



## **HYBRID STEPPING MOTORS** | Step Angle 1.8° With Cable

We offer a broad range of high quality hybrid stepping motors in standard and customized configurations. Our customer-centric approach makes us the ideal supplier for your project, especially to instrument and apparatus builders. In addition, we offer immediate delivery, thanks to always having a high number of motors in stock.

### **Customizations include:**

- ✓ Customized harness
- ✓ Winding configuration
- ✓ Shaft configuration
- ✓ And more...

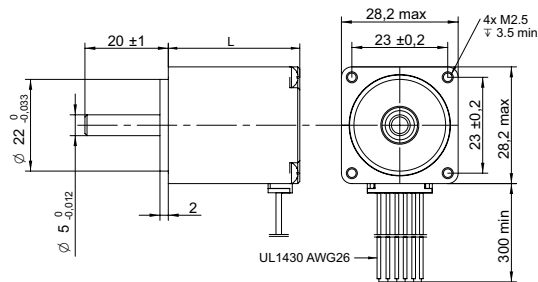
# TABLE OF CONTENTS

MODEL	FLANGE mm	LENGTH mm	HOLDING TORQUE Nm	CURRENT   PHASE A	PAGE
SHW2832-18-067	28	32	0.06	0.67	<a href="#">1</a>
SHW2845-18-067	28	45	0.09	0.67	<a href="#">1</a>
SHW2851-18-067	28	51	0.12	0.67	<a href="#">1</a>
SHW3526-18-028	35	26	0.07	0.28	<a href="#">2</a>
SHW3528-18-050	35	28	0.10	0.5	<a href="#">2</a>
SHW3536-18-100	35	36	0.14	1	<a href="#">2</a>
SHW3920-18-040	39	20	0.08	0.4	<a href="#">3</a>
SHW3931-18-030	39	31	0.18	0.3	<a href="#">3</a>
SHW3934-18-040	39	34	0.21	0.4	<a href="#">3</a>
SHW3938-18-050	39	38	0.36	0.5	<a href="#">3</a>
SHW4226-18-040	42	26	0.17	0.4	<a href="#">4</a>
SHW4234-18-133	42	34	0.22	1.3	<a href="#">4</a>
SHW4240-18-168	42	40	0.36	1.7	<a href="#">4</a>
SHW4248-18-168	42	48	0.44	1.7	<a href="#">4</a>
SHW5740-18-280	57	40	3	2.8	<a href="#">5</a>
SHW5750-18-280	57	50	0.55	2.8	<a href="#">5</a>
SHW5775-18-280	57	75	1	2.8	<a href="#">5</a>
SHW57115-18-280	57	115	1.9	2.8	<a href="#">5</a>
SHW6047-18-280	60	47	1.1	2.8	<a href="#">6</a>
SHW6056-18-280	60	56	1.7	2.8	<a href="#">6</a>
SHW6067-18-280	60	67	2.1	2.8	<a href="#">6</a>
SHW6088-18-280	60	88	3	2.8	<a href="#">6</a>
SHW8694-18-280	86	94	4.8	2.8	<a href="#">7</a>
SHW8665-18-400	86	65	3.5	4	<a href="#">8</a>
SHW8680-18-600	86	80	4.5	6	<a href="#">8</a>
SHW86118-18-600	86	118	8.5	6	<a href="#">8</a>
SHW86156-18-600	86	156	12	0.6	<a href="#">8</a>
SHW11099-18-550	110	99	11	5.5	<a href="#">9</a>

# TABLE OF CONTENTS

MODEL	DIAMETER mm	LENGTH mm	HOLDING TORQUE	CURRENT   PHASE A	PAGE
SHW110150-18-650	110	150	21	6.5	<a href="#">9</a>
SHW110201-18-800	110	201	28	8	<a href="#">9</a>

## DRAWING (mm)



## PHOTO



## MODEL NO. DESIGNATION

SHW28 - STEP ANGLE - CURRENT

Example: SHW2832-18-067

## OPTIONS DRIVER AND POWER SUPPLY



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

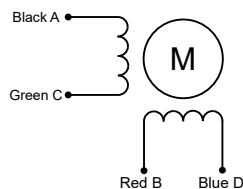
## COMMON MOTOR DATA

		C	
Step angle	°	1.8	
Step angle accuracy <sup>1</sup>	%	± 5	
Shaft material		X8CrNiS18-9   SUS303	●
Bearing type		Ball bearing	●
Radial play <sup>2</sup>	mm	0.02	
Axial play <sup>2</sup>	mm	0.08	
Max. radial force <sup>3</sup>	N	28	
Max. axial force	N	7	
Dielectric strength <sup>4</sup>	V	600	
Insulation resistance <sup>5</sup>	MΩ	100	
Operating temperature	°C	-20 to 50	●
Insulation class		Class B	
IP rating		IP30	●
Connection harness		UL 1061 AWG26   300 mm	●
Connector		Not in standard	●

## MODEL-SPECIFIC MOTOR DATA

Model	SHW2832-18-067	SHW2845-18-067	SHW2851-18-067	
Graph	A	B	C	
Holding torque	mNm	60	95	120
Detent torque	mNm	5	6	8
Rotor inertia	gcm <sup>2</sup>	4	12	18
Current   phase	A	0.67	0.67	0.67
Resistance   phase	Ω	5.6	6.8	9.2
Inductance	mH	3.4	4.9	7.2
Length	mm	32	45	51
Weight	kg	0.11	0.14	0.2

## EXCITATION SEQUENCE TABLE



CW	A	C	B	D
1	●		●	
2		●	●	
3		●		●
4	●			●
1	●		●	

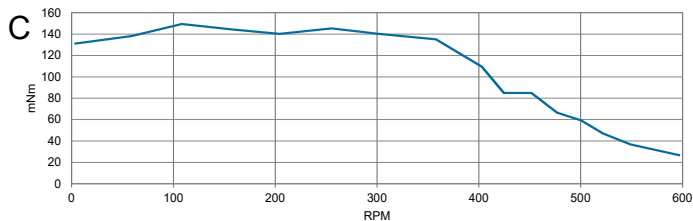
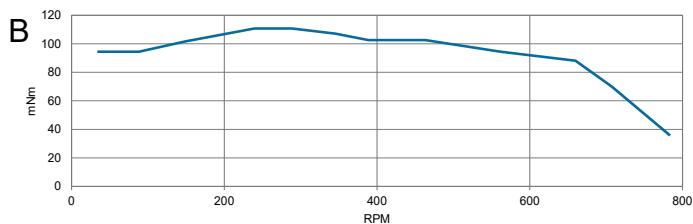
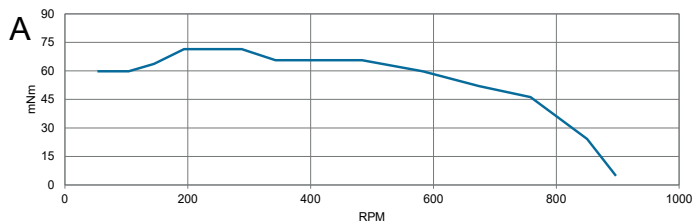
● = +Polarity

## SPEED | TORQUE PERFORMANCE GRAPH PULL OUT

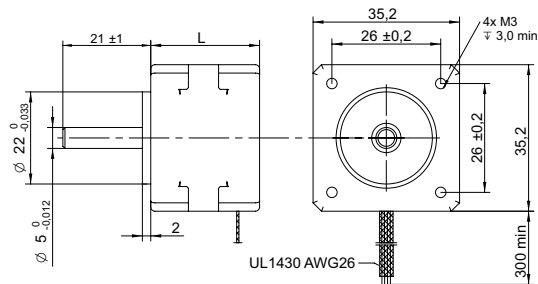
Graph	A	B	C	
Supply voltage	V	24	24	24
Current   phase	A	0.67	0.67	0.67

## NOTES

1. Full step no load.
2. 450 g load.
3. 20 mm from shaft.
4. AC, 1 second.
5. 500 V, DC.



## DRAWING (mm)



## PHOTO



## MODEL NO. DESIGNATION

SHW35 - STEP ANGLE - CURRENT

Example: SHW3526-18-028

## OPTIONS DRIVER AND POWER SUPPLY



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

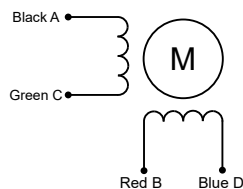
## COMMON MOTOR DATA

		C	
Step angle	°	1.8	
Step angle accuracy <sup>1</sup>	%	± 5	
Shaft material		X8CrNiS18-9   SUS303	●
Bearing type		Ball bearing	●
Radial play <sup>2</sup>	mm	0.02	
Axial play <sup>2</sup>	mm	0.08	
Max. radial force <sup>3</sup>	N	28	
Max. axial force	N	10	
Dielectric strength <sup>4</sup>	V	600	
Insulation resistance <sup>5</sup>	MΩ	100	
Operating temperature	°C	-20 to 50	●
Insulation class		Class B	
IP rating		IP30	●
Connection harness		UL 1430 AWG26   300 mm	●
Connector		Not in standard	●

## MODEL-SPECIFIC MOTOR DATA

Model	SHW3526-18-028	SHW3528-18-050	SHW3536-18-100	
Graph				
Holding torque	mNm	70	100	140
Detent torque	mNm	6	8	10
Rotor inertia	gcm <sup>2</sup>	10	11	14
Current   phase	A	0.28	0.5	1
Resistance   phase	Ω	26	20	2.7
Inductance	mH	27	14	4.3
Length	mm	26	28	36
Weight	kg	0.13	0.14	0.18

## EXCITATION SEQUENCE TABLE



CW	A	C	B	D
1	●		●	
2		●	●	
3		●		●
4	●			●
1	●		●	

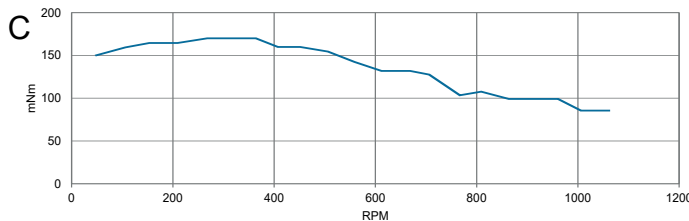
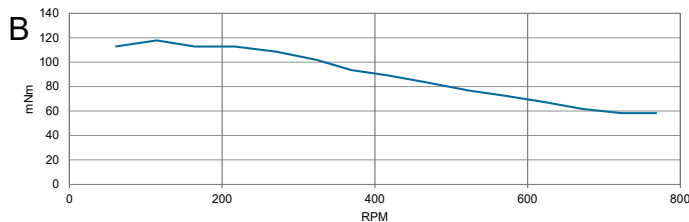
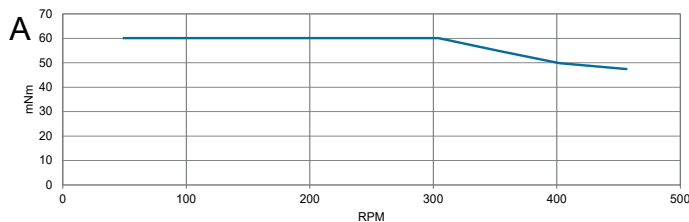
● = +Polarity

## SPEED | TORQUE PERFORMANCE GRAPH PULL OUT

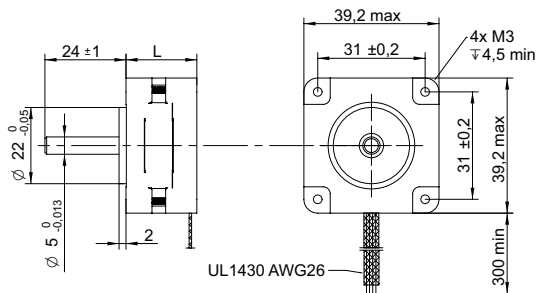
Graph	A	B	C	
Supply voltage	V	24	24	24
Current   phase	A	0.35	0.5	1

## NOTES

1. Full step no load.
2. 450 g load.
3. 20 mm from shaft.
4. AC, 1 second.
5. 500 V, DC.



## DRAWING (mm)



## PHOTO



## MODEL NO. DESIGNATION

SHW39 - STEP ANGLE - CURRENT

Example: SHW3920-18-040

## OPTIONS DRIVER AND POWER SUPPLY



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

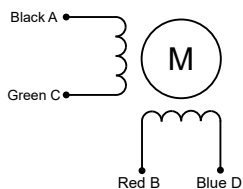
## COMMON MOTOR DATA

		C
Step angle	°	1.8
Step angle accuracy <sup>1</sup>	%	± 5
Shaft material	X8CrNiS18-9   SUS303 ●	
Bearing type	Ball bearing ●	
Radial play <sup>2</sup>	mm	0.02
Axial play <sup>2</sup>	mm	0.08
Max. radial force <sup>3</sup>	N	28
Max. axial force	N	10
Dielectric strength <sup>4</sup>	V	600
Insulation resistance <sup>5</sup>	MΩ	100
Operating temperature	°C	-20 to 50 ●
Insulation class	Class B	
IP rating	IP30 ●	
Connection harness	UL 1430 AWG26   300 mm ●	
Connector	Not in standard ●	

## MODEL-SPECIFIC MOTOR DATA

Model	SHW3920-18-040	SHW3931-18-030	SHW3934-18-040	SHW3938-18-050	
Graph	A	B	-	D	
Holding torque	mNm	85	180	210	360
Detent torque	mNm	8	10	12	12
Rotor inertia	gcm <sup>2</sup>	0.12	0.18	20	0.2
Current   phase	A	0.4	0.3	0.4	0.5
Resistance   phase	Ω	6.6	40	30	24
Inductance	mH	7	30	43	50
Length	mm	20	31	34	38
Weight	kg	0.05	0.12	0.18	0.18

## EXCITATION SEQUENCE TABLE



CW	A	C	B	D
1	●		●	
2		●	●	
3		●		●
4	●			●
1	●		●	

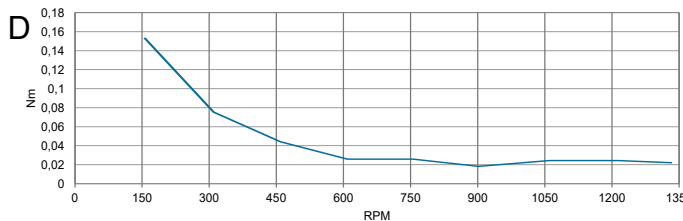
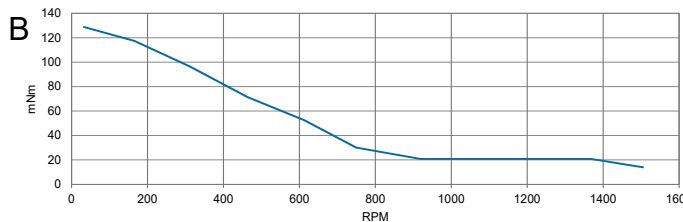
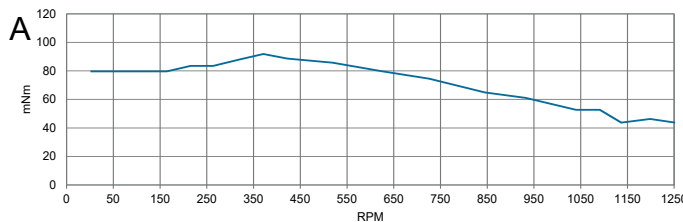
● = +Polarity

## SPEED | TORQUE PERFORMANCE GRAPH PULL OUT

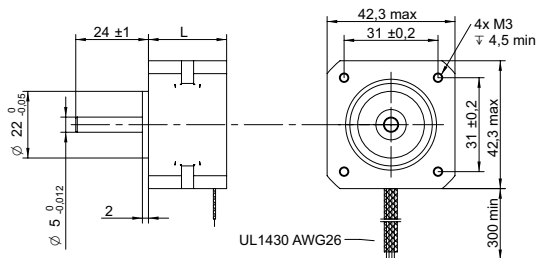
Graph	A	B	C	D	
Supply voltage	V	24	24	-	24
Current   phase	A	0.42	0.42	-	0.45

## NOTES

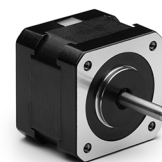
1. Full step no load.
2. 450 g load.
3. 20 mm from shaft.
4. AC, 1 second.
5. 500 V, DC.



### DRAWING (mm)



### PHOTO



### MODEL NO. DESIGNATION

SHW42 - STEP ANGLE - CURRENT

Example: SHW4226-18-040

### OPTIONS DRIVER AND POWER SUPPLY



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

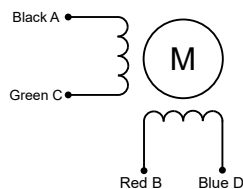
### COMMON MOTOR DATA

		C	
Step angle	°	1.8	
Step angle accuracy <sup>1</sup>	%	± 5	
Shaft material		X8CrNiS18-9   SUS303	●
Bearing type		Ball bearing	●
Radial play <sup>2</sup>	mm	0.02	
Axial play <sup>2</sup>	mm	0.08	
Max. radial force <sup>3</sup>	N	28	
Max. axial force	N	10	
Dielectric strength <sup>4</sup>	V	600	
Insulation resistance <sup>5</sup>	MΩ	100	
Operating temperature	°C	-20 to 50	●
Insulation class		Class B	
IP rating		IP30	●
Connection harness		UL 1430 AWG26   300 mm	●
Connector		Not in standard	●

### MODEL-SPECIFIC MOTOR DATA

Model	SHW4226-18-040	SHW4234-18-133	SHW4240-18-168	SHW4248-18-168	
Graph	A	B	C	D	
Holding torque	mNm	170	220	360	440
Detent torque	mNm	7.5	12	15	20
Rotor inertia	gcm <sup>2</sup>	20	35	54	68
Current   phase	A	0.4	1.3	1.7	1.7
Resistance   phase	Ω	24	2.1	1.65	1.65
Inductance	mH	30	2.5	3.2	2.8
Length	mm	26	33.5	39.5	47.5
Weight	kg	0.15	0.22	0.28	0.35

### EXCITATION SEQUENCE TABLE



CW	A	C	B	D
1	●		●	
2		●	●	
3		●		●
4	●			●
1	●		●	

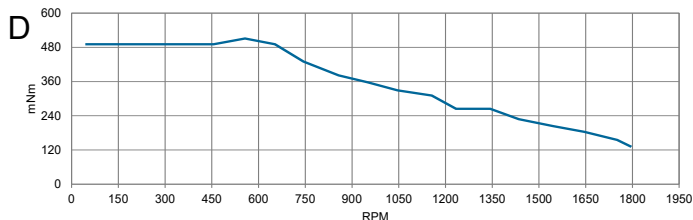
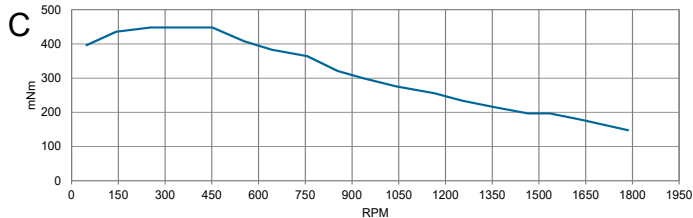
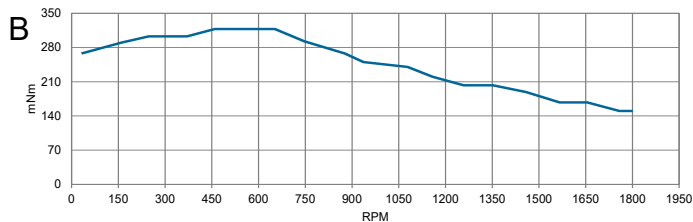
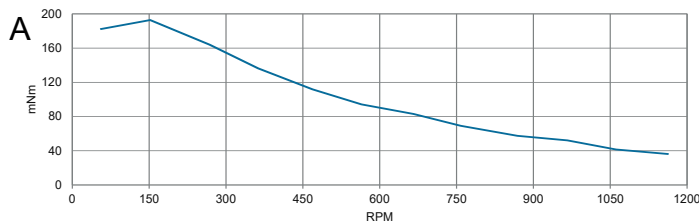
● = +Polarity

### SPEED | TORQUE PERFORMANCE GRAPH PULL OUT

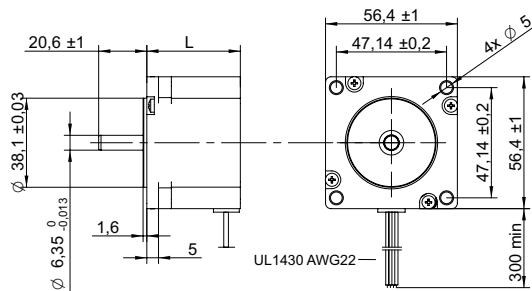
Graph	A	B	C	D	
Supply voltage	V	36	36	36	36
Current   phase	A	0.42	1.4	1.7	1.7

### NOTES

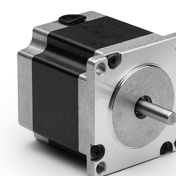
1. Full step no load.
2. 450 g load.
3. 20 mm from shaft.
4. AC, 1 second.
5. 500 V, DC.



## DRAWING (mm)



## PHOTO



## MODEL NO. DESIGNATION

SHW57 - STEP ANGLE - CURRENT

Example: SHW5740-18-280

## OPTIONS DRIVER AND POWER SUPPLY



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

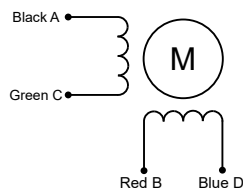
## COMMON MOTOR DATA

Parameter	Value	C
Step angle	1.8°	
Step angle accuracy <sup>1</sup>	± 5%	
Shaft material	X8CrNiS18-9   SUS303	●
Bearing type	Ball bearing	●
Radial play <sup>2</sup>	0.02 mm	
Axial play <sup>2</sup>	0.08 mm	
Max. radial force <sup>3</sup>	75 N	
Max. axial force	15 N	
Dielectric strength <sup>4</sup>	600 V	
Insulation resistance <sup>5</sup>	100 MΩ	
Operating temperature	-20 to 50 °C	●
Insulation class	Class B	
IP rating	IP30	●
Connection harness	UL 1430 AWG22   300 mm	●
Connector	Not in standard	●

## MODEL-SPECIFIC MOTOR DATA

Model	SHW5740-18-280	SHW5750-18-280	SHW5775-18-280	SHW57115-18-280
Graph	A	B	C	-
Holding torque	Nm 0.55	1	1.9	3
Detent torque	Nm 0.02	0.035	0.068	0.1
Rotor inertia	gcm <sup>2</sup> 120	275	480	650
Current   phase	A 2.8	2.8	2.8	2.8
Resistance   phase	Ω 0.7	0.83	1.13	2.1
Inductance	mH 1.4	2.2	3.6	10
Length	mm 40	50	75	115
Weight	kg 0.45	0.65	1	1.8

## EXCITATION SEQUENCE TABLE



CW	A	C	B	D
1	●		●	
2		●	●	
3		●		●
4	●			●
1	●		●	

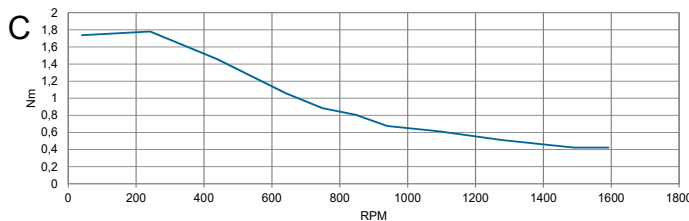
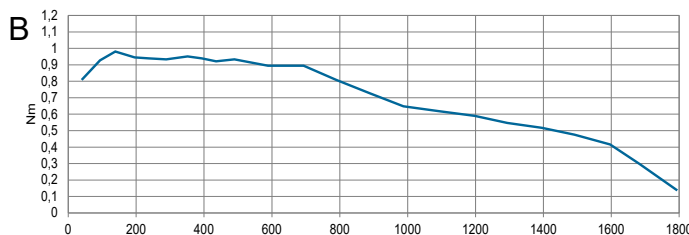
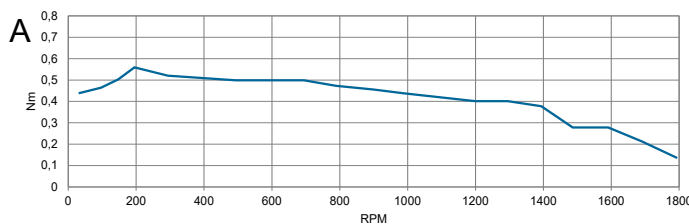
● = +Polarity

## SPEED | TORQUE PERFORMANCE GRAPH PULL OUT

Graph	A	B	C	D
Supply voltage	V 48	48	48	-
Current   phase	A 2.8	2.8	2.8	-

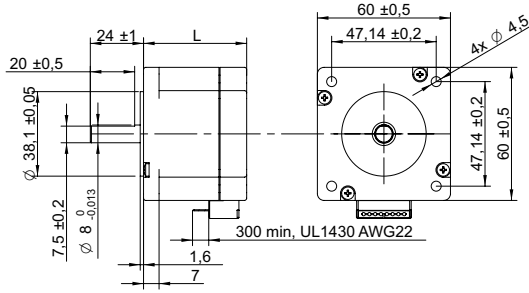
## NOTES

1. Full step no load.
2. 450 g load.
3. 20 mm from shaft.
4. AC, 1 second.
5. 500 V, DC.

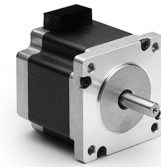




### DRAWING (mm)



### PHOTO



### MODEL NO. DESIGNATION



Example: SHW6047-18-280

### OPTIONS DRIVER AND POWER SUPPLY



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

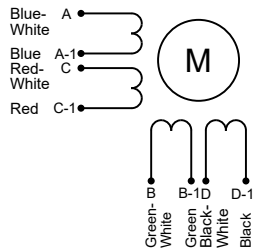
### COMMON MOTOR DATA

		C	
Step angle	°	1.8	
Step angle accuracy <sup>1</sup>	%	± 5	
Shaft material		X8CrNiS18-9   SUS303 ●	
Bearing type		Ball bearing ●	
Radial play <sup>2</sup>	mm	0.02	
Axial play <sup>2</sup>	mm	0.08	
Max. radial force <sup>3</sup>	N	75	
Max. axial force	N	15	
Dielectric strength <sup>4</sup>	V	600	
Insulation resistance <sup>5</sup>	MΩ	100	
Operating temperature	°C	-20 to 50 ●	
Insulation class		Class B	
IP rating		IP30 ●	
Connection harness		UL 1430 AWG22   300 mm ●	
Connector		Not in standard ●	

### MODEL-SPECIFIC MOTOR DATA

Model	SHW6047-18-280	SHW6056-18-280	SHW6067-18-280	SHW6088-18-280	
Graph	A	B	C	D	
Holding torque	Nm	1.1	1.7	2.1	3
Detent torque	Nm	0.05	0.07	0.09	0.12
Rotor inertia	gcm <sup>2</sup>	280	400	570	840
Current   phase	A	2.8	2.8	2.8	2.8
Resistance   phase	Ω	0.75	0.9	1.2	1.5
Inductance	mH	2	3.6	4.6	6.8
Length	mm	47	56	67	88
Weight	kg	0.6	0.77	1.2	1.4

### EXCITATION SEQUENCE TABLE



CW	A	C	B	D
1	●		●	
2		●	●	
3		●		●
4	●			●
1	●		●	

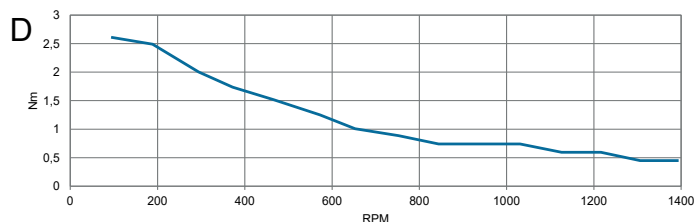
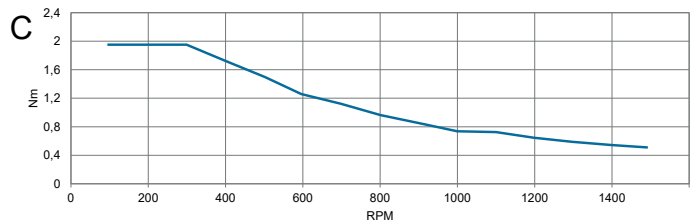
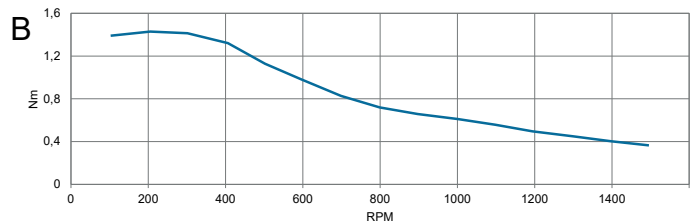
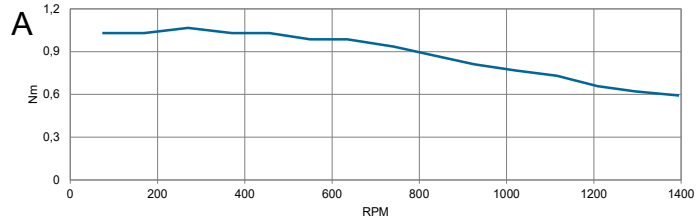
● = +Polarity

### SPEED | TORQUE PERFORMANCE GRAPH PULL OUT

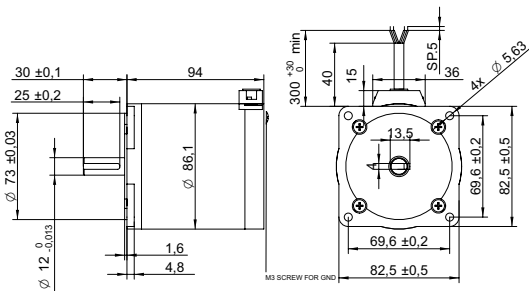
Graph	A	B	C	D	
Supply voltage	V	48	48	48	48
Current   phase	A	2.7	2.7	2.7	2.7

### NOTES

- Full step no load.
- 450 g load.
- 20 mm from shaft.
- AC, 1 second.
- 500 V, DC.



## DRAWING (mm)



## PHOTO



## MODEL NO. DESIGNATION

SHW86 - STEP ANGLE - CURRENT

Example: SHW8694-18-280

## OPTIONS DRIVER AND POWER SUPPLY



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

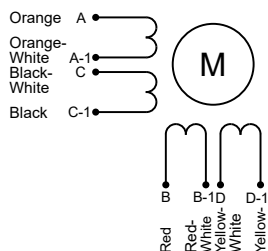
## COMMON MOTOR DATA

		C	
Step angle	°	1.8	
Step angle accuracy <sup>1</sup>	%	± 5	
Shaft material		X8CrNiS18-9   SUS303	●
Bearing type		Ball bearing	●
Radial play <sup>2</sup>	mm	0.02	
Axial play <sup>2</sup>	mm	0.08	
Max. radial force <sup>3</sup>	N	220	
Max. axial force	N	60	
Dielectric strength <sup>4</sup>	V	600	
Insulation resistance <sup>5</sup>	MΩ	100	
Operating temperature	°C	-20 to 50	●
Insulation class		Class B	
IP rating		IP30	●
Connection harness		-	●
Connector		Not in standard	●

## MODEL-SPECIFIC MOTOR DATA

		SHW8694-18-280	
Model		SHW8694-18-280	
Graph		A	
Holding torque	Nm	4.8	
Detent torque	Nm	0.18	
Rotor inertia	gcm <sup>2</sup>	1200	
Current   phase	A	2.8	
Resistance   phase	Ω	1.7	
Inductance	mH	7.7	
Length	mm	94	
Weight	kg	2.4	

## EXCITATION SEQUENCE TABLE



CW	A	C	B	D
1	●		●	
2		●	●	
3				●
4	●			●
1	●		●	

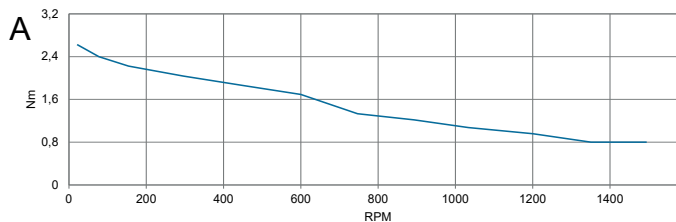
● = +Polarity

## SPEED | TORQUE PERFORMANCE GRAPH PULL OUT

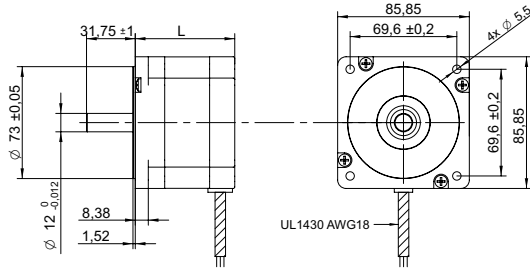
Graph		A
Supply voltage	V	100
Current   phase	A	4
Phase connection		Parallel connection

## NOTES

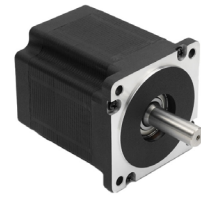
1. Full step no load.
2. 450 g load.
3. 20 mm from shaft.
4. AC, 1 second.
5. 500 V, DC.



DRAWING (mm)



PHOTO



MODEL NO. DESIGNATION



Example: SHW8665-18-280

OPTIONS DRIVER AND POWER SUPPLY



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

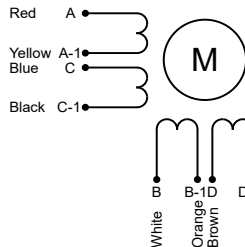
COMMON MOTOR DATA

Step angle	°	1.8	
Step angle accuracy <sup>1</sup>	%	± 5	
Shaft material		X8CrNiS18-9   SUS303	●
Bearing type		Ball bearing	●
Radial play <sup>2</sup>	mm	0.02	
Axial play <sup>2</sup>	mm	0.08	
Max. radial force <sup>3</sup>	N	220	
Max. axial force	N	60	
Dielectric strength <sup>4</sup>	V	600	
Insulation resistance <sup>5</sup>	MΩ	100	
Operating temperature	°C	-20 to 50	●
Insulation class		Class B	
IP rating		IP30	●
Connection harness		UL 1430 AWG18   300 mm	●
Connector		Not in standard	●

MODEL-SPECIFIC MOTOR DATA

Model	SHW8665-18-400	SHW8680-18-600	SHW86118-18-600	SHW86156-18-600	
Graph	A	B	C	D	
Holding torque	Nm	3.5	4.5	8.5	12
Detent torque	Nm	0.08	0.12	0.24	0.36
Rotor inertia	gcm <sup>2</sup>	1000	1400	2700	4000
Current   phase	A	4	6	6	0.63
Resistance   phase	Ω	0.65	0.33	0.5	8
Inductance	mH	3.9	3	6	12
Length	mm	65	80	118	156
Weight	kg	1.7	2.3	3.8	5.3

EXCITATION SEQUENCE TABLE



CW	A	C	B	D
1	●		●	
2		●	●	
3		●		●
4	●			●
1	●		●	

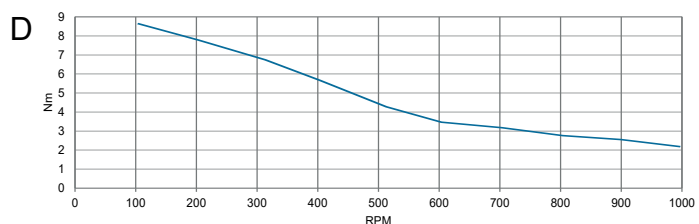
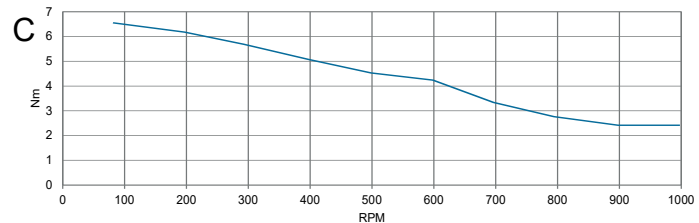
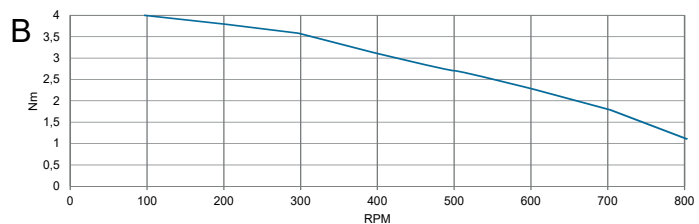
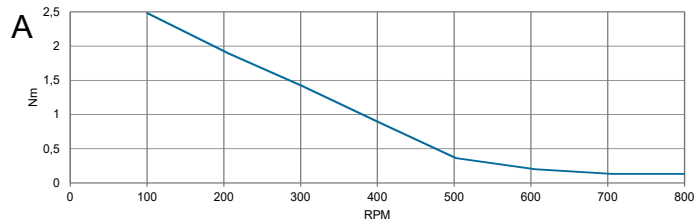
● = +Polarity

SPEED | TORQUE PERFORMANCE GRAPH PULL OUT

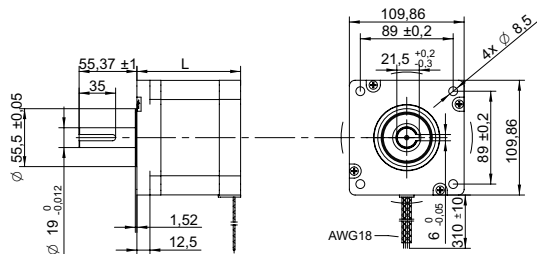
Graph	A	B	C	D	
Supply voltage	V	48	48	48	48
Current   phase	A	5.6	5.6	5.6	5.6
Phase connection		Parallel connection			

NOTES

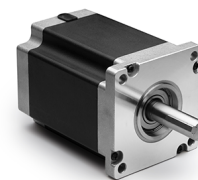
1. Full step no load.
2. 450 g load.
3. 20 mm from shaft.
4. AC, 1 second.
5. 500 V, DC.



DRAWING (mm)



PHOTO



MODEL NO. DESIGNATION

SHW110 - STEP ANGLE - CURRENT

Example: SHW11099-18-550

OPTIONS DRIVER AND POWER SUPPLY



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

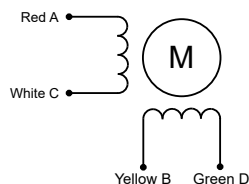
COMMON MOTOR DATA

		C	
Step angle	°	1.8	
Step angle accuracy <sup>1</sup>	%	± 5	
Shaft material		X8CrNiS18-9   SUS303 ●	
Bearing type		Ball bearing ●	
Radial play <sup>2</sup>	mm	0.02	
Axial play <sup>2</sup>	mm	0.08	
Max. radial force <sup>3</sup>	N	330	
Max. axial force	N	100	
Dielectric strength <sup>4</sup>	V	600	
Insulation resistance <sup>5</sup>	MΩ	100	
Operating temperature	°C	-20 to 50 ●	
Insulation class		Class B	
IP rating		IP30 ●	
Connection harness		AWG18   310 mm ●	
Connector		Not in standard ●	

MODEL-SPECIFIC MOTOR DATA

Model	SHW11099-18-550	SHW110150-18-650	SHW110201-18-800	
Graph	A	B	C	
Holding torque	Nm	11	21	28
Detent torque	Nm	0.55	1.1	1.6
Rotor inertia	gcm <sup>2</sup>	3000	5900	7500
Current   phase	A	5.5	6.5	8
Resistance   phase	Ω	0.7	0.72	0.67
Inductance	mH	9.8	12	12
Length	mm	99	150	201
Weight	kg	5	8.4	12

EXCITATION SEQUENCE TABLE



CW	A	C	B	D
1	●		●	
2		●	●	
3		●		●
4	●			●
1	●		●	

● = +Polarity

SPEED | TORQUE PERFORMANCE GRAPH PULL OUT

Graph	A	B	C	
Supply voltage	V	130	130	130
Current   phase	A	5.6	6.50	8

NOTES

1. Full step no load.
2. 450 g load.
3. 20 mm from shaft.
4. AC, 1 second.
5. 500 V, DC.

