



SIMATIC ET 200SP, Digital input module, DI 16x 24V DC Standard, type 3 (IEC 61131), sink input, (PNP, P-reading), Packing unit: 1 Piece, 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   |
| • FW update possible                                      | No   |
| usable BaseUnits  | BU type A0                                     |
| Color code for module-specific color identification plate | CC00   |
| Product function  |  |
| • I&M data  | Yes; I&M0 to I&M3                              |
| • Isochronous mode  | No   |
| Engineering with  |  |
| • STEP 7 TIA Portal configurable/integrated from version  | V14  |
| • STEP 7 configurable/integrated from version             | V5.5 SP3                                       |
| • PCS 7 configurable/integrated from version              | V8.1 SP1                                       |
| • PROFIBUS from GSD version/GSD revision                  | One GSD file each, Revision 3 and 5 and higher |
| • PROFINET from GSD version/GSD revision                  | GSDML V2.3                                     |
| Operating mode  |  |
| • DI  | Yes  |
| • Counter   | No   |
| • Oversampling  | No   |
| • MSI   | 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                                       |  |
| • 24 V  | No   |
| Power loss  |  |
| Power loss, typ.  | 1.7 W  |
| Address area  |  |
| Address space per module                                  |  |
| • Inputs  | 2 byte; + 2 bytes for QI information           |
| Hardware configuration                                    |  |
| Automatic encoding  | Yes  |
| • Mechanical coding element                               | Yes  |
| • Type of mechanical coding element                       | Type A   |

|   |   |
|---|---|
| <b>Selection of BaseUnit for connection variants</b>  |   |
| <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<br>BU type A0 + Potential distributor module<br>BU type A0 + Potential distributor module<br>BU type A0 + Potential distributor module   |
| <b>Digital inputs</b>   |   |
| Number of digital inputs  | 16  |
| Digital inputs, parameterizable   | Yes   |
| Source/sink input   | P-reading   |
| Input characteristic curve in accordance with IEC 61131, type 3   | Yes   |
| <b>Input voltage</b>  |   |
| <ul style="list-style-type: none"> <li>• Rated value (DC)</li> <li>• for signal "0"</li> <li>• for signal "1"</li> </ul>  | 24 V<br>-30 to +5 V<br>+11 to +30V  |
| <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; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 $\mu$ s, depending on line length)  |
| — at "0" to "1", min.   | 0.05 ms   |
| — at "0" to "1", max.   | 20 ms   |
| — at "1" to "0", min.   | 0.05 ms   |
| — at "1" to "0", max.   | 20 ms   |
| <b>Cable length</b>   |   |
| <ul style="list-style-type: none"> <li>• shielded, max.</li> <li>• unshielded, max.</li> </ul>  | 1 000 m<br>600 m  |
| <b>Encoder</b>  |   |
| Connectable encoders  |   |
| <ul style="list-style-type: none"> <li>• 2-wire sensor</li> <li>— permissible quiescent current (2-wire sensor), max.</li> </ul>  | Yes<br>1.5 mA   |
| <b>Interrupts/diagnostics/status information</b>  |   |
| Diagnostics function  | Yes   |
| <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>• Diagnostic information readable</li> <li>• Monitoring the supply voltage</li> <li>— parameterizable</li> <li>• Monitoring of encoder power supply</li> <li>• Wire-break</li> <li>• Short-circuit</li> <li>• Group error</li> </ul> | Yes<br>Yes<br>Yes<br>No<br>Yes; Module-by-module, optional protective circuit for preventing wire-break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm<br>No<br>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 channel diagnostics</li> <li>• for module diagnostics</li> </ul>   | Yes; green PWR LED<br>Yes; green LED<br>No<br>Yes; green/red DIAG LED   |
| <b>Potential separation</b>   |   |
| Potential separation channels   |   |
| <ul style="list-style-type: none"> <li>• between the channels</li> <li>• between the channels and backplane bus</li> <li>• between the channels and the power supply of the electronics</li> </ul>  | No<br>Yes<br>No   |
| <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>   |   |
| 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:** 8/23/2023 