SIEMENS

## Data sheet 6ES7138-4DL00-0AB0



*** Spare part *** SIMATIC DP, Electronics module for ET 200S, 1 POS U, Controlled positioning with digital outputs for 5 V/24 V incremental encoder, SSI encoder, 30 mm overall width

| | |
|---|---|
| **Supply voltage** | |
| Load voltage L+ | |
| ● Rated value (DC) | 24 V |
| ● permissible range, lower limit (DC) | 20.4 V |
| ● permissible range, upper limit (DC) | 28.8 V |
| ● Reverse polarity protection | Yes |
| **Input current** | |
| from load voltage L+ (without load), max. | 55 mA |
| from backplane bus 3.3 V DC, max. | 10 mA |
| **Encoder supply** | |
| 5 V encoder supply | |
| ● 5 V | No |
| 24 V encoder supply | |
| ● 24 V | Yes |
| ● Short-circuit protection | Yes |
| ● Output current, max. | 500 mA |
| Absolute encoder (SSI) encoder supply | |
| ● Absolute encoder (SSI) | Yes |
| ● Type of output voltage | L+ (-0.8 V) |
| ● Short-circuit protection | Yes |
| ● Output current, max. | 500 mA |
| **Power loss** | |
| Power loss, typ. | 2 W |
| **Digital inputs** | |
| Input characteristic curve in accordance with IEC 61131, type 2 | Yes |
| Input voltage | |
| ● Rated value (DC) | 24 V |
| ● for signal "0" | -30 to +5 V |
| ● for signal "1" | +11 to +30V |
| Input current | |
| ● for signal "0", max. (permissible quiescent current) | 2 mA |
| ● for signal "1", typ. | 9 mA |
| Input delay (for rated value of input voltage) | |
| ● Input frequency (with a time delay of 0.1 ms), max. | 100 kHz |
| Cable length | |
| ● unshielded, max. | 50 m |
| **Digital outputs** | |
| Short-circuit protection | Yes |
| ● Response threshold, typ. | 0.7 to 1.8 A |


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| | |
|---|---|
| Limitation of inductive shutdown voltage to | Yes; L+ -(55 to 60 V) |
| Controlling a digital input | Yes |
| Switching capacity of the outputs | |
| ● on lamp load, max. | 5 W |
| Output voltage | |
| ● Rated value (DC) | 24 V |
| ● for signal "0", max. | 3 V |
| ● for signal "1", min. | L+ (-1 V) |
| Output current | |
| ● for signal "1" permissible range for 0 to 60 °C, min. | 7 mA |
| ● for signal "1" permissible range for 0 to 60 °C, max. | 600 mA |
| ● for signal "0" residual current, max. | 0.3 mA |
| Output delay with resistive load | |
| ● "0" to "1", max. | typically 150 µs |
| ● "1" to "0", max. | typically 150 µs |
| Switching frequency | |
| ● with resistive load, max. | 100 Hz |
| ● with inductive load, max. | 2 Hz |
| ● on lamp load, max. | 10 Hz |
| Cable length | |
| ● shielded, max. | 1 000 m |
| ● unshielded, max. | 600 m |
| **Encoder** | |
| Number of connectable encoders, max. | 1 |
| Connectable encoders | |
| ● Incremental encoder (symmetrical) | Yes |
| ● Incremental encoder (asymmetrical) | Yes |
| ● Absolute encoder (SSI) | Yes |
| ● 2-wire sensor | Yes; Type 2 |
| Encoder signals, incremental encoder (symmetrical) | |
| ● Input voltage | to RS-422 |
| ● Differential input voltage, min. | 1 V |
| ● terminating resistor | 330 Ω |
| ● Input frequency, max. | 500 kHz |
| ● Cable length, shielded, max. | 50 m |
| Encoder signals, absolute encoder (SSI) | |
| ● Cable length, shielded, max. | 320 m at 125 kHz, 160 m at 250 kHz, 60 m at 500 kHz, 20 m at 1 MHz, 8 m at 2 MHz, twisted in pairs and shielded |
| ● Monoflop time | 64 µs |
| Updating the encoder value | |
| — Telegram runtime at 13 bit, min. | 7 µs |
| — Telegram runtime at 25 bit, min. | 13 µs |
| **Response times** | |
| Updating time of the feedback messages | 1 ms |
| Latch | In the case of incremental encoders: typ. 400 ms; in the case of SSI encoders: typ. 400 ms + age of the encoder value: |
| Response time at switchover/switchoff point | In the case of incremental encoders: output delay + 30 µs; in the case of SSI encoders: output delay + message frame runtime + 30 ms |
| **Interrupts/diagnostics/status information** | |
| Diagnostics indication LED | |
| ● Actual value falling DN (green) | Yes |
| ● Actual value rising UP (green) | Yes |
| ● Positioning mode POS (green) | Yes |
| ● Group error SF (red) | Yes |
| ● Status indicator digital input (green) | Yes |
| **Potential separation** | |
| between backplane bus and all other circuit components | Yes |
| between the channels and backplane bus | Yes |
| **Dimensions** | |


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| | |
|---|---|
| Width | 30 mm |
| Height | 81 mm |
| Depth | 52 mm |

**Weights**

| | |
|---|---|
| Weight, approx. | 65 g |

**Classifications**

| | Version | Classification |
|---|---|---|
| eClass | 16 | 27-24-26-05 |
| eClass | 14 | 27-24-26-05 |
| eClass | 12 | 27-24-26-05 |
| eClass | 9.1 | 27-24-26-05 |
| eClass | 9 | 27-24-26-05 |
| eClass | 8 | 27-24-26-05 |
| eClass | 7.1 | 27-24-26-05 |
| eClass | 6 | 27-24-26-05 |
| ETIM | 10 | EC001601 |
| ETIM | 9 | EC001601 |
| ETIM | 8 | EC001601 |
| ETIM | 7 | EC001601 |
| IDEA | 4 | 3567 |
| UNSPSC | 15 | 32-15-17-05 |

**Approvals / Certificates**

**General Product Approval**

Miscellaneous | Manufacturer Declaration

**General Product Approval** | **EMV** | **For use in hazardous locations**

China RoHS

**For use in hazardous locations**

FM | Miscellaneous

**For use in hazardous locations** | **Maritime application**

CCC-Ex | NK / Nippon Kaiji Kyokai

**Maritime application**


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CCS (China Classification Society)

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