



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

<ul style="list-style-type: none"> <li>• Incremental encoder (symmetrical)</li> <li>• Incremental encoder (asymmetrical)</li> <li>• 24 V initiator</li> <li>• 24 V directional element</li> </ul>	Yes; With 2 pulse trains offset by 90° Yes Yes Yes; 1 pulse train, 1 direction level
<b>Counter</b>	
Number of counter inputs	1; 32 bit or ±31 bit
<b>Counter input 5 V</b>	
<ul style="list-style-type: none"> <li>• Type</li> <li>• Terminating resistor</li> <li>• Differential input voltage</li> <li>• Counting frequency, max.</li> </ul>	RS 422 220 Ω 1,3 V 500 kHz
<b>Counter input 24 V</b>	
<ul style="list-style-type: none"> <li>• Input voltage for signal "0"</li> <li>• Input voltage for signal "1"</li> <li>• Input current for signal "1", typ.</li> <li>• Counting frequency, max.</li> <li>• Minimum pulse width</li> </ul>	-28.8 ... +5V +11 to +28.8V 9 mA 200 kHz 2.5 μs
<b>Potential separation</b>	
<b>Potential separation digital inputs</b>	
<ul style="list-style-type: none"> <li>• between the channels and backplane bus</li> </ul>	Yes; Optocoupler
<b>Potential separation digital outputs</b>	
<ul style="list-style-type: none"> <li>• between the channels and backplane bus</li> </ul>	Yes; Optocoupler
<b>Potential separation counter</b>	
<ul style="list-style-type: none"> <li>• between the channels and backplane bus</li> </ul>	Yes; Optocoupler
<b>Isolation</b>	
Isolation tested with	500 V
<b>connection method / header</b>	
required front connector	1x 20-pin
<b>Dimensions</b>	
Width	40 mm
Height	125 mm
Depth	120 mm
<b>Weights</b>	
Weight, approx.	250 g
<b>last modified:</b>	1/16/2021 