

SVTM D Series

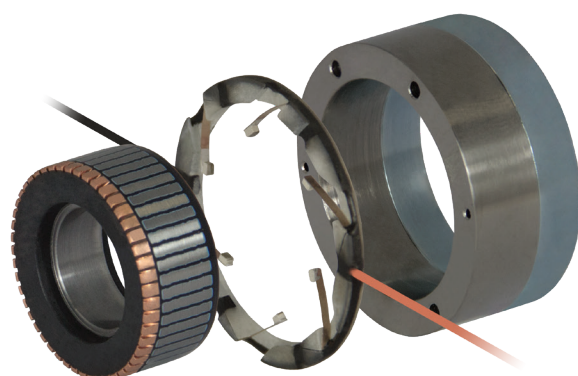
Brush Torque Motors

BRUSH TORQUE

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SVTM D Series

Brush Torque Motors



LIGHTWEIGHT



CUSTOMISABLE



HIGH POWER

DC Torque Motors operate on the same principles as the conventional DC motors but the magnetic circuit design and consequent mechanical configuration are designed for a maximum torque output rather than the usual low torque / high speed characteristic.

A range of unhusd units are supplied as three separate components, a permanent magnet field assembly, a wound armature with precision bore for mounting and a brush ring assembly or brush segments.

A fixed element - the stator, is equipped with rare earth permanent magnets and the rotor is equipped with a dc specific winding which is connected to an extra flat commutator - brushed system. Low speed Torque Motors are beneficial for direct-drive applications. Position and speed feedback can be achieved via additions of DC Tachos, Resolvers or Optical Encoders.

The unhusd motors described below can be supplied in custom designed housings for specific applications.

Benefits

Compact	Wide range
Easy to use	Integrable into the mechanics
Customisable	Extended operating temperatures

Certifications

RoHS 2011/65/EU

Product code

SVTM D  -  -  -  -  - 

D Series

 Stall torque Customizations

 Frame
 01 [38.1]; 02 [51]; 03 [60.32]; 04 [76.2];
 05 [85.725]; 06 [92.075]; 07 [114.3];
 08 [130.175]

 Voltage

Features

Winding	brush two-phase DC motor
Operating temperature	-40° +70° C
Insulation class	F, 155° C for 01-04 model and 08 or H, 180° C for 05-07 model
Magnets	rare earth
Collector	gold plating
Construction technology	frameless
Wire length	300mm

Customizations

Wire drawing stator flange	Wires length
Rotor bore on request	Other voltage winding

SVTM D 01

Values	Unit	SVTM D		
		01-0,07-18-000	01-0,12-23-000	01-0,14-17-000
Frame	Ø mm	38,1	38,1	38,1
Motor length	mm	9,78	12,95	12,95
Peak torque, stalled @Vp	mNm	77,7	127	141
Power input @Tp	W	56,7	83,3	78
Motor constant	mNm/√W	10,3	13,9	16
Electrical time constant	ms	0,11	0,15	0,207
No load speed @Vp	rpm	6962	6961	5280
Break away torque	mNm	4,24	2,2	4,94
Ripple torque	% avg to peak	7	5	7
Max allowable temperate/insulation class		F, 155 °C	F, 155 °C	F, 155 °C
Thermal resitance	°C/W	25	19	19
Mass	g	46,8	62	65,2
Rotor inertia	kgm²x10 ⁻⁶	2,97	4,24	4,24
Resistance (1)(2)	Ohm	5,9	6,8	4,1
Inductance (1)	mH	0,65	1,3	0,85
Torque constant	mNm/A	25,1	36,3	32,4
BEMF constant (1)(2)	V/rad/s	0,0251	0,0363	0,0324
Peak voltage @ Tp	V	18,3	23,8	17,9
Peak current @ Tp	A	3,1	3,5	4,36
Wires length	mm	300	300	300
Ambient temperature (3)	°C	-40 +70	-40 +70	-40 +70

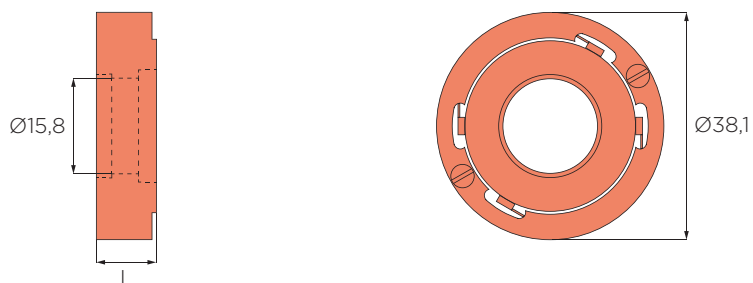
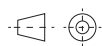
Values	Unit	SVTM D	01-0,39-22-000	01-0,35-22-000	01-0,33-18-000
Frame	Ø mm	38,1	38,1	38,1	
Motor length	mm	27,94	27,94	26	
Peak torque, stalled @Vp	mNm	395	353	333	
Power input @Tp	W	156	156	72	
Motor constant	mNm/√W	31,3	28,3	39,2	
Electrical time constant	ms	0,41	0,41	-	
No load speed @Vp	rpm	3776	4226	2066	
Break away torque	mNm	5,4	5,4	18,5	
Ripple torque	% avg to peak	5	5	5	
Max allowable temperate/insulation class		F, 155 °C	F, 155 °C	F, 155 °C	
Thermal resitance	°C/W	14	14	-	
Mass	g	142	142	140	
Rotor inertia	kgm²x10 ⁻⁶	9,86	9,86	8,7	
Resistance (1)(2)	Ohm	3,18	3,18	4,5	
Inductance (1)	mH	1,3	1,3	1,1	
Torque constant	mNm/A	56,4	50,4	83,2	
BEMF constant (1)(2)	V/rad/s	0,0564	0,0504	0,0832	
Peak voltage @ Tp	V	22,3	22,3	18	
Peak current @ Tp	A	7	7	4	
Wires length	mm	300	300	300	
Ambient temperature (3)	°C	-40 +70	-40 +70	-40 +70	

(1) Line-line

(2) At 25° C

(3) With no condensation

All dimensions in millimeters, unless otherwise specified



Notes

SVTM D 02

Values	Unit	SVTM D 02-1.20-24-000
Frame	Ø mm	51
Motor length	mm	29
Peak torque, stalled @Vp	mNm	1200
Power input @Tp	W	192
Motor constant	mNm/√W	86,6
Electrical time constant	ms	
No load speed @Vp	rpm	2139
Break away torque	mNm	40
Ripple torque	% avg to peak	5
Max allowable temperate/insulation class		F, 155 °C
Thermal resitance	°C/W	-
Mass	g	295
Rotor inertia	kgm²x10 ⁻⁶	-
Resistance (1)(2)	Ohm	3
Inductance (1)	mH	1,5
Torque constant	mNm/A	150
BEMF constant (1)(2)	V/rad/s	0,15
Peak voltage @ Tp	V	24
Peak current @ Tp	A	8
Wires length	mm	300
Ambient temperature (3)	°C	-40 +70

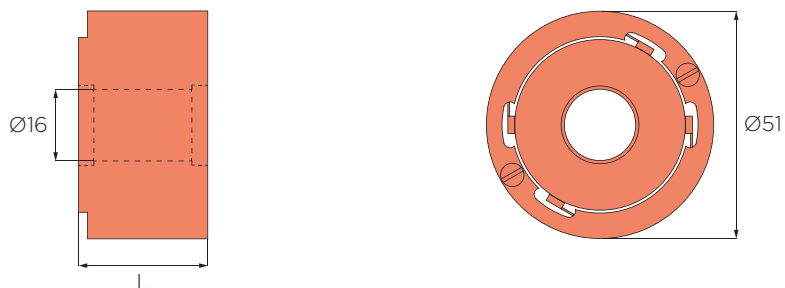
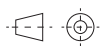
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Note: Rated values are calculated at 25°C ambient temperature

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Notes

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SVTM D 03

Values	Unit	SVTM D 03-0,60-25-000
Frame	Ø mm	60,32
Motor length	mm	25,4
Peak torque, stalled @Vp	mNm	600
Power input @Tp	W	77,5
Motor constant	mNm/√W	68,2
Electrical time constant	ms	0,238
No load speed @Vp	rpm	1251
Break away torque	mNm	12,7
Ripple torque	% avg to peak	6
Max allowable temperate/insulation class		F, 155 °C
Thermal resitance	°C/W	-
Mass	g	303
Rotor inertia	kgm²x10 ⁻⁶	50,8
Resistance (1)(2)	Ohm	8,4
Inductance (1)	mH	2
Torque constant	mNm/A	195
BEMF constant (1)(2)	V/rad/s	0,195
Peak voltage @ Tp	V	25,5
Peak current @ Tp	A	3,04
Wires length	mm	300
Ambient temperature (3)	°C	-40 +70

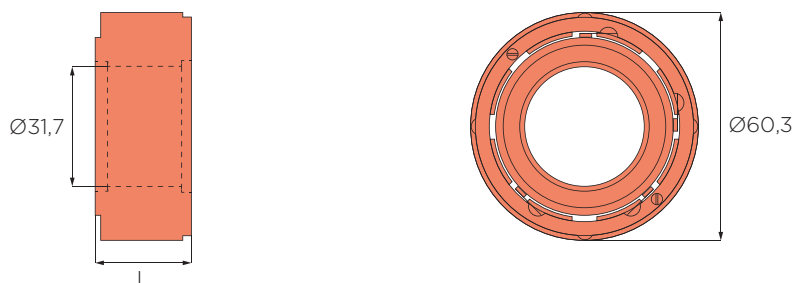
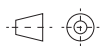
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Notes

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SVTM D 04

Values	Unit	SVTM D 03-0,60-25-000
Frame	Ø mm	76,2
Motor length	mm	19,8
Peak torque, stalled @Vp	mNm	777
Power input @Tp	W	79,1
Motor constant	mNm/√W	87,4
Electrical time constant	ms	0,291
No load speed @Vp	rpm	947
Break away torque	mNm	17,7
Ripple torque	% avg to peak	6
Max allowable temperate/insulation class		H, 180°C
Thermal resitance	°C/W	3,8
Mass	g	692
Rotor inertia	kgm²x10 ⁻⁶	6,5x10 ⁻²
Resistance (1)(2)	Ohm	4,12
Inductance (1)	mH	2
Torque constant	mNm/A	551
BEMF constant (1)(2)	V/rad/s	0,551
Peak voltage @ Tp	V	23,5
Peak current @ Tp	A	5,7
Wires length	mm	300
Ambient temperature (3)	°C	-40 +70

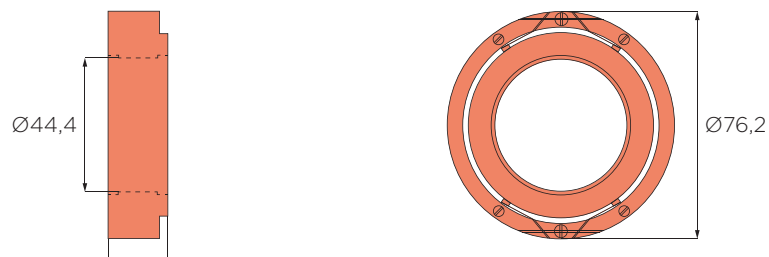
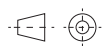
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Notes

BRUSH TORQUE

SVTM D 05

Values	Unit	SVTM D 5-3,14-23-000
Frame	Ø mm	85,725
Motor length	mm	36,9
Peak torque, stalled @Vp	mNm	3140
Power input @Tp	W	134
Motor constant	mNm/√W	0,271
Electrical time constant	ms	0,485
No load speed @Vp	rpm	407
Break away torque	mNm	127
Ripple torque	% avg to peak	7
Max allowable temperate/insulation class		H, 180°C
Thermal resitance	°C/W	3,8
Mass	g	692
Rotor inertia	kgm²x10 ⁻⁶	6,5x10 ⁻²
Resistance (1)(2)	Ohm	4,12
Inductance (1)	mH	2
Torque constant	mNm/A	551
BEMF constant (1)(2)	V/rad/s	0,551
Peak voltage @ Tp	V	23,5
Peak current @ Tp	A	5,7
Wires length	mm	300
Ambient temperature (3)	°C	-40 +70

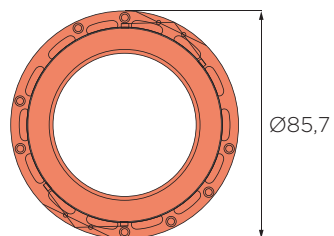
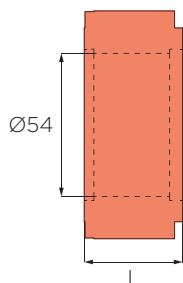
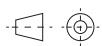
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Notes

SVTM D 06

Values	Unit	SVTM D	
		06-1,06-30-000	06-1,06-23-000
Frame	Ø mm	92,075	92,075
Motor length	mm	13,72	13,72
Peak torque, stalled @Vp	mNm	1060	1060
Power input @Tp	W	154	154
Motor constant	mNm/√W	85,4	84,4
Electrical time constant	ms	0,37	0,37
No load speed @Vp	rpm	1387	1390
Break away torque	mNm	31,8	31,8
Ripple torque	% avg to peak	7	7
Max allowable temperate/insulation class		H, 180°C	H, 180°C
Thermal resitance	°C/W	10,1	10,1
Mass	g	241	214
Rotor inertia	kgm ² x10 ⁻⁶	1,61x10 ⁻²	1,61x10 ⁻²
Resistance (1)(2)	Ohm	6,04	3,43
Inductance (1)	mH	2,23	1,27
Torque constant	mNm/A	210	158
BEMF constant (1)(2)	V/rad/s	0,21	0,158
Peak voltage @ Tp	V	30,5	23
Peak current @ Tp	A	5,05	6,7
Wires length	mm	300	300
Ambient temperature (3)	°C	-40 +70	-40 +70
Values	Unit	SVTM D	
		06-2,12-31-000	06-4,00-23-000
Frame	Ø mm	92,075	92,456
Motor length	mm	21,33	37,008
Peak torque, stalled @Vp	mNm	2120	4000
Power input @Tp	W	184	138
Motor constant	mNm/√W	0,156	0,341
Electrical time constant	ms	0,408	0,628
No load speed @Vp	rpm	830	329
Break away torque	mNm	46	130
Ripple torque	% avg to peak	7	7
Max allowable temperate/insulation class		H, 180°C	H, 180°C
Thermal resitance	°C/W	7,3	3,8
Mass	g	430	955
Rotor inertia	kgm ² x10 ⁻⁶	2,8x10 ⁻²	6,5x10 ⁻²
Resistance (1)(2)	Ohm	5,25	4
Inductance (1)	mH	2,14	2,5
Torque constant	mNm/A	358	681
BEMF constant (1)(2)	V/rad/s	0,358	0,681
Peak voltage @ Tp	V	31,1	23,5
Peak current @ Tp	A	5,92	5,87
Wires length	mm	300	300
Ambient temperature (3)	°C	-40 +70	-40 +70

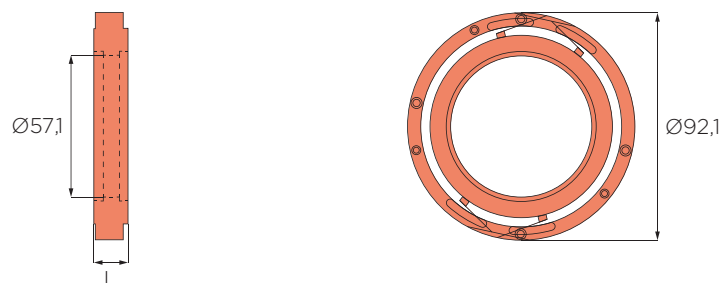
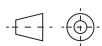
(1) Line-line

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(3) With no condensation

All dimensions in millimeters, unless otherwise specified

Specifications subject to change.



Notes

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SVTM D 07

Values	Unit	SVTM D		
		07-2,30-36-000	07-3,25-31-000	07-3,25-55-000
Frame	Ø mm	114,3	114,3	114,3
Motor length	mm	14,22	17,45	17,45
Peak torque, stalled @Vp	mNm	2300	3250	3250
Power input @Tp	W	248	187	187
Motor constant	mNm/√W	0,146	0,238	0,238
Electrical time constant	ms	0,59	0,573	0,573
No load speed @Vp	rpm	1031	549	549
Break away torque	mNm	56,5	67,8	67,8
Ripple torque	% avg to peak	7	6	6
Max allowable temperate/insulation class		H, 180°C	H, 180°C	H, 180°C
Thermal resitance	°C/W	6,9	3,3	3,3
Mass	g	397	520	520
Rotor inertia	kgm²x10 ⁻⁶	4,19x10 ⁻²	4,88x10 ⁻²	4,88x10 ⁻²
Resistance (1)(2)	Ohm	5,43	5,2	16,4
Inductance (1)	mH	3,19	3	9,4
Torque constant	mNm/A	340	548	963
BEMF constant (1)(2)	V/rad/s	0,34	0,542	0,963
Peak voltage @ Tp	V	36,7	31,2	55,4
Peak current @ Tp	A	6,76	6	3,38
Wires length	mm	300	300	300
Ambient temperature (3)	°C	-40;+70	-40 +70	-40 +70

Values	Unit	SVTM D	
		07-4,59-42-000	07-6,51-33-000
Frame	Ø mm	114,3	114,3
Motor length	mm	21,84	27,28
Peak torque, stalled @Vp	mNm	4590	6510
Power input @Tp	W	275	263
Motor constant	mNm/√W	0,277	0,401
Electrical time constant	ms	0,784	0,83
No load speed @Vp	rpm	573	386
Break away torque	mNm	84,8	136
Ripple torque	% avg to peak	7	5
Max allowable temperate/insulation class		H, 180°C	H, 180°C
Thermal resitance	°C/W	5,2	
Mass	g	697	945
Rotor inertia	kgm²x10 ⁻⁶	7,19x10 ⁻²	9,76x10 ⁻²
Resistance (1)(2)	Ohm	6,68	4,36
Inductance (1)	mH	5,24	3,6
Torque constant	mNm/A	715	838
BEMF constant (1)(2)	V/rad/s	0,715	0,838
Peak voltage @ Tp	V	42,9	33,9
Peak current @ Tp	A	6,42	7,77
Wires length	mm	300	300
Ambient temperature (3)	°C	-40 +70	-40 +70

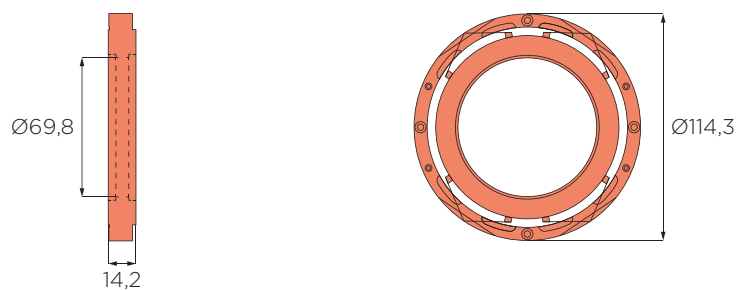
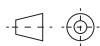
(1) Line-line

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Notes

BRUSH TORQUE

SVTM D 08

Values	Unit	SVTM D		
		08-2,80-22-000	08-4,80-24-000	08-10,0-29-000
Frame	Ø mm	130,175	130,175	130,175
Motor length	mm	23,9	25,5	53,34
Peak torque, stalled @Vp	mNm	2800	4800	10000
Power input @Tp	W	44	96	195
Motor constant	mNm/√W	0,422	0,49	0,716
Electrical time constant	ms	0,818	0,8	1,07
No load speed @Vp	rpm	150	191	186
Break away torque	mNm	90	100	310
Ripple torque	% avg to peak	7	7	6
Max allowable temperate/insulation class		F, 155 °C	F, 155 °C	F, 155 °C
Thermal resitance	°C/W	2,8	2,5	0,8
Mass	g	850	920	2050
Rotor inertia	kgm²x10 ⁻⁶	2,1x10 ⁻³	2,25x10 ⁻³	3,18x10 ⁻³
Resistance (1)(2)	Ohm	11	6	4,47
Inductance (1)	mH	9	4,8	4,8
Torque constant	mNm/A	1400	1200	1515
BEMF constant (1)(2)	V/rad/s	1,4	1,2	1,515
Peak voltage @ Tp	V	22	24	29,5
Peak current @ Tp	A	2	4	6,6
Wires length	mm	300	300	300
Ambient temperature (3)	°C	-40 +70	-40 +70	-40 +70

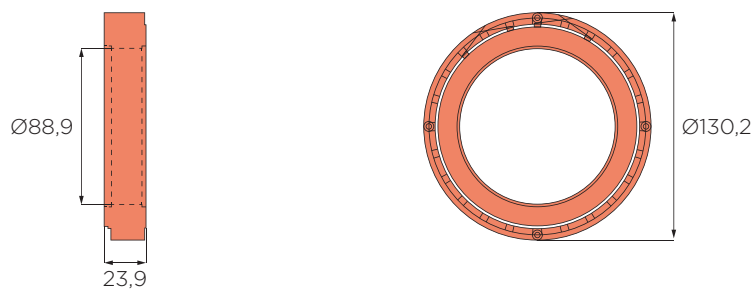
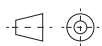
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