

SIMATIC ET 200SP, Digital output module, DQ 16x 24V DC/0,5A Standard, Source output (PNP,P-switching) Packing unit: 1 piece, 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 16x24VDC/0.5A ST                            |
| 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                                            |
| <ul style="list-style-type: none"> <li>DQ with energy-saving function</li> </ul>                          | No                                             |
| <ul style="list-style-type: none"> <li>PWM</li> </ul>                                                     | No                                             |
| <ul style="list-style-type: none"> <li>Oversampling</li> </ul>                                            | No                                             |
| <ul style="list-style-type: none"> <li>MSO</li> </ul>                                                     | No                                             |
| Redundancy                                                                                                |                                                |
| <ul style="list-style-type: none"> <li>Redundancy capability</li> </ul>                                   | 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, max.                                                                                 | 60 mA; without load                            |
| Output voltage                                                                                            |                                                |

|                                                      |                                         |
|------------------------------------------------------|-----------------------------------------|
| Rated value (DC)                                     | 24 V                                    |
| <b>Power loss</b>                                    |                                         |
| Power loss, typ.                                     | 1 W                                     |
| <b>Address area</b>                                  |                                         |
| Address space per module                             |                                         |
| • Inputs                                             | + 2 bytes for QI information            |
| • Outputs                                            | 2 byte                                  |
| <b>Hardware configuration</b>                        |                                         |
| Automatic encoding                                   | Yes                                     |
| • Mechanical coding element                          | Yes                                     |
| <b>Selection of BaseUnit for connection variants</b> |                                         |
| • 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 |
| <b>Digital outputs</b>                               |                                         |
| Type of digital output                               | Source output (PNP, current-sourcing)   |
| Number of digital outputs                            | 16                                      |
| Current-sinking                                      | No                                      |
| Current-sourcing                                     | Yes                                     |
| Short-circuit protection                             | Yes                                     |
| • Response threshold, typ.                           | 1 A                                     |
| Open-circuit detection                               | Yes                                     |
| 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 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 $\mu$ s                              |
| • "1" to "0", typ.                                   | 100 $\mu$ s                             |
| <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>                |                                      |
| <b>horizontal installation</b>                                  |                                      |
| — 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                                  |
| <b>vertical installation</b>                                    |                                      |
| — up to 30 °C, max.                                             | 8 A; in all other mounting positions |
| — up to 40 °C, max.                                             | 6 A; in all other mounting positions |
| — up to 50 °C, max.                                             | 4 A; in all other mounting positions |
| <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>                                      |                                      |
| • Monitoring the supply voltage                                 | Yes                                  |
| • Wire-break                                                    | Yes; Module-wise                     |
| • Short-circuit to M                                            | Yes; Module-wise                     |
| • Short-circuit to L+                                           | Yes; Module-wise                     |
| <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                                       | No                                   |
| • 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                                  |

|                                                        |                                                                                                                            |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Isolation                                              |                                                                                                                            |
| Isolation tested with                                  | 707 V DC (type test)                                                                                                       |
| Ambient conditions                                     |                                                                                                                            |
| Ambient temperature during operation                   |                                                                                                                            |
| • horizontal installation, min.                        | 0 °C                                                                                                                       |
| • horizontal installation, max.                        | 60 °C                                                                                                                      |
| • vertical installation, min.                          | 0 °C; in all other mounting positions                                                                                      |
| • vertical installation, max.                          | 50 °C; in all other mounting positions                                                                                     |
| Altitude during operation relating to sea level        |                                                                                                                            |
| • Ambient air temperature-barometric pressure-altitude | On request: Ambient temperatures lower than 0 °C (without condensation) and/or installation altitudes greater than 2 000 m |
| Dimensions                                             |                                                                                                                            |
| Width                                                  | 15 mm                                                                                                                      |
| Height                                                 | 73 mm                                                                                                                      |
| Depth                                                  | 58 mm                                                                                                                      |
| Weights                                                |                                                                                                                            |
| Weight, approx.                                        | 30 g                                                                                                                       |
| last modified:                                         | 01/16/2018                                                                                                                 |