

SIMATIC ET 200SP, digital output module, DQ 16x 24VDC/0.5A  
Basic, Pack quantity: 1 unit, suitable for BU type A0, Color code  
CC00, Module diagnostics



| General information                                                                                       |                                                |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Product type designation                                                                                  | DQ 16x 24 V DC/0.5 A BA, PU 1                  |
| 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>            | STEP 7 V5.5 or higher                          |
| <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                                             |

|                                                      |                                         |
|------------------------------------------------------|-----------------------------------------|
| • Oversampling                                       | No                                      |
| • MSO                                                | No                                      |
| <b>Supply voltage</b>                                |                                         |
| 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                                     |
| <b>Input current</b>                                 |                                         |
| Current consumption, max.                            | 55 mA; without load                     |
| <b>Output voltage</b>                                |                                         |
| Rated value (DC)                                     | 24 V                                    |
| <b>Power loss</b>                                    |                                         |
| Power loss, typ.                                     | 1 W                                     |
| <b>Address area</b>                                  |                                         |
| Address space per module                             |                                         |
| • 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.                           | 1.4 A; 0.7 to 1.9 A                     |
| Open-circuit detection                               | No                                      |
| Limitation of inductive shutdown voltage to          | Typ. L+ (-53 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                                        | 100 k $\Omega$                          |

|                                                                 |                       |
|-----------------------------------------------------------------|-----------------------|
| Output current                                                  |                       |
| • for signal "1" rated value                                    | 0.5 A                 |
| • for signal "0" residual current, max.                         | 30 µA                 |
| Output delay with resistive load                                |                       |
| • "0" to "1", typ.                                              | 80 µs; at rated load  |
| • "0" to "1", max.                                              | 150 µs; at rated load |
| • "1" to "0", typ.                                              | 100 µs; at rated load |
| • "1" to "0", max.                                              | 200 µs; at rated load |
| Parallel switching of two outputs                               |                       |
| • for uprating                                                  | No                    |
| • for redundant control of a load                               | Yes                   |
| Switching frequency                                             |                       |
| • with resistive load, max.                                     | 100 Hz                |
| • with inductive load, max.                                     | 2 Hz                  |
| • on lamp load, max.                                            | 10 Hz                 |
| Total current of the outputs                                    |                       |
| • Current per channel, max.                                     | 0.5 A                 |
| • Current per module, max.                                      | 8 A                   |
| Total current of the outputs (per module)                       |                       |
| horizontal installation                                         |                       |
| — up to 60 °C, max.                                             | 8 A                   |
| vertical installation                                           |                       |
| — up to 50 °C, max.                                             | 8 A                   |
| Cable length                                                    |                       |
| • shielded, max.                                                | 1 000 m               |
| • unshielded, max.                                              | 600 m                 |
| Isochronous mode                                                |                       |
| Isochronous operation (application synchronized up to terminal) | No                    |
| Interrupts/diagnostics/status information                       |                       |
| Diagnostics function                                            | Yes                   |
| Substitute values connectable                                   | Yes                   |
| Alarms                                                          |                       |
| • Diagnostic alarm                                              | Yes                   |
| Diagnostic messages                                             |                       |
| • Monitoring the supply voltage                                 | Yes                   |
| • Wire-break                                                    | No                    |
| • 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 |

## Potential separation

### Potential separation channels

- |                                          |     |
|------------------------------------------|-----|
| • 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  |
| • vertical installation, max.   | 50 °C |

### 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 |
|-----------------|------|

|                       |            |
|-----------------------|------------|
| <b>last modified:</b> | 10/24/2018 |
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