

SMC60S-0020 Servo Motor

FEATURES

- 24-70VDC or 220VAC
- 200W Power Rating
- Rated Torque of 0.64 Nm
- Maximum Speed of 3500 RPM
- 16 Bit Single-Turn Magnetic Encoder or 2500 PPR Incremental Encoder
- IP65 for Body, IP54 Shaft Seal
- Insulation Class F
- Brake Option Available

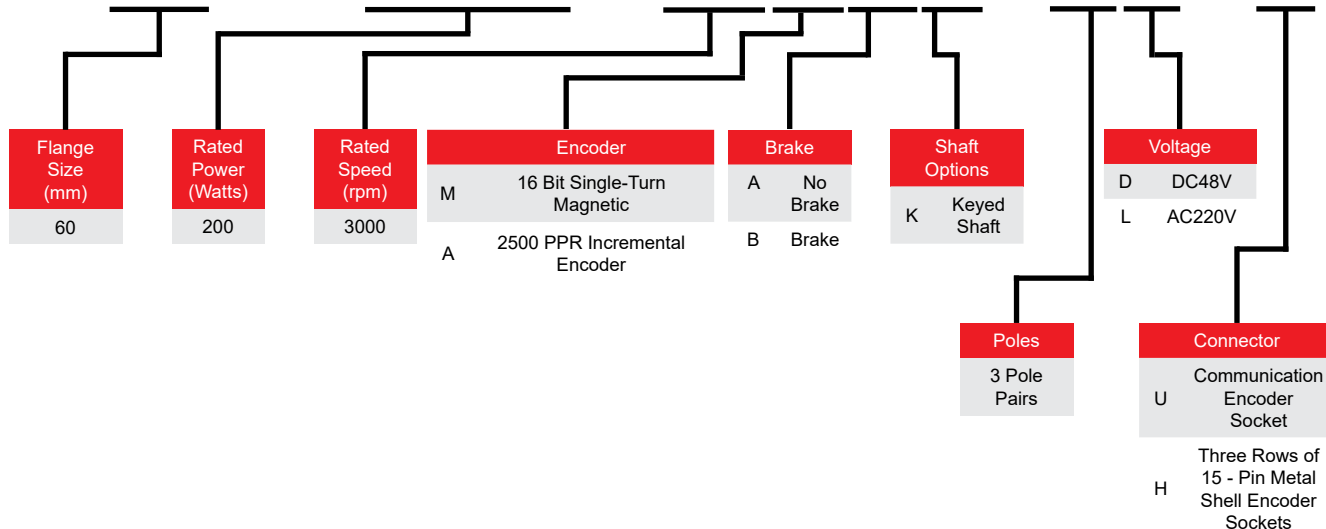


DESCRIPTION

The SMC60S-0020 Series Servo Motor offers a low-cost solution for motion control applications requiring position and speed control. With the 16 Bit Single-Turn Magnetic Encoder or 2500 PPR Incremental Encoder, it allows for better cushioning ability and higher cost-performance ratio. These Servo Motors have Insulation Class F which is the best Insulation Class on the market. They are very quiet with high reliability and stability in high temperature environments. These Servo Motors boast peak torque values up to 1.92 Nm, provide excellent dynamic response, allow for 3 times the overload capacity, and has a rated torque of 0.64 Nm. It is available in a 60mm square flange size, with a brake option.

ORDERING INFORMATION

SMC60S - 0020 - 30MAK - 3DSU

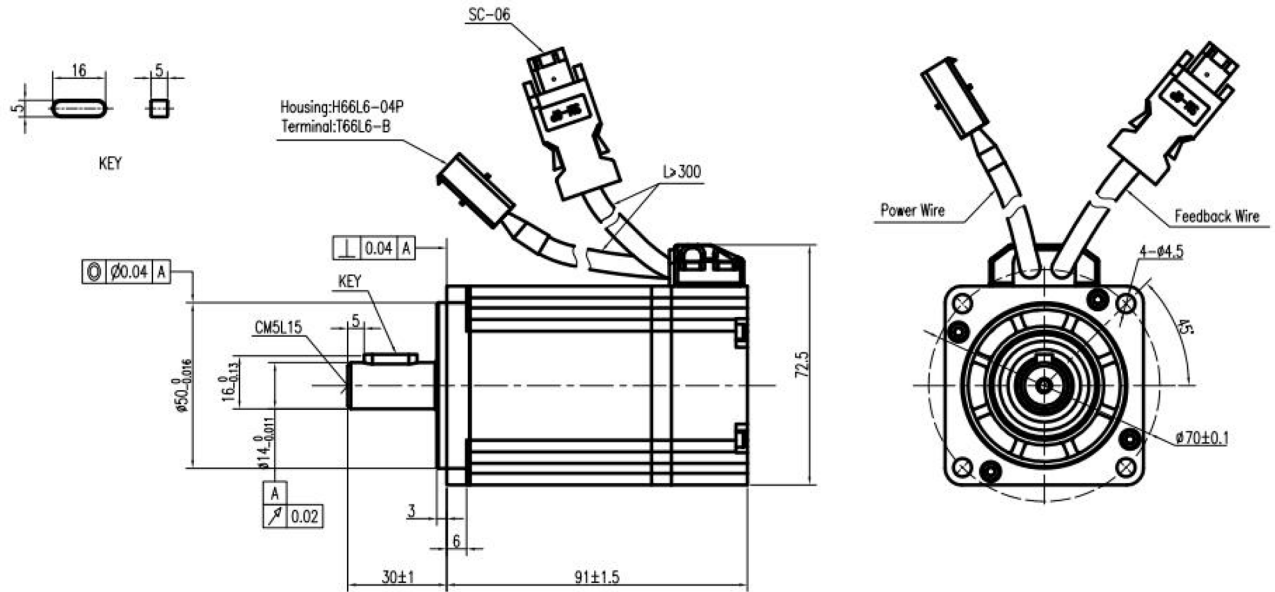


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Model	SMC60S-0020-30MAK-3DSU SMC60S-0020-30MBK-3DSU
Compatible Driver	FD124S-LA-000 FD124S-LB-000
DC Link Voltage (VDC)	48
Rated Power (W)	200
Rated Torque (Nm)	0.64
Rated Speed (RPM)	3000
Max Speed (RPM)	3500
Rated Current (A)	5.1
Maximum Torque (Nm)	1.92
Maximum Current (A)	15.3
Rated Standstill Torque (Nm)	0.7
Rated Standstill Current (A)	5.6
Resistance Line-Line (Ω)	0.889
Inductance Line-Line (mH)	1.51
Electrical Time Constant (ms)	1.7
Mechanical Time Constant (ms)	1.92
Torque Constant Kt (Nm/A)	0.132
Rotor Moment of Inertia Jm (Kg-cm ²)	0.214 0.218 (with brake)
Brake Holding Torque (Nm)	1.5
Pole Pair Number	3
Maximum Voltage Rising du/dt (KV/ μ s)	8
Insulation Class	F
Maximum Radial Force F (N)	180
Maximum Axial Force F (N)	90
Weight (Kg)	1.2 1.6 (with brake)
Length of Motor (mm)	91 \pm 1 121 \pm 1.5 (with brake)

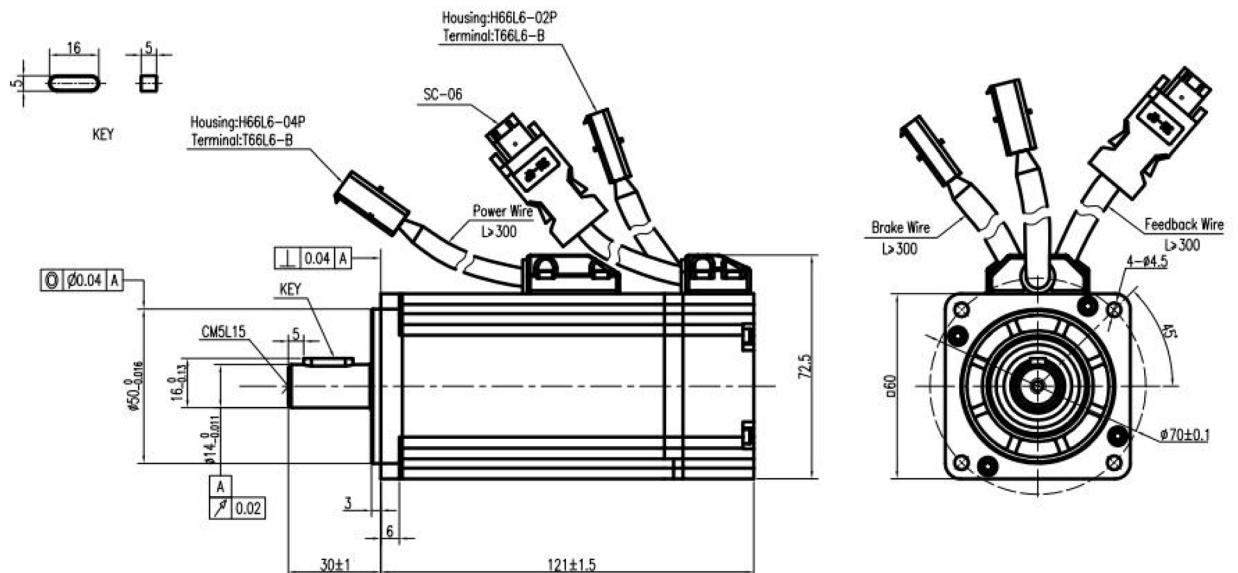
Model	SMC60S-0020-30AAK-3LKH SMC60S-0020-30ABK-3LKH
Compatible Driver	FD422S-CA-000 FD422S-AA-000 FD422S-LA-000
DC Link Voltage (VDC)	300
Rated Power (W)	200
Rated Torque (Nm)	0.64
Rated Speed (RPM)	3000
Max Speed (RPM)	6000
Rated Current (A)	1.4
Maximum Torque (Nm)	1.92
Maximum Current (A)	4.2
Rated Standstill Torque (Nm)	0.7
Rated Standstill Current (A)	1.5
Resistance Line-Line (Ω)	11.2
Inductance Line-Line (mH)	20.9
Electrical Time Constant (ms)	1.87
Mechanical Time Constant (ms)	1.8
Torque Constant Kt (Nm/A)	0.48
Rotor Moment of Inertia Jm (Kg-cm ²)	0.214 0.218 (with brake)
Brake Holding Torque (Nm)	1.5
Pole Pair Number	3
Maximum Voltage Rising du/dt (KV/ μ s)	8
Insulation Class	F
Maximum Radial Force F (N)	180
Maximum Axial Force F (N)	90
Weight (Kg)	1.1 1.6 (with brake)

SMC60S-0020-30MAK-3DSU

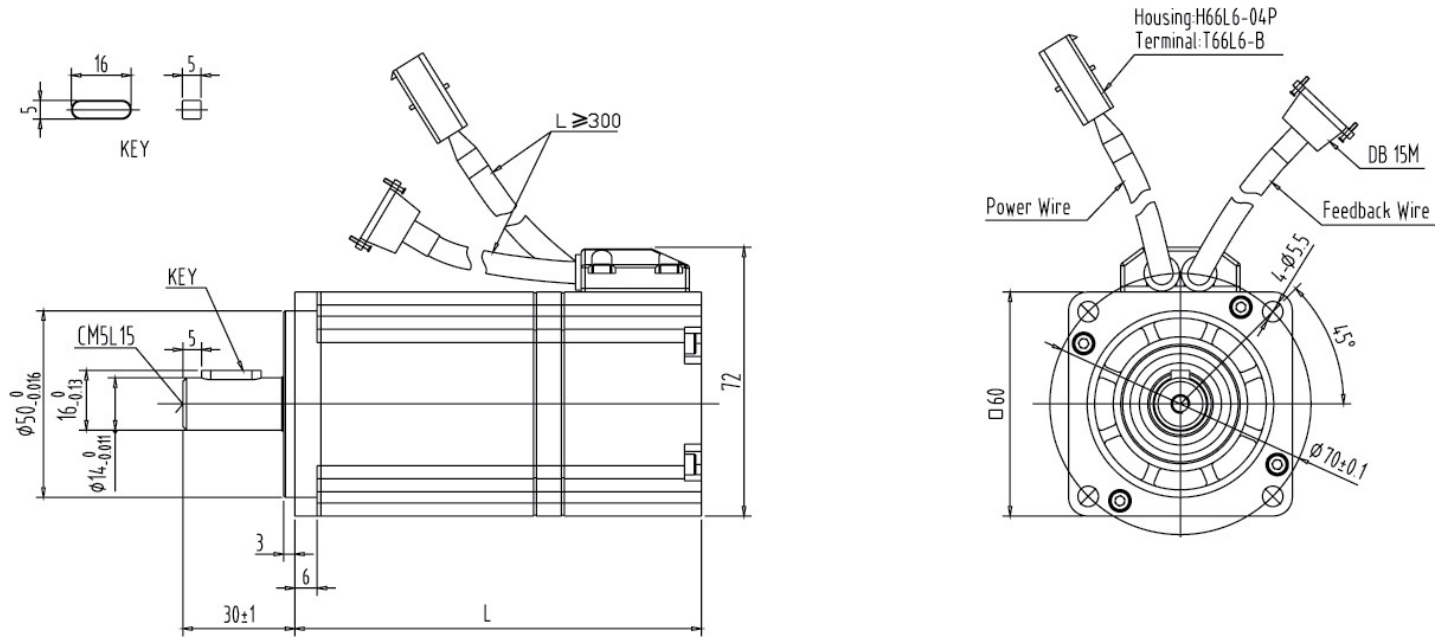


Dimensions are in mm

SMC60S-0020-30MBK-3DSU



SMC60S-0020-30AAK-3LKH



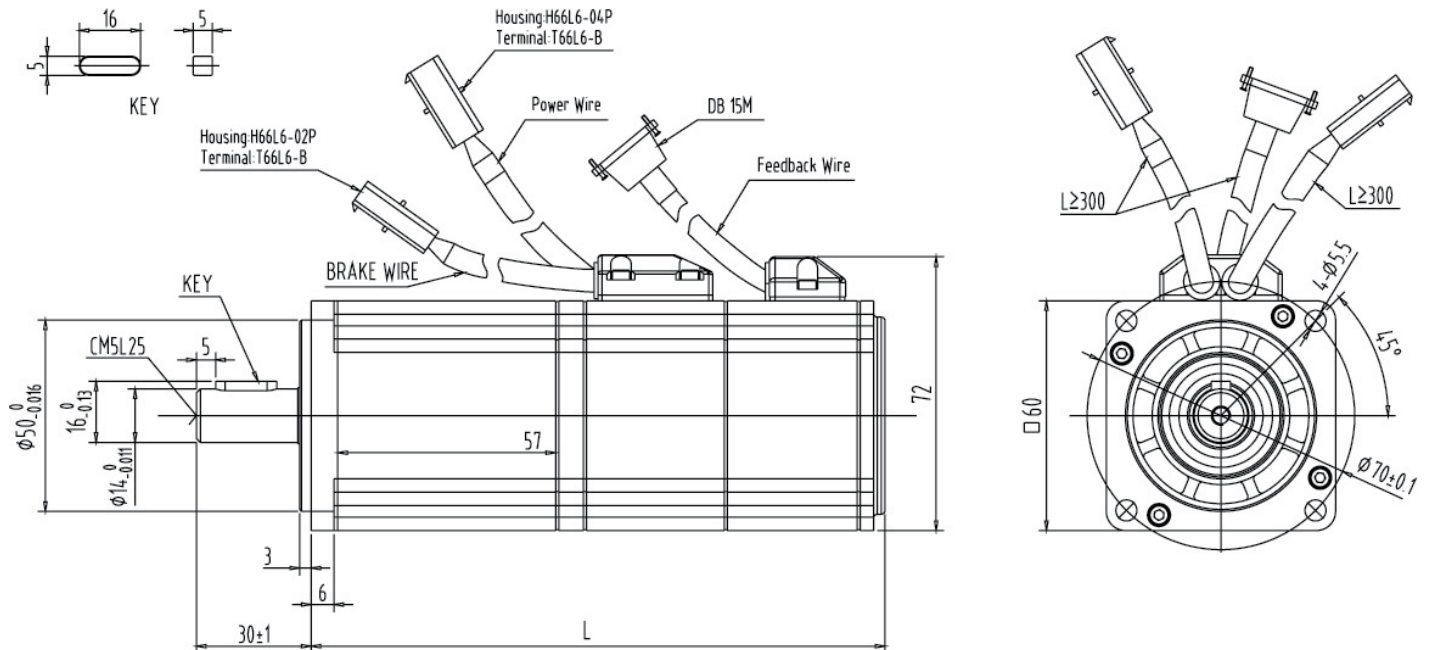
Model	SMC60S-0020-30AAK-3LKH SMC60S-0020-30ABK-3LKH
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Length of Motor
L (mm)

109 ± 1.5
 150 ± 1.5 (with brake)

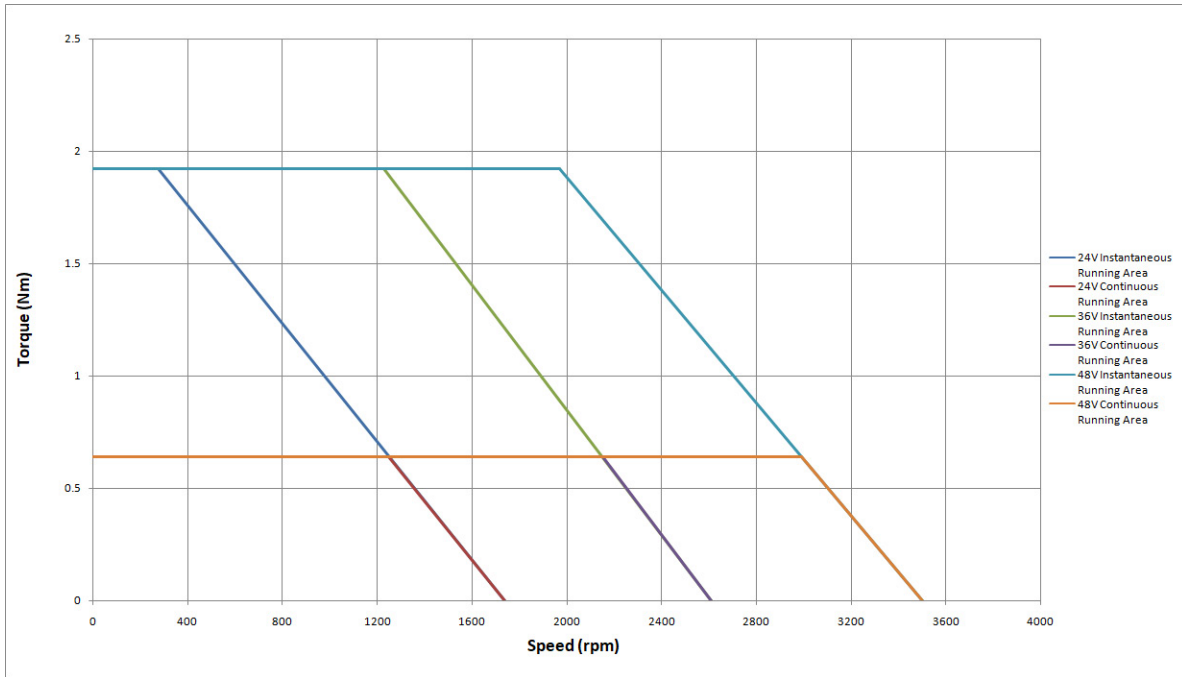
Dimensions are in mm

SMC60S-0020-30ABK-3LKH

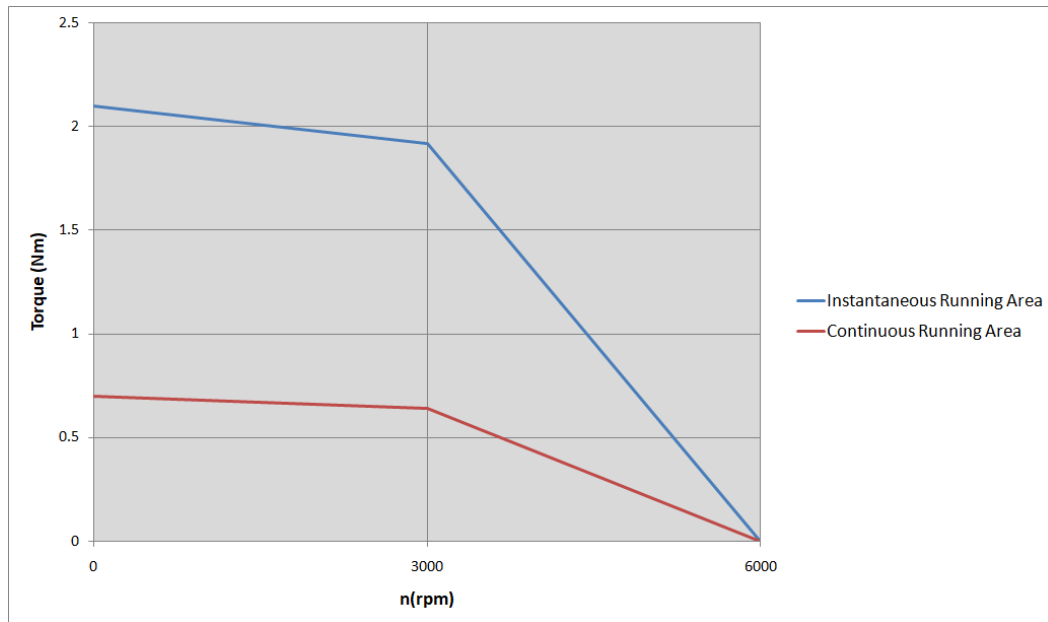


DIMENSIONS

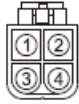
SMC60S-0020-30MAK-3DSU & SMC60S-0020-30MBK-3DSU



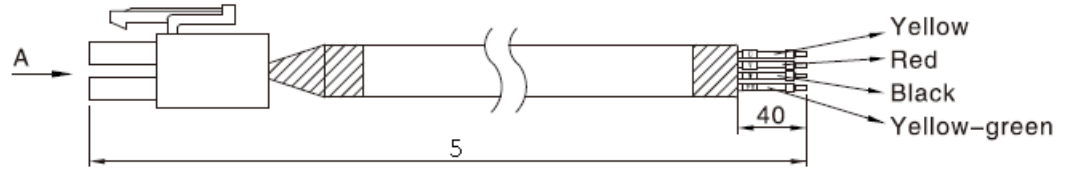
SMC60S-0020-30AAK-3LKH & SMC60S-0020-30ABK-3LKH



Motor Cable: MOT-005-05-KL-D for SMC60S-0020-30MAK-3DSU & SMC60S-0020-30MBK-3DSU

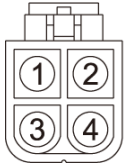


A
4PIN

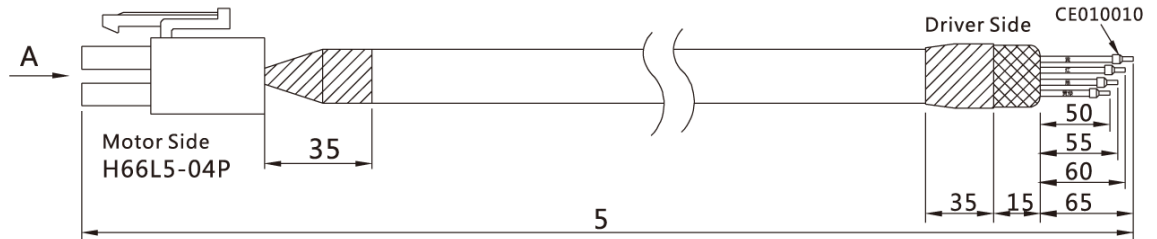


MOT-005-05-KL-D		
Cable Color	Signal	PIN #
Yellow	U	PIN 1
Red	V	PIN 2
Black	W	PIN 3
Yellow-green	PE	PIN 4

Motor Cable: MOT-005-05-KL for SMC60S-0020-30AAK-3LKH & SMC60S-0020-30ABK-3LKH

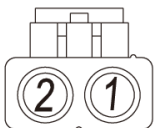


A
4PIN

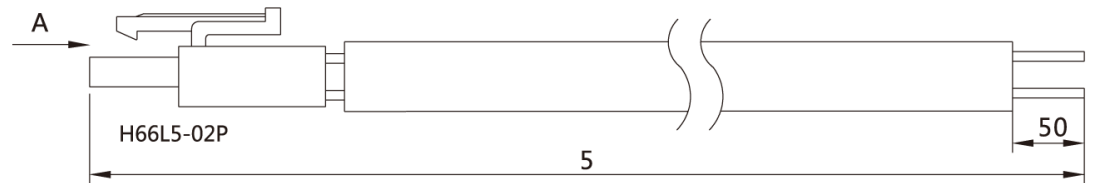


MOT-005-05-KL		
Cable Color	Signal	PIN #
Yellow	U	PIN 1
Red	V	PIN 2
Black	W	PIN 3
Yellow-green	PE	PIN 4

Brake Cable: BRA-05-KL for SMC60S-0020-30MBK-3DSU & SMC60S-0020-30ABK-3LKH

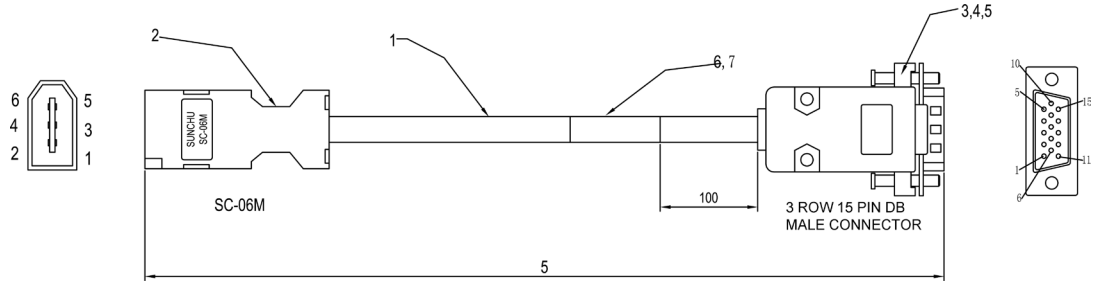


A
2PIN



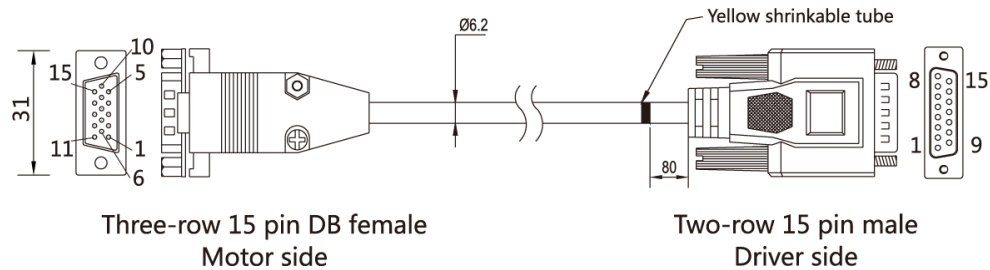
BRA-05-KL		
Cable Color	Signal	PIN #
Red	Brake +	PIN 1
Blue	Brake -	PIN 2

Encoder Cable: ENCHG-05-GU for SMC60S-0020-30MAK-3DSU & SMC60S-0020-30MBK-3DSU



ENCHG-05-GU				
Wiring Cable	Color	Signal 1	Signal 2	DB15
PIN 1	Red	VDD	VDD	PIN1
PIN 2	Black	GND	GND	PIN2
PIN 3	Brown	MA_P+	\	PIN10
PIN 4	Blue	MA_N-	\	PIN15
PIN 5	Yellow	SLO_P+	SD	PIN9
PIN 6	Green	SLO_N-	/SD	PIN14
SHELL	SHIELD	SHIELD	SHIELD	SHELL

Encoder Cable: ENCCA-05-KH for SMC60S-0020-30AAK-3LKH & SMC60S-0020-30ABK-3LKH



ENCCA-05-KH				
Three-Row Motor Side 15 PIN DB	Two-Row Driver Side 15 PIN DB	Signal	External Wire Color	Motor Wire Color
PIN 1	PIN 1	+5V	Red (thick)	Red
PIN 8	PIN 2	A	Brown	Blue-Black
PIN 7	PIN 3	B	Yellow	Green
PIN 6	PIN 4	Z	Green	Yellow
PIN 2	PIN 9	GND	Black (thick)	Black
PIN 13	PIN 10	/A	Brown-white	Blue
PIN 12	PIN 11	/B	Yellow-white	Green-black
PIN 11	PIN 12	/Z	Green-white	Yellow-black
Other PINs empty	Other PINs empty	n/a	n/a	n/a
Shell	Shell	Shield	Shield	Shield

Model	Motor Cable	Encoder Cable	Brake Cable
SMC60S-0020-30MAK-3DSU	MOT-005-05-KL-D	ENCHG-05-GU	-
SMC60S-0020-30MBK-3DSU			BRA-05-KL

Model	Motor Cable	Encoder Cable	Brake Cable
SMC60S-0020-30AAK-3LKH	MOT-005-05-KL	ENCCA-05-KH	-
SMC60S-0020-30ABK-3LKH			BRA-05-KL

Model	SMC60S-0020-30MAK-3DSU SMC60S-0020-30MBK-3DSU	
Length of Motor L(mm)	91 ± 1.5 121 ± 1.5 (with brake)	
Cooling Method	Totally Enclosed, Non-Ventilated	
Protection Level	IP65 for Body, Shaft Sealing IP54	
Environmental Conditions of Operation	Temperature	-20°C~40°C (Non-freezing)
	Humidity	Below 90% RH (Non-condensing)
	Ambient Environment	Away from active gas, combustible gas, oil drops and dust
	Altitude	Maximum Altitude 4000m, Rated Power at 1000m or Below, Above 1000m: Decreasing 1.5% per 100m Rise

Model	SMC60S-0020-30AAK-3LKH SMC60S-0020-30ABK-3LKH	
Length of Motor L(mm)	109 ± 1.5 150 ± 1.5 (with brake)	
Cooling Method	Totally Enclosed, Non-Ventilated	
Protection Level	IP65 for Body, Shaft Sealing IP54	
Environmental Conditions of Operation	Temperature	-20°C~40°C (Non-freezing)
	Humidity	Below 90% RH (Non-condensing)
	Ambient Environment	Away from active gas, combustible gas, oil drops and dust
	Altitude	Maximum Altitude 4000m, Rated Power at 1000m or Below, Above 1000m: Decreasing 1.5% per 100m Rise