

Linear motor data LDN-EL-0100 for not Schunk supported controllers

Type of motor: MGN-EL-0100

Date of creation: 10.04.2018

Description	Symbol	Unit	Value
Daten			
Nominal motor force	F_{nenn}	N	120
Motor peak force	$F_{\text{max.}}$	N	250
Motor idle current (eff.)	I_{nenn}	A eff	2,1
Motor peak current (eff.)	$I_{\text{max.}}$	A eff	7,5
Max. velocity	$v_{\text{max.}}$	m/s	4
Power loss	P	W	75
Force constant	k_{Force}	N/A	58
Motor constant	k_{Motor}	N/ $\sqrt{\text{W}}$	13,9
BEMF (velocity 1 m/s)	k_{EMK}	Vs/m	110
Thermal time constant	$k_{\text{therm.}}$	s	1080
Resistance	R phase / phase	Ohm	7,60
Inductance	Lu-v, Lv-w, Lw-u	mH	75,00
Number of pole pairs per distance		mm	28,1
Mass primary part	$m_{\text{Prim.}}$	kg	3,9
Mass Rail	$m_{\text{Sek.}}$	kg/m	6,2
Max. intermediate circuit voltage	U_{DC}	V	900
Max. coil temperature	$T_{\text{max.}}$	°C	90
Type of temperature sensor			KTY

Control parameters

Current loop propotional gain		V/A	30
Current loop integral action time		ms	8,0
Position loop KV-Factor	kv	1000/min	1
Velocity loop smoothing time const.		us	900
Velocity loop propotional gain	kp	N/(mm/min)	0,031
Velocity loop integral action time	TN	ms	5

Encoder Feedback

Type	magnetic	magnetic absolut	optical	magnetic absolut
Sensor designation	LE100	TTK 70	LIA 22	MSA111C
Tape measure	MB100	MBA 111	SINGLEFLEX DOUBLEFLEX	MBA 111
Manufactur	SIKO	Sick Stegmann	NUMERIK	Siko
Grating period	1000 μm	1000 μm	20 μm	1000 μm
Supply voltage	5 V	7V- 12V	5 V	4,5V - 30V
Waveform	sin/cos	sin/cos / Hiperface	sin/cos	sin/cos / SSI
Reference mark	periodic	--	periodic	--
Reference mark pitch	20 mm	--	50 mm	--
Signal amplitude	1 Vss	1 Vss	1 Vss	1 Vss
Feedback revolution	1 mm	1 mm	0,02 mm	1 mm

Motor connection

Connector	Anschluss	Stecker
Interconnectron Typ: LEAB08AN	U	thick 1
	V	thick 4
	W	thick 3
	GND	thick 2
3*temperature switch with KTY	Switch 105 °C ;	thin C
	KTY 84-130	thin D

Thermal motor protection

	Sensor 1	Sensor 2
Type	NTC	Switch
Type	KTY 84-130	normally closed
Characteristic	Datasheet	105 °C

Measurement system

	LE100	TTK 70	LIA 22	MSA111C
	Sub D pin	Sub D pin	Sub D pin	Sub D pin
Signal	Pin	Pin	Pin	Pin
0V Sense	15			
Ref - / EncData-	10	8	4	3
Ref + / EncData+	9	7	12	2
/B (COS-)	6	6	6	8
B(COS+)	5	5	14	9
A(SIN+)	2	2	13	7
/A(SIN-)	3	3	5	6
N.C.				
GND (0V)	4	4	9	12
N.C.				
Ucc	12	11	8	5
N.C.				
GND (Schirm)				
N.C.				

