

SIMATIC ET 200SP, Digital output module, DQ 16x 24V DC/0.5A STANDARD, Source output (PNP,P-switching) Packing unit: 10 pieces, fits to BU-type A0, Colour Code CC00, substitute value output, module diagnostics for: short-circuit to L+ and ground, wire break, supply voltage



| General information   |  |
|---|--|
| Product type designation  | DQ 16x24 VDC/0.5 A ST                          |
| HW functional status  | From FS03                                      |
| Firmware version  | V0.0   |
| <ul style="list-style-type: none"> <li>FW update possible</li> </ul>                                      | No   |
| usable BaseUnits  | BU type A0                                     |
| Color code for module-specific color identification plate   | CC00   |
| Product function  |  |
| <ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>  | Yes; I&M0 to I&M3                              |
| Engineering with  |  |
| <ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated as of version</li> </ul> | V14  |
| <ul style="list-style-type: none"> <li>STEP 7 configurable/integrated as of version</li> </ul>            | V5.5 SP3                                       |
| <ul style="list-style-type: none"> <li>PCS 7 configurable/integrated as of version</li> </ul>             | V8.1 SP1                                       |
| <ul style="list-style-type: none"> <li>PROFIBUS as of GSD version/GSD revision</li> </ul>                 | One GSD file each, Revision 3 and 5 and higher |
| <ul style="list-style-type: none"> <li>PROFINET as of GSD version/GSD revision</li> </ul>                 | GSDML V2.3                                     |
| Operating mode  |  |
| <ul style="list-style-type: none"> <li>DQ</li> </ul>  | Yes  |

|                                  |    |
|----------------------------------|----|
| • DQ with energy-saving function | No |
| • PWM                            | No |
| • Oversampling                   | No |
| • MSO                            | 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. | 60 mA; without load |
|---------------------------|---------------------|

### Output voltage

|                  |      |
|------------------|------|
| Rated value (DC) | 24 V |
|------------------|------|

### Power loss

|                  |     |
|------------------|-----|
| Power loss, typ. | 1 W |
|------------------|-----|

### Address area

|                                  |                                      |
|----------------------------------|--------------------------------------|
| Address space per module         |                                      |
| • Address space per module, max. | 2 byte; + 2 bytes for QI information |

### Hardware configuration

|                             |     |
|-----------------------------|-----|
| Automatic encoding          | Yes |
| • Mechanical coding element | Yes |

### Selection of BaseUnit for connection variants

|                     |   |
|---------------------|---|
| • 1-wire connection | BU type A0                              |
| • 2-wire connection | BU type A0 + Potential isolation module |
| • 3-wire connection | BU type A0 + Potential isolation module |
| • 4-wire connection | BU type A0 + Potential isolation module |

### Digital outputs

|   |                                       |
|---|---------------------------------------|
| Type of digital output                      | Source output (PNP, current-sourcing) |
| Number of digital outputs                   | 16                                    |
| Current-sinking                             | No                                    |
| Current-sourcing                            | Yes                                   |
| Digital outputs, parameterizable            | Yes                                   |
| Short-circuit protection                    | Yes                                   |
| • Response threshold, typ.                  | 1 A; 0.7 to 1.3 A                     |
| Open-circuit detection                      | Yes                                   |
| Limitation of inductive shutdown voltage to | Typ. L+ (-50 V)                       |
| Controlling a digital input                 | Yes                                   |
| Switching capacity of the outputs           |                                       |
| • with resistive load, max.                 | 0.5 A                                 |
| • on lamp load, max.                        | 5 W                                   |

|   |         |
|---|---------|
| <b>Load resistance range</b>                                    |         |
| • lower limit   | 48 Ω    |
| • upper limit   | 12 kΩ   |
| <b>Output current</b>   |         |
| • for signal "1" rated value                                    | 0.5 A   |
| • for signal "0" residual current, max.                         | 0.1 mA  |
| <b>Output delay with resistive load</b>                         |         |
| • "0" to "1", typ.  | 50 μs   |
| • "1" to "0", typ.  | 100 μs  |
| <b>Parallel switching of two outputs</b>                        |         |
| • for uprating  | No      |
| • for redundant control of a load                               | Yes     |
| <b>Switching frequency</b>                                      |         |
| • with resistive load, max.                                     | 100 Hz  |
| • with inductive load, max.                                     | 2 Hz    |
| • on lamp load, max.  | 10 Hz   |
| <b>Total current of the outputs</b>                             |         |
| • Current per channel, max.                                     | 0.5 A   |
| • Current per module, max.                                      | 8 A     |
| <b>Total current of the outputs (per module)</b>                |         |
| horizontal installation   |         |
| — up to 30 °C, max.   | 8 A     |
| — up to 40 °C, max.   | 8 A     |
| — up to 50 °C, max.   | 6 A     |
| — up to 60 °C, max.   | 4 A     |
| vertical installation   |         |
| — up to 30 °C, max.   | 8 A     |
| — up to 40 °C, max.   | 6 A     |
| — up to 50 °C, max.   | 4 A     |
| <b>Cable length</b>   |         |
| • shielded, max.  | 1 000 m |
| • unshielded, max.  | 600 m   |
| <b>Isochronous mode</b>   |         |
| Isochronous operation (application synchronized up to terminal) | No      |
| <b>Interrupts/diagnostics/status information</b>                |         |
| Diagnostics function  | Yes     |
| Substitute values connectable                                   | Yes     |
| <b>Alarms</b>   |         |
| • Diagnostic alarm  | Yes     |
| <b>Diagnostic messages</b>                                      |         |

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Monitoring the supply voltage</li> <li>• Wire-break</li> <li>• Short-circuit to M</li> <li>• Short-circuit to L+</li> <li>• Group error</li> </ul>              | <p>Yes</p> <p>Yes; Module-wise</p> <p>Yes; Module-wise</p> <p>Yes; Module-wise</p> <p>Yes</p> |
| <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>    | <p>Yes; Green PWR LED</p> <p>Yes; Green LED</p> <p>No</p> <p>Yes; green/red DIAG LED</p>      |
| <b>Potential separation</b>  |   |
| <b>Potential separation channels</b>   |   |
| <ul style="list-style-type: none"> <li>• between the channels</li> <li>• between the channels and backplane bus</li> </ul>   | <p>No</p> <p>Yes</p>  |
| <b>Isolation</b>   |   |
| Isolation tested with  | 707 V DC (type test)  |
| <b>Standards, approvals, certificates</b>  |   |
| Suitable for safety functions  | No  |
| Suitable for safety-related tripping of standard modules   | Yes; From FS01  |
| <b>Highest safety class achievable in safety mode</b>  |   |
| <ul style="list-style-type: none"> <li>• Performance level according to ISO 13849-1</li> <li>• SIL acc. to IEC 61508</li> </ul>  | <p>PL d</p> <p>SIL 2</p>  |
| <b>Ambient conditions</b>  |   |
| <b>Ambient temperature during operation</b>  |   |
| <ul style="list-style-type: none"> <li>• horizontal installation, min.</li> <li>• horizontal installation, max.</li> <li>• vertical installation, min.</li> <li>• vertical installation, max.</li> </ul> | <p>-30 °C</p> <p>60 °C</p> <p>-30 °C</p> <p>50 °C</p>   |
| <b>Altitude during operation relating to sea level</b>   |   |
| <ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> </ul>  | 2 000 m; On request: Installation altitudes greater than 2 000 m                              |
| <b>Dimensions</b>  |   |
| Width  | 15 mm   |
| Height   | 73 mm   |
| Depth  | 58 mm   |
| <b>Weights</b>   |   |
| Weight, approx.  | 30 g  |
| <b>last modified:</b>  | 08/24/2019  |