

SIMATIC DP, ELECTRONIC MODULE FOR ET 200S, 1 COUNT  
5V/500KHZ FOR CONNECTING RS442 INCREMENTAL  
ENCODERS, OPERATION MODES: MEASURE, COUNT 30MM  
WIDE, SINGLE CHANNEL 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. | 45 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.                          | 2 W              |

| 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                                        |
| Cable length                                                    |                                               |
| • shielded, max.                                                | 50 m                                          |
| Digital outputs                                                 |                                               |
| Number of digital outputs                                       | 2                                             |
| 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.                                            | 10 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" rated value                                    | 2 A                                           |
| • for signal "1" permissible range for 0 to 60 °C, min.         | 5 mA                                          |
| • for signal "1" permissible range for 0 to 60 °C, max.         | 2.4 A                                         |
| • 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 (symmetrical)                | Yes                                     |
| Encoder signals, incremental encoder (symmetrical) |                                         |
| • Trace mark signals                               | A, notA, B, notB, A and B offset by 90° |
| • Zero mark signal                                 | N, notN                                 |
| Encoder signal 5 V                                 |                                         |
| — Signal level                                     | to RS-422                               |
| — Terminating resistor                             | 330 Ω                                   |
| — Differential input voltage, min.                 | 1 V                                     |
| — Input frequency, max.                            | 650 kHz                                 |
| — Cable length, shielded, max.                     | 50 m; > 500 kHz: 30 m                   |
| Interrupts/diagnostics/status information          |                                         |
| Diagnostic functions                               | Yes                                     |
| Diagnostics indication LED                         |                                         |
| • Group error SF (red)                             | Yes                                     |
| • Status indicator digital output (green)          | Yes                                     |
| • Status indicator digital input (green)           | Yes                                     |
| • Status indicator backward counting (green)       | Yes                                     |
| • Status indicator forward counting (green)        | Yes                                     |
| • Synchronization SYN (green)                      | Yes                                     |
| Integrated Functions                               |                                         |
| Measuring functions                                |                                         |
| Measuring range                                    |                                         |
| — Frequency measurement, min.                      | 0.1 Hz                                  |
| — Frequency measurement, max.                      | 500 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                   |
| Parameter                                  |                             |
| Remark                                     | 16 byte                     |
| 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                                      | 30 mm                       |
| Height                                     | 81 mm                       |
| Depth                                      | 52 mm                       |
| Weights                                    |                             |
| Weight, approx.                            | 65 g                        |
| <b>last modified:</b>                      | 10/28/2016                  |