



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 µA
from backplane bus 5 V DC, max.	300 mA
Encoder supply	
5 V encoder supply	
• 5 V	Yes; 5.2 V ±2 %
• Short-circuit protection	Yes
• Output current, max.	300 mA
24 V encoder supply	
• 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	
• for signal "0"	-28.8 ... +5V
• for signal "1"	+11 to +28.8V
Input current	
• for signal "1", typ.	9 mA
Input delay (for rated value of input voltage)	
• Input frequency (with a time delay of 0.1 ms), max.	200 kHz
for standard inputs	
— parameterizable	Yes
— at "0" to "1", max.	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	
• for signal "0", max.	3 V
• for signal "1", min.	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	
<ul style="list-style-type: none"> • Diagnostic alarm • Hardware interrupt 	Yes; Parameterizable Yes; Parameterizable
Diagnoses	
<ul style="list-style-type: none"> • Diagnostic information readable 	Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> • internal fault INTF (red) • external fault EXTF (red) • Status indicator digital input (green) • Status indicator digital output (green) 	Yes Yes Yes Yes
Counter	
Number of counter inputs	2; 32 bit or ±31 bit
Counter input 5 V	
<ul style="list-style-type: none"> • Type • Terminating resistor • Differential input voltage • Counting frequency, max. 	RS 422 220 Ω min. 0.5 V 500 kHz
Counter input 24 V	
<ul style="list-style-type: none"> • Input voltage for signal "0" • Input voltage for signal "1" • Input current for signal "1", typ. • Counting frequency, max. 	-30 to +5 V +11 to +30V 9 mA 200 kHz
Potential separation	
Potential separation digital inputs	
<ul style="list-style-type: none"> • between the channels and backplane bus 	Yes; Optocoupler
Potential separation digital outputs	
<ul style="list-style-type: none"> • between the channels and backplane bus 	Yes; Optocoupler
Potential separation counter	
<ul style="list-style-type: none"> • 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: 8/30/2023 