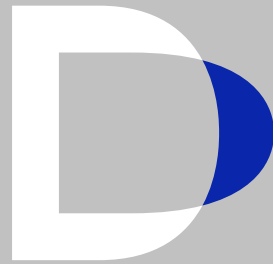


2021/2022
Product
Catalogue



Delta Line

Moving together

Stepper



Permanent Magnet Stepper

p.265



Flat Hybrid Stepper

p.353



Hybrid Stepper S series

p.277



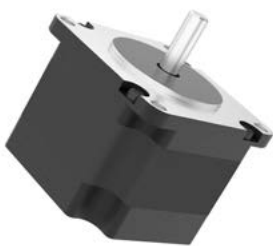
Hybrid Stepper SH series

p.287



Hybrid Stepper STC series

p.327



3-Phase Hybrid Stepper

p.337



Hollow Shaft Stepper

p.345 - NEW



Hybrid Stepper with Encoder

p.357



IP65 Hybrid Stepper

p.373

Stepper Motors

Technical introduction		262
Permanent Magnet Stepper motors	Torque* (Nm)	265
15PM12	0,003...0,004	266
20PM18	0,005	267
25PM15	0,01...0,016	268
35PM16...22	0,04...0,055	269
42PM17...22	0,05...0,06	271
57PM25	0,12...0,15	273
Hybrid Stepper motors - S series	Torque* (Nm)	277
57S41...76	0,288...1,25	278
86S67...125	2,3...7,6	282
Hybrid Stepper motors - SH series High Torque	Torque* (Nm)	287
20SH33...42	0,018...0,03	288
25SH23	0,033	290
28SH32...51	0,043...0,12	291
35SH26...36	0,07...0,14	294
39SH20...38	0,065...0,29	297
42SH33...60	0,158...0,8	300
42SH33...47M - step 0,9°	0,158...0,44	304
57SH41...76	0,39...1,89	307
57SH41...76M - step 0,9°	0,39...1,8	311
60SH45...86	0,78...3,1	314
86SH65...156	2,6...12,1	318
110SH99...201	11,2...28	323
Hybrid Stepper motors - STC series Hyper Torque	Torque* (Nm)	327
20STC33...40	0,022...0,036	328
28STC32...51	0,08...0,18	330
57STC41...76	0,6...2,3	333
3-Phase Hybrid Stepper motors	Torque* (Nm)	337
42 3P24...39	0,08...0,2	338
57 3P42...79	0,45...1,5	340
60 3P53	0,9	343
Hollow Shaft Stepper motors - NEW	Torque* (Nm)	345
20STC40 H	0,036	346
28STC51 H	0,12	347
35STC38 H	0,23	348
42STC47 H	0,44	349
57STC76 H	2,3	350
86SH118 H	6	351
Flat Hybrid Stepper motors	Torque* (Nm)	353
28S10	0,01	354
63S10	0,064	355
Stepper motors with Encoder	Torque* (Nm)	357
SM42 054...080 -E	0,22...0,75	358
SM60 066...107 -E	1...3	362
SM86 084...172 -E	3,5...12	366
IP65 Hybrid Stepper motors	Torque* (Nm)	373
SM28 051...070 - IP65	0,071...0,127	374
SM42 097...127 - IP65	0,16...0,72	376
SM42 097...127 -E - IP65 with Encoder	0,16...0,72	379
SM57 070...093 - IP65	1,2...2,2	382
SM57 101...136 -E - IP65 with Encoder	0,7...1,95	384

* Holding Torque

Term	
Rated voltage	Voltage necessary to reach the nominal current per phase.
Current/Phase	The current supplied to the motor phases that will not exceed, at an ambient temperature of 20°C, the thermal limits of the motor.
Resistance/Phase	Winding resistance per phase. Tolerance +/- 12%, steady state.
Inductance/Phase	Winding inductance per phase measured at 1kHz.
Holding Torque	The torque generated by the motor at nominal current.
Rotor Inertia	Is the mass moment of inertia of the rotor, based on the axis of rotation.
Detent Torque	The torque required to rotate a non-energized step motor.
Number of leads	Number of lead wires available to connect the motor.
Length	Total motor length.
Weight	Total motor mass.
Step angle	Number of angular degrees the motor moves per full-step
Step angle accuracy	The percentage position error per full step, at no load and nominal current. This error is not cumulative between steps.
Insulation class	The electrical insulation system for wires and other wire-wound electrical components is divided into different classes by temperature and temperature rise. The electrical insulation system is sometimes referred to as insulation class or thermal classification.
Ambient temperature	Temperatures at which the motor can operate.
Max. Temp. Rise (rated current 2 phase on)	Maximum temperature rise for the motor at rated voltage and two phases
Max. shaft radial play	The shaft displacement perpendicular to the shaft due to a side force applied perpendicular to the shaft axis.
Max. shaft axial play	Axial shaft displacement occurring during a reversal of an axial force on the shaft.
Max. Radial force	Maximum force that can be applied to the shaft in the radial direction (any direction perpendicular to the motor shaft axis).
Max. Axial force	Maximum force that can be applied to the shaft in the axial direction (in the same axis as or parallel to the motor shaft axis).
Dielectric strength	A dielectric test (also known as hipot or high potential test) is performed on all motors under 500V phases to the housing and during 5 seconds after voltage ramp up. Maximum allowed leakage is 1mA
Insulation resistance	The measurement of insulation resistance is carried out by means of a megohmmeter - high resistance range ohmmeter. DC voltage is applied between the windings and the ground of the motor.

Glossary

Product families

Permanent Magnet Stepper motors
Hybrid Stepper motors
3-Phase Hybrid Stepper motors
Hollow Shaft Stepper motors
Flat Hybrid Stepper motors
Stepper motors with Encoder
IP65 Hybrid Stepper motors

A stepper motor is an electromechanical device which converts electrical pulses into discrete mechanical movements. The shaft or spindle of a stepper motor rotates in discrete step increments when electrical command pulses are applied to it in the proper sequence. The motors rotation has several direct relationships to these applied input pulses. The sequence of the applied pulses is directly related to the direction of motor shafts rotation. A stepper motor can be a good choice whenever controlled movement is required. They can be used to advantage in applications where you need to control rotation angle, speed, position and synchronism.

Main advantages

- 1 The rotation angle of the motor is proportional to the input pulse.
- 2 Precise positioning and repeatability of movement since good stepper motors have an accuracy of 3 - 5% of a step and this error is non cumulative from one step to the next.
- 3 Excellent response to starting/stopping/reversing.
- 4 Very reliable since there are no contact brushes in the motor. Therefore the life of the motor is simply dependent on the life of the bearing.
- 5 A wide range of rotational speeds can be realized as the speed is proportional to the frequency of the input pulses.

Often referred to as "tin can" or "can stack" motor the permanent magnet step motor is a low cost and low resolution type motor. PM motors have permanent magnets added to the motor structure. The rotor no longer has teeth, instead the rotor is magnetized with alternating north and south poles situated in a straight line parallel to the rotor shaft. These motors offer good torque at lower speed.

Permanent Magnets stepper motors

The hybrid stepper motor is more expensive than the PM stepper motor but provides better performance with respect to step resolution, torque and speed. This motor combines the best features of both the PM and Variable Reluctance stepper motors. The rotor is multi-toothed and contains an axially magnetized concentric magnet around its shaft. The teeth on the rotor provide an even better path which helps guide the magnetic flux to preferred locations in the air gap. This further increases the detent, holding and dynamic torque characteristics of the motor when compared with both the VR and PM types.

Hybrid Stepper motors (2-Phase)

3-Phase technology in hybrid stepper motor is used mainly where ultra-low vibration and very low noise levels are required. The drive circuit of these motors is simplified because it is driven with a star wiring connection. The use of three phases inherently helps to reduce torque ripple and smooth motor performance. An example of an ideal application is in performance lighting, where quick movement and quiet operation are required.

3-Phase Hybrid Stepper motors

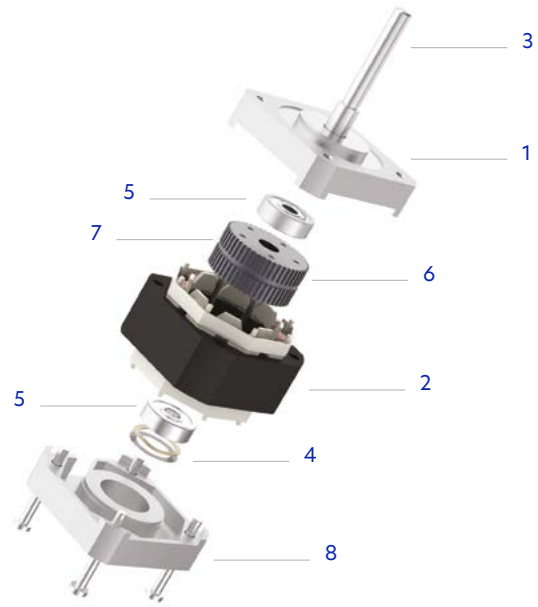
Our Hybrid stepper motors are also available equipped with an optical incremental encoder to increase the motion precision. Thanks to the encoder, the drive knows the position (or the speed) of the motor in real time and can perform adjustments to align the real condition with the condition requested by the system. The presence of an encoder is highly recommended when is critical to know the status of the motor (both position and speed) in every instant.

Stepper motors with integrated Encoder

Technical introduction

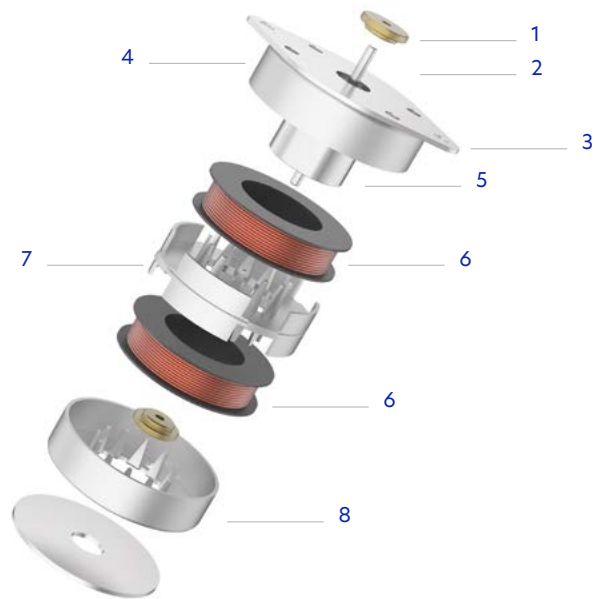
Composition Hybrid Stepper

- 1 Front Endbell
- 2 Stator & Coils
- 3 Shaft
- 4 Washer
- 5 Ball bearings
- 6 Rotor cup
- 7 Magnet
- 8 Rear Endbell



Composition PM Stepper

- 1 Sleeve bearing
- 2 Shaft
- 3 Front flange
- 4 Front cover/stator
- 5 Rotor
- 6 Windings
- 7 Inner stator
- 8 Rear cover/stator





Hybrid Stepper
S series

p.277



Hybrid Stepper
SH series

p.287



Hybrid Stepper
STC series

p.327

Stepper motors

2-Phase Hybrid

Advantages at a glance
High torque
High speed
High reliability

The hybrid stepper motor is more expensive than the PM stepper motor but provides better performance with respect to step resolution, torque and speed. This motor combines the best features of both the PM and Variable Reluctance stepper motors. The rotor is multi-toothed and contains an axially magnetized concentric magnet around its shaft. The teeth on the rotor provide an even better path which helps guide the magnetic flux to preferred locations in the air gap. This further increases the detent, holding and dynamic torque characteristics of the motor when compared with both the VR and PM types.

Hybrid Stepper motors - S series	Torque* (Nm)	277
57S41	0,29...0,40	278
57S51	0,49...0,69	279
57S56	0,60...0,84	280
57S76	0,90...1,25	281
86S67	2,30...2,80	282
86S94	3,80...4,80	283
86S125	6,20...7,60	284

Hybrid Stepper motors - SH series High Torque		287
20SH33 - High Torque	0,018	288
20SH42 - High Torque	0,030	289
25SH23 - High Torque	0,033	290
28SH32 - High Torque	0,043...0,060	291
28SH45 - High Torque	0,075...0,095	292
28SH51 - High Torque	0,090...0,120	293
35SH26 - High Torque	0,070	294
35SH28 - High Torque	0,100	295
35SH36 - High Torque	0,140	296
39SH20 - High Torque	0,065...0,080	297
39SH34 - High Torque	0,130...0,210	298
39SH38 - High Torque	0,200...0,290	299
42SH33 - High Torque	0,158...0,220	300
42SH38 - High Torque	0,259...0,360	301
42SH47 - High Torque	0,317...0,440	302
42SH60 - High Torque	0,650...0,800	303
42SH33M - High Torque - step 0,9°	0,158...0,220	304
42SH38M - High Torque - step 0,9°	0,259...0,360	305
42SH47M - High Torque - step 0,9°	0,317...0,440	306
57SH41 - High Torque	0,390...0,550	307
57SH51 - High Torque	0,720...1,010	308
57SH56 - High Torque	0,900...1,260	309
57SH76 - High Torque	1,350...1,890	310
57SH41M - High Torque - step 0,9°	0,390...0,550	311
57SH56M - High Torque - step 0,9°	0,900...1,260	312
57SH76M - High Torque - step 0,9°	1,350...1,800	313
60SH45 - High Torque	0,780...1,100	314
60SH56 - High Torque	1,170...1,650	315
60SH65 - High Torque	1,500...2,100	316
60SH86 - High Torque	2,200...3,100	317
86SH65 - High Torque	2,600...3,400	318
86SH80 - High Torque	4,600	319
86SH96 - High Torque	7,000	320
86SH118 - High Torque	8,700	321
86SH156 - High Torque	12,100	322
110SH99 - High Torque	11,200	323
110SH150 - High Torque	21,000	324
110SH201 - High Torque	28,000	325

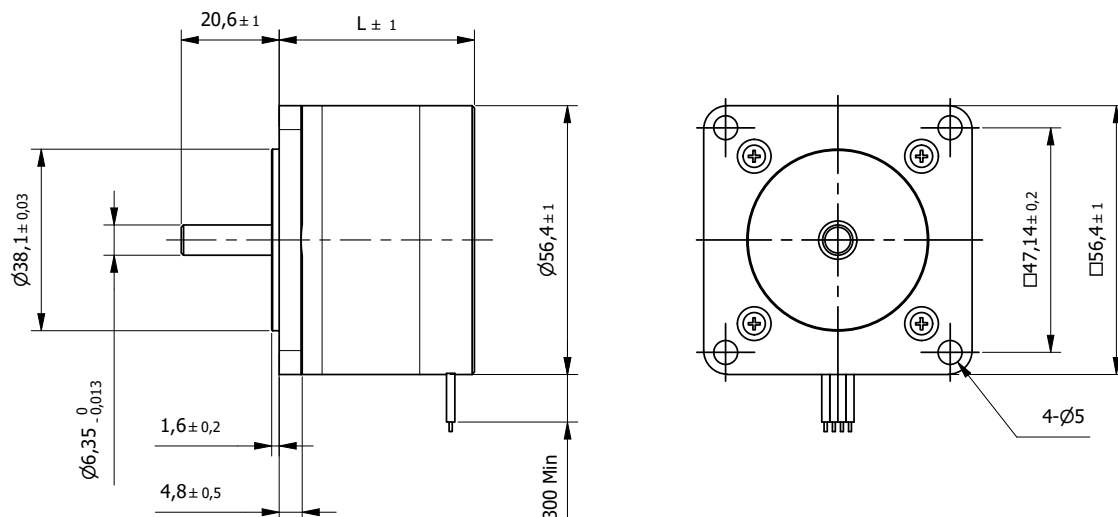
Hybrid Stepper motors - STC series Hyper Torque		327
20STC33 - Hyper Torque	0,022	328
20STC40 - Hyper Torque	0,036	329
28STC32 - Hyper Torque	0,080	330
28STC40 - Hyper Torque	0,130	331
28STC51 - Hyper Torque	0,180	332
57STC41 - Hyper Torque	0,600	333
57STC56 - Hyper Torque	1,400	334
57STC76 - Hyper Torque	2,300	335

* Holding Torque



Hybrid Stepper motors
S-series

Hybrid Stepper motors - S series	Torque* (Nm)	
57S41	0,29...0,40	278
57S51	0,49...0,69	279
57S56	0,60...0,84	280
57S76	0,90...1,25	281
86S67	2,30...2,80	282
86S94	3,80...4,80	283
86S125	6,20...7,60	284



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

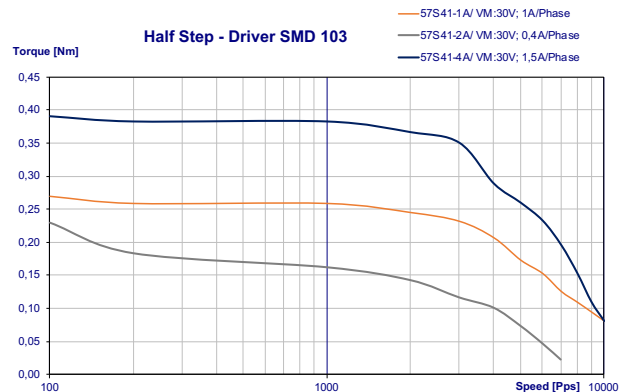
Specification		57S41-1A	57S41-2A	57S41-4A	
1	Rated Voltage	V	4	12	2,8
2	Current/Phase	A	1,1	0,4	1,56
3	Resistance/Phase	Ω	3,6	30	1,8
4	Inductance/Phase	mH	4	30	3,6
5	Holding Torque	Nm	0,288	0,288	0,4
6	Rotor Inertia	gcm ²	57	57	57
7	Detent Torque	Nm	0,018	0,018	0,018
8	n° of Leads		6	6	4
9	Length (L)	mm	41	41	41
10	Weight	Kg	0,54	0,54	0,54

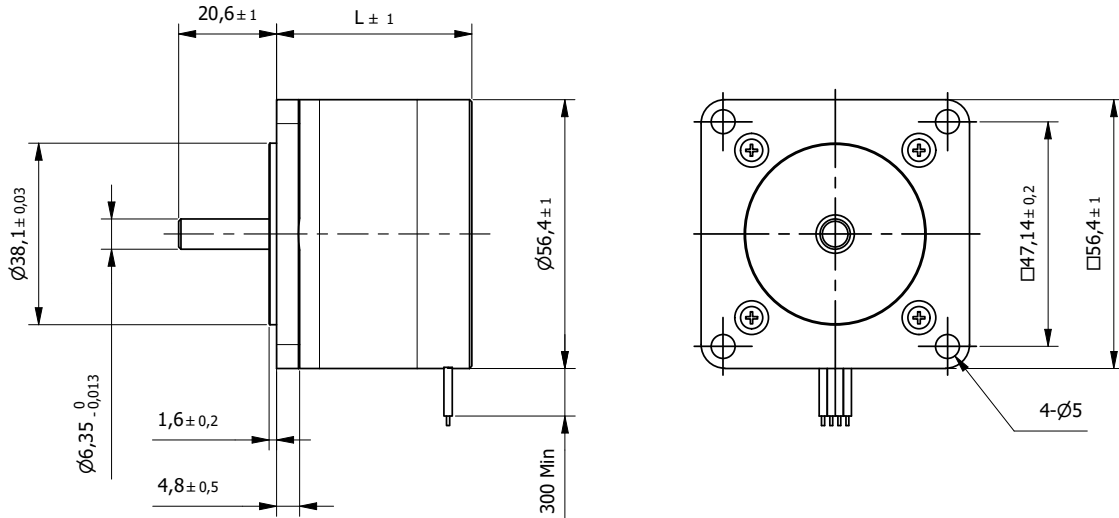
Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B





BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

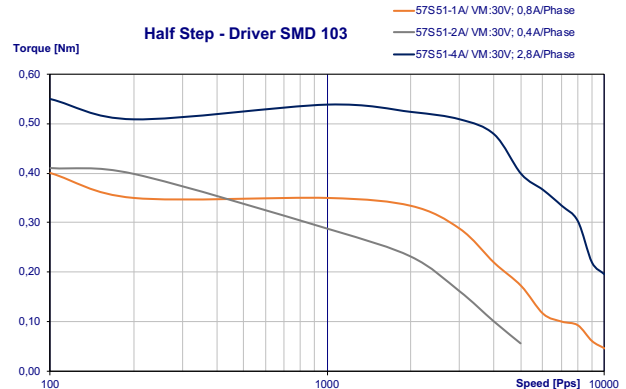
Specification		57S51-1A	57S51-2A	57S51-4A
1	Rated Voltage	V	6	12
2	Current/Phase	A	0,85	2,8
3	Resistance/Phase	Ω	7,1	29
4	Inductance/Phase	mH	9	36
5	Holding Torque	Nm	0,49	0,49
6	Rotor Inertia	gcm ²	110	110
7	Detent Torque	Nm	0,035	0,035
8	n° of Leads		6	4
9	Length (L)	mm	51	51
10	Weight	Kg	0,6	0,6

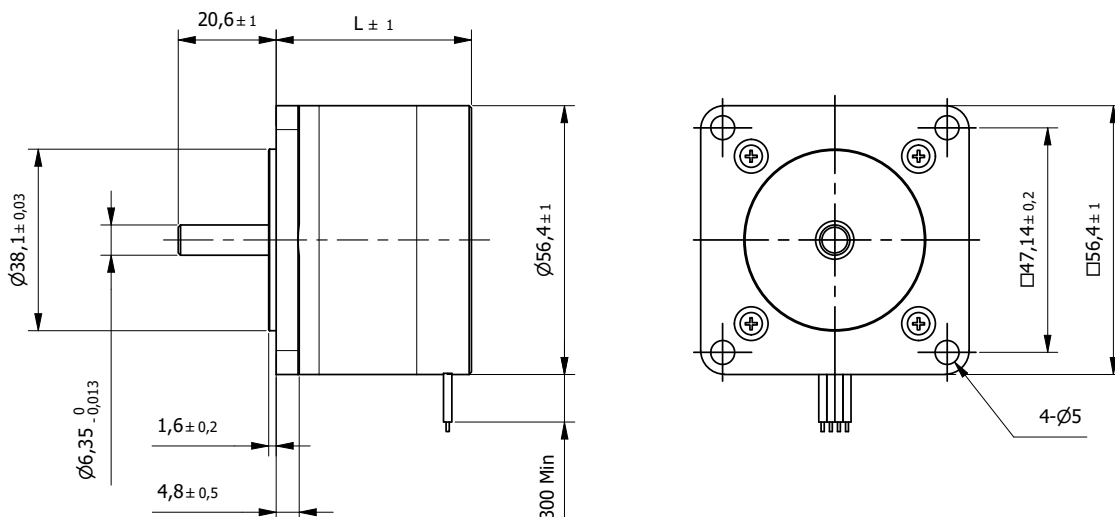
Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request





BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

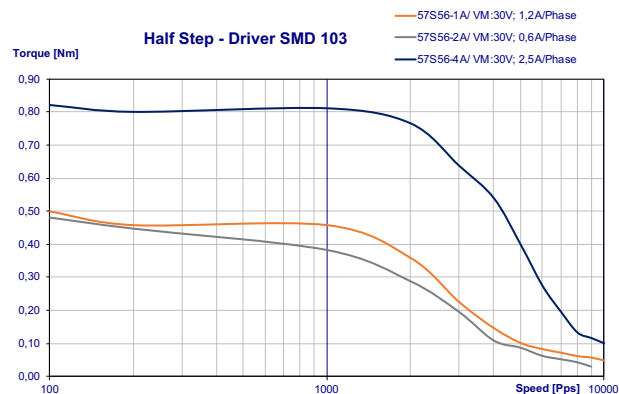
Specification		57S56-1A	57S56-2A	57S56-4A	
1	Rated Voltage	V	6	12	2,8
2	Current/Phase	A	1,2	0,6	2,5
3	Resistance/Phase	Ω	5	20	1,1
4	Inductance/Phase	mH	8	32	3,6
5	Holding Torque	Nm	0,605	0,605	0,84
6	Rotor Inertia	gcm ²	135	135	135
7	Detent Torque	Nm	0,042	0,042	0,042
8	n° of Leads		6	6	4
9	Length (L)	mm	56	56	56
10	Weight	Kg	0,65	0,65	0,65

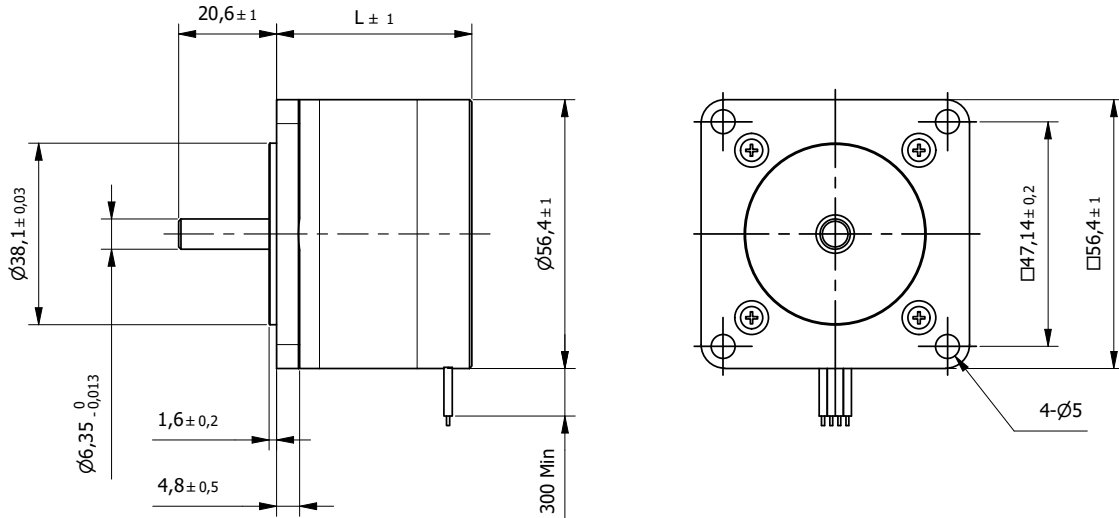
Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B





BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

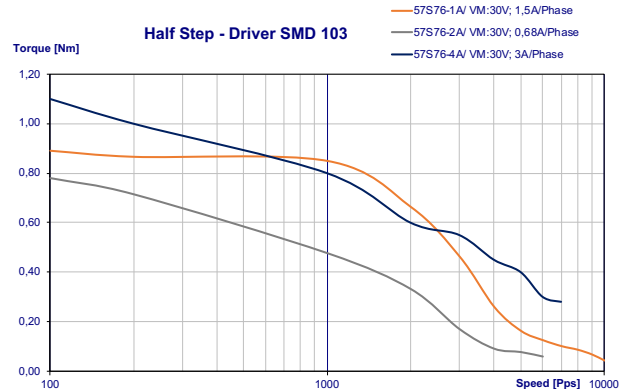
Specification		57S76-1A	57S76-2A	57S76-4A
1	Rated Voltage	V	5,4	12
2	Current/Phase	A	1,5	0,68
3	Resistance/Phase	Ω	3,6	17,7
4	Inductance/Phase	mH	6	30
5	Holding Torque	Nm	0,9	0,9
6	Rotor Inertia	gcm ²	200	200
7	Detent Torque	Nm	0,072	0,072
8	n° of Leads		6	4
9	Length (L)	mm	76	76
10	Weight	Kg	0,95	0,95

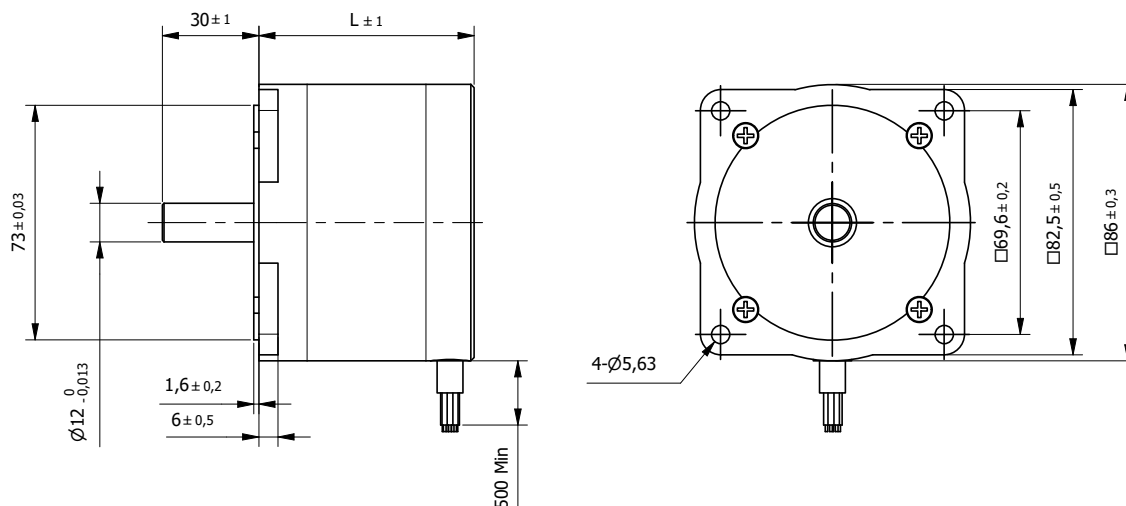
Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request





BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

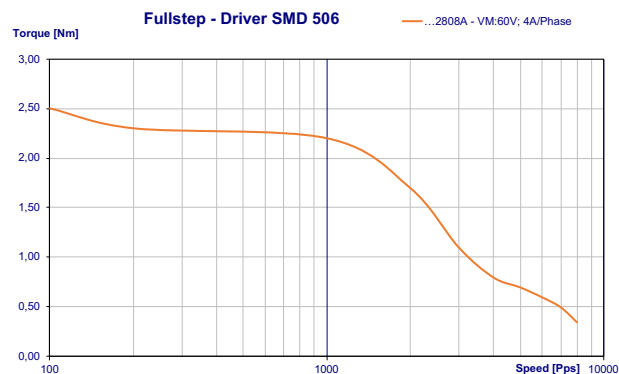
Specification		86S67-2808A		
Model		Unipolar	Parallel	Series
1	Rated Voltage	V	3,64	2,54
2	Current/Phase	A	2,8	3,92
3	Resistance/Phase	Ω	1,3	0,65
4	Inductance/Phase	mH	5,1	5,1
5	Holding Torque	Nm	2,3	2,8
6	Rotor Inertia	gcm ²	660	660
7	Detent Torque	Nm	0,085	0,085
8	n° of Leads		8	8
9	Length (L)	mm	67	67
10	Weight	Kg	1,6	1,6

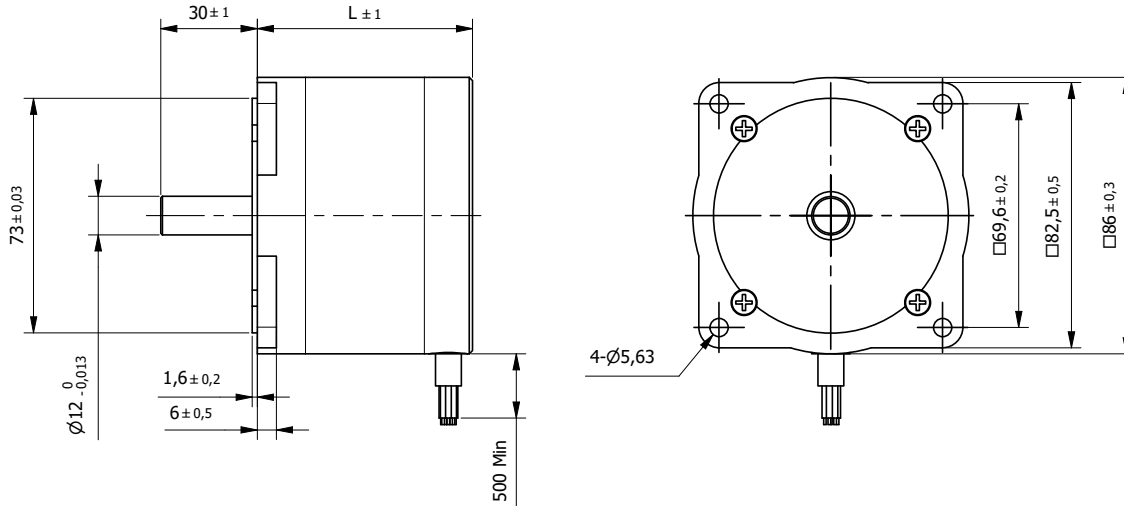
Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220N
Max Axial Force	60N
Dielectric Strength (for 1 min.)	750 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Aries
E4		Libra
E5		Sagittarius
		Aquarius

* other options on request

Connection			
Lead n°	Color	Gauge	Function
1	Orange	UL3266 AWG20	Phase A
2	Orange/White		Phase A-
3	Black/White		Phase C-
4	Black		Phase C
5	Red		Phase B
6	Red/White		Phase B-
7	Yellow/White		Phase D -
8	Yellow		Phase D





BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

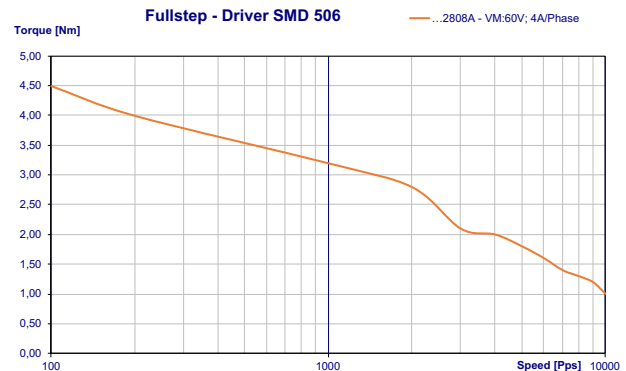
Specification		86S94-2808A			
Model		Unipolar	Parallel	Series	
1	Rated Voltage	V	4,76	2,54	6,6
2	Current/Phase	A	2,8	3,92	1,96
3	Resistance/Phase	Ω	1,7	0,85	3,4
4	Inductance/Phase	mH	7,7	7,7	30,8
5	Holding Torque	Nm	3,8	4,8	4,8
6	Rotor Inertia	gcm ²	1200	1200	1200
7	Detent Torque	Nm	0,13	0,13	0,13
8	n° of Leads		8	8	8
9	Length (L)	mm	94	94	94
10	Weight	Kg	2,4	2,4	2,4

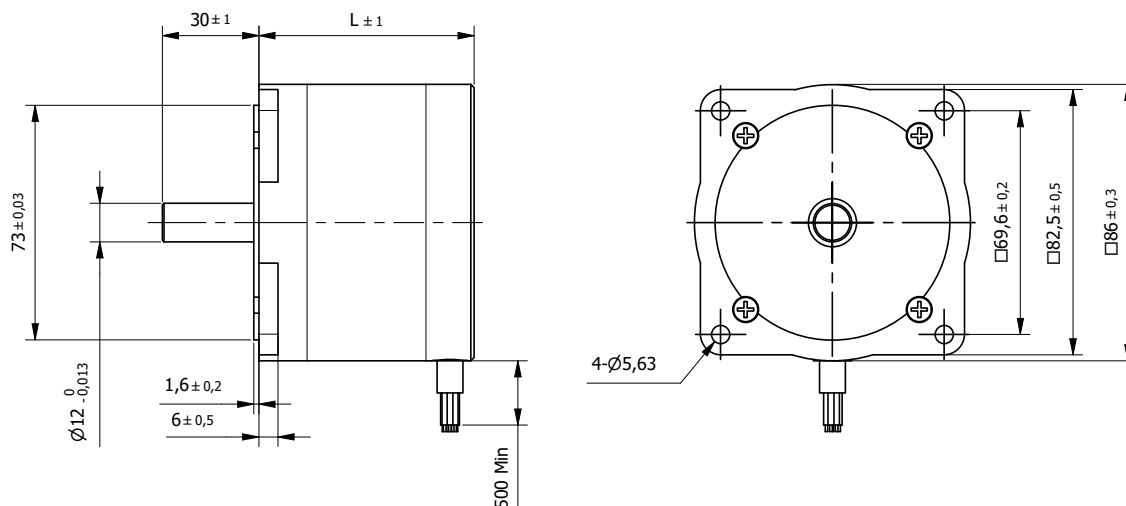
Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220N
Max Axial Force	60N
Dielectric Strength (for 1 min.)	750 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Aries
E4		Libra
E5		Sagittarius
		Aquarius

* other options on request

Connection			
Lead n°	Color	Gauge	Function
1	Orange	UL3266 AWG20	Phase A
2	Orange/White		Phase A-
3	Black/White		Phase C-
4	Black		Phase C
5	Red		Phase B
6	Red/White		Phase B-
7	Yellow/White		Phase D -
8	Yellow		Phase D





BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

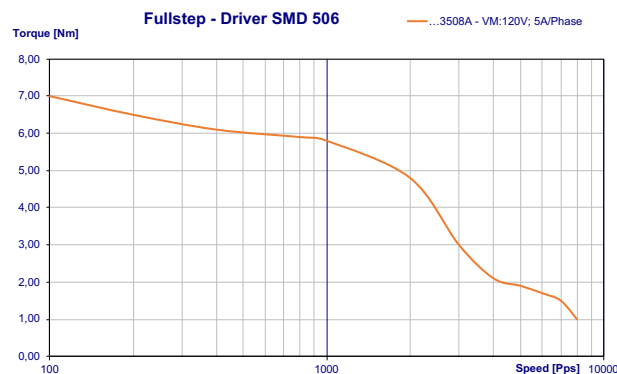
Specification		86S125-3508A			
Model		Unipolar	Parallel	Series	
1	Rated Voltage	V	4,97	3,47	6,95
2	Current/Phase	A	3,5	4,9	2,45
3	Resistance/Phase	Ω	1,42	0,71	2,84
4	Inductance/Phase	mH	7,9	7,9	31,6
5	Holding Torque	Nm	6,2	7,6	7,6
6	Rotor Inertia	gcm ²	1800	1800	1800
7	Detent Torque	Nm	0,23	0,23	0,23
8	n° of Leads		8	8	8
9	Length (L)	mm	125	125	125
10	Weight	Kg	3,6	3,6	3,6

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220N
Max Axial Force	60N
Dielectric Strength (for 1 min.)	750 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Libra
E4		Sagittarius
E5		Aquarius
		Andromeda

* other options on request

Connection			
Lead n°	Color	Gauge	Function
1	Orange	UL3266 AWG20	Phase A
2	Orange/White		Phase A-
3	Black/White		Phase C-
4	Black		Phase C
5	Red		Phase B
6	Red/White		Phase B-
7	Yellow/White		Phase D -
8	Yellow		Phase D





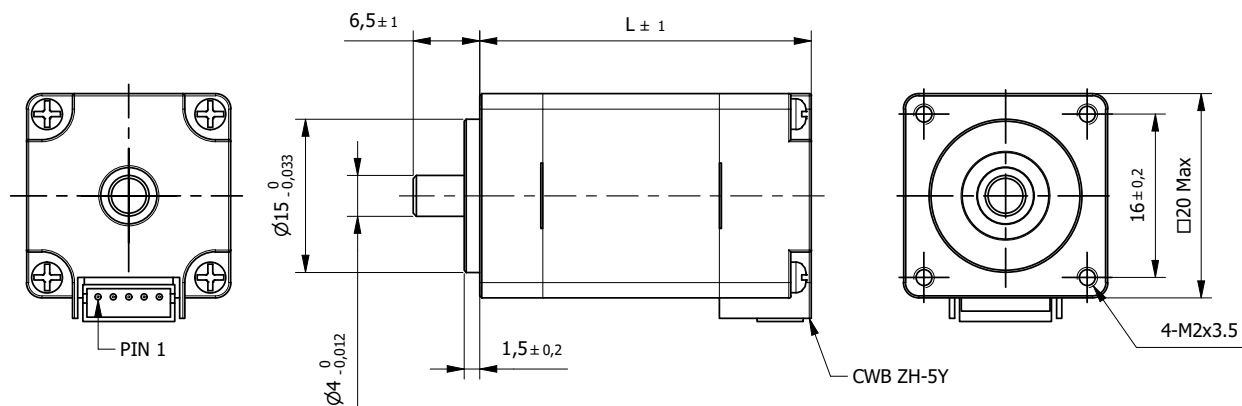
Hybrid Stepper motors
SH-series

Hybrid Stepper motors - SH series High Torque		
20SH33 - High Torque	0,018	288
20SH42 - High Torque	0,030	289
25SH23 - High Torque	0,033	290
28SH32 - High Torque	0,043...0,060	291
28SH45 - High Torque	0,075...0,095	292
28SH51 - High Torque	0,090...0,120	293
35SH26 - High Torque	0,070	294
35SH28 - High Torque	0,100	295
35SH36 - High Torque	0,140	296
39SH20 - High Torque	0,065...0,080	297
39SH34 - High Torque	0,130...0,210	298
39SH38 - High Torque	0,200...0,290	299
42SH33 - High Torque	0,158...0,220	300
42SH38 - High Torque	0,259...0,360	301
42SH47 - High Torque	0,317...0,440	302
42SH60 - High Torque	0,650...0,800	303
42SH33M - High Torque - step 0,9°	0,158...0,220	304
42SH38M - High Torque - step 0,9°	0,259...0,360	305
42SH47M - High Torque - step 0,9°	0,317...0,440	306
57SH41 - High Torque	0,390...0,550	307
57SH51 - High Torque	0,720...1,010	308
57SH56 - High Torque	0,900...1,260	309
57SH76 - High Torque	1,350...1,890	310
57SH41M - High Torque - step 0,9°	0,390...0,550	311
57SH56M - High Torque - step 0,9°	0,900...1,260	312
57SH76M - High Torque - step 0,9°	1,350...1,800	313
60SH45 - High Torque	0,780...1,100	314
60SH56 - High Torque	1,170...1,650	315
60SH65 - High Torque	1,500...2,100	316
60SH86 - High Torque	2,200...3,100	317
86SH65 - High Torque	2,600...3,400	318
86SH80 - High Torque	4,600	319
86SH96 - High Torque	7,000	320
86SH118 - High Torque	8,700	321
86SH156 - High Torque	12,100	322
110SH99 - High Torque	11,200	323
110SH150 - High Torque	21,000	324
110SH201 - High Torque	28,000	325

Hybrid Stepper Motor 20SH33

High Torque

□ 20mm

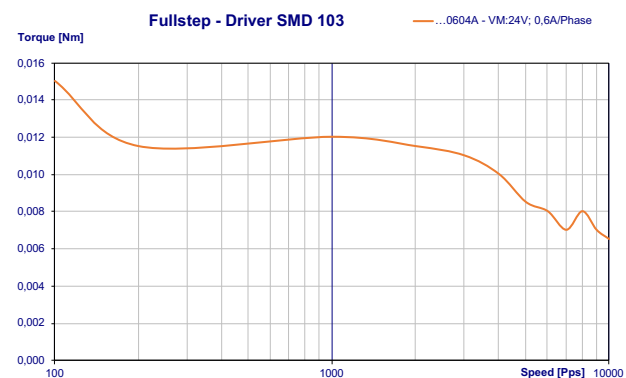


Specification			
Model	...0604A		
1	Rated Voltage	V	3,96
2	Current/Phase	A	0,6
3	Resistance/Phase	Ω	6,5
4	Inductance/Phase	mH	1,7
5	Holding Torque	Nm	0,018
6	Rotor Inertia	gcm ²	2
7	Detent Torque	Nm	0,002
8	n° of Leads		4
9	Length (L)	mm	33
10	Weight	Kg	0,06

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	2N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination	
Drive	
Aries	
Libra	
Orion	
Aquarius	
* other options on request	

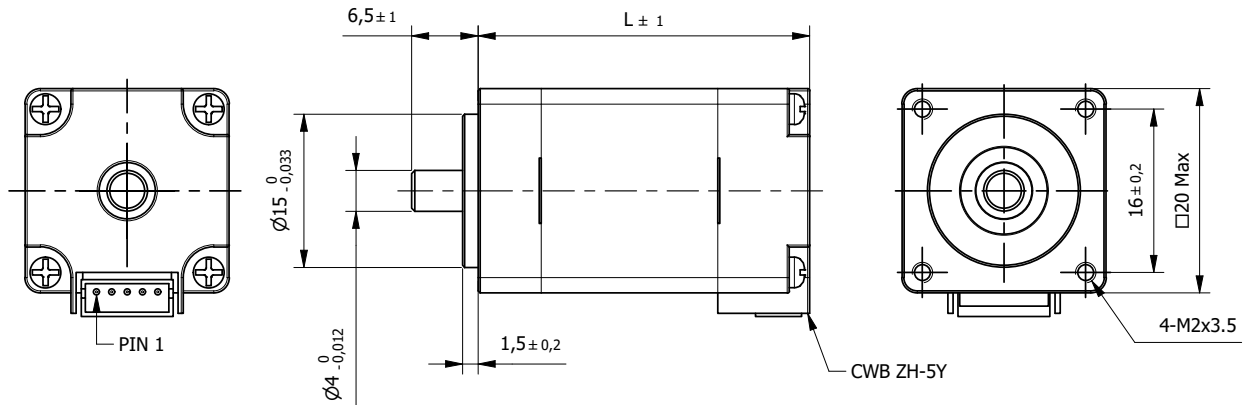
Connection			
Pin n°	Color	Gauge	Function
1	Black	UL1061 AWG28	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 20SH42

High Torque

□ 20mm

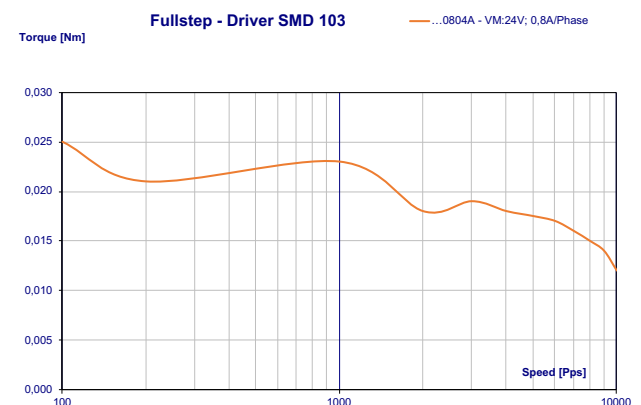


Specification			
Model	...0804A		
1	Rated Voltage	V	4,32
2	Current/Phase	A	0,8
3	Resistance/Phase	Ω	5,4
4	Inductance/Phase	mH	1,5
5	Holding Torque	Nm	0,03
6	Rotor Inertia	gcm ²	3,6
7	Detent Torque	Nm	0,002
8	n° of Leads		4
9	Length (L)	mm	42
10	Weight	Kg	0,08

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	2N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Pin n°	Color	Gauge	Function
1	Black	UL1061 AWG28	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination	
Drive	
Aries	
Libra	
Orion	
Aquarius	
* other options on request	

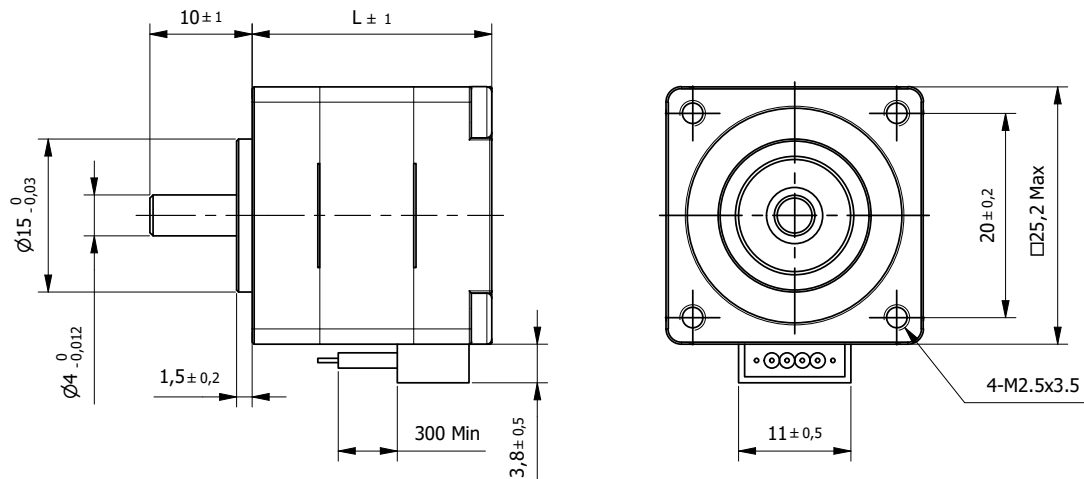


Stepper

Hybrid Stepper Motor 25SH23

High Torque

□ 25mm



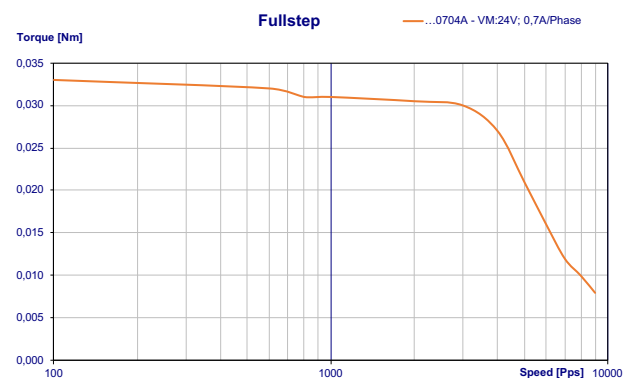
Specification			
Model	...0704A		
1	Rated Voltage	V	3
2	Current/Phase	A	0,7
3	Resistance/Phase	Ω	4,3
4	Inductance/Phase	mH	2,4
5	Holding Torque	Nm	0,033
6	Rotor Inertia	gcm ²	2
7	Detent Torque	Nm	0,003
8	n° of Leads		4
9	Length (L)	mm	23
10	Weight	Kg	0,055

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	7N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination	
Gearbox	Drive
22JMS	Aries
	Libra
	Orion
	Aquarius

* other options on request

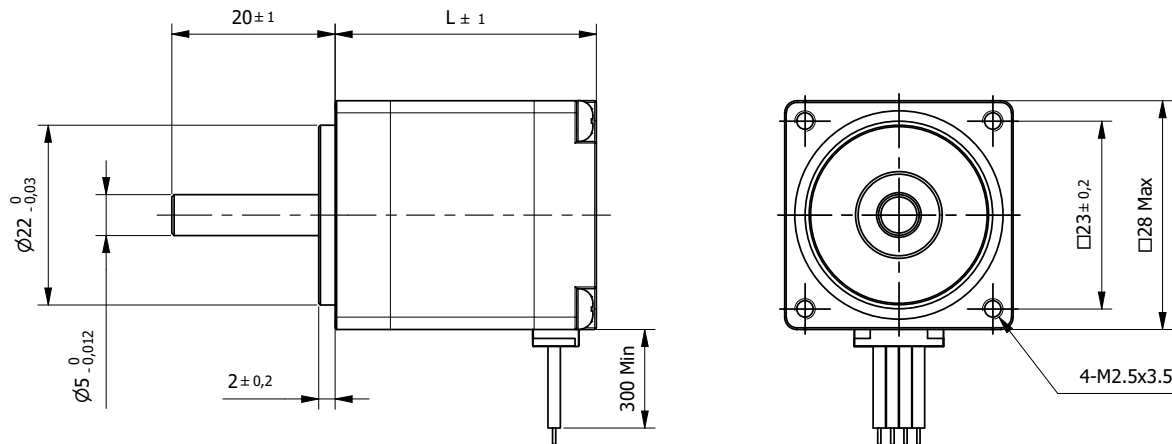
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-



Hybrid Stepper Motor 28SH32

High Torque

□ 28mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

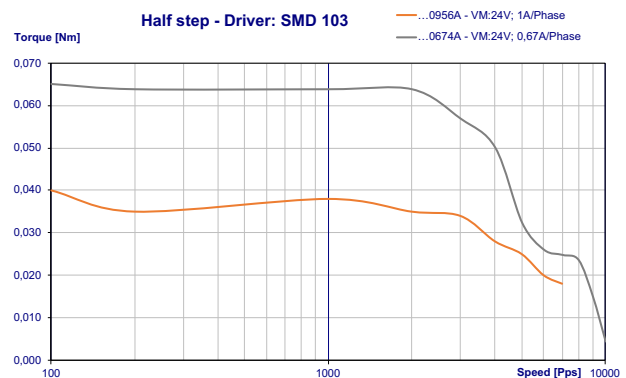
Specification				
Model		...0956A	...0674A	
1	Rated Voltage	V	2,66	3,8
2	Current/Phase	A	0,95	0,67
3	Resistance/Phase	Ω	2,8	5,6
4	Inductance/Phase	mH	0,8	3,4
5	Holding Torque	Nm	0,043	0,06
6	Rotor Inertia	gcm ²	9	9
7	Detent Torque	Nm	0,005	0,005
8	n° of Leads		6	4
9	Length (L)	mm	32	32
10	Weight	Kg	0,11	0,11

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E4	28JMS	Aries
E5	22JMS	Libra
		Orion
		Aquarius

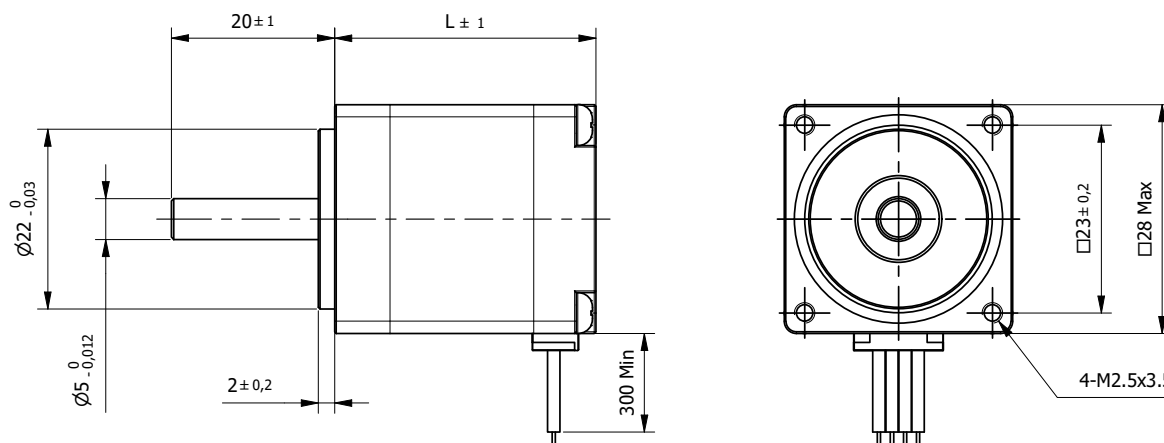
* other options on request



Hybrid Stepper Motor 28SH45

High Torque

□ 28mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

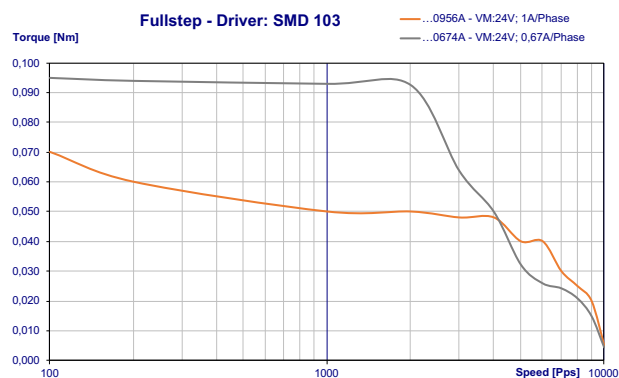
Specification			...0956A	...0674A
Model				
1	Rated Voltage	V	3,4	4,56
2	Current/Phase	A	0,95	0,67
3	Resistance/Phase	Ω	3,4	6,8
4	Inductance/Phase	mH	1,2	4,9
5	Holding Torque	Nm	0,075	0,095
6	Rotor Inertia	gcm ²	12	12
7	Detent Torque	Nm	0,006	0,006
8	n° of Leads		6	4
9	Length (L)	mm	45	45
10	Weight	Kg	0,14	0,14

Characteristics		
Item		
Step angle		1,8°
Step angle Accuracy		±5%
Insulation Class		B
Protection Class		IP30
Ambient Temperature		-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)		80°C
Max. Shaft Radial play (450g load)		0,02mm
Max. Shaft Axial play (450g load)		0,08mm
Max. Radial Force (20mm from front flange)		28N
Max Axial Force		10N
Dielectric Strength (for 1 min.)		500 VAC
Insulation Resistance (min. 500 VDC)		100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E4	28JMS	Aries
E5	22JMS	Libra
		Orion
		Aquarius

* other options on request

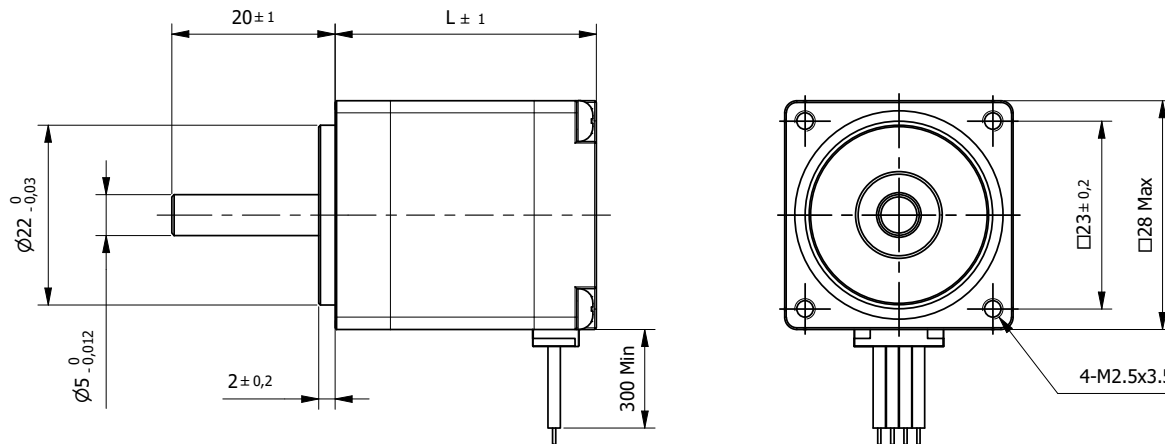
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 28SH51

High Torque

□ 28mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

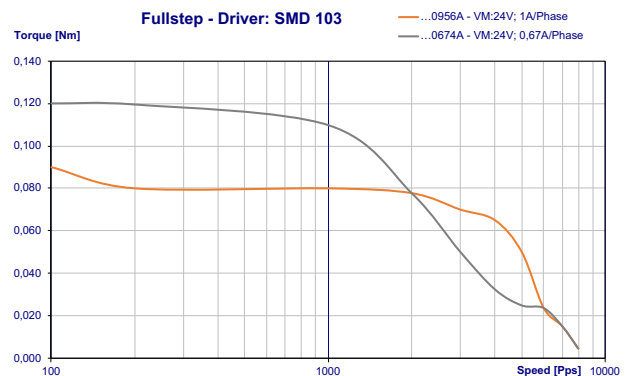
Specification			...0956A	...0674A
1	Rated Voltage	V	4,4	6,2
2	Current/Phase	A	0,95	0,67
3	Resistance/Phase	Ω	4,6	9,2
4	Inductance/Phase	mH	1,8	7,2
5	Holding Torque	Nm	0,09	0,12
6	Rotor Inertia	gcm ²	18	18
7	Detent Torque	Nm	0,008	0,008
8	n° of Leads		6	4
9	Length (L)	mm	51	51
10	Weight	Kg	0,2	0,2

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E4	28JMS	Aries
E5	22JMS	Libra
		Orion
		Aquarius

* other options on request

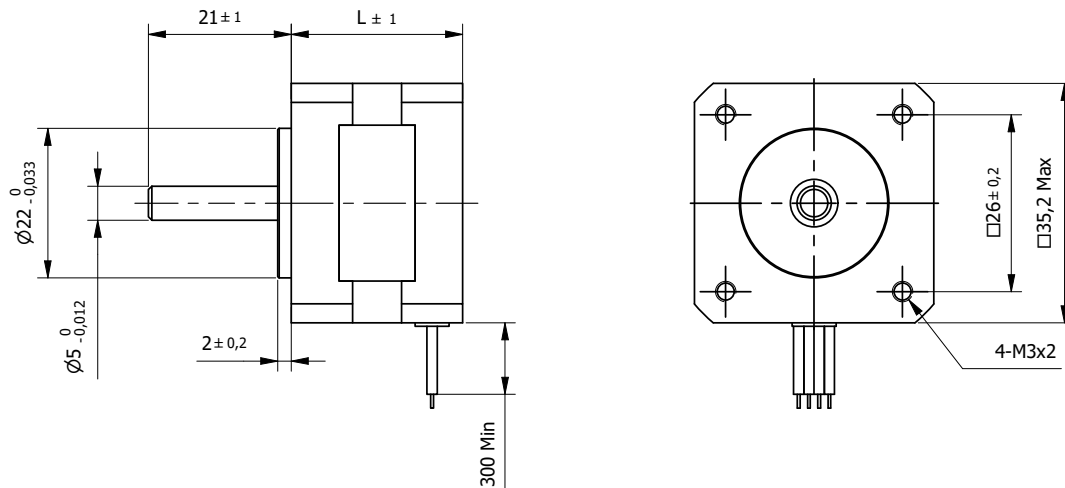
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 35SH26

High Torque

□ 35mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

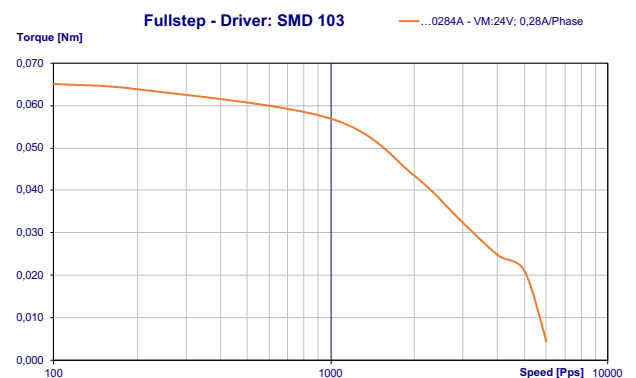
Specification			
Model	...0284A		
1	Rated Voltage	V	7,4
2	Current/Phase	A	0,28
3	Resistance/Phase	Ω	26
4	Inductance/Phase	mH	27
5	Holding Torque	Nm	0,07
6	Rotor Inertia	gcm ²	10
7	Detent Torque	Nm	0,006
8	n° of Leads		4
9	Length (L)	mm	26
10	Weight	Kg	0,13

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	28JMS	Aries
E4		Libra
E5		Orion
		Aquarius

* other options on request

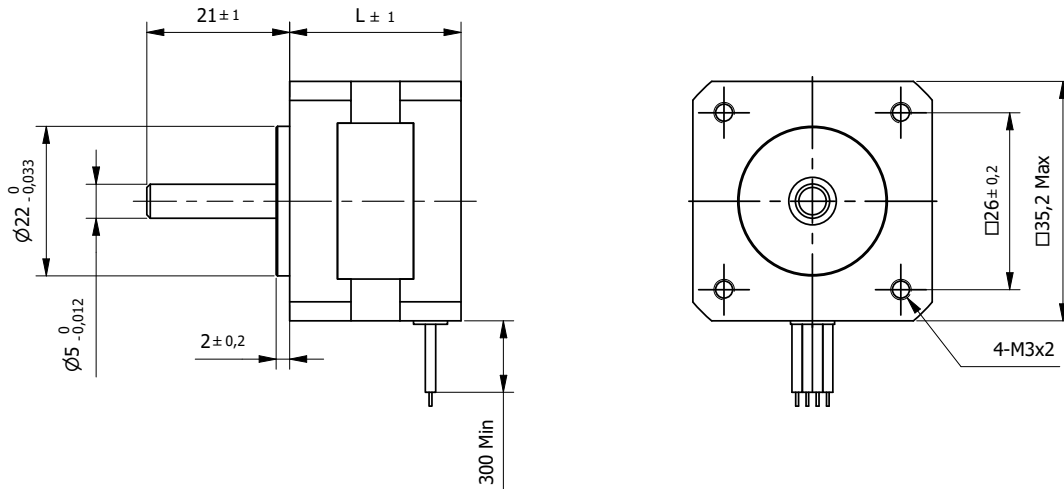
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 35SH28

High Torque

□ 35mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

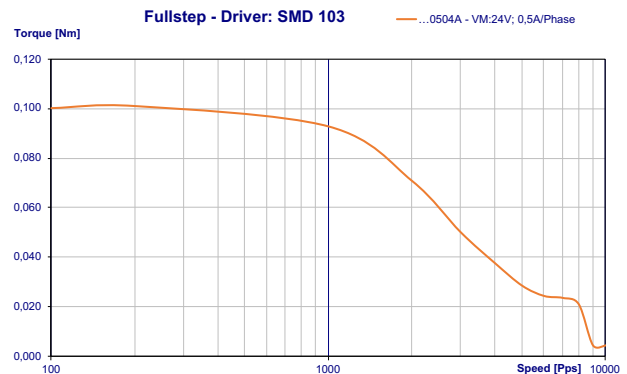
Specification			
Model	...0504A		
1	Rated Voltage	V	10
2	Current/Phase	A	0,5
3	Resistance/Phase	Ω	20
4	Inductance/Phase	mH	14
5	Holding Torque	Nm	0,1
6	Rotor Inertia	gcm ²	11
7	Detent Torque	Nm	0,008
8	n° of Leads		4
9	Length (L)	mm	28
10	Weight	Kg	0,14

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	28JMS	Aries
E4		Libra
E5		Orion
		Aquarius

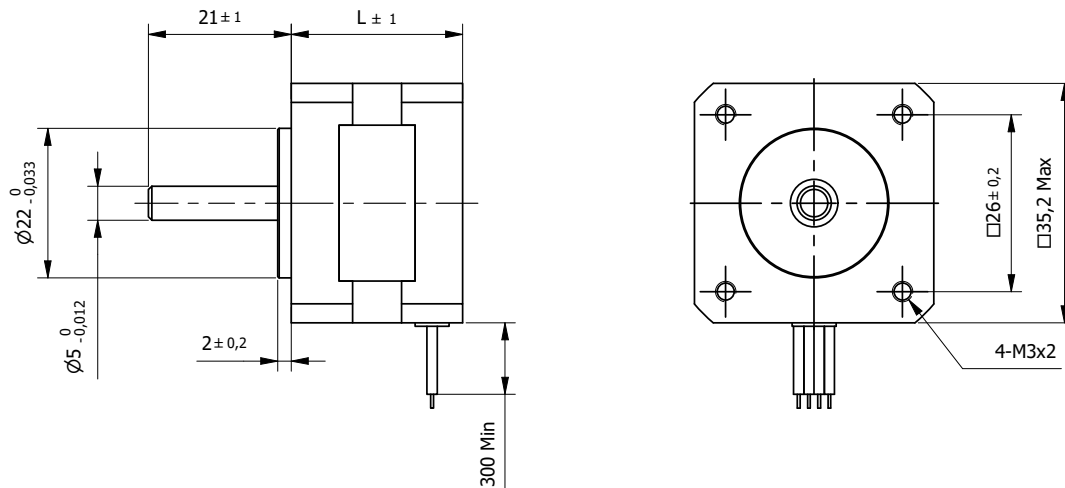
* other options on request



Hybrid Stepper Motor 35SH36

High Torque

□ 35mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

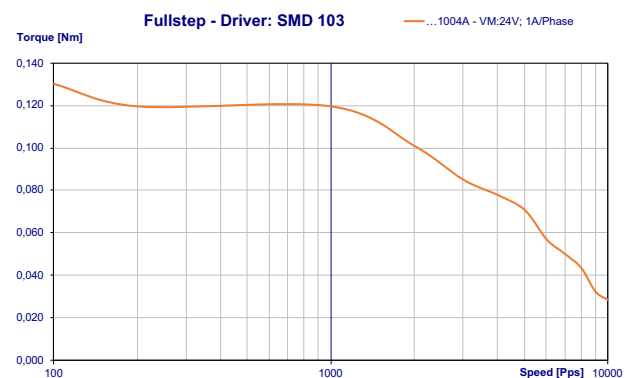
Specification			
Model	...1004A		
1	Rated Voltage	V	2,7
2	Current/Phase	A	1
3	Resistance/Phase	Ω	2,7
4	Inductance/Phase	mH	4,3
5	Holding Torque	Nm	0,14
6	Rotor Inertia	gcm ²	14
7	Detent Torque	Nm	0,01
8	n° of Leads		4
9	Length (L)	mm	36
10	Weight	Kg	0,18

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	28JMS	Aries
E4		Libra
E5		Orion
		Aquarius

* other options on request

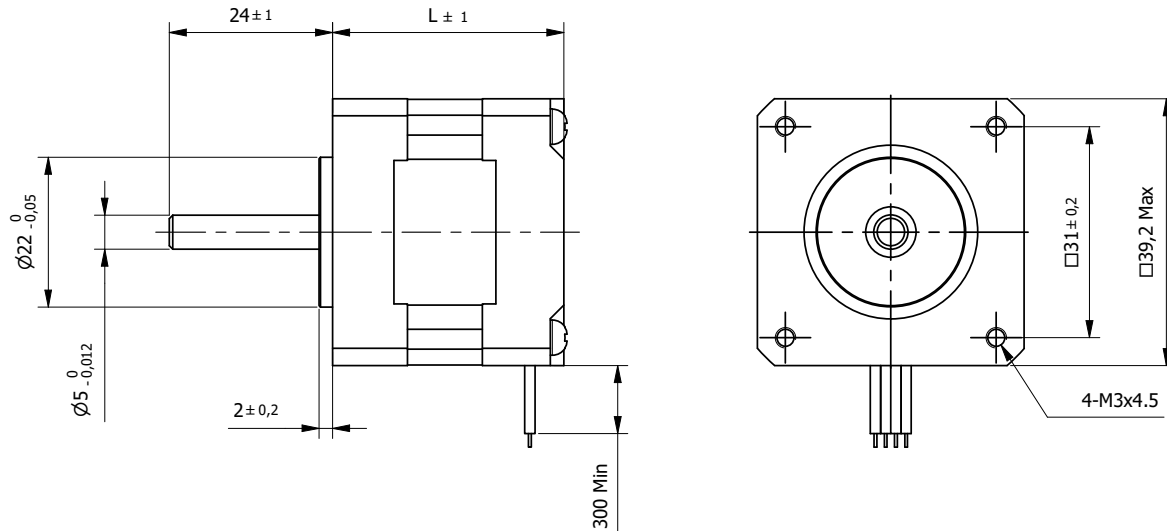
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 39SH20

High Torque

□ 39mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

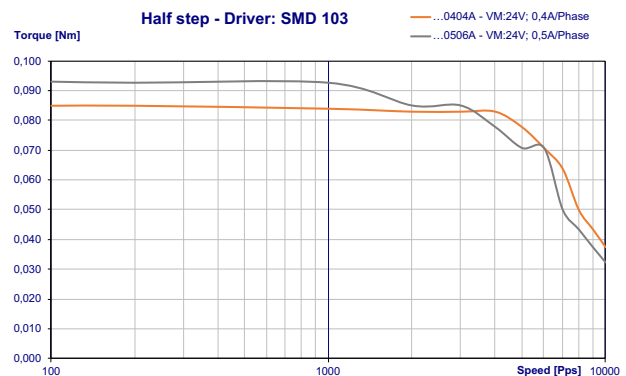
Specification				
Model		...0404A	...0506A	
1	Rated Voltage	V	2,64	6,5
2	Current/Phase	A	0,4	0,5
3	Resistance/Phase	Ω	6,6	13
4	Inductance/Phase	mH	6	6
5	Holding Torque	Nm	0,065	0,08
6	Rotor Inertia	gcm ²	11	11
7	Detent Torque	Nm	0,005	0,005
8	n° of Leads		4	4
9	Length (L)	mm	20	20
10	Weight	Kg	0,12	0,12

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	36JMS	Aries
E4		Libra
E5		Orion
		Aquarius

* other options on request

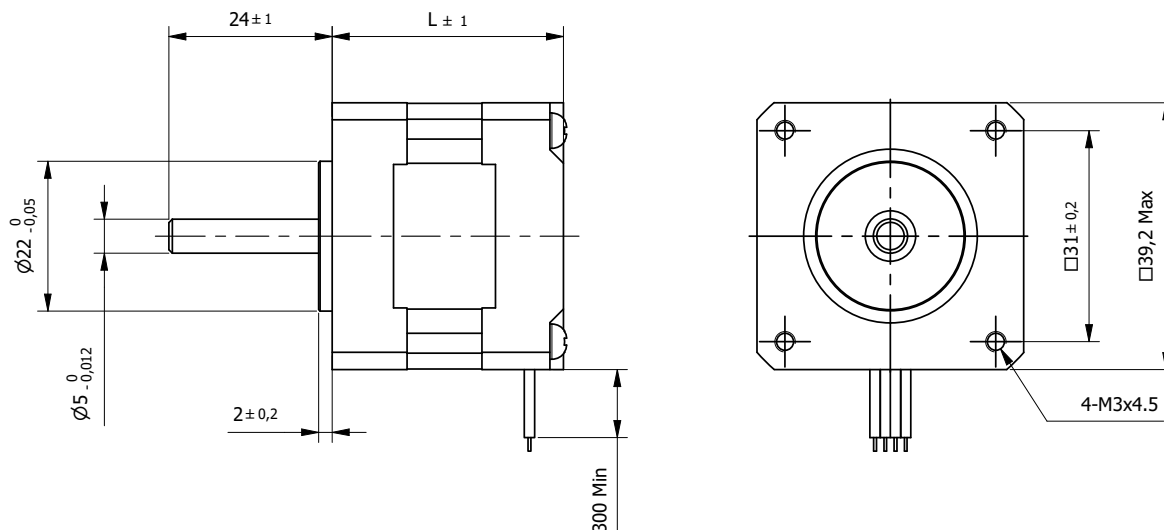
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1007 AWG28	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 39SH34

High Torque

□ 39mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

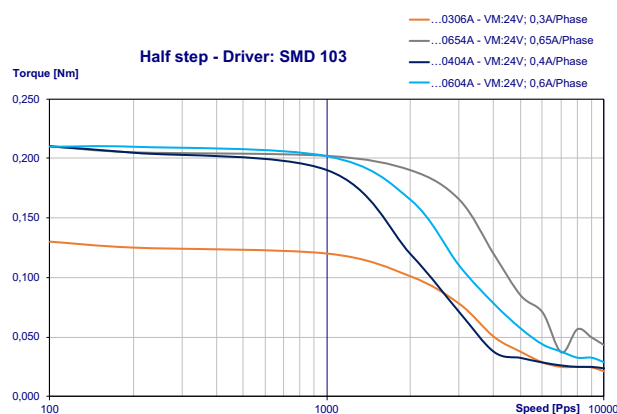
Specification		Model	...0306A	...0654A	...0404A	...0604A
1	Rated Voltage	V	12	4,55	12	9
2	Current/Phase	A	0,3	0,65	0,4	0,6
3	Resistance/Phase	Ω	40	7	30	15
4	Inductance/Phase	mH	20	9,3	43	16
5	Holding Torque	Nm	0,13	0,18	0,21	0,21
6	Rotor Inertia	gcm ²	20	20	20	20
7	Detent Torque	Nm	0,012	0,012	0,012	0,012
8	n° of Leads		6	4	4	4
9	Length (L)	mm	34	34	34	34
10	Weight	Kg	0,18	0,18	0,18	0,18

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	36JMS	Aries
E4		Libra
E5		Orion
		Aquarius

* other options on request

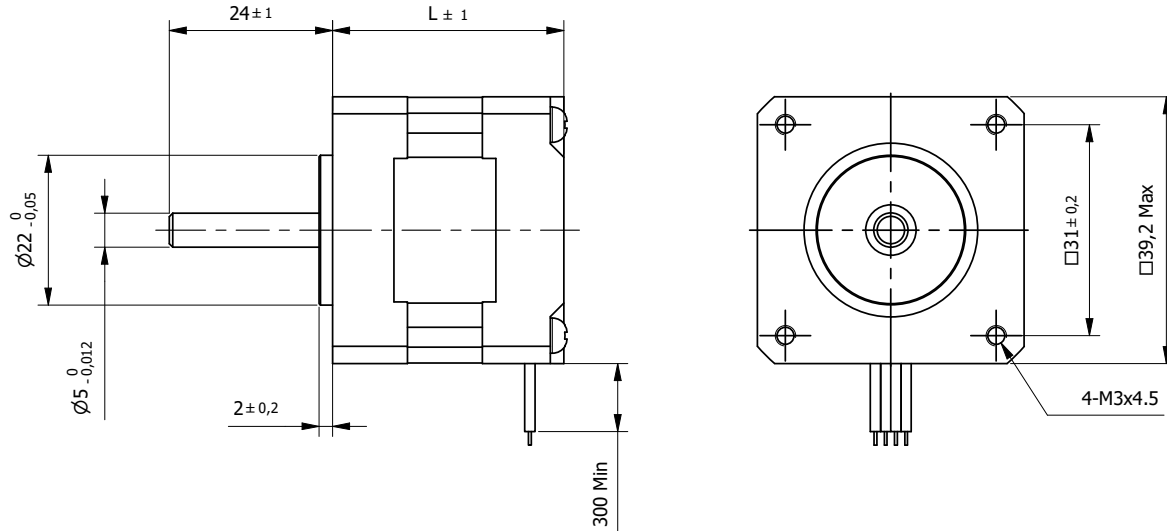
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1430 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 39SH38

High Torque

□ 39mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

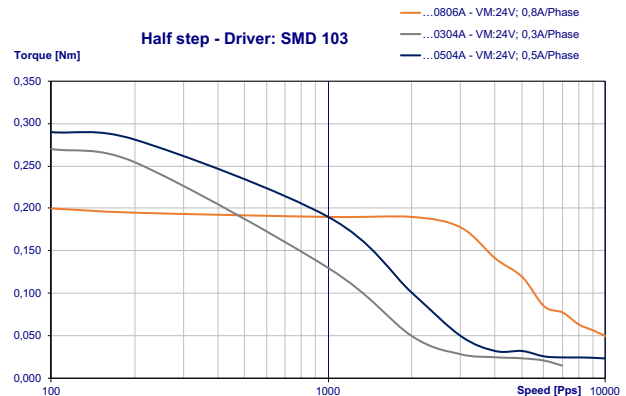
Specification			...0806A	...0304A	...0504A
1	Rated Voltage	V	6	12	11
2	Current/Phase	A	0,8	0,3	0,5
3	Resistance/Phase	Ω	7,5	40	22
4	Inductance/Phase	mH	8	100	40
5	Holding Torque	Nm	0,2	0,28	0,29
6	Rotor Inertia	gcm ²	24	24	24
7	Detent Torque	Nm	0,018	0,018	0,018
8	n° of Leads		6	4	4
9	Length (L)	mm	38	38	38
10	Weight	Kg	0,2	0,2	0,2

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1430 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	36JMS	Aries
E4		Libra
E5		Orion
		Aquarius

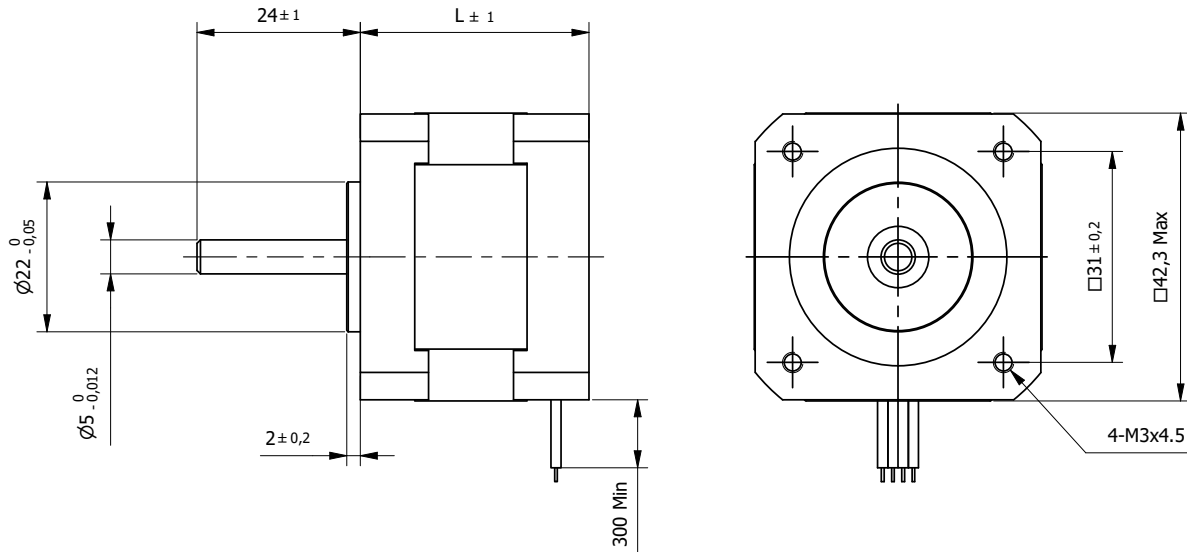
* other options on request



Hybrid Stepper Motor 42SH33

High Torque

□ 42mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19.05mm

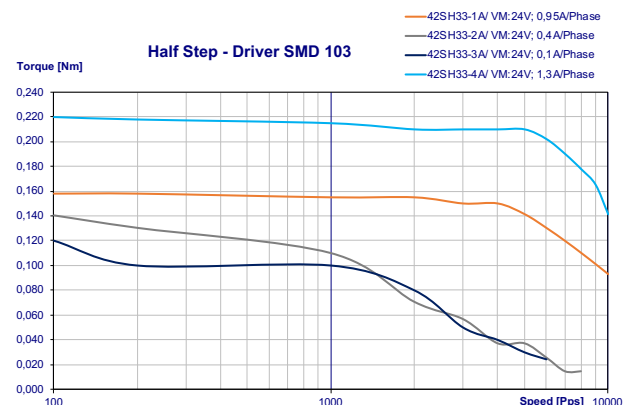
Specification		42SH33-1A	42SH33-2A	42SH33-3A	42SH33-4A	
1	Rated Voltage	V	4	9,6	12	2,8
2	Current/Phase	A	0,95	0,4	0,31	1,33
3	Resistance/Phase	Ω	4,2	24	38,5	2,1
4	Inductance/Phase	mH	2,5	15	21	2,5
5	Holding Torque	Nm	0,158	0,158	0,158	0,22
6	Rotor Inertia	gcm ²	35	35	35	35
7	Detent Torque	Nm	0,012	0,012	0,012	0,012
8	n° of Leads		6	6	6	4
9	Length (L)	mm	33,5	33,5	33,5	33,5
10	Weight	Kg	0,22	0,22	0,22	0,22

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP42	Aries
E4	42JMS	Libra
E5		Orion
		Aquarius

* other options on request

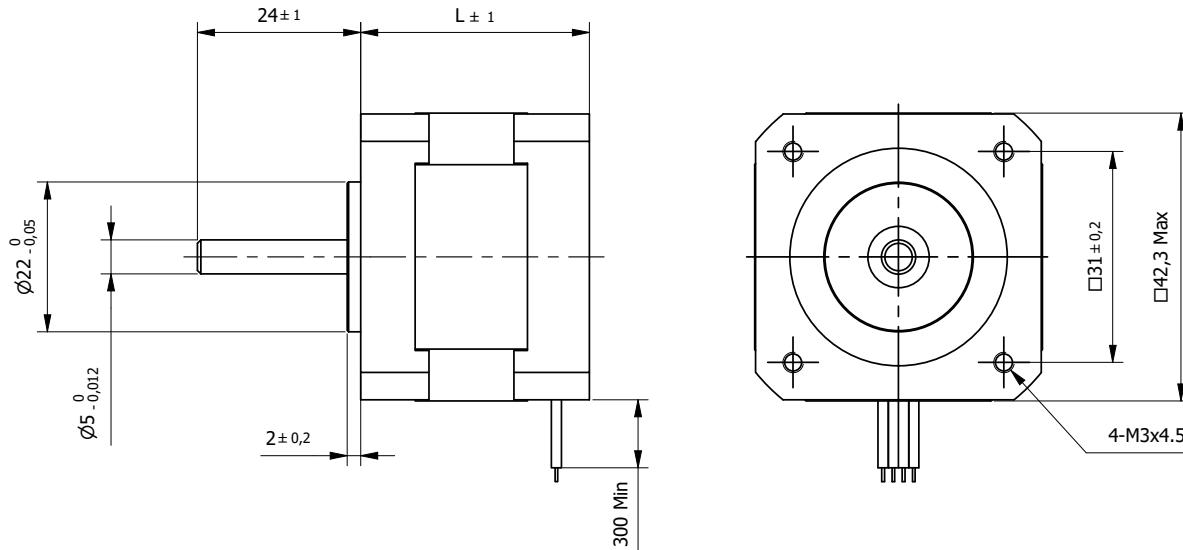
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 42SH38

High Torque

□ 42mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19.05mm

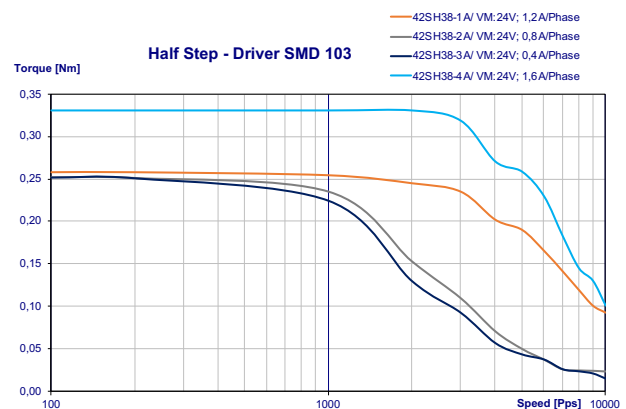
Specification		42SH38-1A	42SH38-2A	42SH38-3A	42SH38-4A	
1	Rated Voltage	V	4	6	12	2,8
2	Current/Phase	A	1,2	0,8	0,4	1,68
3	Resistance/Phase	Ω	3,3	7,5	30	1,65
4	Inductance/Phase	mH	3,2	6,7	25	3,2
5	Holding Torque	Nm	0,259	0,259	0,259	0,36
6	Rotor Inertia	gcm ²	54	54	54	54
7	Detent Torque	Nm	0,015	0,015	0,015	0,015
8	n° of Leads		6	6	6	4
9	Length (L)	mm	39,5	39,5	39,5	39,5
10	Weight	Kg	0,28	0,28	0,28	0,28

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP42	Aries
E4	42JMS	Libra
E5		Orion
		Aquarius

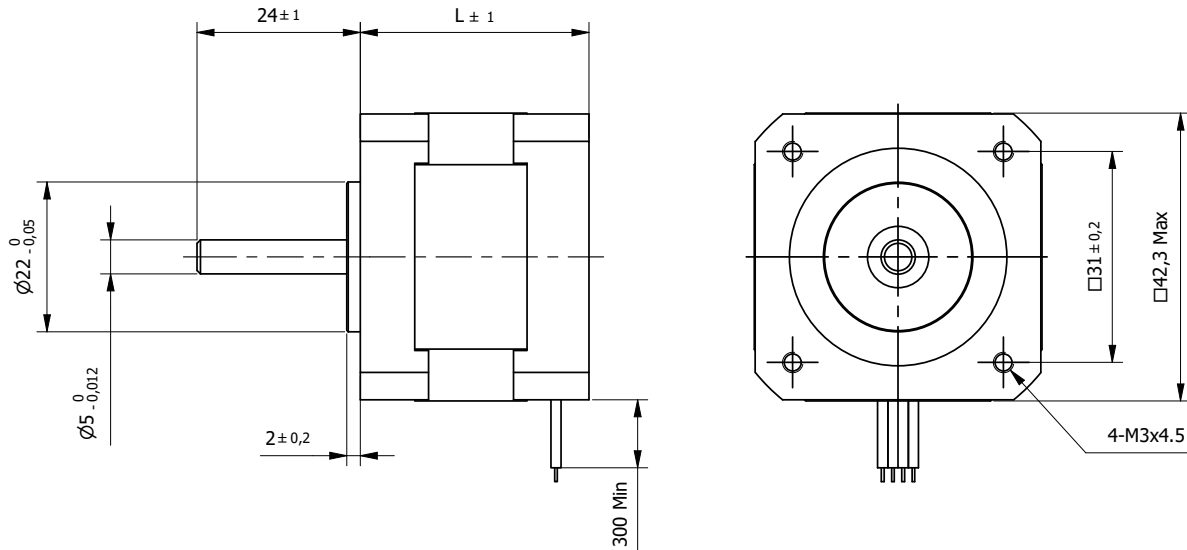
* other options on request



Hybrid Stepper Motor 42SH47

High Torque

□ 42mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19.05mm

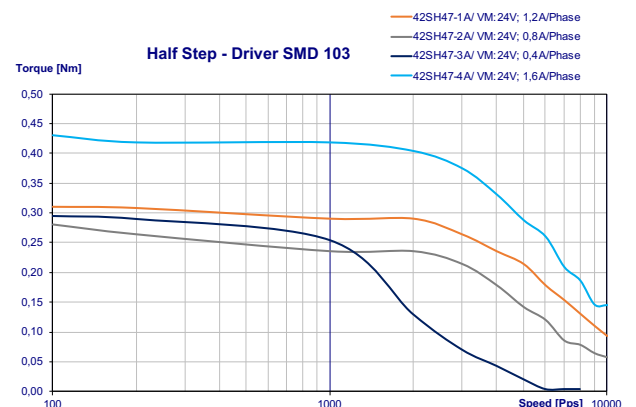
Specification			42SH47-1A	42SH47-2A	42SH47-3A	42SH47-4A
1	Rated Voltage	V	4	6	12	2,8
2	Current/Phase	A	1,2	0,8	0,4	1,68
3	Resistance/Phase	Ω	3,3	7,5	30	1,65
4	Inductance/Phase	mH	2,8	6,3	25	2,8
5	Holding Torque	Nm	0,317	0,317	0,317	0,44
6	Rotor Inertia	gcm ²	68	68	68	68
7	Detent Torque	Nm	0,02	0,02	0,02	0,02
8	n° of Leads		6	6	6	4
9	Length (L)	mm	47,5	47,5	47,5	47,5
10	Weight	Kg	0,35	0,35	0,35	0,35

Characteristics		
Item		
Step angle		1,8°
Step angle Accuracy		±5%
Insulation Class		B
Protection Class		IP30
Ambient Temperature		-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)		80°C
Max. Shaft Radial play (450g load)		0,02mm
Max. Shaft Axial play (450g load)		0,08mm
Max. Radial Force (20mm from front flange)		28N
Max Axial Force		10N
Dielectric Strength (for 1 min.)		500 VAC
Insulation Resistance (min. 500 VDC)		100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP42	Aries
E4	42JMS	Libra
E5		Orion
		Aquarius

* other options on request

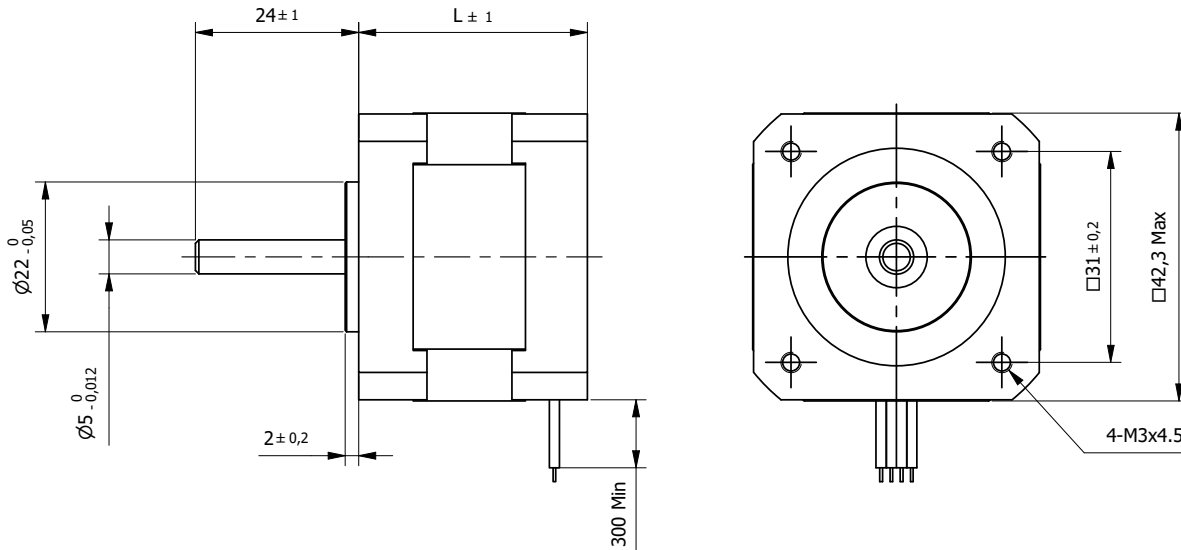
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 42SH60

High Torque

□ 42mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19.05mm

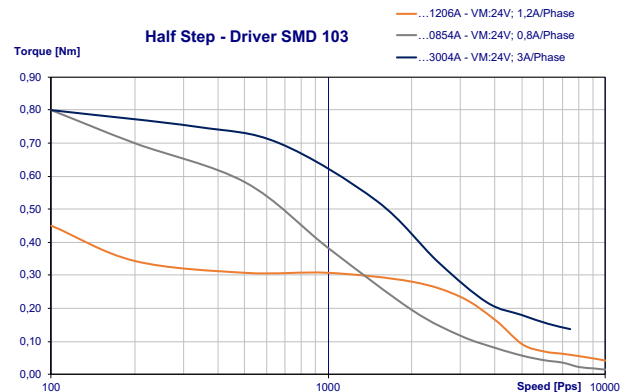
Specification			...1206A	...0854A	...3004A
1	Rated Voltage	V	7,2	10,2	3,3
2	Current/Phase	A	1,2	0,85	3
3	Resistance/Phase	Ω	6	12	1,1
4	Inductance/Phase	mH	7	29	2,7
5	Holding Torque	Nm	0,65	0,8	0,8
6	Rotor Inertia	gcm ²	102	102	102
7	Detent Torque	Nm	0,028	0,028	0,028
8	n° of Leads		6	4	4
9	Length (L)	mm	60	60	60
10	Weight	Kg	0,5	0,5	0,5

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP42	Aries
E4	42JMS	Libra
E5		Orion
		Aquarius

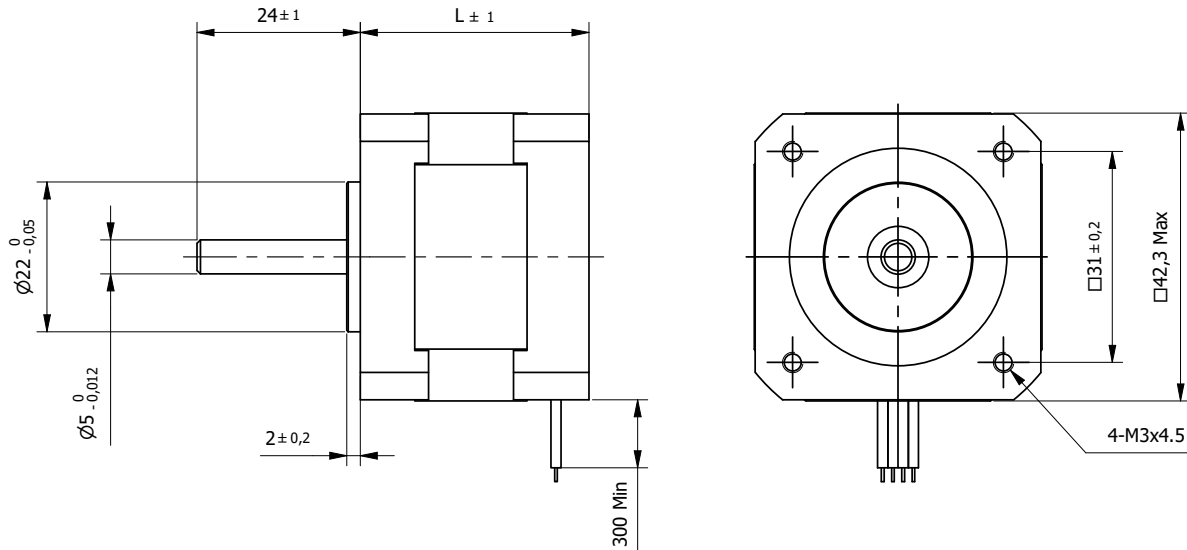
* other options on request



Hybrid Stepper Motor 42SH33M

High Torque - step angle 0,9°

□ 42mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19.05mm

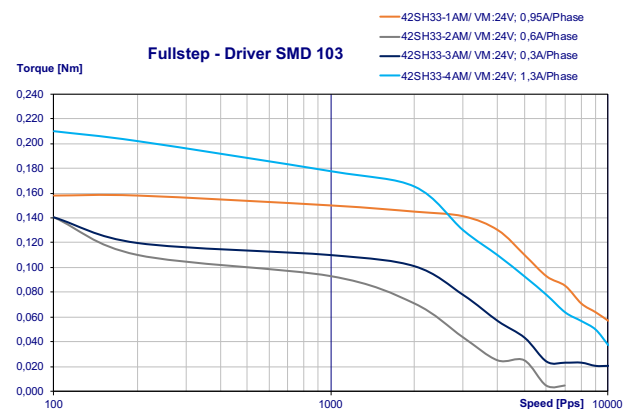
Specification		42SH33-1AM	42SH33-2AM	42SH33-3AM	42SH33-4AM	
1	Rated Voltage	V	4	6	12	2,8
2	Current/Phase	A	0,95	0,6	0,31	1,33
3	Resistance/Phase	Ω	4,2	10	38,5	2,1
4	Inductance/Phase	mH	4	11	33	4,2
5	Holding Torque	Nm	0,158	0,158	0,158	0,22
6	Rotor Inertia	gcm ²	35	35	35	35
7	Detent Torque	Nm	0,02	0,02	0,02	0,02
8	n° of Leads		6	6	6	4
9	Length (L)	mm	33,5	33,5	33,5	33,5
10	Weight	Kg	0,22	0,22	0,22	0,22

Characteristics	
Item	
Step angle	0,9°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP42	Aries
E4	42JMS	Libra
E5		Orion
		Aquarius

* other options on request

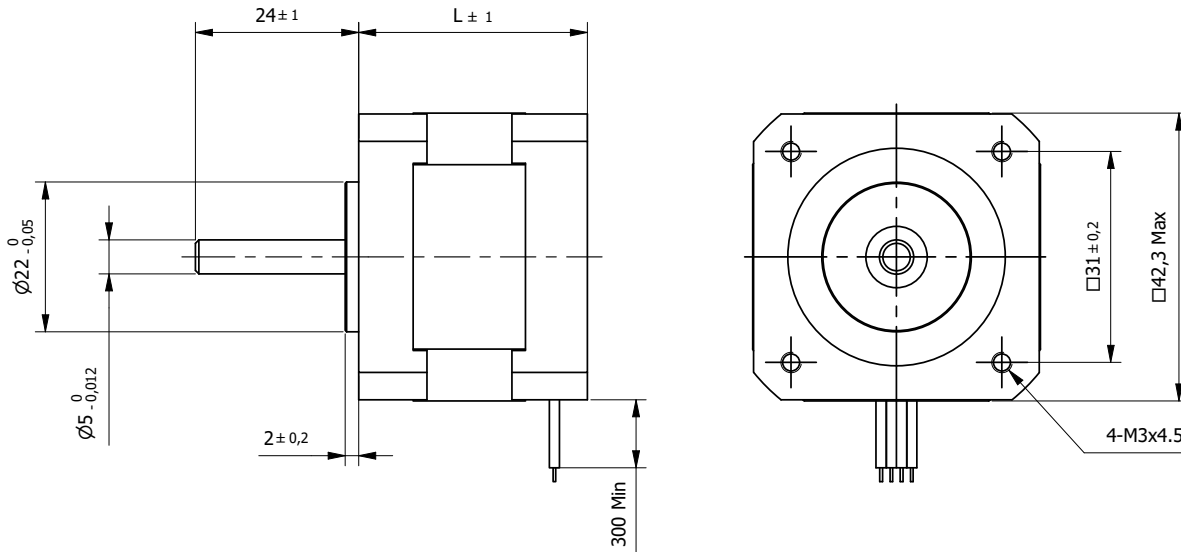
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 42SH38M

High Torque - step angle 0.9°

□ 42mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19.05mm

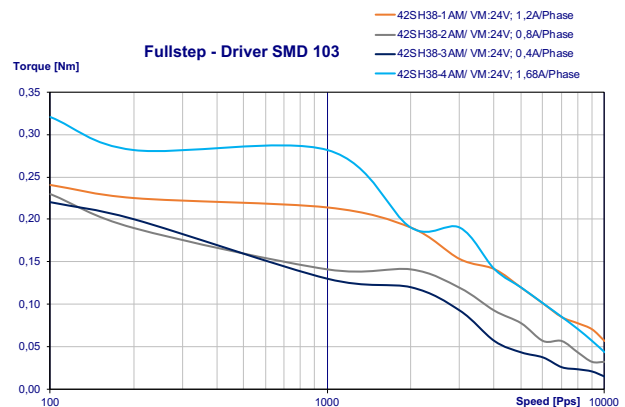
Specification		42SH38-1AM	42SH38-2AM	42SH38-3AM	42SH38-4AM	
1	Rated Voltage	V	4	6	12	2,8
2	Current/Phase	A	1,2	0,8	0,4	1,68
3	Resistance/Phase	Ω	3,3	7,5	30	1,65
4	Inductance/Phase	mH	4,1	8,3	30	4,1
5	Holding Torque	Nm	0,259	0,259	0,259	0,36
6	Rotor Inertia	gcm ²	54	54	54	54
7	Detent Torque	Nm	0,022	0,022	0,022	0,022
8	n° of Leads		6	6	6	4
9	Length (L)	mm	39,5	39,5	39,5	39,5
10	Weight	Kg	0,28	0,28	0,28	0,28

Characteristics	
Item	
Step angle	0,9°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP42	Aries
E4	42JMS	Libra
E5		Orion
		Aquarius

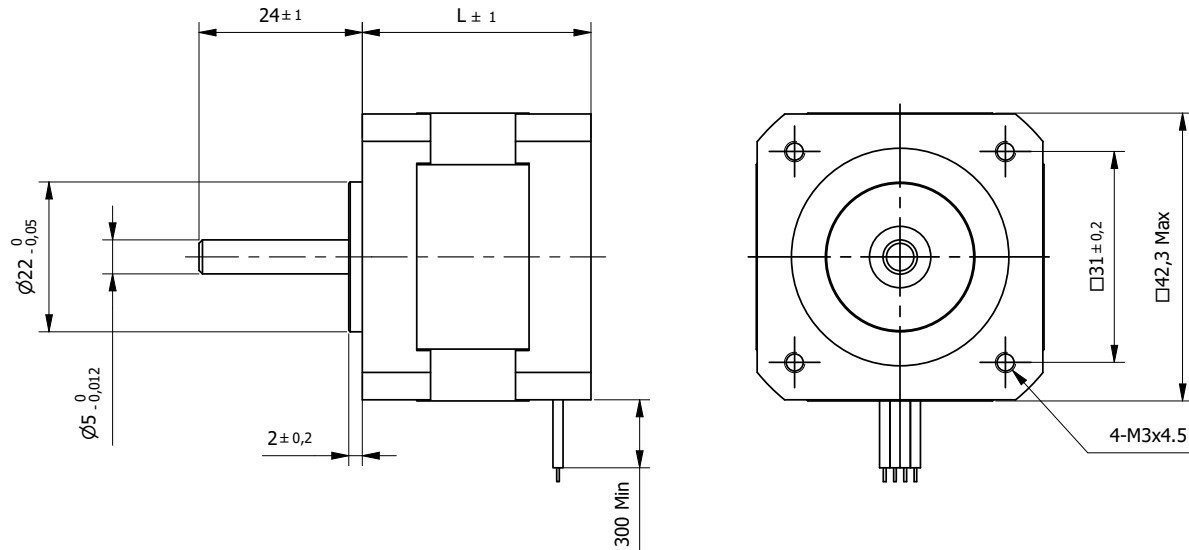
* other options on request



Hybrid Stepper Motor 42SH47M

High Torque - step angle 0,9°

□ 42mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19.05mm

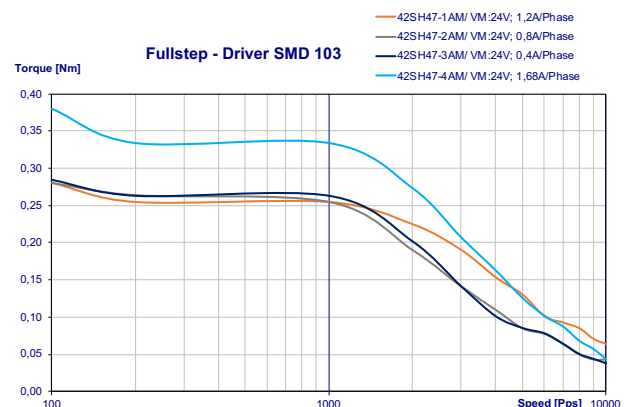
Specification			42SH47-1AM	42SH47-2AM	42SH47-3AM	42SH47-4AM
1	Rated Voltage	V	4	6	12	2,8
2	Current/Phase	A	1,2	0,8	0,4	1,68
3	Resistance/Phase	Ω	3,3	7,5	30	1,65
4	Inductance/Phase	mH	4,9	110	43	50
5	Holding Torque	Nm	0,317	0,317	0,317	0,44
6	Rotor Inertia	gcm ²	68	68	68	68
7	Detent Torque	Nm	0,02	0,02	0,02	0,02
8	n° of Leads		6	6	6	4
9	Length (L)	mm	47,5	47,5	47,5	47,5
10	Weight	Kg	0,35	0,35	0,35	0,35

Characteristics	
Item	
Step angle	0,9°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP42	Aries
E4	42JMS	Libra
E5		Orion
		Aquarius

* other options on request

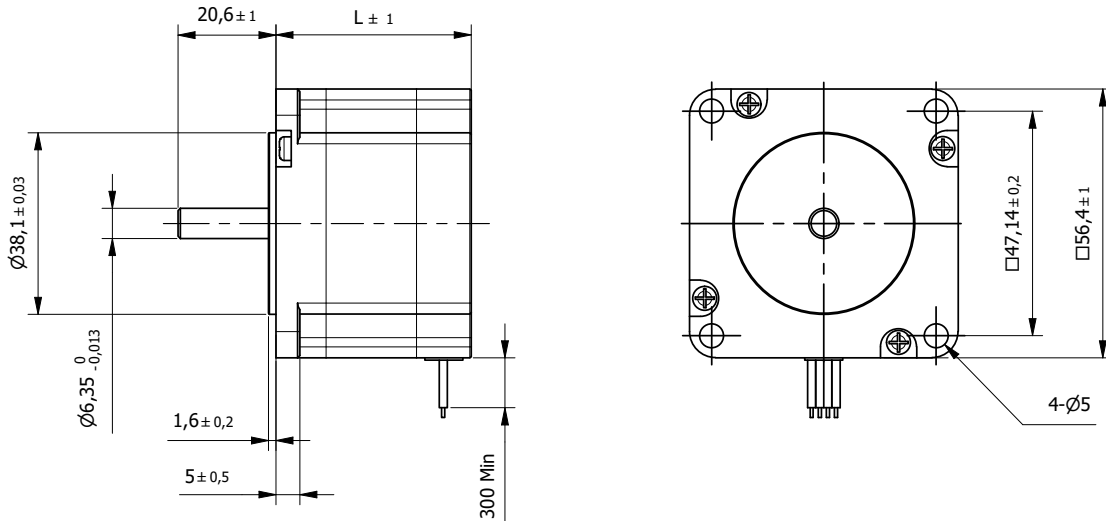
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 57SH41

High Torque

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

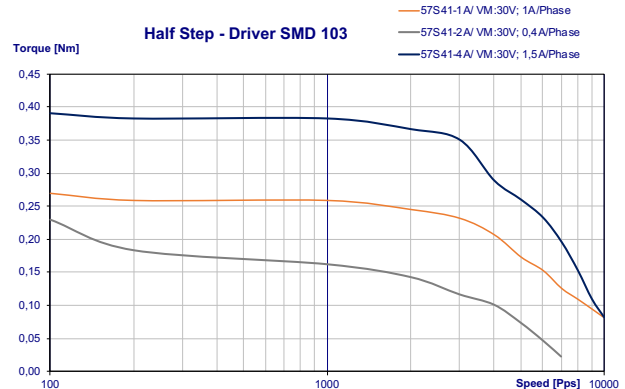
Specification		57SH41-1A	57SH41-2A	57SH41-3A	57SH41-4A	
1	Rated Voltage	V	5,7	2,8	1,9	2
2	Current/Phase	A	1	2	3	2,8
3	Resistance/Phase	Ω	5,7	1,4	0,63	0,7
4	Inductance/Phase	mH	5,4	1,4	0,6	1,4
5	Holding Torque	Nm	0,39	0,39	0,39	0,55
6	Rotor Inertia	gcm ²	120	120	120	120
7	Detent Torque	Nm	0,021	0,021	0,021	0,021
8	n° of Leads		6	6	6	4
9	Length (L)	mm	41	41	41	41
10	Weight	Kg	0,45	0,45	0,45	0,45

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

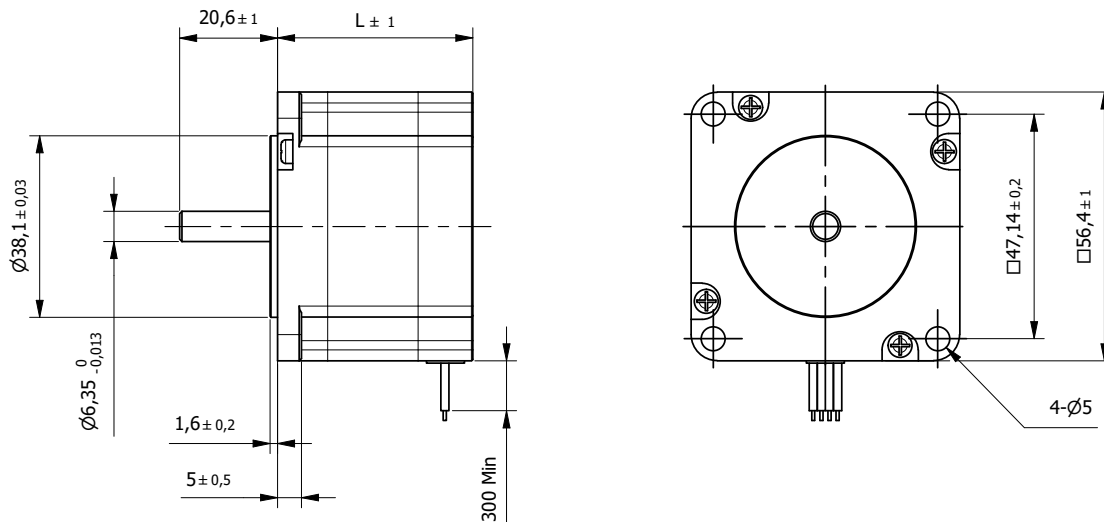
* other options on request



Hybrid Stepper Motor 57SH51

High Torque

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

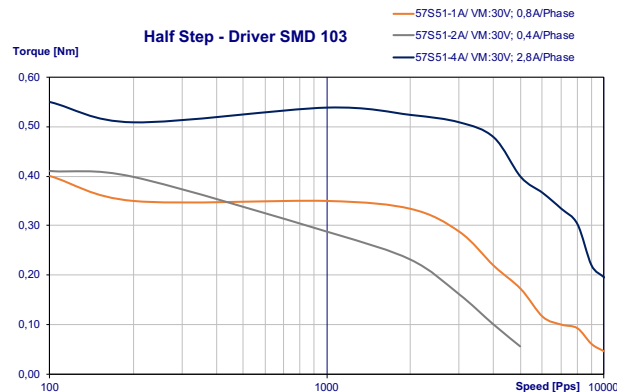
Specification		57SH51-1A	57SH51-2A	57SH51-3A	57SH51-4A	
1	Rated Voltage	V	6,6	3,3	2,2	2,3
2	Current/Phase	A	1	2	3	2,8
3	Resistance/Phase	Ω	6,6	1,65	0,74	0,83
4	Inductance/Phase	mH	8,2	2,2	0,9	2,2
5	Holding Torque	Nm	0,72	0,72	0,72	1,01
6	Rotor Inertia	gcm ²	275	275	275	275
7	Detent Torque	Nm	0,036	0,036	0,036	0,036
8	n° of Leads		6	6	6	4
9	Length (L)	mm	51	51	51	51
10	Weight	Kg	0,65	0,65	0,65	0,65

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request

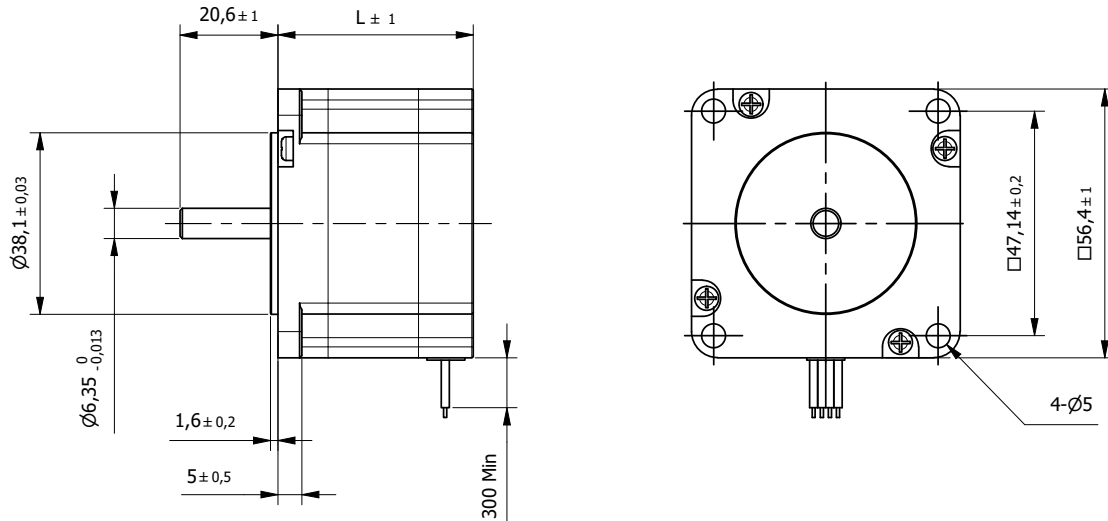
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 57SH56

High Torque

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

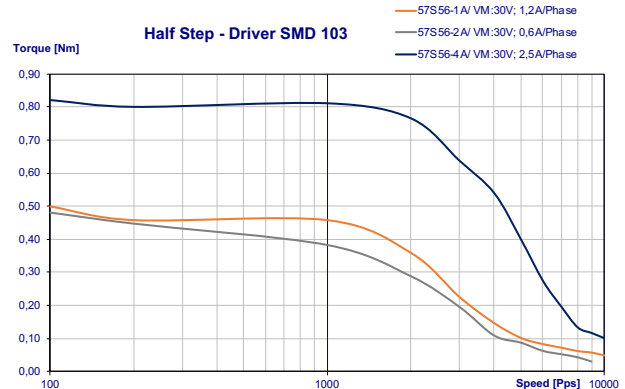
Specification			57SH56-1A	57SH56-2A	57SH56-3A	57SH56-4A
1	Rated Voltage	V	7,4	3,6	2,3	2,5
2	Current/Phase	A	1	2	3	2,8
3	Resistance/Phase	Ω	7,4	1,8	0,75	0,9
4	Inductance/Phase	mH	10	2,5	1,1	2,5
5	Holding Torque	Nm	0,9	0,9	0,9	1,26
6	Rotor Inertia	gcm ²	300	300	300	300
7	Detent Torque	Nm	0,04	0,04	0,04	0,04
8	n° of Leads		6	6	6	4
9	Length (L)	mm	56	56	56	56
10	Weight	Kg	0,7	0,7	0,7	0,7

Characteristics		
Item		
Step angle		1,8°
Step angle Accuracy		±5%
Insulation Class		B
Protection Class		IP30
Ambient Temperature		-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)		80°C
Max. Shaft Radial play (450g load)		0,02mm
Max. Shaft Axial play (450g load)		0,08mm
Max. Radial Force (20mm from front flange)		75N
Max Axial Force		15N
Dielectric Strength (for 1 min.)		500 VAC
Insulation Resistance (min. 500 VDC)		100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

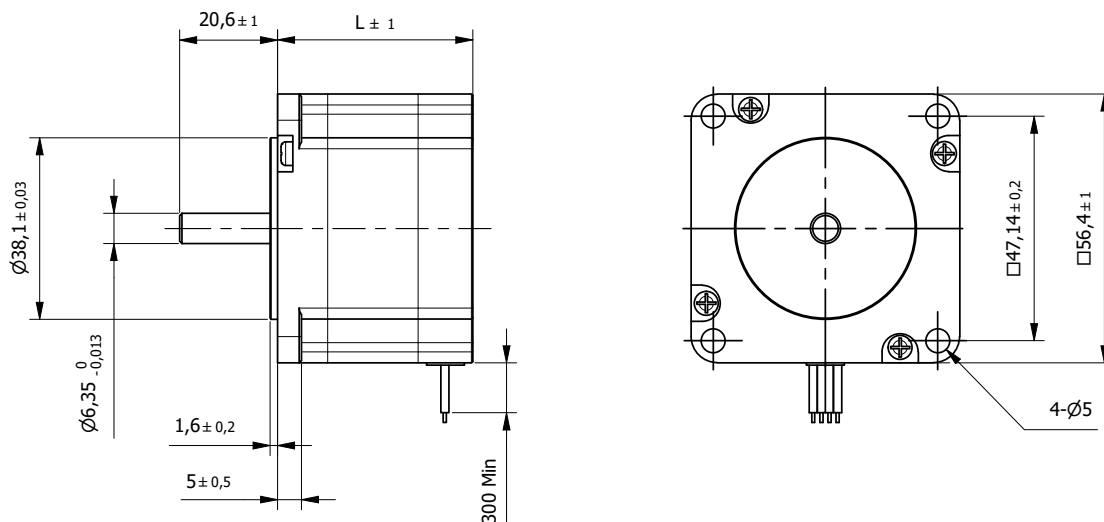
* other options on request



Hybrid Stepper Motor 57SH76

High Torque

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

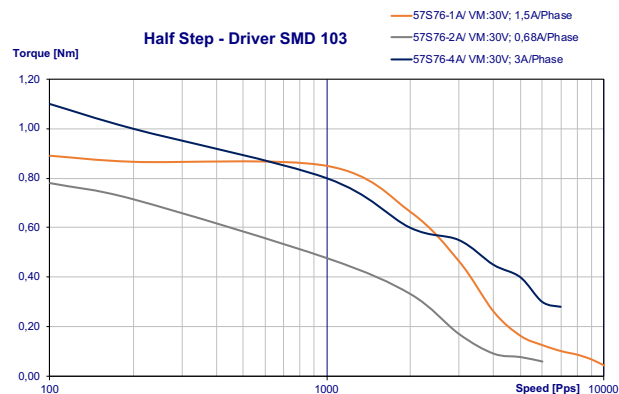
Specification		57SH76-1A	57SH76-2A	57SH76-3A	57SH76-4A	
1	Rated Voltage	V	8,6	4,5	3	3,2
2	Current/Phase	A	1	2	3	2,8
3	Resistance/Phase	Ω	8,6	2,25	1	1,13
4	Inductance/Phase	mH	14	3,6	1,6	3,6
5	Holding Torque	Nm	1,35	1,35	1,35	1,89
6	Rotor Inertia	gcm ²	480	480	480	480
7	Detent Torque	Nm	0,068	0,068	0,068	0,068
8	n° of Leads		6	6	6	4
9	Length (L)	mm	76	76	76	76
10	Weight	Kg	1	1	1	1

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request

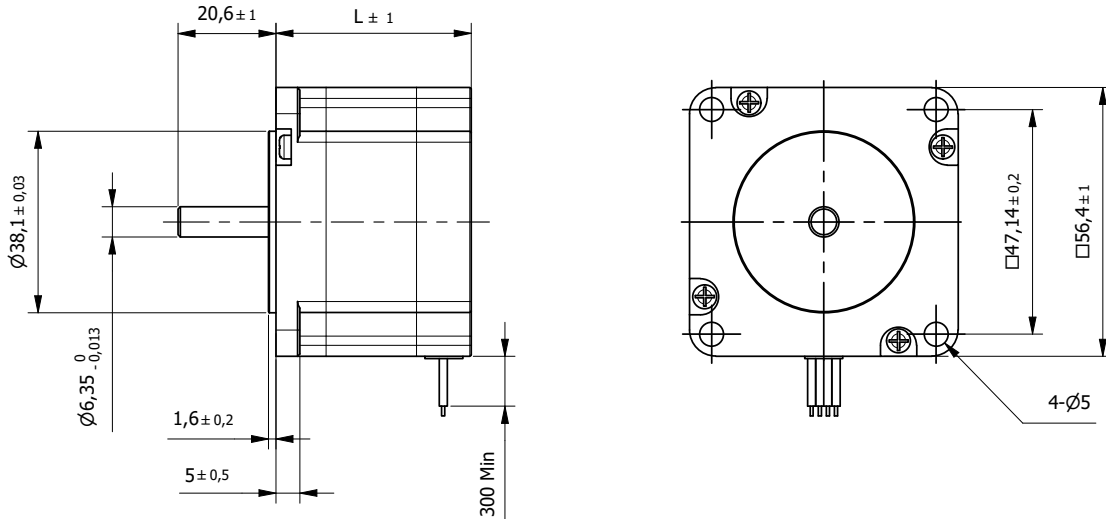
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 57SH41M

High Torque - step angle 0,9°

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

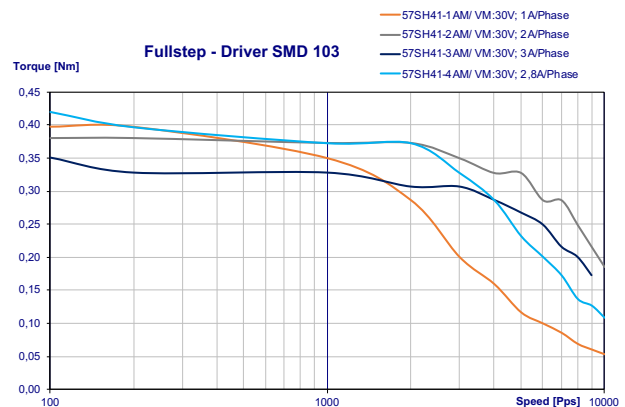
Specification		57SH41-1AM	57SH41-2AM	57SH41-3AM	57SH41-4AM	
1	Rated Voltage	V	5,7	2,8	1,9	2
2	Current/Phase	A	1	2	3	2,8
3	Resistance/Phase	Ω	5,7	1,4	0,63	0,7
4	Inductance/Phase	mH	8	2,2	1	2,2
5	Holding Torque	Nm	0,39	0,39	0,39	0,55
6	Rotor Inertia	gcm ²	120	120	120	120
7	Detent Torque	Nm	0,021	0,021	0,021	0,021
8	n° of Leads		6	6	6	4
9	Length (L)	mm	41	41	41	41
10	Weight	Kg	0,45	0,45	0,45	0,45

Characteristics	
Item	
Step angle	0,9°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

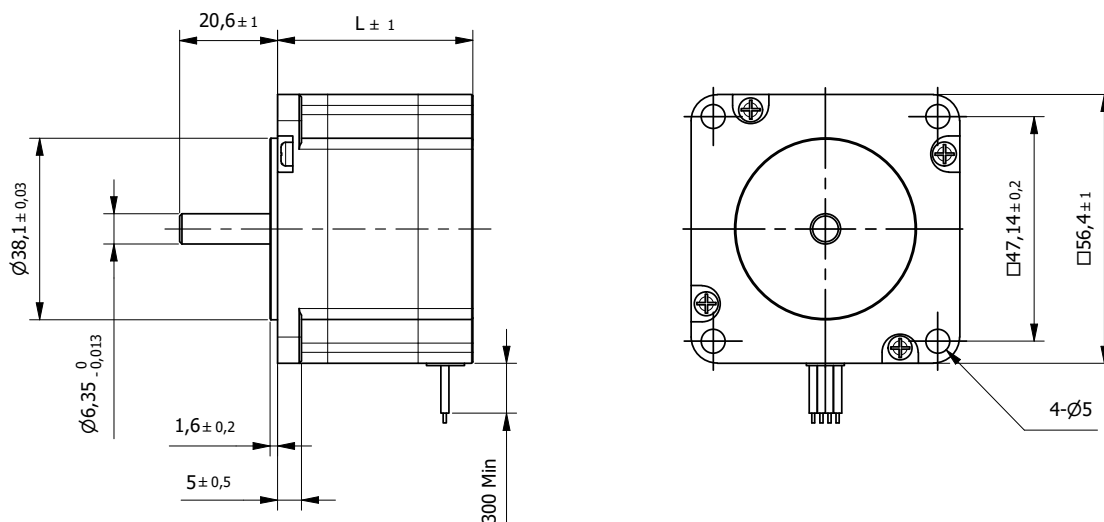
* other options on request



Hybrid Stepper Motor 57SH56M

High Torque - step angle 0,9°

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

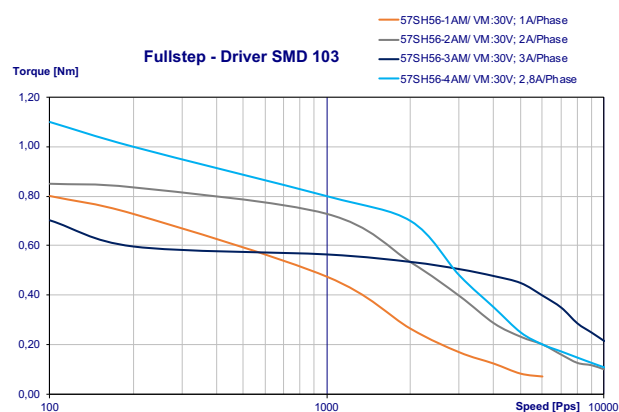
Specification		57SH56-1AM	57SH56-2AM	57SH56-3AM	57SH56-4AM	
1	Rated Voltage	V	7,4	3,6	2,3	2,5
2	Current/Phase	A	1	2	3	2,8
3	Resistance/Phase	Ω	7,4	1,8	0,75	0,9
4	Inductance/Phase	mH	17,5	4,5	1,9	4,5
5	Holding Torque	Nm	0,9	0,9	0,9	1,26
6	Rotor Inertia	gcm ²	300	300	300	300
7	Detent Torque	Nm	0,04	0,04	0,04	0,04
8	n° of Leads		6	6	6	4
9	Length (L)	mm	56	56	56	56
10	Weight	Kg	0,7	0,7	0,7	0,7

Characteristics	
Item	
Step angle	0,9°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request

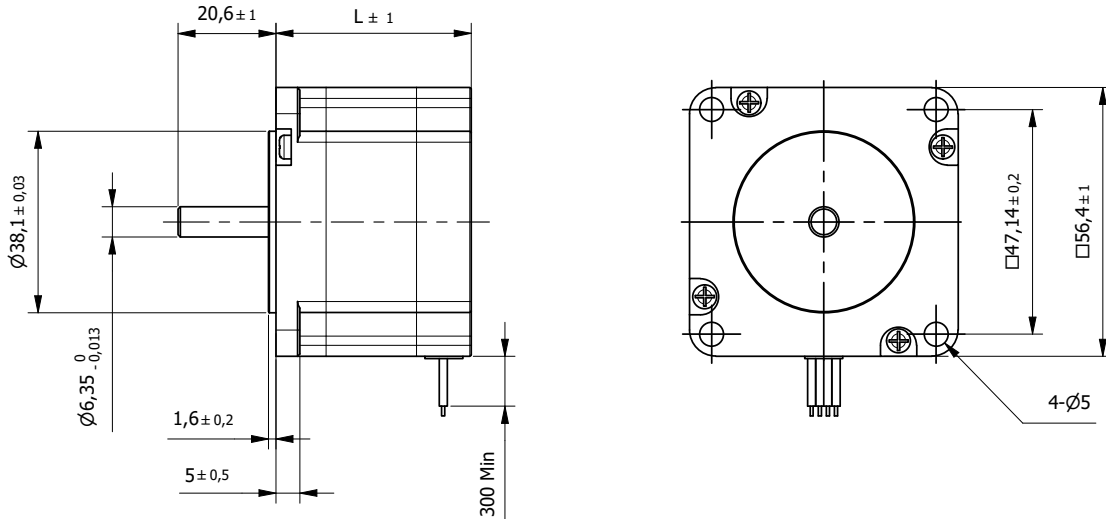
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B



Hybrid Stepper Motor 57SH76M

High Torque - step angle 0,9°

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

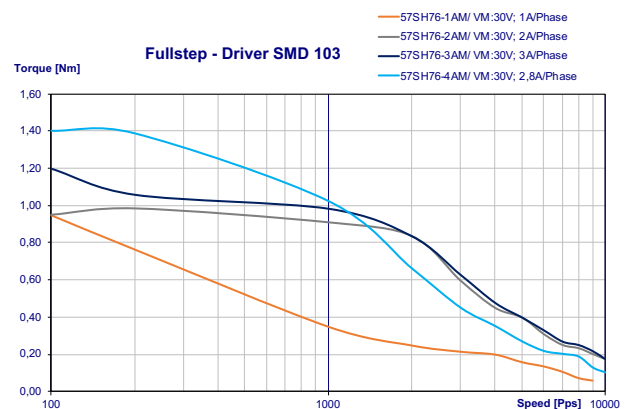
Specification		57SH76-1AM	57SH76-2AM	57SH76-3AM	57SH76-4AM	
1	Rated Voltage	V	8,6	4,5	3	3,2
2	Current/Phase	A	1	2	3	2,8
3	Resistance/Phase	Ω	8,6	2,25	1	1,13
4	Inductance/Phase	mH	23	5,6	2,6	5,6
5	Holding Torque	Nm	1,35	1,35	1,35	1,8
6	Rotor Inertia	gcm ²	480	480	480	480
7	Detent Torque	Nm	0,068	0,068	0,068	0,068
8	n° of Leads		6	6	6	4
9	Length (L)	mm	76	76	76	76
10	Weight	Kg	1	1	1	1

Characteristics	
Item	
Step angle	0,9°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-
Unipolar motor			
5	Yellow		COM Phase A
6	White		COM Phase B

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

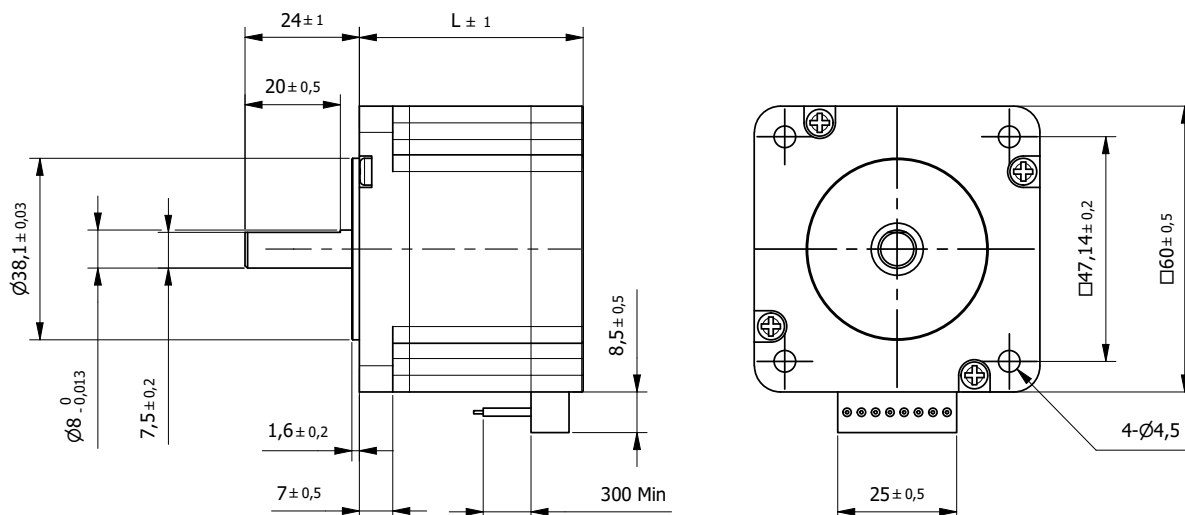
* other options on request



Hybrid Stepper Motor 60SH45

High Torque

□ 60mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

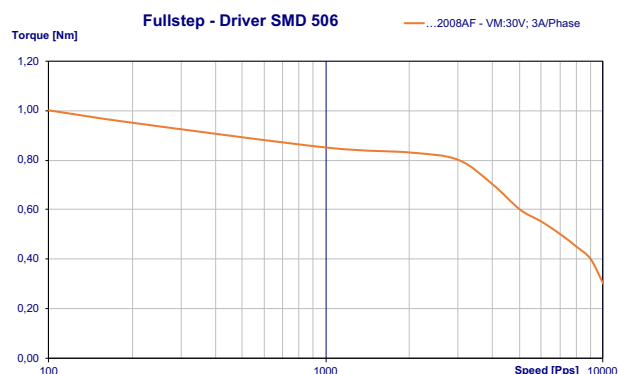
Specification		60SH45-2008AF		
Model		Unipolar	Parallel	Series
1	Rated Voltage	V	3	2,1
2	Current/Phase	A	2	2,8
3	Resistance/Phase	Ω	1,5	0,75
4	Inductance/Phase	mH	2	8
5	Holding Torque	Nm	0,78	1,1
6	Rotor Inertia	gcm ²	275	275
7	Detent Torque	Nm	0,05	0,05
8	n° of Leads		8	8
9	Length (L)	mm	45	45
10	Weight	Kg	0,6	0,6

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request

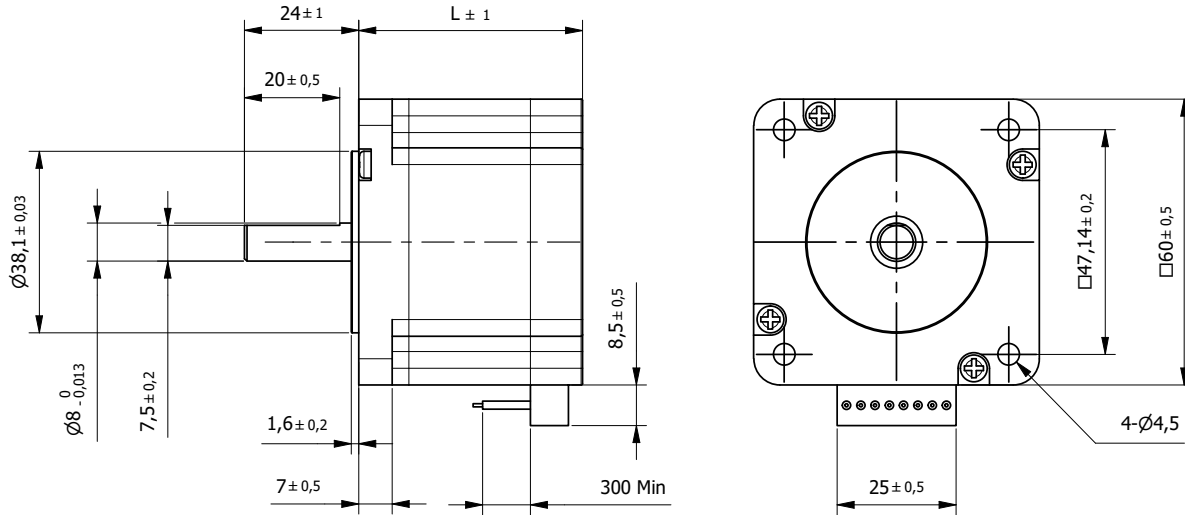
Connection			
Lead n°	Color	Gauge	Function
1	Blue/White	UL1061 AWG22	Phase A
2	Blue		Phase A-
3	Red/White		Phase C-
4	Red		Phase C
5	Green/White		Phase B
6	Green		Phase B-
7	Black/White		Phase D -
8	Black		Phase D



Hybrid Stepper Motor 60SH56

High Torque

□ 60mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

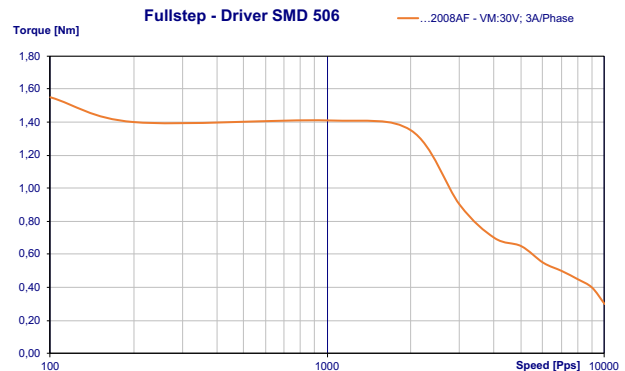
Specification		60SH56-2008AF			
Model		Unipolar	Parallel	Series	
1	Rated Voltage	V	3,6	2,52	5,04
2	Current/Phase	A	2	2,8	1,4
3	Resistance/Phase	Ω	1,8	0,9	3,6
4	Inductance/Phase	mH	3,6	3,6	14,4
5	Holding Torque	Nm	1,17	1,65	1,65
6	Rotor Inertia	gcm ²	400	400	400
7	Detent Torque	Nm	0,07	0,07	0,07
8	n° of Leads		8	8	8
9	Length (L)	mm	56	56	56
10	Weight	Kg	0,77	0,77	0,77

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request

Connection			
Lead n°	Color	Gauge	Function
1	Blue/White	UL1061 AWG22	Phase A
2	Blue		Phase A-
3	Red/White		Phase C-
4	Red		Phase C
5	Green/White		Phase B
6	Green		Phase B-
7	Black/White		Phase D -
8	Black		Phase D

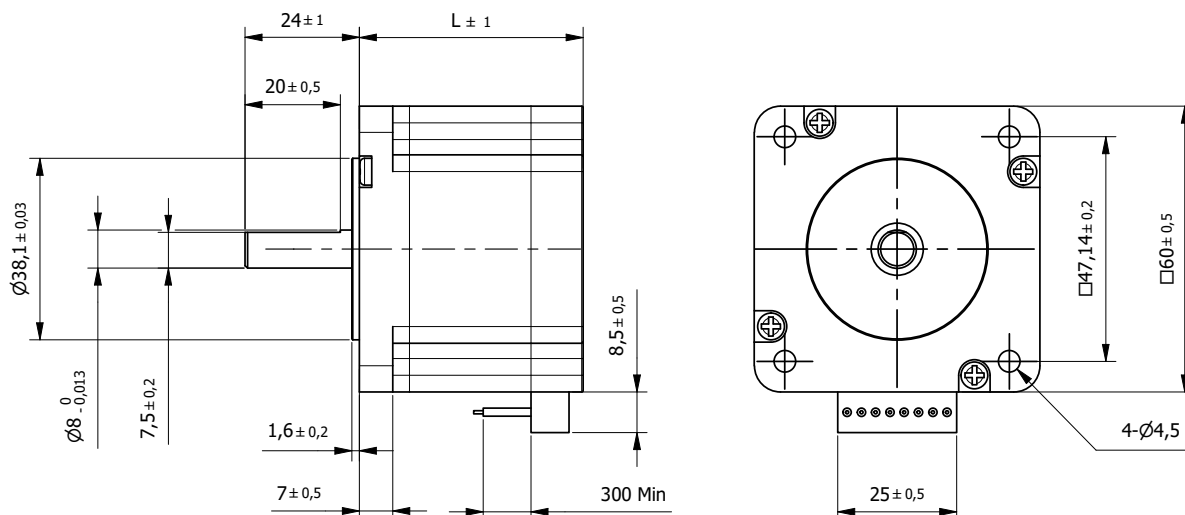


Stepper

Hybrid Stepper Motor 60SH65

High Torque

□ 60mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

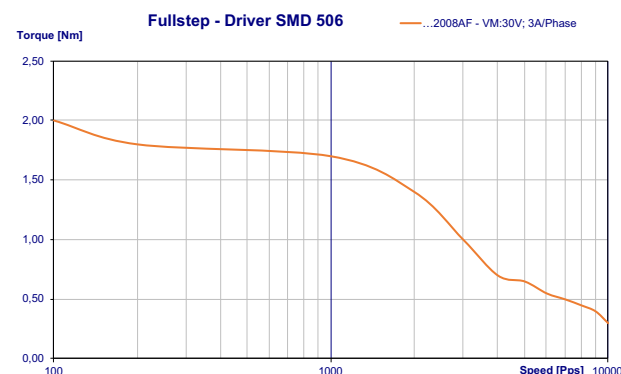
Specification		60SH65-2008AF		
Model		Unipolar	Parallel	Series
1	Rated Voltage	V	4,8	3,36
2	Current/Phase	A	2	2,8
3	Resistance/Phase	Ω	2,4	1,2
4	Inductance/Phase	mH	4,6	4,6
5	Holding Torque	Nm	1,5	2,1
6	Rotor Inertia	gcm ²	570	570
7	Detent Torque	Nm	0,09	0,09
8	n° of Leads		8	8
9	Length (L)	mm	65	65
10	Weight	Kg	1,2	1,2

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request

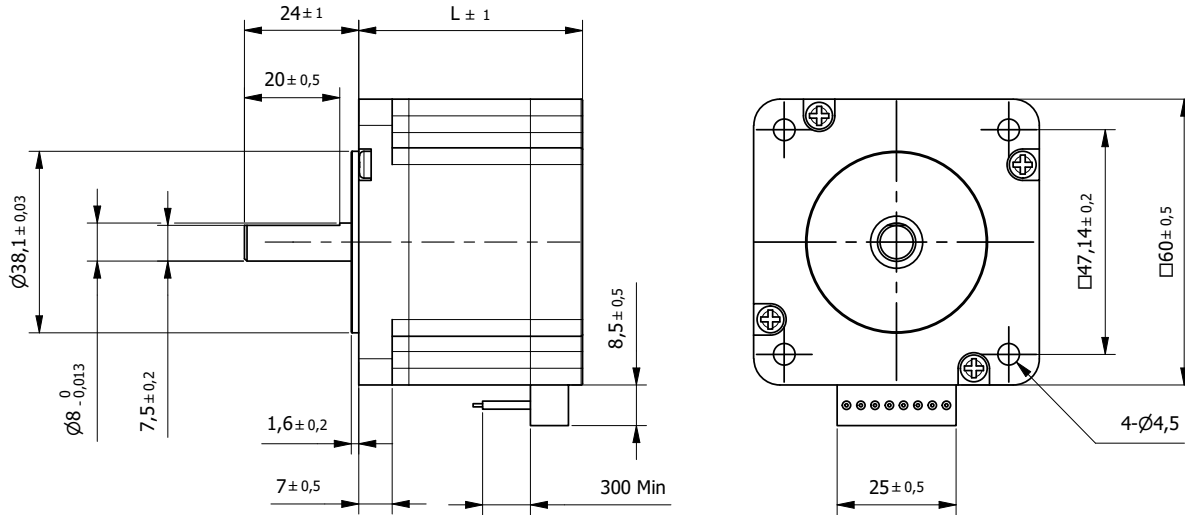
Connection			
Lead n°	Color	Gauge	Function
1	Blue/White	UL1061 AWG22	Phase A
2	Blue		Phase A-
3	Red/White		Phase C-
4	Red		Phase C
5	Green/White		Phase B
6	Green		Phase B-
7	Black/White		Phase D -
8	Black		Phase D



Hybrid Stepper Motor 60SH86

High Torque

□ 60mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

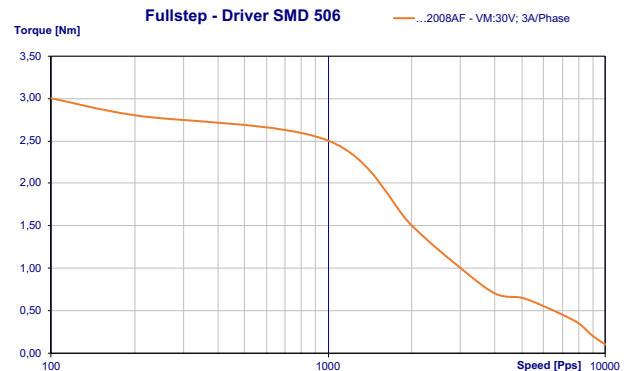
Specification		60SH86-2008AF			
Model		Unipolar	Parallel	Series	
1	Rated Voltage	V	6	4,17	8,4
2	Current/Phase	A	2	2,8	1,4
3	Resistance/Phase	Ω	3	1,5	6
4	Inductance/Phase	mH	6,8	6,8	27,2
5	Holding Torque	Nm	2,2	3,1	3,1
6	Rotor Inertia	gcm ²	840	840	840
7	Detent Torque	Nm	0,1	0,1	0,1
8	n° of Leads		8	8	8
9	Length (L)	mm	86	86	86
10	Weight	Kg	1,4	1,4	1,4

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Orion
		Aquarius

* other options on request

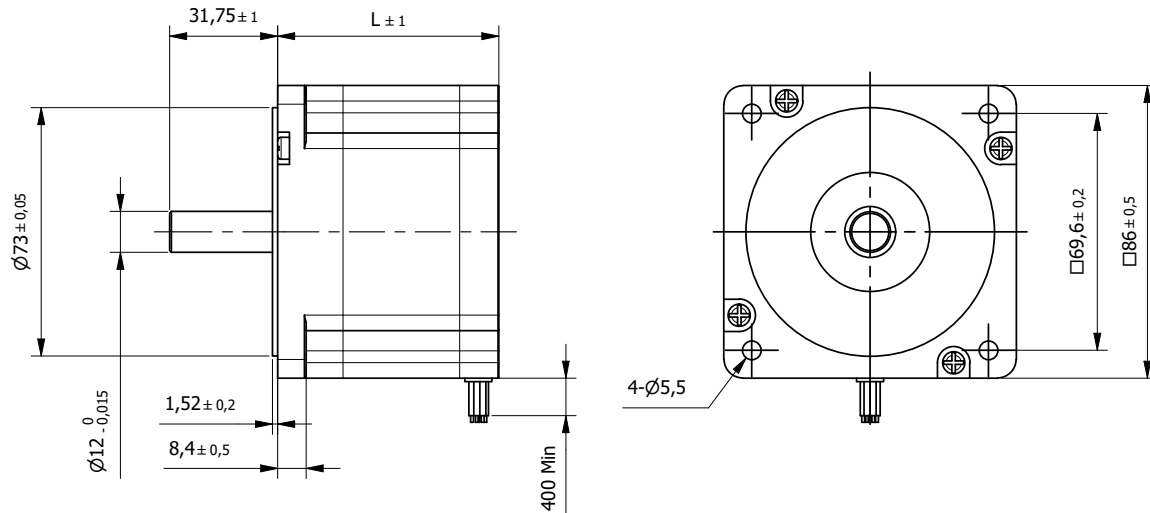
Connection			
Lead n°	Color	Gauge	Function
1	Blue/White	UL1061 AWG22	Phase A
2	Blue		Phase A-
3	Red/White		Phase C-
4	Red		Phase C
5	Green/White		Phase B
6	Green		Phase B-
7	Black/White		Phase D -
8	Black		Phase D



Hybrid Stepper Motor 86SH65

High Torque

□ 86mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

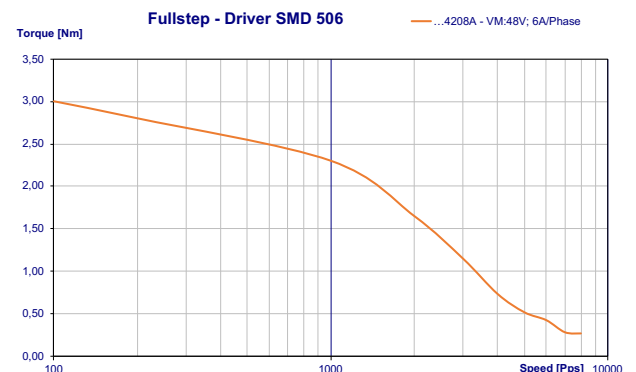
Specification		86SH65-4208A		
Model		Unipolar	Parallel	Series
1	Rated Voltage	V	2,39	3,42
2	Current/Phase	A	4,2	3
3	Resistance/Phase	Ω	0,57	1,14
4	Inductance/Phase	mH	1,7	6,8
5	Holding Torque	Nm	2,6	3,4
6	Rotor Inertia	gcm ²	1000	1000
7	Detent Torque	Nm	0,08	0,08
8	n° of Leads		8	8
9	Length (L)	mm	65	65
10	Weight	Kg	1,7	1,7

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220N
Max Axial Force	60N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Libra
E4		Sagittarius
E5		Aquarius
		Andromeda

* other options on request

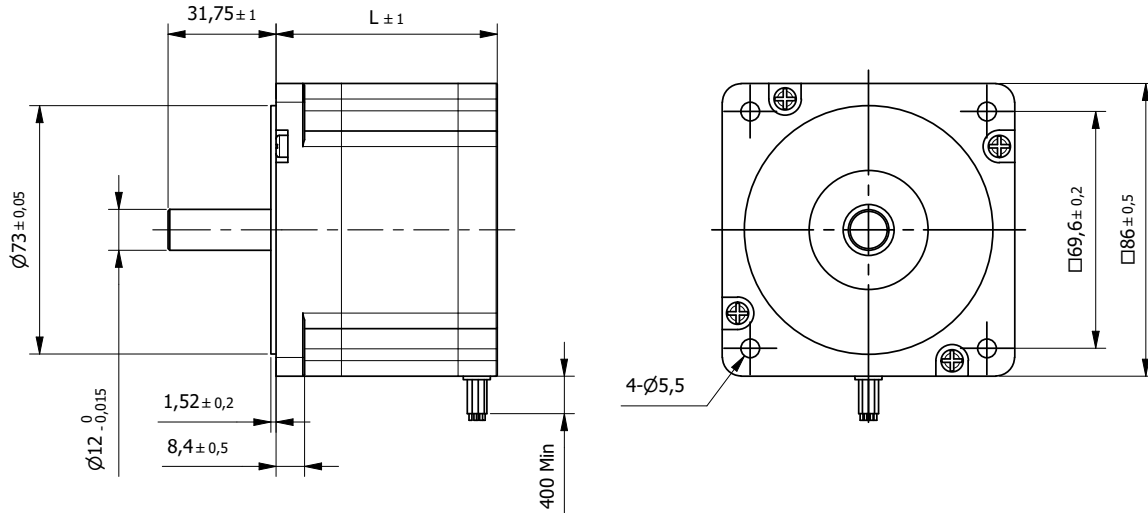
Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1061 AWG20	Phase A
2	Yellow		Phase A-
3	Blue		Phase C-
4	Black		Phase C
5	White		Phase B
6	Orange		Phase B-
7	Brown		Phase D -
8	Green		Phase D



Hybrid Stepper Motor 86SH80

High Torque

□ 86mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

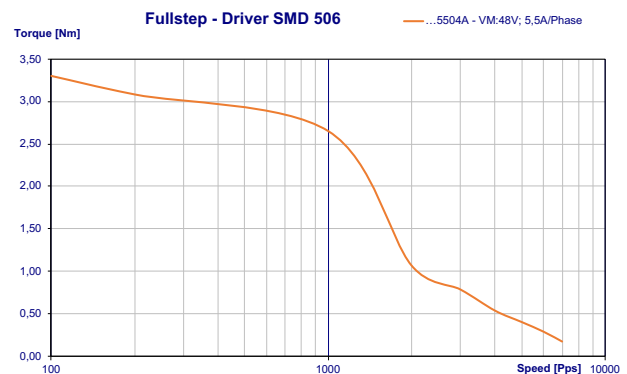
Specification			
Model	...5504A		
1	Rated Voltage	V	2,3
2	Current/Phase	A	5,5
3	Resistance/Phase	Ω	0,42
4	Inductance/Phase	mH	3,5
5	Holding Torque	Nm	4,6
6	Rotor Inertia	gcm ²	1400
7	Detent Torque	Nm	0,12
8	n° of Leads		4
9	Length (L)	mm	80
10	Weight	Kg	2,3

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220N
Max Axial Force	60N
Dielectric Strength (for 1 min.)	750 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1061 AWG20	Phase A
2	White		Phase A-
3	Yellow		Phase B
4	Green		Phase B-

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Libra
E4		Sagittarius
E5		Aquarius
		Andromeda

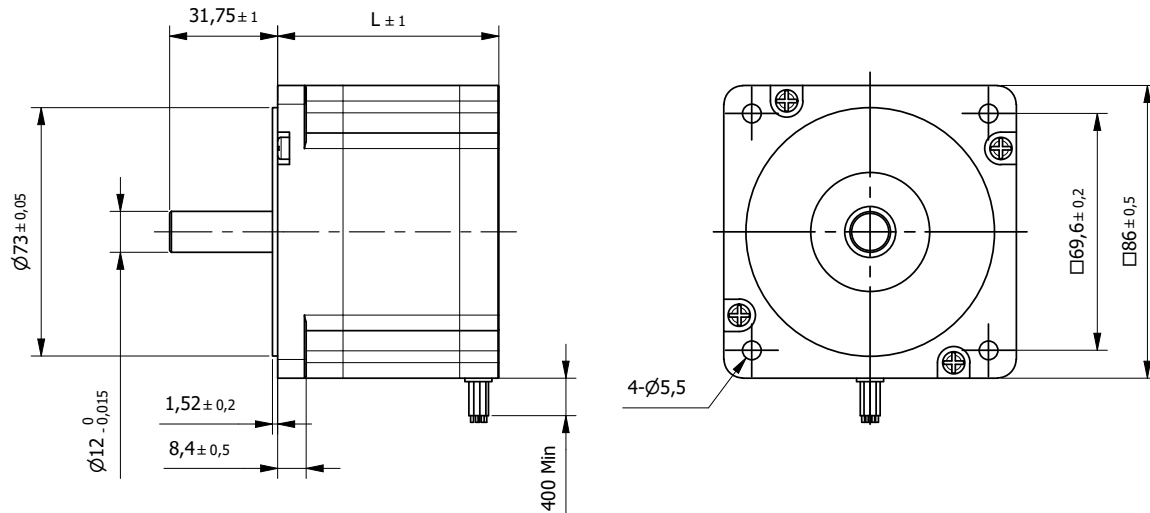
* other options on request



Hybrid Stepper Motor 86SH96

High Torque

□ 86mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

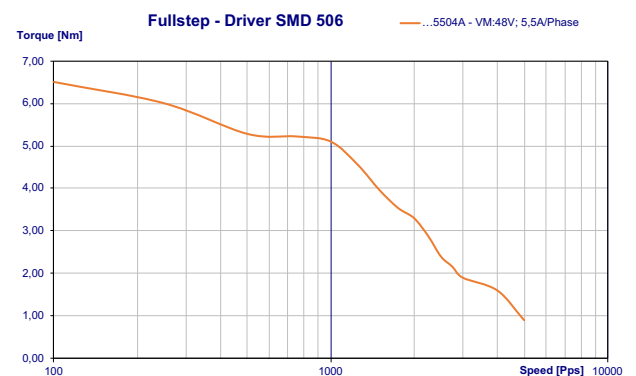
Specification			
Model	...5504A		
1	Rated Voltage	V	2,56
2	Current/Phase	A	5,5
3	Resistance/Phase	Ω	0,465
4	Inductance/Phase	mH	4,5
5	Holding Torque	Nm	7
6	Rotor Inertia	gcm ²	2700
7	Detent Torque	Nm	0,12
8	n° of Leads		4
9	Length (L)	mm	96
10	Weight	Kg	2,8

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220N
Max Axial Force	60N
Dielectric Strength (for 1 min.)	750 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Libra
E4		Sagittarius
E5		Aquarius
		Andromeda

* other options on request

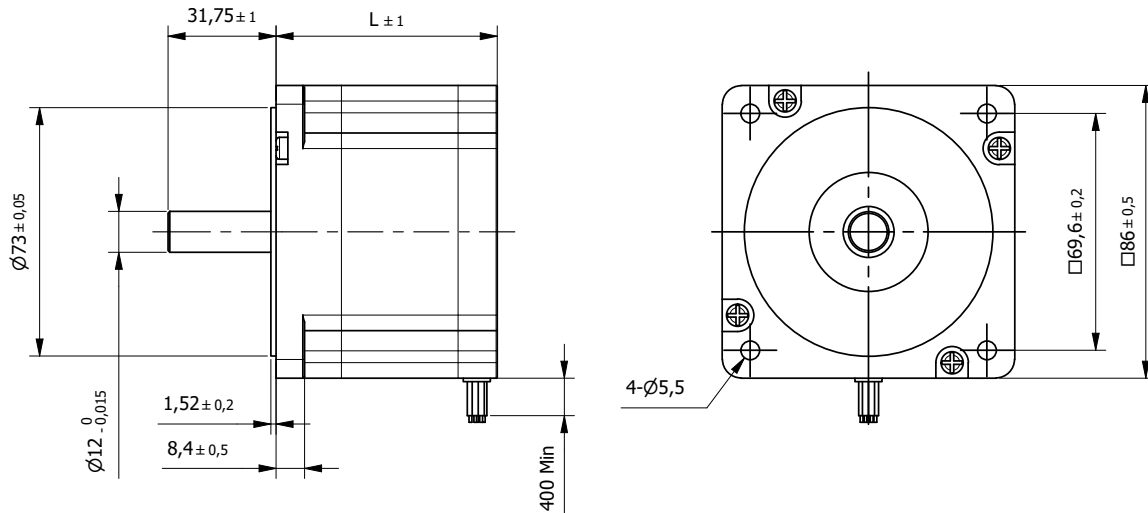
Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1061 AWG20	Phase A
2	White		Phase A-
3	Yellow		Phase B
4	Green		Phase B-



Hybrid Stepper Motor 86SH118

High Torque

□ 86mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

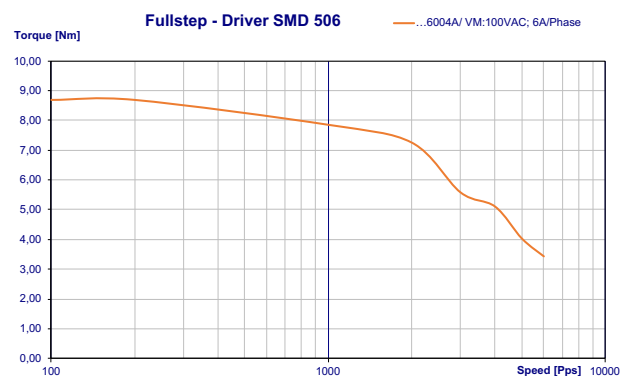
Specification			
Model	...6004A		
1	Rated Voltage	V	2,7
2	Current/Phase	A	6
3	Resistance/Phase	Ω	0,45
4	Inductance/Phase	mH	5,1
5	Holding Torque	Nm	8,7
6	Rotor Inertia	gcm ²	2700
7	Detent Torque	Nm	0,24
8	n° of Leads		4
9	Length (L)	mm	118
10	Weight	Kg	3,8

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220N
Max Axial Force	60N
Dielectric Strength (for 1 min.)	750 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1061 AWG20	Phase A
2	White		Phase A-
3	Yellow		Phase B
4	Green		Phase B-

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Libra
E4		Sagittarius
E5		Aquarius
		Andromeda

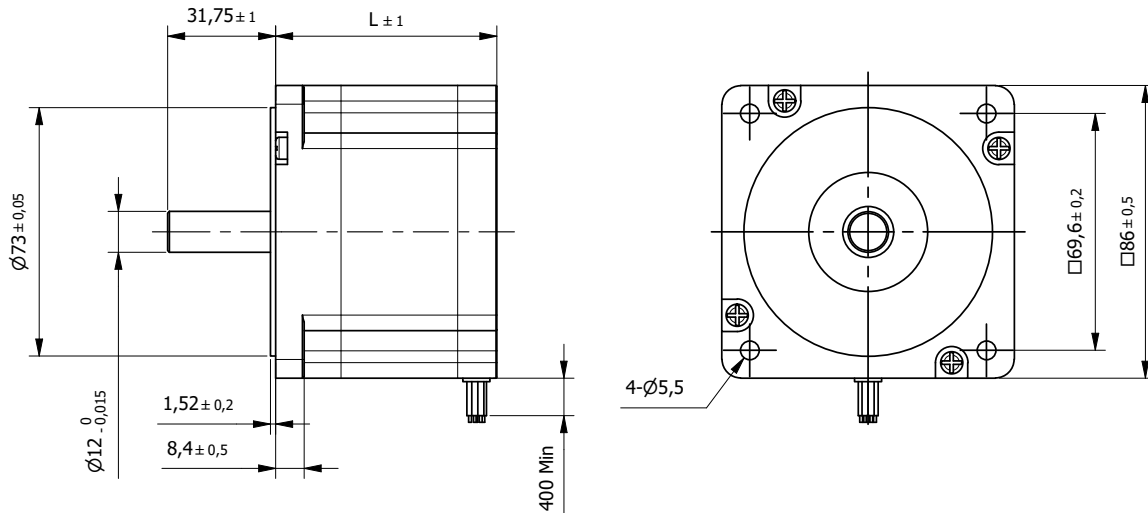
* other options on request



Hybrid Stepper Motor 86SH156

High Torque

□ 86mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

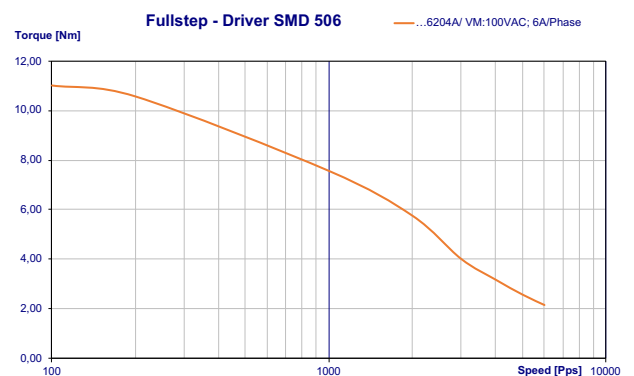
Specification			
Model	...6204A		
1	Rated Voltage	V	4,5
2	Current/Phase	A	6,2
3	Resistance/Phase	Ω	0,72
4	Inductance/Phase	mH	9
5	Holding Torque	Nm	12,1
6	Rotor Inertia	gcm ²	4000
7	Detent Torque	Nm	0,36
8	n° of Leads		4
9	Length (L)	mm	156
10	Weight	Kg	5,4

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220N
Max Axial Force	60N
Dielectric Strength (for 1 min.)	750 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Libra
E4		Sagittarius
E5		Aquarius
		Andromeda

* other options on request

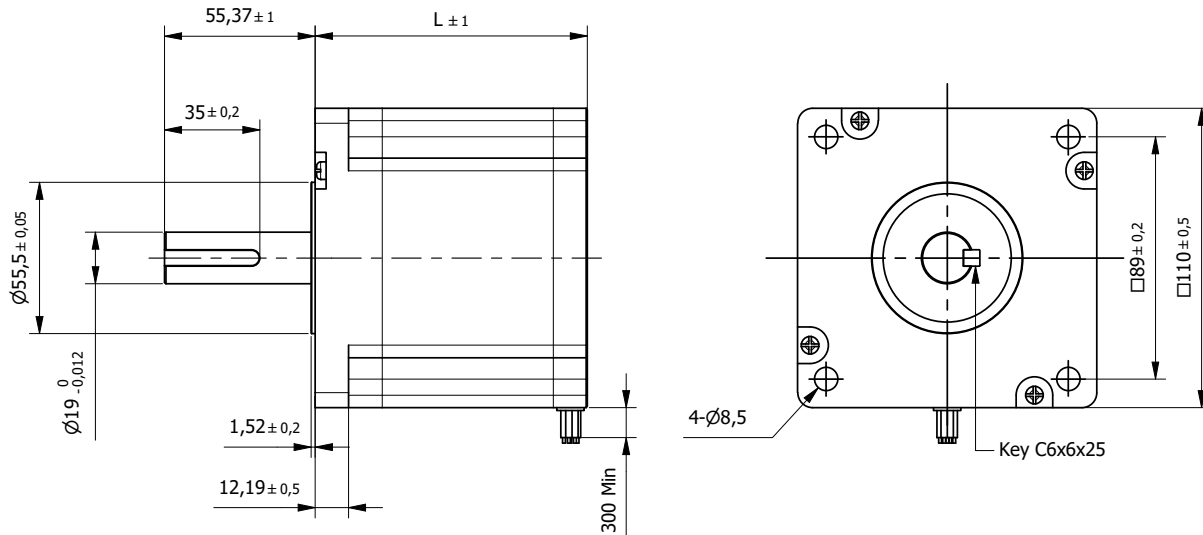
Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1061 AWG20	Phase A
2	White		Phase A-
3	Yellow		Phase B
4	Green		Phase B-



Hybrid Stepper Motor 110SH99

High Torque

□ 110mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

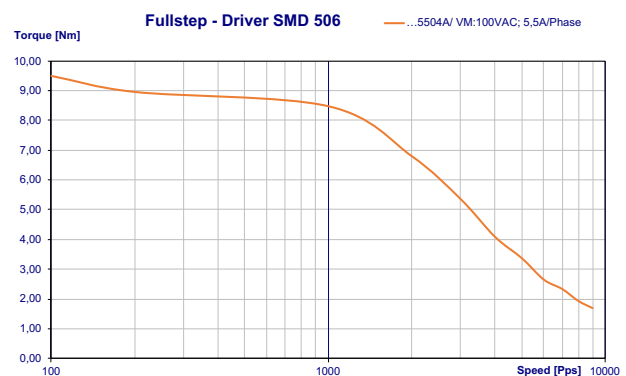
Specification			
Model	...5504A		
1	Rated Voltage	V	4,95
2	Current/Phase	A	5,5
3	Resistance/Phase	Ω	0,7
4	Inductance/Phase	mH	9,8
5	Holding Torque	Nm	11,2
6	Rotor Inertia	gcm ²	5500
7	Detent Torque	Nm	0,3
8	n° of Leads		4
9	Length (L)	mm	99
10	Weight	Kg	5

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	330N
Max Axial Force	100N
Dielectric Strength (for 1 min.)	1500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1430 AWG18	Phase A
2	White		Phase A-
3	Yellow		Phase B
4	Green		Phase B-

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Libra
E4		Sagittarius
E5		Aquarius
		Andromeda

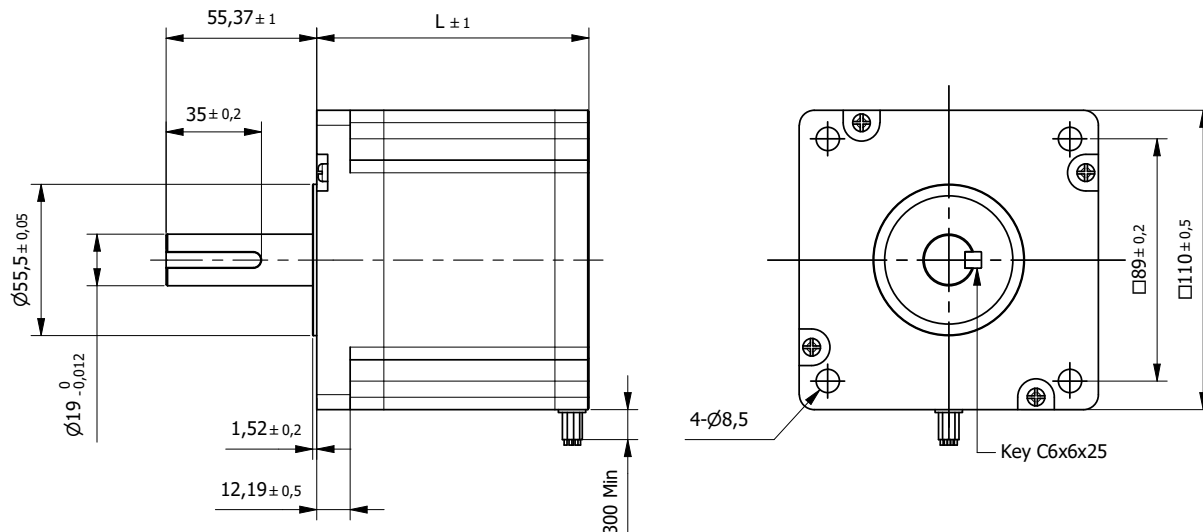
* other options on request



Hybrid Stepper Motor 110SH150

High Torque

□ 110mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

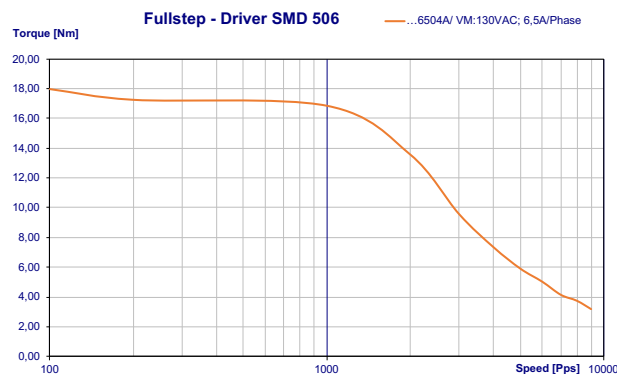
Specification			
Model	...6504A		
1	Rated Voltage	V	5,2
2	Current/Phase	A	6,5
3	Resistance/Phase	Ω	0,72
4	Inductance/Phase	mH	11,5
5	Holding Torque	Nm	21
6	Rotor Inertia	gcm ²	10'900
7	Detent Torque	Nm	0,59
8	n° of Leads		4
9	Length (L)	mm	150
10	Weight	Kg	8,4

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	330N
Max Axial Force	100N
Dielectric Strength (for 1 min.)	1500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Libra
E4		Sagittarius
E5		Aquarius
		Andromeda

* other options on request

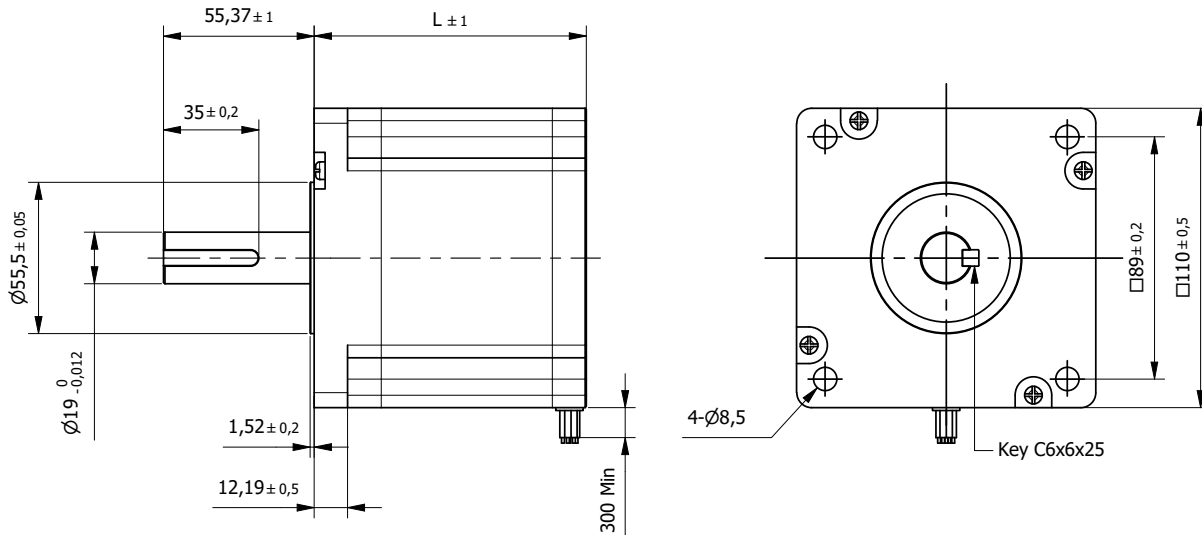
Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1430 AWG18	Phase A
2	White		Phase A-
3	Yellow		Phase B
4	Green		Phase B-



Hybrid Stepper Motor 110SH201

High Torque

□ 110mm



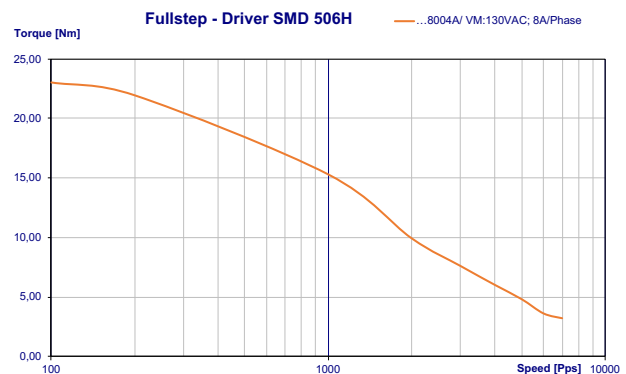
BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

Specification			
Model	...8004A		
1	Rated Voltage	V	5,36
2	Current/Phase	A	8
3	Resistance/Phase	Ω	0,67
4	Inductance/Phase	mH	12
5	Holding Torque	Nm	28
6	Rotor Inertia	gcm ²	16'200
7	Detent Torque	Nm	0,75
8	n° of Leads		4
9	Length (L)	mm	201
10	Weight	Kg	11,7

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	330N
Max Axial Force	100N
Dielectric Strength (for 1 min.)	1500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP80	Andromeda
E4		
E5		
* other options on request		

Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1430 AWG18	Phase A
2	White		Phase A-
3	Yellow		Phase B
4	Green		Phase B-





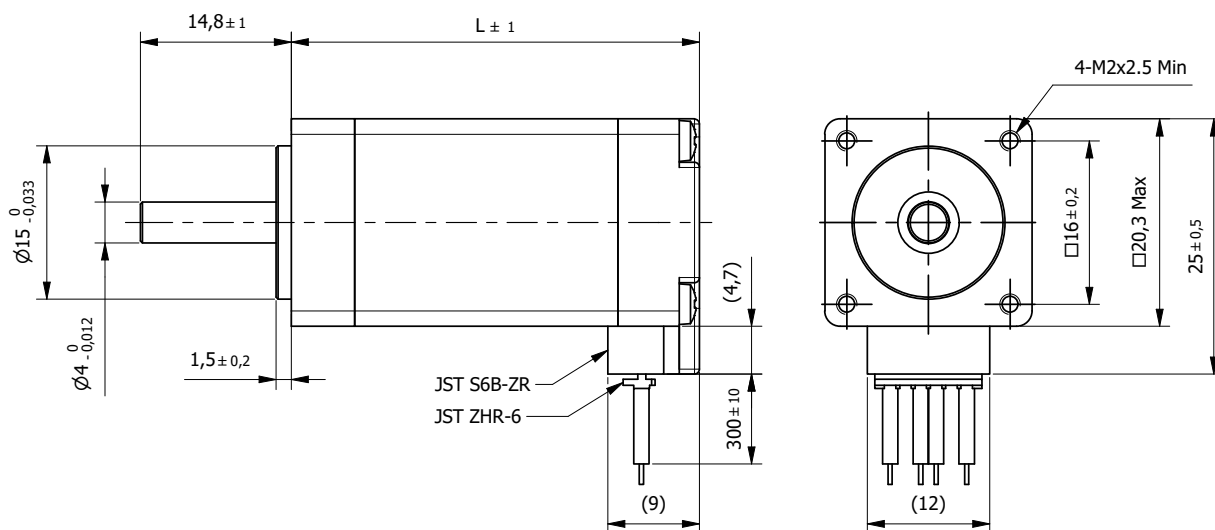
Hybrid Stepper motors
STC-series

Hybrid Stepper motors - STC series Hyper Torque		
20STC33 - Hyper Torque	0,022	328
20STC40 - Hyper Torque	0,036	329
28STC32 - Hyper Torque	0,080	330
28STC40 - Hyper Torque	0,130	331
28STC51 - Hyper Torque	0,180	332
57STC41 - Hyper Torque	0,600	333
57STC56 - Hyper Torque	1,400	334
57STC76 - Hyper Torque	2,300	335

Hybrid Stepper Motor 20STC33

Hyper Torque

□ 20mm

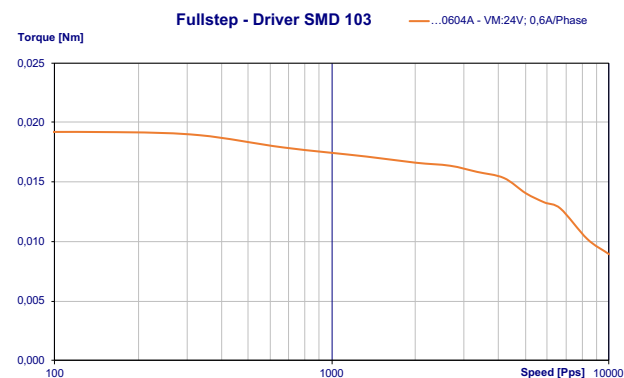


Specification			
Model	...0604A		
1	Rated Voltage	V	3,84
2	Current/Phase	A	0,6
3	Resistance/Phase	Ω	6,4
4	Inductance/Phase	mH	2,6
5	Holding Torque	Nm	0,022
6	Rotor Inertia	gcm ²	2
7	Detent Torque	Nm	0,002
8	n° of Leads		4
9	Length (L)	mm	33
10	Weight	Kg	0,06

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	10N
Max Axial Force	4N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination	
Drive	
Aries	
Libra	
Orion	
Aquarius	
* other options on request	

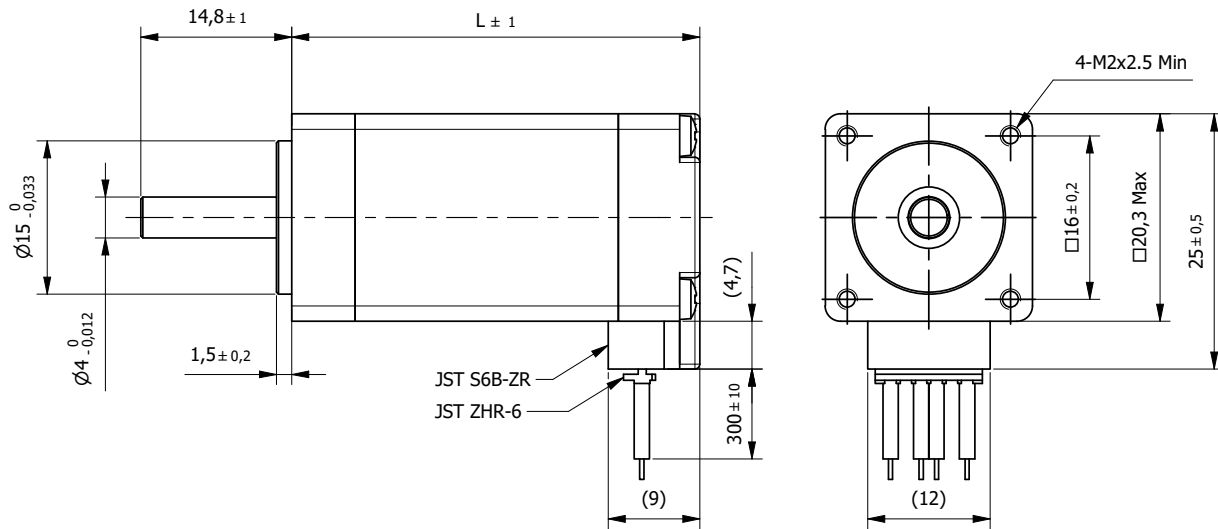
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
3	Green		Phase A-
4	Red		Phase B
6	Blue		Phase B-



Hybrid Stepper Motor 20STC40

Hyper Torque

□ 20mm

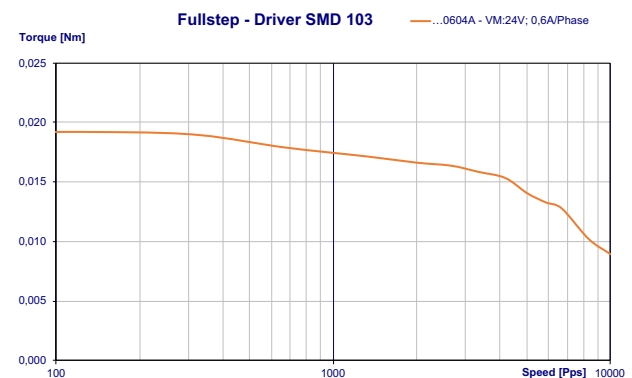


Specification			
Model	...0804A		
1	Rated Voltage	V	4,32
2	Current/Phase	A	0,8
3	Resistance/Phase	Ω	5,6
4	Inductance/Phase	mH	2,3
5	Holding Torque	Nm	0,036
6	Rotor Inertia	gcm ²	3,6
7	Detent Torque	Nm	0,002
8	n° of Leads		4
9	Length (L)	mm	40
10	Weight	Kg	0,08

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	10N
Max Axial Force	4N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination	
Drive	
Aries	
Libra	
Orion	
Aquarius	
* other options on request	

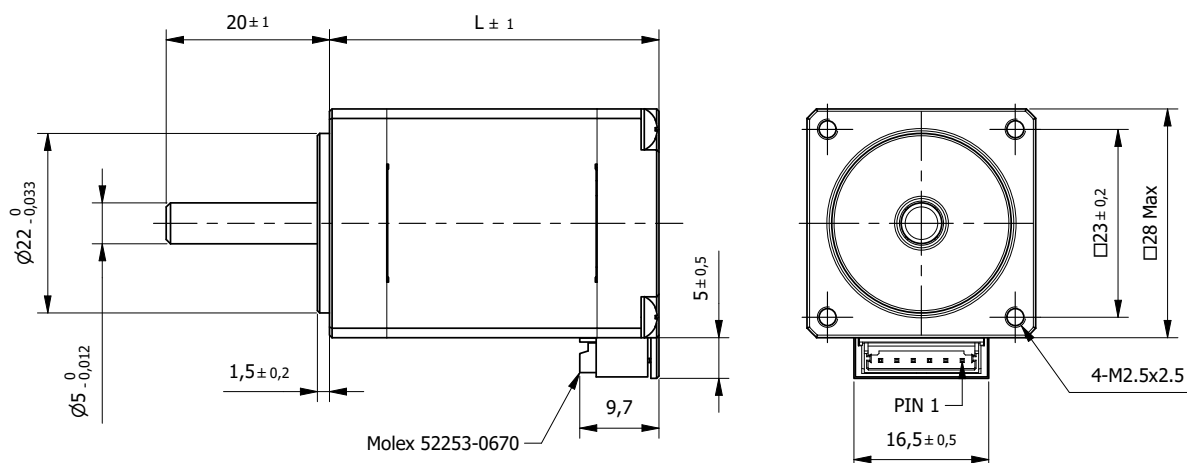
Connection			
Lead n°	Color	Gauge	Function
1	Black	UL1061 AWG26	Phase A
3	Green		Phase A-
4	Red		Phase B
6	Blue		Phase B-



Hybrid Stepper Motor 28STC32

Hyper Torque

□ 28mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

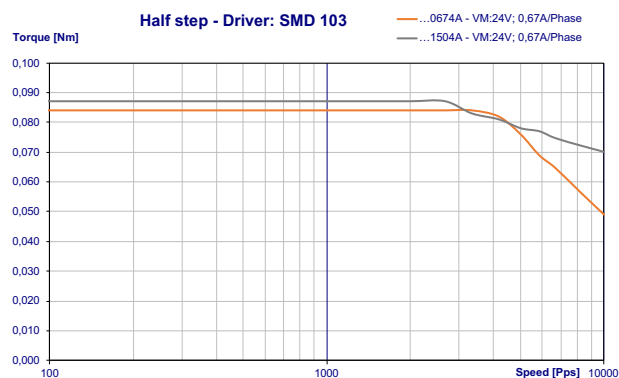
Specification				
Model		...0674A	...1504A	
1	Rated Voltage	V	4,2	1,95
2	Current/Phase	A	0,67	1,5
3	Resistance/Phase	Ω	6,2	1,3
4	Inductance/Phase	mH	5,76	1
5	Holding Torque	Nm	0,08	0,08
6	Rotor Inertia	gcm ²	9	9
7	Detent Torque	Nm	0,005	0,005
8	n° of Leads		4	4
9	Length (L)	mm	32	32
10	Weight	Kg	0,11	0,11

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	7N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E4	28JMS	Aries
E5	22JMS	Libra
		Orion
		Aquarius

* other options on request

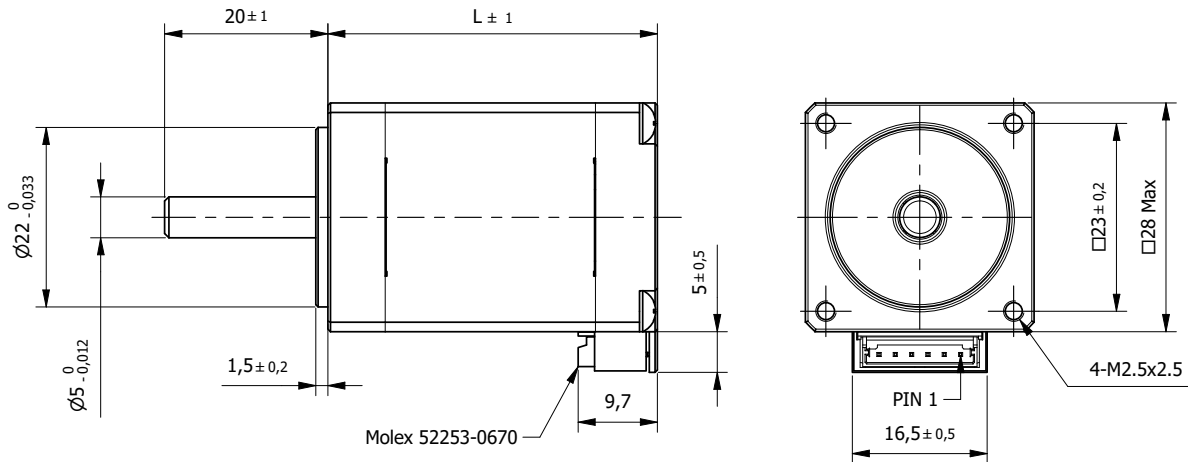
Connection				
Pin n°	Color	Gauge	Function	
1	Black	UL1061 AWG28	Phase A	
3	Green		Phase A-	
4	Red		Phase B	
6	Blue		Phase B-	



Hybrid Stepper Motor 28STC40

Hyper Torque

□ 28mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

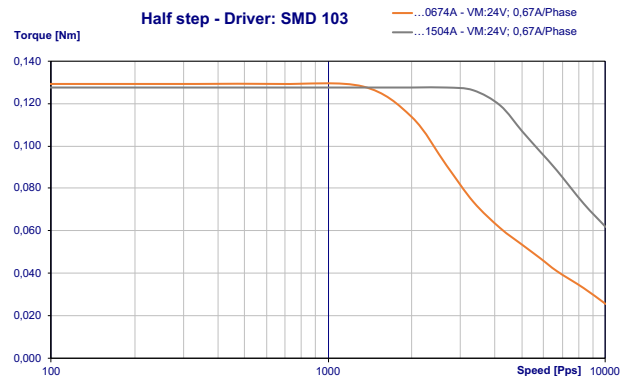
Specification			...0674A	...1504A
1	Rated Voltage	V	4,9	2,2
2	Current/Phase	A	0,67	1,5
3	Resistance/Phase	Ω	7,3	1,45
4	Inductance/Phase	mH	6,52	1,25
5	Holding Torque	Nm	0,13	0,13
6	Rotor Inertia	gcm ²	12	12
7	Detent Torque	Nm	0,006	0,006
8	n° of Leads		4	4
9	Length (L)	mm	40	40
10	Weight	Kg	0,14	0,14

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	7N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E4	28JMS	Aries
E5	22JMS	Libra
		Orion
		Aquarius

* other options on request

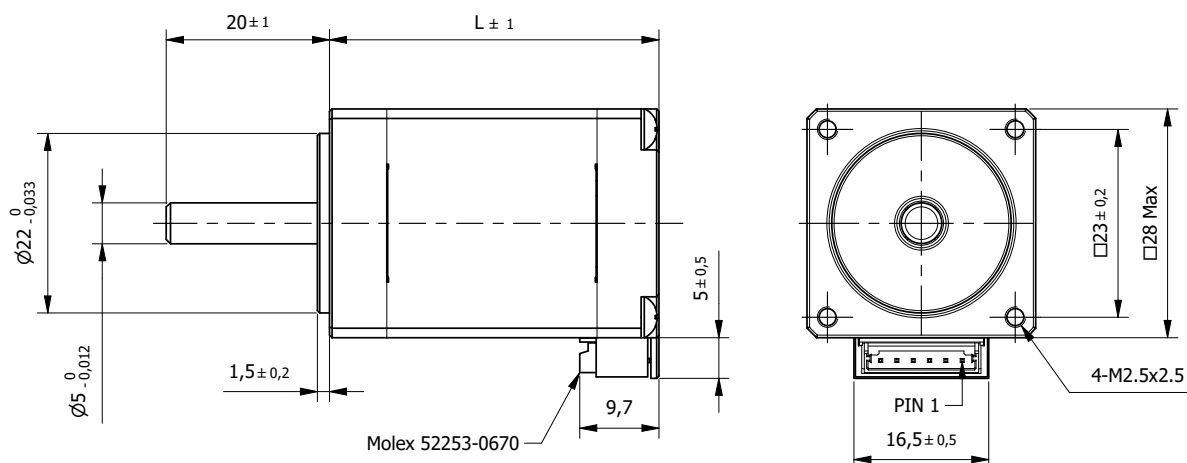
Connection			
Pin n°	Color	Gauge	Function
1	Black	UL1061 AWG28	Phase A
3	Green		Phase A-
4	Red		Phase B
6	Blue		Phase B-



Hybrid Stepper Motor 28STC51

Hyper Torque

□ 28mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 19,05mm

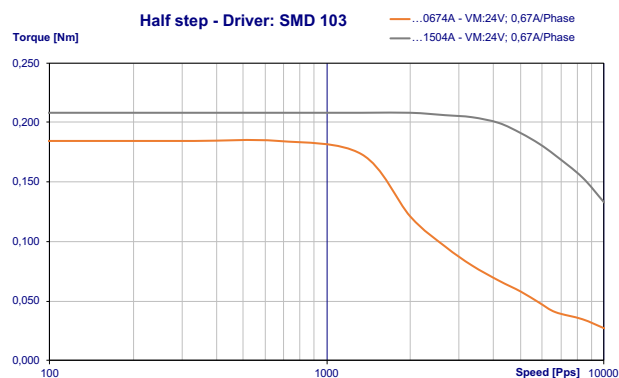
Specification				
Model		...0674A	...1504A	
1	Rated Voltage	V	6,2	2,7
2	Current/Phase	A	0,67	1,5
3	Resistance/Phase	Ω	9,2	1,9
4	Inductance/Phase	mH	8,4	1,9
5	Holding Torque	Nm	0,18	0,18
6	Rotor Inertia	gcm ²	18	18
7	Detent Torque	Nm	0,008	0,008
8	n° of Leads		4	4
9	Length (L)	mm	51,5	51,5
10	Weight	Kg	0,2	0,2

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	7N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E4	28JMS	Aries
E5	22JMS	Libra
		Orion
		Aquarius

* other options on request

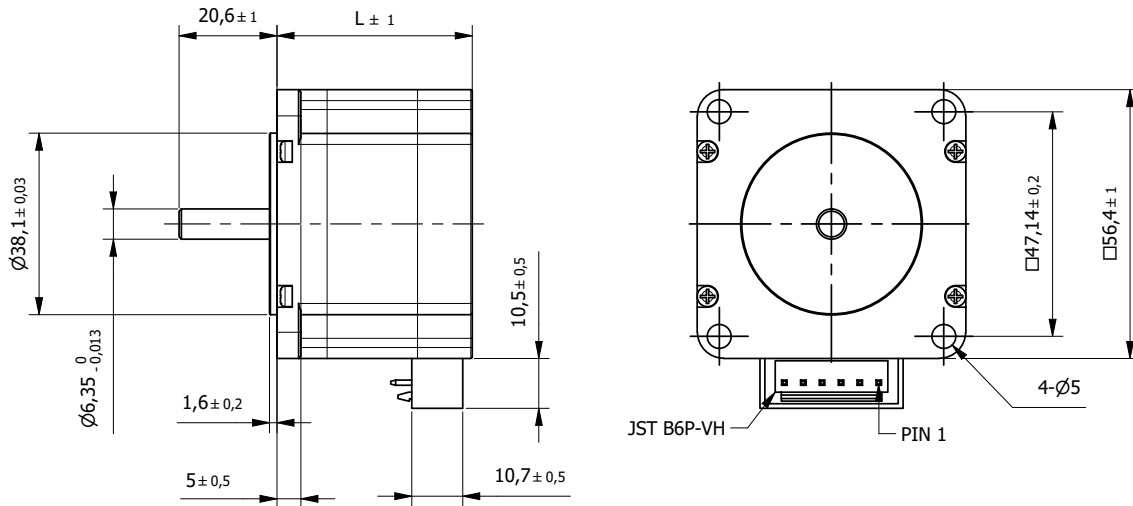
Connection				
Pin n°	Color	Gauge	Function	
1	Black	UL1061 AWG28	Phase A	
3	Green		Phase A-	
4	Red		Phase B	
6	Blue		Phase B-	



Hybrid Stepper Motor 57STC41

Hyper Torque

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

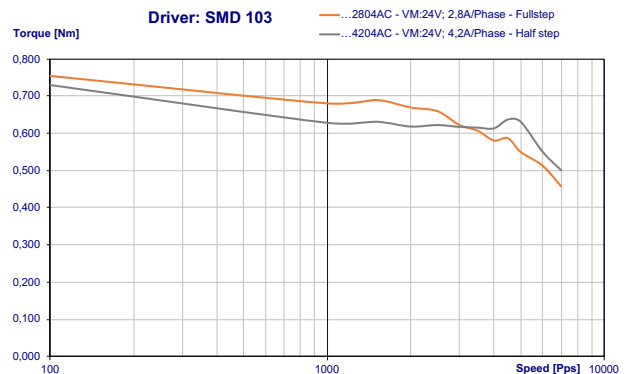
Specification				
Model		...2804AC	...4204AC	
1	Rated Voltage	V	2,1	1,5
2	Current/Phase	A	2,8	4,2
3	Resistance/Phase	Ω	0,78	0,35
4	Inductance/Phase	mH	1,8	0,8
5	Holding Torque	Nm	0,6	0,6
6	Rotor Inertia	gcm ²	120	120
7	Detent Torque	Nm	0,021	0,021
8	n° of Leads		4	4
9	Length (L)	mm	41	41
10	Weight	Kg	0,45	0,45

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	20N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Pin n°	Color	Gauge	Function
1	Black	UL1430 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Sagittarius
		Aquarius

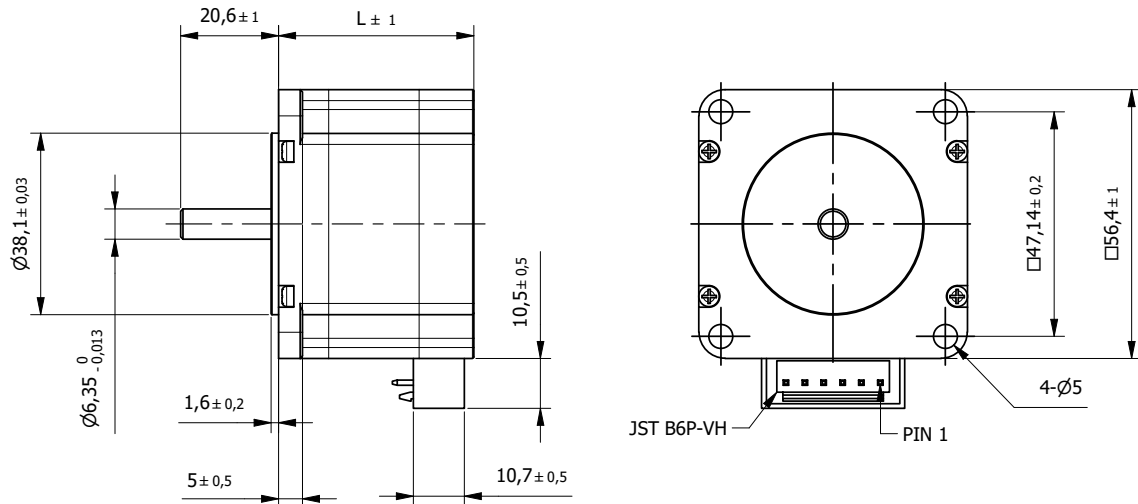
* other options on request



Hybrid Stepper Motor 57STC56

Hyper Torque

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

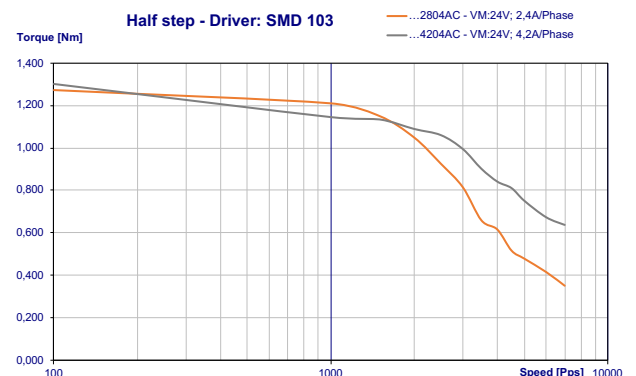
Specification			...2804AC	...4204AC
1	Rated Voltage	V	2,8	2,1
2	Current/Phase	A	2,8	4,2
3	Resistance/Phase	Ω	1	0,5
4	Inductance/Phase	mH	3,2	1,6
5	Holding Torque	Nm	1,4	1,4
6	Rotor Inertia	gcm ²	300	300
7	Detent Torque	Nm	0,04	0,04
8	n° of Leads		4	4
9	Length (L)	mm	56	56
10	Weight	Kg	0,7	0,7

Characteristics		
Item		
Step angle		1,8°
Step angle Accuracy		±5%
Insulation Class		B
Protection Class		IP30
Ambient Temperature		-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)		80°C
Max. Shaft Radial play (450g load)		0,02mm
Max. Shaft Axial play (450g load)		0,08mm
Max. Radial Force (20mm from front flange)		20N
Max Axial Force		15N
Dielectric Strength (for 1 min.)		500 VAC
Insulation Resistance (min. 500 VDC)		100 Mohm

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Sagittarius
		Aquarius

* other options on request

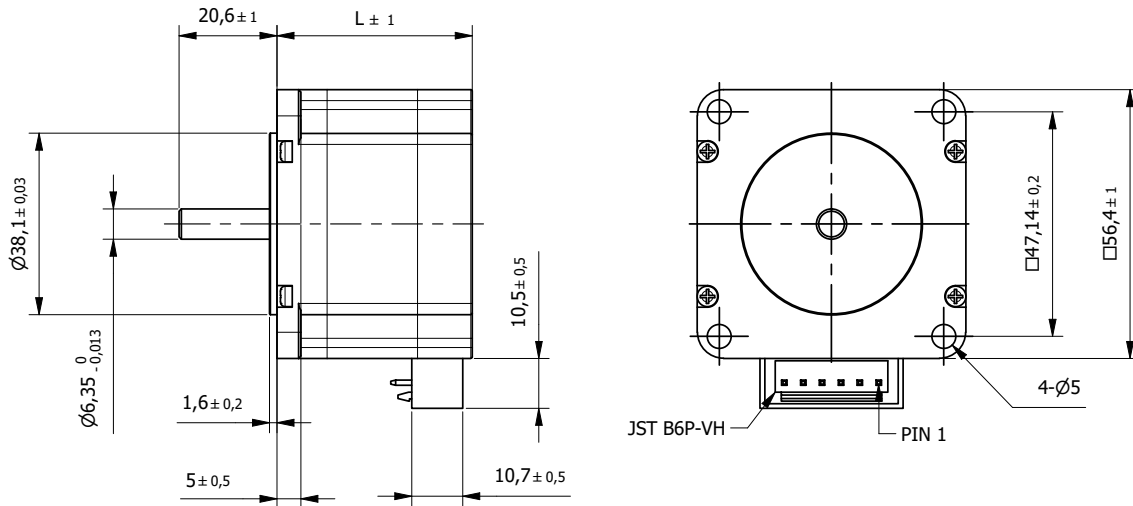
Connection			
Pin n°	Color	Gauge	Function
1	Black	UL1430 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-



Hybrid Stepper Motor 57STC76

Hyper Torque

□ 57mm



BE Version: Rear shaft 13mm - 2x M2.5 on diameter 46mm

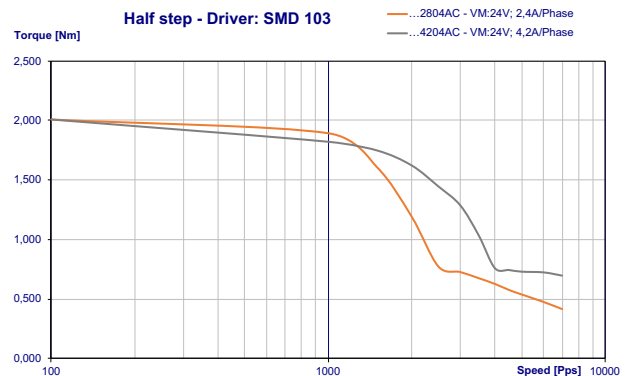
Specification				
Model		...2804AC	...4204AC	
1	Rated Voltage	V	3,6	2,3
2	Current/Phase	A	2,8	4,2
3	Resistance/Phase	Ω	1,3	0,55
4	Inductance/Phase	mH	5,3	2,1
5	Holding Torque	Nm	2,3	2,3
6	Rotor Inertia	gcm ²	480	480
7	Detent Torque	Nm	0,068	0,068
8	n° of Leads		4	4
9	Length (L)	mm	76	76
10	Weight	Kg	1,2	1,2

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Insulation Class	B
Protection Class	IP30
Ambient Temperature	-20°C to +50°C
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	20N
Max Axial Force	15N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection			
Pin n°	Color	Gauge	Function
1	Black	UL1430 AWG22	Phase A
2	Green		Phase A-
3	Red		Phase B
4	Blue		Phase B-

Standard Combination		
Encoder	Gearbox	Drive
E3	GYP56	Aries
E4	56JMS	Libra
E5		Sagittarius
		Aquarius

* other options on request



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