



## ***NHSM Series Hybrid Servo Motor General Catalog***

**A Hybrid Servo Motor**

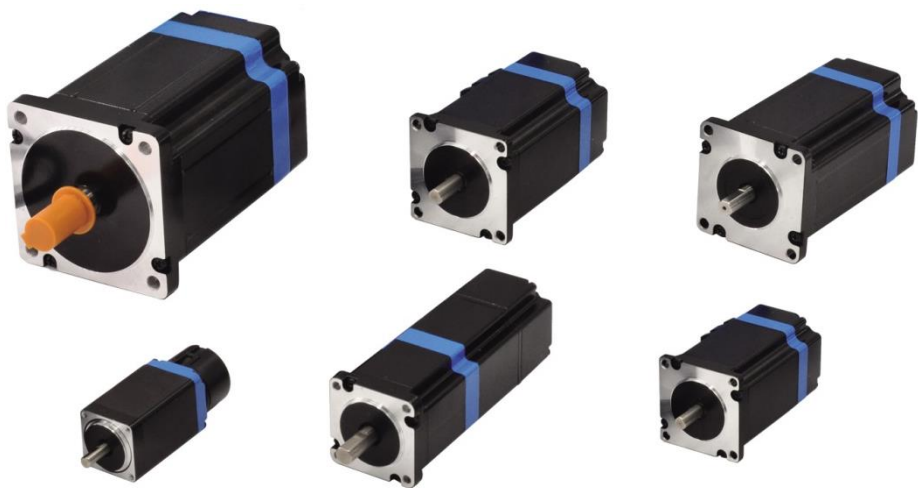
**A0-A6**

**B Hybrid Servo Drive**

**B0-B5**



*NHSM Series*  
*Hybrid Servo Motor*



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## Descriptions

Novara's NHSM series hybrid servo motors offer an alternative for applications requiring high performance and high reliability when the servo system is the only choice, while it remains cost-effective. The internal encoder is used to close the position, velocity and current loops in real time, just like the servo system. It combines the best of servo and stepper motor technologies, and delivers unique capabilities and enhancements over both, while at a fraction of the cost of a servo system.

The NHSM series hybrid servo motors are currently available from NEMA 8 to NEMA 34 with holding torque from 0.4 Nm to 12.0 Nm. All these hybrid servo motors are integrated with 2-channel and 1,000-line optical incremental encoders. Moreover, custom winding, motor length, shaft, encoder resolution and other mechanical modifications are also available.

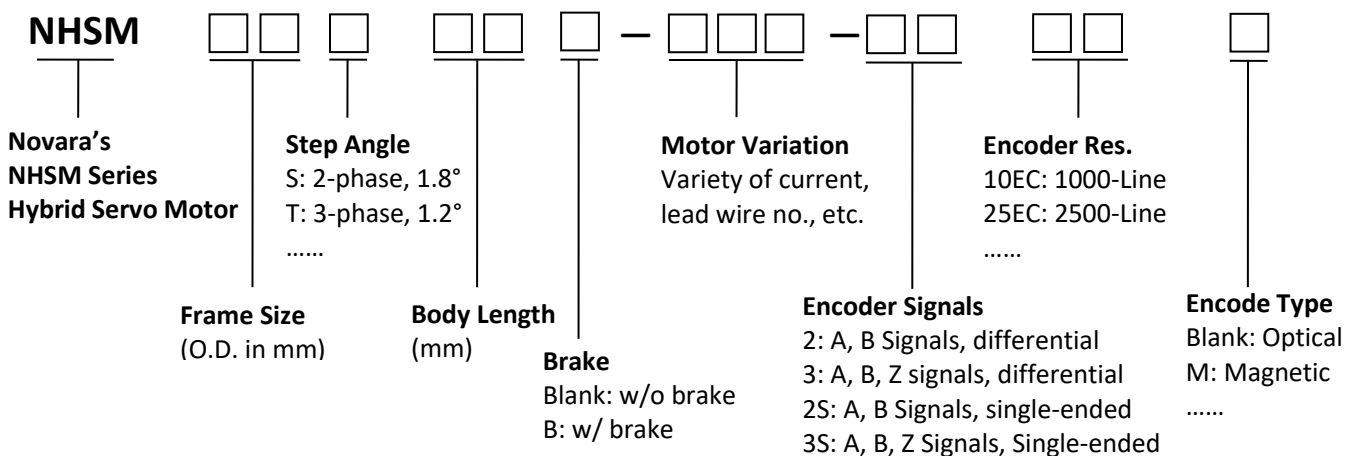
## Advantages of the NHSM Series hybrid servo motors

Compared to conventional stepper motors	Compared to conventional servo motors
<ul style="list-style-type: none"> <li>• Closed-loop, eliminates loss of synchronization</li> <li>• Broader operating range, higher torque and higher speed</li> <li>• Reduced motor heating and more efficient</li> <li>• Smooth motion and super-low motor noise</li> <li>• Do not need a high torque margin</li> <li>• No wave spring inside, negligible shaft axial play</li> </ul>	<ul style="list-style-type: none"> <li>• No tuning and always stable</li> <li>• Quick response, no delay and almost no settling time</li> <li>• No hunting or no inherent dither</li> <li>• High torque at starting and low speed, high stiffness at standstill</li> <li>• Lower cost</li> </ul>

## Applications

Novara's NHSM series hybrid servo motors offer an alternative for applications requiring high performance and high reliability when the servo system is the only choice, while it remains cost-effective. Its great feature of fast response and no hunting makes it the ideal solution for applications such as bonding and vision systems in which rapid motions with a short distance are required and hunting would be a problem. And it is also the ideal solution for applications where the equipment uses a belt-drive mechanism or has low rigidity and you don't want it to vibrate when stopping.

## Part Number



## Standard Versions

Model	No. of Phases	Frame Size	Body Length	Encoder Res.
NHSM28S Series	2	□28mm	Up to 50mm	1000/2500 CPR
NHSM42S Series	2	□42mm	Up to 67mm	1000/2500 CPR
NHSM57S Series	2	□57mm	Up to 100mm	1000/2500 CPR
NHSM60S Series	2	□60mm	Up to 90mm	1000/2500 CPR
NHSM86S Series	2	□86mm	Up to 150mm	1000/2500 CPR

# NHSM28S Series

## 2 Phase Hybrid Servo Motor

NEMA 11

1.8°

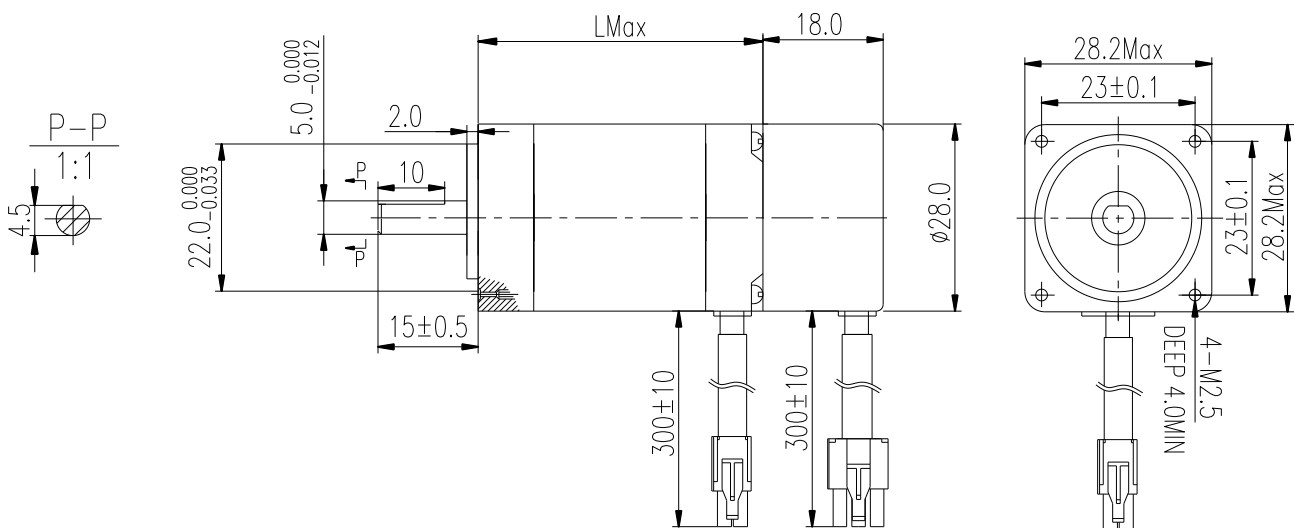
Ambient Temperature	-20 °C ~ +50 °C
Temperature Rise	80 °C Max. (rated current, 2 phase on)
Dielectric Strength	500 VAC for one minute
Insulation Resistance	Class B (Class F also available)



## ■ Specifications

Model	Phase Current	Phase Resistance	Phase Inductance	Holding Torque	Rotor Inertia	Bi/Unipolar	Weight	Length (L)	Encoder Res.
	A/∅	Ω/∅	mH/∅	N.cm	g.cm <sup>2</sup>	# of Leads	g	mm	CPR
NHSM28S33-410-210EC	1.0	2.5	1.8	7.0	8.5	Bi (4)	120	33	1000
NHSM28S50-400-210EC	1.0	3.3	4.0	14.0	18.5	Bi (4)	200	50	1000

## ■ Mechanical Dimension



NEMA 17

1.8°

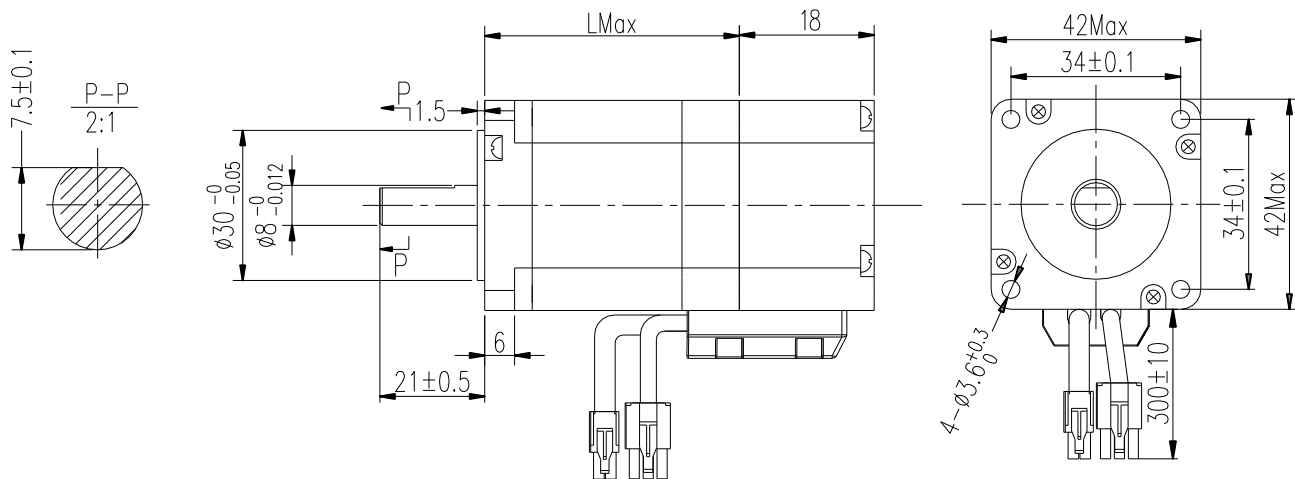
Ambient Temperature	-20 °C ~ +50 °C
Temperature Rise	80 °C Max. (rated current, 2 phase on)
Dielectric Strength	500 VAC for one minute
Insulation Resistance	Class B (Class F also available)



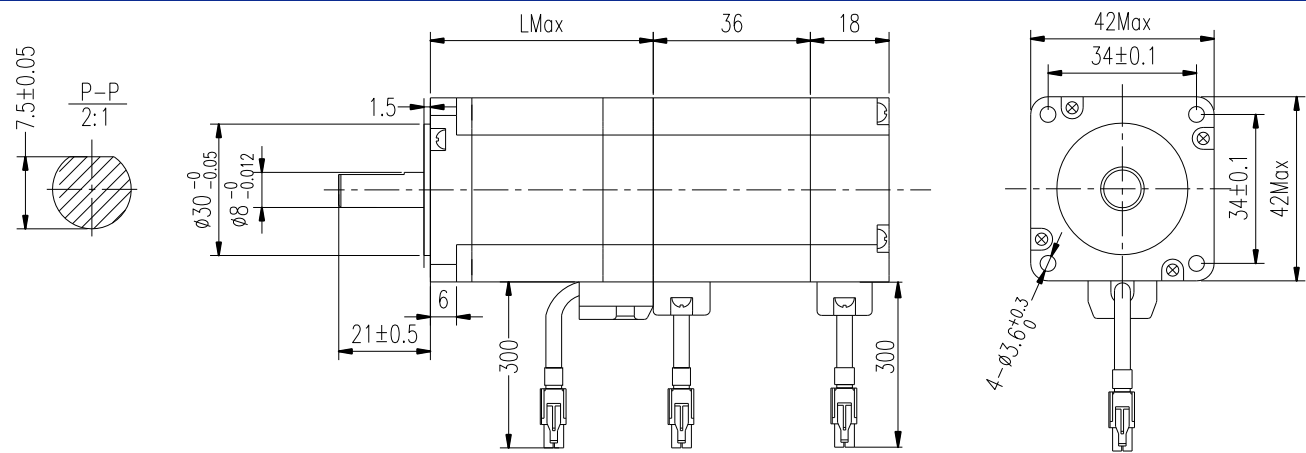
Specifications

Model	Phase Current	Phase Resistance	Phase Inductance	Holding Torque	Rotor Inertia	Bi/Unipolar	Weight	Length (L)	Encoder Res.
	A/∅	Ω/∅	mH/∅	N.m	g.cm <sup>2</sup>	# of Leads	kg	mm	CPR
NHSM42S37-410-210EC	1.3	2.5	5.0	0.3	35	Bi (4)	0.22	37	1000
NHSM42S37-420-210EC	2.3	0.7	2.3	0.3	25	Bi (4)	0.22	37	1000
NHSM42S51-410-210EC	1.3	3.2	5.5	0.5	77	Bi (4)	0.53	51	1000
NHSM42S51-420-210EC	2.3	1.0	1.9	0.5	77	Bi (4)	0.53	51	1000
NHSM42S67-410-210EC	1.3	3.8	8.5	0.8	115	Bi (4)	0.67	67	1000
NHSM42S67-420-210EC	2.3	1.4	3.1	0.8	115	Bi (4)	0.67	67	1000

Mechanical Dimension



Motor with built-in brake



NEMA 23

1.8°

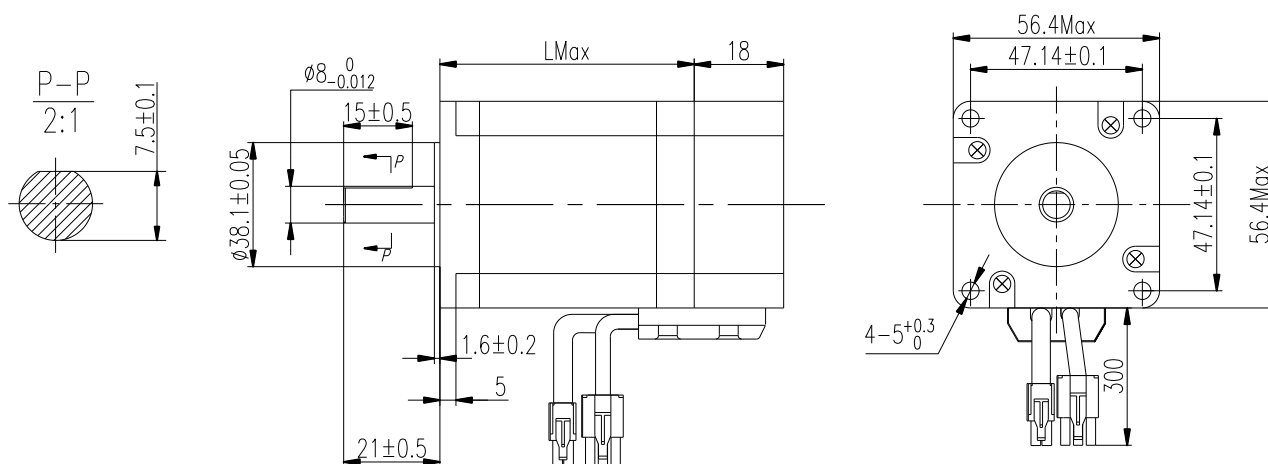
Ambient Temperature	-20 °C ~ +50 °C
Temperature Rise	80 °C Max. (rated current, 2 phase on)
Dielectric Strength	500 VAC for one minute
Insulation Resistance	Class B (Class F also available)



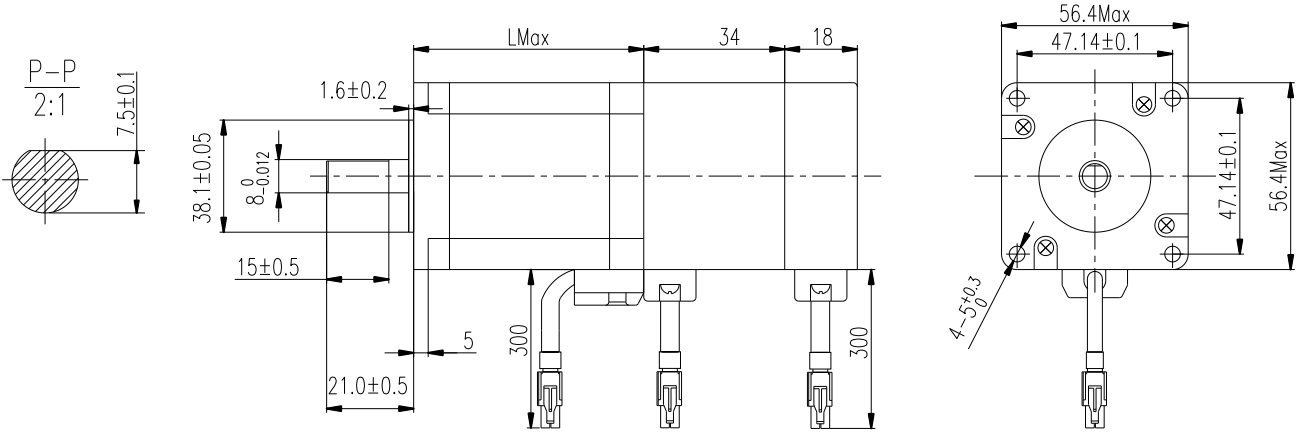
## Specifications

Model	Phase Current	Phase Resistance	Phase Inductance	Holding Torque	Rotor Inertia	Bi/Unipolar	Weight	Length (L)	Encoder Res.
	A/∅	Ω/∅	mH/∅	N.m	g.cm <sup>2</sup>	# of Leads	kg	mm	CPR
NHSM57S56-430-210EC	3.0	0.8	2.4	1.1	200	Bi (4)	0.98	56	1000
NHSM57S56-440-210EC	4.2	0.4	1.2	1.1	200	Bi (4)	0.98	56	1000
NHSM57S80-430-210EC	3.0	1.2	4.0	2.2	480	Bi (4)	1.40	80	1000
NHSM57S80-440-210EC	4.2	0.7	2.0	2.2	480	Bi (4)	1.40	80	1000
NHSM57S100-430-210EC	3.0	1.4	5.5	2.5	800	Bi (4)	1.55	100	1000
NHSM57S100-440-210EC	4.2	0.7	2.5	2.5	800	Bi (4)	1.55	100	1000

## Mechanical Dimension



## Motor with built-in brake





NEMA 24

1.8°

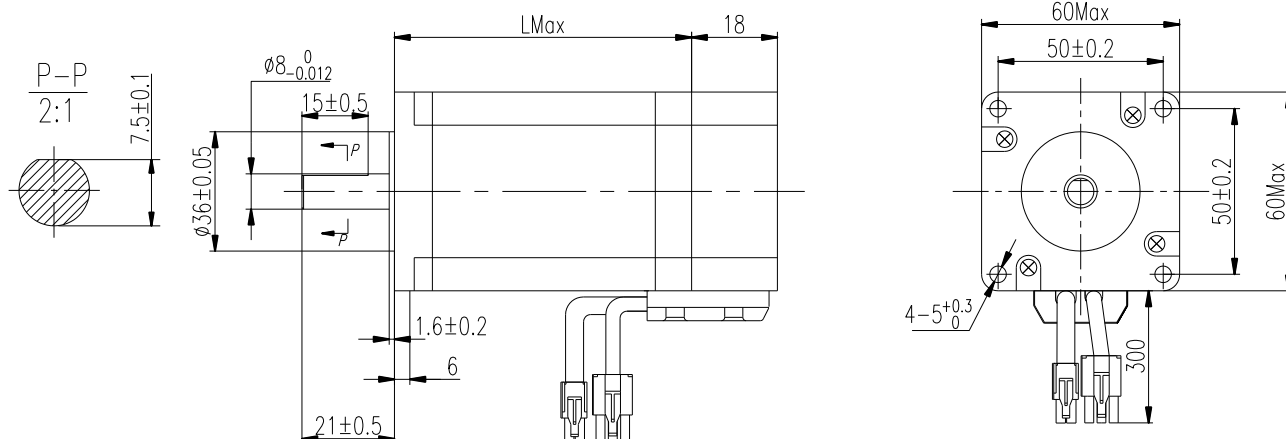
Ambient Temperature	-20 °C ~ +50 °C
Temperature Rise	80 °C Max. (rated current, 2 phase on)
Dielectric Strength	500 VAC for one minute
Insulation Resistance	Class B (Class F also available)



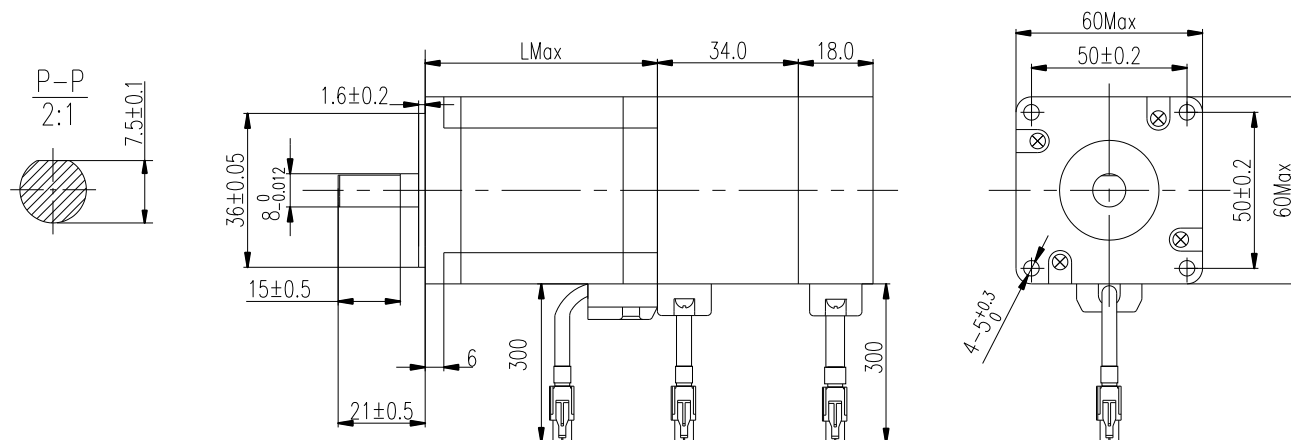
## Specifications

Model	Phase Current	Phase Resistance	Phase Inductance	Holding Torque	Rotor Inertia	Bi/Unipolar	Weight	Length (L)	Encoder Res.
	A/∅	Ω/∅	mH/∅	N.m	g.cm <sup>2</sup>	# of Leads	kg	mm	CPR
NHSM60S45-430-210EC	3.0	0.6	1.3	0.9	140	Bi (4)	0.85	45	1000
NHSM60S45-440-210EC	4.2	0.3	1.0	0.9	140	Bi (4)	0.85	45	1000
NHSM60S56-430-210EC	3.0	0.8	2.4	1.6	320	Bi (4)	0.88	56	1000
NHSM60S56-440-210EC	4.2	0.45	1.2	1.6	320	Bi (4)	0.88	56	1000
NHSM60S90-430-210EC	3.0	1.1	5.0	3.0	800	Bi (4)	1.5	90	1000
NHSM60S90-440-210EC	4.2	0.75	2.8	3.0	800	Bi (4)	1.5	90	1000

## Mechanical Dimension



## Motor with built-in brake



NEMA 34

1.8°

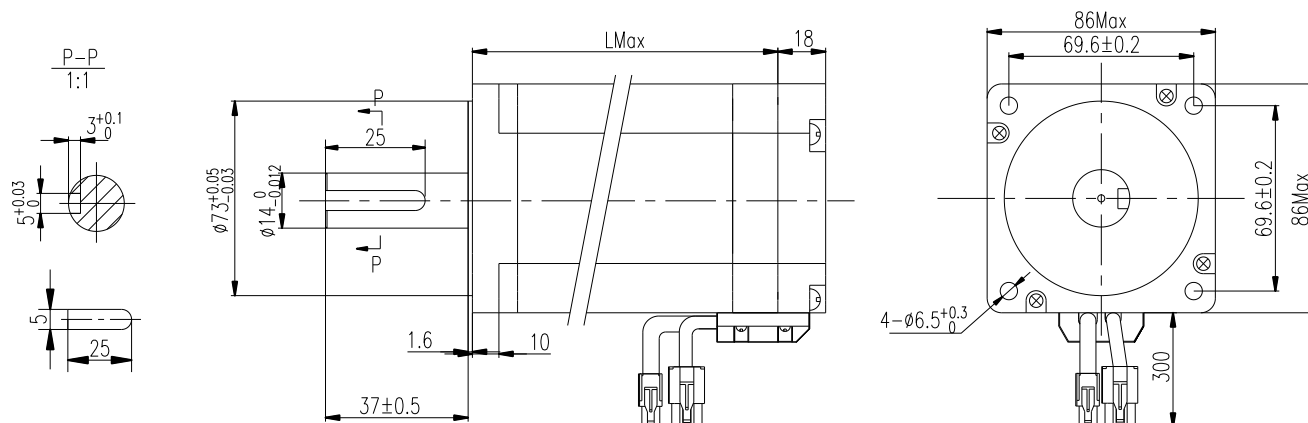
Ambient Temperature	-20 °C ~ +50 °C
Temperature Rise	80 °C Max. (rated current, 2 phase on)
Dielectric Strength	500 VAC for one minute
Insulation Resistance	Class B (Class F also available)



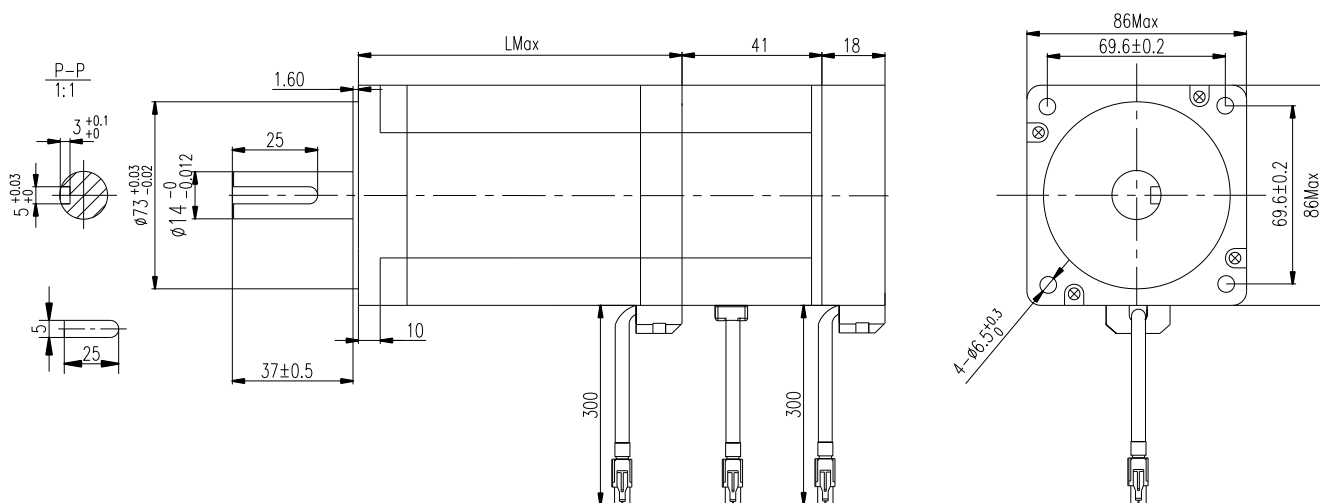
## Specifications

Model	Phase Current	Phase Resistance	Phase Inductance	Holding Torque	Rotor Inertia	Bi/Unipolar	Weight	Length (L)	Encoder Res.
	A/∅	Ω/∅	mH/∅	N.m	kg.cm <sup>2</sup>	# of Leads	kg	mm	CPR
NHSM86S78-456-210EC	5.6	0.3	3.0	4.2	1.4	Bi (4)	2.4	78	1000
NHSM86S78-470-210EC	7.0	0.28	1.8	4.2	1.4	Bi (4)	2.4	78	1000
NHSM86S114-456-210EC	5.6	0.45	5.5	8.0	2.7	Bi (4)	3.7	114	1000
NHSM86S114-470-210EC	7.0	0.38	3.2	8.0	2.7	Bi (4)	3.7	114	1000
NHSM86S150-456-210EC	5.6	0.65	8.4	12.0	4.0	Bi (4)	4.5	150	1000
NHSM86S150-470-210EC	7.0	0.45	5.2	12.0	4.0	Bi (4)	4.5	150	1000

## Mechanical Dimension



## Motor with built-in brake



**B**

## ***NHSD Series Hybrid Servo Drive***



Description	B-1
Applications	B-1
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NHSD5082	B-2
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## Description

Novara's NHSD series hybrid servo drives are versatility fully digital stepper drives, adopting the latest DSP with advanced variable current and variable frequency control algorithm. It provides a high-performance and cost-effective driving solution of stepper servo system. These drives have compact size, reducing the electromagnetic interference between the lines. When working with Novara's stepper servo motor, it combines features of both open loop steppers and brushless servo systems, and offers many unique advanced features for excellent motion control system performance, while at a fraction of the cost of a servo system.

## Applications

With many unique advanced features, Novara's stepper servo systems are ideal for industrial automation to upgrade stepper performance or replace brushless servo systems in a wide range of applications, especially where high speed and low noise is required. The typical applications include small-to-large size CNC routers, CNC mills, potters, plasmas, large-scale laser cutters/engravers, labeling equipment, robotics, gemstone processing machines, pick & place machines, X-Y tables, and so on.

## Part Number

<b>NHSD</b>			
Novara's NHSD Series Hybrid Servo Drive	<b>Max. Input Voltage</b> 50: 50V 80: 80V .....	<b>Max. Output Current</b> 82: 8.2A ...	<b>Voltage Type</b> Blank: DC Power AC: AC power

## Standard Versions

Model	Phase	Output Current	Operating Voltage		Microstep Resolutions	Driving Motors	Size	Weight
			AC	DC				
NHSD5082	2	0.5-8.2	N/A	20-50	2-128, 2.5-50	11-24	116×69×26.5	0.25
NHSD8082	2	0.5-8.2	N/A	20-80	2-128, 2.5-50	11-24	116×69×26.5	0.25
NHSD8082AC	2	0.5-8.2	20-80	30-110	2-256, 5-200	24-34	151×97×48	0.60
NHSD11082AC	2	0.5-8.2	24-130	24-150	2-256, 5-200	24-34	151×97×48	0.60

## General Specifications

<b>Heat Sinking Method</b>	Natural cooling or forced cooling	
<b>Operating Environment</b>	Environment	No corrosive gas, dust, water or oil
	Ambient Temperature	0 to +50 °C (+32 to +122 °F) (non-freezing)
	Humidity	90% or less (non-condensing)
	Operating Temperature	70°C Max
	Vibration	5.9m/s <sup>2</sup> Max
<b>Storage Temperature</b>	-10 to +70 °C (+14 to +158 °F) (non-freezing)	

## Introduction

The hybrid servo drive NHSD5082 is a versatility fully digital stepper drive, adopting the latest DSP with advanced variable current and variable frequency control algorithm. It provides a high-performance and cost-effective driving solution of stepper servo system. The drive NHSD5082 has compact size, reducing the electromagnetic interference between the lines. When working with Novara's stepper servo motor, it combines features of both open loop steppers and brushless servo systems, and offers many unique advanced features for excellent motion control system performance, while at a fraction of the cost of a servo system.



## Electrical Specifications

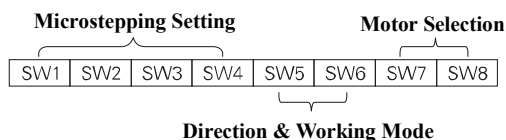
Parameters	Min	Typical	Max	Unit
Output current	0.5	-	8.2 (RMS)	A
Supply voltage	+20	+36	+50	VDC
Encoder Resolution	400	1,000	5,000	CPR
Pulse high level width	1.5	-	-	μs
Position Error Precision	-	±1	-	Pulse
Speed Control Precision	-	±2	-	rpm
Maximum Acceleration (no load)	-	100	-	rpm/ms

## Function Description

Function	Description
Microstep Setting	Microstep resolution is set by SW1, 2, 3, 4 of the DIP switch. In order to avoid losing steps, do not change the microstep resolution on the fly.
Current Setting	The motor current will be adjusted automatically regarding to the load or the stator-rotor relationship. However, the user can also configure the current in the tuning software.
Control Signals	PUL+ and PUL- are for the pulse command signal. DIR+ and DIR- are for the direction control signal. ENA+ and ENA- are for the enable/disable control signal. ALM+ and ALM- are for alarm output signal.
Motor Connector	A+, A- and B+, B- are for motor connections. Exchanging the connection of two wires for a coil to the drive will reverse default motion direction.
Power Connector	Recommended to use power supplies with output of +20 to 45VDC, leaving space for power fluctuation and back-EMF.
Encoder Connector	EA+, EA- and EB+, EB- are for encoder connections. VCC and EGND are for encoder's power.
RS232 Communication	Used to set the peak current, microstep, active level, current loop parameters and other parameters.
Indicators	There are two LED indicators on the drive for power and alarm signals. When the Green LED is on, the drive is powered up. When the Red LED is on, the drive is in fault status. When in fault status, the motor shaft will be free. Reset the drive by re-powering it to make it function properly after solving problem(s).

## Parameter Settings

The drive uses a 8-bit DIP switch to set microstep resolution, motor direction, working mode and motor selection, as shown below:



## Microstep Resolution Settings

Microstep	Steps/Rev.	SW1	SW2	SW3	SW4
2	Software Configured (Default 400)	ON	ON	ON	ON
4	800	OFF	ON	ON	ON
8	1,600	ON	OFF	ON	ON
16	3,200	OFF	OFF	ON	ON
32	6,400	ON	ON	OFF	ON
64	12,800	OFF	ON	OFF	ON
128	25,600	ON	OFF	OFF	ON
2.5	500	OFF	OFF	OFF	ON
5	1,000	ON	ON	ON	OFF
10	2,000	OFF	ON	ON	OFF
20	4,000	ON	OFF	ON	OFF
25	5,000	OFF	OFF	ON	OFF
40	8,000	ON	ON	OFF	OFF
50	10,000	OFF	ON	OFF	OFF
18	3,600	ON	OFF	OFF	OFF
36	7,200	OFF	OFF	OFF	OFF

## Motor Direction

SW5	Motor Direction
ON	CW (clock-wise)
OFF	CCW (counter-clock-wise)

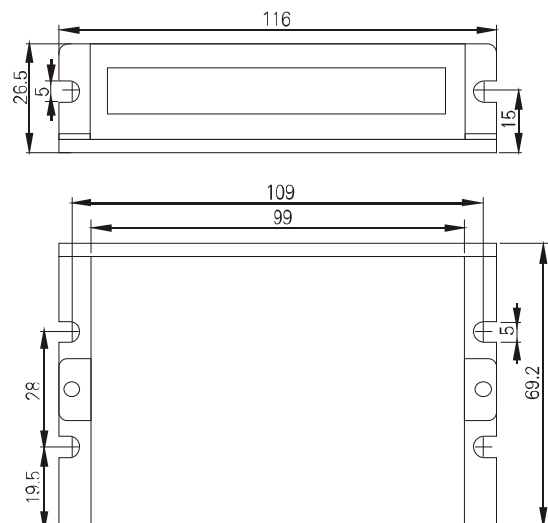
## Working Mode

SW6	Working Mode	Function
ON	Point Motion	Used for the applications where fast point-to-point movement is required
OFF	FOC	Vector closed loop control variable current mode

## Motor Selection

SW7	SW8	Motor Selection
ON	ON	NEMA 17
OFF	ON	NEMA 23
ON	OFF	NEMA 24
OFF	OFF	NEMA 34 (DEFAULT)

## Mechanical Dimension



### Introduction

The hybrid servo drive NHSD8082 is a versatility fully digital stepper drive, adopting the latest DSP with advanced variable current and variable frequency control algorithm. It provides a high-performance and cost-effective driving solution of stepper servo system. The drive NHSD8082 has compact size, reducing the electromagnetic interference between the lines. When working with Novara's stepper servo motor, it combines features of both open loop steppers and brushless servo systems, and offers many unique advanced features for excellent motion control system performance, while at a fraction of the cost of a servo system.



### Electrical Specifications

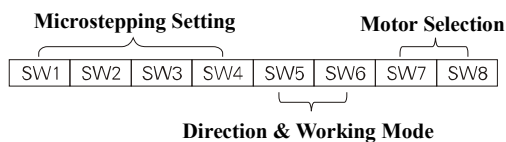
Parameters	Min	Typical	Max	Unit
Output current	0.5	-	8.2 (RMS)	A
Supply voltage	+20	+36	+80	VDC
Encoder Resolution	400	1,000	5,000	CPR
Pulse high level width	1.5	-	-	μs
Position Error Precision	-	±1	-	Pulse
Speed Control Precision	-	±2	-	rpm
Maximum Acceleration (no load)	-	100	-	rpm/ms

### Function Description

Function	Description
Microstep Setting	Microstep resolution is set by SW1, 2, 3, 4 of the DIP switch. In order to avoid losing steps, do not change the microstep resolution on the fly.
Current Setting	The motor current will be adjusted automatically regarding to the load or the stator-rotor relationship. However, the user can also configure the current in the tuning software.
Control Signals	PUL+ and PUL- are for the pulse command signal. DIR+ and DIR- are for the direction control signal. ENA+ and ENA are for the enable/disable control signal. ALM+ and ALM- are for alarm output signal.
Motor Connector	A+, A- and B+, B- are for motor connections. Exchanging the connection of two wires for a coil to the drive will reverse default motion direction.
Power Connector	Recommended to use power supplies with output of +20 to 72VDC, leaving space for power fluctuation and back-EMF.
Encoder Connector	EA+, EA- and EB+, EB- are for encoder connections. VCC and EGND are for encoder's power.
RS232 Communication	Used to set the peak current, microstep, active level, current loop parameters and other parameters.
Indicators	There are two LED indicators on the drive for power and alarm signals. When the Green LED is on, the drive is powered up. When the Red LED is on, the drive is in fault status. When in fault status, the motor shaft will be free. Reset the drive by re-powering it to make it function properly after solving problem(s).

### Parameter Settings

The drive uses a 8-bit DIP switch to set microstep resolution, motor direction, working mode and motor selection, as shown below:



### Microstep Resolution Settings

Microstep	Steps/Rev.	SW1	SW2	SW3	SW4
2	Software Configured (Default 400)	ON	ON	ON	ON
4	800	OFF	ON	ON	ON
8	1,600	ON	OFF	ON	ON
16	3,200	OFF	OFF	ON	ON
32	6,400	ON	ON	OFF	ON
64	12,800	OFF	ON	OFF	ON
128	25,600	ON	OFF	OFF	ON
2.5	500	OFF	OFF	OFF	ON
5	1,000	ON	ON	ON	OFF
10	2,000	OFF	ON	ON	OFF
20	4,000	ON	OFF	ON	OFF
25	5,000	OFF	OFF	ON	OFF
40	8,000	ON	ON	OFF	OFF
50	10,000	OFF	ON	OFF	OFF
18	3,600	ON	OFF	OFF	OFF
36	7,200	OFF	OFF	OFF	OFF

### Motor Direction

SW5	Motor Direction
ON	CW (clock-wise)
OFF	CCW (counter-clock-wise)

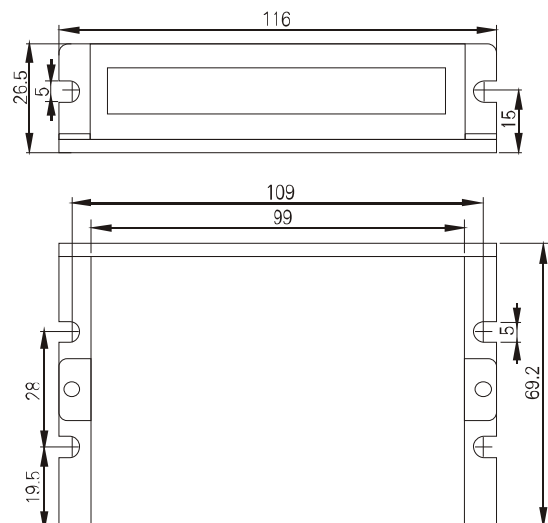
### Working Mode

SW6	Working Mode	Function
ON	Point Motion	Used for the applications where fast point-to-point movement is required
OFF	FOC	Vector closed loop control variable current mode

### Motor Selection

SW7	SW8	Motor Selection
ON	ON	NEMA 17
OFF	ON	NEMA 23
ON	OFF	NEMA 24
OFF	OFF	NEMA 34 (DEFAULT)

### Mechanical Dimension



### Introduction

The hybrid servo drive NHSD8082AC is a versatility fully digital stepper drive, adopting the latest DSP with advanced variable current and variable frequency control algorithm. It provides a high-performance and cost-effective driving solution of stepper servo system. The drive NHSD8082AC has compact size, reducing the electromagnetic interference between the lines. When working with Novara's stepper servo motor, it combines features of both open loop steppers and brushless servo systems, and offers many unique advanced features for excellent motion control system performance, while at a fraction of the cost of a servo system.



### Electrical Specifications

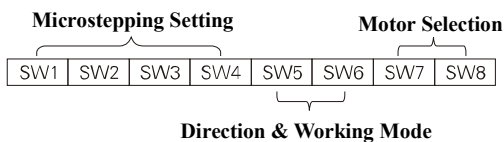
Parameters	Min	Typical	Max	Unit
Output current	0.5	-	8.2 (RMS)	A
Supply voltage	20 (30)	-	80 (110)	VAC (VDC)
Encoder Resolution	400	1,000	5,000	CPR
Pulse high level width	1.5	-	-	μs
Position Error Precision	-	±1	-	Pulse
Speed Control Precision	-	±2	-	rpm
Maximum Acceleration (no load)	-	100	-	rpm/ms

### Function Description

Function	Description
Microstep Setting	Microstep resolution is set by SW1, 2, 3, 4 of the DIP switch. In order to avoid losing steps, do not change the microstep resolution on the fly.
Current Setting	The motor current will be adjusted automatically regarding to the load or the stator-rotor relationship. However, the user can also configure the current in the tuning software.
Control Signals	PUL+ and PUL- are for the pulse command signal. DIR+ and DIR- are for the direction control signal. ENA+ and ENA- are for the enable/disable control signal. ALM+ and ALM- are for alarm output signal.
Motor Connector	A+, A- and B+, B- are for motor connections. Exchanging the connection of two wires for a coil to the drive will reverse default motion direction.
Power Connector	Connected to the AC or DC power supply.
Encoder Connector	EA+, EA- and EB+, EB- are for encoder connections. VCC and EGND are for encoder's power.
RS232 Communication	Used to set the peak current, microstep, active level, current loop parameters and other parameters.
Indicators	There are two LED indicators on the drive for power and alarm signals. When the Green LED is on, the drive is powered up. When the Red LED is on, the drive is in fault status. When in fault status, the motor shaft will be free. Reset the drive by re-powering it to make it function properly after solving problem(s).

### Parameter Settings

The drive uses a 8-bit DIP switch to set microstep resolution, motor direction, working mode and motor selection, as shown below:



### Microstep Resolution Settings

Microstep	Steps/Rev.	SW1	SW2	SW3	SW4
2	Software Configured (Default 400)	ON	ON	ON	ON
4	800	OFF	ON	ON	ON
8	1,600	ON	OFF	ON	ON
16	3,200	OFF	OFF	ON	ON
32	6,400	ON	ON	OFF	ON
64	12,800	OFF	ON	OFF	ON
128	25,600	ON	OFF	OFF	ON
256	51,200	OFF	OFF	OFF	ON
5	1,000	ON	ON	ON	OFF
10	2,000	OFF	ON	ON	OFF
20	4,000	ON	OFF	ON	OFF
25	5,000	OFF	OFF	ON	OFF
40	8,000	ON	ON	OFF	OFF
50	10,000	OFF	ON	OFF	OFF
100	20,000	ON	OFF	OFF	OFF
200	40,000	OFF	OFF	OFF	OFF

### Motor Direction

SW5	Motor Direction
ON	CW (clock-wise)
OFF	CCW (counter-clock-wise)

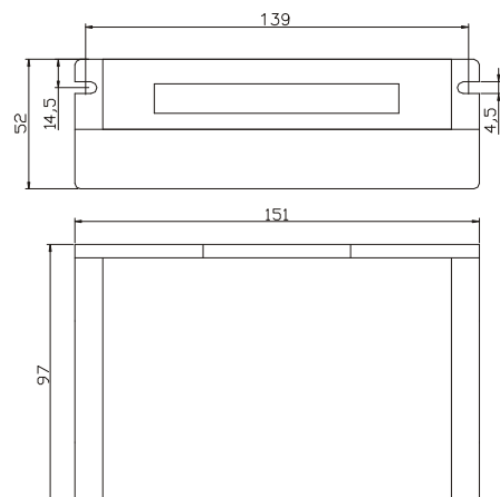
### Working Mode

SW6	Working Mode	Function
ON	Point Motion	Used for the applications where fast point-to-point movement is required
OFF	FOC	Vector closed loop control variable current mode

### Motor Selection

SW7	SW8	Motor Selection
ON	ON	NEMA 24 (3.0Nm)
OFF	ON	NEMA 34 (4.5Nm)
ON	OFF	NEMA 34 (8.5Nm)
OFF	OFF	NEMA 34 (12.0Nm)

### Mechanical Dimension





### Introduction

The hybrid servo drive NHSD11082AC is a versatility fully digital stepper drive, adopting the latest DSP with advanced variable current and variable frequency control algorithm. It provides a high-performance and cost-effective driving solution of stepper servo system. The drive NHSD11082AC has compact size, reducing the electromagnetic interference between the lines. When working with Novara's stepper servo motor, it combines features of both open loop steppers and brushless servo systems, and offers many unique advanced features for excellent motion control system performance, while at a fraction of the cost of a servo system.



### Electrical Specifications

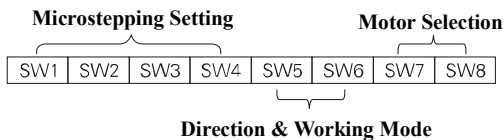
Parameters	Min	Typical	Max	Unit
Output current	0.5	-	8.2 (RMS)	A
Supply voltage	24 (24)	-	130 (150)	VAC (VDC)
Encoder Resolution	400	1,000	5,000	CPR
Pulse high level width	1.5	-	-	μs
Position Error Precision	-	±1	-	Pulse
Speed Control Precision	-	±2	-	rpm
Maximum Acceleration (no load)	-	100	-	rpm/ms

### Function Description

Function	Description
Microstep Setting	Microstep resolution is set by SW1, 2, 3, 4 of the DIP switch. In order to avoid losing steps, do not change the microstep resolution on the fly.
Current Setting	The motor current will be adjusted automatically regarding to the load or the stator-rotor relationship. However, the user can also configure the current in the tuning software.
Control Signals	PUL+ and PUL- are for the pulse command signal. DIR+ and DIR- are for the direction control signal. ENA+ and ENA- are for the enable/disable control signal. ALM+ and ALM- are for alarm output signal.
Motor Connector	A+, A- and B+, B- are for motor connections. Exchanging the connection of two wires for a coil to the drive will reverse default motion direction.
Power Connector	Connected to the AC or DC power supply.
Encoder Connector	EA+, EA- and EB+, EB- are for encoder connections. VCC and EGND are for encoder's power.
RS232 Communication	Used to set the peak current, microstep, active level, current loop parameters and other parameters.
Indicators	There are two LED indicators on the drive for power and alarm signals. When the Green LED is on, the drive is powered up. When the Red LED is on, the drive is in fault status. When in fault status, the motor shaft will be free. Reset the drive by re-powering it to make it function properly after solving problem(s).

### Parameter Settings

The drive uses a 8-bit DIP switch to set microstep resolution, motor direction, working mode and motor selection, as shown below:



### Microstep Resolution Settings

Microstep	Steps/Rev.	SW1	SW2	SW3	SW4
2	Software Configured (Default 400)	ON	ON	ON	ON
4	800	OFF	ON	ON	ON
8	1,600	ON	OFF	ON	ON
16	3,200	OFF	OFF	ON	ON
32	6,400	ON	ON	OFF	ON
64	12,800	OFF	ON	OFF	ON
128	25,600	ON	OFF	OFF	ON
256	51,200	OFF	OFF	OFF	ON
5	1,000	ON	ON	ON	OFF
10	2,000	OFF	ON	ON	OFF
20	4,000	ON	OFF	ON	OFF
25	5,000	OFF	OFF	ON	OFF
40	8,000	ON	ON	OFF	OFF
50	10,000	OFF	ON	OFF	OFF
100	20,000	ON	OFF	OFF	OFF
200	40,000	OFF	OFF	OFF	OFF

### Motor Direction

SW5	Motor Direction
ON	CW (clock-wise)
OFF	CCW (counter-clock-wise)

### Working Mode

SW6	Working Mode	Function
ON	Point Motion	Used for the applications where fast point-to-point movement is required
OFF	FOC	Vector closed loop control variable current mode

### Motor Selection

SW7	SW8	Motor Selection
ON	ON	NEMA 24 (3.0Nm)
OFF	ON	NEMA 34 (4.5Nm)
ON	OFF	NEMA 34 (8.5Nm)
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### Mechanical Dimension

