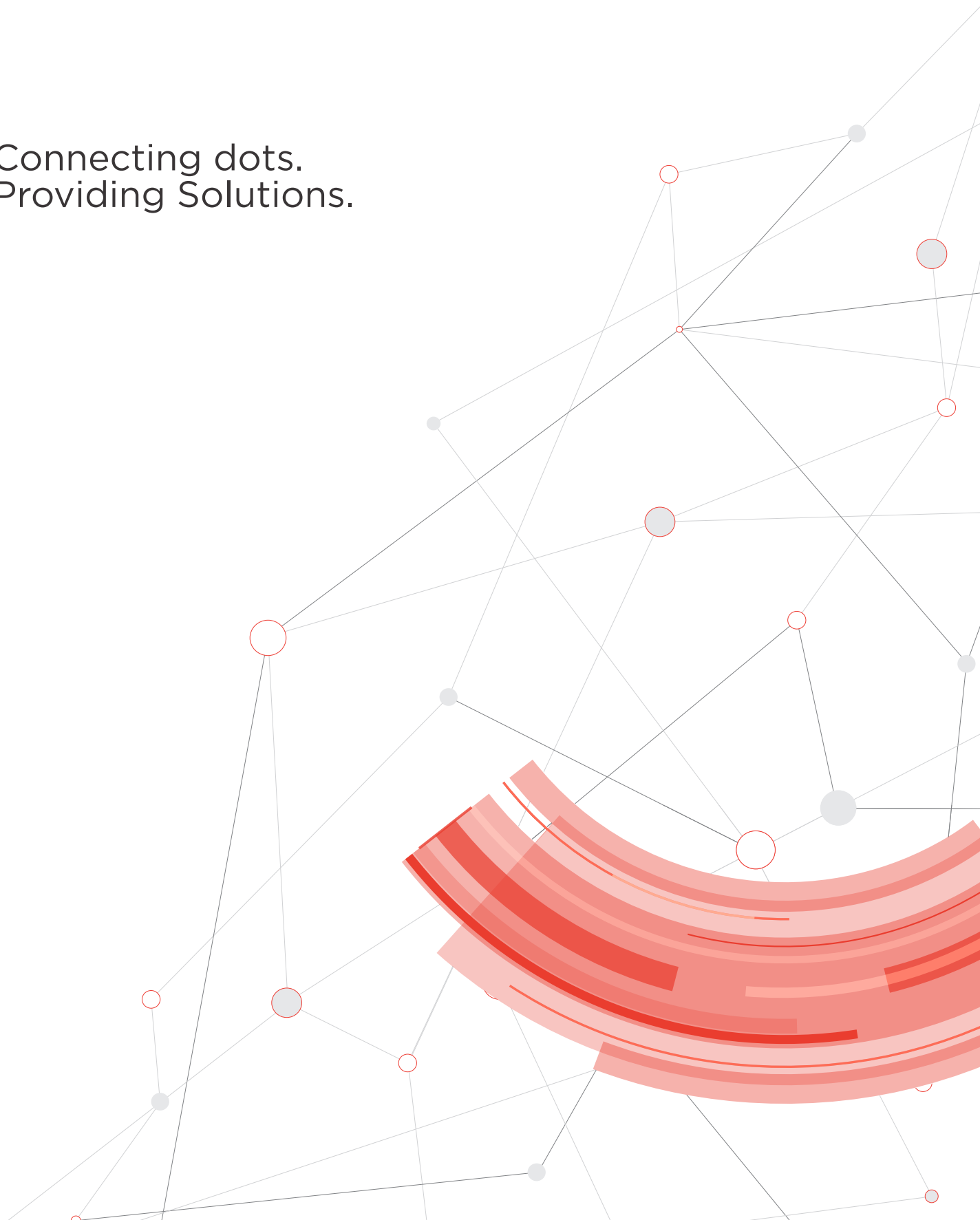


MICROMOTORS



servotecnica

Connecting dots.
Providing Solutions.



Contents

A SERIES SVTN A 01	Coreless BLDC motors 2 Pole Brushless DC Motors	2 .. 400W	ø12 .. 40mm	p. 10-31
	2 Pole High-Speed Brushless DC Motors	2 .. 80W	ø12 .. 36mm	p. 32-41
	2 Pole Brushless DC Motors with I.E.	20 .. 150W	ø16 .. 20mm	p. 42-57
B SERIES SVTN B 01	Coreless DC Motors 2 Pole Brushed DC Motors	1,6 .. 150W	ø12 .. 40mm	p. 58-105
	Encoders Magnetic Incremental Encoders	25 .. 1000/1024ppr	ø16 .. 22mm	p. 106-109
G SERIES SVTN G 01	Gearboxes Planetary Gearboxes	0.2 .. 45Nm	ø10 .. 52mm	p. 110-117



Expertise at your service

All-around services and solutions. A product selection and software development are the best proposal for specific applications.

In the automation and motion control industry since 1980, Servotecnica manufactures and proposes unique products based on cutting-edge technologies developed by leading global manufacturers.

The concernment of giving a wide range of products guarantees its presence in all sectors of the industry requiring high performances, skilled engineers, reducing machine developing time and offering a service support which grants a reliable partner for your applications.

Wide Range & Cost Effectiveness

A wide range of Micromotors supported by a 35+ years experience will translate into a proficient product selection and design, reducing time-to-market and increasing your competitiveness.



Custom

Thanks to our lean and flexible production, we can deliver specifically designed samples in accordance to the requirements of any of your applications in a very short time, thus to provide you with the best solution.



Industries

Medical & Lab



Dental devices
Surgical robots
Insulin pumps
Diagnosis

Robotics



Electric grippers
Humanoid robots
Inspection robots
Service robots

Automation



Packaging machines
Cobots
Welding equipments
Miniaturized pumps
Security lockers

Instruments



Calibration systems
Laser leveling systems

Automotive



Fuel injection pumps
Adjustable shock absorbers
Electric vehicles
Driver-assisted systems
Power steering

Aerospace



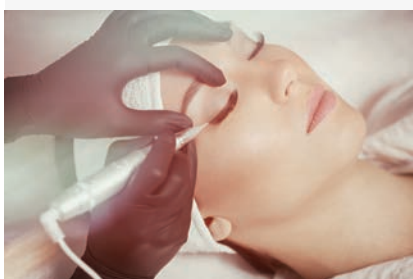
Radar systems
Flap adjustments
Seat and display adjustments

Video Systems



Seurveillance cameras
Mobile inspection systems
Professional cameras

Consumer Applications



Tattoo Machines
Permanent make-up
Massage Chairs
Bicycle shift systems
Moving head projectors

Optics



Automatic focus
Lasers
Ophthalmology
Microscopes

SVTN A 01 Series

Coreless BLDC motors
2 Pole Brushless DC Motors

Contents

Model	W	Max rpm	Page
SVTN A 01-1220	up to 8	37.000	10
SVTN A 01-1230	up to 15	25.000	11
SVTN A 01-1630	up to 12	23.000	12
SVTN A 01-1636	up to 21	14.500	13
SVTN A 01-2040	up to 32	18.500	14
SVTN A 01-2232	up to 20	23.500	15
SVTN A 01-2240	up to 39	17.000	16
SVTN A 01-2248	up to 43	13.000	17
SVTN A 01-2260	up to 70	16.000	18
SVTN A 01-2446	up to 42	14.000	19
SVTN A 01-2453	up to 54	15.000	20
SVTN A 01-2845	up to 35	13.500	21
SVTN A 01-2854	up to 72	8.500	22
SVTN A 01-2864	up to 88	8.000	23
SVTN A 01-3242	up to 60	9.500	24
SVTN A 01-3260	up to 120	11.000	25
SVTN A 01-3270	up to 130	9.000	26
SVTN A 01-3660	up to 140	8.000	27
SVTN A 01-3670	up to 250	6.500	28
SVTN A 01-4058	up to 150	8.000	29
SVTN A 01-4070	up to 210	8.000	30
SVTN A 01-4088	up to 400	8.000	31

SVTN A 01

Coreless BLDC motor
2 Pole Brushless DC Motors



HIGH-POWER DENSITY



HIGH-EFFICIENCY



COST-EFFECTIVE

The benefits of this new technology are torque and high-speed when compared to same sizing. The lack of cogging, a reduced ripple torque, a linear correlation between speed and torque, low inertia bring performance to greater level in terms of power, dynamics by means of reduced weights and reduced dimensions.

Servotecnica's brushless motors apply hall sensors as a standard option, in addition to having the magnetic encoder option. Thanks to the sensors it is possible to control rotation speed, and, thanks to the lack of cogging, provide high performance and accuracy.

Benefits

High power density	Long operational lifetime
High efficiency	No cogging
High reliability	Low inertia
Low noise	Robust
Low inductance	Cost-effective
Good heat dissipation	

Product code

SVTN A 01 - ○ ○ ◇ ◇ - □ □ - ◇ - ◇ ☆ ☆ ☆

A Series

01 Brushless DC Motors

○ Diameter

◇ Length

□ Nominal Voltage

◇ Shaft
Single shaft [S]; Double shaft [D]

◇ Sensor
Sensorless [0]; Hall sensor [H]

☆ Customizations

Features

Winding	3 phase
Operating temperature	-30° +100° C
Connectors	JST PHR-8 1630; 1636; 2040; 2232; 2240; 2248; 2260; 2446; 2453; 2845; 2854; 2864 MOLEX 39-01-2080 3242; 3260; 3270; 3660; 3670; 4058; 4070; 4088
Magnets	Neodymium
Construction technology	Coreless winding system
Estimated operating lifetime	Lifetime depends on motor working conditions. It can reach 20.000 work hours under optimal conditions (almost 100 hours under extreme conditions).

Feedback

Hall Sensor (standard)	
Magnetic encoder*	3 channels, from 25 to 1000/1024 ppr

Customizations

Hall Sensor (standard)	
Shaft	Length/Diameter/D-Cut/double shaft
Leadwire	PVC/Silicon/Teflon/UL No/Dimension/length
Connector	JST/MOLEX

*See page 93 for more information

Technical drawing of a 3D printed part, showing three views: front, top, and side.

Front View:

- Top flange diameter: $5 \begin{smallmatrix} 0 \\ -0.3 \end{smallmatrix}$
- Top flange thickness: $0.5 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
- Main body diameter: $\varnothing 12 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
- Bottom flange diameter: $\varnothing 10 \pm 10$
- Bottom flange thickness: 100 ± 10
- Surface finish symbols: R_{A} on the top flange, R_{A} on the bottom flange.

Top View:

- Central hole diameter: $\varnothing 12 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
- Three small holes diameter: $\varnothing 0.3 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
- Surface finish symbol: R_{A} on the top flange.

Side View:

- Top flange thickness: $0.5 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$
- Main body diameter: $\varnothing 12 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
- Bottom flange diameter: $\varnothing 10 \pm 10$
- Bottom flange thickness: 100 ± 10
- Surface finish symbol: R_{A} on the bottom flange.

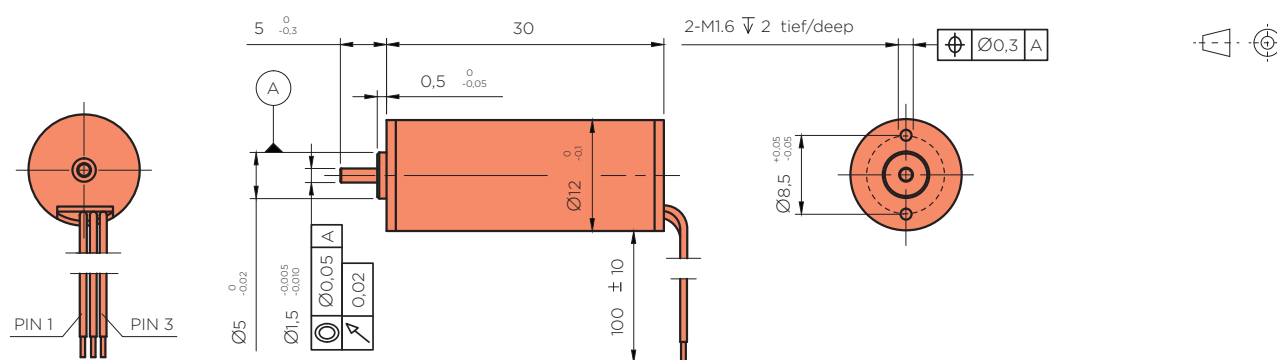
Thermal resistance housing-ambient	38.3 K/W
Thermal resistance winding-housing	9.6 K/W
Thermal time constant winding	5 s
Thermal time constant motor	196 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+125°C
Max. permissible speed	50000 rpm
Radial play	preloaded
Max. axial load (dynamic)	0,3
Max.force for press fits (static)	11N
Max. radial loading, 5mm from flange	4.3 N
Number of pole pairs	1
Number of phases	3
Weight of motor	9,8g

Continuous operating range with Reduced Rth2 50%	Continuous operating range

Connection 0	(Sensorless)	PVC	
Pin 1	Motor winding MA	AWG28	yellow
Pin 2	Motor winding MB	AWG28	green
Pin 3	Motor winding MC	AWG28	blue

PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE

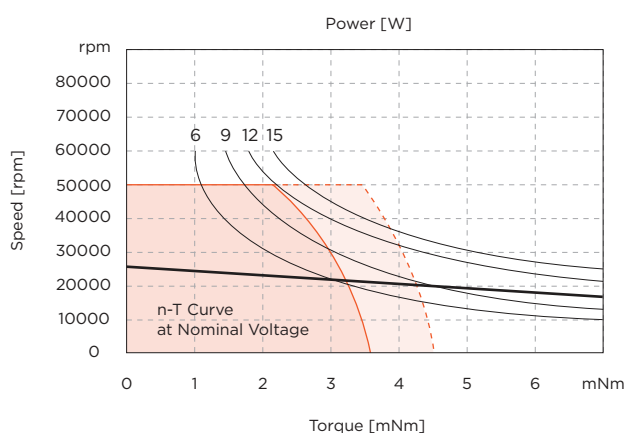
SVTN A 01-1230



Values	Unit	SVTN A 01 1230-06..	1230-09..	1230-12..
Nominal voltage	V	6	9	12
No load speed	rpm	25310	25100	24930
No load current	mA	122	90	72
Nominal speed	rpm	20719	20565	20449
Nominal torque	mNm	3	3	3
Nominal current	A	1,47	0,98	0,74
Stall torque	mNm	17	17	17
Stall current	A	7,5	5,0	3,8
Max. efficiency	%	76,2	75,0	74,3
Terminal resistance*	Ω	0,8	1,8	3,2
Terminal inductance*	mH	0,02	0,04	0,08
Torque constant	mNm/A	2,23	3,36	4,51
Speed constant	rpm/V	4288	2840	2118
Speed/torque gradient	rpm/mNm	1530,5	1511,6	1493,7
Mechanical time constant	ms	5,1	5,1	5,0
Rotor inertia	gcm ²	0,32	0,32	0,32

Thermal resistance housing-ambient	28.4 K/W
Thermal resistance winding-housing	7.1 K/W
Thermal time constant winding	4 s
Thermal time constant motor	240 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+125°C
Max. permissible speed	50000 rpm
Radial play	preloaded
Max. axial load (dynamic)	0,3
Max. force for press fits (static)	11N
Max. radial loading, 5mm from flange	4.3 N
Number of pole pairs	1
Number of phases	3
Weight of motor	16.3 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

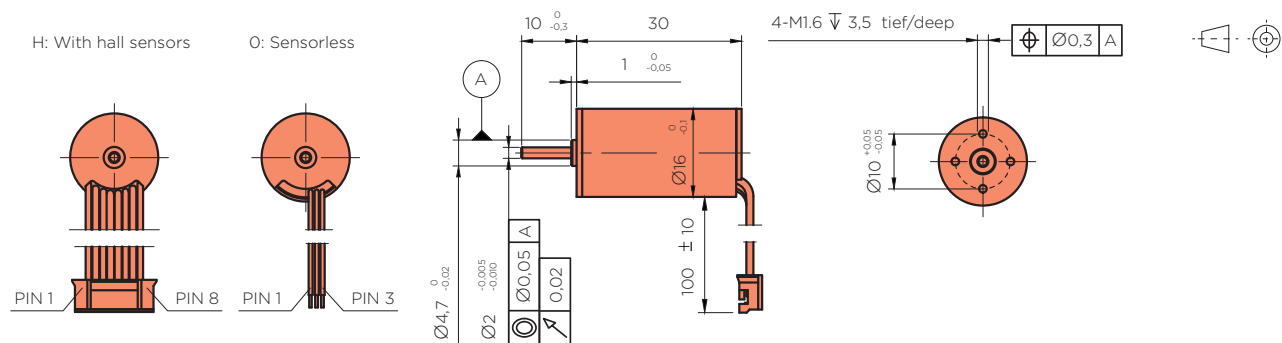
Connection

Connection 0	(Sensorless)	PVC
Pin 1	Motor winding MA	AWG28 yellow
Pin 2	Motor winding MB	AWG28 green
Pin 3	Motor winding MC	AWG28 blue

Configuration

PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE

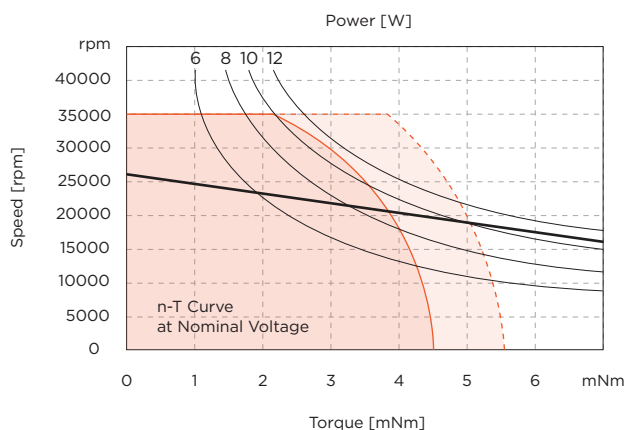
SVTN A 01-1630



Values	Unit	SVTN A 01		
		1630-12..	1630-18..	1630-24..
Nominal voltage	V	12	18	24
No load speed	rpm	23220	23511	23760
No load current	mA	210	150	100
Nominal speed	rpm	19138	19506	19203
Nominal torque	mNm	3,5	3,5	3,5
Nominal current	A	0,95	0,65	0,48
Stall torque	mNm	20	21	18
Stall current	A	4,4	3,1	2,1
Max. efficiency	%	61,3	60,9	61,0
Terminal resistance*	Ω	2,7	5,8	11,5
Terminal inductance*	mH	0,08	0,17	0,33
Torque constant	mNm/A	4,70	6,96	9,18
Speed constant	rpm/V	2031	1373	1040
Speed/torque gradient	rpm/mNm	1166,3	1144,2	1302,1
Mechanical time constant	ms	5,8	5,7	6,5
Rotor inertia	gcm ²	0,48	0,48	0,48

Thermal resistance housing-ambient	20.0 K/W
Thermal resistance winding-housing	8.8 K/W
Thermal time constant winding	8 s
Thermal time constant motor	236 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	35000 rpm
Radial play	preloaded
Max. axial load (dynamic)	1.3 N
Max. force for press fits (static)	15 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Number of phases	3
Weight of motor	25 g

*The diagram based on ambient temperature of 25°.



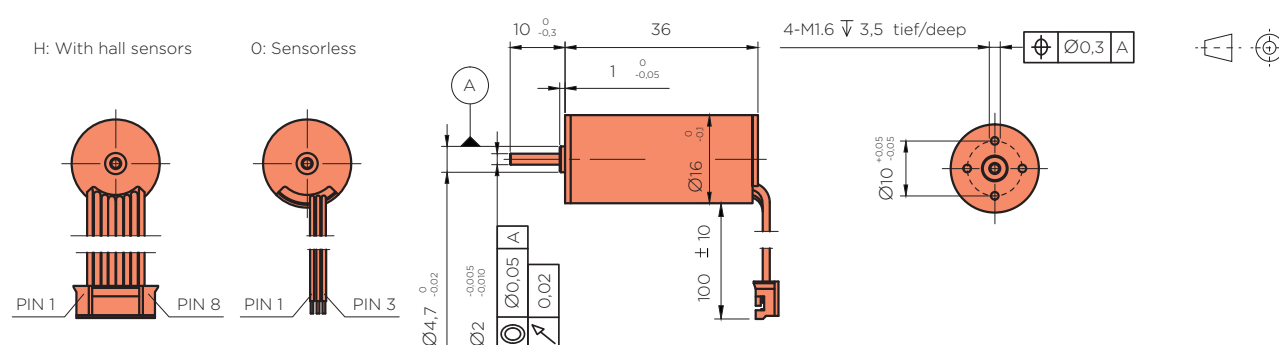
Connection

Connection H	(Sensor)	PVC	
Pin 1	Vhall 3-18 VDC	AWG26	black
Pin 2	Hall sensor HA	AWG26	black
Pin 3	Hall sensor HB	AWG26	black
Pin 4	Hall sensor HC	AWG26	black
Pin 5	GND	AWG26	black
Pin 6	Motor winding MA	AWG26	black
Pin 7	Motor winding MB	AWG26	black
Pin 8	Motor winding MC	AWG26	black
Connector			
JST	PHR-8		
Connection O	(Sensorless)		
Pin 1	Motor winding MA	AWG26	yellow
Pin 2	Motor winding MB	AWG26	green
Pin 3	Motor winding MC	AWG26	blue

Configuration

PERFORMANCE: Customized in the continuous operating range
 BALL BEARING: Preload
 FLANGE: Standard frange front&back/customize the frange
 SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
 LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
 CONNECTOR: JST/MOLEX/TE

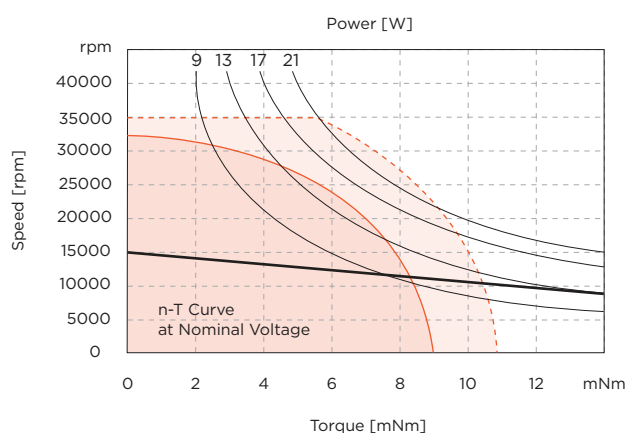
SVTN A 01-1636



Values	Unit	SVTN A 01			
		1636-06..	1636-09..	1636-12..	1636-24..
Nominal voltage	V	6	9	12	24
No load speed	rpm	13835	14533	14460	14668
No load current	mA	150	110	70	50
Nominal speed	rpm	11412	11930	11615	12005
Nominal torque	mNm	6	6	6	6
Nominal current	A	1,62	1,14	0,84	0,44
Stall torque	mNm	34	33	30	33
Stall current	A	8,6	5,9	4,0	2,2
Max. efficiency	%	75,3	74,5	75,3	72,2
Terminal resistance*	Ω	0,7	1,5	3,0	10,8
Terminal inductance*	mH	0,04	0,08	0,15	0,81
Torque constant	mNm/A	4,07	5,80	7,79	15,27
Speed constant	rpm/V	2347	1646	1227	625
Speed/torque gradient	rpm/mNm	403,8	433,9	474,2	443,8
Mechanical time constant	ms	2,6	2,8	3,1	2,9
Rotor inertia	gcm ²	0.62	0.62	0.62	0.62

Thermal resistance housing-ambient	17,1 K/W
Thermal resistance winding-housing	5,3 K/W
Thermal time constant winding	6 s
Thermal time constant motor	252 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	35000 rpm
Radial play	preloaded
Max. axial load (dynamic)	1,3 N
Max. force for press fits (static)	15 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Number of phases	3
Weight of motor	32 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

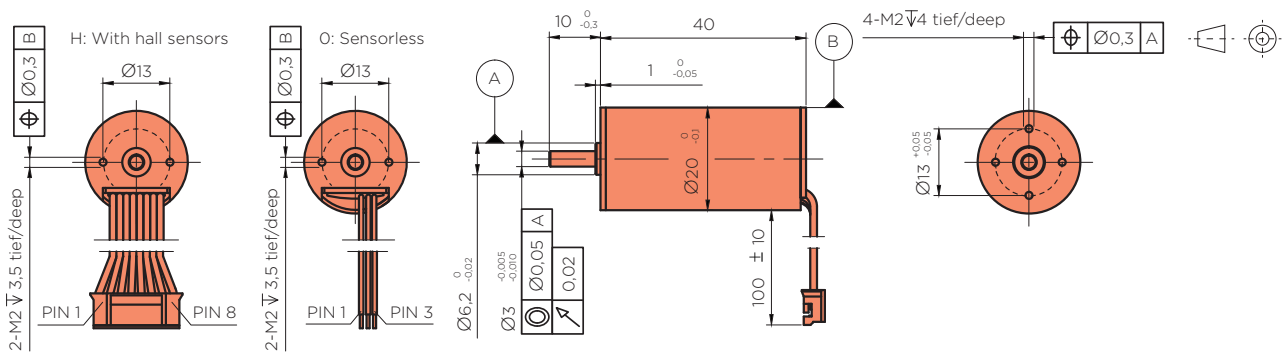
Connection

Connection H	(Sensor)	PVC
Pin 1	Vhall 3-18 VDC	AWG26 black
Pin 2	Hall sensor HA	AWG26 black
Pin 3	Hall sensor HB	AWG26 black
Pin 4	Hall sensor HC	AWG26 black
Pin 5	GND	AWG26 black
Pin 6	Motor winding MA	AWG26 black
Pin 7	Motor winding MB	AWG26 black
Pin 8	Motor winding MC	AWG26 black
Connector		
JST	PHR-8	
Connection O	(Sensorless)	
Pin 1	Motor winding MA	AWG26 yellow
Pin 2	Motor winding MB	AWG26 green
Pin 3	Motor winding MC	AWG26 blue

Configuration

PERFORMANCE: Customized in the continuous operating range
 BALL BEARING: Preload
 FLANGE: Standard frange front&back/customize the frange
 SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
 LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
 CONNECTOR: JST/MOLEX/TE

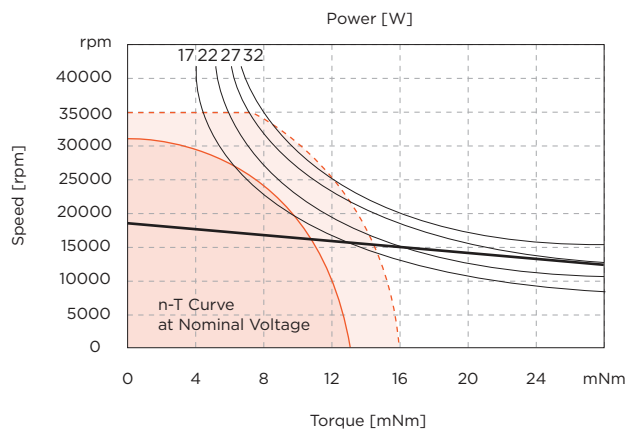
SVTN A 01-2040



Values	Unit	SVTN A 01	2040-12..	2040-18..	2040-24..	2040-36..
Nominal voltage	V	12	18	24	36	
No load speed	rpm	17780	18360	18500	18880	
No load current	mA	149	137	105	83	
Nominal speed	rpm	15083	16171	16042	16164	
Nominal torque	mNm	10	10	10	10	
Nominal current	A	1,72	1,22	0,93	0,64	
Stall torque	mNm	66	84	75	70	
Stall current	A	10,5	9,2	6,3	4,0	
Max. efficiency	%	77,6	77,1	75,8	73,2	
Terminal resistance*	Ω	1,1	2,0	3,8	9,0	
Terminal inductance*	mH	0,08	0,17	0,30	0,62	
Torque constant	mNm/A	6,35	9,22	12,18	17,83	
Speed constant	rpm/V	1503	1035	784	536	
Speed/torque gradient	rpm/mNm	269,7	218,9	245,8	271,6	
Mechanical time constant	ms	6,4	5,2	5,8	6,4	
Rotor inertia	gcm ²	2,25	2,25	2,25	2,25	

Thermal resistance housing-ambient	13.8 K/W
Thermal resistance winding-housing	4.3 K/W
Thermal time constant winding	8 s
Thermal time constant motor	366 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	35000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	56 g

*The diagram based on ambient temperature of 25°.

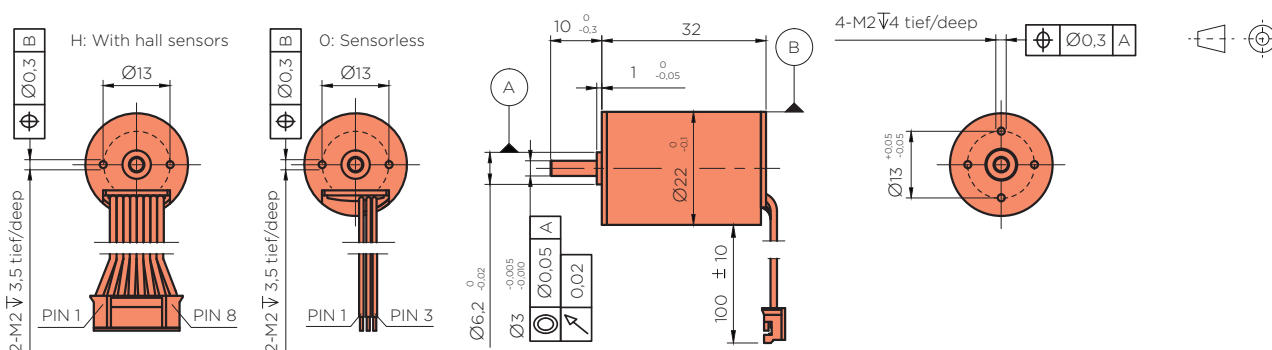


Continuous operating range
Continuous operating range with Reduced Rth2 50%

ztt

Connection	Configuration
Connection H (Sensor) PVC Pin 1 Vhall 3-18 VDC AWG26 black Pin 2 Hall sensor HA AWG26 black Pin 3 Hall sensor HB AWG26 black Pin 4 Hall sensor HC AWG26 black Pin 5 GND AWG26 black Pin 6 Motor winding MA AWG26 black Pin 7 Motor winding MB AWG26 black Pin 8 Motor winding MC AWG26 black Connector JST PHR-8 Connection O (Sensorless) Pin 1 Motor winding MA AWG26 yellow Pin 2 Motor winding MB AWG26 green Pin 3 Motor winding MC AWG26 blue	PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE

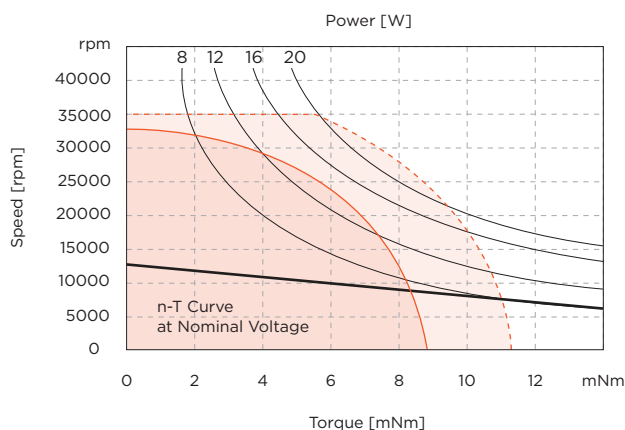
SVTN A 01-2232



Values	Unit	SVTN A 01			
		2232-06..	2232-12..	2232-18..	2232-24..
Nominal voltage	V	6	12	18	24
No load speed	rpm	11700	11184	12080	12164
No load current	mA	230	150	86	60
Nominal speed	rpm	9585	9023	9937	9358
Nominal torque	mNm	6	6	6	6
Nominal current	A	1.5	0.76	0.52	0.39
Stall torque	mNm	33.2	31.1	33.8	26
Stall current	A	7.23	3.32	2.55	1.5
Max. efficiency	%	67.5	62	66.6	64
Terminal resistance*	Ω	0.83	3.61	7.07	16
Terminal inductance*	mH	0.08	0.28	0.66	1.72
Torque constant	mNm/A	4.74	9.78	13.7	18.1
Speed constant	rpm/V	2014	976	695	528
Speed/torque gradient	rpm/mNm	353	360	357	468
Mechanical time constant	ms	5.5	5.6	5.6	7.3
Rotor inertia	gcm ²	1.5	1.5	1.5	1.5

Thermal resistance housing-ambient	15.2 K/W
Thermal resistance winding-housing	6.0 K/W
Thermal time constant winding	11 s
Thermal time constant motor	383 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	35000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	48 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

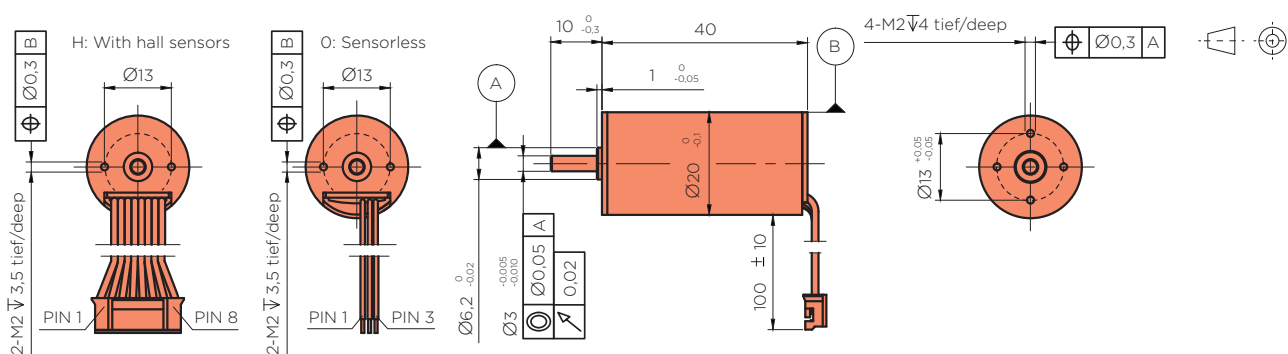
Connection

Connection H	(Sensor)	PVC
Pin 1	Vhall 3-18 VDC	AWG26 black
Pin 2	Hall sensor HA	AWG26 black
Pin 3	Hall sensor HB	AWG26 black
Pin 4	Hall sensor HC	AWG26 black
Pin 5	GND	AWG26 black
Pin 6	Motor winding MA	AWG26 black
Pin 7	Motor winding MB	AWG26 black
Pin 8	Motor winding MC	AWG26 black
Connector	JST	PHR-8
Connection O	(Sensorless)	
Pin 1	Motor winding MA	AWG26 yellow
Pin 2	Motor winding MB	AWG26 green
Pin 3	Motor winding MC	AWG26 blue

Configuration

PERFORMANCE: Customized in the continuous operating range
 BALL BEARING: Preload
 FLANGE: Standard frange front&back/customize the frange
 SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
 LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
 CONNECTOR: JST/MOLEX/TE

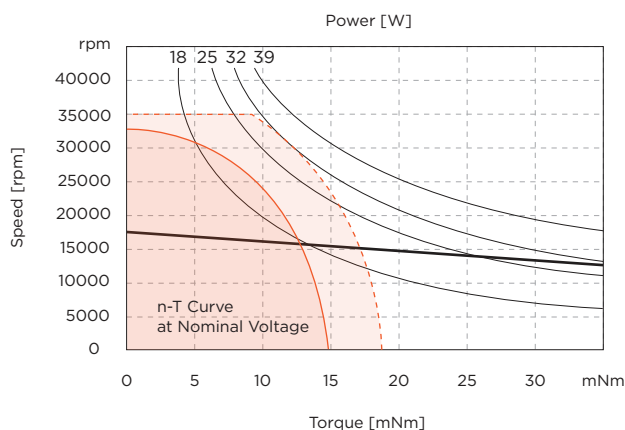
SVTN A 01-2240



Values	Unit	SVTN A 01	2240-12..	2240-24..	2240-30..	2240-36..
Nominal voltage	V		12	24	30	36
No load speed	rpm		16748	16768	16713	16679
No load current	mA		183	115	87	73
Nominal speed	rpm		14354	14337	14360	14128
Nominal torque	mNm		12	12	12	12
Nominal current	A		1,96	1,01	0,80	0,67
Stall torque	mNm		84	83	85	78
Stall current	A		12,6	6,3	5,1	4,0
Max. efficiency	%		77,4	74,8	75,7	74,7
Terminal resistance*	Ω		1,0	3,8	5,8	9,1
Terminal inductance*	mH		0,07	0,28	0,44	0,64
Torque constant	mNm/A		6,74	13,42	16,85	20,23
Speed constant	rpm/V		1416	712	567	472
Speed/torque gradient	rpm/mNm		199,5	202,6	196,1	212,6
Mechanical time constant	ms		4,7	4,8	4,7	5,1
Rotor inertia	gcm ²		2,27	2,27	2,27	2,27

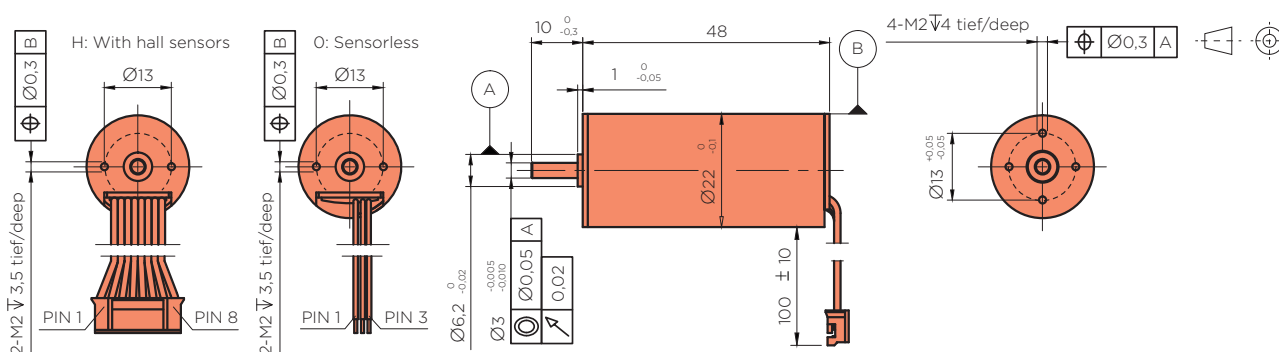
Thermal resistance housing-ambient	12.7 K/W
Thermal resistance winding-housing	5.0 K/W
Thermal time constant winding	12 s
Thermal time constant motor	420 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	35000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	64 g

*The diagram based on ambient temperature of 25°.



Connection	Configuration
Connection H (Sensor) Pin 1 Vhall 3-18 VDC AWG26 black Pin 2 Hall sensor HA AWG26 black Pin 3 Hall sensor HB AWG26 black Pin 4 Hall sensor HC AWG26 black Pin 5 GND AWG26 black Pin 6 Motor winding MA AWG26 black Pin 7 Motor winding MB AWG26 black Pin 8 Motor winding MC AWG26 black Connector JST PHR-8 Connection O (Sensorless) Pin 1 Motor winding MA AWG26 yellow Pin 2 Motor winding MB AWG26 green Pin 3 Motor winding MC AWG26 blue	PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE

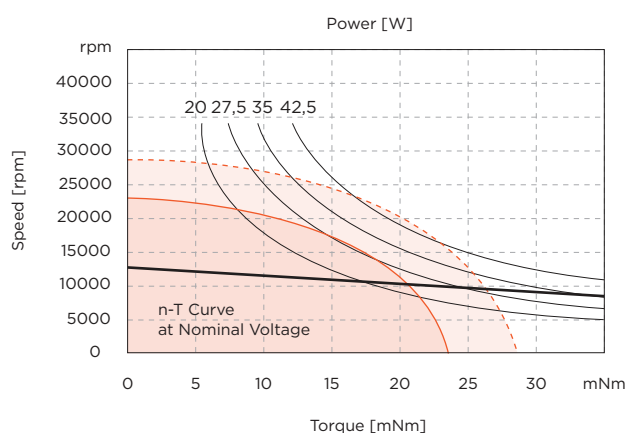
SVTN A 01-2248



Values	Unit	SVTN A 01	2248-12..	2248-24..	2248-36..	2248-48..
Nominal voltage	V		12	24	36	48
No load speed	rpm		13004	12930	13390	13641
No load current	mA		179	102	82	69
Nominal speed	rpm		11426	11413	11749	12159
Nominal torque	mNm		18	18	18	18
Nominal current	A		2,24	1,13	0,79	0,61
Stall torque	mNm		148	153	147	166
Stall current	A		17,2	8,9	5,9	5,1
Max. efficiency	%		80,6	79,7	77,8	78,0
Terminal resistance*	Ω		0,7	2,7	6,1	9,5
Terminal inductance*	mH		0,07	0,28	0,58	0,97
Torque constant	mNm/A		8,72	17,52	25,32	33,14
Speed constant	rpm/V		1095	545	377	288
Speed/torque gradient	rpm/mNm		87,7	84,3	91,2	82,3
Mechanical time constant	ms		2,9	2,8	3,0	2,7
Rotor inertia	gcm ²		3,14	3,14	3,14	3,14

Thermal resistance housing-ambient	11.8 K/W
Thermal resistance winding-housing	4.7 K/W
Thermal time constant winding	21 s
Thermal time constant motor	504 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	30000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	85 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

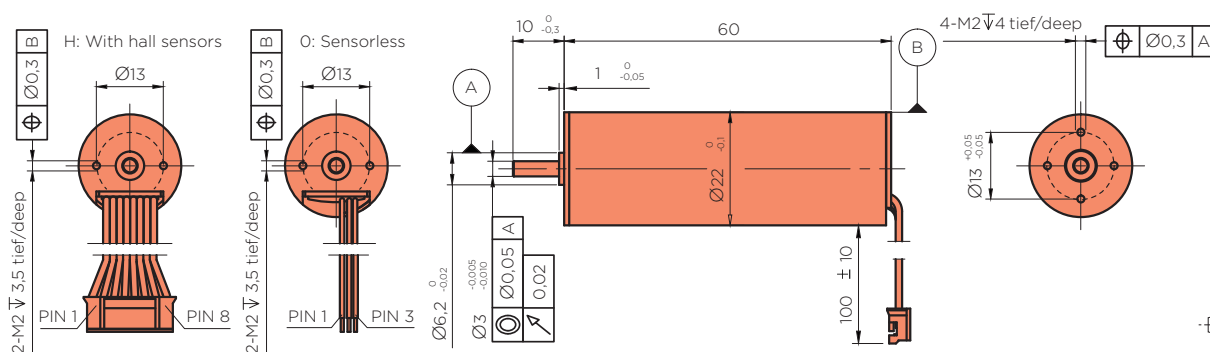
Connection

Connection H	(Sensor)	PVC
Pin 1	Vhall 3-18 VDC	AWG26 black
Pin 2	Hall sensor HA	AWG26 black
Pin 3	Hall sensor HB	AWG26 black
Pin 4	Hall sensor HC	AWG26 black
Pin 5	GND	AWG26 black
Pin 6	Motor winding MA	AWG26 black
Pin 7	Motor winding MB	AWG26 black
Pin 8	Motor winding MC	AWG26 black
Connector		
JST	PHR-8	
Connection O	(Sensorless)	
Pin 1	Motor winding MA	AWG26 yellow
Pin 2	Motor winding MB	AWG26 green
Pin 3	Motor winding MC	AWG26 blue

Configuration

PERFORMANCE: Customized in the continuous operating range
 BALL BEARING: Preload
 FLANGE: Standard frange front&back/customize the frange
 SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
 LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
 CONNECTOR: JST/MOLEX/TE

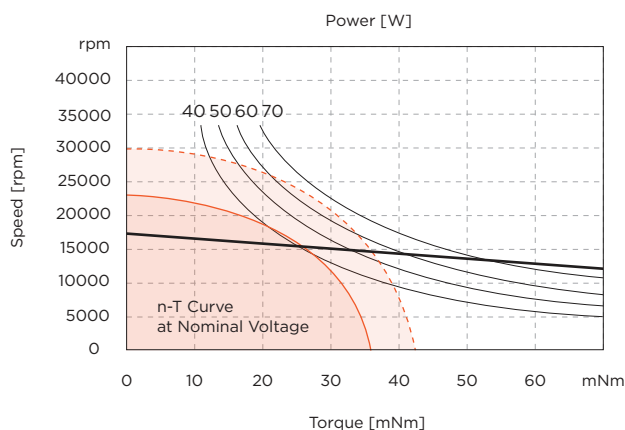
SVTN A 01-2260



Values	Unit	SVTN A 01			
		2260-12..	2260-24..	2260-36..	2260-48..
Nominal voltage	V	12	24	36	48
No load speed	rpm	16360	16086	16030	16200
No load current	mA	440	230	170	110
Nominal speed	rpm	14517	14441	14364	14530
Nominal torque	mNm	28	28	28	28
Nominal current	A	4,49	2,22	1,49	1,11
Stall torque	mNm	249	274	269	272
Stall current	A	36,4	19,7	12,9	9,8
Max. efficiency	%	79,2	79,5	78,4	79,9
Terminal resistance*	Ω	0,3	1,2	2,8	4,9
Terminal inductance*	mH	0,03	0,13	0,30	0,52
Torque constant	mNm/A	6,92	14,08	21,16	27,98
Speed constant	rpm/V	1380	678	451	341
Speed/torque gradient	rpm/mNm	65,8	58,8	59,5	59,7
Mechanical time constant	ms	3,1	2,8	2,8	2,8
Rotor inertia	gcm²	4.50	4.50	4.50	4.50

Thermal resistance housing-ambient	7,6 K/W
Thermal resistance winding-housing	4,6 K/W
Thermal time constant winding	29 s
Thermal time constant motor	533 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	30000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3,5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	122 g

*The diagram based on ambient temperature of 25°.

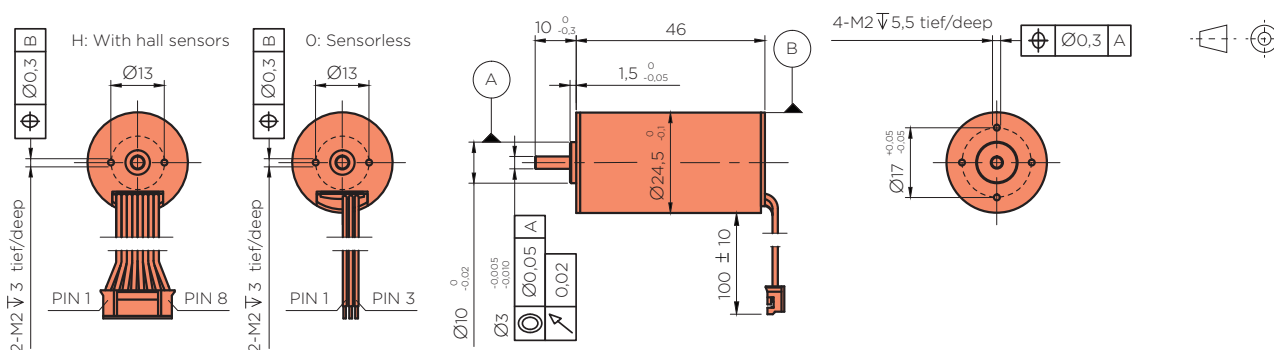


Connection Configuration

Connection H	(Sensor)	PVC
Pin 1	Vhall 3-18 VDC	AWG26 black
Pin 2	Hall sensor HA	AWG26 black
Pin 3	Hall sensor HB	AWG26 black
Pin 4	Hall sensor HC	AWG26 black
Pin 5	GND	AWG26 black
Pin 6	Motor winding MA	AWG26 black
Pin 7	Motor winding MB	AWG26 black
Pin 8	Motor winding MC	AWG26 black
Connector	JST	PHR-8
Connection O	(Sensorless)	
Pin 1	Motor winding MA	AWG26 yellow
Pin 2	Motor winding MB	AWG26 green
Pin 3	Motor winding MC	AWG26 blue

PERFORMANCE: Customized in the continuous operating range
 BALL BEARING: Preload
 FLANGE: Standard frange front&back/customize the frange
 SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
 LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
 CONNECTOR: JST/MOLEX/TE

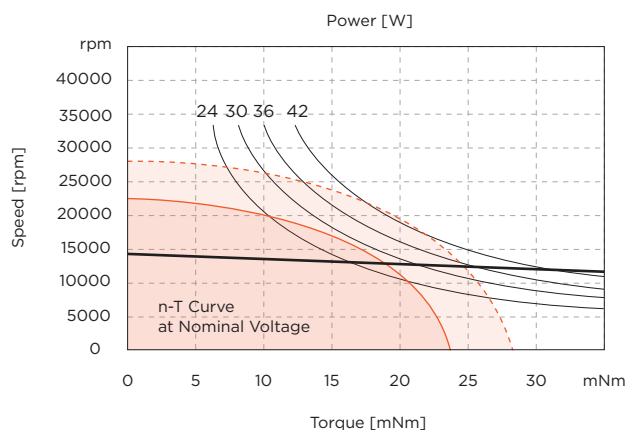
SVTN A 01-2446



Values	Unit	SVTN A 01	2446-12..	2446-24..	2446-36..	2446-48..
Nominal voltage	V		12	24	36	48
No load speed	rpm		14150	13872	13920	13870
No load current	mA		249	124	106	79
Nominal speed	rpm		12678	12487	12662	12446
Nominal torque	mNm		18	18	18	18
Nominal current	A		2,50	1,23	0,84	0,63
Stall torque	mNm		173	180	199	175
Stall current	A		21,9	11,2	8,3	5,5
Max. efficiency	%		79,8	80,0	78,6	77,4
Terminal resistance*	Ω		0,5	2,2	4,4	8,8
Terminal inductance*	mH		0,07	0,29	0,62	1,14
Torque constant	mNm/A		8,01	16,34	24,38	32,57
Speed constant	rpm/V		1193	584	392	293
Speed/torque gradient	rpm/mNm		81,8	76,9	69,9	79,1
Mechanical time constant	ms		3,6	3,4	3,1	3,5
Rotor inertia	gcm ²		4,20	4,20	4,20	4,20

Thermal resistance housing-ambient	11.6 K/W
Thermal resistance winding-housing	5.6 K/W
Thermal time constant winding	30 s
Thermal time constant motor	557 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	30000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	92 g

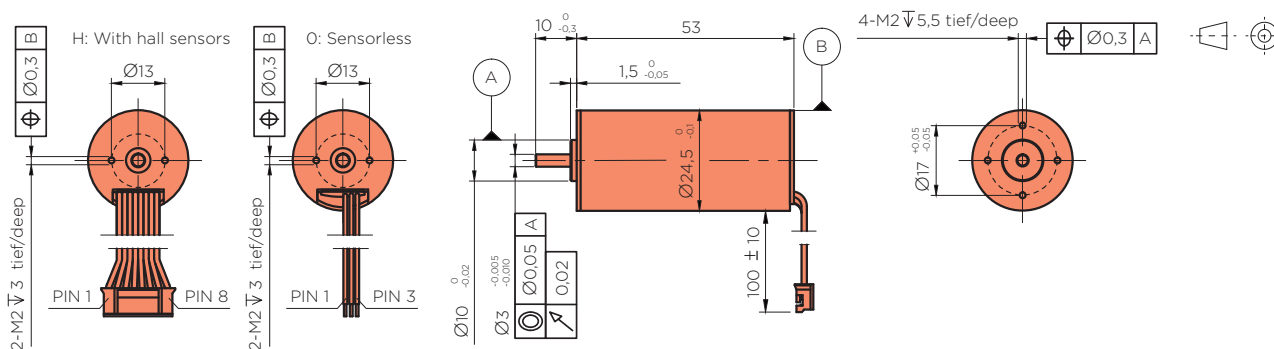
*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection	Configuration
Connection H (Sensor) PVC Pin 1 Vhall 3-18 VDC AWG26 black Pin 2 Hall sensor HA AWG26 black Pin 3 Hall sensor HB AWG26 black Pin 4 Hall sensor HC AWG26 black Pin 5 GND AWG26 black Pin 6 Motor winding MA AWG26 black Pin 7 Motor winding MB AWG26 black Pin 8 Motor winding MC AWG26 black Connector JST PHR-8 Connection O (Sensorless) Pin 1 Motor winding MA AWG26 yellow Pin 2 Motor winding MB AWG26 green Pin 3 Motor winding MC AWG26 blue	PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE

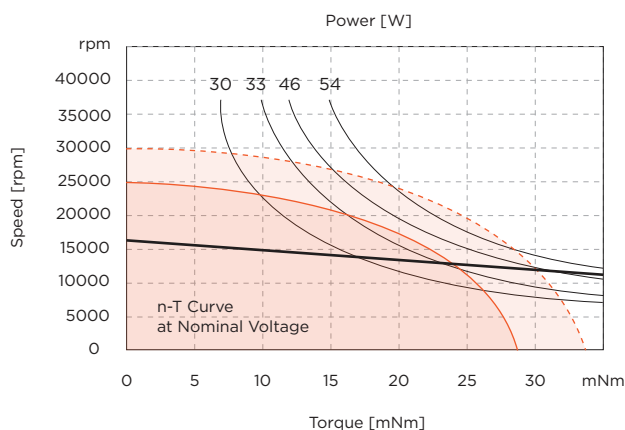
SVTN A 01-2453



Values	Unit	SVTN A 01			
		2453-12..	2453-24..	2453-36..	2453-48..
Nominal voltage	V	12	24	36	48
No load speed	rpm	15083	15398	15202	15310
No load current	mA	308	156	115	94
Nominal speed	rpm	13938	14347	14211	14263
Nominal torque	mNm	20	20	20	20
Nominal current	A	2,96	1,51	1,01	0,77
Stall torque	mNm	263	293	307	293
Stall current	A	35,3	20,0	13,8	10,0
Max. efficiency	%	82,2	83,1	82,6	81,5
Terminal resistance*	Ω	0,3	1,2	2,6	4,8
Terminal inductance*	mH	0,05	0,19	0,44	0,76
Torque constant	mNm/A	7,53	14,77	22,43	29,66
Speed constant	rpm/V	1268	647	426	322
Speed/torque gradient	rpm/mNm	57,2	52,5	49,6	52,3
Mechanical time constant	ms	3,5	3,2	3,1	3,2
Rotor inertia	gcm ²	5,90	5,90	5,90	5,90

Thermal resistance housing-ambient	10.2 K/W
Thermal resistance winding-housing	6.4 K/W
Thermal time constant winding	36 s
Thermal time constant motor	555 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	30000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	110 g

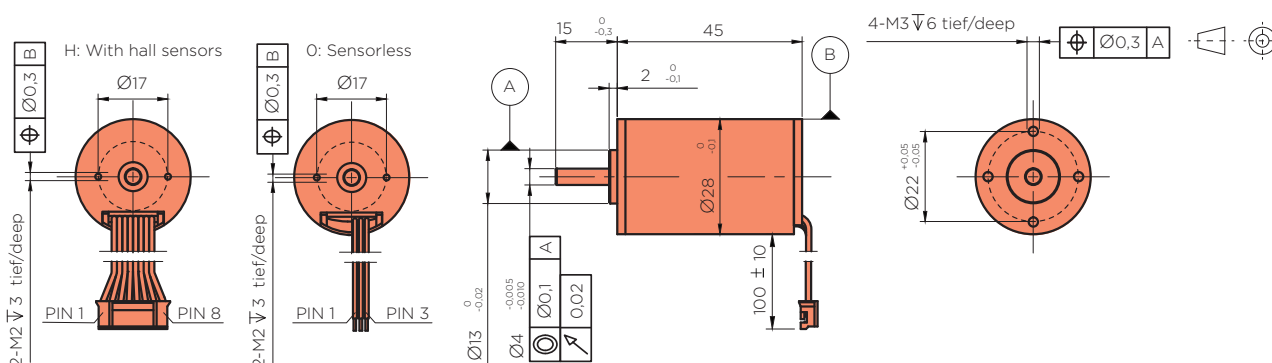
*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection				Configuration	
Connection H	(Sensor)	PVC		PERFORMANCE:	Customized in the continuous operating range
Pin 1	Vhall 3-18 VDC	AWG26	black	BALL BEARING:	Preload
Pin 2	Hall sensor HA	AWG26	black	FLANGE:	Standard frange front&back/customize the frange
Pin 3	Hall sensor HB	AWG26	black	SHAFT:	Length/Diameter/Cut face/double shaft/hollow shaft
Pin 4	Hall sensor HC	AWG26	black	LEADWIRE:	PVC/Silicon/Teflon/UL No/Dimension/length
Pin 5	GND	AWG26	black	CONNECTOR:	JST/MOLEX/TE
Pin 6	Motor winding MA	AWG26	black		
Pin 7	Motor winding MB	AWG26	black		
Pin 8	Motor winding MC	AWG26	black		
Connector					
JST	PHR-8				
Connection O	(Sensorless)				
Pin 1	Motor winding MA	AWG26	yellow		
Pin 2	Motor winding MB	AWG26	green		
Pin 3	Motor winding MC	AWG26	blue		

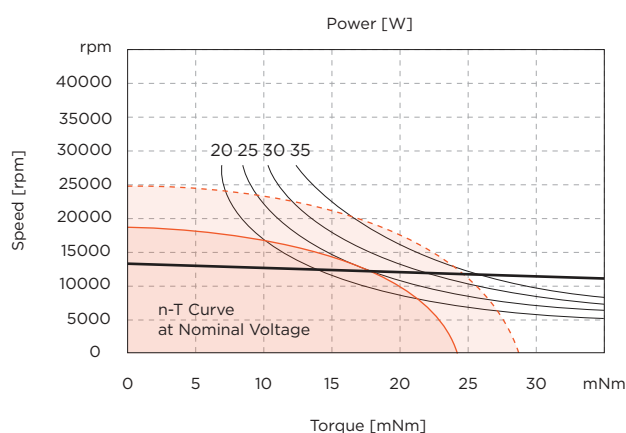
SVTN A 01-2845



Values	Unit	SVTN A 01	2845-12..	2845-24..	2845-36..	2845-48..
Nominal voltage	V		12	24	36	48
No load speed	rpm		13737	13756	13783	13400
No load current	mA		202	128	84	79
Nominal speed	rpm		12232	12342	12432	11903
Nominal torque	mNm		18	18	18	18
Nominal current	A		2,38	1,22	0,81	0,61
Stall torque	mNm		164	175	184	161
Stall current	A		20,1	10,8	7,5	4,9
Max. efficiency	%		81,0	79,4	80,0	76,1
Terminal resistance*	Ω		0,6	2,2	4,8	9,9
Terminal inductance*	mH		0,08	0,34	0,73	1,47
Torque constant	mNm/A		8,26	16,46	24,66	33,65
Speed constant	rpm/V		1156	580	387	284
Speed/torque gradient	rpm/mNm		83,6	78,6	75,0	83,1
Mechanical time constant	ms		4,5	4,3	4,1	4,5
Rotor inertia	gcm ²		5,19	5,19	5,19	5,19

Thermal resistance housing-ambient	9.6 K/W
Thermal resistance winding-housing	6.3 K/W
Thermal time constant winding	37 s
Thermal time constant motor	584 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	25000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	120 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

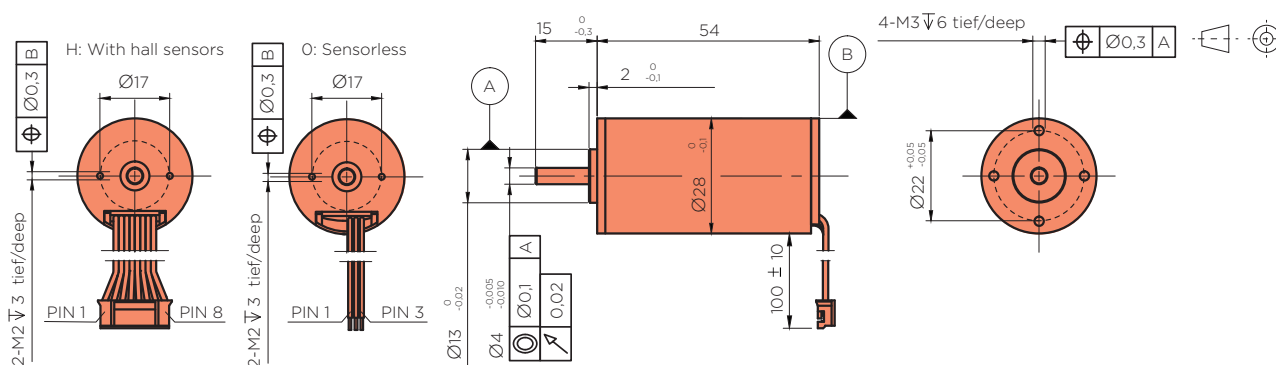
Connection

Connection H	(Sensor)	PVC	
Pin 1	Vhall 3-18 VDC	AWG26	black
Pin 2	Hall sensor HA	AWG26	black
Pin 3	Hall sensor HB	AWG26	black
Pin 4	Hall sensor HC	AWG26	black
Pin 5	GND	AWG26	black
Pin 6	Motor winding MA	AWG26	black
Pin 7	Motor winding MB	AWG26	black
Pin 8	Motor winding MC	AWG26	black
Connector			
JST	PHR-8		
Connection O	(Sensorless)		
Pin 1	Motor winding MA	AWG26	yellow
Pin 2	Motor winding MB	AWG26	green
Pin 3	Motor winding MC	AWG26	blue

Configuration

PERFORMANCE: Customized in the continuous operating range
 BALL BEARING: Preload
 FLANGE: Standard frange front&back/customize the frange
 SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
 LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
 CONNECTOR: JST/MOLEX/TE

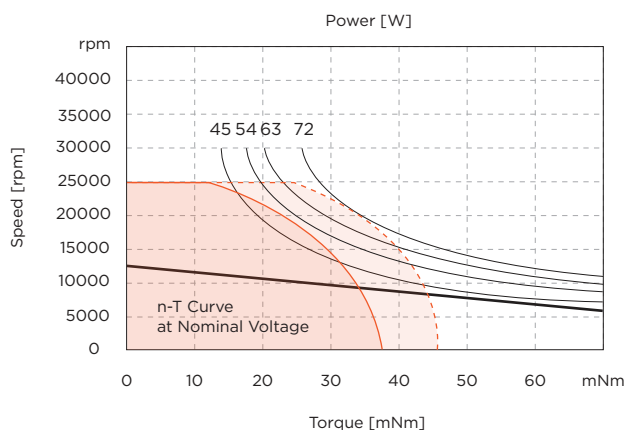
SVTN A 01-2854



Values	Unit	SVTN A 01	2854-12..	2854-24..	2854-36..	2854-48..
Nominal voltage	V	12	24	36	48	
No load speed	rpm	8031	8336	8175	8325	
No load current	mA	142	94	65	51	
Nominal speed	rpm	6646	7084	6891	6805	
Nominal torque	mNm	35	35	35	35	
Nominal current	A	2,62	1,38	0,91	0,70	
Stall torque	mNm	203	233	223	192	
Stall current	A	14,5	8,7	5,4	3,6	
Max. efficiency	%	81,2	80,3	79,3	77,6	
Terminal resistance*	Ω	0,8	2,8	6,6	13,4	
Terminal inductance*	mH	0,16	0,61	1,41	2,56	
Torque constant	mNm/A	14,13	27,19	41,55	54,28	
Speed constant	rpm/V	676	351	230	176	
Speed/torque gradient	rpm/mNm	39,6	35,8	36,7	43,4	
Mechanical time constant	ms	3,5	3,2	3,3	3,9	
Rotor inertia	gcm ²	8,50	8,50	8,50	8,50	

Thermal resistance housing-ambient	7,1 K/W
Thermal resistance winding-housing	5 K/W
Thermal time constant winding	51 s
Thermal time constant motor	552 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	25000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7,5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	156 g

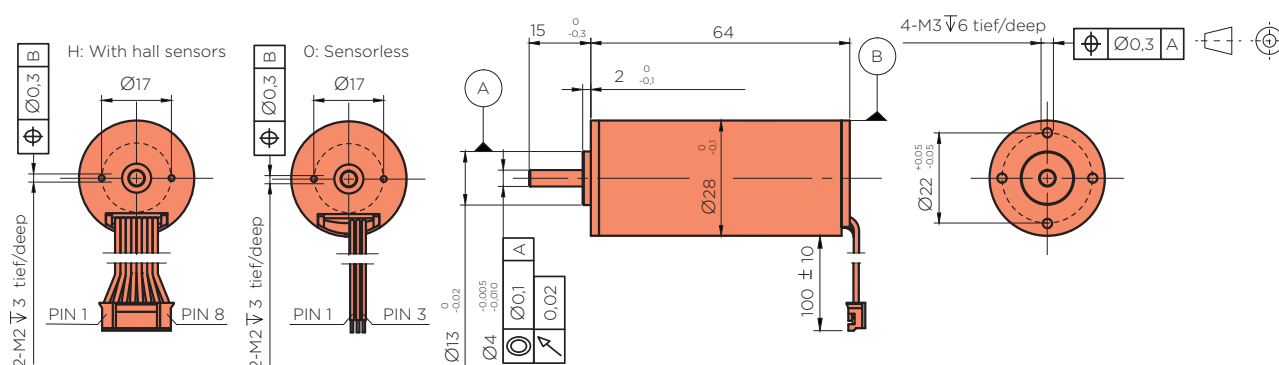
*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection	Configuration
Connection H (Sensor) PVC Pin 1 Vhall 3-18 VDC AWG26 black Pin 2 Hall sensor HA AWG26 black Pin 3 Hall sensor HB AWG26 black Pin 4 Hall sensor HC AWG26 black Pin 5 GND AWG26 black Pin 6 Motor winding MA AWG26 black Pin 7 Motor winding MB AWG26 black Pin 8 Motor winding MC AWG26 black Connector JST PHR-8 Connection O (Sensorless) Pin 1 Motor winding MA AWG26 yellow Pin 2 Motor winding MB AWG26 green Pin 3 Motor winding MC AWG26 blue	PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE

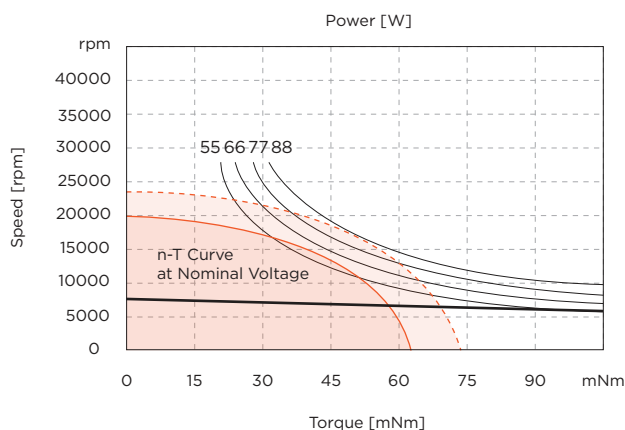
SVTN A 01-2864



Values	Unit	SVTN A 01			
		2864-12..	2864-24..	2864-36..	2864-48..
Nominal voltage	V	12	24	36	48
No load speed	rpm	7956	8014	8275	7960
No load current	mA	182	104	92	59
Nominal speed	rpm	6712	6840	7053	6782
Nominal torque	mNm	50	50	50	50
Nominal current	A	3,68	1,87	1,31	0,94
Stall torque	mNm	320	341	339	338
Stall current	A	22,6	12,1	8,3	6,0
Max. efficiency	%	82,8	82,3	80,1	81,1
Terminal resistance*	Ω	0,5	2,0	4,3	8,0
Terminal inductance*	mH	0,11	0,46	0,96	1,83
Torque constant	mNm/A	14,29	28,35	41,09	57,02
Speed constant	rpm/V	668	337	232	167
Speed/torque gradient	rpm/mNm	24,9	23,5	24,4	23,6
Mechanical time constant	ms	2,5	2,4	2,5	2,4
Rotor inertia	gcm ²	9.62	9.62	9.62	9.62

Thermal resistance housing-ambient	5.5 K/W
Thermal resistance winding-housing	4 K/W
Thermal time constant winding	56 s
Thermal time constant motor	521 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	25000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	195 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection

Connection H	(Sensor)	PVC
Pin 1	Vhall 3-18 VDC	AWG26 black
Pin 2	Hall sensor HA	AWG26 black
Pin 3	Hall sensor HB	AWG26 black
Pin 4	Hall sensor HC	AWG26 black
Pin 5	GND	AWG26 black
Pin 6	Motor winding MA	AWG26 black
Pin 7	Motor winding MB	AWG26 black
Pin 8	Motor winding MC	AWG26 black

Connector

JST PHR-8

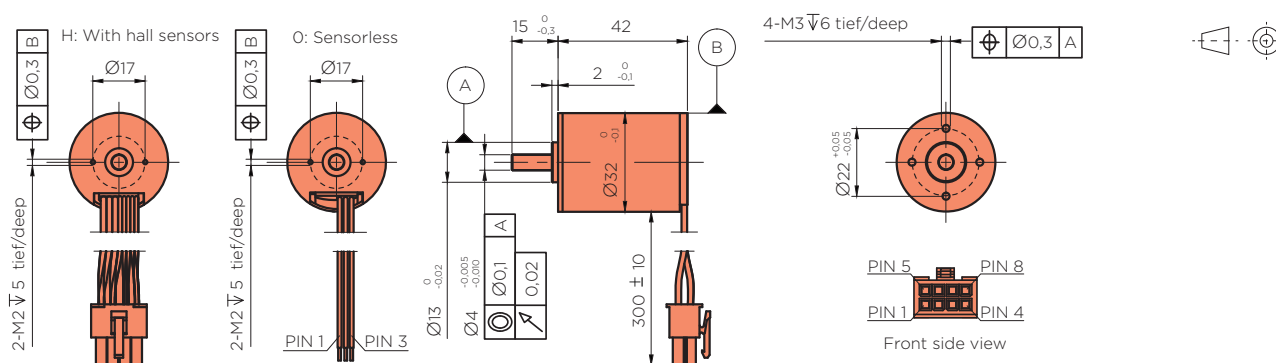
Connection O (Sensorless)

Pin 1	Motor winding MA	AWG26 yellow
Pin 2	Motor winding MB	AWG26 green
Pin 3	Motor winding MC	AWG26 blue

Configuration

PERFORMANCE: Customized in the continuous operating range
 BALL BEARING: Preload
 FLANGE: Standard frange front&back/customize the frange
 SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
 LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
 CONNECTOR: JST/MOLEX/TE

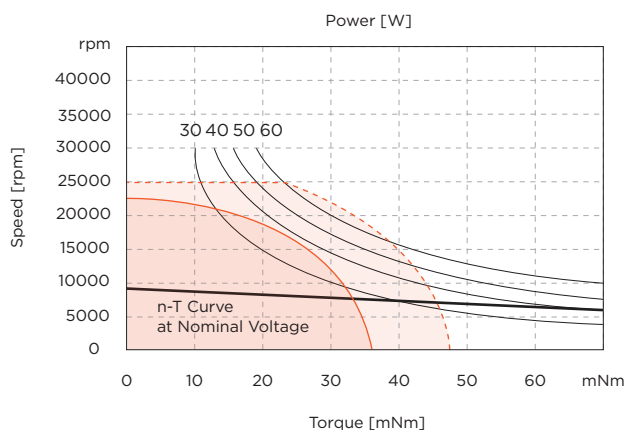
SVTN A 01-3242



Values	Unit	SVTN A 01	3242-12..	3242-24..	3242-36..	3242-48..
Nominal voltage	V		12	24	36	48
No load speed	rpm		9319	9516	9269	9389
No load current	mA		380	210	120	90
Nominal speed	rpm		8198	8364	8219	8124
Nominal torque	mNm		25	25	25	25
Nominal current	A		2,46	1,27	0,81	0,61
Stall torque	mNm		208	206	221	186
Stall current	A		17,6	9,0	6,2	4,0
Max. efficiency	%		72,8	71,8	74,1	72,2
Terminal resistance*	Ω		0,7	2,7	5,8	12,1
Terminal inductance*	mH		0,11	0,40	0,98	1,79
Torque constant	mNm/A		12,03	23,52	36,37	47,72
Speed constant	rpm/V		794	406	263	200
Speed/torque gradient	rpm/mNm		44,9	46,1	42,0	50,6
Mechanical time constant	ms		4,4	4,5	4,1	5,0
Rotor inertia	gcm ²		9,40	9,40	9,40	9,40

Thermal resistance housing-ambient	8.8 K/W
Thermal resistance winding-housing	2.7 K/W
Thermal time constant winding	23.5 s
Thermal time constant motor	560 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	25000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	147 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection	Configuration
Connection H (Sensor) PTFE Pin 1 Motor winding MB AWG20 green Pin 2 Vhall 3-18 VDC AWG26 red Pin 3 Hall sensor HA AWG26 yellow Pin 4 Hall sensor HC AWG26 blue Pin 5 Motor winding MA AWG20 yellow Pin 6 Motor winding MC AWG20 blue Pin 7 GND AWG26 black Pin 8 Hall sensor HB AWG26 green Connector Molex 39-01-2080 Connection O (Sensorless) PTFE Pin 1 Motor winding MA AWG20 yellow Pin 2 Motor winding MB AWG20 green Pin 3 Motor winding MC AWG20 blue	PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE

The technical drawing illustrates the H07VH-1 cable assembly in two views:

- Side View:** Shows the cable profile with a diameter of $\varnothing 17$. It details the outer jacket thickness ($\varnothing 0.3 \pm B$) and the internal conductor arrangement. Two configurations are shown: "H: With hall sensors" and "O: Sensorless". The sensorless version shows a central pin labeled PIN 1 and a ground pin labeled PIN 3.
- Front Side View:** A top-down view of the circular connector head. It features four pins arranged symmetrically around a central point. Dimensions include a total width of 60 mm, a distance of 15 mm from the edge to the first pin, and a pin-to-pin distance of 2 mm. Tolerances are specified as $+0/-0.3$ mm for the overall width and $+0/-0.1$ mm for the pin spacing. A depth dimension of 300 ± 10 mm is indicated for the main body. A secondary dimension of $15^{+0.02}_{-0.02}$ mm is shown near the base.

Additional specifications and symbols include:

- Cable type: 2-M2 V 5 tief/deep
- Pin configuration: PIN 5, PIN 8, PIN 1, PIN 4
- Material/Tolerance callouts: $\varnothing 0.3 \pm A$, $\varnothing 0.1$, $\varnothing 0.02$
- Surface finish: 4-M3 V6 tief/deep
- Geometric tolerance: $\varnothing 0.3 \pm A$

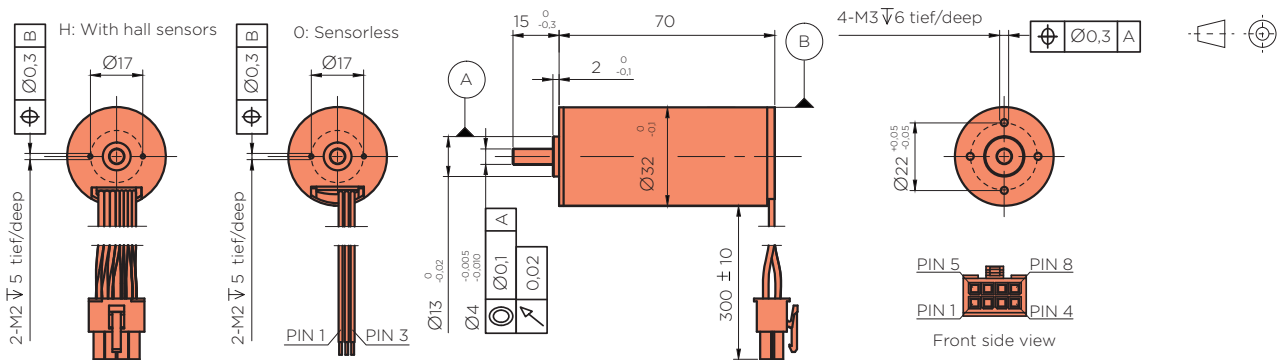
Thermal resistance housing-ambient	6 K/W
Thermal resistance winding-housing	3.2 K/W
Thermal time constant winding	36 s
Thermal time constant motor	626 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	25000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	217 g

The figure consists of two vertically stacked graphs sharing a common x-axis representing Torque in mNm, ranging from 0 to 140. The top graph's y-axis is Power in Watts [W], ranging from 0 to 40. It displays four solid curves for constant speeds of 60, 80, 100, and 120 rpm. The bottom graph's y-axis is Speed in rpm, ranging from 0 to 40,000. It displays the same four speed curves. A shaded orange region in the bottom graph, bounded by a solid line and a dashed line, is labeled 'n-T Curve at Nominal Voltage'.

Continuous operating range with Reduced Rth2 50%	Continuous operating range

PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE

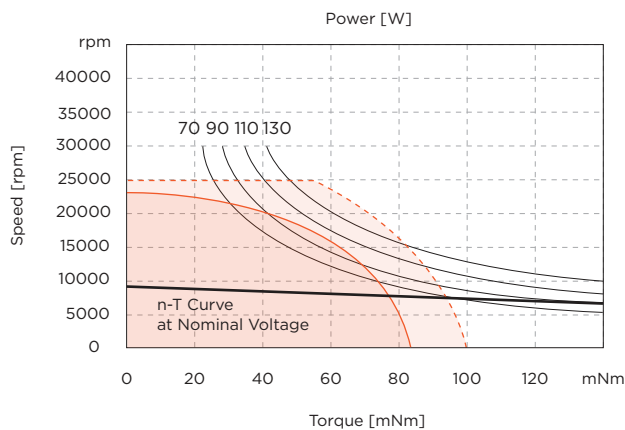
SVTN A 01-3270



Values	Unit	SVTN A 01	3270-12..	3270-24..	3270-36..	3270-48..
Nominal voltage	V		12	24	36	48
No load speed	rpm		8998	9055	9252	9080
No load current	mA		450	180	100	90
Nominal speed	rpm		7991	7963	8129	8077
Nominal torque	mNm		70	70	70	70
Nominal current	A		6,00	2,97	2,00	1,49
Stall torque	mNm		625	581	577	634
Stall current	A		50,0	23,3	15,7	12,7
Max. efficiency	%		81,9	83,2	84,7	83,9
Terminal resistance*	Ω		0,2	1,0	2,3	3,8
Terminal inductance*	mH		0,09	0,35	0,75	1,33
Torque constant	mNm/A		12,62	25,11	36,92	50,12
Speed constant	rpm/V		757	380	259	191
Speed/torque gradient	rpm/mNm		14,4	15,6	16,0	14,3
Mechanical time constant	ms		2,8	3,0	3,1	2,8
Rotor inertia	gcm ²		18,52	18,52	18,52	18,52

Thermal resistance housing-ambient	4.7 K/W
Thermal resistance winding-housing	2.9 K/W
Thermal time constant winding	38 s
Thermal time constant motor	568 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	25000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	256 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection

Connection H	(Sensor)	PTFE
Pin 1	Motor winding MB	AWG20 green
Pin 2	Vhall 3-18 VDC	AWG26 red
Pin 3	Hall sensor HA	AWG26 yellow
Pin 4	Hall sensor HC	AWG26 blue
Pin 5	Motor winding MA	AWG20 yellow
Pin 6	Motor winding MC	AWG20 blue
Pin 7	GND	AWG26 black
Pin 8	Hall sensor HB	AWG26 green
Connector		
Molex	39-01-2080	
Connection O	(Sensorless)	PTFE
Pin 1	Motor winding MA	AWG20 yellow
Pin 2	Motor winding MB	AWG20 green
Pin 3	Motor winding MC	AWG20 blue

Configuration

PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE

CORELESS
BRUSHLESS



CORELESS
BRUSHLESS

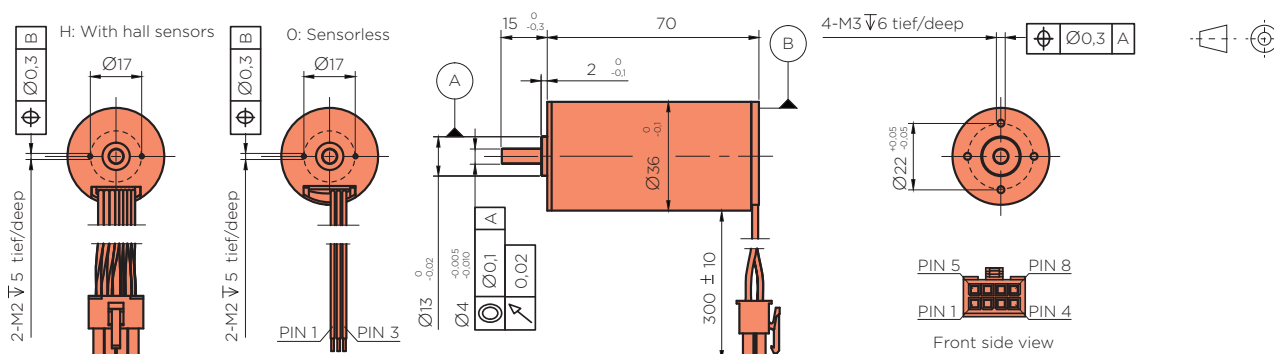
CORELESS
BRUSHLESS

CORELESS
BRUSHLESS



CORELESS
BRUSHLESS

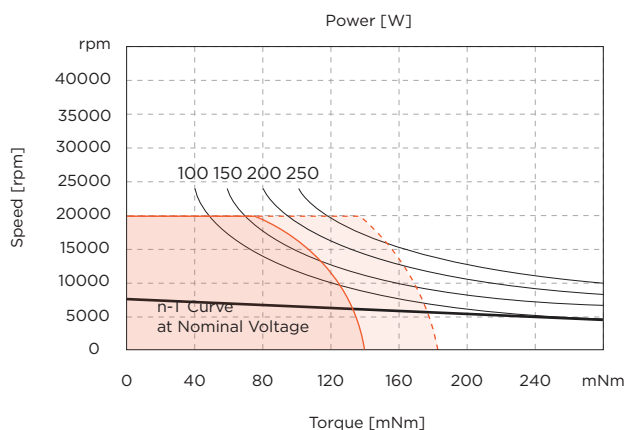
SVTN A 01-3670



Values	Unit	SVTN A 01			
		3670-12..	3670-24..	3670-36..	3670-48..
Nominal voltage	V	12	24	36	48
No load speed	rpm	6578	6555	6675	6545
No load current	mA	293	137	101	78
Nominal speed	rpm	5300	5391	5455	5401
Nominal torque	mNm	120	120	120	120
Nominal current	A	7,24	3,59	2,45	1,81
Stall torque	mNm	618	676	657	687
Stall current	A	36,0	19,6	12,9	10,0
Max. efficiency	%	82,8	84,0	83,1	83,1
Terminal resistance*	Ω	0,3	1,2	2,8	4,8
Terminal inductance*	mH	0,09	0,38	0,85	1,52
Torque constant	mNm/A	17,28	34,72	51,10	69,48
Speed constant	rpm/V	553	275	187	137
Speed/torque gradient	rpm/mNm	10,7	9,7	10,2	9,5
Mechanical time constant	ms	2,4	2,2	2,3	2,1
Rotor inertia	gcm ²	21,50	21,50	21,50	21,50

Thermal resistance housing-ambient	3.5 K/W
Thermal resistance winding-housing	0.9 K/W
Thermal time constant winding	14.3 s
Thermal time constant motor	558 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	20000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	331 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection

Connection H	(Sensor)	PTFE
Pin 1	Motor winding MB	AWG20 green
Pin 2	Vhall 3-18 VDC	AWG26 red
Pin 3	Hall sensor HA	AWG26 yellow
Pin 4	Hall sensor HC	AWG26 blue
Pin 5	Motor winding MA	AWG20 yellow
Pin 6	Motor winding MC	AWG20 blue
Pin 7	GND	AWG26 black
Pin 8	Hall sensor HB	AWG26 green

Connector

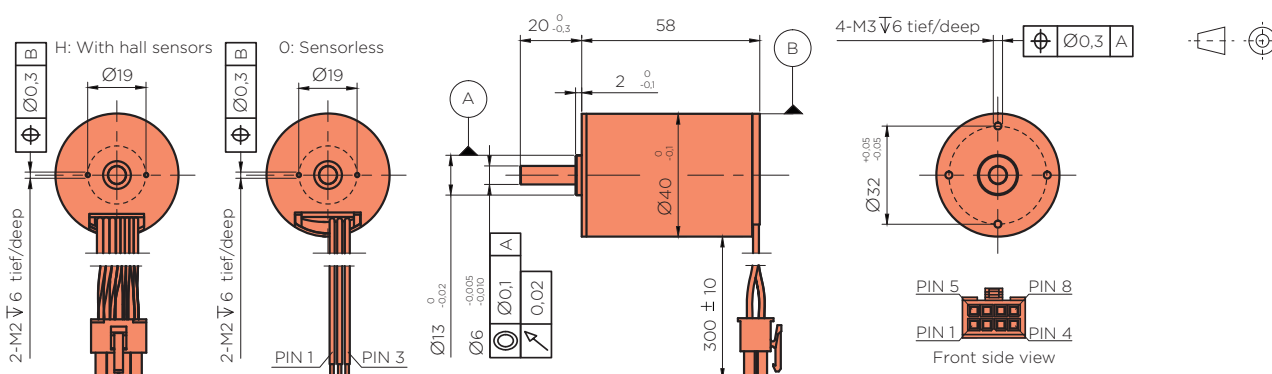
Molex 39-01-2080

Connection O	(Sensorless)	PTFE
Pin 1	Motor winding MA	AWG20 yellow
Pin 2	Motor winding MB	AWG20 green
Pin 3	Motor winding MC	AWG20 blue

Configuration

PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE

SVTN A 01-4058

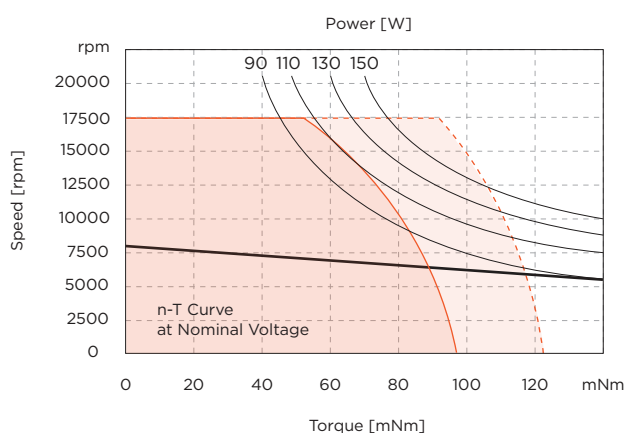


CORELESS
BRUSHLESS

Values	Unit	SVTN A 01			
		4058-12..	4058-24..	4058-36..	4058-48..
Nominal voltage	V	12	24	36	48
No load speed	rpm	7958	7890	7962	8001
No load current	mA	480	200	170	110
Nominal speed	rpm	7000	6912	6943	6986
Nominal torque	mNm	85	85	85	85
Nominal current	A	6,44	3,15	2,16	1,61
Stall torque	mNm	706	686	664	670
Stall current	A	50,0	24,0	15,7	11,9
Max. efficiency	%	81,4	82,6	80,3	81,7
Terminal resistance*	Ω	0,2	1,0	2,3	4,0
Terminal inductance*	mH	0,11	0,46	0,97	1,67
Torque constant	mNm/A	14,26	28,81	42,71	56,76
Speed constant	rpm/V	670	332	224	168
Speed/torque gradient	rpm/mNm	11,3	11,5	12,0	11,9
Mechanical time constant	ms	3,5	3,6	3,7	3,7
Rotor inertia	gcm ²	29,62	29,62	29,62	29,62

Thermal resistance housing-ambient	4.7 K/W
Thermal resistance winding-housing	2.2 K/W
Thermal time constant winding	35 s
Thermal time constant motor	777 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	17500 rpm
Radial play	preloaded
Max. axial load (dynamic)	9 N
Max. force for press fits (static)	170 N
Max. radial loading, 5mm from flange	80 N
Number of pole pairs	1
Number of phases	3
Weight of motor	338 g

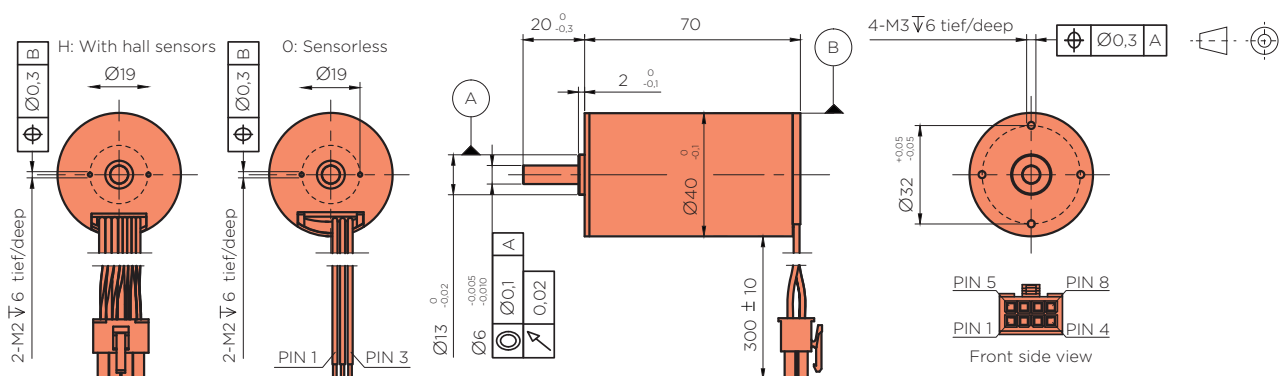
*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range
with Reduced Rth2 50%

Connection				Configuration	
Connection H	(Sensor)	PTFE		PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE	
Pin 1	Motor winding MB	AWG20	green		
Pin 2	Vhall 3-18 VDC	AWG26	red		
Pin 3	Hall sensor HA	AWG26	yellow		
Pin 4	Hall sensor HC	AWG26	blue		
Pin 5	Motor winding MA	AWG20	yellow		
Pin 6	Motor winding MC	AWG20	blue		
Pin 7	GND	AWG26	black		
Pin 8	Hall sensor HB	AWG26	green		
Connector					
Molex	39-01-2080				
Connection O	(Sensorless)	PTFE			
Pin 1	Motor winding MA	AWG20	yellow		
Pin 2	Motor winding MB	AWG20	green		
Pin 3	Motor winding MC	AWG20	blue		

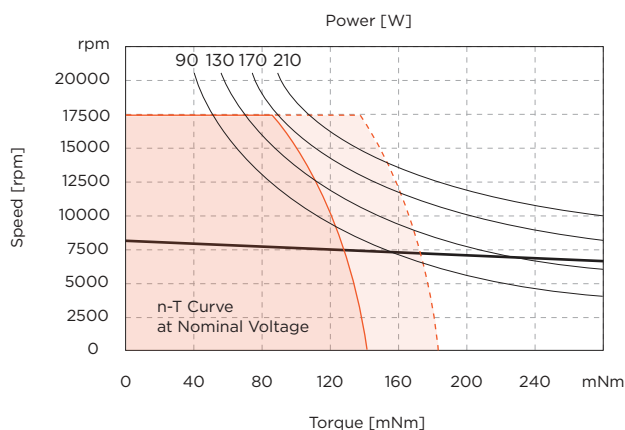
SVTN A 01-4070



Values	Unit	SVTN A 01	4070-12..	4070-24..	4070-36..	4070-48..
Nominal voltage	V	12	24	36	48	
No load speed	rpm	6154	8102	8113	8061	
No load current	mA	264	200	190	130	
Nominal speed	rpm	5084	7304	7266	7238	
Nominal torque	mNm	130	130	130	130	
Nominal current	A	7,29	4,82	3,28	2,43	
Stall torque	mNm	748	1320	1245	1273	
Stall current	A	40,7	47,1	29,8	22,6	
Max. efficiency	%	84,5	87,4	84,7	85,4	
Terminal resistance*	Ω	0,3	0,5	1,2	2,1	
Terminal inductance*	mH	0,11	0,30	0,66	1,20	
Torque constant	mNm/A	18,50	28,17	42,10	56,54	
Speed constant	rpm/V	516	339	227	169	
Speed/torque gradient	rpm/mNm	8,2	6,1	6,5	6,3	
Mechanical time constant	ms	3,4	2,5	2,7	2,6	
Rotor inertia	gcm ²	39,43	39,43	39,43	39,43	

Thermal resistance housing-ambient	3.8 K/W
Thermal resistance winding-housing	1.5 K/W
Thermal time constant winding	33 s
Thermal time constant motor	775 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	17500 rpm
Radial play	preloaded
Max. axial load (dynamic)	9 N
Max. force for press fits (static)	170 N
Max. radial loading, 5mm from flange	80 N
Number of pole pairs	1
Number of phases	3
Weight of motor	415 g

*The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection

Connection H	(Sensor)	PTFE
Pin 1	Motor winding MB	AWG20 green
Pin 2	Vhall 3-18 VDC	AWG26 red
Pin 3	Hall sensor HA	AWG26 yellow
Pin 4	Hall sensor HC	AWG26 blue
Pin 5	Motor winding MA	AWG20 yellow
Pin 6	Motor winding MC	AWG20 blue
Pin 7	GND	AWG26 black
Pin 8	Hall sensor HB	AWG26 green

Connector

Molex 39-01-2080

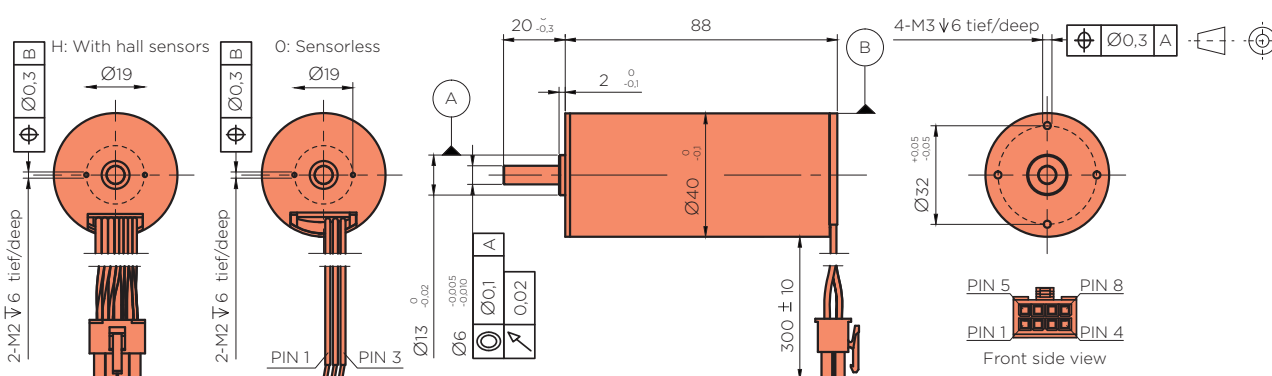
Connection O

Pin 1	Motor winding MA	AWG20	yellow
Pin 2	Motor winding MB	AWG20	green
Pin 3	Motor winding MC	AWG20	blue

Configuration

PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE

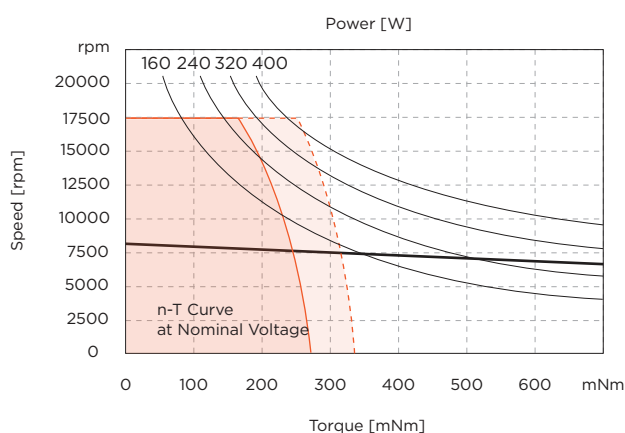
SVTN A 01-4088



Values	Unit	SVTN A 01		
		4088-24..	4088-36..	4088-48..
Nominal voltage	V	24	36	48
No load speed	rpm	7921	8032	8081
No load current	mA	440	290	200
Nominal speed	rpm	7299	7379	7452
Nominal torque	mNm	200	200	200
Nominal current	A	7,39	4,99	3,74
Stall torque	mNm	2546	2460	2570
Stall current	A	88,9	58,1	45,7
Max. efficiency	%	86,4	86,4	87,2
Terminal resistance*	Ω	0,3	0,6	1,1
Terminal inductance*	mH	0,18	0,38	0,78
Torque constant	mNm/A	28,79	42,59	56,47
Speed constant	rpm/V	332	224	169
Speed/torque gradient	rpm/mNm	3,1	3,3	3,1
Mechanical time constant	ms	1,8	1,9	1,8
Rotor inertia	gcm²	54,14	54,14	54,14

Thermal resistance housing-ambient	3.0 K/W
Thermal resistance winding-housing	0.6 K/W
Thermal time constant winding	48 s
Thermal time constant motor	996 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	17500 rpm
Radial play	preloaded
Max. axial load (dynamic)	9 N
Max. force for press fits (static)	170 N
Max. radial loading, 5mm from flange	80 N
Number of pole pairs	1
Number of phases	3
Weight of motor	571 g

*The diagram based on ambient temperature of 25°.



Connection	Configuration
Connection H (Sensor) PTFE Pin 1 Motor winding MB AWG20 green Pin 2 Vhall 3-18 VDC AWG26 red Pin 3 Hall sensor HA AWG26 yellow Pin 4 Hall sensor HC AWG26 blue Pin 5 Motor winding MA AWG20 yellow Pin 6 Motor winding MC AWG20 blue Pin 7 GND AWG26 black Pin 8 Hall sensor HB AWG26 green Connector Molex 39-01-2080 Connection O (Sensorless) PTFE Pin 1 Motor winding MA AWG20 yellow Pin 2 Motor winding MB AWG20 green Pin 3 Motor winding MC AWG20 blue	PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE

SVTN A 02 Series

Coreless BLDC motor
2 Pole High-Speed Brushless DC Motors

Contents

[illegible]

SVTN A 02

Slotless BLDC motor
2 Pole High-Speed Brushless DC Motors



HIGH-SPEED



LOW-NOISE



COST-EFFECTIVE

Typically employed in the medical field for surgical tools, these motors merge the SVTN A Series characteristics to a optimized project for high-speed functions.

Thanks to a precise balancing of the rotor and the use of special bearings, maximum stability and low noise are guaranteed.

Benefits

High-speed

Long lifespan

Cost-effective

Low inertia

High efficiency

Low noise

High reliability

Product code

SVTN A 02 ○○◇◇ - □□ - ◇ - ◇☆☆

A Series

02 Brushless DC Motors

○ Diameter

◇ Length

□ Nominal Voltage

◇ Shaft
Single shaft [S]; Double shaft [D]◇ Sensor
Sensorless [0]; Hall sensor [H]

☆☆ Customizations

Features

Winding	3 phase
Operating temperature	-30° +100° C
Connectors	JST PHR-8 1636; 1644; 1656; 2040
Magnets	Neodymium
Design technology	Coreless winding system
Estimated operating lifetime	Lifetime depends on motor working conditions. It can reach 20.000 hours under optimal conditions.

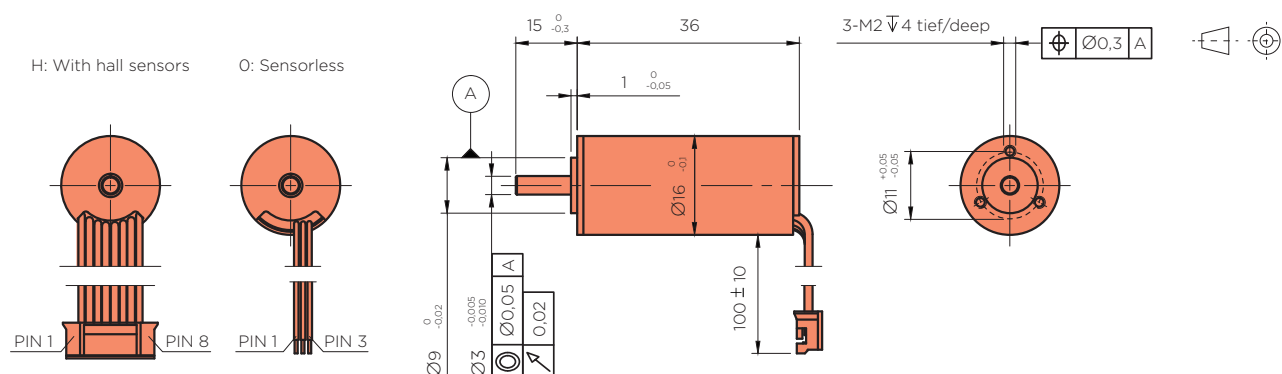
Feedback

Hall Sensor (standard)

Customizations

Flange	Shape
Shaft	Length/Diameter/D-Cut
Leadwire	PVC/Silicon/Teflon/UL No/Dimension/length
Connector	JST

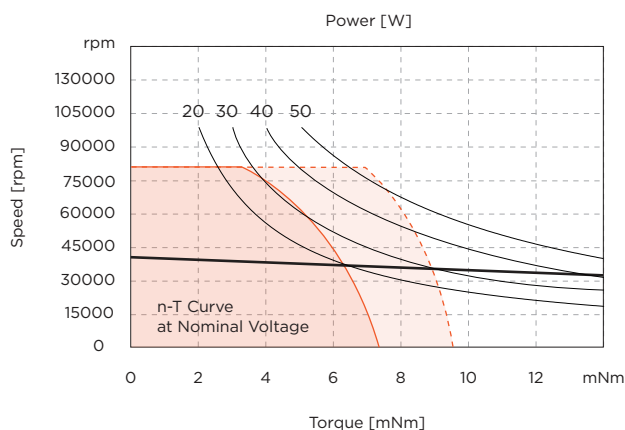
SVTN A 02 1636



Values	Unit	SVTN A 02	1636-24..	1636-30..	1636-36..
Nominal voltage	V	24	30	36	
No load speed	rpm	40273	40225	40760	
No load current	mA	90	77	72	
Nominal speed	rpm	37067	36958	37406	
Nominal torque	mNm	5	5	5	
Nominal current	A	0,98	0,79	0,67	
Stall torque	mNm	62,8	61,6	60,8	
Stall current	A	11,2	8,8	7,3	
Max. efficiency	%	82,9	82,2	81,2	
Terminal resistance*	Ω	2,14	3,41	4,9	
Terminal inductance*	mH	0,11	0,17	0,24	
Torque constant	mNm/A	5,65	7,06	8,35	
Speed constant	rpm/V	1692	1353	1143	
Speed/torque gradient	rpm/mNm	641	653	671	
Mechanical time constant	ms	3,7	3,8	3,9	
Rotor inertia	gcm ²	0,55	0,55	0,55	

Thermal resistance housing-ambient	18.6 K/W
Thermal resistance winding-housing	3.44 K/W
Thermal time constant winding	6 s
Thermal time constant motor	298 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	80000 rpm
Radial play	preloaded
Max. axial load (dynamic)	2.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	11 N
Number of pole pairs	1
Number of phases	3
Weight of motor	32 g

The diagram based on ambient temperature of 25°.



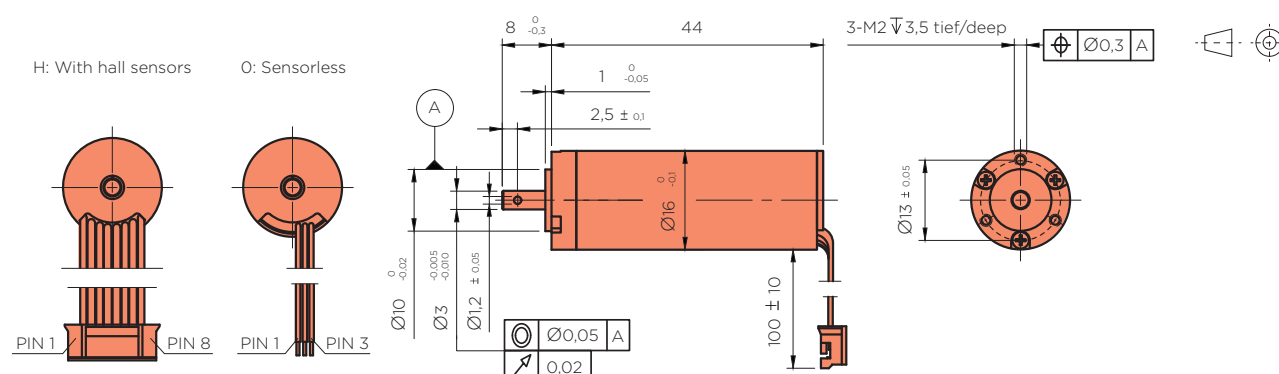
Connection

Connection H	(Sensor)	PVC	
Pin 1	Vhall 3-18 VDC	AWG26	black
Pin 2	Hall sensor HA	AWG26	black
Pin 3	Hall sensor HB	AWG26	black
Pin 4	Hall sensor HC	AWG26	black
Pin 5	GND	AWG26	black
Pin 6	Motor winding MA	AWG26	black
Pin 7	Motor winding MB	AWG26	black
Pin 8	Motor winding MC	AWG26	black
Connector			
JST	PHR-8		
Connection O	(Sensorless)		
Pin 1	Motor winding MA	AWG26	yellow
Pin 2	Motor winding MB	AWG26	green
Pin 3	Motor winding MC	AWG26	blue

Configuration

PERFORMANCE: Customized in the continuous operating range
 BALL BEARING: Preload
 FLANGE: Standard frange front&back/customize the frange
 SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft
 LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
 CONNECTOR: JST/MOLEX/TE

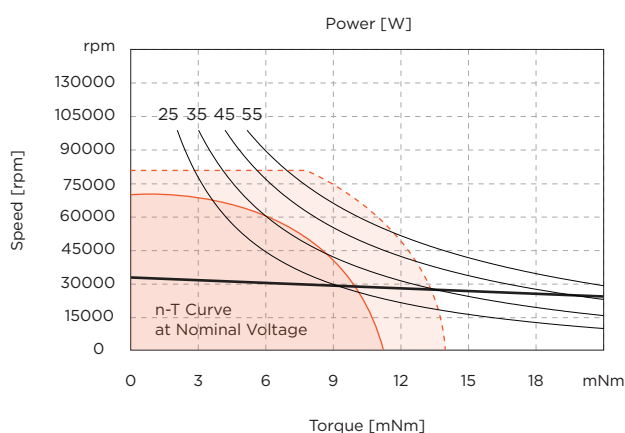
SVTN A 02 1644



Values	Unit	SVTN A 02		
		1644-24..	1644-30..	1644-36..
Nominal voltage	V	24	30	36
No load speed	rpm	30580	30900	30160
No load current	mA	95	80	76
Nominal speed	rpm	28134	28403	27632
Nominal torque	mNm	7,5	7,5	7,5
Nominal current	A	1,1	0,9	0,74
Stall torque	mNm	93,8	92,8	89,5
Stall current	A	12,7	10,2	8,0
Max. efficiency	%	83,4	83,0	81,5
Terminal resistance*	Ω	1,9	3,0	4,5
Terminal inductance*	mH	0,12	0,19	0,28
Torque constant	mNm/A	7,44	9,20	11,29
Speed constant	rpm/V	1284	1038	846
Speed/torque gradient	rpm/mNm	326	333	337
Mechanical time constant	ms	2,8	2,9	2,9
Rotor inertia	gcm ²	0,82	0,82	0,82

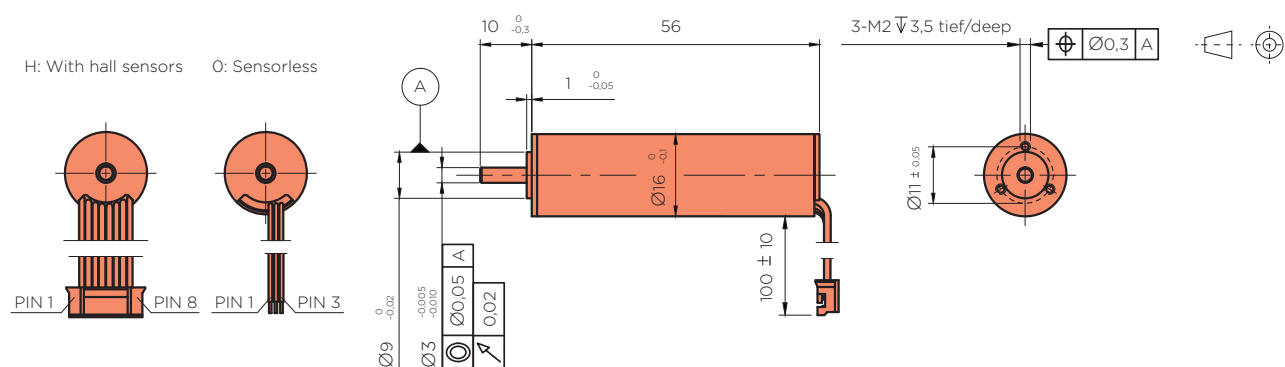
Thermal resistance housing-ambient	16.2 K/W
Thermal resistance winding-housing	3.5 K/W
Thermal time constant winding	4 s
Thermal time constant motor	339 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	80000 rpm
Radial play	preloaded
Max. axial load (dynamic)	2.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	11 N
Number of pole pairs	1
Number of phases	3
Weight of motor	43g

The diagram based on ambient temperature of 25°.



Connection	Configuration
Connection H (Sensor) PVC Pin 1 Vhall 3-18 VDC AWG26 black Pin 2 Hall sensor HA AWG26 black Pin 3 Hall sensor HB AWG26 black Pin 4 Hall sensor HC AWG26 black Pin 5 GND AWG26 black Pin 6 Motor winding MA AWG26 black Pin 7 Motor winding MB AWG26 black Pin 8 Motor winding MC AWG26 black Connector JST PHR-8 Connection O (Sensorless) Pin 1 Motor winding MA AWG26 yellow Pin 2 Motor winding MB AWG26 green Pin 3 Motor winding MC AWG26 blue	PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE

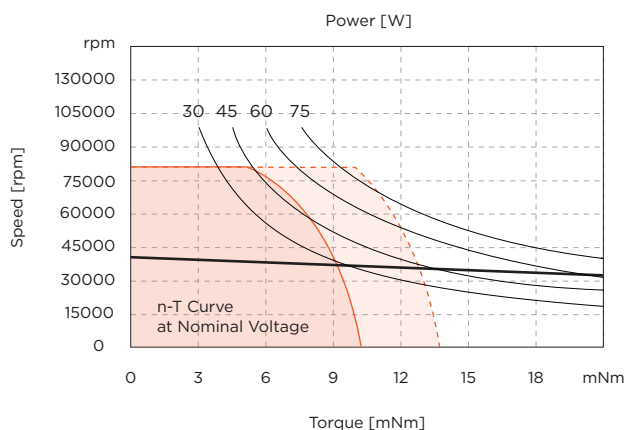
SVTN A 02 1656



Values	Unit	SVTN A 02		
		1656-24..	1656-30..	1656-36..
Nominal voltage	V	24	30	36
No load speed	rpm	41670	40775	41311
No load current	mA	103	89	79
Nominal speed	rpm	39232	38438	38898
Nominal torque	mNm	6	6	6
Nominal current	A	1,2	0,95	0,8
Stall torque	mNm	103	105	103
Stall current	A	18,9	15,1	12,5
Max. efficiency	%	85,8	85,2	84,7
Terminal resistance*	Ω	1,27	1,99	2,88
Terminal inductance*	mH	0,09	0,14	0,20
Torque constant	mNm/A	5,47	6,98	8,27
Speed constant	rpm/V	1746	1367	1155
Speed/torque gradient	rpm/mNm	406	390	402
Mechanical time constant	ms	2,6	2,5	2,6
Rotor inertia	gcm ²	0,61	0,61	0,61

Thermal resistance housing-ambient	16.2 K/W
Thermal resistance winding-housing	1.9 K/W
Thermal time constant winding	5 s
Thermal time constant motor	397 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	80000 rpm
Radial play	preloaded
Max. axial load (dynamic)	2.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	11 N
Number of pole pairs	1
Number of phases	3
Weight of motor	50 g

The diagram based on ambient temperature of 25°.

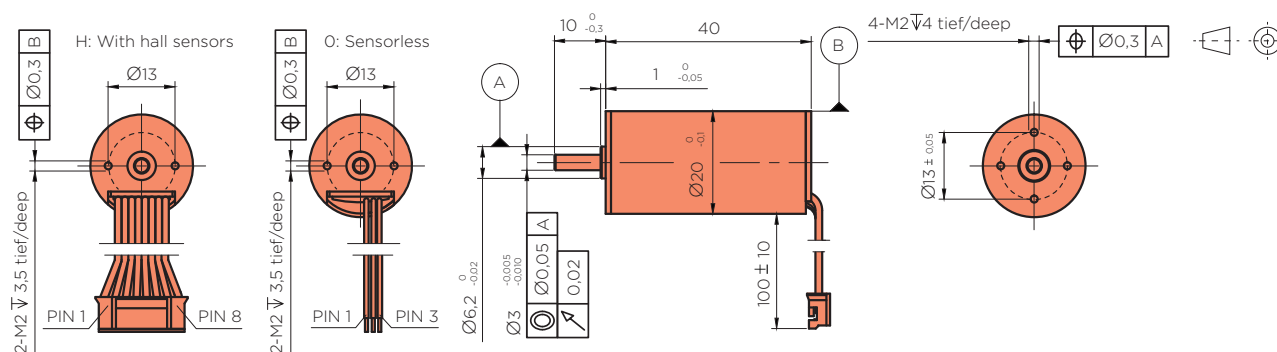


Continuous operating range
with Reduced Rth2 50%

Connection	Configuration
Connection H (Sensor) PVC Pin 1 Vhall 3-18 VDC AWG26 black Pin 2 Hall sensor HA AWG26 black Pin 3 Hall sensor HB AWG26 black Pin 4 Hall sensor HC AWG26 black Pin 5 GND AWG26 black Pin 6 Motor winding MA AWG26 black Pin 7 Motor winding MB AWG26 black Pin 8 Motor winding MC AWG26 black Connector JST PHR-8 Connection O (Sensorless) Pin 1 Motor winding MA AWG26 yellow Pin 2 Motor winding MB AWG26 green Pin 3 Motor winding MC AWG26 blue	PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE

Continuous operating range

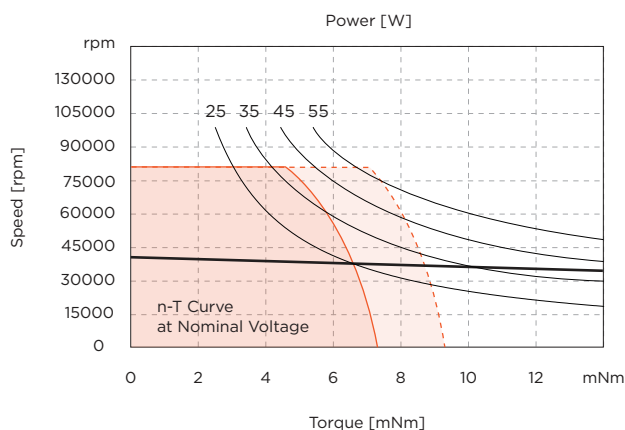
SVTN A 02 2040



Values	Unit	SVTN A 02 2040-24..	2040-30..	2040-36..
Nominal voltage	V	24	30	36
No load speed	rpm	41392	40700	40020
No load current	mA	69	60	55
Nominal speed	rpm	37500	36777	36049
Nominal torque	mNm	6,3	6,3	6,3
Nominal current	A	1,21	0,96	0,79
Stall torque	mNm	67	65	63
Stall current	A	12,2	9,4	7,5
Max. efficiency	%	85,5	84,7	83,6
Terminal resistance*	Ω	1,96	3,19	4,80
Terminal inductance*	mH	0,21	0,47	0,47
Torque constant	mNm/A	5,51	6,99	8,53
Speed constant	rpm/V	1734	1365	1120
Speed/torque gradient	rpm/mNm	617,8	622,8	630,4
Mechanical time constant	ms	4,5	4,5	4,6
Rotor inertia	gcm ²	0,69	0,69	0,69

Thermal resistance housing-ambient	18.7 K/W
Thermal resistance winding-housing	1.9 K/W
Thermal time constant winding	5 s
Thermal time constant motor	397 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	80000 rpm
Radial play	preloaded
Max. axial load (dynamic)	2.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	11 N
Number of pole pairs	1
Number of phases	3
Weight of motor	53 g

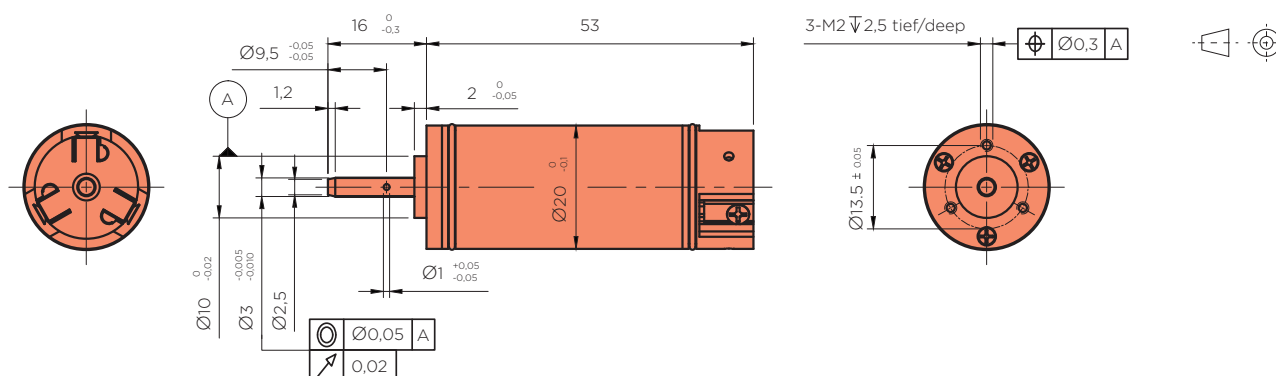
The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection	Configuration
Connection H (Sensor) PVC Pin 1 Vhall 3-18 VDC AWG26 black Pin 2 Hall sensor HA AWG26 black Pin 3 Hall sensor HB AWG26 black Pin 4 Hall sensor HC AWG26 black Pin 5 GND AWG26 black Pin 6 Motor winding MA AWG26 black Pin 7 Motor winding MB AWG26 black Pin 8 Motor winding MC AWG26 black Connector JST PHR-8 Connection O (Sensorless) Pin 1 Motor winding MA AWG26 yellow Pin 2 Motor winding MB AWG26 green Pin 3 Motor winding MC AWG26 blue	PERFORMANCE: Customized in the continuous operating range BALL BEARING: Preload FLANGE: Standard frange front&back/customize the frange SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length CONNECTOR: JST/MOLEX/TE

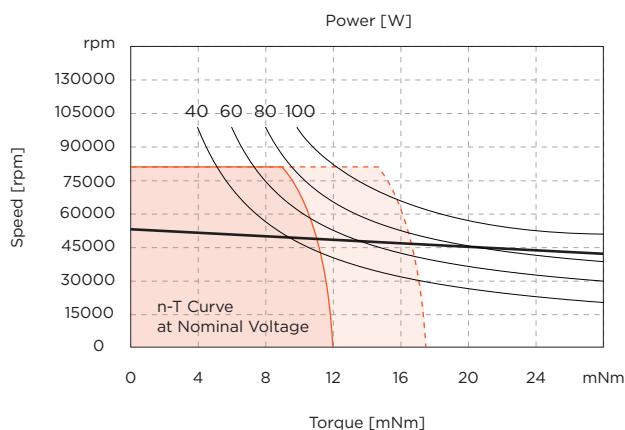
SVTN A 02 2053



Values	Unit	SVTN A 02	2053-18..	2053-24..	2053-36..	2053-48..
Nominal voltage	V		18	24	36	48
No load speed	rpm		50202	50832	51448	50700
No load current	mA		136	107	81	68
Nominal speed	rpm		45684	46379	46936	46188
Nominal torque	mNm		10	10	10	10
Nominal current	A		3,07	2,33	1,58	1,18
Stall torque	mNm		111	114	114	112
Stall current	A		32,7	25,5	17,2	12,6
Max. efficiency	%		87,5	87,5	86,8	85,8
Terminal resistance*	Ω		0,55	0,94	2,09	3,82
Terminal inductance*	mH		0,06	0,10	0,23	0,38
Torque constant	mNm/A		3,41	4,49	6,65	8,99
Speed constant	rpm/V		2801	2127	1436	1062
Speed/torque gradient	rpm/mNm		452	445	451	451
Mechanical time constant	ms		3,9	3,9	3,9	3,9
Rotor inertia	gcm ²		0,83	0,83	0,83	0,83

Thermal resistance housing-ambient	11.8 K/W
Thermal resistance winding-housing	0.8 K/W
Thermal time constant winding	2 s
Thermal time constant motor	386 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	80000 rpm
Radial play	preloaded
Max. axial load (dynamic)	2.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	11 N
Number of pole pairs	1
Number of phases	3
Weight of motor	63 g

The diagram based on ambient temperature of 25°.



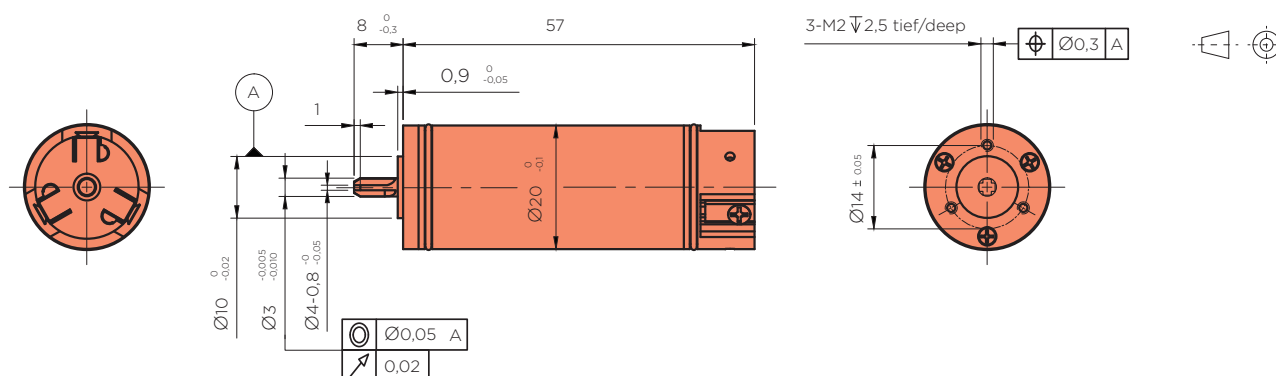
Connection

Connection
Special connector
Please contact sales engineer

Configuration

PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard flange front&back/customize the flange
SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft

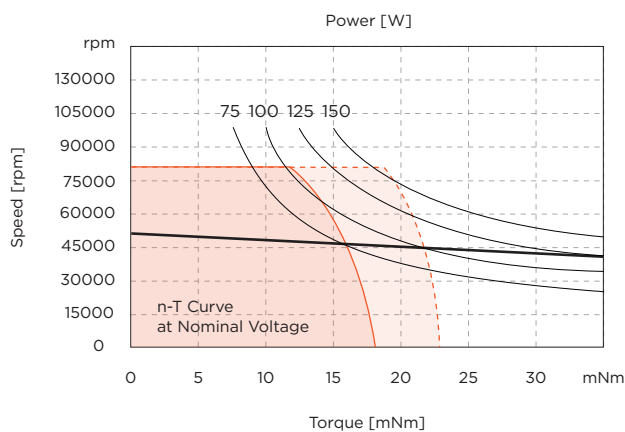
SVTN A 02 2057



Values	Unit	SVTN A 02			
		2057-18..	2057-24..	2057-36..	2057-48..
Nominal voltage	V	18	24	36	48
No load speed	rpm	50202	50832	51286	50700
No load current	mA	210	158	113	94
Nominal speed	rpm	46263	46714	47328	46436
Nominal torque	mNm	15	15	15	15
Nominal current	A	4,61	3,50	2,36	1,76
Stall torque	mNm	191	185	194	178
Stall current	A	56,3	41,4	29,2	19,9
Max. efficiency	%	88,2	88,0	87,9	86,7
Terminal resistance*	Ω	0,32	0,58	1,23	2,41
Terminal inductance*	mH	0,04	0,06	0,14	0,25
Torque constant	mNm/A	3,41	4,49	6,68	9
Speed constant	rpm/V	2799	2126	1430	1061
Speed/torque gradient	rpm/mNm	263	275	264	284
Mechanical time constant	ms	2,5	2,6	2,5	2,7
Rotor inertia	gcm ²	0,91	0,91	0,91	0,91

Thermal resistance housing-ambient	7,6 K/W
Thermal resistance winding-housing	1,6 K/W
Thermal time constant winding	5 s
Thermal time constant motor	410 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	80000 rpm
Radial play	preloaded
Max. axial load (dynamic)	2,5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	11 N
Number of pole pairs	1
Number of phases	3
Weight of motor	69 g

The diagram based on ambient temperature of 25°.



Connection

Connection
Special connector
Please contact sales engineer

Configuration

PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard flange front&back/customize the flange
SHAFT: Length/Diameter/Cut face/double shaft/hollow shaft

SVTN A 03 Series

Coreless BLDC motors

2 Pole Brushless DC Motors with Integrated Electronics

WITH INTEGRATED
ELECTRONICS

WITH INTEGRATED
ELECTRONICS

SVTN A 03

Coreless BLDC motor

2 Pole Brushless DC Motors with Integrated Electronics



EASY-TO-USE



LONG SERVICE LIFE



COST-EFFECTIVE

The benefits of this build technology join the simplicity of use of a brushed DC motor with the longevity of a brushless motor, maintaining cost-effectiveness and ease of integration.

The lack of cogging is typical of the coreless motors and guarantees a reduce ripple torque, a linear correlation between torque, speed and low inertia.

The miniaturization of the electronics allows to maintain the diameter of the motor unvaried with a slight increase in length.

Benefits

Long lifetime

High efficiency

Low noise

High reliability

No cogging

Low inertia

Cost-effective

Product code

SVTN A 03 ○○◇◇ - □□ - ◇ - ◇☆☆

A Series

03 Brushless DC Motors

○ Diameter

◇ Length

□ Voltage

◇ Shaft
Single shaft [S]; Double shaft [D]◇ Direction of rotation
CW [0]; CCW [1]

☆☆ Customizations

Features

Winding	3 phase (2-wires DC regulated)
Operating temperature	-30° +100° C
Connectors	Flying leads or JST* or MOLEX*
Magnets	Neodymium
Construction technology	Coreless winding system
Estimated operating lifetime	Lifetime depends on motor working conditions. It can reach 20.000 work hours under optimal conditions (almost 100 hours under extreme conditions).

Customizations

Flange	Shape
Shaft	Length/Diameter/D-Cut
Leadwire	PVC/Silicon/Teflon/UL No/Dimension/length
Connector	JST/MOLEX

*Optional

Technical drawing of a mechanical part, showing three views: front view, side view, and top view.

Front View: A cylindrical part with a diameter of $\varnothing 12$ and a length of 150 ± 10 . The drawing includes a section line A-A and a table of properties.

Side View: A cross-section of the part with a diameter of $\varnothing 5$ and a length of 28 . The drawing includes a section line A-A and a table of properties.

Top View: A circular cross-section with a diameter of $\varnothing 8,5$ and a central hole with a diameter of $\varnothing 0,3$. The drawing includes a section line A-A and a table of properties.

Table of Properties:

Property	Value
Material	2-M1.6
Surface Treatment	2 tief/deep
Surface Finish	$\sqrt{0,3}$
Surface Finish	A

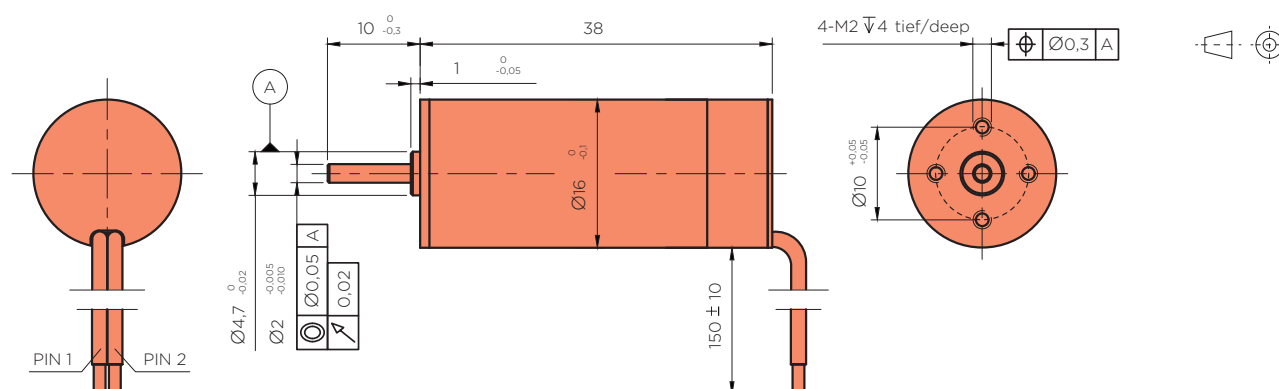
Thermal resistance housing-ambient	38.3 K/W
Thermal resistance winding-housing	9.6 K/W
Thermal time constant winding	5 s
Thermal time constant motor	196 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+125°C
Max. permissible speed	50000 rpm
Radial play	preloaded
Max. axial load (dynamic)	0,3
Max.force for press fits (static)	11N
(static, shaft supported)	200 N
Max. radial loading, 5mm from flange	4.3 N
Number of pole pairs	1
Number of phases	3
Weight of motor	12.2 g

The graph shows the relationship between speed and torque for different power levels. The y-axis represents Speed in rpm, ranging from 0 to 80,000. The x-axis represents Torque in mNm, ranging from 0.0 to 3.5. Four curves are plotted for power levels of 2, 4, 6, and 8 W. A shaded region indicates the n-T curve at nominal voltage, which is bounded by a solid black line and a dashed red line.

Continuous operating range with Reduced Rth2 50%	Continuous operating range

Caution
Incorrect lead connection will damage the controller!

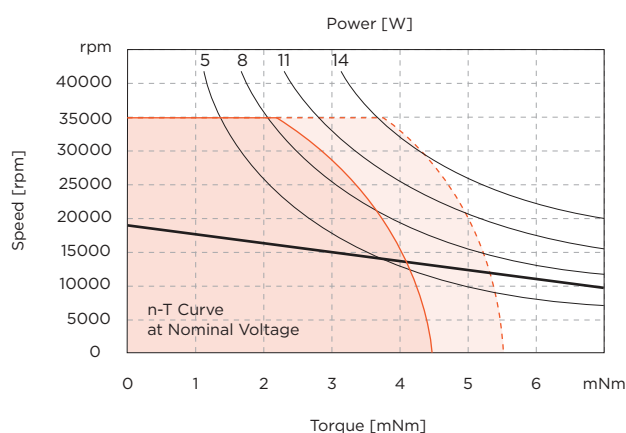
SVTN A 03 1638



Values	Unit	SVTN A 03 1638-06..	1638-12..
Nominal voltage	V	6	12
No load speed	rpm	8832	17664
No load current	mA	110	100
Nominal speed	rpm	6102	14491
Nominal torque	mNm	1,5	2
Nominal current	A	0,37	0,43
Stall torque	mNm	4,85	11,13
Stall current	A	0,96	1,91
Max. efficiency	%	43,7	59,5
Supply Voltage +Vcc	V	4.5..7	8..13
Direction of rotation		CCW viewed from shaft end	
Torque constant	mNm/A	5,74	6,11
Speed constant	rpm/V	1664	1562
Speed/torque gradient	rpm/mNm	1820	1604
Mechanical time constant	ms	8,2	7,2
Rotor inertia	gcm ²	0,4	0,4

Thermal resistance housing-ambient	20.2 K/W
Thermal resistance winding-housing	8.7 K/W
Thermal time constant winding	7 s
Thermal time constant motor	238 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	35000 rpm
Radial play	preloaded
Max. axial load (dynamic)	1.3 N
Max. force for press fits (static)	15 N
(static, shaft supported)	350 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Number of phases	3
Weight of motor	27 g

The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

WITH INTEGRATED
ELECTRONICS

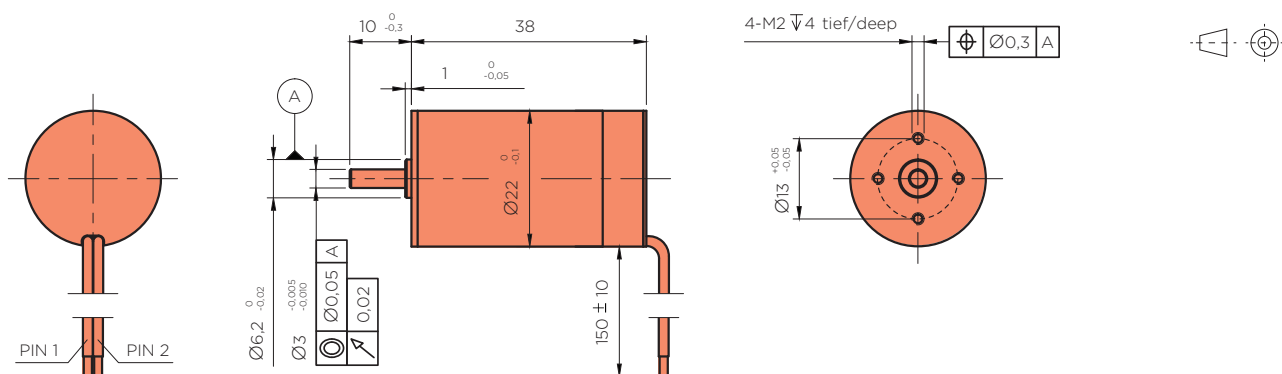
Connection Configuration

Connection	PTFE
Pin 1	+VCC
Pin 2	GND

AWG24	red
AWG24	black

Caution
Incorrect lead connection will damage the controller!

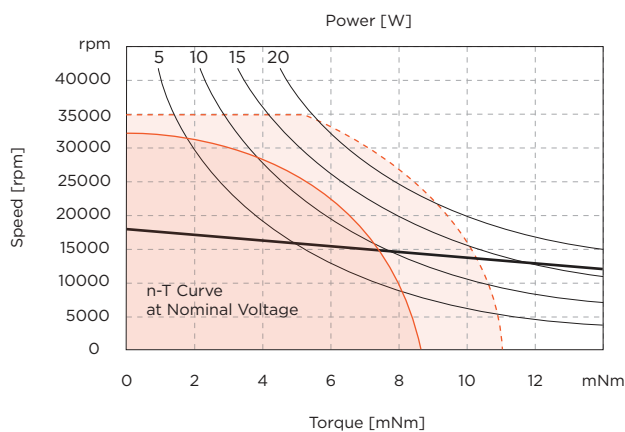
FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers



Values	Unit	SVTN A 03		
		2238-12..	2238-18..	2238-24..
Nominal voltage	V	12	18	24
No load speed	rpm	17445	17830	17721
No load current	mA	220	150	110
Nominal speed	rpm	14292	14700	14260
Nominal torque	mNm	6	6	6
Nominal current	A	1,13	0,75	0,57
Stall torque	mNm	45	45	41
Stall current	A	7,44	4,96	3,39
Max. efficiency	%	70,2	70,3	67,7
Supply Voltage +Vcc	V	10..28	10..28	10..28
Direction of rotation		CCW viewed from shaft end		
Torque constant	mNm/A	6,15	9,32	12,29
Speed constant	rpm/V	1553	1024	777
Speed/torque gradient	rpm/mNm	407	399	447
Mechanical time constant	ms	6,4	6,2	7,0
Rotor inertia	gcm²	1,5	1,5	1,5

Thermal resistance housing-ambient	15.2 K/W
Thermal resistance winding-housing	6.0 K/W
Thermal time constant winding	11 s
Thermal time constant motor	383 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	35000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	63 g

The diagram based on ambient temperature of 25°.



Continuous operating range with Reduced Rth2 50%	Continuous operating range

Connection

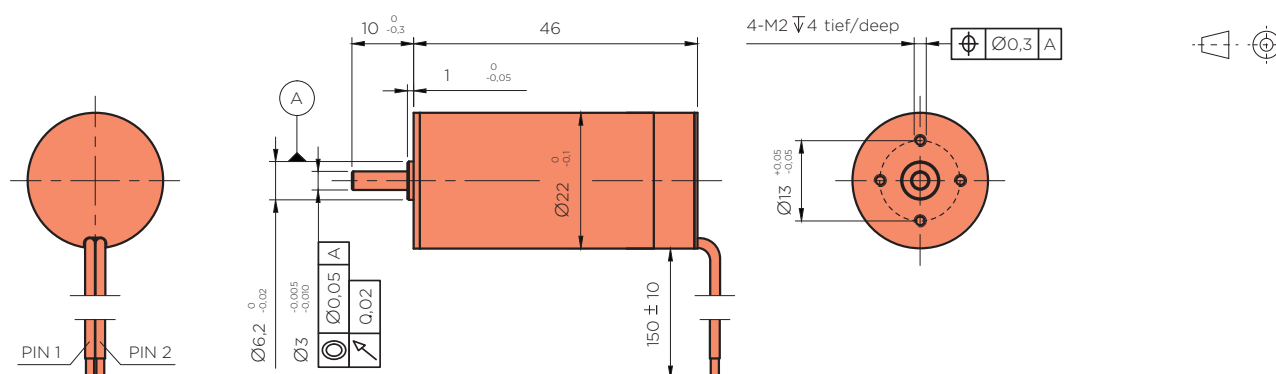
Connection		PTFE	
Pin 1	+VCC	AWG24	red
Pin 2	GND	AWG24	black

Configuration

FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers

Caution
Incorrect lead connection will damage the controller!

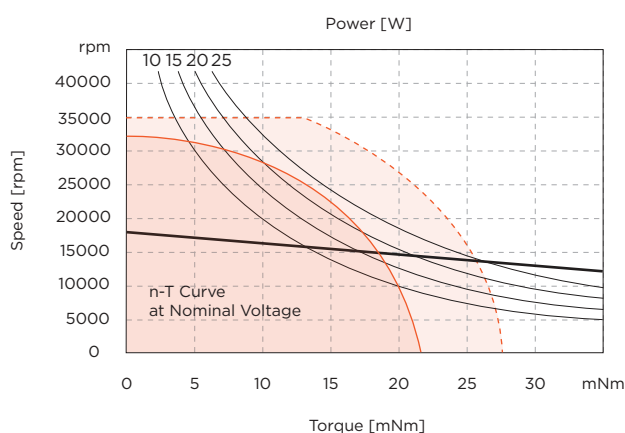
SVTN A 03 2246



Values	Unit	SVTN A 03 2246-12..	2246-24..
Nominal voltage	V	12	24
No load speed	rpm	11570	15627
No load current	mA	170	140
Nominal speed	rpm	10085	12771
Nominal torque	mNm	8	12
Nominal current	A	1,01	1,01
Stall torque	mNm	60,4	82,8
Stall current	A	6,7	6,3
Max. efficiency	%	70,5	71,8
Supply Voltage +Vcc	V	10..28	10..28
Direction of rotation		CCW viewed from shaft end	
Torque constant	mNm/A	9,2	13,4
Speed constant	rpm/V	1038	712
Speed/torque gradient	rpm/mNm	202	203
Mechanical time constant	ms	4,8	4,8
Rotor inertia	gcm ²	2,3	2,3

Thermal resistance housing-ambient	12.7 K/W
Thermal resistance winding-housing	5.0 K/W
Thermal time constant winding	12 s
Thermal time constant motor	420 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	35000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	79 g

The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range with Reduced Rth2 50%

Connection

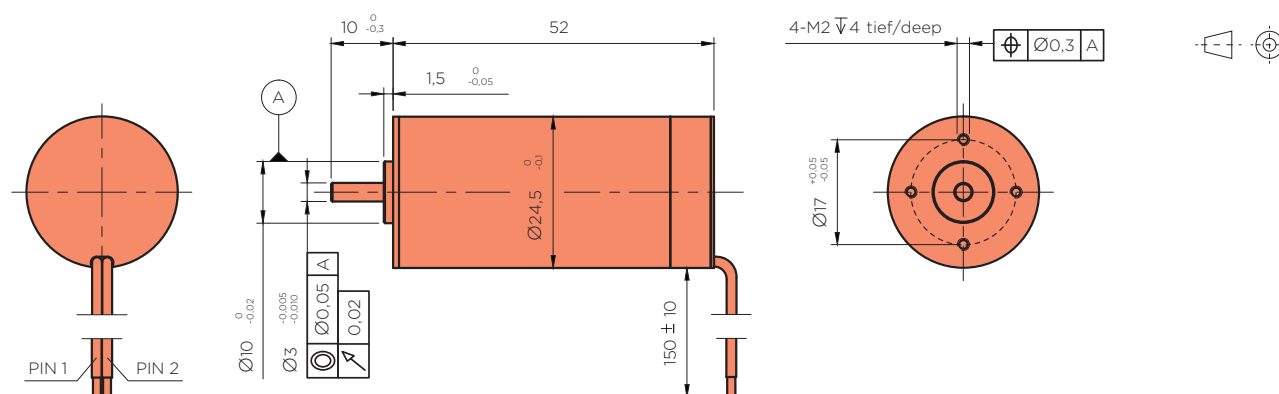
Connection		PTFE
Pin 1	+VCC	AWG24 red
Pin 2	GND	AWG24 black

Caution
Incorrect lead connection will damage the controller!

Configuration

FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers

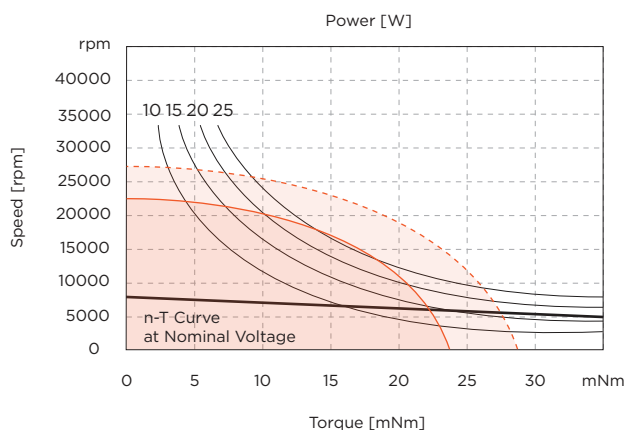
SVTN A 03 2452



Values	Unit	SVTN A 03 2452-12..	2452-24..
Nominal voltage	V	12	24
No load speed	rpm	6904	6980
No load current	mA	103	70
Nominal speed	rpm	5087	5089
Nominal torque	mNm	14	14
Nominal current	A	0,98	0,51
Stall torque	mNm	87	85
Stall current	A	5,58	2,73
Max. efficiency	%	71,7	67,9
Supply Voltage +Vcc	V	10..28	10..28
Direction of rotation		CCW viewed from shaft end	
Torque constant	mNm/A	15,9	32,0
Speed constant	rpm/V	601	298
Speed/torque gradient	rpm/mNm	81,3	81,9
Mechanical time constant	ms	3,6	3,6
Rotor inertia	gcm ²	4,2	4,2

Thermal resistance housing-ambient	11.6 K/W
Thermal resistance winding-housing	5.6 K/W
Thermal time constant winding	30 s
Thermal time constant motor	557 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	30000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	112 g

The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range
with Reduced Rth2 50%

Connection

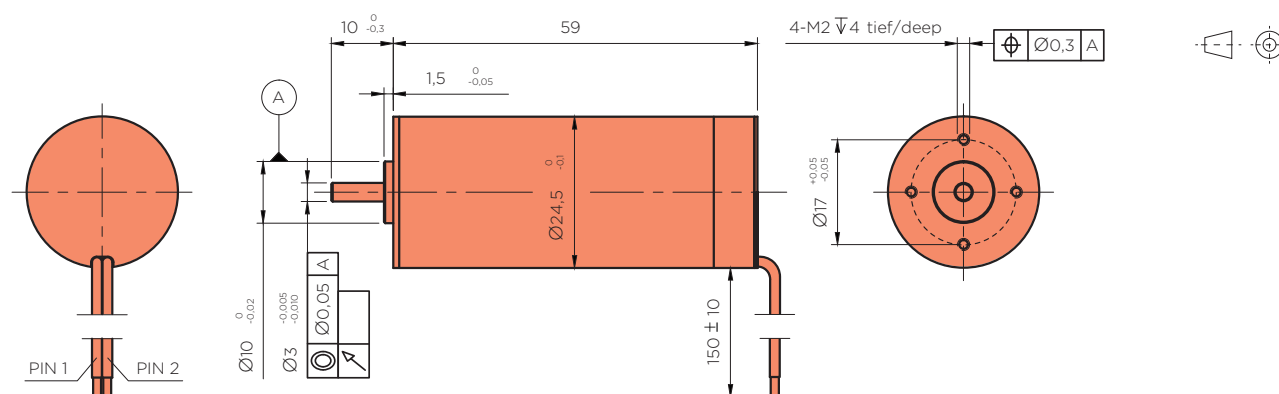
Connection	PTFE
Pin 1	+VCC
Pin 2	GND

Caution
Incorrect lead connection will damage the controller!

Configuration

FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers

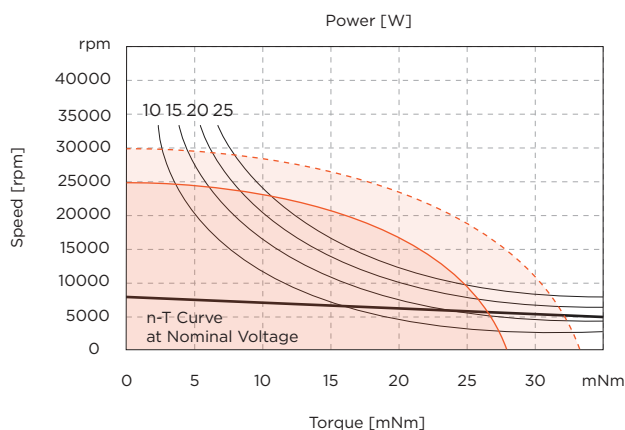
SVTN A 03 2459



Values	Unit	SVTN A 03 2459-12..	2459-24..
Nominal voltage	V	12	24
No load speed	rpm	7699	7655
No load current	mA	114	73
Nominal speed	rpm	6958	6597
Nominal torque	mNm	14	20
Nominal current	A	1,07	0,75
Stall torque	mNm	145	145
Stall current	A	10	4,98
Max. efficiency	%	79,8	77,2
Supply Voltage +Vcc	V	10..28	10..28
Direction of rotation		CCW viewed from shaft end	
Torque constant	mNm/A	14,7	29,5
Speed constant	rpm/V	649	324
Speed/torque gradient	rpm/mNm	52,9	52,9
Mechanical time constant	ms	3,3	3,3
Rotor inertia	gcm ²	5,9	5,9

Thermal resistance housing-ambient	10.2 K/W
Thermal resistance winding-housing	6.4 K/W
Thermal time constant winding	36 s
Thermal time constant motor	555 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	30000 rpm
Radial play	preloaded
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Number of phases	3
Weight of motor	130 g

The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range
with Reduced Rth2 50%

Connection

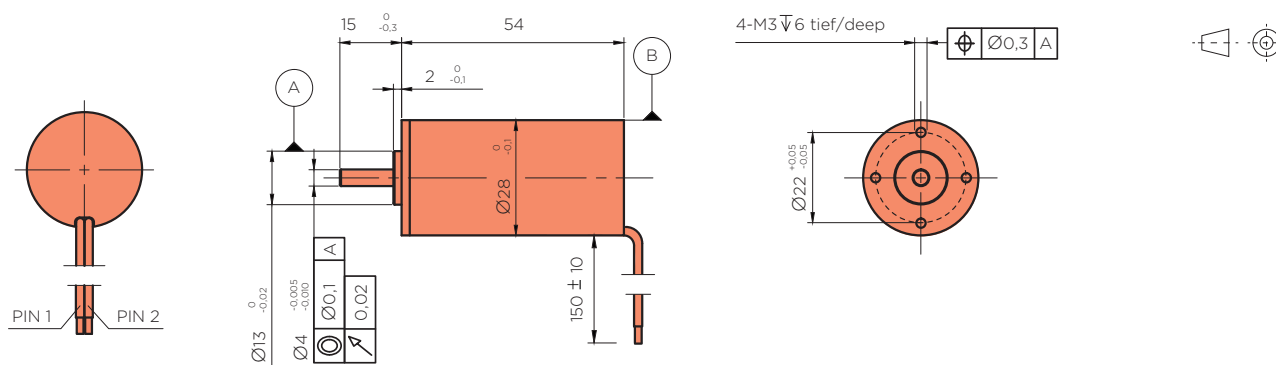
Connection		PTFE
Pin 1	+VCC	AWG24 red
Pin 2	GND	AWG24 black

Caution
Incorrect lead connection will damage the controller!

Configuration

FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers

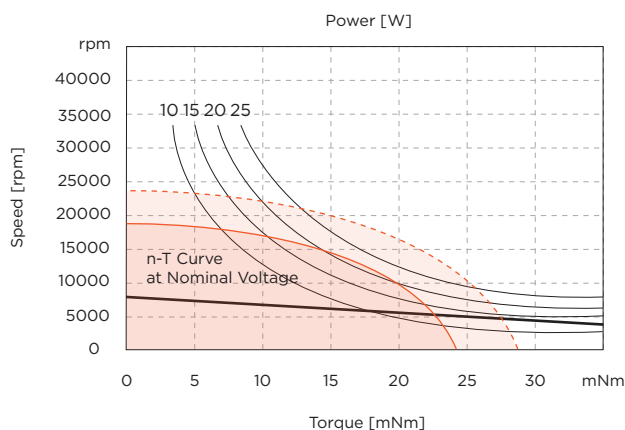
SVTN A 03 2854



Values	Unit	SVTN A 03 2854-12..	2854-24..
Nominal voltage	V	12	24
No load speed	rpm	6878	6700
No load current	mA	121	76
Nominal speed	rpm	5674	5157
Nominal torque	mNm	15	18
Nominal current	A	1,04	0,62
Stall torque	mNm	85,7	78,1
Stall current	A	5,38	2,43
Max. efficiency	%	72,3	67,8
Supply Voltage +Vcc	V	10..28	10..28
Direction of rotation		CCW viewed from shaft end	
Torque constant	mNm/A	16,3	33,1
Speed constant	rpm/V	586	288
Speed/torque gradient	rpm/mNm	80,3	85,7
Mechanical time constant	ms	4,4	4,7
Rotor inertia	gcm ²	5,2	5,2

Thermal resistance housing-ambient	9.6 K/W
Thermal resistance winding-housing	6.3 K/W
Thermal time constant winding	37 s
Thermal time constant motor	584 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	25000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	153 g

The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range
with Reduced Rth2 50%

Connection Configuration

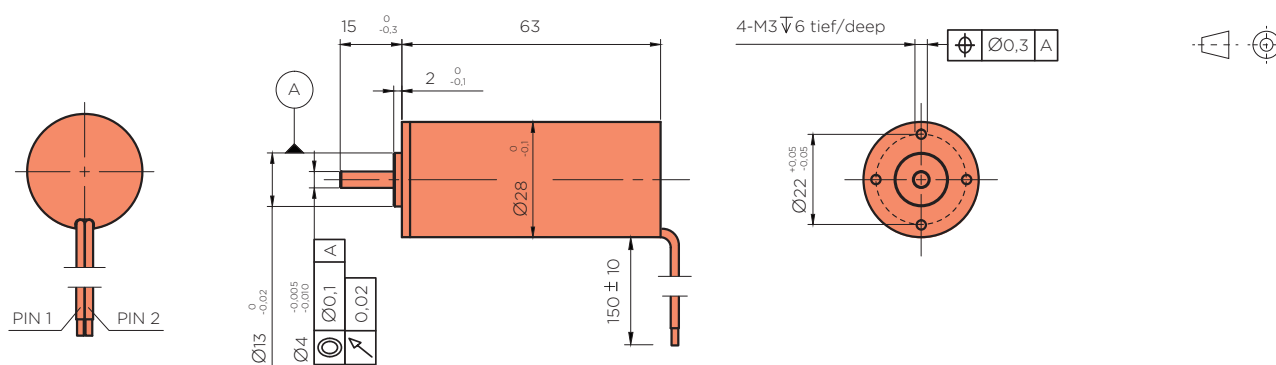
Connection	PTFE
Pin 1	+VCC
Pin 2	GND

AWG20	red
AWG20	black

FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers

Caution
Incorrect lead connection will damage the controller!

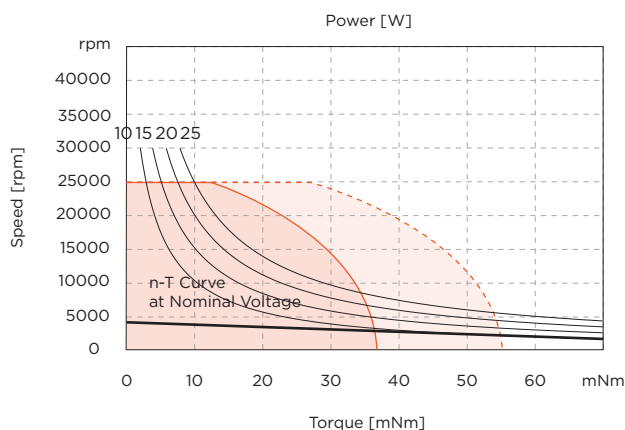
SVTN A 03 2863



Values	Unit	SVTN A 03 2863-12..	2863-24..
Nominal voltage	V	12	24
No load speed	rpm	4168	4162
No load current	mA	70	60
Nominal speed	rpm	3264	3033
Nominal torque	mNm	25	25
Nominal current	A	0,99	0,53
Stall torque	mNm	115	92
Stall current	A	4,33	1,79
Max. efficiency	%	76,2	66,7
Supply Voltage +Vcc	V	10..28	10..28
Direction of rotation		CCW viewed from shaft end	
Torque constant	mNm/A	27	53
Speed constant	rpm/V	353	179
Speed/torque gradient	rpm/mNm	36,2	45,2
Mechanical time constant	ms	3,2	4,0
Rotor inertia	gcm ²	8,5	8,5

Thermal resistance housing-ambient	7,1 K/W
Thermal resistance winding-housing	5 K/W
Thermal time constant winding	51 s
Thermal time constant motor	552 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	25000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7,5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	188 g

The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range
with Reduced Rth2 50%

Connection

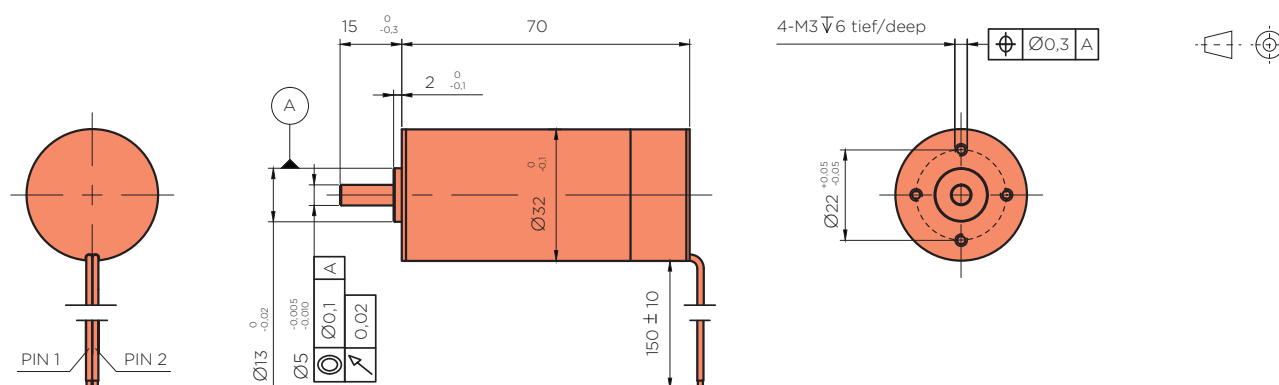
Connection		PTFE
Pin 1	+VCC	AWG20 red
Pin 2	GND	AWG20 black

Caution
Incorrect lead connection will damage the controller!

Configuration

FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers

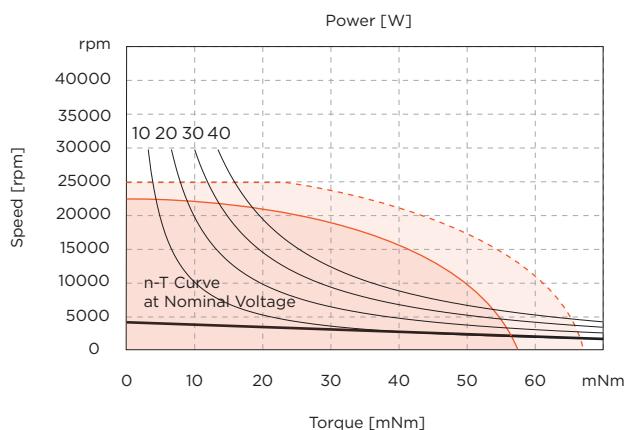
SVTN A 03 3270



Values	Unit	SVTN A 03 3270-12..	3270-24..
Nominal voltage	V	12	24
No load speed	rpm	7200	7100
No load current	mA	194	110
Nominal speed	rpm	6623	6243
Nominal torque	mNm	25	40
Nominal current	A	1,78	1,36
Stall torque	mNm	312	331
Stall current	A	20	10,5
Max. efficiency	%	81,3	80,6
Supply Voltage +Vcc	V	10..28	10..28
Direction of rotation		CCW viewed from shaft end	
Torque constant	mNm/A	15,8	31,9
Speed constant	rpm/V	606	299
Speed/torque gradient	rpm/mNm	23,1	21,4
Mechanical time constant	ms	3,7	3,5
Rotor inertia	gcm ²	15,5	15,5

Thermal resistance housing-ambient	5 K/W
Thermal resistance winding-housing	4 K/W
Thermal time constant winding	52 s
Thermal time constant motor	540 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	25000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	255g

The diagram based on ambient temperature of 25°.



Continuous operating range
Continuous operating range
with Reduced Rth2 50%

Connection Configuration

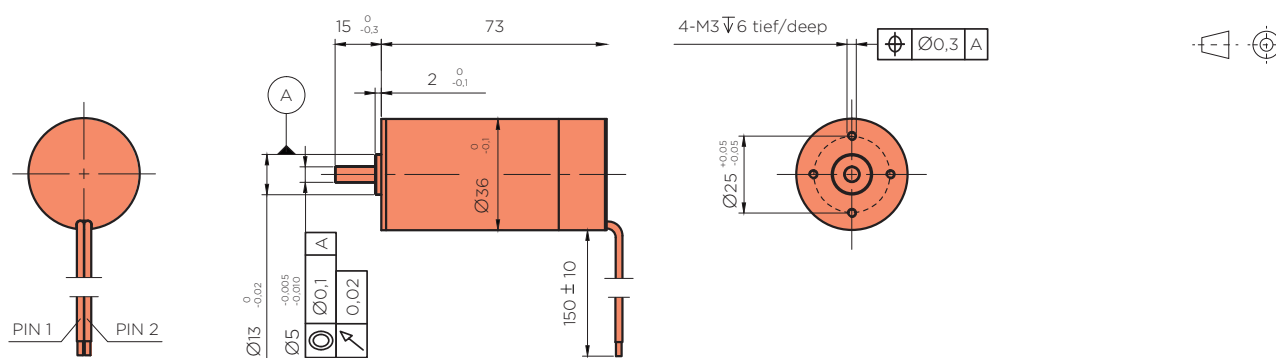
Connection	PTFE
Pin 1	+VCC
Pin 2	GND

PTFE	red
AWG20	black

FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers

Caution
Incorrect lead connection will damage the controller!

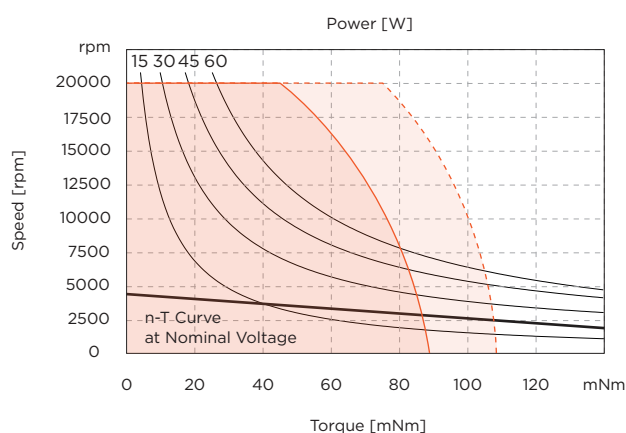
SVTN A 03 3673



Values	Unit	SVTN A 03 3673-12..	3673-24..
Nominal voltage	V	12	24
No load speed	rpm	4070	4041
No load current	mA	148	84
Nominal speed	rpm	3229	3223
Nominal torque	mNm	50	50
Nominal current	A	1,95	0,98
Stall torque	mNm	242	247
Stall current	A	8,89	4,52
Max. efficiency	%	75,9	74,6
Supply Voltage +Vcc	V	10..28	10..28
Direction of rotation		CCW viewed from shaft end	
Torque constant	mNm/A	27,7	55,7
Speed constant	rpm/V	345	172
Speed/torque gradient	rpm/mNm	16,8	16,4
Mechanical time constant	ms	3,4	3,3
Rotor inertia	gcm ²	19,5	19,5

Thermal resistance housing-ambient	4.9 K/W
Thermal resistance winding-housing	1.6 K/W
Thermal time constant winding	45 s
Thermal time constant motor	630 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	20000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	317 g

The diagram based on ambient temperature of 25°.



Connection

Connection	PTFE
Pin 1	+VCC
Pin 2	GND

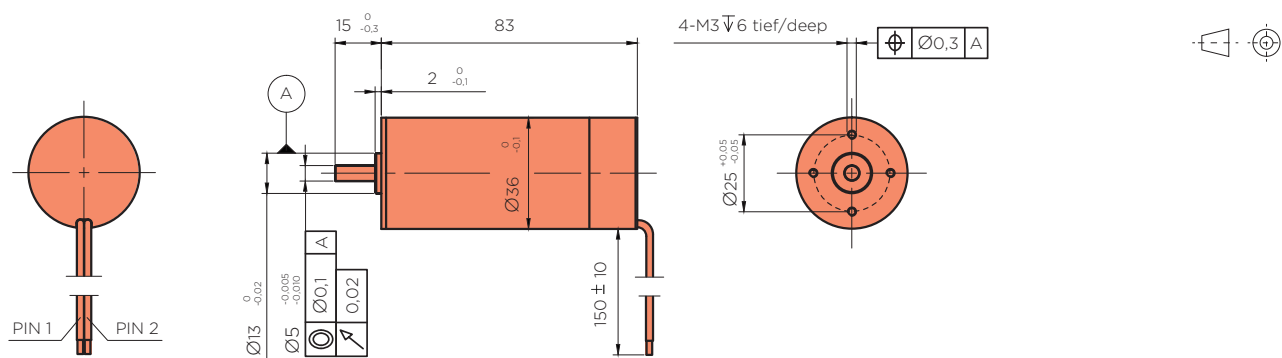
Caution
Incorrect lead connection will damage the controller!

Configuration

FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers

WITH INTEGRATED
ELECTRONICS

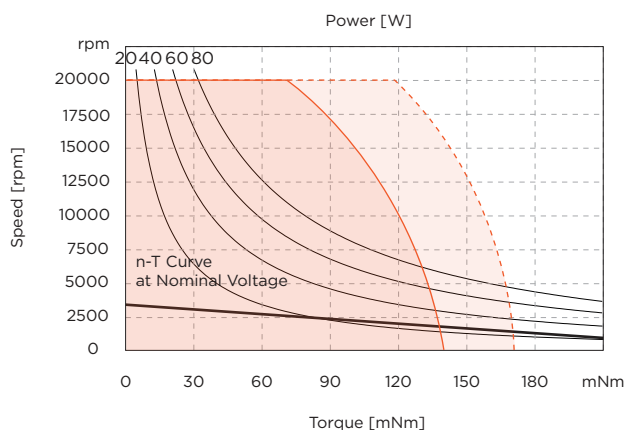
SVTN A 03 3683



Values	Unit	SVTN A 03 3683-12..	3683-24..
Nominal voltage	V	12	24
No load speed	rpm	3277	3272
No load current	mA	137	78
Nominal speed	rpm	2294	2304
Nominal torque	mNm	100	100
Nominal current	A	3,04	1,53
Stall torque	mNm	333	338
Stall current	A	9,8	5,0
Max. efficiency	%	77,8	76,5
Supply Voltage +Vcc	V	10..28	10..28
Direction of rotation		CCW viewed from shaft end	
Torque constant	mNm/A	34,5	68,9
Speed constant	rpm/V	277	139
Speed/torque gradient	rpm/mNm	9,83	9,69
Mechanical time constant	ms	2,2	2,2
Rotor inertia	gcm ²	21,5	21,5

Thermal resistance housing-ambient	5 K/W
Thermal resistance winding-housing	2.3 K/W
Thermal time constant winding	46 s
Thermal time constant motor	816 s
Ambient temperature	-30...+100°C
Max. permissible winding temperature	+150°C
Max. permissible speed	20000 rpm
Radial play	preloaded
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Number of phases	3
Weight of motor	366 g

The diagram based on ambient temperature of 25°.



Connection Configuration

Connection	PTFE
Pin 1	+VCC
Pin 2	GND

Caution
Incorrect lead connection will damage the controller!

FUNCTION: On&Off/Direction/Speed control/Brake
Speed closed&open-loop Control/Speed feedback
PERFORMANCE: Customized in the continuous operating range
BALL BEARING: Preload
FLANGE: Standard frange front&back/customize the frange
SHAFT: Length/Diameter/Cut face
LEADWIRE: PVC/Silicon/Teflon/UL No/Dimension/length
CONNECTOR: JST/MOLEX/TE
MORE: Please contact our sales engineers

SVTN B 01 Series

Coreless DC Motors
2 Pole Brushed DC Motors

Contents

Model	W	Max rpm	Page
SVTN B 01-1215	1,6	34.000	62
SVTN B 01-1230	2,5	15.000	63
SVTN B 01-1320	2,5	19.000	64
SVTN B 01-1331	3,5	16.200	65
SVTN B 01-1524	3	12.300	66
SVTN B 01-1625	3,5	13.000	67-68
SVTN B 01-1640	4,5	13.000	69-70
SVTN B 01-1725	4	14.000	71-72
SVTN B 01-1740	5	22.000	73
SVTN B 01-1928	6	16.000	74
SVTN B 01-2030	10	16.000	75
SVTN B 01-2225	10	16.000	76-77
SVTN B 01-2230	12	14.000	78-79
SVTN B 01-2642	20	10.000	80
SVTN B 01-2657	25	8.000	81
SVTN B 01-2845	25	9.000	82-83
SVTN B 01-2863	40	8.500	84
SVTN B 01-3045	40	8.800	85
SVTN B 01-3256	60	8.000	86
SVTN B 01-3571	90	9.000	87
SVTN B 01-4050	110	9.500	88
SVTN B 01-4070	150	9.000	89

SVTN B 01

Coreless DC Motors
2 Pole Brushed DC Motors



LONG LIFETIME



HIGH POWER-DENSITY



COST-EFFECTIVE

The specific design construction of a coreless DC motor provides several advantages over traditional, iron core, technology. A first added value it is given from rotor lower mass and inertia, so very rapid acceleration and deceleration rates are possible. Furthermore the lack of iron reduce "iron losses" to provide higher efficiencies (up to 90 percent) than traditional DC motors. Last, but not least, coreless design reduces winding inductance, so sparking between the brushes and commutator is reduced, increasing motor life and reducing electromagnetic interference (EMI).

Servotecnica's Coreless DC Motors are available on a wide range of sizes and high flexibility on mechanical custom requirements.

Benefits

High power density

Long operational lifetime

High efficiency

Cost-effective

High reliability

No cogging

Low inductance

Low inertia

Good heat dissipation

Product code

SVTN B 01 - ○ ○ ◇ ◇ - □ □ - ⬡ - ⬠ △ ☆

B 01 Series

○ Diameter

◇ Length

□ Nominal Voltage

⬡ Shaft
Single shaft [S]; Double shaft [D]

⬠ Connection
Wires [W]; Terminals [O]

△ Commutator
Graphite brushes [G]; Metal brushes [M]

☆ Customizations

Features

Operating temperature	-30° +100° C
Connections	Terminals or cables
Magnets	Neodymium
Construction technology	Coreless winding system
Estimated operating lifetime	Lifetime depends on motor working conditions. It can reach 10.000 work hours under optimal conditions (almost 100 hours under extreme conditions).

Feedback

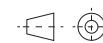
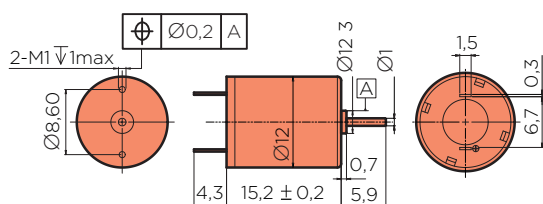
Magnetic encoder* 3 channels, from 25 to 1000/1024 ppr

Customizations

Flange	Shape
Shaft	Length/Diameter/D-Cut/double shaft
Leadwire	PVC/Silicon/Teflon/UL No/Dimension/length

*See page 93 for more information

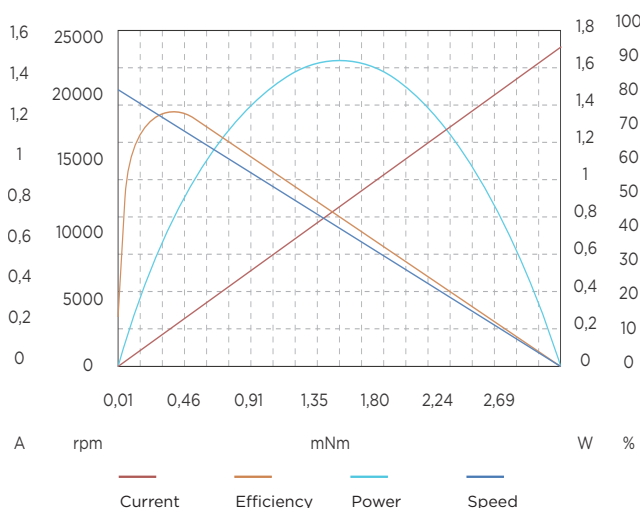
SVTN B 01-1215 Metal brushes



1:1

Values	Unit	SVTN B 01			
		1215-4.5..	1215-7.4..	1215-12..	1215-24..
Nominal voltage	V	4.5	7.4	12	24
No-load speed	rpm	21000	28000	14000	34000
No-load current	mA	25.0	35.0	15.0	30.0
Nominal speed	rpm	16800	22400	11200	27200
Nominal torque	mNm	0.6	0.7	0.5	1.2
Nominal current	A	0.3	0.3	0.1	0.2
Stall torque	mNm	3.0	3.6	2.6	5.9
Stall current	A	1.5	1.5	0.3	0.9
Max. efficiency	%	75.8	68.4	69.7	76.6
Terminal resistance	Ω	3.00	4.93	36.36	26.67
Terminal inductance	mH	18.00	23.00	118.00	100.00
Torque constant	mNm/A	2.01	2.45	7.96	6.64
Speed constant	rpm/V	4666.7	3783.8	1166.7	1416.7
Speed/torque gradient	rpm/mNm	7075.6	7861.0	5477.8	5783.0
Mechanical time constant	ms	7.9	9.1	6.1	7.8
Rotor inertia	gcm ²	0.11	0.11	0.13	0.12

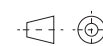
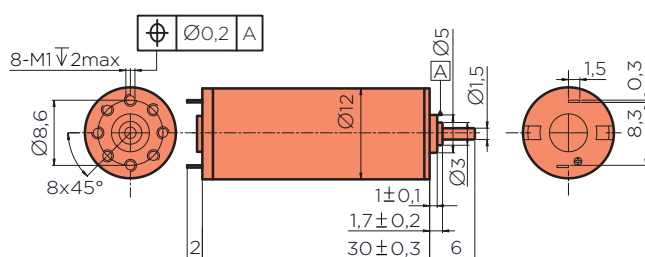
Thermal resistance housing-ambient	37.5 K/W
Thermal resistance winding-housing	9.0 K/W
Thermal time constant winding	2.22 s
Thermal time constant motor	135 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	34000 rpm
Max. axial load (dynamic)	0.1 N
Max. force for press fits (static)	20 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Weight of motor	6.9 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Sleeve or ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

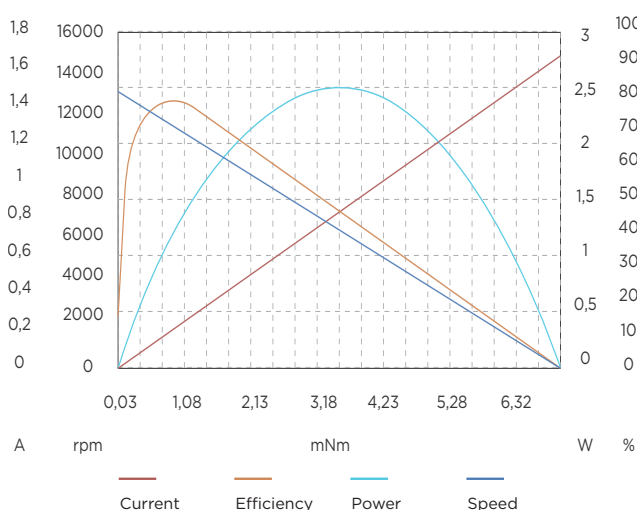
SVTN B 01-1230 Metal brushes



1:1

Values	Unit	SVTN B 01			
		1230-06..	1230-12..	1230-15..	1230-24..
Nominal voltage	V	6	12	15	24
No-load speed	rpm	13500	11400	13500	15000
No-load current	mA	22.0	16.0	15.0	8.0
Nominal speed	rpm	10800	9120	10800	12000
Nominal torque	mNm	1.4	1.5	1.8	2.7
Nominal current	A	0.4	0.2	0.2	0.2
Stall torque	mNm	7.0	7.6	9.2	13.4
Stall current	A	1.69	0.78	0.89	0.90
Max. efficiency	%	78.5	77.7	79.9	80.0
Terminal resistance	Ω	3.55	15.38	16.85	26.67
Terminal inductance	mH	0.25	0.59	0.65	0.98
Torque constant	mNm/A	4.19	9.91	10.49	15.11
Speed constant	rpm/V	2250.0	950.0	900.0	625.0
Speed/torque gradient	rpm/mNm	1932.1	1495.9	1462.3	1115.5
Mechanical time constant	ms	5.7	4.3	4.5	3.2
Rotor inertia	gcm ²	0.28	0.27	0.29	0.27

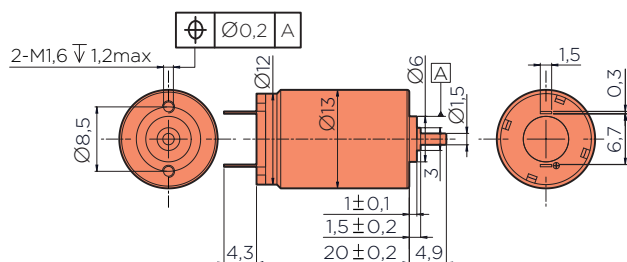
Thermal resistance housing-ambient	33 K/W
Thermal resistance winding-housing	7.0 K/W
Thermal time constant winding	4.88 s
Thermal time constant motor	229 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	15000 rpm
Max. axial load (dynamic)	0.1 N
Max. force for press fits (static)	20 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Weight of motor	17 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Sleeve or ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

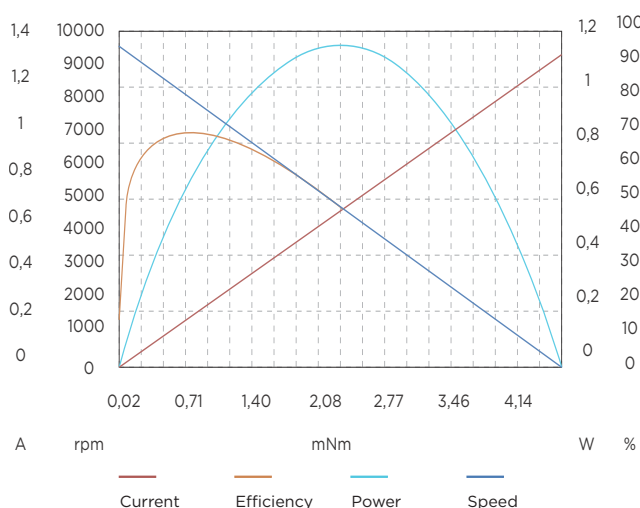
SVTN B 01-1320 Metal brushes



1:1

Values	Unit	SVTN B 01	1320-3-7..	1320-06..	1320-12..	1320-24..
Nominal voltage	V	3.7	6	12	24	
No-load speed	rpm	9500	12000	13000	12000	
No-load current	mA	35.0	30	16	10	
Nominal speed	rpm	7600	9600	10400	9600	
Nominal torque	mNm	0.9	1.5	1.0	1.19	
Nominal current	A	0.288	0.358	0.133	0.074	
Stall torque	mNm	4.58	7.41	5.01	5.93	
Stall current	A	1.30	1.63	0.60	0.33	
Max. efficiency	%	69.9	71.1	70.0	68.21	
Terminal resistance	Ω	2.85	3.68	20	72.73	
Terminal inductance	mH	0.09	0.12	0.50	1.30	
Torque constant	mNm/A	3.62	4.66	8.58	18.52	
Speed constant	rpm/V	2567.6	2000.0	1083.3	500.00	
Speed/torque gradient	rpm/mNm	2075.1	1620.4	2594.5	2024.85	
Mechanical time constant	ms	5.3	4.2	5.6	4.63	
Rotor inertia	gcm ²	0.25	0.25	0.20	0.22	

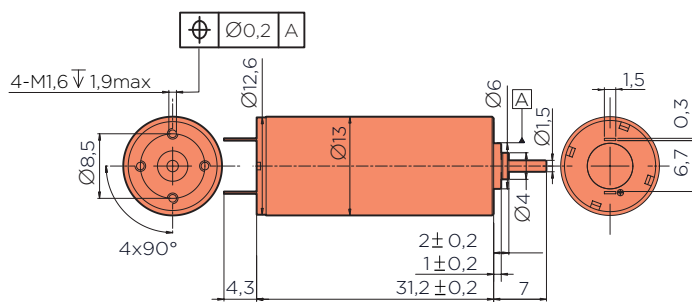
Thermal resistance housing-ambient	46 K/W
Thermal resistance winding-housing	14 K/W
Thermal time constant winding	5.18 s
Thermal time constant motor	76.1 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	19000 rpm
Max. axial load (dynamic)	0.2 N
Max. force for press fits (static)	20 N
Max. radial loading, 5mm from flange	1.4 N
Number of pole pairs	1
Weight of motor	13 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Sleeve or ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

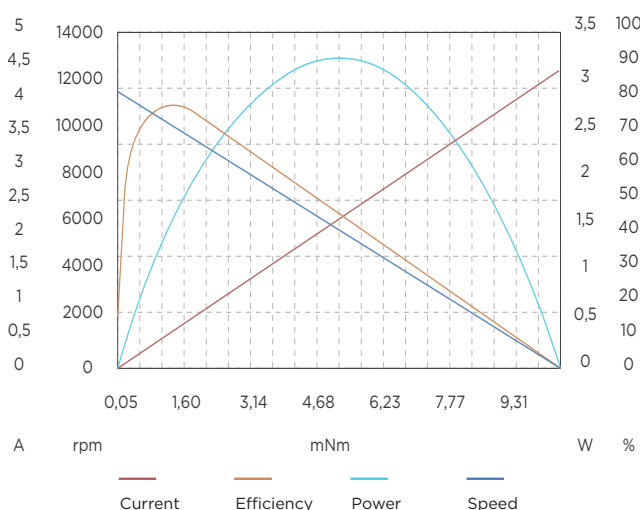
SVTN B 01-1331 Metal brushes



1:1

Values	Unit	SVTN B 01			
		1331-3..	1331-06..	1331-12..	1331-24..
Nominal voltage	V	3	6	12	24
No-load speed	rpm	12000	11000	11600	16200
No-load current	mA	45.0	30.0	18.0	12.0
Nominal speed	rpm	9600	8800	9280	12960
Nominal torque	mNm	2.1	2.4	2.0	4.1
Nominal current	A	0.9	0.5	0.2	0.4
Stall torque	mNm	10.3	12.1	10.1	21.0
Stall current	A	4.400	2.400	1.080	1.570
Max. efficiency	%	80.8	75.8	69.4	70.5
Terminal resistance	Ω	0.68	2.50	11.11	12.31
Terminal inductance	mH	0.05	0.12	0.27	0.75
Torque constant	mNm/A	2.36	5.12	9.60	13.78
Speed constant	rpm/V	4000.0	1833.3	966.7	675.0
Speed/torque gradient	rpm/mNm	1166.1	910.0	1150.3	618.5
Mechanical time constant	ms	8.0	6.2	7.9	4.2
Rotor inertia	gcm ²	0.65	0.65	0.65	0.65

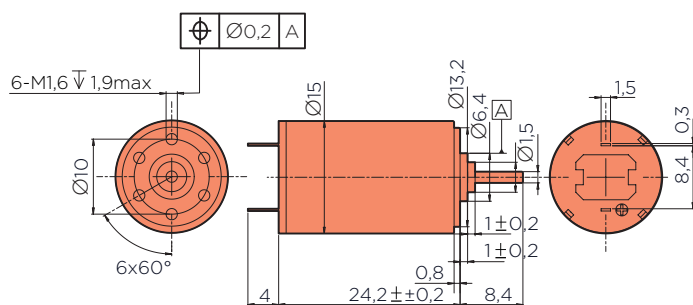
Thermal resistance housing-ambient	33 K/W
Thermal resistance winding-housing	7.0 K/W
Thermal time constant winding	4.88 s
Thermal time constant motor	259 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	16200 rpm
Max. axial load (dynamic)	0.2 N
Max. force for press fits (static)	20 N
Max. radial loading, 5mm from flange	1.4 N
Number of pole pairs	1
Weight of motor	20 gr

CORELESS
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Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Sleeve or ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

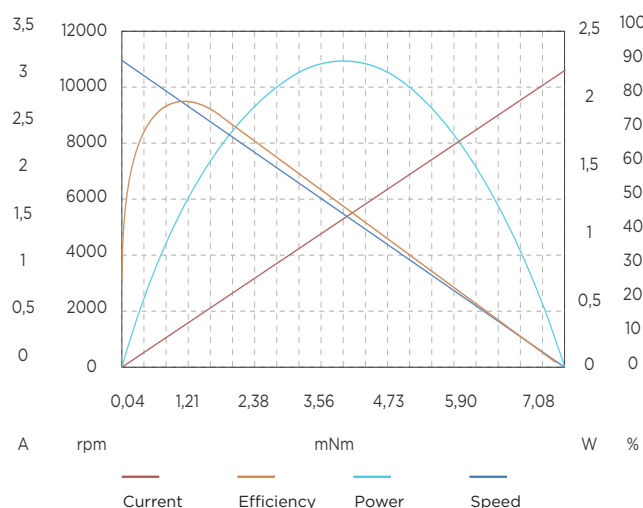
SVTN B 01-1524 Metal brushes



1:1

Values	Unit	SVTN B 01			
		1524-03..	1524-06..	1524-12..	1524-24..
Nominal voltage	V	3	6	12	24
No-load speed	rpm	10700	12300	11800	9500
No-load current	mA	40	20	11	4
Nominal speed	rpm	8560	9840	9440	7600
Nominal torque	mNm	1.6	1.8	1.7	1.4
Nominal current	A	0.6	0.4	0.2	0.1
Stall torque	mNm	7.8	9.1	8.7	7.0
Stall current	A	3.0	2.0	0.9	0.3
Max. efficiency	%	78.2	81.0	79.3	78.2
Terminal resistance	Ω	1.00	3.00	13.04	80.00
Terminal inductance	mH	0.02	0.05	0.23	1.05
Torque constant	mNm/A	2.64	4.61	9.60	23.80
Speed constant	rpm/V	3566.7	2050.0	983.3	395.8
Speed/torque gradient	rpm/mNm	1368.4	1347.1	1352.9	1348.3
Mechanical time constant	ms	11.0	10.1	11.9	11.9
Rotor inertia	gcm²	0.77	0.72	0.84	0.84

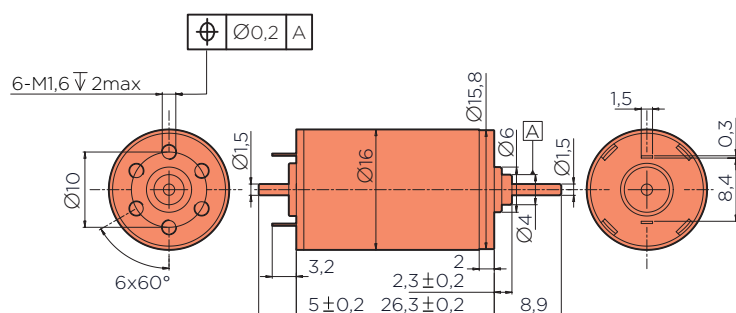
Thermal resistance housing-ambient	4.5 K/W
Thermal resistance winding-housing	31 K/W
Thermal time constant winding	2.4 s
Thermal time constant motor	300 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	12300 rpm
Max. axial load (dynamic)	0.2 N
Max. force for press fits (static)	20 N
Max. radial loading, 5mm from flange	1.4 N
Number of pole pairs	1
Weight of motor	22 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Sleeve or ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

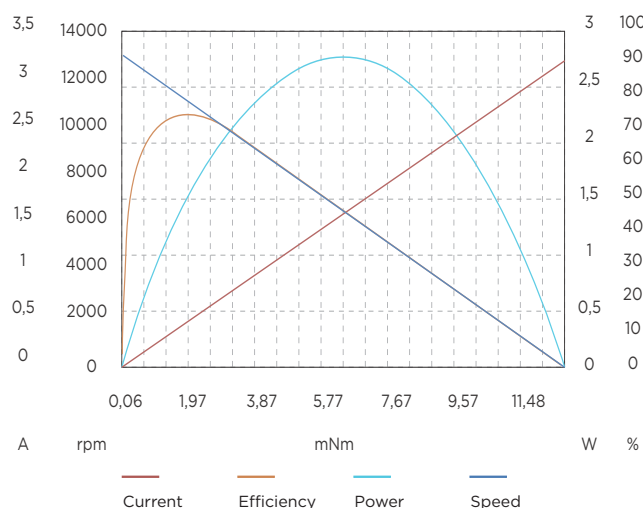
SVTN B 01-1625 Metal brushes



1:1

Values	Unit	SVTN B 01			
		1625-3.7..	1625-06..	1625-12..	1625-24..
Nominal voltage	V	3.7	6	12	24
No-load speed	rpm	8500	9800	10800	11000
No-load current	mA	50	20	15	6
Nominal speed	rpm	6800	7840	8640	8800
Nominal torque	mNm	2.5	2.8	2.7	3.0
Nominal current	A	0.67	0.50	0.27	0.15
Stall torque	mNm	12.7	14.0	13.5	15.2
Stall current	A	3.15	2.43	1.30	0.74
Max. efficiency	%	76.4	82.7	79.7	82.8
Terminal resistance	Ω	1.17	2.47	9.23	32.43
Terminal inductance	mH	0.105	0.210	0.510	1.320
Torque constant	mNm/A	4.09	5.80	10.49	20.67
Speed constant	rpm/V	2297.3	1633.3	900.0	458.3
Speed/torque gradient	rpm/mNm	670.3	701.3	801.4	725.2
Mechanical time constant	ms	6.3	6.6	7.5	6.8
Rotor inertia	gcm ²	0.90	0.90	0.90	0.90

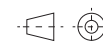
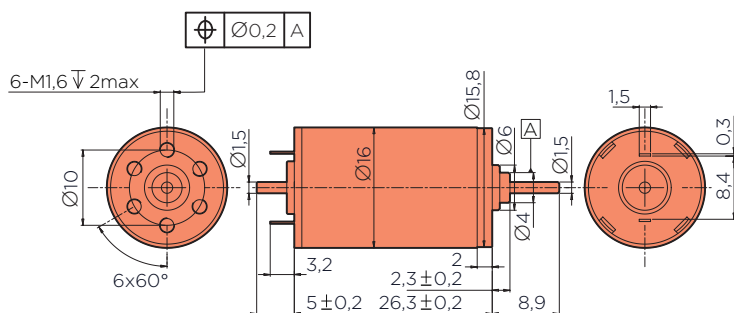
Thermal resistance housing-ambient	40.6 K/W
Thermal resistance winding-housing	9.5 K/W
Thermal time constant winding	5.33 s
Thermal time constant motor	268 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	11000 rpm
Max. axial load (dynamic)	1.3 N
Max. force for press fits (static)	15 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Weight of motor	24 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Sleeve or ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

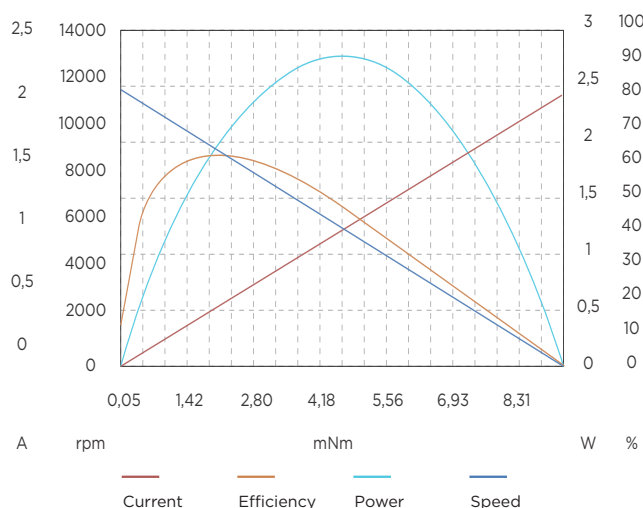
SVTN B 01-1625 Graphite brushes



1:1

Values	Unit	SVTN B 01	1625-06-..	1625-09..	1625-12..	1625-24..
Nominal voltage	V	6	9	12	24	
No-load speed	rpm	11500	12500	13600	11800	
No-load current	mA	80	65	50	32	
Nominal speed	rpm	8108	9125	9928	8614	
Nominal torque	mNm	2.71	3.10	3.19	3.64	
Nominal current	A	0.65	0.53	0.44	0.23	
Stall torque	mNm	9.2	11.5	11.8	13.5	
Stall current	A	2.00	1.80	1.50	0.82	
Max. efficiency	%	64.0	65.6	66.8	66.2	
Terminal resistance	Ω	3.00	5.00	8.00	29.30	
Terminal inductance	mH	0.10	0.18	0.34	1.10	
Torque constant	mNm/A	4.78	6.63	8.14	18.75	
Speed constant	rpm/V	1916.7	1388.9	1133.3	491.7	
Speed/torque gradient	rpm/mNm	1252.3	1087.1	1151.5	708.8	
Mechanical time constant	ms	12.6	10.7	10.8	7.6	
Rotor inertia	gcm ²	0.96	0.94	0.90	1.03	

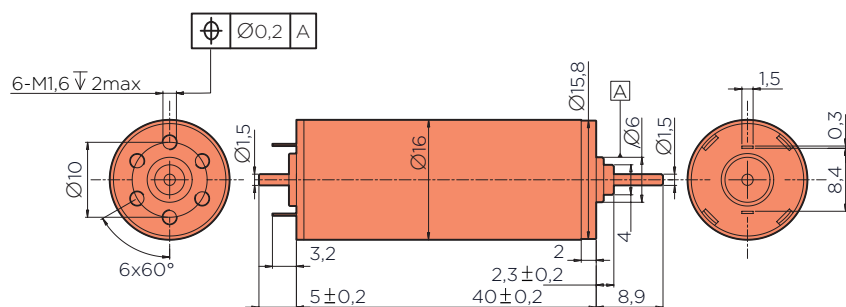
Thermal resistance housing-ambient	40.6 K/W
Thermal resistance winding-housing	9.5 K/W
Thermal time constant winding	5.33 s
Thermal time constant motor	268 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	13600 rpm
Max. axial load (dynamic)	1.3 N
Max. force for press fits (static)	15 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Weight of motor	24 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Sleeve or ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

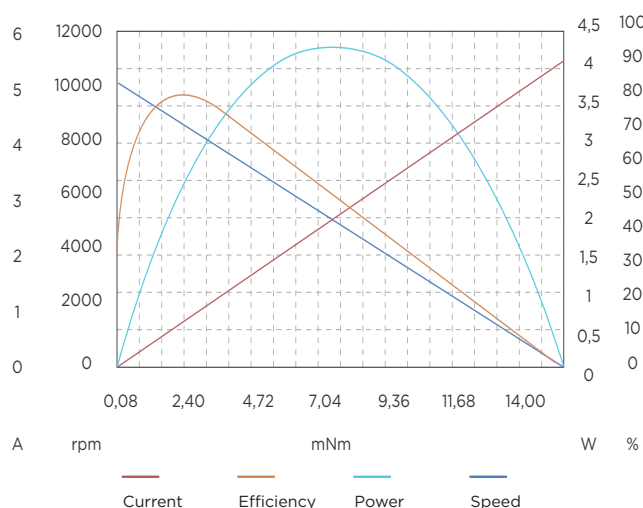
SVTN B 01-1640 Metal brushes



1:1

Values	Unit	SVTN B 01			
		1640-03..	1640-06..	1640-12..	1640-24..
Nominal voltage	V	3	6	12	24
No-load speed	rpm	10000	9200	14000	13000
No-load current	mA	50	28	60	25
Nominal speed	rpm	8000	7360	11200	10400
Nominal torque	mNm	3.1	3.3	10.0	10.4
Nominal current	A	1.14	0.56	1.29	0.62
Stall torque	mNm	15.5	16.3	49.8	52.0
Stall current	A	5.5	2.7	6.2	3.0
Max. efficiency	%	81.8	80.6	81.3	82.6
Terminal resistance	Ω	0.55	2.25	1.94	8.00
Terminal inductance	mH	0.01	0.06	0.15	0.56
Torque constant	mNm/A	2.84	6.16	8.11	17.48
Speed constant	rpm/V	3333.3	1533.3	1166.7	541.7
Speed/torque gradient	rpm/mNm	646.4	565.1	281.3	249.9
Mechanical time constant	ms	11.3	9.9	4.9	4.4
Rotor inertia	gcm²	1.67	1.67	0.90	1.67

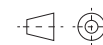
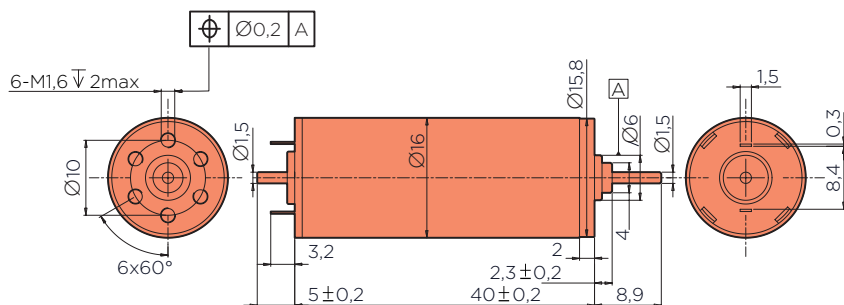
Thermal resistance housing-ambient	30 K/W
Thermal resistance winding-housing	8.5 K/W
Thermal time constant winding	10.6 s
Thermal time constant motor	436 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	14000 rpm
Max. axial load (dynamic)	1.3 N
Max. force for press fits (static)	15 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Weight of motor	40.5 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Sleeve or ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

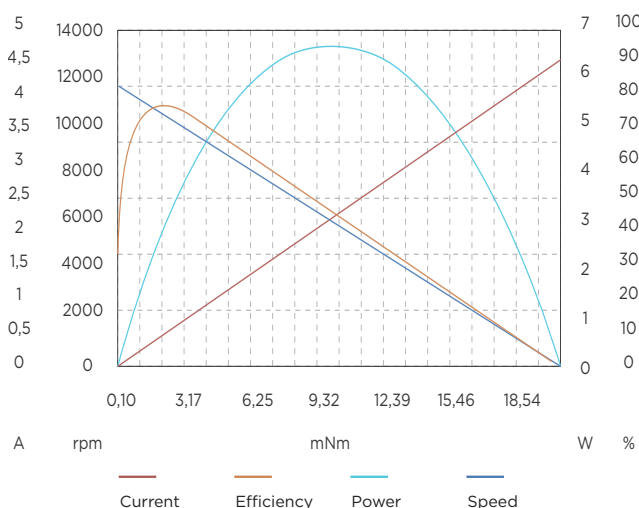
SVTN B 01-1640 Graphite brushes



1:1

Values	Unit	SVTN B 01	1640-06..	1640-12..	1640-24..
Nominal voltage	V	6	12	24	
No-load speed	rpm	12200	10400	10000	
No-load current	mA	70	45	30	
Nominal speed	rpm	9516	8112	7550	
Nominal torque	mNm	4.5	6.6	8.7	
Nominal current	A	1.04	0.65	0.41	
Stall torque	mNm	20.5	29.9	35.3	
Stall current	A	4.50	2.80	1.60	
Max. efficiency	%	76.6	76.2	74.5	
Terminal resistance	Ω	1.33	4.29	15.00	
Terminal inductance	mH	0.029	0.141	0.506	
Torque constant	mNm/A	4.62	10.84	22.49	
Speed constant	rpm/V	2033.3	866.7	416.7	
Speed/torque gradient	rpm/mNm	595.7	348.2	283.2	
Mechanical time constant	ms	10.4	6.1	5.0	
Rotor inertia	gcm ²	1.67	1.67	1.69	

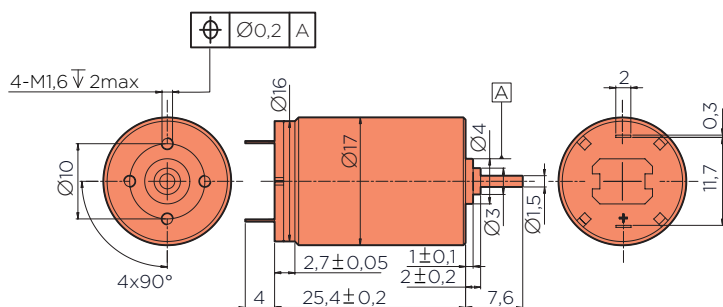
Thermal resistance housing-ambient	30 K/W
Thermal time constant winding	10.6 s
Thermal time constant motor	436 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	12200 rpm
Max. axial load (dynamic)	1.3 N
Max. force for press fits (static)	15 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Weight of motor	42 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Sleeve or ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

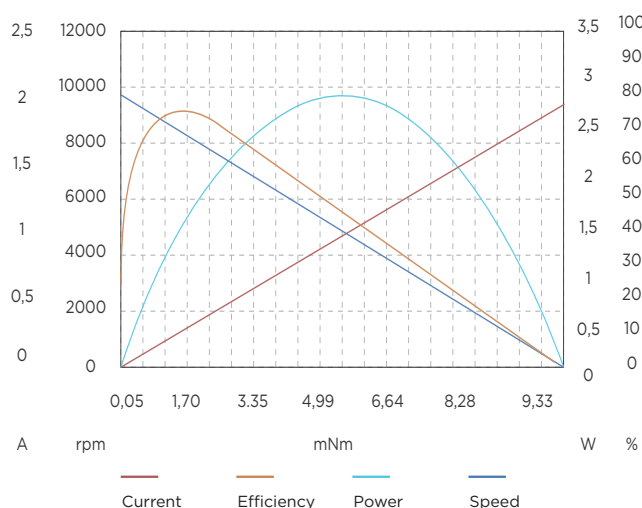
SVTN B 01-1725 Metal brushes



1:1

Values	Unit	SVTN B 01			
		1725-06..	1725-09..	1725-12..	1725-24..
Nominal voltage	V	6	9	12	24
No-load speed	rpm	10000	10000	10000	10000
No-load current	mA	23	30	20	8
Nominal speed	rpm	8000	8000	8000	8000
Nominal torque	mNm	2.19	2.06	2.68	2.72
Nominal current	A	0.41	0.28	0.24	0.14
Stall torque	mNm	11.0	10.3	13.4	13.6
Stall current	A	1.96	1.26	1.21	0.61
Max. efficiency	%	79.5	71.5	77.5	81.4
Terminal resistance	Ω	3.06	7.14	5.71	22.86
Terminal inductance	mH	0.10	0.20	0.28	0.93
Torque constant	mNm/A	5.66	8.39	11.30	22.70
Speed constant	rpm/V	1666.7	1111.1	833.3	416.7
Speed/torque gradient	rpm/mNm	911.7	969.1	746.0	735.0
Mechanical time constant	ms	7.4	7.9	4.2	3.6
Rotor inertia	gcm²	0.78	0.78	0.80	0.82

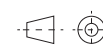
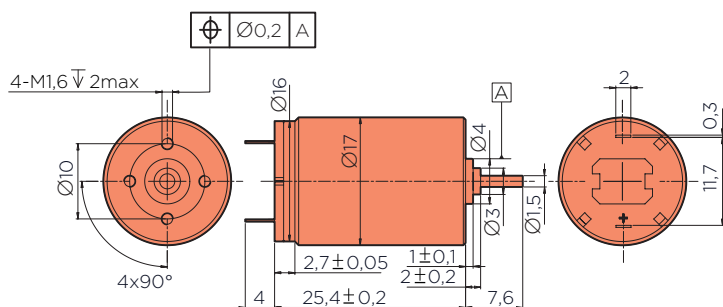
Thermal resistance housing-ambient	4 K/W
Thermal resistance winding-housing	24.5 K/W
Thermal time constant winding	2.6 s
Thermal time constant motor	270 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	10000 rpm
Max. axial load (dynamic)	1.3 N
Max. force for press fits (static)	15 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Weight of motor	28 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

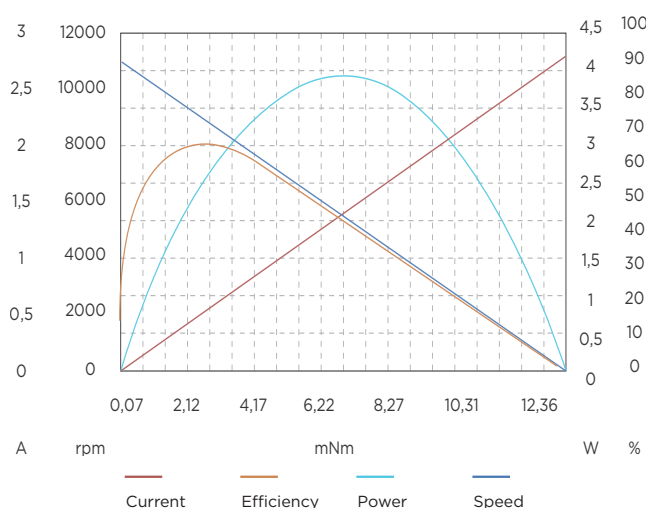
SVTN B 01-1725 Graphite brushes



1:1

Values	Unit	SVTN B 01		
		1725-06..	1725-12..	1725-24..
Nominal voltage	V	6	12	24
No-load speed	rpm	11000	10000	10000
No-load current	mA	90	50	22
Nominal speed	rpm	8140	7400	7300
Nominal torque	mNm	3.55	3.28	3.81
Nominal current	A	0.79	0.35	0.19
Stall torque	mNm	13.66	12.60	14.10
Stall current	A	2.80	1.17	0.66
Max. efficiency	%	67.4	67.8	66.6
Terminal resistance	Ω	2.14	10.20	36.40
Terminal inductance	mH	0.08	0.31	1.18
Torque constant	mNm/A	5.04	11.10	22.14
Speed constant	rpm/V	1833.3	833.3	416.7
Speed/torque gradient	rpm/mNm	805.2	793.6	584.2
Mechanical time constant	ms	7.6	5.5	5.5
Rotor inertia	gcm ²	0.90	0.90	0.90

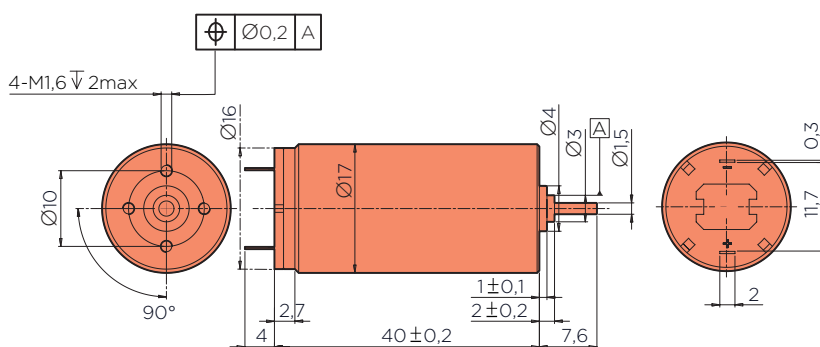
Thermal resistance housing-ambient	4 K/W
Thermal resistance winding-housing	24.5 K/W
Thermal time constant winding	2.6 s
Thermal time constant motor	270 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	11000 rpm
Max. axial load (dynamic)	1.3 N
Max. force for press fits (static)	15 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Weight of motor	28 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

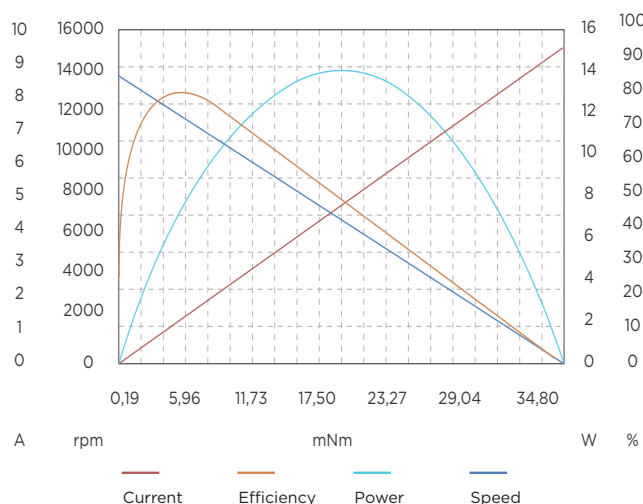
SVTN B 01-1740 Graphite brushes



1:1

Values	Unit	SVTN B 01	1740-06..	1740-12..	1740-24..
Nominal voltage	V	6	12	24	
No-load speed	rpm	13500	22000	16000	
No-load current	mA	120	130	48	
Nominal speed	rpm	11408	18590	13520	
Nominal torque	mNm	6.0	9.5	9.8	
Nominal current	A	1.54	1.97	0.74	
Stall torque	mNm	38.5	61.2	63.1	
Stall current	A	9.30	12.00	4.50	
Max. efficiency	%	78.6	80.3	80.4	
Terminal resistance	Ω	0.65	1.00	5.33	
Terminal inductance	mH	0.028	0.075	0.290	
Torque constant	mNm/A	4.19	5.15	14.17	
Speed constant	rpm/V	2250.0	1833.3	666.7	
Speed/torque gradient	rpm/mNm	351.0	359.7	253.6	
Mechanical time constant	ms	6.2	6.4	4.5	
Rotor inertia	gcm ²	1.69	1.69	1.69	

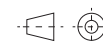
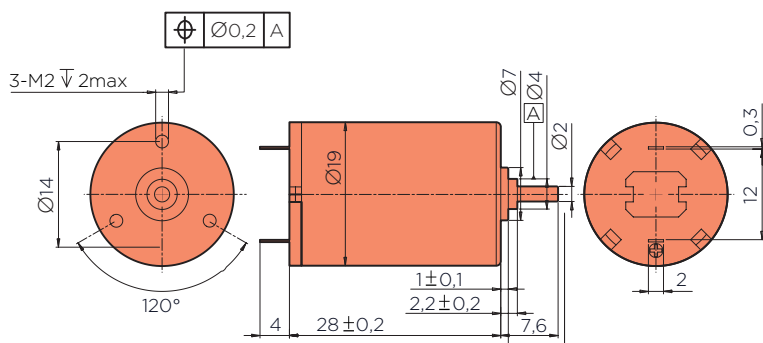
Thermal resistance housing-ambient	7 K/W
Thermal resistance winding-housing	23 K/W
Thermal time constant winding	8 s
Thermal time constant motor	440 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	22000 rpm
Max. axial load (dynamic)	1.3 N
Max. force for press fits (static)	15 N
Max. radial loading, 5mm from flange	5 N
Number of pole pairs	1
Weight of motor	48 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

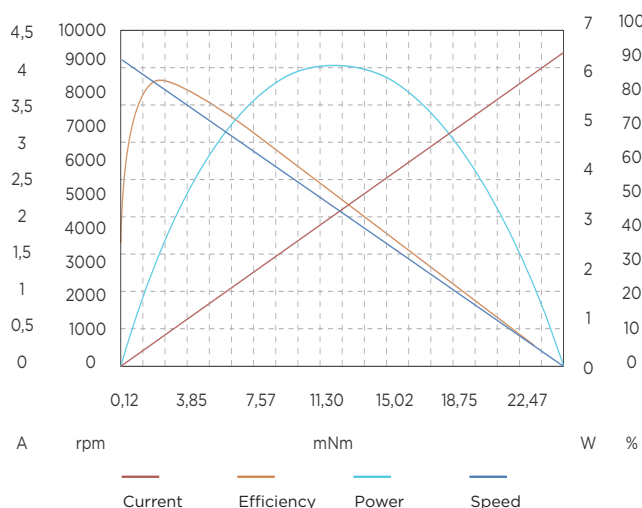
SVTN B 01-1928 Graphite brushes



1:1

Values	Unit	SVTN B 01			
		1928-06..	1928-09..	1928-12..	1928-24..
Nominal voltage	V	6	9	12	24
No-load speed	rpm	9000	10000	10000	15200
No-load current	mA	40	30	20	35
Nominal speed	rpm	7965	8850	8000	12160
Nominal torque	mNm	2.9	4.1	7.1	10.8
Nominal current	A	0.49	0.51	0.65	0.75
Stall torque	mNm	24.8	35.6	35.6	54.5
Stall current	A	3.98	4.20	3.15	3.65
Max. efficiency	%	81.0	83.8	84.7	83.3
Terminal resistance	Ω	1.51	2.14	3.81	6.55
Terminal inductance	mH	0.08	0.16	0.26	0.51
Torque constant	mNm/A	6.30	8.53	11.39	14.96
Speed constant	rpm/V	1500.0	1111.1	833.3	633.3
Speed/torque gradient	rpm/mNm	362.5	281.0	280.6	278.8
Mechanical time constant	ms	8.7	6.7	6.7	5.3
Rotor inertia	gcm²	2.29	2.29	2.29	2.29

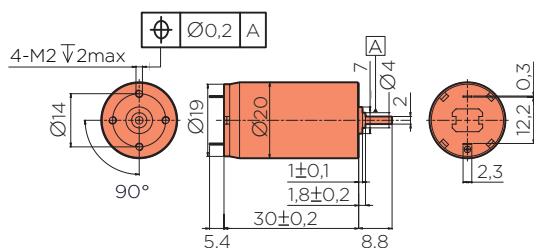
Thermal resistance housing-ambient	21.3 K/W
Thermal resistance winding-housing	10.5 K/W
Thermal time constant winding	11.0 s
Thermal time constant motor	201 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	15200 rpm
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Weight of motor	40 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

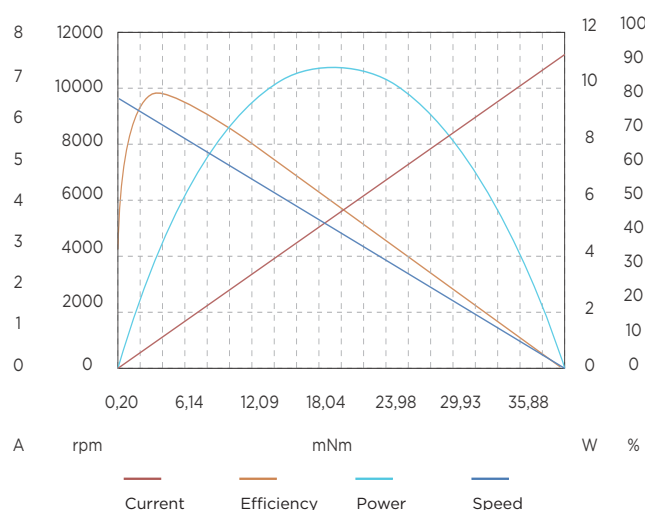
SVTN B 01-2030 Graphite brushes



1:2

Values	Unit	SVTN B 01	2030-06..	2030-09..	2030-12..	2030-15..	2030-24..
Nominal voltage	V	6	9	12	15	24	
No-load speed	rpm	9800	10000	12000	10000	9100	
No-load current	mA	60	38	40	20	8	
Nominal speed	rpm	8379	8550	10260	8550	7781	
Nominal torque	mNm	5.75	6.29	5.71	3.76	3.78	
Nominal current	A	1.05	0.77	0.64	0.29	0.16	
Stall torque	mNm	39.6	43.4	39.3	25.9	26.0	
Stall current	A	6.90	5.12	4.20	1.85	1.05	
Max. efficiency	%	82.2	83.5	81.4	80.3	83.3	
Terminal resistance	Ω	0.87	1.76	2.86	8.11	22.9	
Terminal inductance	mH	0.14	0.29	0.51	0.86	1.9	
Torque constant	mNm/A	5.80	8.53	9.46	14.17	25.0	
Speed constant	rpm/V	1633.3	1111.1	1000.0	666.7	379.2	
Speed/torque gradient	rpm/mNm	247.2	230.7	305.0	385.7	349.4	
Mechanical time constant	ms	6.51	6.08	7.63	9.65	8.74	
Rotor inertia	gcm ²	2.52	2.52	2.39	2.39	2.42	

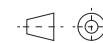
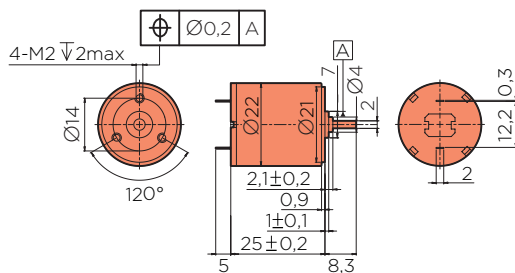
Thermal resistance housing-ambient	20 K/W
Thermal resistance winding-housing	6.0 K/W
Thermal time constant winding	10.2 s
Thermal time constant motor	313 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	12000 rpm
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Weight of motor	48 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

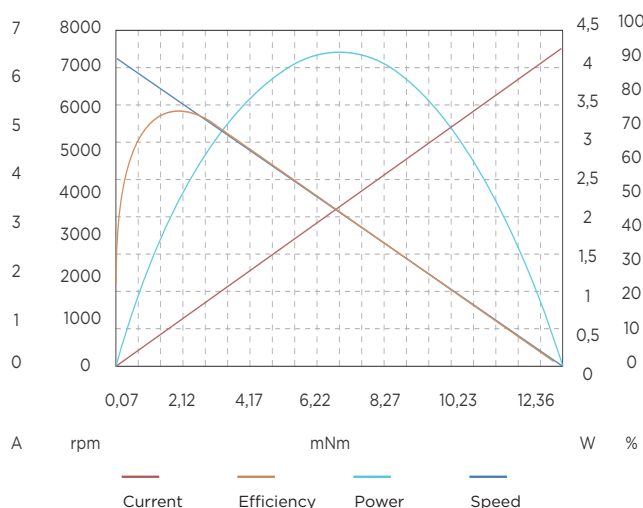
SVTN B 01-2225 Metal brushes



1:2

Values	Unit	SVTN B 01			
		2225-03..	2225-06..	2225-12..	2225-24..
Nominal voltage	V	3	6	12	24
No-load speed	rpm	7600	8200	8300	7800
No-load current	mA	70	30	20	6
Nominal speed	rpm	6764	6806	6889	6474
Nominal torque	mNm	2.35	3.28	4.13	3.44
Nominal current	A	0.70	0.50	0.32	0.12
Stall torque	mNm	21.3	19.3	24.3	20.2
Stall current	A	5.80	2.82	1.80	0.70
Max. efficiency	%	79.2	80.4	80.0	82.3
Terminal resistance	Ω	0.52	2.13	6.67	34.29
Terminal inductance	mH	0.013	0.045	0.240	0.800
Torque constant	mNm/A	3.72	6.91	13.65	29.13
Speed constant	rpm/V	2533.3	1366.7	691.7	325.0
Speed/torque gradient	rpm/mNm	356.2	425.2	341.5	385.8
Mechanical time constant	ms	9.93	12.30	10.61	11.84
Rotor inertia	gcm ²	2.66	2.76	2.97	2.93

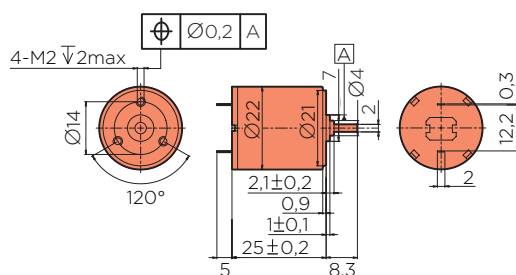
Thermal resistance housing-ambient	20 K/W
Thermal resistance winding-housing	6.0 K/W
Thermal time constant winding	10.2 s
Thermal time constant motor	313 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	8300 rpm
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Weight of motor	48 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

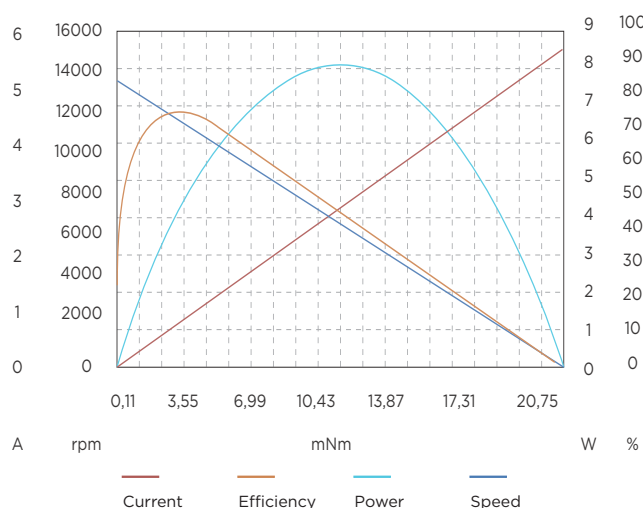
SVTN B 01-2225 Graphite brushes



1:2

Values	Unit	SVTN B 01			
		2225-06..	2225-12..	2225-18..	2225-24..
Nominal voltage	V	6	12	18	24
No-load speed	rpm	13500	15800	11800	12000
No-load current	mA	100	90	60	45
Nominal speed	rpm	11340	13272	9676	9960
Nominal torque	mNm	3.67	5.13	6.24	5.56
Nominal current	A	0.98	0.81	0.50	0.34
Stall torque	mNm	22.9	32.1	34.7	32.7
Stall current	A	5.60	4.60	2.50	1.80
Max. efficiency	%	75.1	74.0	71.4	70.9
Terminal resistance	Ω	1.07	2.61	7.20	13.33
Terminal inductance	mH	0.025	0.090	0.265	0.550
Torque constant	mNm/A	4.17	7.11	14.22	18.62
Speed constant	rpm/V	2250.0	1316.7	655.6	500.0
Speed/torque gradient	rpm/mNm	588.9	492.7	340.2	367.2
Mechanical time constant	ms	18.07	15.12	10.44	11.27
Rotor inertia	gcm²	2.93	2.93	2.97	2.93

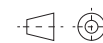
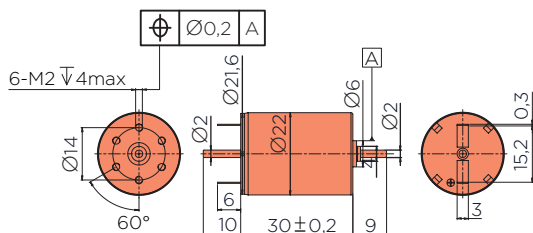
Thermal resistance housing-ambient	20 K/W
Thermal resistance winding-housing	6.0 K/W
Thermal time constant winding	10.2 s
Thermal time constant motor	313 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	15800 rpm
Max. axial load (dynamic)	3.5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Weight of motor	48 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

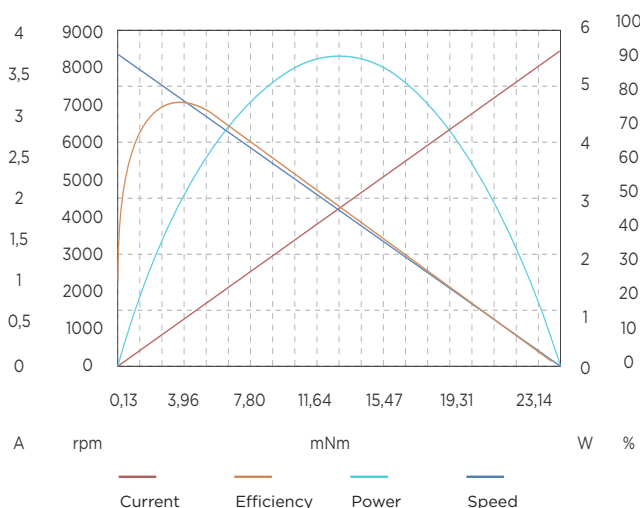
SVTN B 01-2230 Metal brushes



1:2

Values	Unit	SVTN B 01	2230-06..	2230-09..	2230-12..	2230-15..	2230-24..
Nominal voltage	V	6	9	12	15	24	
No-load speed	rpm	8300	12200	10200	11000	9000	
No-load current	mA	48	60	24	8	6	
Nominal speed	rpm	7387	10858	9078	9790	8010	
Nominal torque	mNm	2,81	2,39	2,73	2,7	1,37	
Nominal current	A	0,46	0,41	0,27	0,22	0,06	
Stall torque	mNm	25,6	21,7	24,9	24,5	12,4	
Stall current	A	3,8	3,2	2,26	1,9	0,5	
Max. efficiency	%	78,8	74,5	80,4	87,4	79,3	
Terminal resistance	Ω	1,58	2,81	5,31	7,89	48	
Terminal inductance	mH	0,095	0,16	0,36	0,58	3,1	
Torque constant	mNm/A	6,82	6,91	11,12	12,97	25,2	
Speed constant	rpm/V	1383,3	1355,6	850	733,3	375	
Speed/torque gradient	rpm/mNm	324,6	562,1	410,4	448,4	724,1	
Mechanical time constant	ms	8,94	13,83	10,63	11,9	20,18	
Rotor inertia	gcm ²	2,63	2,35	2,47	2,54	2,75	

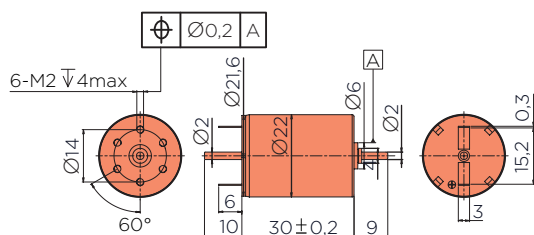
Thermal resistance housing-ambient	20 K/W
Thermal resistance winding-housing	6.0 K/W
Thermal time constant winding	10.2 s
Thermal time constant motor	313 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	12200 rpm
Max. axial load (dynamic)	3,5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Weight of motor	54 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

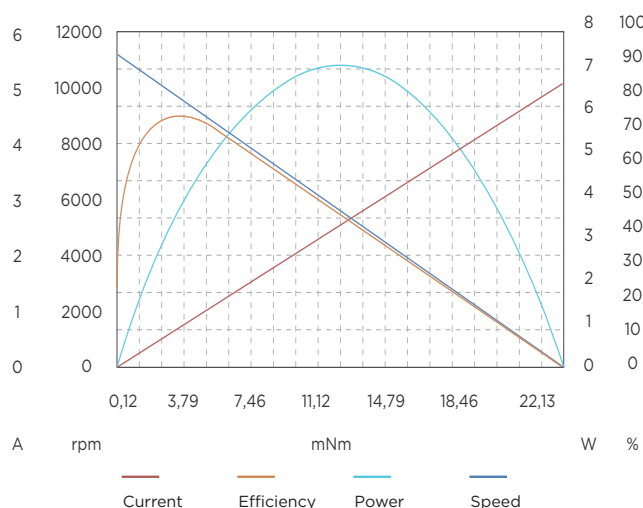
SVTN B 01-2230 Graphite brushes



1:2

Values	Unit	SVTN B 01			
		2230-06..	2230-12..	2230-18..	2230-24..
Nominal voltage	V	6	12	18	24
No-load speed	rpm	11300	12200	10800	11000
No-load current	mA	90	65	45	30
Nominal speed	rpm	9492	10248	9234	9405
Nominal torque	mNm	3,91	5,22	5,79	5,26
Nominal current	A	0,88	0,63	0,42	0,29
Stall torque	mNm	24,45	32,6	39,96	36,26
Stall current	A	5	3,6	2,6	1,8
Max. efficiency	%	74,97	74,93	75,42	75,85
Terminal resistance	Ω	1,2	3,33	6,92	13,33
Terminal inductance	mH	0,19	0,403	0,85	1,6
Torque constant	mNm/A	4,98	9,22	15,64	20,49
Speed constant	rpm/V	1883,3	1016,7	600	458,3
Speed/torque gradient	rpm/mNm	462,2	374,2	270,3	303,3
Mechanical time constant	ms	13,05	11,08	7,9	9,09
Rotor inertia	gcm²	2,7	2,83	2,79	2,54

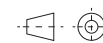
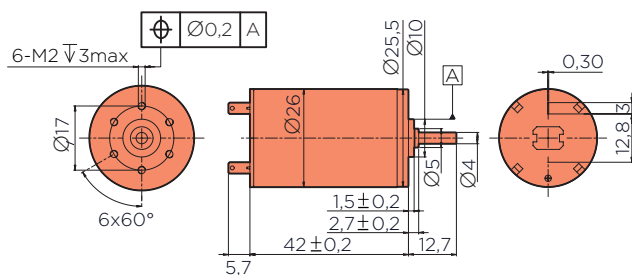
Thermal resistance housing-ambient	20 K/W
Thermal resistance winding-housing	6.0 K/W
Thermal time constant winding	10.2 s
Thermal time constant motor	314 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	12200 rpm
Max. axial load (dynamic)	3,5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Weight of motor	54 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

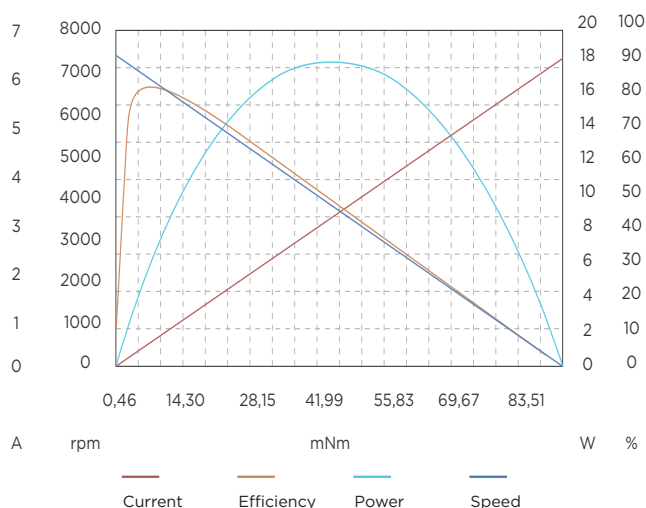
SVTN B 01-2642 Graphite brushes



1:2

Values	Unit	SVTN B 01			
		2642-06..	2642-09..	2642-12..	2642-24..
Nominal voltage	V	6	9	12	24
No-load speed	rpm	5500	8400	8100	8800
No-load current	mA	50	50	45	30
Nominal speed	rpm	4895	7476	7452	7700
Nominal torque	mNm	4,01	5,97	5,44	9,25
Nominal current	A	0,44	0,64	0,43	0,39
Stall torque	mNm	36,5	54,2	68,1	74
Stall current	A	3,6	5,4	4,9	2,9
Max. efficiency	%	77,8	81,7	81,7	80,7
Terminal resistance	Ω	1,67	1,67	2,45	8,28
Terminal inductance	mH	0,062	0,07	0,16	0,29
Torque constant	mNm/A	10,27	10,14	14,02	25,77
Speed constant	rpm/V	916,7	933,3	675	366,7
Speed/torque gradient	rpm/mNm	150,8	154,9	119	119
Mechanical time constant	ms	9,11	7,68	5,9	5,79
Rotor inertia	gcm²	5.77	4.73	4.73	4.65

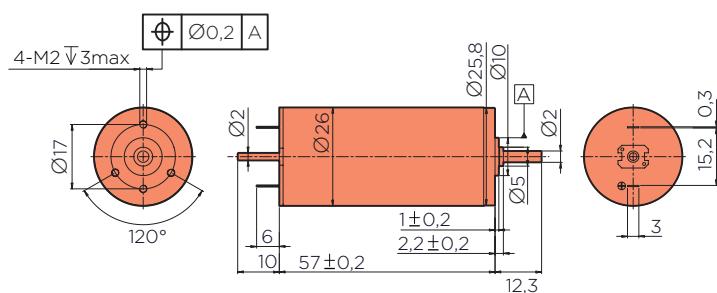
Thermal resistance housing-ambient	16 K/W
Thermal resistance winding-housing	5 K/W
Thermal time constant winding	18 s
Thermal time constant motor	700 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	8800 rpm
Max. axial load (dynamic)	3,5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Weight of motor	105 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

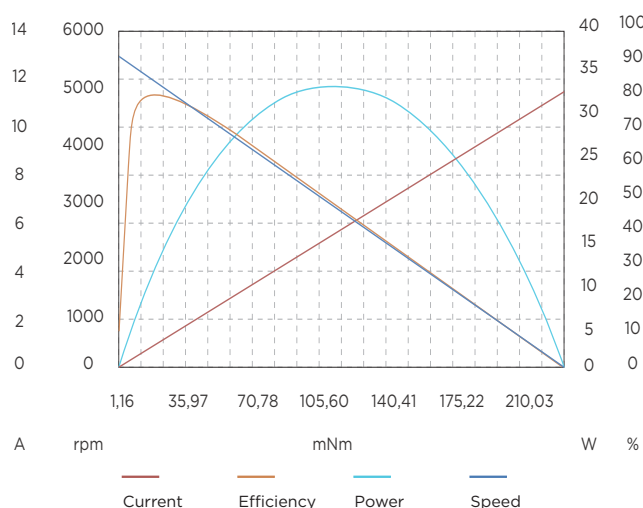
SVTN B 01-2657 Graphite brushes



1:2

Values	Unit	SVTN B 01 2657-12..	2657-24..	2657-48..
Nominal voltage	V	12	24	48
No-load speed	rpm	5600	5600	5800
No-load current	mA	130	60	20
Nominal speed	rpm	4984	4984	5162
Nominal torque	mNm	25,53	25,57	36,16
Nominal current	A	1,39	0,69	0,48
Stall torque	mNm	232,1	232,5	328,8
Stall current	A	11,6	5,8	4,2
Max. efficiency	%	79,9	80,7	86,7
Terminal resistance	Ω	1,03	4,14	11,43
Terminal inductance	mH	0,083	0,31	1,43
Torque constant	mNm/A	20,23	40,5	78,65
Speed constant	rpm/V	466,7	233,3	120,8
Speed/torque gradient	rpm/mNm	24,1	24,1	17,6
Mechanical time constant	ms	3,34	3,45	2,56
Rotor inertia	gcm ²	13,22	13,69	5,13

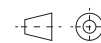
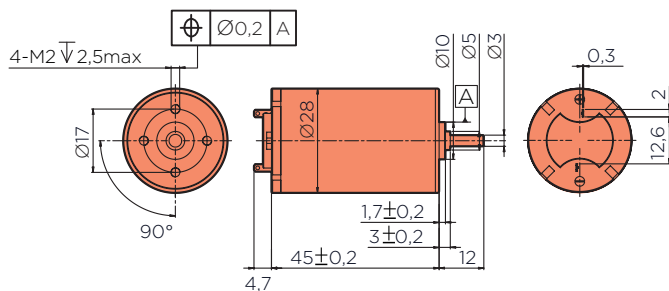
Thermal resistance housing-ambient	10.2 K/W
Thermal resistance winding-housing	3.01 K/W
Thermal time constant winding	24s
Thermal time constant motor	620 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	5800 rpm
Max. axial load (dynamic)	3,5 N
Max. force for press fits (static)	44 N
Max. radial loading, 5mm from flange	15 N
Number of pole pairs	1
Weight of motor	149 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

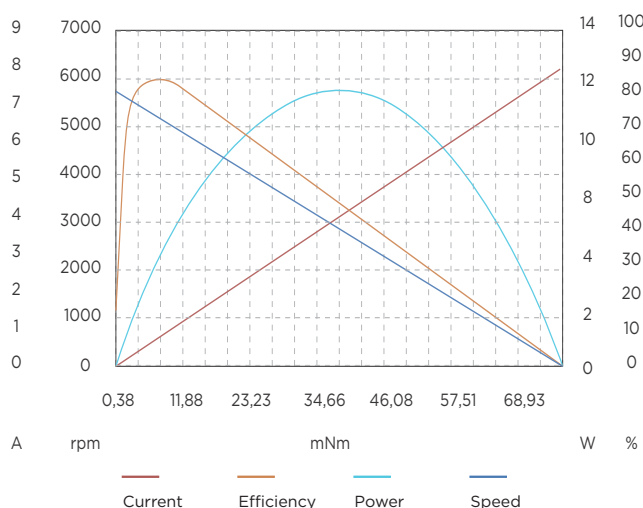
SVTN B 01-2845 Metal brushes



1:2

Values	Unit	SVTN B 01	2845-06..	2845-12..	2845-24..	2845-48..
Nominal voltage	V	6	12	24	48	
No-load speed	rpm	5800	6200	6400	7000	
No-load current	mA	45	25	16	10	
Nominal speed	rpm	5336	5394	5568	6090	
Nominal torque	mNm	6,09	14,3	20,33	18,56	
Nominal current	A	0,67	0,8	0,59	0,29	
Stall torque	mNm	76,2	110	156,4	142,8	
Stall current	A	7,8	6	4,4	2,2	
Max. efficiency	%	85,4	87,5	88,3	87	
Terminal resistance	Ω	0,77	2	5,45	21,82	
Terminal inductance	mH	0,053	0,16	0,55	2,1	
Torque constant	mNm/A	9,82	18,41	35,68	65,18	
Speed constant	rpm/V	966,7	516,7	266,7	145,8	
Speed/torque gradient	rpm/mNm	76,1	56,4	40,9	49	
Mechanical time constant	ms	6,66	6,28	4,78	6	
Rotor inertia	gcm ²	8,35	11,47	11,16	11,69	

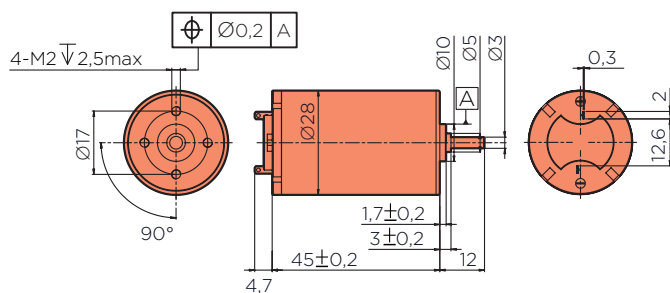
Thermal resistance housing-ambient	9 K/W
Thermal resistance winding-housing	2 K/W
Thermal time constant winding	9 s
Thermal time constant motor	570 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	8500 rpm
Max. axial load (dynamic)	7,5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Weight of motor	145 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

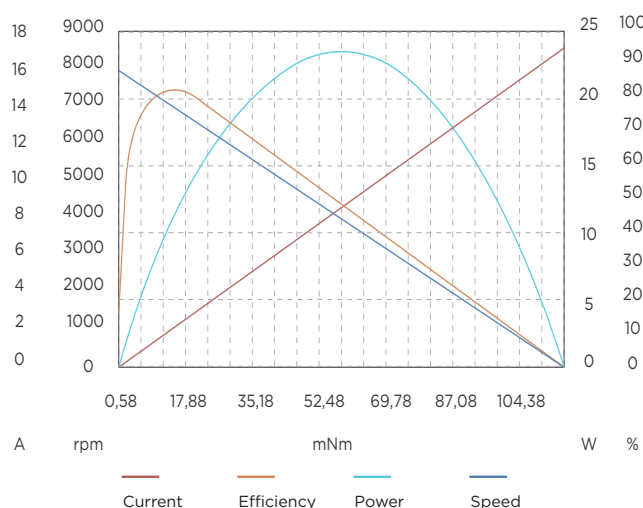
SVTN B 01 2845 Graphite brushes



1:2

Values	Unit	SVTN B 01			
		2845-06..	2845-12..	2845-24..	2845-48..
Nominal voltage	V	6	12	24	48
No-load speed	rpm	7800	8400	8500	8200
No-load current	mA	150	120	75	45
Nominal speed	rpm	6942	7476	7565	7298
Nominal torque	mNm	12,69	15,85	17,65	17,9
Nominal current	A	1,89	1,29	0,74	0,37
Stall torque	mNm	115,3	144,1	160,5	162,7
Stall current	A	16	10,8	6,1	3
Max. efficiency	%	81,6	80	79,1	77
Terminal resistance	Ω	0,38	1,11	3,93	16
Terminal inductance	mH	0,03	0,12	0,42	1,8
Torque constant	mNm/A	7,28	13,49	26,63	55,06
Speed constant	rpm/V	1300	700	354,2	170,8
Speed/torque gradient	rpm/mNm	67,6	58,3	53	50,4
Mechanical time constant	ms	7,53	7	6,49	6,73
Rotor inertia	gcm²	10,63	11,47	11,69	12,75

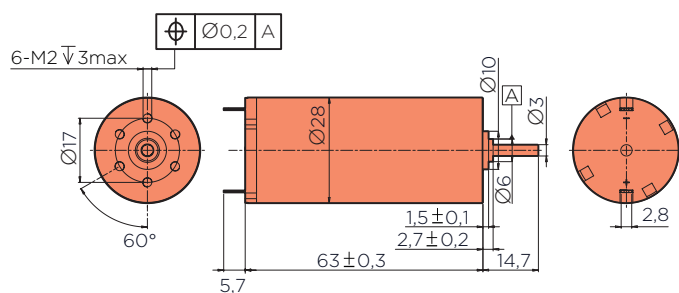
Thermal resistance housing-ambient	9 K/W
Thermal resistance winding-housing	2 K/W
Thermal time constant winding	9 s
Thermal time constant motor	570 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	8500 rpm
Max. axial load (dynamic)	7,5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Weight of motor	145 gr

CORELESS
BRUSHED DC

Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

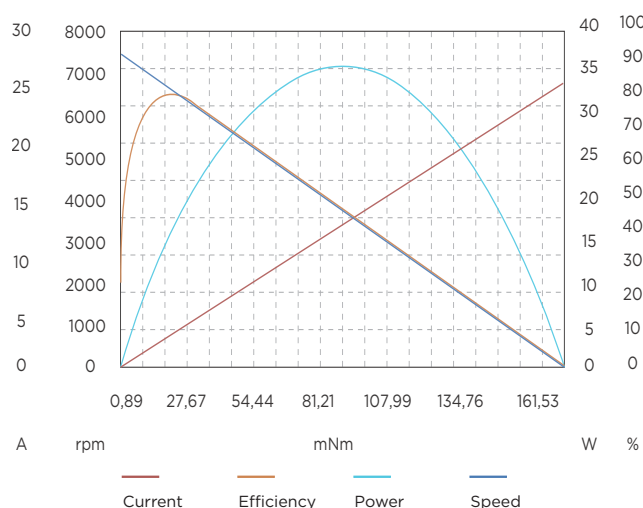
SVTN B 01-2863 Graphite brushes



1:2

Values	Unit	SVTN B 01	2863-06..	2863-12..	2863-24..
Nominal voltage	V	6	12	24	
No-load speed	rpm	7500	7300	7300	
No-load current	mA	320	240	64	
Nominal speed	rpm	6675	6497	6497	
Nominal torque	mNm	19,63	26,46	32,71	
Nominal current	A	2,92	1,95	1,11	
Stall torque	mNm	178,5	240,5	297,4	
Stall current	A	24	15,8	9,6	
Max. efficiency	%	78,2	76,9	84,3	
Terminal resistance	Ω	0,25	0,76	2,5	
Terminal inductance	mH	0,03	0,09	0,28	
Torque constant	mNm/A	7,54	15,46	31,19	
Speed constant	rpm/V	1250	608,3	304,2	
Speed/torque gradient	rpm/mNm	42	30,3	24,5	
Mechanical time constant	ms	7,02	6,56	4,97	
Rotor inertia	gcm ²	15,94	20,63	19,32	

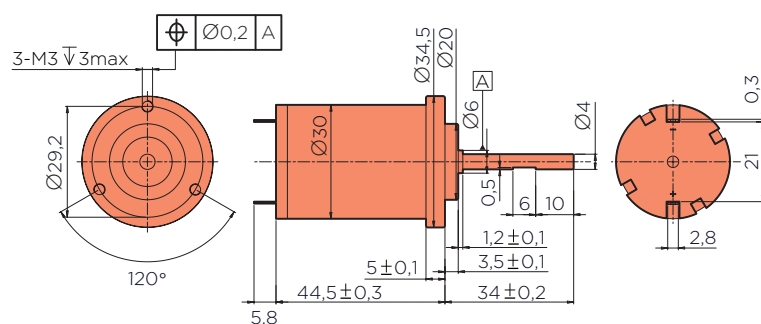
Thermal resistance housing-ambient	8 K/W
Thermal resistance winding-housing	3 K/W
Thermal time constant winding	30 s
Thermal time constant motor	600 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	7500 rpm
Max. axial load (dynamic)	7,5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Weight of motor	200 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

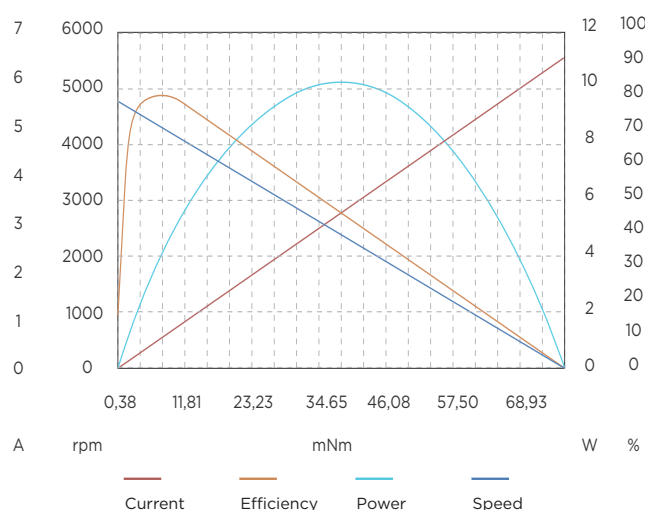
SVTN B 01-3045 Graphite brushes



1:2

Values	Unit	SVTN B 01		
		3045-06..	3045-12..	3045-24..
Nominal voltage	V	6	12	24
No-load speed	rpm	4800	7800	6000
No-load current	mA	95	140	35
Nominal speed	rpm	4272	6942	5340
Nominal torque	mNm	12,62	18,3	17,35
Nominal current	A	1,16	1,4	0,49
Stall torque	mNm	114,7	166,3	157,8
Stall current	A	9,8	11,6	4,2
Max. efficiency	%	81,3	79,2	82,6
Terminal resistance	Ω	0,61	1,03	5,71
Terminal inductance	mH	0,072	0,11	0,46
Torque constant	mNm/A	11,82	14,51	37,88
Speed constant	rpm/V	800	650	250
Speed/torque gradient	rpm/mNm	41,8	46,9	38
Mechanical time constant	ms	6,57	9,14	8,25
Rotor inertia	gcm ²	14,99	18,62	20,72

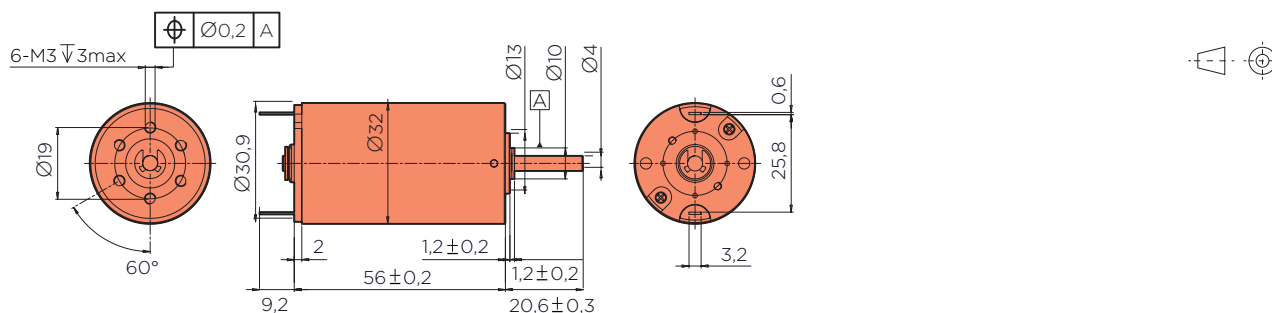
Thermal resistance housing-ambient	10,5 K/W
Thermal resistance winding-housing	3,1 K/W
Thermal time constant winding	15 s
Thermal time constant motor	630 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	7800 rpm
Max. axial load (dynamic)	7,5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Weight of motor	175 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

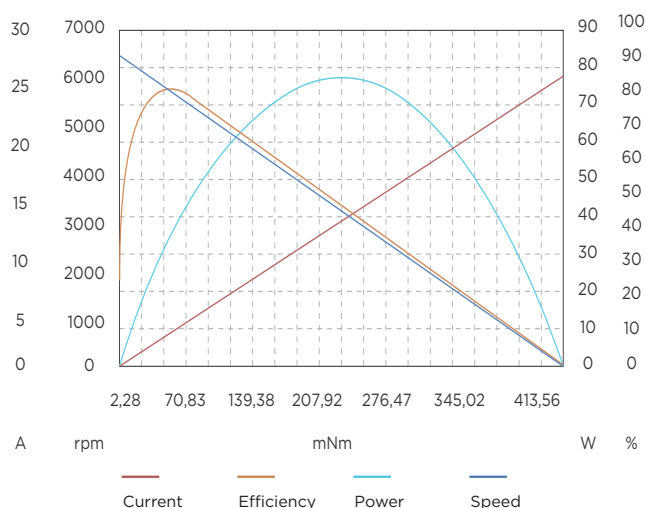
SVTN B 01-3256 Graphite brushes



1:2

Values	Unit	SVTN B 01	3256-12..	3256-24..	3256-48..
Nominal voltage	V	12	24	48	
No-load speed	rpm	6400	6100	6800	
No-load current	mA	240	85	50	
Nominal speed	rpm	5696	5429	6052	
Nominal torque	mNm	50,27	53,03	57,1	
Nominal current	A	3,07	1,51	0,9	
Stall torque	mNm	457	482,1	519,1	
Stall current	A	26	13	7,8	
Max. efficiency	%	81,7	84,5	84,6	
Terminal resistance	Ω	0,46	1,85	6,15	
Terminal inductance	mH	0,075	0,265	0,96	
Torque constant	mNm/A	17,74	37,33	66,97	
Speed constant	rpm/V	533,3	254,2	141,7	
Speed/torque gradient	rpm/mNm	14	12,7	13,1	
Mechanical time constant	ms	4,06	3,67	3,8	
Rotor inertia	gcm ²	27,68	27,68	27,68	

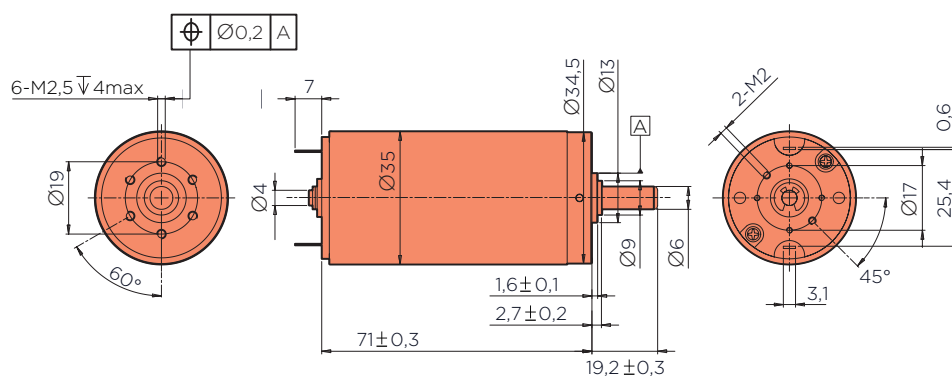
Thermal resistance housing-ambient	8,5 K/W
Thermal resistance winding-housing	2,3 K/W
Thermal time constant winding	18 s
Thermal time constant motor	670 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	6800 rpm
Max. axial load (dynamic)	7,5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Weight of motor	225 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

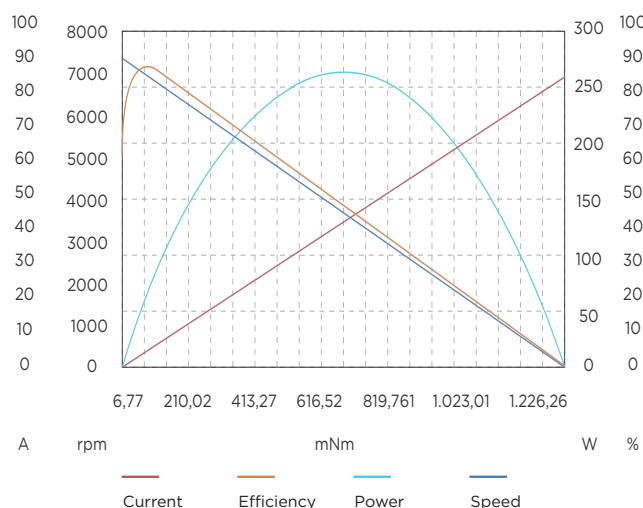
SVTN B 01-3571 Graphite brushes



1:2

Values	Unit	SVTN B 01	3571-12..	3571-15..	3571-18..	3571-24..	3571-48..
Nominal voltage	V	12	15	18	24	48	
No-load speed	rpm	7400	7100	6600	7900	7600	
No-load current	mA	250	160	150	150	80	
Nominal speed	rpm	6771	6497	6039	7229	6118	
Nominal torque	mNm	115,17	81,76	82,35	117,62	245,1	
Nominal current	A	7,71	4,23	3,32	4,22	4,16	
Stall torque	mNm	1355	961,9	968,8	1383,8	1256,9	
Stall current	A	88	48	37,5	48	21	
Max. efficiency	%	89,6	88,8	87,8	89,1	88	
Terminal resistance	Ω	0,14	0,31	0,48	0,5	2,3	
Terminal inductance	mH	0,05	0,12	0,17	0,19	0,7	
Torque constant	mNm/A	15,44	20,11	25,94	28,92	60,1	
Speed constant	rpm/V	616,7	473,3	366,7	329,2	158,3	
Speed/torque gradient	rpm/mNm	5,5	7,4	6,8	5,7	6	
Mechanical time constant	ms	4,57	5,87	5,43	4,48	4,61	
Rotor inertia	gcm ²	79,98	76,01	76,06	74,80	72,85	

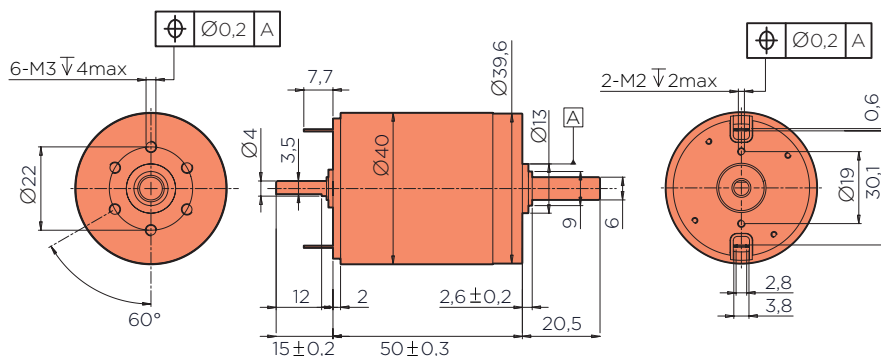
Thermal resistance housing-ambient	6.2 K/W
Thermal resistance winding-housing	2 K/W
Thermal time constant winding	30.1 s
Thermal time constant motor	707 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	7900 rpm
Max. axial load (dynamic)	7.5 N
Max. force for press fits (static)	100 N
Max. radial loading, 5mm from flange	25 N
Number of pole pairs	1
Weight of motor	360 gr



Configuration

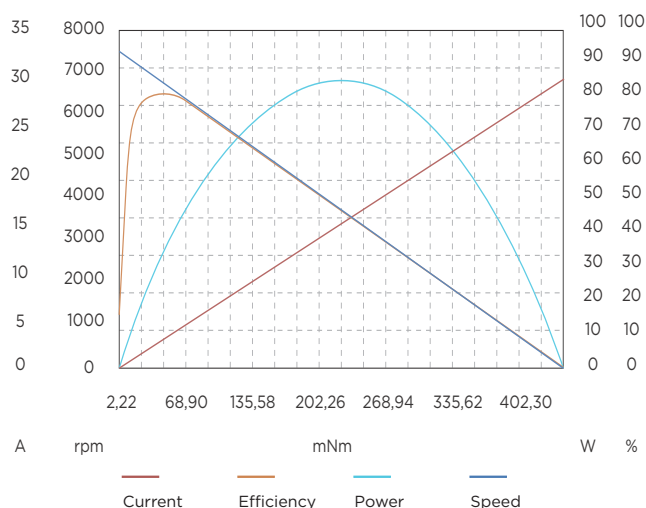
PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

SVTN B 01-4050 Graphite brushes



Values	Unit	SVTN B 01	4050-12..	4050-15..	4050-24..	4050-36..	4050-48..
Nominal voltage	V	12	15	24	36	48	
No-load speed	rpm	7600	7600	7850	8000	9500	
No-load current	mA	260	200	150	60	40	
Nominal speed	rpm	6612	6612	6712	6640	8075	
Nominal torque	mNm	57,79	57,83	77,05	72,18	75,41	
Nominal current	A	4,13	3,29	2,81	1,75	1,61	
Stall torque	mNm	444,5	444,8	531,4	424,6	502,8	
Stall current	A	30	24	18,5	10	10,5	
Max. efficiency	%	82,2	82,6	82,8	85,1	88	
Terminal resistance	Ω	0,4	0,63	1,3	3,6	4,6	
Terminal inductance	mH	0,043	0,087	0,18	0,32	0,51	
Torque constant	mNm/A	14,95	18,69	28,96	42,71	48,1	
Speed constant	rpm/V	633,3	506,7	327,1	222,2	197,9	
Speed/torque gradient	rpm/mNm	17,1	17,1	14,8	18,8	18,9	
Mechanical time constant	ms	6	6,56	5,75	6,92	6,94	
Rotor inertia	gcm ²	33,54	36,66	37,14	35,08	35,08	

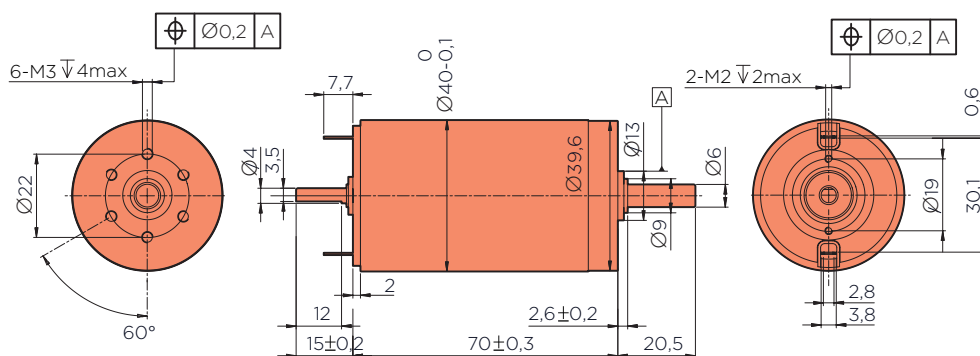
Thermal resistance housing-ambient	4.9 K/W
Thermal resistance winding-housing	2 K/W
Thermal time constant winding	38 s
Thermal time constant motor	780 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	9500 rpm
Max. axial load (dynamic)	9 N
Max. force for press fits (static)	170 N
Max. radial loading, 5mm from flange	80 N
Number of pole pairs	1
Weight of motor	290 gr



Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

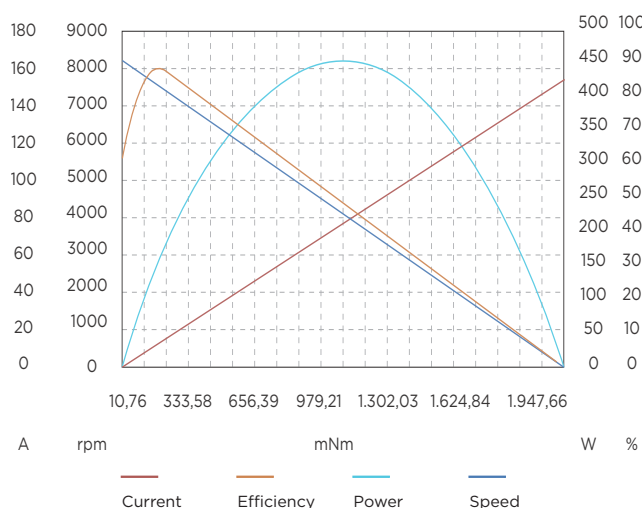
SVTN B 01-4070 Graphite brushes



1:2

Values	Unit	SVTN B 01	4070-12..	4070-24..	4070-36..	4070-48..	4070-48..
Nominal voltage	V	12	24	36	48	48	
No-load speed	rpm	8200	7600	7500	7600	2200	
No-load current	mA	500	180	180	100	18	
Nominal speed	rpm	7585	7030	6900	6992	1606	
Nominal torque	mNm	161,41	181,25	189,36	196,86	172,37	
Nominal current	A	12,09	6,2	4,33	3,37	0,85	
Stall torque	mNm	2152,1	2416,7	2367	2460,7	638,4	
Stall current	A	155	80,5	52	41	3,1	
Max. efficiency	%	89	90,8	88,6	90,4	85,3	
Terminal resistance	Ω	0,08	0,3	0,69	1,17	15,5	
Terminal inductance	mH	0,016	0,083	0,18	0,34	4,08	
Torque constant	mNm/A	13,93	30,09	45,68	60,16	207,1	
Speed constant	rpm/V	683,3	316,7	208,3	158,3	45,8	
Speed/torque gradient	rpm/mNm	3,8	3,1	3,2	3,1	3,4	
Mechanical time constant	ms	5,6	4,42	4,3	4,05	4,31	
Rotor inertia	gcm ²	140,23	134,1	137,14	125,21	119,52	

Thermal resistance housing-ambient	4.7 K/W
Thermal resistance winding-housing	1.9 K/W
Thermal time constant winding	41.5 s
Thermal time constant motor	809 s
Ambient temperature	-20...+85°C
Max. permissible winding temperature	+100°C
Max. permissible speed	7600 rpm
Max. axial load (dynamic)	9 N
Max. force for press fits (static)	170 N
Max. radial loading, 5mm from flange	80 N
Number of pole pairs	1
Weight of motor	485 gr

CORELESS
BRUSHED DC

Configuration

PERFORMANCE: Customized in the continuous operating range
 BEARINGS: Ball bearings (preloaded)
 FLANGE (front/back): Standard or customized
 SHAFT (front/back): Length/Diameter/Cut face/double shaft
 CONNECTION: Terminals or cables

Encoders

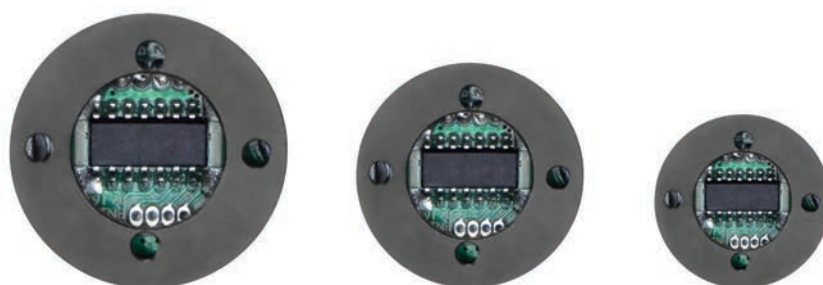
Magnetic Incremental Encoders

Contents

[illegible]

Encoders

Magnetic Incremental Encoders*



ROBUST



COMPACT



COST-EFFECTIVE

Thanks to incremental magnetic encoders (single ended and line driver), you can obtain a reliable control of speed and position.

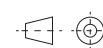
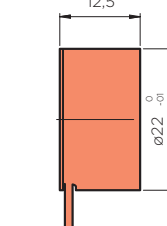
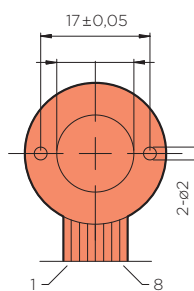
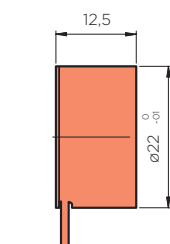
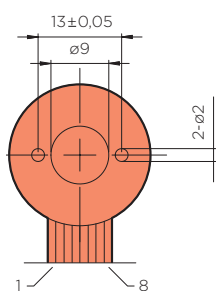
*As an option, incremental optic encoders are available for high resolution needs.

Features

Housing	Engineering plastic
Operating temperature	-40° +125° C
Signal	3 channels: ABI; A A/, B B/, I I/
Resolution	from 25 to 1000/1024 ppr
Supply Voltage	5 VDC
Max speed	28.000 rpm

EN 22A, EN 22AL

EN 22B, EN 22BL



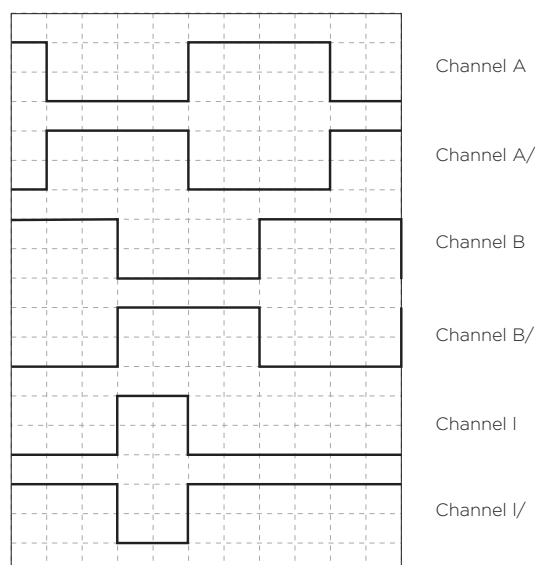
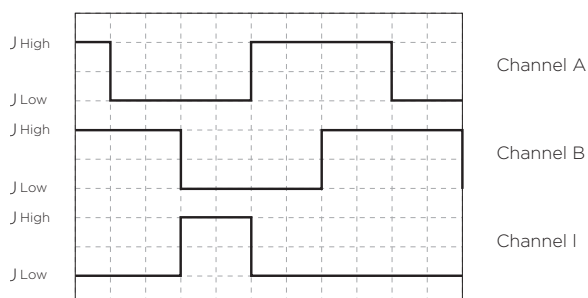
Electric Data	Unit	EN 22A	EN 22AL	EN 22B	EN 22BL
Counts per revolution	ppr	1024	1024	1024	1024
Number of channels	#	3	3	3	3
Max. speed	rpm	28000	28000	28000	28000
Supply voltage	VDC	5	5	5	5
Output signal		TTL single ended	TTL line driver	TTL single ended	TTL line driver
Index pulse width	deg.	90	90	90	90
Phase shift, Channel A to B	deg.	90	90	90	90
Interia of code disc	g/cm ²	0,7	0,7	0,7	0,7
Operating temperature range	°C	-40..+125	-40..+125	-40..+125	-40..+125

Features & Configuration

- Magnetic rotary encoder chip
- Output interface: ABI
- Configuration programmable : Zero position, ABI line per revolution
- ABI binary programmable decimal and binary pulse count: 1000, 500, 400, 300, 200, 100, 50, 25, 1024, 512, 256 ppr

Connection

Output signal



Connection	EN22A; EN22A	EN22AL; EN22BL	PVC
Pin 1	GND	GND	AWG28
Pin 2	Vcc	Vcc	AWG28
Pin 3	I	I/	AWG28
Pin 4	B	I	AWG28
Pin 5	A	B/	AWG28
Pin 6	NC	B	AWG28
Pin 7	NC	A/	AWG28
Pin 8	NC	A	AWG28

Direction of rotation: CCW viewed from front shaft end

Gearboxes

Planetary gearboxes

GEARBOXES

GEARBOXES

Gearboxes

Planetary gearboxes



ROBUST



COMPACT



COST-EFFECTIVE

The planetary gearboxes are characterized by a robust design and are employed for uses where high-performance and reduce dimensions are required.

The gear trains can be made of steel or plastic polymers, also in blended configurations when needed.

The gearboxes are lubricated according to the needs with reference to temperature and functionality.

They are available with sleeve, ball or customized bearings.

Available also in personalized options designed upon request.

Benefits

Robust

Compact

Cost-effective

Low Noise

Product code

SVTG    -  -      -   

Bearings
Sleeve [A]; Ball [B]



Ratio



Diameter



Type of motor
Brushless [A]; Brushed [B]; Flat [F]



Number of gear stages



Motor diameter

Features

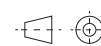
Materials	Metal / Polymer
Diameter	from 10mm to 52mm
Torque	from 0.2Nm to 45Nm
Operating temperature	-20° +100°C*
Estimated operating lifetime	Lifetime depends on gearbox working conditions. Operating life span can vary between 1.000 to 3.000 work hours.

Customizations

Flange	Shape
Shaft	Length/Diameter/D-Cut/...
Input-stage geartrain	Plastic (for quiet running)

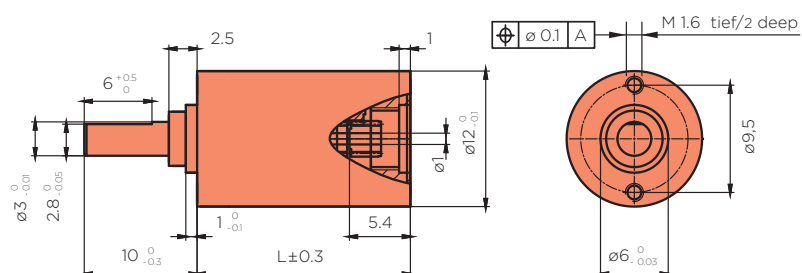
*With special lubrication

SVTG A 10



A 10						
Values	Unit					
Housing material		Metal				
Geartrain material		Metal/Plastic				
Max inupt speed (continuous operation)	rpm	≤ 20.000				
Bearings on ouput shaft		Sleeve				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 10				
Axial	N	≤ 8				
Max shaft press fit force	N	≤ 10				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	-20 +125				
Number of gear stages		1	2	3	4	5
Reduction ratio		4:1	16:1	64:1	256:1	1024:1
Continuous torque	Nm	0.01	0.025	0.1	0.15	0.15
Intermittent torque	Nm	0.02	0.05	0.15	0.2	0.2
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	1	1.2	1.2	1.5	1.5
Weight	g	5	6.3	7.5	8.8	10
Gearhead Lenght L	mm	11	13.8	16.6	19.4	22.2

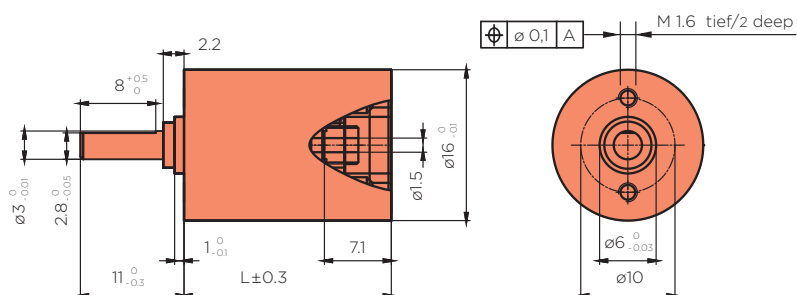
SVTG A 12



A 12						
Values	Unit					
Housing material		Metal				
Geartrain material		Metal/Plastic				
Max input speed (continuous operation)	rpm	≤ 20.000				
Bearings on output shaft		Sleeve/Ball*				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 10				
Axial	N	≤ 8				
Max shaft press fit force	N	≤ 10				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	$-20 +125$				
Number of gear stages		1	2	3	4	5
Reduction ratio		3.94:1	14:1	42:1	146:1	650:1
		4.62 :1	16:1	54:1	187:1	946:1
			18:1	61:1	282:1	1345:1
			21:1	72:1	342:1	1661:1
				84:1	387:1	2094:1
				98:1	454:1	2586:1
					560:1	3194:1
Continuous torque	Nm	0,2	0,2	0,3	0,3	0,35
Intermittent torque	Nm	0,3	0,3	0,45	0,45	0,5
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	1	1.2	1.2	1.5	1.5
Weight	g	7	10	13	16,5	20
Gearhead Length L	mm	13,3	16,1	18,9	21,7	24,5

*Optional

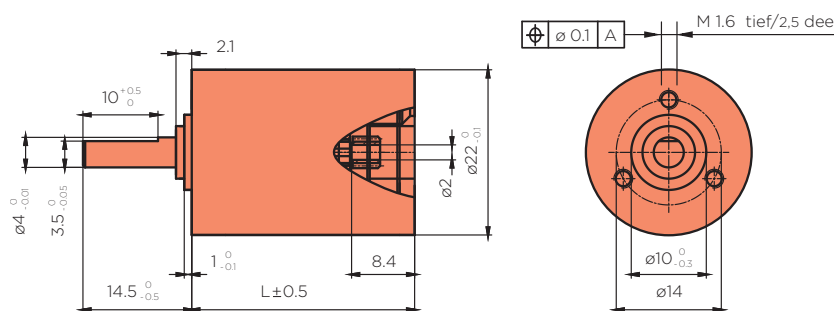
SVTG A 16



A 16						
Values	Unit					
Housing material		Metal				
Geartrain material		Metal/Plastic				
Max input speed (continuous operation)	rpm	≤ 20.000				
Bearings on output shaft		Sleeve/Ball*				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 10				
Axial	N	≤ 8				
Max shaft press fit force	N	≤ 10				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	$-20 +125$				
Number of gear stages		1	2	3	4	5
Reduction ratio		3,79:1	14:1	54:1	206:1	1012:1
		4,31:1	16:1	70:1	267:1	1152:1
		5,08:1	18:1	80:1	304:1	1311:1
			22:1	94:1	407:1	1492:1
				111:1	479:1	1596:1
				131:1	664:1	2067:1
						2434:1
Continuous torque	Nm	0.2	0.2	0.3	0.3	0.35
Intermittent torque	Nm	0.3	0.3	0.45	0.45	0.5
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	1	1.5	1.5	2	2
Weight	g	15	20	25	30	35
Gearhead Length L	mm	14.8	18.4	22.00	25.6	29.2

*Optional

SVTG B 22



A 22

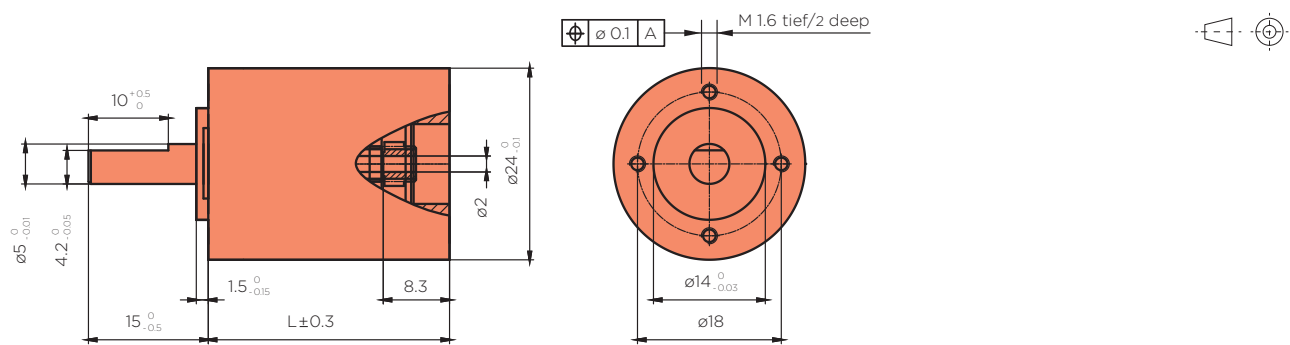
Values

Unit

Housing material		Metal				
Geartrain material		Metal/Plastic				
Max input speed (continuous operation)	rpm	≤ 10.000				
Bearings on output shaft		Sleeve*/Ball				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 50				
Axial	N	≤ 50				
Max shaft press fit force	N	≤ 100				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	-20 +125				
Number of gear stages		1	2	3	4	5
Reduction ratio		3.57:1	14:1	46:1	182:1	729:1
		4:1	16:1	51:1	205:1	817:1
		5.5:1	18:1	59:1	263:1	1024:1
			22:1	64:1	303:1	1209:1
				74:1	338:1	1558:1
				84:1	405:1	1936:1
				101:1	466:1	2287:1
				121:1	557:1	2662:1
Continuous torque	Nm	0.3	0.3	0.5	0.5	0.75
Intermittent torque	Nm	0.5	0.5	0.8	0.8	1
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	1	1.5	1.5	2	2
Weight	g	30	35	46	55	65
Gearhead Length L	mm	22,1	25,9	29,7	33,5	37,3

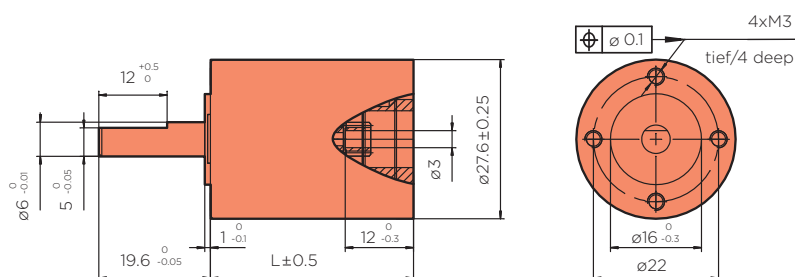
*Optional

SVTG B 24



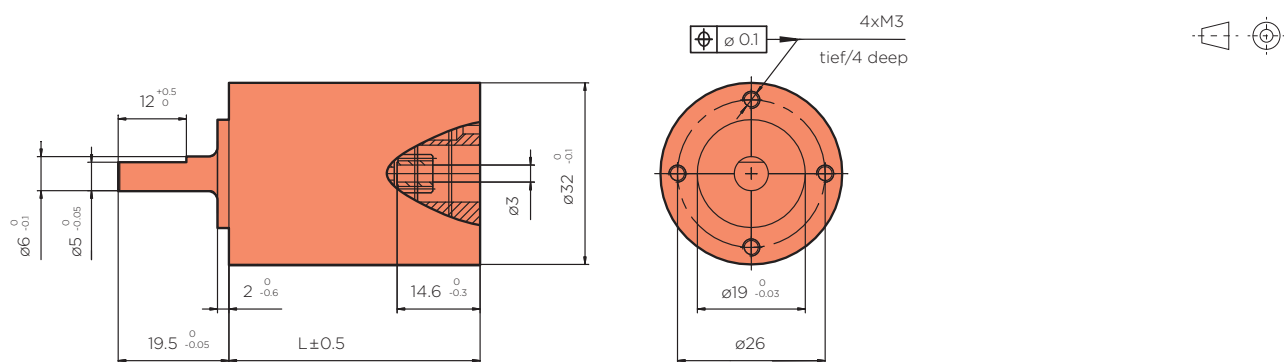
A 24						
Values	Unit					
Housing material		Metal				
Geartrain material		Metal/Plastic				
Max inupt speed (continuous operation)	rpm	≤ 10.000				
Bearings on ouput shaft		Ball				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 50				
Axial	N	≤ 50				
Max shaft press fit force	N	≤ 100				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	-20 +125				
Number of gear stages		1	2	3	4	5
Reduction ratio		3,3:1	12:1	36:1	119:1	660:1
		4,29:1	14:1	47:1	154:1	741:1
			17:1	56:1	200:1	857:1
			22:1	61:1	260:1	1036:1
				79:1	337:1	1346:1
				95:1	408:1	1628:1
					493:1	1748:1
						2114:1
Continuous torque	Nm	0.5	0.8	1.5	1.8	2.5
Intermittent torque	Nm	1	1.5	2	2.5	3.5
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	1	1.5	1.5	2	2
Weight	g	35	41	52	59	68
Gearhead Lenght L	mm	20.3	24.4	30.2	34.3	38.4

SVTG B 28



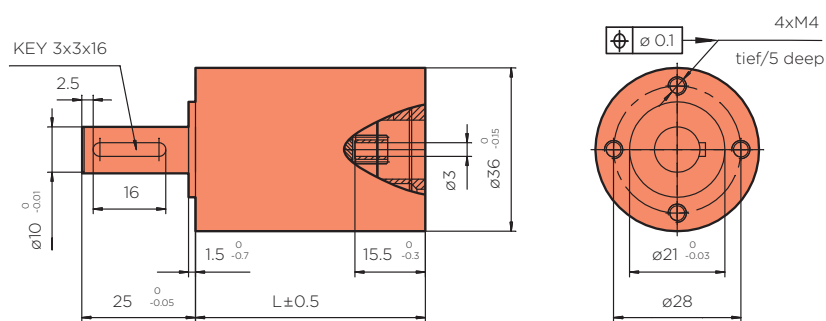
A 28						
Values		Unit				
Housing material		Metal				
Geartrain material		Metal/Plastic				
Max inupt speed (continuous operation)	rpm	≤ 10.000				
Bearings on ouput shaft		Ball				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 50				
Axial	N	≤ 50				
Max shaft press fit force	N	≤ 100				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	-20 +125				
Number of gear stages		1	2	3	4	5
Reduction ratio		3.57:1	14:1	46:1	182:1	729:1
		4:1	16:1	51:1	205:1	817:1
		5.5:1	18:1	59:1	263:1	1024:1
			21:1	64:1	303:1	1209:1
				74:1	338:1	1558:1
				85:1	405:1	1936:1
				101:1	466:1	2287:1
				121:1	557:1	2662:1
Continuous torque	Nm	0.5	1	3	3	3
Intermittent torque	Nm	0.8	2	4	4	4
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	1	1.2	1.2	1.5	1.5
Weight	g	50	65	85	95	110
Gearhead Lenght L	mm	26.7	31.2	35.7	40.2	44.7

SVTG B 32



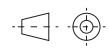
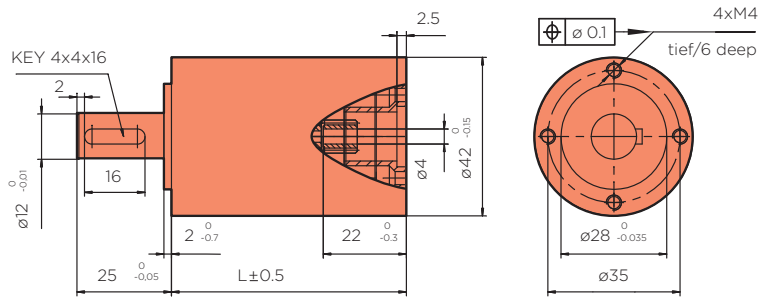
A 32						
Values	Unit					
Housing material		Metal				
Geartrain material		Metal/Plastic				
Max input speed (continuous operation)	rpm	≤ 10.000				
Bearings on output shaft		Ball				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 100				
Axial	N	≤ 80				
Max shaft press fit force	N	≤ 120				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	-20 +125				
Number of gear stages		1	2	3	4	5
Reduction ratio		3.11:1	10:1	30:1	159:1	694:1
		4:1	15:1	46:1	179:1	765:1
		4.8:1	19:1	51:1	223:1	856:1
			23:1	62:1	266:1	989:1
				72:1	298:1	1428:1
				80:1	344:1	1846:1
				92:1	412:1	2548:1
				111:1	531:1	3174:1
Continuous torque	Nm	1	1.5	2.5	3	5
Intermittent torque	Nm	2	3	5	6	7.5
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	1	1.5	1.5	2	2
Weight	g	125	147	169	191	213
Gearhead Length L	mm	31.6	37.9	44.2	50.5	56.8

SVTG B 36



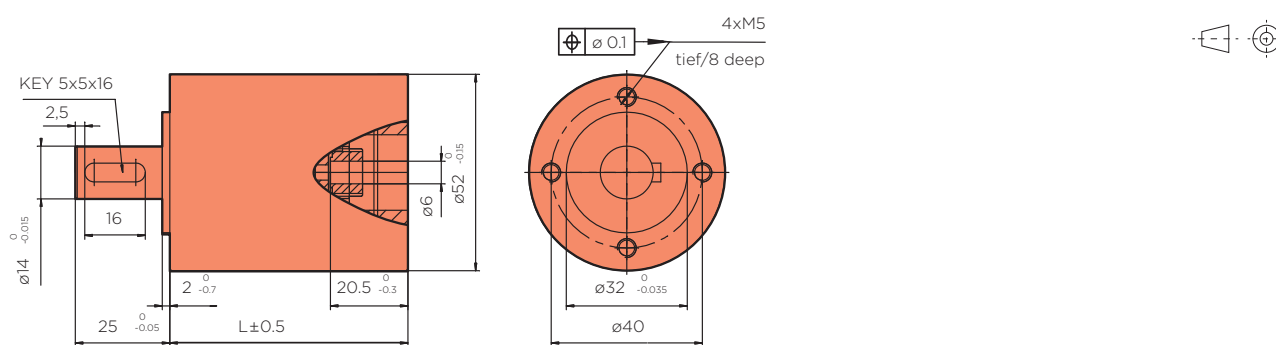
A 36						
Values	Unit					
Housing material		Metal				
Geartrain material		Metal/Plastic				
Max input speed (continuous operation)	rpm	≤ 10.000				
Bearings on output shaft		Ball				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 100				
Axial	N	≤ 80				
Max shaft press fit force	N	≤ 120				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	-20 +125				
Number of gear stages		1	2	3	4	5
Reduction ratio		3.75:1	14:1	53:1	198:1	1249:1
		4.67:1	17:1	66:1	246:1	1429:1
		6.5:1	22:1	82:1	306:1	1779:1
			30:1	102:1	381:1	2213:1
				141:1	475:1	3083:1
				169:1	661:1	4294:1
					920:1	5981:1
Continuous torque	Nm	4	8	16	16	20
Intermittent torque	Nm	5	12	25	25	30
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	0.8	1	1	1.2	1.2
Weight	g	210	245	280	315	350
Gearhead Length L	mm	36	43.3	50.6	57.9	65.2

SVTG B 42



A 42						
Values	Unit					
Housing material		Metal				
Geartrain material		Metal/Plastic				
Max input speed (continuous operation)	rpm	≤ 10.000				
Bearings on output shaft		Ball				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 200				
Axial	N	≤ 100				
Max shaft press fit force	N	≤ 120				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	$-20 +125$				
Number of gear stages		1	2	3	4	5
Reduction ratio		3.11:1	10:1	30:1	168:1	807:1
		4.17:1	12:1	43:1	225:1	1080:1
		4.8:1	15:1	54:1	301:1	1434:1
		5.75:1	20:1	72:1	400:1	1834:1
				83:1	461:1	2300:1
				96:1	574:1	3301:1
				115:1	661:1	4048:1
				159:1	762:1	5247:1
Continuous torque	Nm	3	12	16	25	25
Intermittent torque	Nm	5	20	25	36	36
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	0.8	1	1	1.2	1.2
Weight	g	250	345	405	490	580
Gearhead Length L	mm	41	53	62	77	86

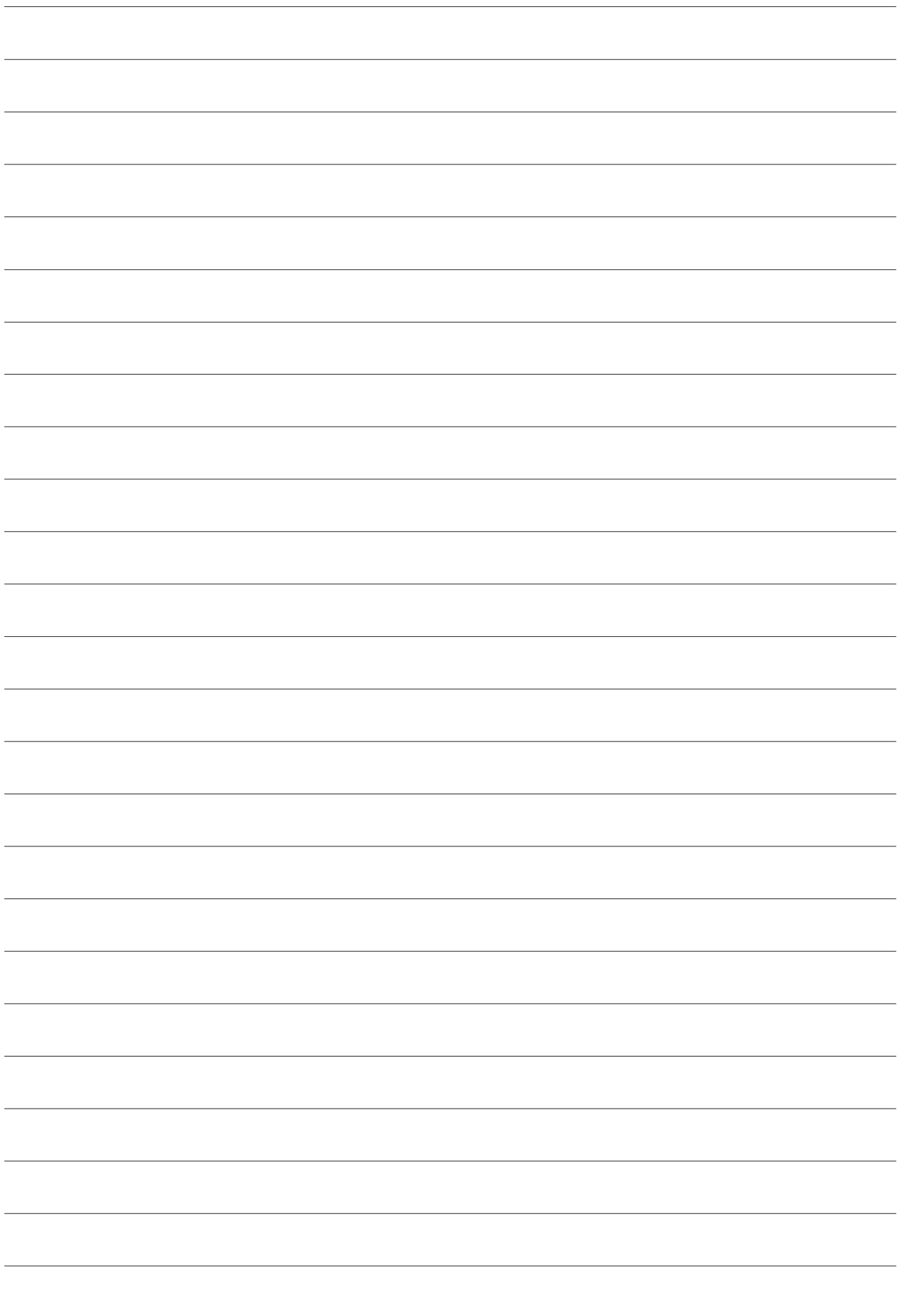
SVTG B 52



A 52						
Values	Unit					
Housing material		Metal				
Geartrain material		Metal/Plastic				
Max input speed (continuous operation)	rpm	≤ 10.000				
Bearings on output shaft		Ball				
Max shaft load						
Radial (5mm from mounting face)	N	≤ 200				
Axial	N	≤ 100				
Max shaft press fit force	N	≤ 120				
Shaft play						
Radial	mm	≤ 0.1				
Axial	mm	≤ 0.2				
Operating temperature range	°C	-20 +125				
Number of gear stages		1	2	3	4	5
Reduction ratio		3.56:1	13:1	45:1	252:1	1003:1
		4.29:1	15:1	54:1	337:1	1889:1
		5.60:1	24:1	79:1	441:1	2048:1
		6.75:1	31:1	86:1	576:1	3226:1
				103:1	753:1	4214:1
				134:1	837:1	5648:1
				176:1	983:1	6638:1
				212:1	1185:1	8001:1
Continuous torque	Nm	4	15	30	30	30
Intermittent torque	Nm	6	22.5	45	45	45
Max Efficiency	%	90	81	73	65	59
No-Load Backlash	°	1	1.5	1.5	2	2
Weight	g	475	575	675	775	875
Gearhead Length L	mm	46	54.5	63	71.5	80

Notes

[illegible]



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how can I help you?

Your local contact