



Figure similar

SIMATIC ET 200SP, digital input module, DI 8x 24 V DC High Feature, input type 3 (IEC 61131), sink input, (PNP, sink input) Packing unit: 1 unit, suitable for BU type A0, color code CC01, input delay 0.05..20 ms; Channel diagnostics for: Encoder power supply short circuit, wire break, supply voltage, channel fault LED

| General information                                       |                                                |
|-----------------------------------------------------------|------------------------------------------------|
| Product type designation                                  | DI 8x24 V DC HF                                |
| HW functional status                                      | From FS07                                      |
| Firmware version                                          |                                                |
| • FW update possible                                      | Yes                                            |
| 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                              |
| • Isochronous mode                                        | Yes                                            |
| • suitable for operation on PROFINET R1 IMs               | Yes                                            |
| Engineering with                                          |                                                |
| • STEP 7 TIA Portal configurable/integrated from version  | V13 SP1 / -                                    |
| • STEP 7 configurable/integrated from version             | V5.5 / -                                       |
| • PCS 7 configurable/integrated from version              | V8.1 SP1                                       |
| • PCS neo can be configured/integrated from version       | from V1.0.0                                    |
| • 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                                                     | Yes                                            |
| 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 (rated value)                         | 20 mA                                          |
| Current consumption, max.                                 | 39 mA                                          |
| Encoder supply                                            |                                                |
| Number of outputs                                         | 8                                              |
| Output voltage, min.                                      | 19.2 V                                         |
| Short-circuit protection                                  | Yes                                            |
| 24 V encoder supply                                       |                                                |
| • 24 V                                                    | Yes                                            |
| • Short-circuit protection                                | Yes; per channel, electronic                   |
| • Output current per channel, max.                        | 700 mA                                         |

|                                                                 |                                                                                                                         |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| • Output current per module, max.                               | 700 mA                                                                                                                  |
| <b>Power loss</b>                                               |                                                                                                                         |
| Power loss, typ.                                                | 1.5 W; 24 V, 8 inputs supplied via encoder supply                                                                       |
| <b>Address area</b>                                             |                                                                                                                         |
| Address space per module                                        |                                                                                                                         |
| • Inputs                                                        | 1 byte; + 1 byte for QI information                                                                                     |
| <b>Hardware configuration</b>                                   |                                                                                                                         |
| Automatic encoding                                              | Yes                                                                                                                     |
| • Mechanical coding element                                     | Yes                                                                                                                     |
| • Type of mechanical coding element                             | Type A                                                                                                                  |
| <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 or potential distributor module                                                           |
| • 4-wire connection                                             | BU type A0 + Potential distributor 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                                                                                                                     |
| Pulse extension                                                 | Yes; Pulse duration from 4 µs                                                                                           |
| • Length                                                        | 2 s; 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s                                                                            |
| Edge evaluation                                                 | Yes; rising edge, falling edge, edge change                                                                             |
| <b>Input voltage</b>                                            |                                                                                                                         |
| • Rated value (DC)                                              | 24 V                                                                                                                    |
| • for signal "0"                                                | -30 to +5 V                                                                                                             |
| • for signal "1"                                                | +11 to +30V                                                                                                             |
| <b>Input current</b>                                            |                                                                                                                         |
| • for signal "1", typ.                                          | 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 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                                                                                                                   |
| <b>Cable length</b>                                             |                                                                                                                         |
| • shielded, max.                                                | 1 000 m                                                                                                                 |
| • unshielded, max.                                              | 600 m                                                                                                                   |
| <b>Encoder</b>                                                  |                                                                                                                         |
| <b>Connectable encoders</b>                                     |                                                                                                                         |
| • 2-wire sensor                                                 | Yes                                                                                                                     |
| — permissible quiescent current (2-wire sensor), max.           | 1.5 mA                                                                                                                  |
| <b>Isochronous mode</b>                                         |                                                                                                                         |
| Filtering and processing time (TCI), min.                       | 420 µs                                                                                                                  |
| Bus cycle time (TDP), min.                                      | 500 µs                                                                                                                  |
| Jitter, max.                                                    | 8 µs                                                                                                                    |
| <b>Interrupts/diagnostics/status information</b>                |                                                                                                                         |
| Diagnostics function                                            | Yes                                                                                                                     |
| <b>Alarms</b>                                                   |                                                                                                                         |
| • Diagnostic alarm                                              | Yes; channel by channel                                                                                                 |
| • Hardware interrupt                                            | Yes; Parameterizable, channels 0 to 7                                                                                   |
| <b>Diagnoses</b>                                                |                                                                                                                         |
| • Diagnostic information readable                               | Yes                                                                                                                     |
| • Monitoring the supply voltage                                 | Yes                                                                                                                     |
| — parameterizable                                               | Yes                                                                                                                     |
| • Monitoring of encoder power supply                            | Yes; channel by channel                                                                                                 |
| • Wire-break                                                    | Yes; Channel by channel, optional protective circuit for preventing wire-break                                          |

|                                                                |                                                                                                   |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| • Short-circuit                                                | diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm<br>Yes; channel by channel |
| <b>Diagnostics indication LED</b>                              |                                                                                                   |
| • Monitoring of the supply voltage (PWR-LED)                   | Yes; green PWR LED                                                                                |
| • Channel status display                                       | Yes; green LED                                                                                    |
| • for channel diagnostics                                      | Yes; red LED                                                                                      |
| • for module diagnostics                                       | Yes; green/red DIAG LED                                                                           |
| <b>Potential separation</b>                                    |                                                                                                   |
| <b>Potential separation channels</b>                           |                                                                                                   |
| • between the channels                                         | No                                                                                                |
| • between the channels and backplane bus                       | Yes                                                                                               |
| • between the channels and the power supply of the electronics | No                                                                                                |
| <b>Isolation</b>                                               |                                                                                                   |
| Isolation tested with                                          | 707 V DC (type test)                                                                              |
| <b>Standards, approvals, certificates</b>                      |                                                                                                   |
| Suitable for safety functions                                  | No                                                                                                |
| <b>Ecological footprint</b>                                    |                                                                                                   |
| • environmental product declaration                            | Yes                                                                                               |
| <b>Global warming potential</b>                                |                                                                                                   |
| — global warming potential, (total) [CO2 eq]                   | 15.9 kg                                                                                           |
| — global warming potential, (during production) [CO2 eq]       | 3.69 kg                                                                                           |
| — global warming potential, (during operation) [CO2 eq]        | 12.7 kg                                                                                           |
| — global warming potential, (after end of life cycle) [CO2 eq] | -0.495 kg                                                                                         |
| <b>Ambient conditions</b>                                      |                                                                                                   |
| <b>Ambient temperature during operation</b>                    |                                                                                                   |
| • horizontal installation, min.                                | -30 °C; < 0 °C as of FS07                                                                         |
| • horizontal installation, max.                                | 60 °C                                                                                             |
| • vertical installation, min.                                  | -30 °C; < 0 °C as of FS07                                                                         |
| • vertical installation, max.                                  | 50 °C                                                                                             |
| <b>Altitude during operation relating to sea level</b>         |                                                                                                   |
| • Installation altitude above sea level, max.                  | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual                            |
| <b>Dimensions</b>                                              |                                                                                                   |
| Width                                                          | 15 mm                                                                                             |
| Height                                                         | 73 mm                                                                                             |
| Depth                                                          | 58 mm                                                                                             |
| <b>Weights</b>                                                 |                                                                                                   |
| Weight, approx.                                                | 28 g                                                                                              |

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