

# Linear motor data LDM-EL-0400 for not Schunk supported controllers

Type of motor: **MGM-EL-0400**

Date of creation: **10.04.2018**

Description	Symbol	Unit	Value
<b>Daten</b>			
Nominal motor force	$F_{nenn}$	N	370
Motor peak force	$F_{max.}$	N	1000
Motor idle current (eff.)	$I_{nenn}$	A eff	6,7
Motor peak current (eff.)	$I_{max.}$	A eff	28
Max. velocity	$v_{max.}$	m/s	4
Power loss	P	W	15,5
Force constant	$k_{Force}$	N/A	55
Motor constant	$k_{Motor}$	N/√W	94
BEMF (velocity 1 m/s)	$k_{EMK}$	Vs/m	100,4
Thermal time constant	$k_{therm.}$	s	1440
Resistance	R phase / phase	Ohm	1,60
Inductance	Lu-v, Lv-w, Lw-u	mH	15,50
Number of pole pairs per distance		mm	28,1
Mass primary part	$m_{Prim.}$	kg	9,6
Mass Rail	$m_{Sek.}$	kg/m	11,4
Max. intermediate circuit voltage	$U_{DC}$	V	900
Max. coil temperature	$T_{max.}$	°C	90
Type of temperature sensor			KTY

## Control parameters

Current loop propotional gain		V/A	17
Current loop integral action time		ms	8,1
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	<b>LE100</b>	<b>TTK 70</b>	<b>LIA 22</b>	<b>MSA111C</b>
Tape measure	<b>MB100</b>	<b>MBA 111</b>	<b>SINGLEFLEX</b>	<b>MBA 111</b>
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.				

