

MSP Family of brushless Servomotors with concentrated windings

Datasheet



- No. of poles: 6 (MSP2) 10 (MSP3 ... MSP5)
- Feedback: Encoder (2048 lines, TTL) with Hall-simulation (E), Resolver (R), Absolute encoder t.b.d. (A)
- Protection: IP64, optional IP65 / IP67 w/o (V) or with (W) shaft seal
- Connections: screw connectors - Intercontec
- Thermal motor protection: PTC, optional: Thermal switch 145° C, KTY or NTC
- Shaft w/o key, optional: key DIN 6885 (P)
- Options: Cable (K), customer modifications

Designation:

MSP3-0130-30-320-E/T1B

Family: MSP = MACCON Servo

Frame Size: 2, 3, 4, 5

Nominal Torque in N/cm

Nominal speed ÷ 100 in UpM

Brake: B = Holding brake, 24 Vdc

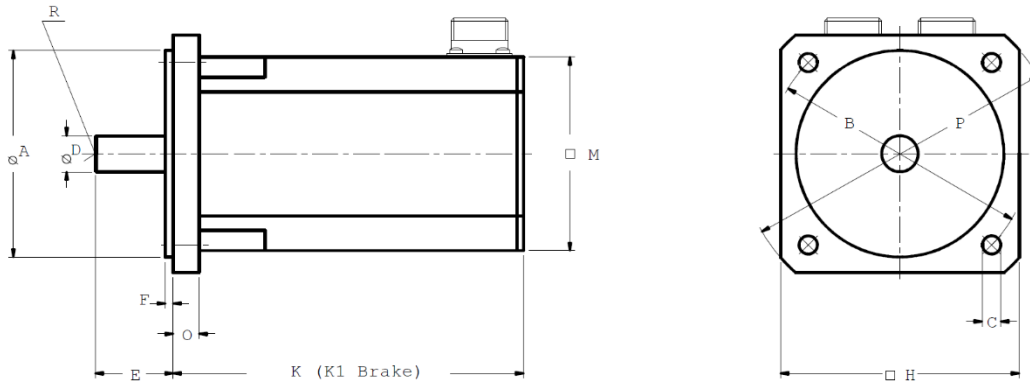
Thermal protection Tx: 0=Switch, 1=PTC

2=NTC, 3=KTY83-110° C, 4=KTY84-130° C

Encoder with HE, R=Resolver, A=Absolute Enc.

Nominal bus voltage in Vdc

Dimensions (mm):



	A ₆	B	C	D _{k6}	E	F	H	K	K	K	K	M	O	P
								with Encoder	with Encoder and Brake	with Resolver	with Resolver and Brake			
MSP2-0028	40	63	5.8	9	20	2.5	55	94	128	67	105	50	6	74
MSP2-0054	40	63	5.8	9	20	2.5	55	109	143	82	120	50	6	74
MSP2-0075	40	63	5.8	9	20	2.5	55	124	158	97	135	50	6	74
MSP2-0095	40	63	5.8	9	20	2.5	55	139	173	112	150	50	6	74
MSP3-0115	80	100	7	14	30	3	86	99	144	82	120	74	11	115
MSP3-0205	80	100	7	14	30	3	86	117	162	100	138	74	11	115
MSP3-0350	80	100	7	14	30	3	86	153	198	136	174	74	11	115
MSP3-0480	80	100	7	14	30	3	86	189	234	172	210	74	11	115
MSP4-0510	95	115	9	19	40	3	98	132	182,5	113	154	98	14	130
MSP4-0750	95	115	9	19	40	3	98	162	212,5	143	184	98	14	130
MSP4-0960	95	115	9	19	40	3	98	192	242,5	173	214	98	14	130
MSP5-1200	130	165	12	24	50	3.5	142	157	206	145	244	128	16	188
MSP5-1600	130	165	12	24	50	3.5	142	187	236	175	181	128	16	188
MSP5-2000	130	165	12	24	50	3.5	142	217	266	205	211	128	16	188
MSP5-2400	130	165	12	24	50	3.5	142	247	296	235	241	128	16	188

Winding data for operation at 90 - 320 Vdc bus voltage:

Motor model	Nominal torque	Nominal Current	Nominal Speed	Peak torque	Peak current	Voltage constant	Torque constant	Resistance (Ph. – Ph.)	Inductance (Ph. – Ph.)	Rotor inertia	Weight (w/out brake)
	M_n	I_n	n_n	M_{max}	I_{max}	K_E	K_T	R_{2ph}	L_{2ph}	J	m
	Nm	A _{eff.}	min ⁻¹	Nm	A _{eff.}	V _{dc} /1000	Nm/ A _{eff.}	Ω	mH	kg/cm ²	kg
MSP2-0028-45-320	0.25	0.96	4500	1.1	4.5	24.7	0.29	28.3	28.4	0.05	0.76
MSP2-0054-45-320	0.48	1.12	4500	2.2	5.4	39.6	0.46	25.9	32.3	0.07	0.93
MSP2-0075-45-320	0.68	1.48	4500	3.0	7.1	41.7	0.49	17.0	22.7	0.09	1.10
MSP2-0095-45-320	0.85	1.70	4500	3.8	8.4	44.5	0.52	13.1	19.0	0.11	1.27
MSP3-0115-30-320	1.13	2.3	3000	3.5	9.2	48.8	0.57	8.4	18.0	0.31	1.5
MSP3-0205-30-320	1.90	3.1	3000	6.2	12.7	62.9	0.74	5.4	13.3	0.55	2.0
MSP3-0350-30-320	3.0	4.3	3000	10.5	19.4	70.7	0.83	2.8	8.1	1.04	2.9
MSP3-0480-30-320	3.7	4.5	3000	14.4	17.3	84.9	0.99	2.5	7.5	1.52	3.8
MSP4-0510-30-320	4.2	7.0	3000	15.3	31.0	64.3	0.75	1.24	6.8	2.04	3.8
MSP4-0750-30-320	6.1	8.8	3000	22.5	40.7	72.1	0.84	0.79	4.8	3.26	5.1
MSP4-0960-30-320	7.7	10.8	3000	28.8	49.2	76.4	0.89	0.62	3.6	4.49	6.4
MSP5-1200-30-320	10.5	14.7	3000	36	53	72.1	0.84	0.42	3.4	9.6	7.5
MSP5-1600-30-320	13.8	17.0	3000	48	61	79.2	0.93	0.30	2.5	13.3	9.5
MSP5-2000-20-320	17.5	16.4	2000	60	55	106.1	1.24	0.37	3.3	17.1	11.5
MSP5-2400-20-320	22.0	16.4	2000	72	53	132.9	1.55	0.45	4.1	20.8	13.5

Winding data for operation at 320 - 680 Vdc bus voltage:

Motor model	Nominal torque	Nominal Current	Nominal Speed	Peak torque	Peak current	Voltage constant	Torque constant	Resistance (Ph. - Ph.)	Inductance (Ph. - Ph.)	Rotor inertia	Weight (w/out brake)
	M_n	I_n	n_n	M_{max}	I_{max}	K_E	K_T	R_{2ph}	L_{2ph}	J	m
	Nm	A _{eff.}	min ⁻¹	Nm	A _{eff.}	V _{dc} /1000	Nm/ A _{eff.}	Ω	mH	kg/cm ²	kg
MSP2-0028-45-560	0.25	0.96	4500	1.1	4.5	24.7	0.29	28.3	28.4	0.05	0.76
MSP2-0054-45-560	0.48	0.90	4500	2.2	4.3	49.5	0.58	41.1	51.0	0.07	0.93
MSP2-0075-45-560	0.68	0.83	4500	3.0	3.9	74.9	0.88	54.0	72.0	0.09	1.10
MSP2-0095-45-560	0.85	1.07	4500	3.8	5.3	70,7	0.83	33.6	48.5	0.11	1.27
MSP3-0115-30-560	1.13	1.3	3000	3.5	5.0	89.1	1.04	27.8	59.3	0.31	1.5
MSP3-0205-30-560	1.90	1.7	3000	6.2	7.2	111.7	1.31	17.3	42.4	0.55	2.0
MSP3-0350-30-560	3.0	2.4	3000	10.5	10.9	125.9	1.47	8.9	25.5	1.04	2.9
MSP3-0480-30-560	3.7	2.8	3000	14.4	9.9	148.5	1.74	7.7	23.5	1.52	3.8
MSP4-0510-30-560	4.2	3.9	3000	15.3	17.4	114.6	1.34	4.0	21.7	2.04	3.8
MSP4-0750-30-560	6.1	5.1	3000	22.5	23.8	123.0	1.44	2.3	13.5	3.26	5.1
MSP4-0960-30-560	7.7	6.0	3000	28.8	27.4	137.2	1.60	2.0	11.9	4.49	6.4
MSP4-1130-30-560	8.8	6.9	3000	34	27	96	1.59	1.49	9.1	5.7	7.7
MSP5-1200-30-560	10.5	8.3	3000	36	29	128.7	1.51	1.33	10.9	9.6	7.5
MSP5-1600-30-560	13.8	9.9	3000	48	36	135.8	1.59	0.88	7.5	13.3	9.5
MSP5-2000-30-560	16.0	11.5	3000	60	40	147.1	1.72	0.72	6.3	17.1	11.5
MSP5-2400-30-560	20.0	14.1	3000	72	47	148.5	1.74	0.56	4.9	20.8	13.5
MSP6-1800-30-560	13.0	11.0	3000	51	45	89	1.74	0.62	7.2	18.5	10.1
MSP6-2400-30-560	17.0	13.8	3000	72	60	95	1.57	0.41	5.5	25.6	12.8
MSP6-3000-30-560	21.0	16.2	3000	90	64	102	1.69	0.33	4.7	32.7	15.5
MSP6-3800-30-560	25.0	19.7	3000	114	93	96	1.59	0.25	3.5	39.9	18.3
MSP6-4400-30-560	30.0	24.4	3000	132	102	94	1.55	0.19	2.8	47	21.0
MSP7-3000-30-560	23.0	15.5	3000	85	58	111	1.84	0.41	6.4	49.5	16.5
MSP7-4000-30-560	25.0	20.1	3000	120	90	92	1.52	0.17	3.1	69.0	21.5
MSP7-5000-30-560	30.0	24.4	3000	150	109	96	1.59	0.13	2.6	88.0	26.5
MSP7-6000-30-560	36.2	20.7	2500	180	102	121	2.0	0.16	3.3	107.0	31.5

Other windings (also low voltage windings) available on request.

Pin assignment:

Motor (8 pin, Size 1)		TTL-Encoder (17 pin)		Resolver (12 pin)	
1, 4, 3	U, V, W	11, 16	+5V, 0V	4, 8	S1 (sin+), S3 (sin -)
2	Ground	9, 10	A, /A	3, 7	S4 (cos+), S2 (cos -)
A, B	Brake + / -	7, 8	B, /B	5, 9	R2, R1 (excitation + / -)
		3, 4	Z, /Z	2, 6	Thermal protection
		14, 15	Thermal protection		
		5/6, 1/2, 12/13	Halls (U /U, V /V, W /W)		