



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                                       |
| 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   |
| Power loss  |  |
| Power loss, typ.  | 4.5 W  |
| Digital inputs  |  |
| Number of digital inputs                                | 3  |
| Functions   | 1 for gate start, 1 for gate stop, 1 for setting the counter |
| Input voltage   |  |
| • for signal "0"  | -28.8 ... +5V  |
| • for signal "1"  | +11 to +28.8V  |
| Input current   |  |
| • for signal "1", typ.                                  | 9 mA   |
| Digital outputs   |  |
| Number of digital outputs                               | 2  |
| Short-circuit protection                                | Yes; Clocked electronically                                  |
| Limitation of inductive shutdown voltage to             | 2L+ (-39 V)  |
| Output voltage  |  |
| • for signal "0", max.                                  | 3 V  |
| • for signal "1", min.                                  | 2L+ (-1,5 V)   |
| Output current  |  |
| • 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  |
| Output delay with resistive load                        |  |
| • "0" to "1", max.                                      | 300 $\mu$ s  |
| Encoder   |  |
| Connectable encoders                                    |  |

|                                      |  |
|--------------------------------------|--|
| • 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  |

### Counter

|                          |                           |
|--------------------------|---------------------------|
| Number of counter inputs | 1; 32 bit or $\pm 31$ bit |
|--------------------------|---------------------------|

#### Counter input 5 V

|                              |              |
|------------------------------|--------------|
| • Type                       | RS 422       |
| • Terminating resistor       | 220 $\Omega$ |
| • Differential input voltage | 1,3 V        |
| • Counting frequency, max.   | 500 kHz      |

#### Counter input 24 V

|                                      |               |
|--------------------------------------|---------------|
| • 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: 8/16/2023 