

Datasheet for linear direct drive PPU-E15-Z-Axis and servo drive Indradrive Cs
Type of motor PPU-E15-Z-Axis
Type of axis PPU-E15-Z-Axis
Date of creation: 18.03.2026



Description	Symbol	Unit		comment
-------------	--------	------	--	---------

Electrical data

S-0-0141	Type of axis				
P-0-4014	Type of motor	Linear synchron motor		0200h	
P-0-0512	Temperature sensor			3	
	PWM frequency		kHz	4	
S-0-0111	Motor idle current (eff.)	I_d	A	4,8	
	Nominal motor force	F_{nenn}	N	200	with temperature increase of 65 K inside motor
	Power loss	P_{const}	W	114,6	with temperature increase of 65 K inside motor
S-0-0109	Motor peak current (eff.)	I_{max}	A	16	
	Motor peak force	F_{max}	N	540	
S-0-0092	Bipolar force limit value		%	333,3	
P-0-0109	Force peak limit		%	333,3	
P-0-0051	Force constant	k_t	N/A	41,3	
	Motor constant	K_m	N/√W	18,7	
	BEMF (velocity 1 m/s)	k_e (Phase-Phase)	V _{ss}	75	
	Thermal resistance	R_{th}	K/W	0,57	temperature increase (65 K) / P_{const}
S-0-0113	Maximum motor speed	v_{max}	mm/min	240000	
	Max. frequency	f_{max}	Hz	142,3	
P-0-0018	Number of pole pairs per distance	PWT (Npol-Npol)	mm	28,1	
	Poles			7	
	Type of circuit			Y	
	Max. intermediate circuit voltage	U_{DC}	V	900	
	Inductance	$L_{u-w}, L_{v-w}, L_{w-u}$	mH	13,00	
P-0-4016	Motor series inductance		mH	6,50	
P-0-4017	Motor shunt inductance		mH	6,50	
P-0-4048	Winding resistance by 25°C	$R_{u-w}, R_{v-w}, R_{w-u}$	Ohm	2,60	
	Winding resistance by 90°C	$R_{u-w}, R_{v-w}, R_{w-u}$	Ohm	3,3	
	Electrical time constant		ms	5	
	Type of temperature sensor			KTY84	
S-0-0201	Motor warning temperature		°C	85	
S-0-0204	Motor shutdown temperature		°C	90	
	Insulation class		F		

Mechanical Data

	Mass primary part without carriage	kg	0	
	Mass carriage	kg	0	
	Total mass primary part	kg	3,524	
	Total mass rail	kg/m	0	without attachments

Control parameters without mass moment of inertia

S-0-0106	Current loop propotional gain		V/A	15,1
S-0-0107	Current loop integral action time		ms	4,2
S-0-0104	Position loop KV-Factor	kv		1
P-0-0004	Velocity loop smoothing time const.			900
S-0-0100	Velocity loop propotional gain	kp		0,012
S-0-0101	Velocity loop integral action time	TN		5

Parameter of position

S-0-0277	Position feedback 1 type		1001 b
S-0-0278	Maximum travel range	mm	4000

Encoder Feedback

	Measurement principle		magnetic	absolut magnetic	optisch	absolut magnetic	absolut magnetic
	Type of sensor		LE100	TTK 70	LIC 411	STL 70	MSA111C-DQ
	Tape measure		MB100	MBA 111	LIC 4009	MBA213	MBA111
	Manufacturer		SIKO	Sick	Heidenhain	Sick	SIKO
	Grating period	μm	1000	1000	--	2000 μm	1000 μm
	Supply voltage	V	5	7-12	3,6V - 14V	7V - 12V	10V- 30V
	Waveform		sin/cos	sin/cos / Hiperface	EnDat 2.2	sin/cos / Hiperface	DRIVE-CLiQ
	Reference mark		periodic	--	--	--	--
	Reference mark pitch	mm	20	--	--	--	--
	Signal amplitude	V _{ss}	1	1	--	1 V _{ss}	1V _{ss}
S-0-0116 / S-0-0602.1.3	Feedback resolution	mm	1,00	1,00	10 nm	1,00 mm	1 mm

Motor connection

Connector	Connector	Contact
Tyco Electronic	U	thick 1
Typ: 923	V	thick 4
	W	thick 3
	GND	thick 2
Series connection of 3* temperature switch and KTY84	Switch 105 °C ;	thin C
	KTY84	thin D

Thermal motor protection

	Sensor1	Sensor2
Type	NTC	Switch
Type	KTY84	normally closed
Characteristic	Datasheet	105 °C

Motor feedback

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