



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-coded label         | CC00                                           |
| Product function                                         |                                                |
| • I&M data                                               | Yes; I&M0 to I&M3                              |
| • Isochronous mode                                       | No                                             |
| • suitable for operation on PROFINET R1 IMs              | Yes                                            |
| 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                                       |
| • 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                                                    | 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                                                                                                                |
| <b>Hardware configuration</b>                                   |                                                                                                                                                     |
| Automatic encoding                                              | Yes                                                                                                                                                 |
| • Mechanical coding element                                     | Yes                                                                                                                                                 |
| • Type of mechanical coding element                             | Type A                                                                                                                                              |
| Selection of BaseUnit for connection variants                   |                                                                                                                                                     |
| • 1-wire connection                                             | BU type A0                                                                                                                                          |
| • 2-wire connection                                             | BU type A0 + Potential distributor module                                                                                                           |
| • 3-wire connection                                             | BU type A0 + Potential distributor module                                                                                                           |
| • 4-wire connection                                             | BU type A0 + Potential distributor module                                                                                                           |
| <b>Digital inputs</b>                                           |                                                                                                                                                     |
| Number of digital inputs                                        | 16                                                                                                                                                  |
| Digital inputs, parameterizable                                 | Yes                                                                                                                                                 |
| Sourcing/sinking input                                          | P-reading                                                                                                                                           |
| Input characteristic curve in accordance with IEC 61131, type 3 | Yes                                                                                                                                                 |
| Input voltage                                                   |                                                                                                                                                     |
| • Rated value (DC)                                              | 24 V                                                                                                                                                |
| • for signal "0"                                                | -30 to +5 V                                                                                                                                         |
| • for signal "1"                                                | +11 to +30V                                                                                                                                         |
| Input current                                                   |                                                                                                                                                     |
| • for signal "1", typ.                                          | 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                                                    |                                                                                                                                                     |
| • shielded, max.                                                | 1 000 m                                                                                                                                             |
| • unshielded, max.                                              | 600 m                                                                                                                                               |
| <b>Encoder</b>                                                  |                                                                                                                                                     |
| Connectable encoders                                            |                                                                                                                                                     |
| • 2-wire sensor                                                 | Yes                                                                                                                                                 |
| — permissible quiescent current (2-wire sensor), max.           | 1.5 mA                                                                                                                                              |
| <b>Interrupts/diagnostics/status information</b>                |                                                                                                                                                     |
| Diagnostics function                                            | Yes                                                                                                                                                 |
| Alarms                                                          |                                                                                                                                                     |
| • Diagnostic alarm                                              | Yes                                                                                                                                                 |
| Diagnoses                                                       |                                                                                                                                                     |
| • Diagnostic information readable                               | Yes                                                                                                                                                 |
| • Monitoring the supply voltage                                 | Yes                                                                                                                                                 |
| — parameterizable                                               | Yes                                                                                                                                                 |
| • Monitoring of encoder power supply                            | No                                                                                                                                                  |
| • Wire break                                                    | Yes; Module-by-module, optional protective circuit for preventing wire-break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm |
| • Short-circuit                                                 | No                                                                                                                                                  |
| • Group error                                                   | Yes                                                                                                                                                 |
| 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                                                                                                                             |
| <b>Potential separation</b>                                     |                                                                                                                                                     |
| 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                                                                     |
| <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]                   | 21 kg                                                                  |
| — global warming potential, (during production) [CO2 eq]       | 4.25 kg                                                                |
| — global warming potential, (during operation) [CO2 eq]        | 17.5 kg                                                                |
| — global warming potential, (after end of life cycle) [CO2 eq] | -0.743 kg                                                              |
| <b>Ambient conditions</b>                                      |                                                                        |
| <b>Ambient temperature during operation</b>                    |                                                                        |
| • 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                                                                  |
| <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>Absolute humidity</b>                                       |                                                                        |
| • dew point, min.                                              | -60 °C; suitable for dry room applications                             |
| <b>Dimensions</b>                                              |                                                                        |
| Width                                                          | 15 mm                                                                  |
| Height                                                         | 73 mm                                                                  |
| Depth                                                          | 58 mm                                                                  |
| <b>Weights</b>                                                 |                                                                        |
| Weight, approx.                                                | 28 g                                                                   |
| <b>Classifications</b>                                         |                                                                        |

|        | Version | Classification |
|--------|---------|----------------|
| eClass | 16      | 27-24-26-04    |
| eClass | 14      | 27-24-26-04    |
| eClass | 12      | 27-24-26-04    |
| eClass | 9.1     | 27-24-26-04    |
| eClass | 9       | 27-24-26-04    |
| eClass | 8       | 27-24-26-04    |
| eClass | 7.1     | 27-24-26-04    |
| eClass | 6       | 27-24-26-04    |
| ETIM   | 10      | EC001599       |
| ETIM   | 9       | EC001599       |
| ETIM   | 8       | EC001599       |
| ETIM   | 7       | EC001599       |
| IDEA   | 4       | 3566           |
| UNSPSC | 15      | 32-15-17-05    |

#### Approvals / Certificates

##### General Product Approval



[Miscellaneous](#)

[Manufacturer Declaration](#)



##### General Product Approval

For use in hazard-



[China RoHS](#)



For use in hazardous locations

[FM](#)

[CCC-Ex](#)



[Type Examination Certificate](#)



[Miscellaneous](#)

For use in hazardous locations

Maritime application

[CCC-Ex](#)



[NK / Nippon Kaiji Kyokai](#)

Maritime application

Environment



[CCS \(China Classification Society\)](#)

[KR \(Korean Register of Shipping\)](#)



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