

Torque motor data for ERT100 without brake for not Schunk supported controller

Type of motor: ERT100 without brake

Date of creation: 22.04.2022

Description	Symbol	Unit	Value
Data			
Nominal motor torque	F_{nenn} [1]	Nm	16,7
Motor peak torque	F_{max} [1]	Nm	51
Motor idle current (eff.)	I_{nenn} [1,2]	A eff	2,41
Motor peak current (eff.)	I_{max} [1,2]	A eff	7,61
max. motor speed	n_{max}	U/min	350
Power loss	P [1]	W	89
Torque / Force constant	k_{Kraft}	Nm/A	6,90
Motor constant	k_{Motor}	Nm/√W	1,80
BEMF (speed 600 U/min)	k_{EMK} (1000 U/min)	V_{eff}	484,5
Thermal time constant	$k_{therm.}$	s	1200
Resistance	R (Phase Phase)	Ohm	8,2
Inductance	L (Phase Phase)	mH	26,1
Number of pol pairs			14
Mass of motor	m	kg	7,8
rotor moment of inertia		kgm ²	0,00570
Max. intermediate circuit voltage	U_{max} [2]	V	900
Max. coil temperature	T_{max}	°C	90
Type of temperature sensor			PT1000

Control parameters

Current loop propotional gain		V/A	14,8
Current loop integral action time		ms	1,35
Position loop KV-Factor	k_v	1000/min	1
Velocity loop smoothing time const.		us	900
Velocity loop propotional gain	k_p	N/(mm/min)	1
Velocity loop integral action time	T_N	ms	5

Encoder Feedback

Motor	ERT12	ERT50/100	ERT300
Sensor designation	MSACERT12	MSACERT50	MSACERT300
Manufactor	Siko	SIKO	SIKO
Supply voltage	44172 V	7-12	7-12
Waveform	sin/cos / Hiperface	sin/cos / Hiperface	sin/cos / Hiperface
	Singleturn	Singleturn	Singleturn
Signal amplitude	1	1	1
travel range	+ -180°	+ -180°	+ -180°
Feedback revolution	158	224	396

Motor connection

Connector	Anschluss	Stecker
Interconnectron Typ: LEAB08AN	U	gross 1
	V	gross 4
	W	gross 3
	Erde	gross 2
3*switch and PT1000 in a row	Schalter 105°C	klein C
	PT1000	klein D
Electric brake		klein A
		klein B

Motor feedback

		ERT12	ERT50/100	ERT300
Signal		Pin	Pin	Pin
EncData-		6	6	6
EncData+		5	5	5
/B (COS-)		3	3	3
B(COS+)		4	4	4
A(SIN+)		2	2	2
/A(SIN-)		1	1	1
GND (0V)		7	7	7
Ucc		8	8	8

