

SIMATIC S7-400, function module FM 450-1 for counter function with 2 channels 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.	50 mA
from load voltage 2L+ (without load), max.	60 μ A
from backplane bus 5 V DC, max.	300 mA

Encoder supply

5 V encoder supply

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|----------------------------|----------------------|
| • 5 V | Yes; 5.2 V \pm 2 % |
| • Short-circuit protection | Yes |
| • Output current, max. | 300 mA |

24 V encoder supply

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|----------------------------|-----------------|
| • 24 V | Yes; 1L+ (-3 V) |
| • Short-circuit protection | Yes |
| • Output current, max. | 300 mA |

Power loss	
Power loss, typ.	6 W
Digital inputs	
Number of digital inputs	6
Functions	1 for gate start, 1 for gate stop, 1 for setting the counter
Input voltage	
<ul style="list-style-type: none"> • for signal "0" • for signal "1" 	-28.8 ... +5V +11 to +28.8V
Input current	
<ul style="list-style-type: none"> • for signal "1", typ. 	9 mA
Input delay (for rated value of input voltage)	
<ul style="list-style-type: none"> • Input frequency (with a time delay of 0.1 ms), max. 	200 kHz
for standard inputs	
<ul style="list-style-type: none"> — parameterizable — at "0" to "1", max. 	Yes 2.5 μs; ≥ 2.5 μs (200 kHz); ≤ 25 μs (20 kHz)
Digital outputs	
Number of digital outputs	4
Short-circuit protection	Yes; Clocked electronically
Limitation of inductive shutdown voltage to	2L+ (-39 V)
Output voltage	
<ul style="list-style-type: none"> • for signal "0", max. • for signal "1", min. 	3 V 2L+ (-1,5 V)
Output current	
<ul style="list-style-type: none"> • for signal "1" rated value • for signal "1" permissible range for 0 to 60 °C, min. • for signal "1" permissible range for 0 to 60 °C, max. 	0.5 A; Res. / P.D. 5 W tungsten 24 V DC 5 mA 0.6 A
Output delay with resistive load	
<ul style="list-style-type: none"> • "0" to "1", max. 	300 μs
Encoder	
Connectable encoders	
<ul style="list-style-type: none"> • Incremental encoder (symmetrical) • Incremental encoder (asymmetrical) • 24 V initiator • 24 V directional element 	Yes; With 2 pulse trains offset by 90° Yes Yes Yes; 1 pulse train, 1 direction level
Interrupts/diagnostics/status information	
Status indicator	Yes; 14 green LEDs for status of CR, DIR, inputs and outputs
Diagnostics function	Yes
Alarms	

• Diagnostic alarm	Yes; Parameterizable
• Hardware interrupt	Yes; Parameterizable
Diagnoses	
• Diagnostic information readable	Yes
Diagnostics indication LED	
• internal fault INTF (red)	Yes
• external fault EXTF (red)	Yes
• Status indicator digital input (green)	Yes
• Status indicator digital output (green)	Yes
Counter	
Number of counter inputs	2; 32 bit or ± 31 bit
Counter input 5 V	
• Type	RS 422
• Terminating resistor	220 Ω
• Differential input voltage	min. 0.5 V
• Counting frequency, max.	500 kHz
Counter input 24 V	
• Input voltage for signal "0"	-30 to +5 V
• Input voltage for signal "1"	+11 to +30V
• Input current for signal "1", typ.	9 mA
• Counting frequency, max.	200 kHz
• Minimum pulse width	$\geq 2.5 \mu\text{s}$ (200 kHz); $\geq 25 \mu\text{s}$ (20 kHz) (parameterizable)
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 48-pin
Dimensions	
Width	25 mm
Height	290 mm
Depth	210 mm
Weights	
Weight, approx.	650 g

last modified:

10/13/2020