MANUFACTURER DOCUMENT PACKAGE

# Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

## 6ES7138-4DA04-0AB0

**24 V HIGH-SPEED COUNTER MODULE**

Used with the applicable SIMATIC ET 200S 1 COUNT configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens 6ES7138-4DA04-0AB0 Data Sheet, January 2017, pages 1-4.

SIEMENS

Show actual product details

## Data sheet 6ES7138-4DA04-0AB0

SIMATIC DP, ELECTRONIC MODULE F. ET 200S, 1 COUNT 24V/100KHZ 15 MM WIDE, OPERATION MODES: COUNT, MEASURE, (PERIOD DURATION MEASUREMENT HIGH RESOLUTION) WITH CLOCK CYCLIC SYNCHRON.APP



Figure similar

| | |
|---|---|
| **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. | 42 mA |
| from backplane bus 3.3 V DC, max. | 10 mA |
| **Encoder supply** | |
| 24 V encoder supply | |
| • 24 V | Yes; L+ (-0.8 V) |
| • Short-circuit protection | Yes |
| • Output current, max. | 500 mA |
| **Power loss** | |
| Power loss, typ. | 1 W |


Subject to change without notice
© Copyright Siemens AG

| | |
|---|---|
| **Hardware configuration** | |
| Module exchange | |
| • Module exchange during operation of the IM-DP | Yes |
| • Module exchange under process voltage | Yes |
| **Digital inputs** | |
| Number of digital inputs | 1 |
| Functions | Gate control, synchronization, latch function |
| Input characteristic curve in accordance with IEC 61131, type 2 | Yes |
| Input voltage | |
| • Rated value (DC) | 24 V |
| • for signal "0" | -30 to +5V |
| • 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) | |
| for standard inputs | |
| — at "0" to "1", max. | 2.5 µs; Filter off: 2.5 µs (200 kHz), filter on: 25 µs (20 kHz) |
| Cable length | |
| • shielded, max. | 100 m; Filter 20 kHz: 100 m, filter 200 kHz: 50 m |
| **Digital outputs** | |
| Number of digital outputs | 1 |
| Short-circuit protection | Yes |
| • Response threshold, typ. | 2.6 A to 4 A |
| Limitation of inductive shutdown voltage to | L+ (-50 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 40 °C, min. | 5 mA |
| • for signal "1" permissible range for 0 to 40 °C, max. | 2 000 mA |
| • for signal "1" permissible range for 0 to 60 °C, min. | 5 mA |


Subject to change without notice
© Copyright Siemens AG

| | |
|---|---|
| • for signal "1" permissible range for 0 to 60 °C, max. | 500 mA; 1000 mA at 50 °C |
| • for signal "0" residual current, max. | 0.5 mA |
| Output delay with resistive load | |
| • "0" to "1", max. | 100 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 (asymmetrical) | Yes |
| • 24 V initiator | Yes |
| • 2-wire sensor | Yes |

| Interrupts/diagnostics/status information | |
|---|---|
| Diagnostic functions | Yes |
| Diagnostics indication LED | |
| • Group error SF (red) | Yes |
| • Status indicator digital input (green) | Yes |
| • Status indicator digital output (green) | Yes |
| • Status indicator backward counting (green) | Yes |
| • Status indicator forward counting (green) | Yes |

| Integrated Functions | |
|---|---|
| Measuring functions | |
| Measuring range | |
| — Frequency measurement, min. | 0.1 Hz |
| — Frequency measurement, max. | 100 kHz |
| — Cycle duration measurement, min. | 10 µs |
| — Cycle duration measurement, max. | 120 s |
| — Speed measurement, min. | 1 1/min |
| — Speed measurement, max. | 25 000 1/min |

| Counter | |
|---|---|
| Number of counter inputs | 1; 32 bit |
| Minimum pulse width | 2.5 µs; Filter off: 2.5 µs (200 kHz), filter on: 25 µs (20 kHz) |

| Parameter | |
|---|---|
| Remark | 16 byte |


Subject to change without notice
© Copyright Siemens AG

| Potential separation | |
|---|---|
| Potential separation digital inputs | |
| • Potential separation digital inputs | No; only opposite shielding |
| Potential separation counter | |
| • between the channels and backplane bus | Yes |
| • Between the channels and load voltage L+ | No |

| Dimensions | |
|---|---|
| Width | 15 mm |
| Height | 81 mm |
| Depth | 52 mm |

| Weights | |
|---|---|
| Weight, approx. | 40 g |

**last modified:** 01/03/2017


Subject to change without notice
© Copyright Siemens AG