



SIMATIC ET 200SP, Digital input module, DI 16x 24V DC Standard, type 3 (IEC 61131), sink input, (PNP, P-reading), Packing unit: 10 Pieces, fits to BU-type A0, Colour Code CC00, input delay time 0,05..20ms, diagnostics wire break, diagnostics supply voltage

General information	
Product type designation	DI 16x24VDC ST
HW functional status	From FS02
Firmware version	V0.0
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	No
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	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>	No
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V14
<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>PCS 7 configurable/integrated from version</li> </ul>	V8.1 SP1
<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>	No
<ul style="list-style-type: none"> <li>Oversampling</li> </ul>	No
<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.	90 mA
Encoder supply	
24 V encoder supply	
<ul style="list-style-type: none"> <li>24 V</li> </ul>	No
Power loss	
Power loss, typ.	1.7 W
Address area	
Address space per module	
<ul style="list-style-type: none"> <li>Inputs</li> </ul>	2 byte; + 2 bytes for QI information

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 A
Selection of BaseUnit for connection variants	
<ul style="list-style-type: none"> <li>• 1-wire connection</li> </ul>	BU type A0
<ul style="list-style-type: none"> <li>• 2-wire connection</li> </ul>	BU type A0 + Potential distributor module
<ul style="list-style-type: none"> <li>• 3-wire connection</li> </ul>	BU type A0 + Potential distributor module
<ul style="list-style-type: none"> <li>• 4-wire connection</li> </ul>	BU type A0 + Potential distributor module
Digital inputs	
Number of digital inputs	16
Digital inputs, parameterizable	Yes
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Input voltage	
<ul style="list-style-type: none"> <li>• Rated value (DC) <ul style="list-style-type: none"> <li>— 24 V DC</li> </ul> </li> </ul>	24 V Yes
<ul style="list-style-type: none"> <li>• for signal "0"</li> </ul>	-30 to +5 V
<ul style="list-style-type: none"> <li>• for signal "1"</li> </ul>	+11 to +30V
Input current	
<ul style="list-style-type: none"> <li>• for signal "1", typ.</li> </ul>	2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
<ul style="list-style-type: none"> <li>— parameterizable</li> </ul>	Yes; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length)
<ul style="list-style-type: none"> <li>— at "0" to "1", min.</li> </ul>	0.05 ms
<ul style="list-style-type: none"> <li>— at "0" to "1", max.</li> </ul>	20 ms
<ul style="list-style-type: none"> <li>— at "1" to "0", min.</li> </ul>	0.05 ms
<ul style="list-style-type: none"> <li>— at "1" to "0", max.</li> </ul>	20 ms
Cable length	
<ul style="list-style-type: none"> <li>• shielded, max.</li> </ul>	1 000 m
<ul style="list-style-type: none"> <li>• unshielded, max.</li> </ul>	600 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
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
<ul style="list-style-type: none"> <li>• Diagnostic alarm</li> </ul>	Yes
Diagnoses	
<ul style="list-style-type: none"> <li>• Diagnostic information readable</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Monitoring the supply voltage <ul style="list-style-type: none"> <li>— parameterizable</li> </ul> </li> </ul>	Yes Yes
<ul style="list-style-type: none"> <li>• Monitoring of encoder power supply</li> </ul>	No
<ul style="list-style-type: none"> <li>• Wire-break</li> </ul>	Yes; Module-by-module, optional protective circuit for preventing wire-break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm
<ul style="list-style-type: none"> <li>• Short-circuit</li> </ul>	No
<ul style="list-style-type: none"> <li>• Group error</li> </ul>	Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> <li>• Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
<ul style="list-style-type: none"> <li>• Channel status display</li> </ul>	Yes; green LED
<ul style="list-style-type: none"> <li>• for channel diagnostics</li> </ul>	No
<ul style="list-style-type: none"> <li>• for module diagnostics</li> </ul>	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
<ul style="list-style-type: none"> <li>• between the channels</li> </ul>	No

- between the channels and backplane bus
- between the channels and the power supply of the electronics

Yes  
No

#### Isolation

Isolation tested with 707 V DC (type test)

#### Ambient conditions

##### Ambient temperature during operation

- horizontal installation, min. -30 °C; < 0 °C as of FS02
- horizontal installation, max. 60 °C
- vertical installation, min. -30 °C; < 0 °C as of FS02
- 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

#### Dimensions

Width 15 mm

Height 73 mm

Depth 58 mm

#### Weights

Weight, approx. 28 g

**last modified:** 1/16/2021 