

SIMATIC S7-300, Counter module FM 350-1 for S7-300, Counter functions up to 500 kHz 1 channel for connection of 5 V and 24 V incremental encoders Isochronous mode; Measuring range types incl. configuration package on CD



| Supply voltage                             |                        |
|--|------------------------|
| Auxiliary voltage 1L+, load voltage 2L+    |                        |
| • Rated value (DC)                         | 24 V                   |
| • permissible range, lower limit (DC)      | 20.4 V; Dynamic 18.5 V |
| • permissible range, upper limit (DC)      | 28.8 V; dynamic 30.2 V |
| non-periodic skip                          |                        |
| — Duration                                 | 500 ms                 |
| — Recovery time                            | 50 s                   |
| — Value                                    | 35 V                   |
| Input current                              |                        |
| from load voltage 1L+ (without load), max. | 40 mA                  |
| from backplane bus 5 V DC, max.            | 160 mA                 |
| Encoder supply                             |                        |
| 5 V encoder supply                         |                        |
| • 5 V                                      | Yes; 5.2 V $\pm$ 2 %   |
| • Output current, max.                     | 300 mA                 |
| 24 V encoder supply                        |                        |
| • 24 V                                     | Yes; 1L+ (-3 V)        |

|   |  |
|---|--|
| • Output current, max.                                  | 400 mA   |
| <b>Power loss</b>                                       |  |
| Power loss, typ.  | 4.5 W  |
| <b>Digital inputs</b>                                   |  |
| Number of digital inputs                                | 3  |
| Functions   | 1 for gate start, 1 for gate stop, 1 for setting the counter |
| <b>Input voltage</b>                                    |  |
| • for signal "0"  | -28.8 ... +5V  |
| • for signal "1"  | +11 to +28.8V  |
| <b>Input current</b>                                    |  |
| • for signal "1", typ.                                  | 9 mA   |
| <b>Digital outputs</b>                                  |  |
| Number of digital outputs                               | 2  |
| Short-circuit protection                                | Yes; Clocked electronically                                  |
| Limitation of inductive shutdown voltage to             | 2L+ (-39 V)  |
| <b>Output voltage</b>                                   |  |
| • for signal "0", max.                                  | 3 V  |
| • for signal "1", min.                                  | 2L+ (-1,5 V)   |
| <b>Output current</b>                                   |  |
| • for signal "1" rated value                            | 0.5 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. | 0.6 A  |
| <b>Output delay with resistive load</b>                 |  |
| • "0" to "1", max.                                      | 300 µs   |
| <b>Encoder</b>  |  |
| <b>Connectable encoders</b>                             |  |
| • Incremental encoder (symmetrical)                     | Yes; With 2 pulse trains offset by 90°                       |
| • Incremental encoder (asymmetrical)                    | Yes  |
| • 24 V initiator  | Yes  |
| • 24 V directional element                              | Yes; 1 pulse train, 1 direction level                        |
| <b>Counter</b>  |  |
| Number of counter inputs                                | 1  |
| Counting range, description                             | 32 bit or ±31 bit  |
| Minimum pulse width, adjustable                         | Yes; 2.5 or 25 µs  |
| <b>Counter input 5 V</b>                                |  |
| • Type  | RS 422   |
| • Terminating resistor                                  | 220 Ω  |
| • Differential input voltage                            | 1,3 V  |

|                                      |               |
|--------------------------------------|---------------|
| • Counting frequency, max.           | 500 kHz       |
| <b>Counter input 24 V</b>            |               |
| • Input voltage for signal "0"       | -28.8 ... +5V |
| • Input voltage for signal "1"       | +11 to +28.8V |
| • Input current for signal "1", typ. | 9 mA          |
| • Counting frequency, max.           | 200 kHz       |
| • Minimum pulse width                | 2.5 $\mu$ s   |

### Potential separation

#### Potential separation digital inputs

- between the channels and backplane bus Yes; Optocoupler

#### Potential separation digital outputs

- between the channels and backplane bus Yes; Optocoupler

#### Potential separation counter

- between the channels and backplane bus Yes; Optocoupler

### Isolation

|                       |       |
|-----------------------|-------|
| Isolation tested with | 500 V |
|-----------------------|-------|

### Connection method

|                          |           |
|--------------------------|-----------|
| required front connector | 1x 20-pin |
|--------------------------|-----------|

### Dimensions

|        |        |
|--------|--------|
| Width  | 40 mm  |
| Height | 125 mm |
| Depth  | 120 mm |

### Weights

|                 |       |
|-----------------|-------|
| Weight, approx. | 250 g |
|-----------------|-------|

**last modified:** 08/30/2019