SIEMENS

Data sheet 6ES7450-1AP01-0AE0



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

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● for signal "1", min.	2L+ (-1,5 V)		
Output current			
● for signal "1" rated value	0.5 A; Res. / P.D. 5 W tungsten 24 V DC		
● 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 µs		
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		
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	≥ 2.5 µs (200 kHz); ≥ 25 µs (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		
Classifications			
		Version	**Classification**

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eClass	16	27-24-22-05
eClass	14	27-24-22-05
eClass	12	27-24-22-05
eClass	9.1	27-24-22-05
eClass	9	27-24-22-05
eClass	8	27-24-22-05
eClass	7.1	27-24-22-05
eClass	6	27-24-22-05
ETIM	10	EC001422
ETIM	9	EC001422
ETIM	8	EC001422
ETIM	7	EC001422
IDEA	4	3567
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval



Miscellaneous







China RoHS

General Product Approval

Miscellaneous

Manufacturer Declaration

For use in hazardous locations





FM



For use in hazardous locations





Type Examination Certificate



Maritime application





Maritime application





NK / Nippon Kaiji Kyokai



CCS (China Classification Society)

last modified: 6/7/2025

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