



SIMATIC S7-400, positioning module FM 451 for rapid/slow traverse drives, 3 channels incl. configuration package on CD

Figure similar

Supply voltage	
Rated value (DC)	24 V
Input current	
Current consumption, typ.	550 mA
Encoder supply	
5 V encoder supply	
• 5 V	Yes
• Output current, max.	210 mA
• Cable length, max.	35 m; at max. 210 mA
24 V encoder supply	
• 24 V	Yes
• Output current, max.	300 mA
• Cable length, max.	100 m; at max. 300 mA
Absolute encoder (SSI) encoder supply	
• Absolute encoder (SSI)	Yes
• Type of output voltage	24 V DC
• Output current, max.	300 mA
• Cable length, max.	300 m; At max. 156 kbit/s
Power loss	
Power loss, typ.	3.6 W
Digital inputs	
Number of digital inputs	12; 4 per axis
Functions	Reference cams, reversing cams, flying actual value setting, start/stop positioning
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	-30 to +5 V
• for signal "1"	+11 to +30V
Input current	
• for signal "0", max. (permissible quiescent current)	1.5 mA
• for signal "1", typ.	9 mA
Digital outputs	
Number of digital outputs	12; 4 per axis
Functions	Rapid traverse, creep, run right, run left
Short-circuit protection	Yes
Output voltage	
• for signal "1", min.	UP -3 V
Output current	
• for signal "1" permissible range for 0 to 55 °C, max.	600 mA; with UPmax

• for signal "0" residual current, max.	0.5 mA	
Encoder		
Connectable encoders		
• Incremental encoder (symmetrical)	Yes	
• Incremental encoder (asymmetrical)	Yes	
• Absolute encoder (SSI)	Yes	
Encoder signals, incremental encoder (symmetrical)		
• Trace mark signals	A, notA, B, notB	
• Zero mark signal	N, notN	
• Input voltage	5 V difference signal (phys. RS 422)	
• Input frequency, max.	1 MHz	
Encoder signals, incremental encoder (asymmetrical)		
• Trace mark signals	A, B	
• Zero mark signal	N	
• Input voltage	24 V	
• Input frequency, max.	50 kHz; for 25 m cable length, 25 kHz for 100 m cable length	
• Cable length, shielded, max.	100 m	
Encoder signals, absolute encoder (SSI)		
• Input signal	5 V difference signal (phys. RS 422)	
• Data signal	DATA, notDATA	
• Clock signal	CL, notCL	
• Telegram length, parameterizable	13 or 25 bit serial	
• Clock frequency, max.	1.25 MHz	
• Gray code	Yes	
• Cable length, shielded, max.	300 m; At max. 156 kbit/s	
Potential separation		
Potential separation digital inputs		
• Potential separation digital inputs	Yes	
Potential separation digital outputs		
• Potential separation digital outputs	Yes	
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	
• max.	55 °C	
Ambient temperature during storage/transportation		
• min.	-40 °C	
• max.	70 °C	
connection method		
required front connector	1x 48-pin	
Dimensions		
Width	50 mm	
Height	290 mm	
Depth	210 mm	
Weights		
Weight, approx.	1 300 g	
Classifications		
	Version	Classification
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	9	EC001422
ETIM	8	EC001422
ETIM	7	EC001422
IDEA	4	3567

Approvals / Certificates

General Product Approval



[Miscellaneous](#)



[KC](#)



EMV

For use in hazardous locations



[EM](#)



For use in hazardous locations

Marine / Shipping



[Type Examination Certificate](#)



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