



SIMATIC ET 200SP, Digital output module, DQ 8x 24V DC/0.5A Standard, Source output (PNP,P-switching) Packing unit: 1 piece, fits to BU-type A0, Colour Code CC02, substitute value output, module diagnostics for: short-circuit to L+ and ground, wire break, supply voltage

| General information                                       |                                                |
|-----------------------------------------------------------|------------------------------------------------|
| Product type designation                                  | DQ 8x24VDC/0.5A 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 | CC02                                           |
| Product function                                          |                                                |
| • I&M data                                                | Yes; I&M0 to I&M3                              |
| • Isochronous mode                                        | No                                             |
| 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                                       |
| • 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                                            |                                                |
| • DQ                                                      | 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.                                 | 35 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.                          | 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>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 outputs</b>                               |                                                               |
| Type of digital output                               | Source output (PNP, current-sourcing)                         |
| Number of digital outputs                            | 8                                                             |
| Current-sourcing                                     | Yes                                                           |
| Digital outputs, parameterizable                     | Yes                                                           |
| Short-circuit protection                             | Yes                                                           |
| • Response threshold, typ.                           | 1 A                                                           |
| Limitation of inductive shutdown voltage to          | Typ. L+ (-50 V)                                               |
| Controlling a digital input                          | Yes                                                           |
| <b>Switching capacity of the outputs</b>             |                                                               |
| • with resistive load, max.                          | 0.5 A                                                         |
| • on lamp load, max.                                 | 5 W                                                           |
| <b>Load resistance range</b>                         |                                                               |
| • lower limit                                        | 48 $\Omega$                                                   |
| • upper limit                                        | 12 k $\Omega$                                                 |
| <b>Output voltage</b>                                |                                                               |
| • for signal "1", min.                               | L+ (-0.8 V)                                                   |
| <b>Output current</b>                                |                                                               |
| • for signal "1" rated value                         | 0.5 A                                                         |
| • for signal "1" permissible range, max.             | 0.5 A                                                         |
| • for signal "0" residual current, max.              | 0.1 mA                                                        |
| <b>Output delay with resistive load</b>              |                                                               |
| • "0" to "1", max.                                   | 50 $\mu$ s; at rated load                                     |
| • "1" to "0", max.                                   | 100 $\mu$ s; at rated load                                    |
| <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.                           | 4 A                                                           |
| <b>Total current of the outputs (per module)</b>     |                                                               |
| horizontal installation                              |                                                               |
| — up to 60 °C, max.                                  | 4 A                                                           |
| vertical installation                                |                                                               |
| — up to 50 °C, max.                                  | 4 A                                                           |
| <b>Cable length</b>                                  |                                                               |
| • shielded, max.                                     | 1 000 m                                                       |
| • unshielded, max.                                   | 600 m                                                         |
| <b>Interrupts/diagnostics/status information</b>     |                                                               |
| Diagnostics function                                 | Yes                                                           |
| Substitute values connectable                        | Yes                                                           |
| <b>Alarms</b>                                        |                                                               |
| • Diagnostic alarm                                   | Yes                                                           |
| <b>Diagnoses</b>                                     |                                                               |
| • Monitoring the supply voltage                      | Yes                                                           |

|                                                                                                                                                                                                          |                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Wire-break</li> <li>• Short-circuit to M</li> <li>• Short-circuit to L+</li> <li>• Group error</li> </ul>                                                       | Yes; Module-wise<br>Yes; Module-wise<br>Yes; Module-wise<br>Yes                               |
| <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>    | Yes; green PWR LED<br>Yes; green LED<br>No<br>Yes; green/red DIAG LED                         |
| <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> <li>• between the channels and the power supply of the electronics</li> </ul>       | No<br>Yes<br>No                                                                               |
| <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>                                                                          | PL d<br>SIL 2                                                                                 |
| <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> | -30 °C; < 0 °C as of FS02<br>60 °C<br>-30 °C; < 0 °C as of FS02<br>50 °C                      |
| <b>Altitude during operation relating to sea level</b>                                                                                                                                                   |                                                                                               |
| <ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> </ul>                                                                                                          | 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.                                                                                                                                                                                          | 30 g                                                                                          |
| <b>last modified:</b>                                                                                                                                                                                    | 5/19/2021  |