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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
● for signal "1", min.	2L+ (-1,5 V)

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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

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