

SMH40S Servo Motor



FEATURES

- 40mm Frame Size
- 220VAC
- Power Rating up to 100 Watts
- Rated Torque up to 0.32 Nm
- Rated Speed of 3000 RPM
- Brake Option Available
- 2500PPR Incremental Encoder Included
- Totally Enclosed, Non-Ventilated
- IP65 Protection for Body, IP54 Shaft Sealing
- CE Certified



DESCRIPTION

The SMH40S Series Servo Motor offers a solution to servo applications requiring position and speed control. This servo motor series comes standard with a 2,500 Pulses per Revolution (PPR) Incremental Encoder, runs at a rated speed of 3000 RPM, provides peak values up to 300% of the rated torque and current values, and has a rated torque up to 0.32 Nm with a 50-100 Watt power rating. This servo motor series enables industrial motion control applications to attain a great combination of position and speed functionality.

DIMENSIONS

Model	SMH40S-0005-30AAK-4LKH SMH40S-0005-30ABK-4LKH	SMH40S-0010-30AAK-4LKH SMH40S-0010-30ABK-4LKH
Compatible Driver	FD412-LA-000	
DC Link Voltage (VDC)	300	300
Rated Power (W)	50	100
Rated Torque (Nm)	0.16	0.32
Rated Speed (RPM)	3000	3000
Max Speed (RPM)	3000	3000
Rated Current (A)	0.7	1.4
Maximum Torque (Nm)	0.48	0.96
Maximum Current (A)	2.1	4.2
Standstill Torque (Nm)	0.176	0.352
Standstill Current (A)	0.77	1.54
Resistance Line-Line (Ω)	16.6	5.53
Inductance Line-Line (mH)	14	6
Electrical Time Constant (ms)	0.84	1.08
Mechanical Time Constant (ms)	1.28	0.86
Reverse Voltage Constant K_e (V/krpm)	16	14
Torque Constant K_t (Nm/A)	0.265	0.265
Rotor Moment of Inertia J_m (Kg-cm ²)	0.031 0.031 (with brake)	0.059 0.061 (with brake)
Brake Holding Torque (Nm)	1	1
Pole Pair Number	4	4
Maximum Voltage Rising du/dt (KV/ μ s)	8	8
Insulation Class	F	F
Maximum Radical Force F (N)	120	120
Maximum Axial Force F (N)	60	60
Weight (lbs)	1.11 1.77 (with brake)	1.77 2.21 (with brake)

L011353 *Note: Part Numbers with -30ABK are equipped with a brake.

- **40mm Frame Size**
- **70 VDC**
- **Power Rating up to 100 Watts**
- **Rated Torque up to 0.32 Nm**
- **Rated Speed of 3000 RPM**
- **2500PPR Incremental Encoder Included**
- **Totally Enclosed, Non-Ventilated**
- **IP65 Protection for Body, IP54 Shaft Sealing**
- **CE Certified**



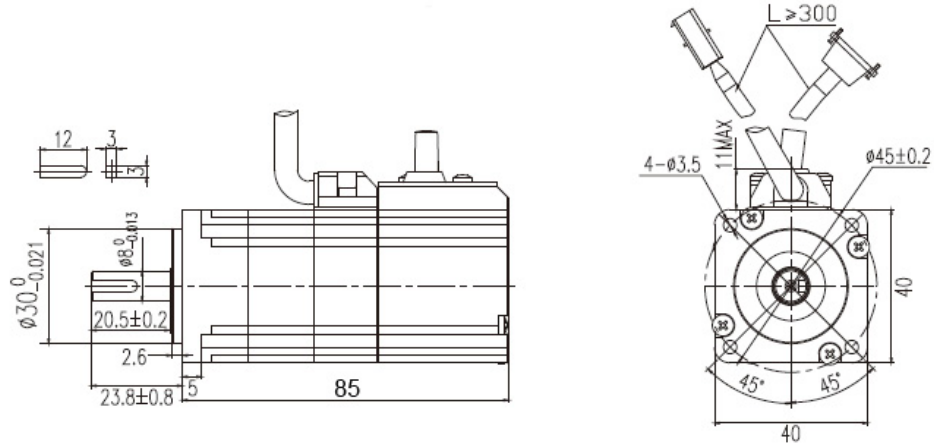
SPECIFICATIONS

Model	SMH40S-0005-30AAK-4DKH	SMH40S-0010-30AAK-4DKH
Compatible Driver	FD122-CA-000	
DC Link Voltage (VDC)	60	60
Rated Power (W)	50	100
Rated Torque (Nm)	0.16	0.32
Rated Speed (RPM)	3000	3000
Rated Current (A)	1.2	2.5
Maximum Torque (Nm)	0.48	0.96
Maximum Current (A)	3.6	7.5
Standstill Torque (Nm)	0.176	0.352
Standstill Current (A)	1.32	2.75
Resistance Line-Line (Ω)	4.2	2.1
Inductance Line-Line (mH)	3.5	2.5
Electrical Time Constant (ms)	0.84	1.2
Mechanical Time Constant (ms)	1.28	1.22
Reverse Voltage Constant K_e (V/krpm)	16	16
Torque Constant K_t (Nm/A)	0.1323	0.1323
Rotor Moment of Inertia J_m (Kg-cm ²)	0.031 0.033 (with brake)	0.059 0.061 (with brake)
Brake Holding Torque (Nm)	1	1
Pole Pair Number	4	4
Maximum Voltage Rising du/dt (KV/ μ s)	8	8
Insulation Class	F	F
Maximum Radical Force F (N)	120	120
Maximum Axial Force F (N)	60	60
Weight (lbs)	1.11 1.77 (with brake)	1.77 2.21 (with brake)

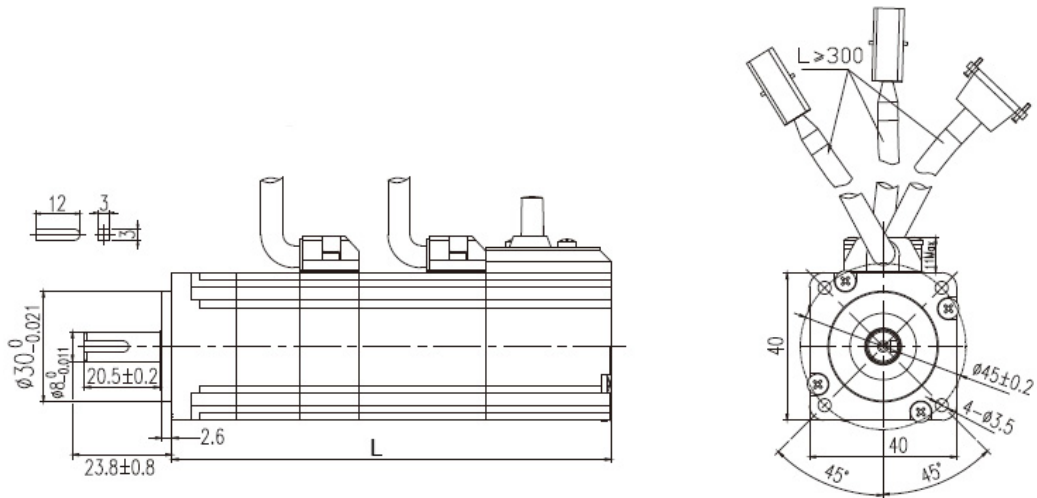
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SMH40S-0005-30AAK-4LKH, SMH40S-0005-30AAK-4DKH, SMH40S-0010-30AAK-4LKH, and SMH40S-0010-30AAK-4DKH

DIMENSIONS



SMH40S-0005-30ABK-4DKH and SMH40S-0010-30ABK-4DKH



MOTOR LENGTHS

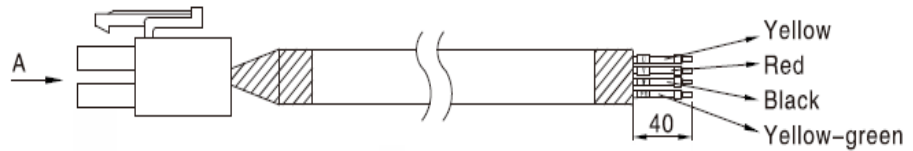
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Length of Motor L (mm)	85.3±1 119±1.5 (with brake)	110.8±1 145±1.5 (with brake)

Motor Cable: MOT-005-05-KL-D for SMH40S-0005-30AAK-4DKH, SMH40S-0010-30AAK-4DKH

MOT-005-LL-KL-D Wire Spec.: 4 x 18AWG(41/0.167)



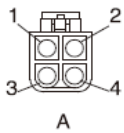
A
4PIN



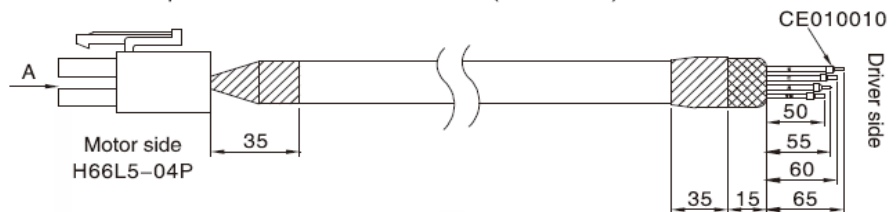
MOT-005-LL-KL-D		
Cable Color	Signal	PIN #
Yellow	U	PIN 1
Red	V	PIN 2
Black	W	PIN 3
Yellow-green	PE	PIN 4

Motor Cable: MOT-005-05-KL for SMH40S-0005-30AAK-4LKH, SMH40S-0010-30AAK-4LKH

MOT-005-LL-KL Wire spec. UI20328 4C x 18AWG(41/0.16T) black



A

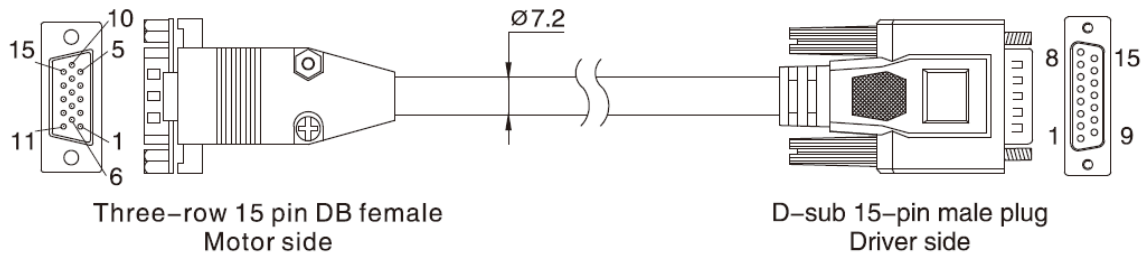


MOT-005-LL-KL		
Cable Color	Signal	PIN #
Yellow	U	PIN 1
Red	V	PIN 2
Black	W	PIN 3
Yellow-green	PE	PIN 4

Encoder Cable: ENCAA-05-KH for SMH40S-0005-30AAK-4DKH, SMH40S-0010-30AAK-4DKH, SMH40S-0005-30AAK-4LKH, SMH40S-0005-30ABK-4LKH, SMH40S-0010-30AAK-4LKH, SMH40S-0010-30ABK-4LKH

ENCCA-LL-KH

Wire spec. 1P x 24AWG(7/0.20T)+7P x 28AWG(7/0.127T)



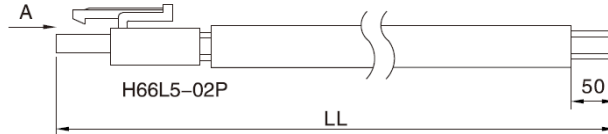
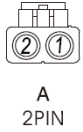
ENCCA-LL-KH				
Three-row 15 pin DB	Two-row 15 pin DB	Signal	External Wire Color	Motor Wire Color
PIN 1	PIN 1	+5V	Red (thick)	Red
PIN 8	PIN 2	A	Orange	Blue-Black
PIN 7	PIN 3	B	Yellow	Green
PIN 6	PIN 4	Z	Green	Yellow
PIN 4	PIN 5	U	Brown	Brown-Black
PIN 10	PIN 6	V	Purple	White-Black
PIN 9	PIN 7	W	Blue	Gray-Black
PIN 2	PIN 9	GND	Black (thick)	Black
PIN 13	PIN 10	/A	Orange-White	Blue
PIN 12	PIN 11	/B	Yellow-White	Green-Black
PIN 11	PIN 12	/Z	Green-White	Yellow-Black
PIN 5	PIN 13	/U	Brown-White	Brown
PIN 15	PIN 14	/V	Purple-White	White
PIN 14	PIN 15	/W	Blue-White	Gray
PIN 3 empty	PIN 8 empty			
Metal Shell	DB Metal Shell	Shield	Shield	Metal Shell

BRAKE CABLE: BRA-05-KL for SMH40S-0005-30ABK-4LKH, SMH40S-0010-30ABK-4LKH

BRAKE CABLE

BRA-LL-KL

Wire spec. 2 x 20AWG



BRA-05-KL		
CABLE COLOR	SIGNAL	PIN ASSIGNMENT
RED	BRAKE+	1
BLUE	BRAKE-	2

COMPATIBLE CABLES

Model	Motor Cable	Encoder Cable	Brake Cable
SMH40S-0005-30AAK-4LKH	MOT-005-05-KL	ENCCA-05-KH	--
SMH40S-0005-30ABK-4LKH	MOT-005-05-KL	ENCCA-05-KH	BRA-05-KL
SMH40S-0005-30AAK-4DKH	MOT-005-05-KL-D	ENCCA-05-KH	--
SMH40S-0010-30AAK-4LKH	MOT-005-05-KL	ENCAA-05-KH	--
SMH40S-0010-30ABK-4LKH	MOT-005-05-KL	ENCCA-05-KH	BRA-05-KL
SMH40S-0010-30AAK-4DKH	MOT-005-05-KL-D	ENCCA-05-KH	--

SPECIFICATIONS

Model	SMH40S-0005-30AAK-4LKH SMH40S-0005-30ABK-4LKH SMH40S-0005-30AAK-4DKH	SMH40S-0010-30AAK-4LKH SMH40S-0010-30ABK-4LKH SMH40S-0010-30AAK-4DKH
Length of Motor L (mm)	85.3±1 119±1.5 (with brake)	110.8±1 145±1.5 (with brake)
Position Feedback Device	Incremental Encoder 2500PPR	
Cooling Method	Totally Enclosed, Non-Ventilated	
Protection Level	IP65 for Body, Shaft Sealing IP54	
Temperature	-20°C~40°C	
Humidity	Below 90% RH (No Condensing)	
Ambient Environment	Away from Active Gas, Combustible Gas, Oil Drops and Dust	
Altitude	Maximum Altitude 4000m, Rated Power at 100m or Below, Above 1000m: Decreasing 1.5% per 100m Rise	