



SIMATIC ET 200SP, TM count 1x 24 V Counter module, 1 channel for 24 V incremental encoder or pulse encoder, 3 DI, 2 DQ Suitable for BU type A0, packing quantity: 10 units

| General information | |
|--|--|
| Product type designation | TM Count 1x24V |
| Firmware version | V2.0 |
| <ul style="list-style-type: none"> FW update possible | Yes |
| usable BaseUnits | BU type A0 |
| Color code for module-specific color identification plate | CC00 |
| Product function | |
| <ul style="list-style-type: none"> I&M data | Yes; I&M0 to I&M3 |
| <ul style="list-style-type: none"> Isochronous mode | Yes |
| Engineering with | |
| <ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version | STEP 7 V15 SP1 or higher |
| <ul style="list-style-type: none"> STEP 7 configurable/integrated from version | V5.6 and higher |
| <ul style="list-style-type: none"> PROFIBUS from GSD version/GSD revision | One GSD file each, Revision 3 and 5 and higher |
| <ul style="list-style-type: none"> PROFINET from GSD version/GSD revision | GSDML V2.34 |
| Supply voltage | |
| Rated value (DC) | 24 V |
| Load voltage L+ | |
| <ul style="list-style-type: none"> Rated value (DC) | 24 V |
| <ul style="list-style-type: none"> permissible range, lower limit (DC) | 19.2 V |
| <ul style="list-style-type: none"> permissible range, upper limit (DC) | 28.8 V |
| <ul style="list-style-type: none"> Reverse polarity protection | Yes |
| Input current | |
| Current consumption, max. | 60 mA; without load |
| Encoder supply | |
| Number of outputs | 1 |
| 24 V encoder supply | |
| <ul style="list-style-type: none"> 24 V | Yes; L+ (-0.8 V) |
| <ul style="list-style-type: none"> Short-circuit protection | Yes; electronic/thermal |
| <ul style="list-style-type: none"> Output current, max. | 300 mA |
| Power loss | |
| Power loss, typ. | 1 W |
| Address area | |
| Address space per module | |
| <ul style="list-style-type: none"> Inputs | 16 byte; 4 bytes in Fast mode |
| <ul style="list-style-type: none"> Outputs | 12 byte; 4 bytes for Motion Control, 0 bytes for Fast mode |
| Hardware configuration | |
| Automatic encoding | Yes |
| <ul style="list-style-type: none"> Mechanical coding element | Yes |
| <ul style="list-style-type: none"> Type of mechanical coding element | type B |
| Digital inputs | |

| | |
|---|---|
| Number of digital inputs | 3 |
| Digital inputs, parameterizable | Yes |
| Input characteristic curve in accordance with IEC 61131, type 3 | Yes |
| Digital input functions, parameterizable | |
| • Gate start/stop | Yes |
| • Capture | Yes |
| • Synchronization | Yes |
| • Freely usable digital input | Yes |
| • Probe | Yes |
| Input voltage | |
| • Rated value (DC) | 24 V |
| • for signal "0" | -5 ... +5 V |
| • for signal "1" | +11 to +30V |
| • permissible voltage at input, min. | -30 V; -5 V continuous, -30 V brief reverse polarity protection |
| • permissible voltage at input, max. | 30 V |
| Input current | |
| • for signal "1", typ. | 2.5 mA |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |
| — parameterizable | Yes; none / 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms |
| for technological functions | |
| — parameterizable | Yes |
| Cable length | |
| • shielded, max. | 1 000 m |
| • unshielded, max. | 600 m |
| Digital outputs | |
| Type of digital output | Transistor |
| Number of digital outputs | 2 |
| Digital outputs, parameterizable | Yes |
| Short-circuit protection | Yes; electronic/thermal |
| • Response threshold, typ. | 1 A |
| Limitation of inductive shutdown voltage to | L+ (-53 V) |
| Controlling a digital input | Yes |
| Digital output functions, parameterizable | |
| • Switching tripped by comparison values | Yes |
| • Freely usable digital output | Yes |
| Switching capacity of the outputs | |
| • with resistive load, max. | 0.5 A; Per digital output |
| • on lamp load, max. | 5 W |
| Load resistance range | |
| • lower limit | 48 Ω |
| • upper limit | 12 kΩ |
| Output voltage | |
| • for signal "1", min. | 23.2 V; L+ (-0.8 V) |
| Output current | |
| • for signal "1" rated value | 0.5 A; Per digital output |
| • for signal "1" permissible range, max. | 0.6 A; Per digital output |
| • for signal "1" minimum load current | 2 mA |
| • for signal "0" residual current, max. | 0.5 mA |
| Output delay with resistive load | |
| • "0" to "1", max. | 50 μs |
| • "1" to "0", max. | 50 μs |
| Switching frequency | |
| • with resistive load, max. | 10 kHz |
| • with inductive load, max. | 0.5 Hz; Acc. to IEC 60947-5-1, DC-13; observe derating curve |
| • on lamp load, max. | 10 Hz |
| Total current of the outputs | |
| • Current per module, max. | 1 A |
| Cable length | |
| • shielded, max. | 1 000 m |
| • unshielded, max. | 600 m |

| Encoder | |
|---|--|
| Connectable encoders | |
| <ul style="list-style-type: none"> • 2-wire sensor — permissible quiescent current (2-wire sensor), max. | Yes 1.5 mA |
| Encoder signals, incremental encoder (asymmetrical) | |
| <ul style="list-style-type: none"> • Input voltage • Input frequency, max. • Counting frequency, max. • Cable length, shielded, max. • Signal filter, parameterizable • Incremental encoder with A/B tracks, 90° phase offset • Incremental encoder with A/B tracks, 90° phase offset and zero track • pulse encoder • pulse encoder with direction • pulse encoder with one impulse signal per count direction | 24 V 200 kHz 800 kHz; with quadruple evaluation 600 m; depending on input frequency, encoder and cable quality; max. 50 m at 200 kHz Yes Yes Yes Yes Yes Yes Yes |
| Interface types | |
| <ul style="list-style-type: none"> • Source/sink input • Input characteristic curve in accordance with IEC 61131, type 3 | Yes Yes |
| Interrupts/diagnostics/status information | |
| Substitute values connectable | Yes; Parameterizable |
| Alarms | |
| <ul style="list-style-type: none"> • Diagnostic alarm • Hardware interrupt | Yes Yes |
| Diagnoses | |
| <ul style="list-style-type: none"> • Monitoring the supply voltage • Wire-break • Short-circuit • A/B transition error at incremental encoder • Group error | Yes Yes Yes Yes Yes |
| Diagnostics indication LED | |
| <ul style="list-style-type: none"> • Monitoring of the supply voltage (PWR-LED) • Channel status display • for module diagnostics • Status indicator forward counting (green) • Status indicator backward counting (green) | Yes; green PWR LED Yes; green LED Yes; green/red DIAG LED Yes Yes |
| Integrated Functions | |
| Counter | Yes |
| <ul style="list-style-type: none"> • Number of counters • Counting frequency, max. | 1 800 kHz; with quadruple evaluation |
| Fast mode | Yes |
| Counting functions | |
| <ul style="list-style-type: none"> • Can be used with TO High_Speed_Counter • Continuous counting • Counter response parameterizable • Hardware gate via digital input • Software gate • Event-controlled stop • Synchronization via digital input • Counting range, parameterizable | Yes Yes Yes Yes Yes Yes Yes Yes |
| Comparator | |
| <ul style="list-style-type: none"> — Number of comparators — Direction dependency — Can be changed from user program | 2 Yes Yes |
| Position detection | |
| <ul style="list-style-type: none"> • Incremental acquisition • Suitable for S7-1500 Motion Control | Yes Yes |
| Measuring functions | |
| <ul style="list-style-type: none"> • Measuring time, parameterizable | Yes |

| | | |
|---|--|-----------------------|
| • Dynamic measurement period adjustment | Yes | |
| • Number of thresholds, parameterizable | 2 | |
| Measuring range | | |
| — Frequency measurement, min. | 0.04 Hz | |
| — Frequency measurement, max. | 800 kHz | |
| — Cycle duration measurement, min. | 1.25 µs | |
| — Cycle duration measurement, max. | 25 s | |
| Accuracy | | |
| — Frequency measurement | 100 ppm; depending on measuring interval and signal evaluation | |
| — Cycle duration measurement | 100 ppm; depending on measuring interval and signal evaluation | |
| — Velocity measurement | 100 ppm; depending on measuring interval and signal evaluation | |
| Potential separation | | |
| Potential separation channels | | |
| • between the channels and backplane bus | Yes | |
| Isolation | | |
| Isolation tested with | 707 V DC (type test) | |
| Standards, approvals, certificates | | |
| Suitable for safety functions | No | |
| Ambient conditions | | |
| Ambient temperature during operation | | |
| • horizontal installation, min. | -30 °C | |
| • horizontal installation, max. | 60 °C | |
| • vertical installation, min. | -30 °C | |
| • vertical installation, max. | 50 °C | |
| • ceiling installation, min. | -30 °C | |
| • ceiling installation, max. | 50 °C | |
| • floor installation, min. | -30 °C | |
| • floor installation, max. | 50 °C | |
| Altitude during operation relating to sea level | | |
| • Installation altitude above sea level, max. | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual | |
| Decentralized operation | | |
| to SIMATIC S7-300 | Yes | |
| to SIMATIC S7-400 | Yes | |
| to SIMATIC S7-1200 | Yes | |
| to SIMATIC S7-1500 | Yes | |
| to standard PROFIBUS master | Yes | |
| to standard PROFINET controller | Yes | |
| Dimensions | | |
| Width | 15 mm | |
| Height | 73 mm | |
| Depth | 58 mm | |
| Weights | | |
| Weight, approx. | 45 g | |
| Classifications | | |
| | Version | Classification |
| 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 | 9 | EC001601 |
| ETIM | 8 | EC001601 |
| ETIM | 7 | EC001601 |
| IDEA | 4 | 3567 |
| UNSPSC | 15 | 32-15-17-05 |

General Product Approval

Marine / Shipping

[Manufacturer Declaration](#)



last modified:

5/22/2024