



SIMATIC DP, Electronics module for ET 200SP, F-DQ 4x24 V DC/2A, 15 mm width, up to PL E (ISO 13849) up to SIL 3 (IEC 61508)

| General information | |
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| Product type designation | F-DQ 4x24VDC/2A PM HF |
| usable BaseUnits | BU type A0 |
| Product function | |
| • I&M data | Yes; I&M0 to I&M3 |
| Engineering with | |
| • STEP 7 TIA Portal configurable/integrated from version | V12 |
| • STEP 7 configurable/integrated from version | V5.5 SP3 / - |
| • PROFINET from GSD version/GSD revision | V2.31 |
| 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 |
| power supply according to NEC Class 2 required | No |
| Input current | |
| Current consumption (rated value) | 75 mA; without load |
| Current consumption, max. | 21 mA; From the backplane bus |
| output voltage / header | |
| Rated value (DC) | 24 V |
| Power | |
| Power available from the backplane bus | 70 mW |
| Power loss | |
| Power loss, typ. | 4 W |
| Address area | |
| Address space per module | |
| • Inputs | 5 byte |
| • Outputs | 5 byte |
| Hardware configuration | |
| Automatic encoding | Yes |
| • Electronic coding element type F | Yes |
| Digital outputs | |
| Type of digital output | Transistor |
| Number of digital outputs | 4 |
| Digital outputs, parameterizable | Yes |
| Short-circuit protection | Yes |
| • Response threshold, typ. | > 3.3 A |
| Open-circuit detection | Yes |
| • Response threshold, typ. | 8 mA |
| Overload protection | Yes |

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| • Response threshold, typ. | 2.9 A |
| Limitation of inductive shutdown voltage to | Typ. -2x 47 V |
| Controlling a digital input | Yes; digital output, according to IEC 61131-2, type 2 |
| Switching capacity of the outputs | |
| • with resistive load, max. | 2 A |
| • on lamp load, max. | 10 W |
| Load resistance range | |
| • lower limit | 12 Ω |
| • upper limit | 2 000 Ω |
| Output voltage | |
| • for signal "1", min. | 24 V; L+ (-0.5 V) |
| Output current | |
| • for signal "1" rated value | 2 A |
| • for signal "0" residual current, max. | 0.5 mA |
| Switching frequency | |
| • with resistive load, max. | 30 Hz; Symmetrical |
| • with inductive load, max. | 0.1 Hz; according to IEC 60947-5-1, DC-13, symmetrical |
| • on lamp load, max. | 10 Hz; Symmetrical |
| Total current of the outputs | |
| • Current per channel, max. | 2 A; note derating data in the manual |
| • Current per module, max. | 6 A; note derating data in the manual |
| Cable length | |
| • shielded, max. | 1 000 m |
| • unshielded, max. | 500 m |
| Interrupts/diagnostics/status information | |
| Diagnostics function | Yes |
| Substitute values connectable | No |
| Alarms | |
| • Diagnostic alarm | Yes |
| Diagnostics indication LED | |
| • RUN LED | Yes; green LED |
| • ERROR LED | Yes; red LED |
| • 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 |
| Potential separation | |
| Potential separation channels | |
| • between the channels | No |
| • between the channels and backplane bus | Yes |
| • between the channels and the power supply of the electronics | No |
| Isolation | |
| Isolation tested with | 707 V DC (type test) |
| Standards, approvals, certificates | |
| Suitable for safety functions | Yes |
| Ecological footprint | |
| • environmental product declaration | Yes |
| Global warming potential | |
| — global warming potential, (total) [CO2 eq] | 88.3 kg |
| — global warming potential, (during production) [CO2 eq] | 13.1 kg |
| — global warming potential, (during operation) [CO2 eq] | 76.6 kg |
| — global warming potential, (after end of life cycle) [CO2 eq] | -1.37 kg |
| Highest safety class achievable in safety mode | |
| • Performance level according to ISO 13849-1 | PLe |
| • SIL acc. to IEC 61508 | SIL 3 |
| Probability of failure (for service life of 20 years and repair time of 100 hours) | |
| — Low demand mode: PFDavg in accordance with SIL2 | < 2.00E-04 |

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| — Low demand mode: PFDavg in accordance with SIL3 | < 2.00E-05 |
| — High demand/continuous mode: PFH in accordance with SIL2 | < 1.00E-08 1/h |
| — High demand/continuous mode: PFH in accordance with SIL3 | < 1.00E-09 1/h |

| Ambient conditions | |
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| 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 | |
| • Installation altitude above sea level, max. | 4 000 m; Restrictions for installation altitudes > 2 000 m, see manual |
| Dimensions | |
| Width | 15 mm |
| Height | 73 mm |
| Depth | 58 mm |
| Weights | |
| Weight, approx. | 57 g |

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