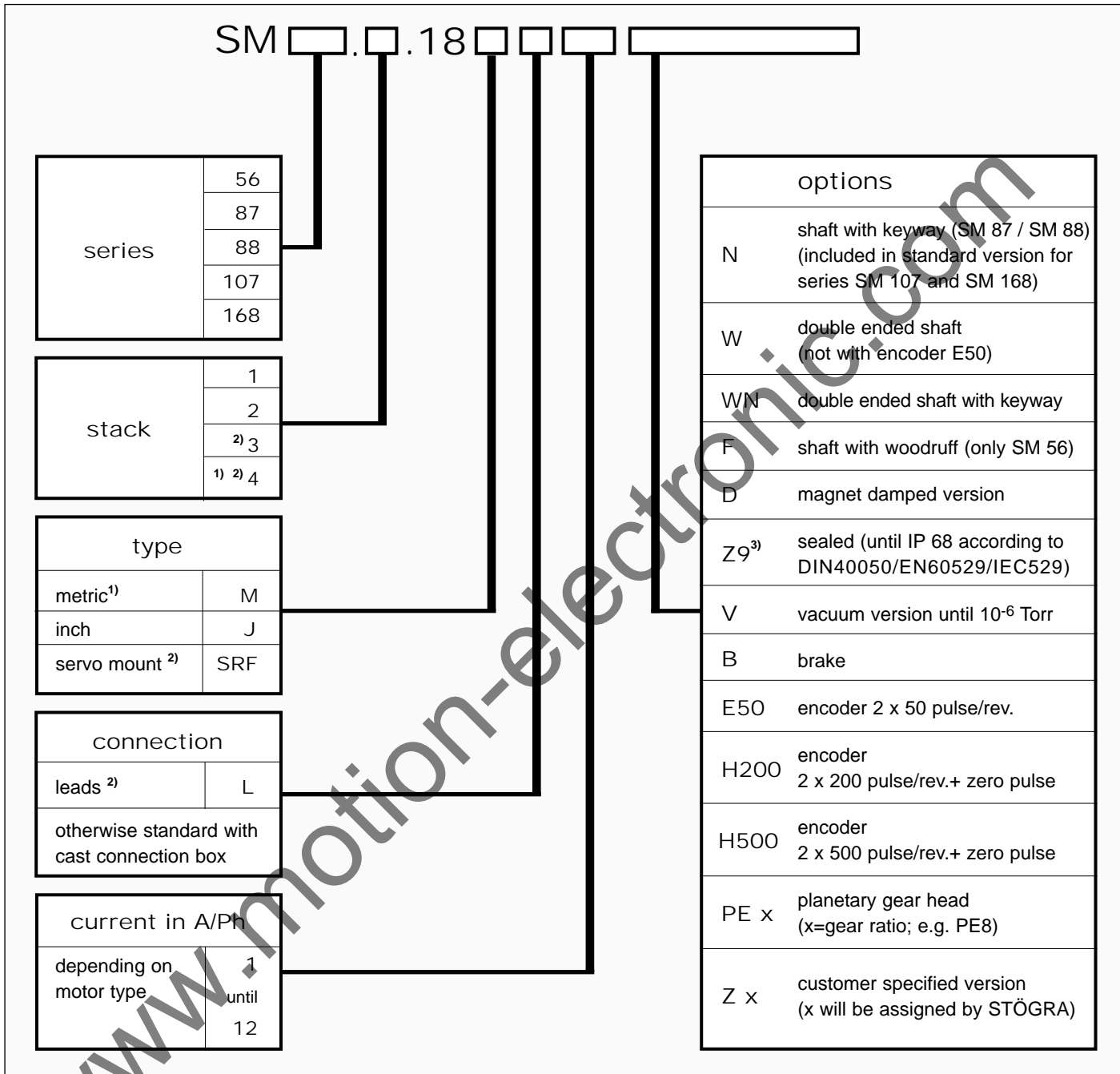


4 ordering Key

STÖGRA Stepper motors are designed as modular system. This enables us to provide a great variety of standard motor types and a high flexibility for customer specific solutions.



¹⁾ not for series 56

²⁾ not for series 168

³⁾ IP68 according to DIN 40050 / EN60529 / IEC529 - IP58 according to VDE0530-5 / EN60034-5 / IEC34-5

Please note, not all options can be combined!

Series SM 86, SM 108 and SM 109 still are available for spare parts, but they should not be used for new designs.

general STÖGRA motor specifications:

Q ± 3% accuracy based on 1.8° motor step angle (non cumulative)

Q operating temperature -30°C until 80°C (short time until 100°C) for standard types

Q insulation class F according to VDE 0530

Q dielectric motor strength 1800 vrms (series 56 : 1000 vrms)

Q high bearing thrust and overhang loads

order examples:

SM 56.2.18 J3 E50 PE8

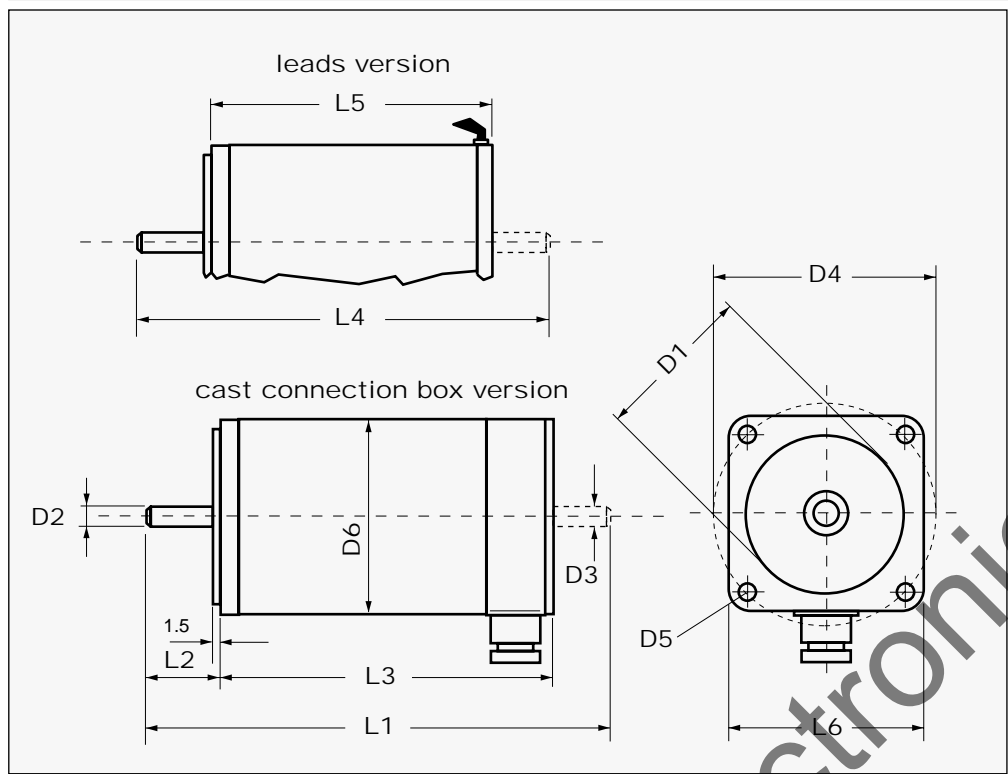
SM 87.1.18 ML3

SM 88.3.18 M8 BH200

SM 107.2.18 M12 BE50 PE4

SM 168.2.18 M12

5 dimension



stepping motor		D1 -0.05		D2 -0.02		D3 -0.02		D4		D5	D6	L1	L2	L3	L4	L5	L6	thread of cable entry	
series	type	M	J	M	J	M	J	M	J				+0.5	±0.5		±0.5			
56	SM 56.1.18											108	21	76	90	50	56.5	M20 x 1.5	
	SM 56.2.18		38.1		6.35		6.35		66.5	5.3	56.5	134		102	116	76			
	SM 56.3.18											162		130	144	104			
87	SM 87.1.18	73		10	9.52	10	(12) ¹⁾	9.52	99	6.5	86	137	31.5	85.5	137	60.5	86	M20 x 1.5	
	SM 87.2.18											169		117.5	169	92.5			
	SM 87.3.18											201		149.5	201	124.5			
	SM 87.4.18											233		181.5	233	156.5			
88	SM 88.1.18	73		12	9.52	12	(10) ¹⁾	9.52	99	6.5	86	145	31.5	93.5	145	68.5	86	M20 x 1.5	
	SM 88.2.18											177		125.5	177	100.5			
	SM 88.3.18											209		158.5	209	132.5			
	SM 88.4.18											241		189.5	241	164.5			
107	SM 107.1.18	60	55.54	12	12.7	10	12.7	127.5	125.5	8.5	108	170	50	111		89.5	108	M20 x 1.5	
	SM 107.2.18														238	161			139.5
	SM 107.3.18			16	15.87	12									288	211			189.5
	SM 107.4.18														338	261			239.5
168	SM 168.1.18	180		24		19		215		15	168	268	50.5	179			192	PG16	
	SM 168.2.18																		343

¹⁾ series SM87 also available with 12 mm shaft and series SM88 also available with 10 mm shaft

all dimensions in mm

M = metric
J = inch

6 keyways and woodruffs

keyways:

Series SM107 and SM168 are delivered in standard version with keyway (but not on double ended shaft).

At series SM87 the keyway is an option, which has to be indicated at the ordering key.

keyway DIN 6885 T1		stepping motor			keyway DIN 6885 T1		
series	type	M	J	SRF	type A b x h x l	a	¹⁾ a
56	SM 56.1.18	/	0	0	A2 x 2 x 12	3	3
	SM 56.2.18						
	SM 56.3.18						
87	SM 87.1.18	0	0	0	bis Ø10 A3 x 3 x 15	6	1.5
	SM 87.2.18						
	SM 87.3.18						
	SM 87.4.18						
88	SM 88.1.18	0	0	0	bis Ø10 A3 x 3 x 15	6	1.5
	SM 88.2.18						
	SM 88.3.18						
	SM 88.4.18						
107	SM 107.1.18	S	/	/	A5 x 5 x 20	5	5
	SM 107.2.18						
	SM 107.3.18						
	SM 107.4.18						
168	SM 168.1.18	S	/	/	A8 x 7 x 25	5	5
	SM 168.2.18						

¹⁾ double ended shaft

woodruff DIN 6888		stepping motor		woodruff DIN 6885 T1			
series	type	J	SRF	type s x h	d	c	t
56	SM 56.1.18	0	0	2 x 2.6	7	7	1.8
	SM 56.2.18						
	SM 56.3.18						

/ = no standard stepping motor

S = standard - stepping motor is delivered with keyway in standard version

O = option - stepping motor is delivered without keyway or woodruff in standard version

order examples:

SM 56.2.18 J3F with woodruff

SM 87.2.18 M6 N with keyway at front shaft

SM 87.2.18 M6 WN with keyway only at double ended shaft

SM 87.2.18 M6 NWN with keyway at front and double ended shaft

7 overview electrical and mechanical specifications

electrical and mechanical specifications

weight and rotor inertia are for standard versions with cast connection box, without double ended shaft.		electrical specifications				mechanical specifications						
		resistance per phase	inductance per phase	current per phase unipolar	current per phase bipolar	step angle (at full step)	holding torque	detent torque	rotor inertia	bearing thrust load	bearing overhang load	weight
series	motor type	Ohm	mH	A	A	°	Nm	Nm	kgcm ²	N	N	kg
56	SM 56.1.18 J1	4.75	9	1	1.4	1.8	0.45	0.01	0.125	80	150	0.6
	SM 56.1.18 J3	0.72	1	3	4.2							
	SM 56.1.18 J3.9	0.42	0.64	3.9	5.5							
	SM 56.2.18 J1.5	3.9	9	1.5	2.1	1.8	0.85	0.017	0.25	80	150	1
	SM 56.2.18 J2	2.6	5	2	2.8							
	SM 56.2.18 J3	1.2	2.6	3	4.2							
	SM 56.3.18 J1.5	4.3	9	1.5	2.1	1.8	1.25	0.025	0.375	80	150	1.35
	SM 56.3.18 J3	1.46	3	3	4.2							
SM 56.3.18 J4.6	0.72	1.2	4.6	6.5								
SM 56.3.18 J4.6	0.72	1.2	4.6	6.5								
87	SM 87.1.18 M1.6	2.9	6	1.6	2.3	1.8	1.8	0.026	0.65	180	280	1.7
	SM 87.1.18 M3	0.72	1.6	3	4.2							
	SM 87.1.18 M5	0.28	0.7	5	7							
	SM 87.2.18 M3.5	0.74	3	3.5	5	1.8	3.6	0.05	1.3	180	280	2.65
	SM 87.2.18 M4.6	0.48	1.5	4.6	6.5							
	SM 87.2.18 M6	0.38	1	6	8.4							
	SM 87.3.18 M3.5	1.1	5	3.5	5	1.8	5.4	0.08	1.95	180	280	3.65
	SM 87.3.18 M6	0.43	1.7	6	8.4							
	SM 87.3.18 M7	0.33	1	7	10							
	SM 87.3.18 M7	0.33	1	7	10							
SM 87.4.18 M6	0.55	2.3	6	8.4	1.8	7.2	0.1	2.6	180	280	4.6	
SM 87.4.18 M7	0.42	1.8	7	10								
88 ¹⁾	SM 88.1.18 M2	1.88	11.1	(1.4)	2	1.8	3	0.042	1.35	180	280	1.7
	SM 88.1.18 M4	0.5	2.5	(2.8)	4							
	SM 88.1.18 M8	0.13	0.75	(5.7)	8							
	SM 88.2.18 M2	3.61	26	(1.4)	2	1.8	6	0.08	2.7	180	280	2.65
	SM 88.2.18 M4	0.74	5.5	(2.8)	4							
	SM 88.2.18 M8	0.21	1.5	(5.7)	8							
	SM 88.3.18 M4	1.14	10.9	(2.8)	4	1.8	9	0.13	4.05	180	280	3.65
	SM 88.3.18 M8	0.29	2.6	(5.7)	8							
	SM 88.3.18 M12	0.14	1	(8.5)	12							
	SM 88.4.18 M8	0.37	3.55	(5.7)	8	1.8	12	0.16	5.4	180	280	4.6
SM 88.4.18 M12	0.12	1.75	(8.5)	12								
107	SM 107.1.18 M6	0.3	1.6	5	7	1.8	5	0.11	4	400	650	4.3
	SM 107.1.18 M8	0.225	1.2	5.7	8							
	SM 107.1.18 M12	0.1	0.55	8.8	12.5							
	SM 107.2.18 M8	0.38	2.4	5.7	8	1.8	9	0.21	8	400	650	7.2
	SM 107.2.18 M10	0.25	1.6	7.1	10							
	SM 107.2.18 M12	0.175	1.15	8.8	12.5							
	SM 107.3.18 M10	0.38	2.7	7.1	10	1.8	13	0.3	12	400	650	9.8
	SM 107.3.18 M12	0.28	1.9	8.8	12.5							
SM 107.4.18 M12	0.34	2.7	8.8	12.5								
168	SM 168.1.18 M12	0.18	2.5	8.8	12.5	1.8	19	0.3	31.2	660	1000	18
	SM 168.2.18 M12	0.28	5	8.8	12.5	1.8	38	0.6	64.4	660	1000	23

1) SM88 only with bipolar winding