

# iHSV57

# Integrated AC Servo Motors



杰美康机电  
JUST MOTION CONTROL



## 1. Features:

- High positioning accuracy
- High torque
- Cost-effective high speed response
- Smooth and very low noise
- Compact size
- Pulse Input Mode Pulse + Direction
- Current Loop Bandwidth: (-3dB) 2KHz (Typical)
- Speed Loop Bandwidth: 500Hz (Typical)
- Position Loop Bandwidth: 200Hz (Typical)
- Parameters to download via RS232 to PC.
- Users can define subdivisions via external Dial-up switches or via software.
- Over-current, I2T-motor-current-observation, Over-voltage, Under-voltage, Over-heat, Over-speed, protections.

## 2. Description:

The iHSV57-XX AC servo motor consists of a perfectly tuned servo driver integrated in a servo motor, vector controlled and with DSP chip. The system saves installation space, cabling between driver, motor and encoder, and is very profitable due to its low purchase price.

## 3. Applications:

iHSV57-XX can be used in various applications such as laser cutters, laser markers, high precision X-Y tables, labelling machines, CNC router, etc. Its unique features make the iHSV57-XX an ideal choice for applications that require low-speed smoothness and high torque at higher revolution by small mounting space.

## 4. Naming Rules:

iHSV 57 - 30 - 10 - 36 - XX - XX

1 2 3 4 5 6 7

1. Integrated Servo motor
2. Motor frame size: 57
3. Motor revolution (unit: x 100 RPM) 10  $\triangleq$  1000 RPM, 20  $\triangleq$  2000 RPM, 30  $\triangleq$  3000 RPM
4. Output Power (unit: x 10 W) 10  $\triangleq$  100 W; 20  $\triangleq$  200 W
5. Motor rated DC voltage: 24 means voltage is 24 V, 36 means voltage is 36 V.
6. Shaft length: 01 = 30 mm, 21 = 21 mm
7. Pilot diameter: No digit = 25.4 mm, 38 = 38.1 mm

## 5. Electrical Specifications:

Parameters	Min	Typical	Max	Unit
Input Voltage	20	36	50	VDC
Pulse per revolution	4	-	51200	Pul./rev.
Pulse input frequency		-	200	kHz
Pulse Voltage	3.3	5	24 (with R= 5k $\Omega$ )	V
Logic Signal Current	7	10	16	mA
Isolation Resistance	100	-	-	M $\Omega$

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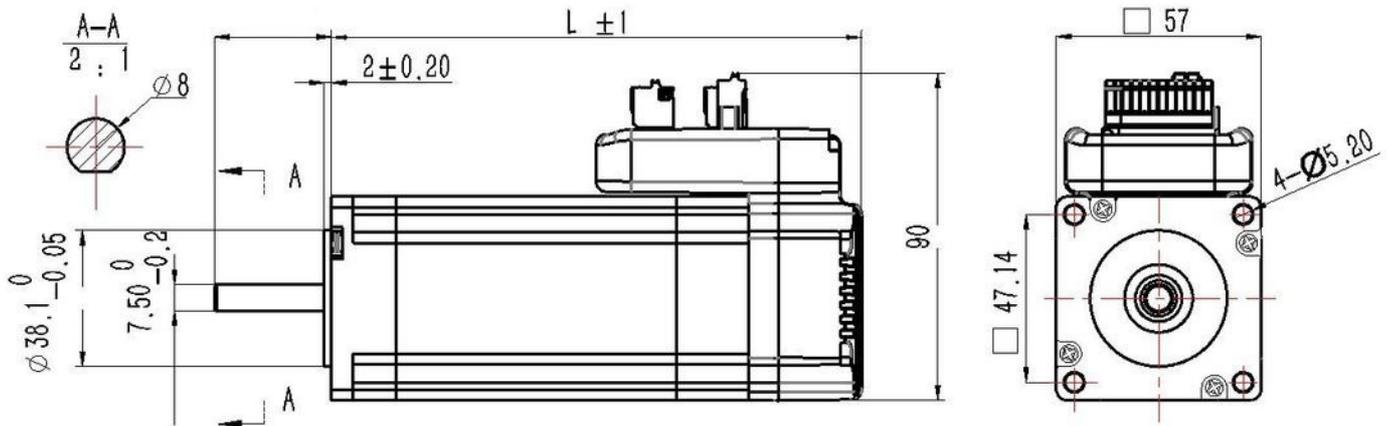
## 6. Motor Specifications:

Name:	iHSV57-30-10-36-XX	iHSV57-30-14-36-XX	iHSV57-30-18-36-XX	Unit
Rated Power	90	140	180	W
Rated Torque	0.29	0.44	0.57	N·m
Rated Speed	3000	3000	3000	min <sup>-1</sup>
Max. Speed	3000	3000	3000	min <sup>-1</sup>
Rated Voltage	36	36	36	V
Rated Current	3.5	5.4	7.5	A
Weight	1.0	1.3	1.6	kg
Max. Cogging torque	10.3	12.1	14.9	mN·m

## 7. Operating Environment:

Cooling	Natural cooling or forced cooling	
Operating Environment	Environment	Avoid dust, oil, fog and corrosive gases
	Ambient Temperature	0°C – 40°C
	Humidity	40 %RH – 90 %RH
	Operating Temperature	max. 70°C
Storage Temperature	-20°C – 80°C	

## 8. Mechanical Specification:



Name:	Motor length	Length of motor and drive (L)	Shaft Length	Pilot Diameter
iHSV57-30-10-36-21-38	76 mm	110 mm	21 ±1 mm	38,1 mm
iHSV57-30-14-36-21-38	96 mm	130 mm	21 ±1 mm	38,1 mm
iHSV57-30-18-36-21-38	116 mm	150 mm	21 ±1 mm	38,1 mm
iHSV57-30-10-36-01	76 mm	110 mm	30 ±1 mm	25,4 mm
iHSV57-30-14-36-01	96 mm	130 mm	30 ±1 mm	25,4 mm
iHSV57-30-18-36-01	116 mm	150 mm	30 ±1 mm	25,4 mm



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RS232 Communication Port

Pin	Name	Colour at round beige Cable	Colour at flat grey Cable	Description
1	NC	-	-	Not used
2	RX	Brown-White	Yellow	RS232 Receive Data
3	GND	Blue	Green	Ground
4	TX	Blue-White	Red	RS232 Transmit Data
5	VCC	-	-	Power Supply 3.3 V to HISU. Attention: For PC software use, leave unconnected!

**Note 1:** The RS232 communication port is not isolated. Please use an isolated power supply for the iHSSXX when the PC's serial port is not isolated.

**Note 2:** Do not plug or unplug the connector when power is on.

## 11. DIP Switch Settings:

Pulses per revolution of the iHSS-XX can be configured via DIP switch SW1-SW4 or by the tuning software. When all SW1-SW4 are at "ON" positions, the drive will take the setting set by the software. In this case, a user can re-configure to any value between 4 and 51200 through software. If any bit of SW1-SW4 is at "OFF" position, the integrated drive board will take micro step resolution setting determined by bit positions of SW1-SW4. Use the following table for their resolution settings via the DIP switches.

Pulses / Revolution	SW1	SW2	SW3	SW4
Software configured	On	On	On	On
800	Off	On	On	On
1600	On	Off	On	On
3200	Off	Off	On	On
6400	On	On	Off	On
12800	Off	On	Off	On
25600	On	Off	Off	On
51200	Off	Off	Off	On
1000	On	On	On	Off
2000	Off	On	On	Off
4000	On	Off	On	Off
5000	Off	Off	On	Off
8000	On	On	Off	Off
10000	Off	On	Off	Off
20000	On	Off	Off	Off
40000	Off	Off	Off	Off

**SW 5:** S5 is used for setting the active edge of the input signal, "off" -means the active edge is the rising edge, while "on" is the falling edge.

**SW 6:** DIP switch S6 is used for changing motor shaft rotation direction. Changing position from "ON" to "OFF", or "OFF" to "ON" will reverse rotation direction of the iHSV57-XX.

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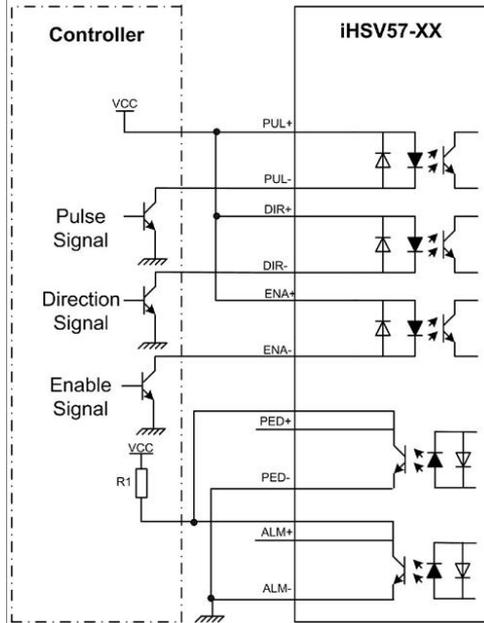
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## 12. Fine Tuning:

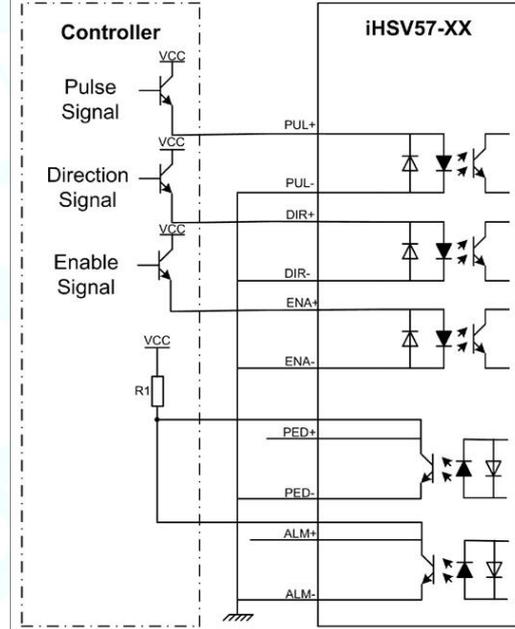
Standard parameters are already set ex works. These standard parameter values are optimized and suitable for most industrial applications. In most cases it is not necessary to change them. However, if you want to optimize the performance for your application, the software can be used to adjust these parameters

## 13. Typical Connections:

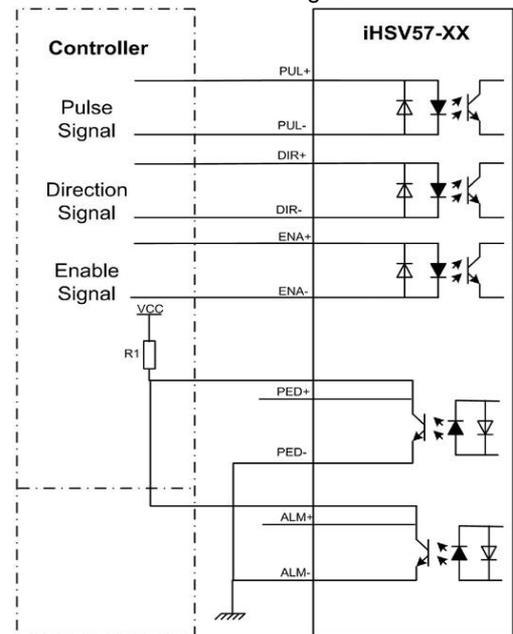
Connection to Common Anode:



Connection to Common Cathode:



Connection to Differential Signal:



## 14. RS232 Communication Cable Connections:

**Note 1:** The RS232 communication port is not isolated. Please use a galvanic isolated power supply for the iHSS86-XX when the PC's serial port is not isolated.

**Note 2:** Do not plug or unplug the connector when power is on.

Definition		Remark
RX	○     )	Receive Data
GND	○     )	Power Ground
TX	○     )	Transmit Data
OR		
NC	○     )	Reserved
RX	○     )	Receive Data
GND	○     )	Power Ground
TX	○     )	Transmit Data
VCC	○     )	Power Supply to HISU