

SIMATIC ET 200SP, digital output module, DQ 4x 24VDC/2A High Feature, suitable for BU type A0, Color code CC02, channel diagnostics



| General information                                       |                                      |
|-----------------------------------------------------------|--------------------------------------|
| Product type designation                                  | ET 200SP, DQ 4x 24 V DC/2 A HF, PU 1 |
| HW functional status                                      | From FS06                            |
| Firmware version                                          |                                      |
| • FW update possible                                      | Yes                                  |
| 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                    |
| Engineering with                                          |                                      |
| • STEP 7 TIA Portal configurable/integrated as of version | V13 SP1 / -                          |
| • STEP 7 configurable/integrated as of version            | V5.5 / -                             |
| • PROFIBUS as of GSD version/GSD revision                 | GSD Revision 5                       |
| • PROFINET as of GSD version/GSD revision                 | GSDML V2.3                           |
| Operating mode                                            |                                      |
| • DQ                                                      | Yes                                  |
| • DQ with energy-saving function                          | No                                   |

|                                                                                                                                                              |                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• PWM</li> <li>• Oversampling</li> <li>• MSO</li> </ul>                                                               | No<br>No<br>Yes                                                                                                                      |
| <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>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                                                                                                                                     |                                                                                                                                      |
| <ul style="list-style-type: none"> <li>• Address space per module, max.</li> </ul>                                                                           | 4 byte; 2 channels per submodule + QI information                                                                                    |
| <b>Hardware configuration</b>                                                                                                                                |                                                                                                                                      |
| Automatic encoding                                                                                                                                           | Yes                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Mechanical coding element</li> </ul>                                                                                | Yes                                                                                                                                  |
| <b>Selection of BaseUnit for connection variants</b>                                                                                                         |                                                                                                                                      |
| <ul style="list-style-type: none"> <li>• 1-wire connection</li> <li>• 2-wire connection</li> <li>• 3-wire connection</li> <li>• 4-wire connection</li> </ul> | BU type A0<br>BU type A0<br>BU type A0 with AUX terminals or potential distributor module<br>BU type A0 + Potential isolation module |
| <b>Digital outputs</b>                                                                                                                                       |                                                                                                                                      |
| Type of digital output                                                                                                                                       | Source output (PNP, current-sourcing)                                                                                                |
| Number of digital outputs                                                                                                                                    | 4                                                                                                                                    |
| Current-sinking                                                                                                                                              | No                                                                                                                                   |
| Current-sourcing                                                                                                                                             | Yes                                                                                                                                  |
| Digital outputs, parameterizable                                                                                                                             | Yes                                                                                                                                  |
| Short-circuit protection                                                                                                                                     | Yes                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Response threshold, typ.</li> </ul>                                                                                 | 2.8 to 5.2 A                                                                                                                         |
| Limitation of inductive shutdown voltage to                                                                                                                  | L+ -(37 to 41V)                                                                                                                      |
| Controlling a digital input                                                                                                                                  | Yes; Minimum current consumption 7 mA                                                                                                |
| <b>Switching capacity of the outputs</b>                                                                                                                     |                                                                                                                                      |
| <ul style="list-style-type: none"> <li>• with resistive load, max.</li> <li>• on lamp load, max.</li> </ul>                                                  | 2 A<br>10 W                                                                                                                          |
| <b>Load resistance range</b>                                                                                                                                 |                                                                                                                                      |
| <ul style="list-style-type: none"> <li>• lower limit</li> <li>• upper limit</li> </ul>                                                                       | 12 $\Omega$<br>3 400 $\Omega$                                                                                                        |
| <b>Output current</b>                                                                                                                                        |                                                                                                                                      |

|                                                                 |                         |
|-----------------------------------------------------------------|-------------------------|
| • for signal "1" rated value                                    | 2 A                     |
| • for signal "0" residual current, max.                         | 0.1 mA                  |
| Output delay with resistive load                                |                         |
| • "0" to "1", typ.                                              | 50 µs                   |
| • "1" to "0", typ.                                              | 100 µs                  |
| Parallel switching of two outputs                               |                         |
| • for uprating                                                  | No                      |
| 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.                                     | 2 A                     |
| • Current per module, max.                                      | 8 A                     |
| Total current of the outputs (per module)                       |                         |
| horizontal installation                                         |                         |
| — 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                     |
| Cable length                                                    |                         |
| • shielded, max.                                                | 1 000 m                 |
| • unshielded, max.                                              | 600 m                   |
| Isochronous mode                                                |                         |
| Isochronous operation (application synchronized up to terminal) | Yes                     |
| Bus cycle time (TDP), min.                                      | 500 µs                  |
| Jitter, max.                                                    | 8 µs                    |
| Interrupts/diagnostics/status information                       |                         |
| Diagnostics function                                            | Yes                     |
| Substitute values connectable                                   | Yes                     |
| Alarms                                                          |                         |
| • Diagnostic alarm                                              | Yes                     |
| Diagnostic messages                                             |                         |
| • Monitoring the supply voltage                                 | Yes                     |
| • Wire-break                                                    | Yes; channel by channel |
| • Short-circuit                                                 | Yes; channel by channel |
| • Group error                                                   | Yes                     |

|                                                          |                                                                  |
|----------------------------------------------------------|------------------------------------------------------------------|
| <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                                | Yes; Red LED                                                     |
| • 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                                                              |
| <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 FS02                                                   |
| <b>Highest safety class achievable in safety mode</b>    |                                                                  |
| • Performance level according to ISO 13849-1             | PL d                                                             |
| • SIL acc. to IEC 61508                                  | SIL 2                                                            |
| <b>Ambient conditions</b>                                |                                                                  |
| <b>Ambient temperature during operation</b>              |                                                                  |
| • horizontal installation, min.                          | -30 °C                                                           |
| • horizontal installation, max.                          | 60 °C                                                            |
| • vertical installation, min.                            | -30 °C                                                           |
| • vertical installation, max.                            | 50 °C                                                            |
| <b>Altitude during operation relating to sea level</b>   |                                                                  |
| • Installation altitude above sea level, max.            | 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>                                    | 01/22/2020                                                       |