



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

|                                                          |                       |
|----------------------------------------------------------|-----------------------|
| 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 consumption 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        |

|                                                                                           |                                                             |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| • 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       |
| <b>Switching capacity of the outputs</b>                                                  |                                                             |
| • with resistive load, max.                                                               | 2 A                                                         |
| • on lamp load, max.                                                                      | 10 W                                                        |
| <b>Load resistance range</b>                                                              |                                                             |
| • lower limit                                                                             | 12 $\Omega$                                                 |
| • upper limit                                                                             | 2 000 $\Omega$                                              |
| <b>Output voltage</b>                                                                     |                                                             |
| • for signal "1", min.                                                                    | 24 V; L+ (-0.5 V)                                           |
| <b>Output current</b>                                                                     |                                                             |
| • for signal "1" rated value                                                              | 2 A                                                         |
| • for signal "0" residual current, max.                                                   | 0.5 mA                                                      |
| <b>Switching frequency</b>                                                                |                                                             |
| • 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                                          |
| <b>Total current of the outputs</b>                                                       |                                                             |
| • Current per channel, max.                                                               | 2 A; note derating data in the manual                       |
| • Current per module, max.                                                                | 6 A; note derating data in the manual                       |
| <b>Cable length</b>                                                                       |                                                             |
| • shielded, max.                                                                          | 1 000 m                                                     |
| • unshielded, max.                                                                        | 500 m                                                       |
| <b>Interrupts/diagnostics/status information</b>                                          |                                                             |
| Diagnostics function                                                                      | Yes; See Chapter "Alarms/diagnostic messages" in the manual |
| Substitute values connectable                                                             | No                                                          |
| <b>Alarms</b>                                                                             |                                                             |
| • Diagnostic alarm                                                                        | Yes                                                         |
| • Hardware interrupt                                                                      | No                                                          |
| <b>Diagnostics indication LED</b>                                                         |                                                             |
| • 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                                     |
| <b>Potential separation</b>                                                               |                                                             |
| <b>Potential separation channels</b>                                                      |                                                             |
| • between the channels                                                                    | No                                                          |
| • between the channels and backplane bus                                                  | Yes                                                         |
| • between the channels and the power supply of the electronics                            | No                                                          |
| <b>Isolation</b>                                                                          |                                                             |
| Isolation tested with                                                                     | 707 V DC (type test)                                        |
| <b>Standards, approvals, certificates</b>                                                 |                                                             |
| Suitable for safety functions                                                             | Yes                                                         |
| <b>Ecological footprint</b>                                                               |                                                             |
| • environmental product declaration                                                       | Yes                                                         |
| <b>Global warming potential</b>                                                           |                                                             |
| — 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                                                    |
| <b>Highest safety class achievable in safety mode</b>                                     |                                                             |
| • Performance level according to ISO 13849-1                                              | PLe                                                         |
| • SIL acc. to IEC 61508                                                                   | SIL 3                                                       |
| <b>Probability of failure (for service life of 20 years and repair time of 100 hours)</b> |                                                             |
| — Low demand mode: PFDavg in accordance with                                              | < 2.00E-04                                                  |

|                                                            |                |
|------------------------------------------------------------|----------------|
| SIL2                                                       |                |
| — 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

|                                                 |                                                                        |
|-------------------------------------------------|------------------------------------------------------------------------|
| 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 |
|-----------------|------|

Classifications

|        | Version | Classification |
|--------|---------|----------------|
| eClass | 14      | 27-24-26-04    |
| eClass | 12      | 27-24-26-04    |
| eClass | 9.1     | 27-24-26-04    |
| eClass | 9       | 27-24-26-04    |
| eClass | 8       | 27-24-26-04    |
| eClass | 7.1     | 27-24-26-04    |
| eClass | 6       | 27-24-26-04    |
| ETIM   | 9       | EC001599       |
| ETIM   | 8       | EC001599       |
| ETIM   | 7       | EC001599       |
| IDEA   | 4       | 3566           |
| UNSPSC | 15      | 32-15-17-05    |

Approvals / Certificates

|                          |       |             |
|--------------------------|-------|-------------|
| General Product Approval | other | Environment |
|--------------------------|-------|-------------|

[Miscellaneous](#)



[Confirmation](#)



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firmations](#)

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