 °C as of FS04
• horizontal installation, max.	60 °C
• vertical installation, min.	-30 °C; < 0 °C as of FS04
• vertical installation, max.	50 °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 manual
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#### Dimensions

Width	15 mm
Height	73 mm
Depth	58 mm

#### Weights

Weight, approx.	28 g
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**last modified:** 2/1/2021 