

Linear motor data LDK-US-0100 for not Schunk supported controllers

Type of motor: MGK-ES-0100

Date of creation: 17.03.2026

Description	Symbol	Unit	Value
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Daten

Nominal motor force	F _{nenn}	N	115
Motor peak force	F _{max}	N	250
Motor idle current (eff.)	I _{nenn}	A eff	2
Motor peak current (eff.)	I _{max}	A eff	7,5
Max. velocity	v _{max}	m/s	4
Power loss	P	W	70
Force constant	k _{Force}	N/A	58,1
Motor constant	k _{Motor}	N/√W	13,7
BEEMF (velocity 1 m/s)	k _{EMK}	Vs/m	110
Thermal time constant	k _{therm.}	s	1200
Resistance	R phase / phase	Ohm	7,60
Inductance	Lu-v,Lv-w,Lw-u	mH	70,00
Number of pole pairs per distance		mm	28,1
Mass primary part	m _{Prim.}	kg	2,5
Mass Rail	m _{Sek.}	kg/m	4,7
Max. intermediate circuit voltage	U _{DC}	V	900
Max. coil temperature	T _{max}	°C	90
Type of temperature sensor			KTY84

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	optisch	magnetic absolut	magnetic absolut
Sensor designation	LE100	TTK 70	LIC 411	MSA111C-DQ	STL 70
Tape measure	MB100	MBA 111	LIC 4009	MBA111	MBA213
Manufacturer	SIKO	Sick	Heidenhain	SIKO	Sick
Grating period	1000 µm	1000 µm	--	1000 µm	2000 µm
Supply voltage	5 V	7V- 12V	3,6V - 14V	10V- 30V	7V - 12V
Waveform	sin/cos	sin/cos / Hiperface	EnDat 2.2	DRIVE-CLiQ	sin/cos / Hiperface
Reference mark	periodic	--	--	--	--
Reference mark pitch	20 mm	--	--	--	--
Signal amplitude	1 Vss	1 Vss	--	1Vss	1Vss
Feedback revolution	1,00 mm	1,00 mm	10 nm	1,00 mm	2,00 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 KTY84	Switch 105 °C ;	thin C
	KTY84	thin D

Thermal motor protection

	Sensor 1	Sensor 2
Type	NTC	Switch
Type	KTY84	normally closed
Characteristic	Datasheet	105 °C

Measurement system

	LE100	TTK 70	LIC 411	MSA111C-DQ	STL 70
	Sub D pin	Sub D pin	Stecker	Stecker	Sub D pin
Signal	Pin	Pin			
0V Sense	15				
Ref - / EncData-	10	8	4		8
Ref + / EncData+	9	7	3		7
/B (COS-)	6	6		4	6
B(COS+)	5	5		5	5
A(SIN+)	2	2		8	2
/A(SIN-)	3	3		7	3
Clock+			7		
GND (0V)	4	4	5	3	4
Clock-			6		
Ucc	12	11	8	1	11
N.C.				2	
GND (Schirm)					
N.C.				10	