

SIEMENS

Product data sheet

6ES7451-3AL00-0AE0


SIMATIC S7-300,
FM 451 POSITIONING MODULE FOR RAPID/
CREEP FEED DRIVE 3 CHANNELS INCL. CONFIG.
PACKAGE ON CD

Supply voltage	
24 V DC	Yes
Input current	
Current consumption, max.	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

Output voltage	24 V DC
Output current, max.	300 mA
Cable length, max.	300 m ; At max. 156 kbit/s
Digital inputs	
Number/binary inputs	12 ; 4 per axis
Functions	Reference cams, reversing cams, flying actual value setting, start/stop positioning
Input voltage	
Type of voltage / of the input voltage	
Rated value, DC	24 V
for signal "0"	-3 to +5 V
for signal "1"	11 to 30 V
Input current	
for signal "1", typ.	6 mA
for 2-wire BERO	
for signal "1", typ.	30 mA
Digital outputs	
Number/binary outputs	12 ; 4 per axis
Functions	Rapid traverse, creep, run right, run left
Functionality/short-circuit strength	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 signal	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	13 or 25 bit serial
Clock frequency, max.	1.25 MHz
Gray code	1
Cable length, shielded, max.	300 m ; At max. 156 kbit/s
Galvanic isolation	
Galvanic isolation digital inputs	
Galvanic isolation digital inputs	Yes
Galvanic isolation digital outputs	
Galvanic isolation digital outputs	Yes
Ambient conditions	
Operating temperature	
Min.	0 °C
max.	55 °C
Storage/transport temperature	
Min.	-40 °C
max.	70 °C
Relative humidity	
Humidity class F	Yes
Degree and class of protection	
IP20	Yes
Connection method	

required front connector	1x 48-pin
Dimensions	
Width	50 mm
Height	290 mm
Depth	210 mm
Weight	
Weight, approx.	1300 g
Status	Sep 10, 2011