	Type code	Mechanical rating[a] (Nm)	Radial load (N)	Axial load (N)	No of ratios	Shaft Orientation	DC brushless (PBL) Power[a] (Watts) Max	DC brushless (PBL) Speed (rpm) Max	DC brushless (PBL) Torque[a] (Nm) Min	DC brushless (PBL) Torque[a] (Nm) Max	DC permanent magnet (PM) Power[a] (Watts) Min	DC permanent magnet (PM) Power[a] (Watts) Max	DC permanent magnet (PM) Speed (rpm) Min	DC permanent magnet (PM) Speed (rpm) Max	DC permanent magnet (PM) Torque[a] (Nm) Min	DC permanent magnet (PM) Torque[a] (Nm) Max	AC induction (SD) Power[a] (Watts) Min	AC induction (SD) Power[a] (Watts) Max	AC induction (SD) Speed (rpm) Min	AC induction (SD) Speed (rpm) Max	AC induction (SD) Torque[a] (Nm) Min	AC induction (SD) Torque[a] (Nm) Max	AC/DC series wound (SD) Power[a] (Watts) Min	AC/DC series wound (SD) Power[a] (Watts) Max	AC/DC series wound (SD) Speed (rpm) Min	AC/DC series wound (SD) Speed (rpm) Max	AC/DC series wound (SD) Torque[a] (Nm) Min	AC/DC series wound (SD) Torque[a] (Nm) Max	DC shunt wound (SD) Power[a] (Watts) Min	DC shunt wound (SD) Power[a] (Watts) Max	DC shunt wound (SD) Speed (rpm) Min	DC shunt wound (SD) Speed (rpm) Max	DC shunt wound (SD) Torque[a] (Nm) Min	DC shunt wound (SD) Torque[a] (Nm) Max	Standard options: fixing base (B)	shaft length (mm)	shaft dia. (mm) single	shaft dia. (mm) double	shaft dia. (mm) hollow (H)	shaft output flat	shaft output keyway	shaft output custom	flange PCD (mm) standard	flange PCD (mm) optional (F)	flange PCD (mm) 3-point (3P)	International standard flanges IEC	International standard flanges NEMA	International standard flanges metric
motor only	-	-	-	-	-	In-line	440	4000	0.06	1.4	7.5	900	1500	8000	0.05	1.1	3.7	250	900	2800	0.025	1.3	10	190	2000	6500	0.04	0.36	10	150	2000	5000	0.05	0.38	-	-	❍	❍	-	-	-	-	●	-	-	❍	❍	❍
worm																																																
	S	4.5	69	35	27	90°	84	640	0.2	3.5	7.5	90	21	970	0.2	4.0	3.7	120	13	680	0.06	4.5	38	50	43	960	0.2	2.3	38	50	43	960	0.2	2.3	-	29	9	9	-	●	❍	❍	41.3	-	42	-	-	-
	M	11.8	132[b]	88[c]	28	90°	220	480	0.7	11.8	23	280	21	970	0.5	11.7	10	190	12	680	0.36	11.8	38	150	42	970	0.2	6.4	38	150	28	970	0.2	6.8	❍	52	12	12	8	❍	●	❍	47.6	80	50.8	-	-	-
	L	22	177[b]	132[c]	12	90°	346	432	0.7	19.2	33	450	25	780	0.9	18.7	95	250	15	546	1.6	17	50	150	33	780	0.9	11.3	60	150	33	780	1	11.3	❍	51	15	15	15	❍	●	❍	57.1	100	72	-	-	-
	LS	22	314	196	12	90°	346	432	0.7	19.2	33	450	25	780	0.9	18.7	95	250	15	546	1.6	17	50	150	33	780	0.9	11.3	60	150	33	780	1	11.3	-	51	25	25	15	❍	●	❍	-	-	-	-	-	-
	G	50	491	294	6	90°	440	240	6.6	50	80	450	20	320	4.6	45.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75	25	25	15	❍	●	❍	-	-	-	-	-	-
EMD worm																																															
	GB12	40	-	-	6	90°	-	-	-	-	63	275	20	560	1.4	27.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	❍	<25	<25	-	❍	❍	❍	-	-	-	-	-	-
	GB9	104	-	-	5	90°	-	-	-	-	200	275	20	560	3.5	56.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	❍	<25	<25	-	❍	❍	❍	-	-	-	-	-	-
double worm																																															
	SS	5.9	54	35	19	90°/in-line	-	-	-	-	7.5	60	0.5	150	0.8	5.9	3.7	120	0.32	40	0.34	5.9	15	50	1	80	1.8	5.9	38	50	1	80	2.8	5.9	-	29	9	9	-	●	❍	❍	41.3	-	42	-	-	-
	MM	11.8	88[b]	88[c]	12	90°/in-line	-	-	-	-	23	60	0.3	59	5	11.8	8	190	0.5	30	1.1	11.8	10	125	1	80	3.4	11.8	10	150	1	80	3.4	11.8	❍	52	12	12	8	❍	●	❍	47.6	80	50.8	-	-	-
double worm																																															
	SIW	11.3	78	49	17	in-line	136	102	2.5	11.3	7.5	90	1	235	0.6	11.3	8	60	1	164	0.4	11.3	10	38	1.5	176	0.5	11.3	10	38	1.5	176	0.5	11.3	●	29	9	-	-	●	❍	❍	41.3	-	-	-	-	-
	MIW	28	265	132	17	in-line	184	77	3.2	28	23	120	1	235	1.7	28	8	120	1	164	0.5	28	10	75	1.5	176	0.5	28	10	95	1.5	176	0.5	28	●	52	12	-	-	❍	●	❍	47.6	-	-	-	-	-
	LIW	45	353	196	15	in-line	available on request				33	200	1	108	4.7	45	35	190	1.1	75	4.3	45	30	95	1.6	81	2	45	50	125	1.6	81	4	45	●	51	15	-	-	❍	●	❍	57.1	-	-	-	-	-
spur																																															
	SIS	7.9	88	44	9	in-line	-	-	-	-	7.5	90	5	182	0.9	7.9	8	60	3	127	1.24	7.9	10	38	6.6	136	1	7.9	10	38	6.6	136	1	7.9	●	25.5	10	-	-	●	❍	❍	41.3	77.2	-	-	-	-
	MIS	45	216	137	9	in-line	-	-	-	-	33	200	15	623	1	37	35	190	14	436	1	45	30	95	20	467	0.8	23	50	125	20	467	1.3	30	●	51	14	-	-	❍	●	❍	48	-	-	-	-	-
	LIS	74	265	177	11	in-line	-	-	-	-	23	280	4	667	1	86	10	190	2.6	467	1	100	30	95	6	500	1	74	50	125	6	500	1	74	●	51	15	-	-	❍	●	❍	70	-	-	-	-	-
worm spur																																															
	SWS	11	177	112	10	90°	52	67	3.6	11	7.5	60	1	101	1.5	11	8	25	1	71	1.9	11	15	38	1.8	76	1.9	11	15	38	1.8	76	1.9	11	●	32	10	10	-	●	❍	❍	-	-	-	-	-	-
	MWS	45	353	177	17	90°	134	98	3.3	45	7.5	90	1	149	1	45	10	60	0.65	106	1.1	45	25	50	1.4	150	1.8	45	25	50	1.4	150	1.8	45	●	51	14	14	-	❍	●	❍	48	-	-	-	-	-
	LWS	100	446	226	21	90°	184	80	3.4	100	23	450	0.4	80	4	100	8	190	0.22	90	1	100	38	125	0.9	80	3.5	100	38	150	0.9	80	3.5	100	●	51	15[e]	15[e]	-	❍	●	❍	70	-	-	-	-	-
	GWS	250	667	353	14	90°	184	44	19.4	250	60	450	0.5	71	16	250	55	250	0.4	50	11	250	-	-	-	-	-	-	-	-	-	-	-	-	●	76	25	25	15	❍	●	❍	75	-	-	-	-	-
planetary																																															
	PG36	3[d]	39[d]	15[d]	13	in-line	-	-	-	-	3.8	11	3	674	0.05	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	8	-	-	●	❍	❍	28	-	-	-	-	-
	PG45	15[d]	130[d]	40[d]	13	in-line	-	-	-	-	11	14	5	863	0.1	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	10	-	-	❍	●	❍	35	-	-	-	-	-
	PG56	30[d]	260[d]	80[d]	14	in-line	-	-	-	-	3.7	59	3	694	0.1	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	12	-	-	❍	●	❍	45	-	-	-	-	-
	HP60	40[d]	725[d]	225[d]	34	in-line	220	1000	0.4	30	23	450	1	1000	0.52	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	15	-	-	❍	●	❍	45	-	-	❍	❍	❍

	DC brushless	DC permanent Magnet	AC induction	AC/DC series wound	DC shunt wound
motor construction	Wound stator, permanent magnet rotor	Permanent magnet stator, wound rotor with commutator	Wound stator, aluminium cage rotor	Low resistance wound stator, wound rotor with commutator	High resistance wound stator, wound rotor with commutator
insulation class	F	F	F	F	F
supply voltage	DC up to 48V with controller	DC from 12V to mains voltage	AC 1 or 3 phase mains voltage	AC or DC up to mains voltage	DC up to mains voltage
ingress protection	IP54	IP22 / IP54 / IP66	IP20 / IP50 / IP54	IP20 / IP23 / IP50 / IP54	IP20 / IP23 / IP50 / IP54

Optional extras
Tachogenerator; encoder; terminal box; brake; speed reducer; controller

Customisation options
Shaft; spindle; paint finish; fixing arrangements; non-standard ratios; Ingress Protection (IP) rating; gear material; lubricant; insulation class

Design options
Bespoke OEM motor-gearbox design and manufacture service | call for details

a: for S1 duty cycle (continuous operation); figures for intermittent operation may be higher, call for details | b: approx. 70% higher when supplied with base | c: approx. 20% higher when supplied with base | d: for 4-stage assembly | e: 17mm diametre shaft available with ratios 115:1 and 56:1 | f: maximum | KEY: ● as standard ❍ optional

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