



SIMATIC ET 200SP, Digital input module, DI 8x 24V DC Standard, type 3 (IEC 61131), sink input, (PNP, P-reading), Packing unit: 1 piece, fits to BU-type A0, Colour Code CC01, input delay time 0,05..20ms, module diagnostics for: short-circuit of sensor supply, wire break, supply voltage

| General information                                       |                                                |
|-----------------------------------------------------------|------------------------------------------------|
| Product type designation                                  | DI 8x24 VDC ST                                 |
| Firmware version                                          | V0.0                                           |
| • FW update possible                                      | No                                             |
| usable BaseUnits                                          | BU type A0                                     |
| Color code for module-specific color identification plate | CC01                                           |
| Product function                                          |                                                |
| • I&M data                                                | Yes; I&M0 to I&M3                              |
| Engineering with                                          |                                                |
| • STEP 7 TIA Portal configurable/integrated as of version | V14                                            |
| • STEP 7 configurable/integrated as of version            | V5.5 SP3 or higher                             |
| • PCS 7 configurable/integrated as of version             | V8.1 SP1                                       |
| • PROFIBUS as of GSD version/GSD revision                 | One GSD file each, Revision 3 and 5 and higher |
| • PROFINET as of GSD version/GSD revision                 | GSDML V2.3                                     |
| Operating mode                                            |                                                |
| • DI                                                      | Yes                                            |
| • Counter                                                 | No                                             |

|                                                                 |                                                          |
|-----------------------------------------------------------------|----------------------------------------------------------|
| • Oversampling                                                  | No                                                       |
| • MSI                                                           | No                                                       |
| <b>Supply voltage</b>                                           |                                                          |
| 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                                                      |
| <b>Input current</b>                                            |                                                          |
| Current consumption, max.                                       | 50 mA; All channels are supplied from the encoder supply |
| <b>Encoder supply</b>                                           |                                                          |
| Number of outputs                                               | 8                                                        |
| Output voltage encoder supply, min.                             | 19.2 V                                                   |
| Short-circuit protection                                        | Yes; per module                                          |
| <b>24 V encoder supply</b>                                      |                                                          |
| • 24 V                                                          | Yes                                                      |
| • Short-circuit protection                                      | Yes                                                      |
| • Output current, max.                                          | 700 mA; Total current of all encoders                    |
| <b>Power loss</b>                                               |                                                          |
| Power loss, typ.                                                | 1 W; 24 V, 8 inputs supplied via encoder supply          |
| <b>Address area</b>                                             |                                                          |
| <b>Address space per module</b>                                 |                                                          |
| • Inputs                                                        | 1 byte; + 1 byte for QI information                      |
| <b>Hardware configuration</b>                                   |                                                          |
| Automatic encoding                                              | Yes                                                      |
| • Mechanical coding element                                     | Yes                                                      |
| <b>Submodules</b>                                               |                                                          |
| • Number of configurable submodules, max.                       | 4                                                        |
| <b>Selection of BaseUnit for connection variants</b>            |                                                          |
| • 1-wire connection                                             | BU type A0                                               |
| • 2-wire connection                                             | BU type A0                                               |
| • 3-wire connection                                             | BU type A0 with AUX terminals                            |
| • 4-wire connection                                             | BU type A0 + Potential isolation module                  |
| <b>Digital inputs</b>                                           |                                                          |
| Number of digital inputs                                        | 8                                                        |
| Digital inputs, parameterizable                                 | Yes                                                      |
| Source/sink input                                               | P-reading                                                |
| Input characteristic curve in accordance with IEC 61131, type 3 | Yes                                                      |
| <b>Input voltage</b>                                            |                                                          |
| • Type of input voltage                                         | DC                                                       |

|                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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 +5V<br>+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                                                                                                                                                                                                                                  |                                                                                                                                                                                                                  |
| — 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 µs, 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                                                                                                                                                                                                            |
| Cable length                                                                                                                                                                                                                                         |                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• shielded, max.</li> <li>• unshielded, max.</li> </ul>                                                                                                                                                       | 1 000 m<br>600 m                                                                                                                                                                                                 |
| Encoder                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  |
| 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                                                                                                                                                                                                    |
| Isochronous mode                                                                                                                                                                                                                                     |                                                                                                                                                                                                                  |
| Isochronous operation (application synchronized up to terminal)                                                                                                                                                                                      | No                                                                                                                                                                                                               |
| Interrupts/diagnostics/status information                                                                                                                                                                                                            |                                                                                                                                                                                                                  |
| Diagnostics function                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                              |
| Alarms                                                                                                                                                                                                                                               |                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Diagnostic alarm</li> </ul>                                                                                                                                                                                 | Yes                                                                                                                                                                                                              |
| Diagnostic messages                                                                                                                                                                                                                                  |                                                                                                                                                                                                                  |
| <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> </ul> | Yes<br>Yes<br>Yes<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>Yes; Module-wise<br>Yes; Module-wise |
| Diagnostics indication LED                                                                                                                                                                                                                           |                                                                                                                                                                                                                  |
| <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> </ul>                                                                                  | Yes; green PWR LED<br>Yes; Green LED<br>No                                                                                                                                                                       |

- for module diagnostics

Yes; green/red DIAG LED

## Potential separation

### Potential separation channels

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

No

Yes

No

## Isolation

Isolation tested with

707 V DC (type test)

## Ambient conditions

### Ambient temperature during operation

- horizontal installation, min.
- horizontal installation, max.
- vertical installation, min.
- vertical installation, max.

0 °C

60 °C

0 °C

50 °C

### Altitude during operation relating to sea level

- Ambient air temperature-barometric pressure-altitude

On request: Ambient temperatures lower than 0 °C (without condensation) and/or installation altitudes greater than 2 000 m

## Dimensions

Width

15 mm

Height

73 mm

Depth

58 mm

## Weights

Weight, approx.

28 g

**last modified:**

04/13/2018