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## Data sheet 6ES7131-6BF01-0BA0



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 |
| 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 | CC01 |
| 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 or higher |
| ● PCS 7 configurable/integrated from version | V8.1 SP1 |
| ● PCS neo can be configured/integrated from version | V3.1 |
| ● 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. | 50 mA; All channels are supplied from the encoder supply |
| **Encoder supply** | |
| Number of outputs | 8 |
| Output voltage, min. | 19.2 V |
| Short-circuit protection | Yes; per module |
| 24 V encoder supply | |
| ● 24 V | Yes |
| ● Short-circuit protection | Yes |
| ● Output current, max. | 700 mA |
| ● Output current per channel, max. | 700 mA |
| ● Output current per module, max. | 700 mA |


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| **Power loss** | |
| Power loss, typ. | 1 W; 24 V, 8 inputs supplied via encoder supply |
| **Address area** | |
| Address space per module | |
| ● Inputs | 1 byte; + 1 byte for QI information |
| **Hardware configuration** | |
| 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 |
| ● 3-wire connection | BU type A0 with AUX terminals or potential distributor module |
| ● 4-wire connection | BU type A0 + Potential distributor module |
| **Digital inputs** | |
| 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 |
| 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 |
| **Encoder** | |
| Connectable encoders | |
| ● 2-wire sensor | Yes |
| — permissible quiescent current (2-wire sensor), max. | 1.5 mA |
| **Interrupts/diagnostics/status information** | |
| Diagnostics function | Yes |
| Alarms | |
| ● Diagnostic alarm | Yes |
| Diagnoses | |
| ● Diagnostic information readable | Yes |
| ● Monitoring the supply voltage | Yes |
| — parameterizable | Yes |
| ● Monitoring of encoder power supply | Yes; Module-by-module, optional protective circuit for preventing wire-break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm |
| ● Wire-break | Yes; Module-wise |
| ● Short-circuit | Yes; Module-wise |
| 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 |
| **Potential separation** | |
| Potential separation channels | |
| ● between the channels | No |
| ● between the channels and backplane bus | Yes |


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| | |
|---|---|
| ● between the channels and the power supply of the electronics | No |
| **Isolation** | |
| Isolation tested with | 707 V DC (type test) |
| **Standards, approvals, certificates** | |
| Suitable for safety functions | No |
| Ecological footprint | |
| ● environmental product declaration | Yes |
| Global warming potential | |
| — 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 |
| **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 |

**Classifications**

| | Version | Classification |
|---|---|---|
| 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**

Manufacturer Declaration | Miscellaneous | KC

| General Product Approval | For use in hazardous locations |
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|---|---|---|---|---|---|
| RCM | UL | FM | CCC-Ex | ATEX | IECEx |

| For use in hazardous locations | Maritime application | | | | |
|---|---|---|---|---|---|
| Miscellaneous | ABS | BUREAU VERITAS | DNV | LRS | NK / Nippon Kaiji Kyokai |

| Maritime application | | | | Environment |
|---|---|---|---|---|
| RINA | RMRS | CCS (China Classification Society) | KR | EPD |

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