

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 |

| | |
|---|-----------------------|
| 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) | |
| Encoder signal 5 V | |
| — Signal level | to RS-422 |
| — Terminating resistor | 330 Ω |
| — Differential input voltage, min. | 1 V |
| — 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

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

Weights

| | |
|-----------------------|------------|
| Weight, approx. | 65 g |
| last modified: | 07/10/2020 |