

SIMATIC S7-400, FM 450-1 FUNCTION MODULE F.
 COUNT.FUNCT. WITH 2 CHANNELS INCL. CONFIG. PACKAGE
 ON CD



Supply voltage	
Load voltage 1L+	
• Reverse polarity protection	Yes
Load voltage 2L+	
• Reverse polarity protection	Yes
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.	450 mA
Encoder supply	
5 V encoder supply	

<ul style="list-style-type: none"> • 5 V • short-circuit protection • Output current, max. 	Yes; 5.2 V +/-2% Yes 300 mA
24 V encoder supply	
<ul style="list-style-type: none"> • 24 V • Short-circuit protection • Output current, max. 	Yes; 1L+ (-3 V) Yes 300 mA
Power loss	
Power loss, typ.	9 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 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) 	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

Interrupts/diagnostics/status information

Status indicator	Yes; 14 green LEDs for status of CR, DIR, inputs and outputs
Diagnostic functions	Yes
Alarms	
• Diagnostic alarm	Yes; Parameterizable
• Hardware interrupt	Yes; Parameterizable
Diagnostic messages	
• Diagnostic information readable	Yes
Diagnostics indication LED	
• Description	2 red LEDs for internal and external errors
• 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 +5V
• 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); $\leq 25 \mu\text{s}$ (20 kHz) (parameterizable)

Parameter

Remark	Assigned binary addresses: 64 bytes/64 bytes
--------	--

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

Permissible potential difference

between different circuits	75 V DC/60 V AC
----------------------------	-----------------

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:	03/30/2017 