

SMH60S Servo Motor



FEATURES

- **60mm Frame Size**
- **220VAC**
- **Power Rating up to 400 Watts**
- **Rated Torque up to 1.27 Nm**
- **Rated Speed of 3000 RPM**
- **Brake Option Available**
- **2500PPR Incremental Encoder**
- **Totally Enclosed, Non-Ventilated**
- **IP65 Protection for Body, IP54 Shaft Sealing**
- **CE Certified**



DESCRIPTION

The SMH60S 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 of 0.64 - 1.27 Nm with a 200-400 Watt power rating. This servo motor series enables industrial motion control applications to attain a great combination of position and speed functionality.

SPECIFICATIONS

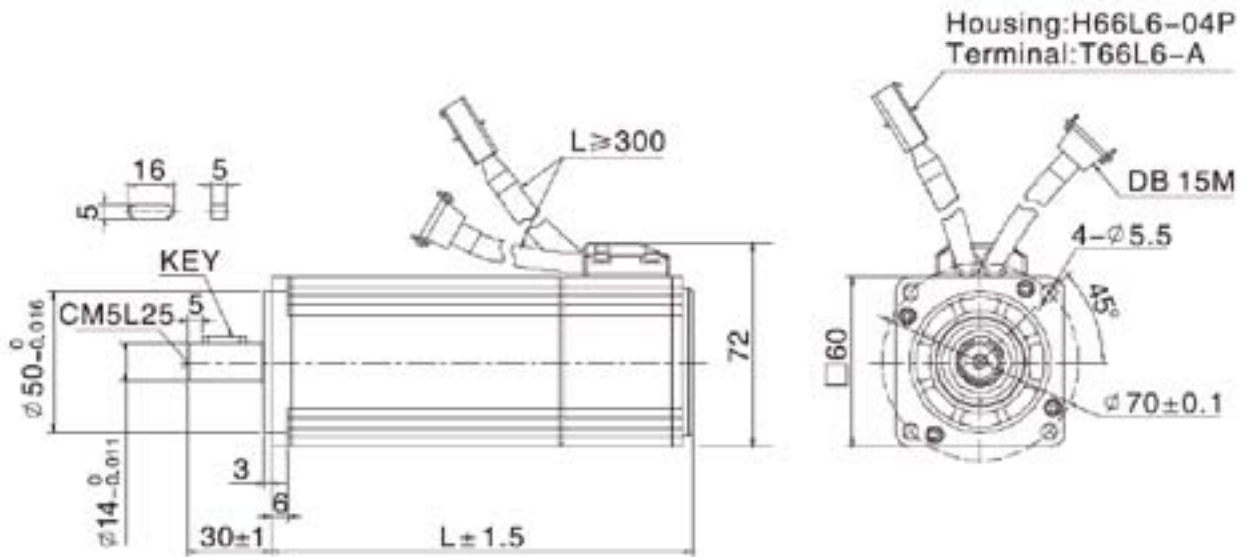
Model	SMH60S-0020-30AAK-3LKH SMH60S-0020-30AAK-3LKN SMH60S-0020-30ABK-3LKH	SMH60S-0040-30AAK-3LKH SMH60S-0040-30AAK-3LKN SMH60S-0040-30ABK-3LKH
Compatible Driver	FD422-LA-000	
DC Link Voltage (VDC)	300	300
Rated Power (W)	200	400
Rated Torque (Nm)	0.64	1.27
Rated Speed (RPM)	3000	3000
Max Speed (RPM)	3000	3000
Rated Current (A)	1.6	3.1
Maximum Torque (Nm)	1.92	3.82
Maximum Current (A)	4.8	9.3
Standstill Torque (Nm)	0.7	1.39
Standstill Current (A)	1.79	3.38
Resistance Line-Line (Ω)	8.02	3.52
Inductance Line-Line (mH)	16.3	7.8
Electrical Time Constant (ms)	2.03	2.22
Mechanical Time Constant (ms)	2.26	1.35
Reverse Voltage Constant K_e (V/krpm)	29	29
Torque Constant K_t (Nm/A)	0.48	0.48
Rotor Moment of Inertia J_m (Kg-cm ²)	0.375 0.379 (with brake)	0.510 0.514 (with brake)
Pole Pair Number	3	3
Maximum Voltage Rising du/dt (KV/ μ s)	8	8
Insulation Class	F	F
Maximum Radical Force F (N)	180	180
Maximum Axial Force F (N)	90	90
Weight G(Kg)	1.3 1.8 (with brake)	1.8 2.3 (with brake)

L011356 *Note: Part Numbers with -30ABK are equipped with a brake

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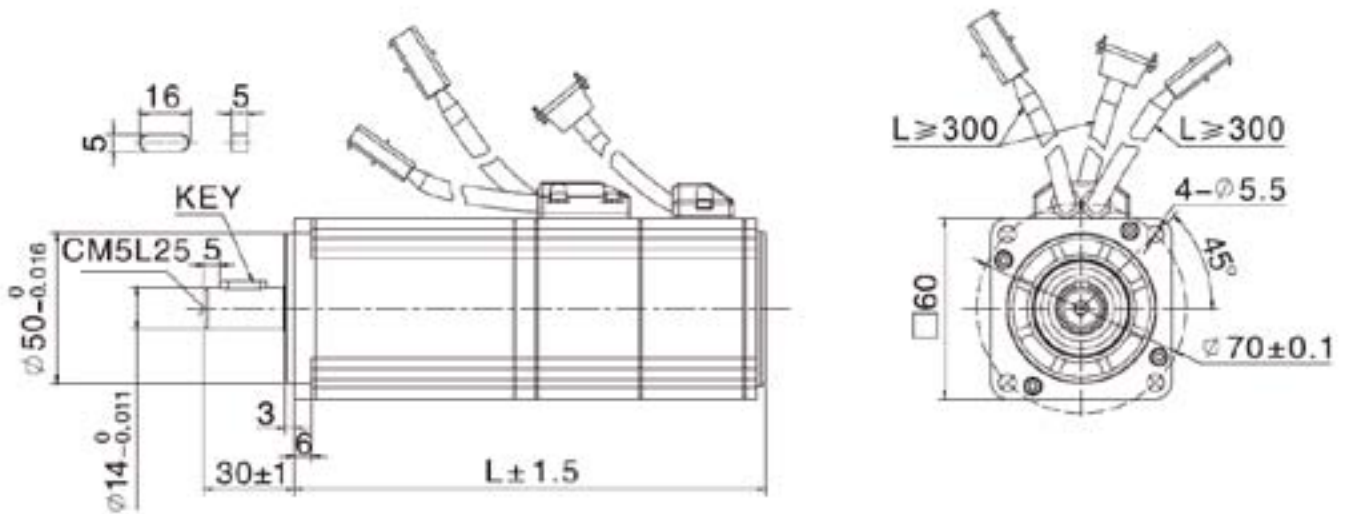


SMH60S-0020-30AAK-3LKH and SMH60S-0040-30AAK-3LKH



SMH60S-0020-30ABK-3LKH and SMH60S-0040-30ABK-3LKH

Dimensions are in mm



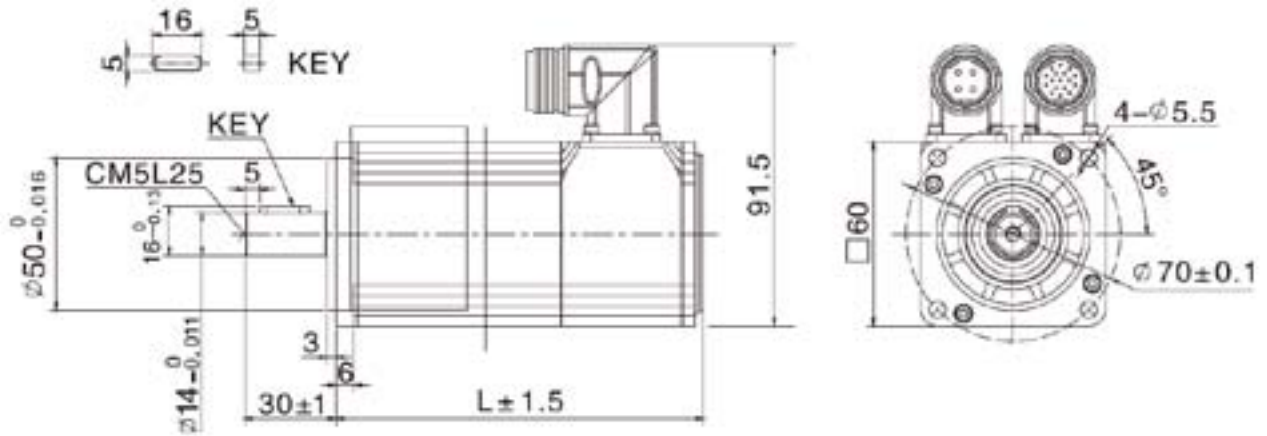
Model	SMH60S-0020-30AAK-3LKH SMH60S-0020-30ABK-3LKH SMH60S-0020-30AAK-3LKN	SMH60S-0040-30AAK-3LKH SMH60S-0040-30ABK-3LKH SMH60S-0040-30AAK-3LKN
Length of Motor L (mm)	85.3±1 119±1.5 (with brake)	110.8±1 145±1.5 (with brake)

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SMH60S-0020-30AAK-3LKN and SMH60S-0040-30AAK-3LKN

DIMENSIONS

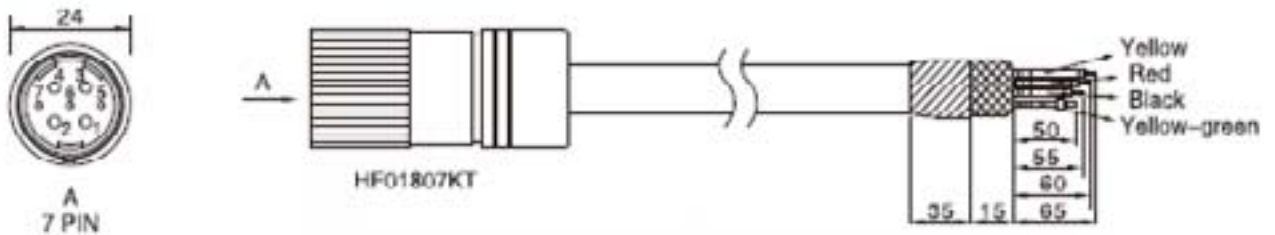


Model	SMH60S-0020-30AAK-3LKH SMH60S-0020-30ABK-3LKH SMH60S-0020-30AAK-3LKN	SMH60S-0040-30AAK-3LKH SMH60S-0040-30ABK-3LKH SMH60S-0040-30AAK-3LKN
Length of Motor L (mm)	85.3±1 119±1.5 (with brake)	110.8±1 145±1.5 (with brake)

Dimensions are in mm

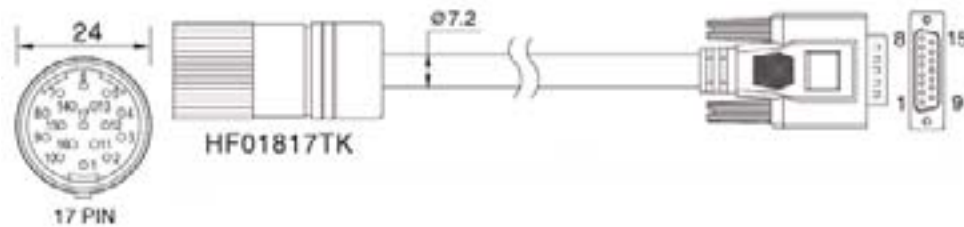
Motor Cable: MOT-005-05 for SMH60S-0020-30AAK-3LKN and SMH-0040-30AAK-3LKN

WIRING PINOUTS



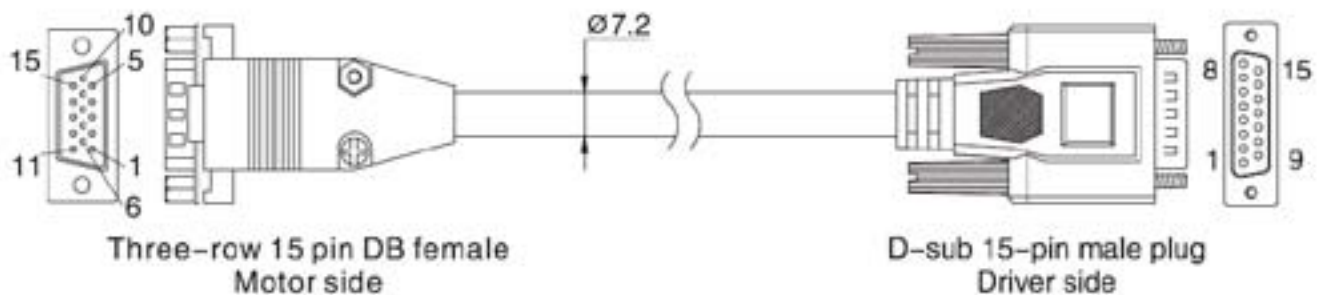
MOT-005-LL		
Cable Color	Signal	PIN #
Yellow	U	PIN 2
Red	V	PIN 3
Black	W	PIN 4
Yellow-green	PE	PIN 1
metal-ring	Shield	Shield Cable

Encoder Cable: ENCCA-05 for SMH60S-0020-30AAK-3LKN and SMH60S-0040-30AAK-3LKN



ENCCA-LL				
17 Pin DB	Two-row 15 pin DB	Signal	External Wire Color	Motor Wire Color
PIN 1	PIN 1	+5V	Red (thick)	Red
PIN 3	PIN 2	A	Orange	Blue
PIN 5	PIN 3	B	Yellow	Green
PIN 14	PIN 4	Z	Green	Yellow
PIN 9	PIN 5	U	Brown	Brown
PIN 11	PIN 6	V	Purple	Gray
PIN 16	PIN 7	W	Blue	White
PIN 2	PIN 9	GND	Black (thick)	Black
PIN 4	PIN 10	/A	Orange-White	Blue-Black
PIN 6	PIN 11	/B	Yellow-White	Green-Black
PIN 15	PIN 12	/Z	Green-White	Yellow-Black
PIN 10	PIN 13	/U	Brown-White	Brown-Black
PIN 12	PIN 14	/V	Purple-White	Gray-Black
PIN 17	PIN 15	/W	Blue-White	White-Black
Internal Metal Ring	DB Metal Shell	Shield	Shield	Shield

Encoder Cable: ENCCA-05-KH for SMH60S-0020-30AAK-3LKH, SMH60S-0040-30AAK-3LKH, SMH60S-0020-30ABK-3LKH, and SMH60S-0040-30ABK-3LKH



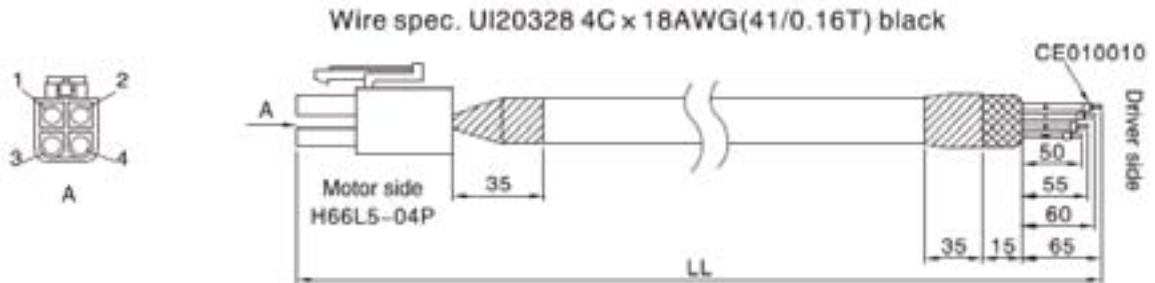
ENCCA-05-KH				
Three-row 15 Pin DB	Two-row 15 pin DB	Signal	External Wire Color	Motor Wire Color
PIN 1	PIN 1	+5V	Red (thick)	Red
PIN 8	PIN 2	A	Orange	Blue-black
PIN 7	PIN 3	B	Yellow	Green
PIN 6	PIN 4	Z	Green	Yellow
PIN 4	PIN 5	U	Brown	Brown-black
PIN 10	PIN 6	V	Purple	White-black
PIN 9	PIN 7	W	Blue	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	--	--	--
Internal Metal Ring	DB Metal Shell	Shield	Shield	Metal Shell

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WIRING PINOUTS

Motor Cable: MOT-005-05-KL for SMH60S-0020-30AAK-3LKH, SMH60S-0020-30ABK-3LKH, SMH60S-0040-30AAK-3LKH, and SMH60S-004-20ABK-3LKH



MOT-005-05-KL		
Cable Color	Signal	PIN #
Yellow	U	PIN 1
Red	V	PIN 2
Black	W	PIN 3
Yellow-green	PE	PIN 4

Model	Motor Cable	Encoder Cable	Brake Cable
SMH60S-0020-30AAK-3LKH SMH60S-0020-30ABK-3LKH	MOT-005-05-KCL	ENCCA-05-KCH	BRA-05-KL
SMH60S-0020-30AAK-3LKN	MOT-005-05-KC0	ENCCA-05-KC0	BRA-05-KL
SMH60S-0040-30AAK-3LKH SMH60S-0040-30ABK-3LKH	MOT-005-05-KCL	ENCCA-05-KCH	BRA-05-KL
SMH60S-0040-30AAK-3LKN	MOT-005-05-KC0	ENCCA-05-KC0	BRA-05-KL

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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)
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	