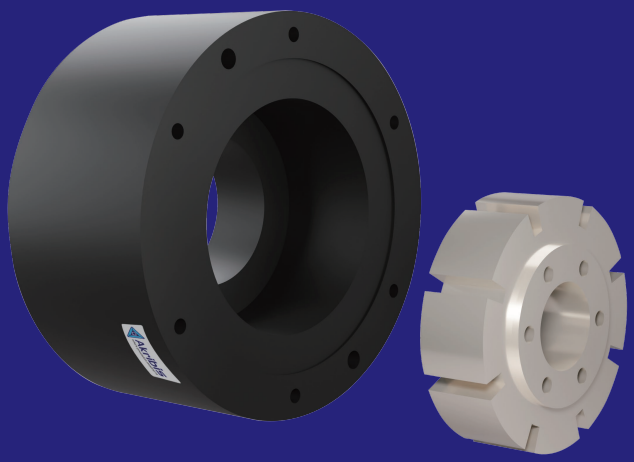


ACD-P SERIES

- No cogging torque
- Direct drive rotary motor with ironless technology
- Low speed ripple, suitable for inspection application

EN-26.3.1

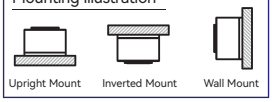
Akribis systems

ACD62-P-10

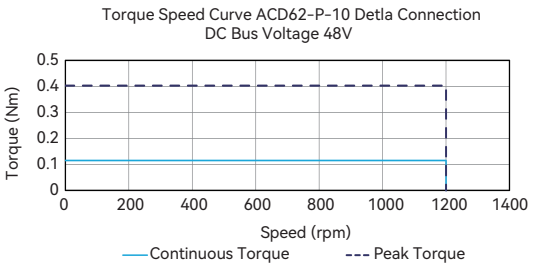
ACD62-P-10				
Performance Parameters	Symbol	Unit	D	Y
Continuous Torque @100°C ❶	T_{cn}	Nm	0.115	0.115
Peak Torque	T_{pk}	Nm	0.40	0.40
Torque Constant ±10%	K_t	Nm/Arms	0.024	0.042
Back EMF Constant ±10%	K_e	Vpeak/rpm	0.002	0.004
Motor Constant @25°C	K_m	Nm/Sqrt(W)	0.023	0.028
Resistance (L-L) @25°C ±10% ❷	R_{25}	Ω	0.73	1.51
Inductance (L-L) ±20% ❸	L	mH	0.073	0.195
Electrical Time Constant	τ_e	ms	0.10	0.13
Continuous Current @100°C ❶	I_{cn}	Arms	4.8	2.8
Peak Current	I_{pk}	Arms	16.8	9.7
Continuous Power Dissipation @100°C ❶	P_{cn}	W	32.6	22.4
Max. Coil Temperature	t_{max}	℃	100	100
Thermal Dissipation Constant ❶	K_{thn}	W/℃	0.435	0.298
Max. Bus Voltage	U_{bus}	Vdc	48.0	48.0
Pole Number	2P	-	8	8
Mechanical Parameters				
Overall Mass	m_n	kg	0.5	0.5
Rotor Inertia	J_r	kg·m²	9.714E-06	9.714E-06
Other Information				
Insulation Class		Class B (130°C)		
Protection Grade		IP00		
Compliance with Global Standards		RoHS, CE		
Ambient Temperature	Operation	0°C to 40°C (non-freezing)		
	Storage	-15°C to 70°C (non-freezing)		
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)		
	Storage	10%RH to 90%RH (non-condensing)		
Recommended Ambience		Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.		

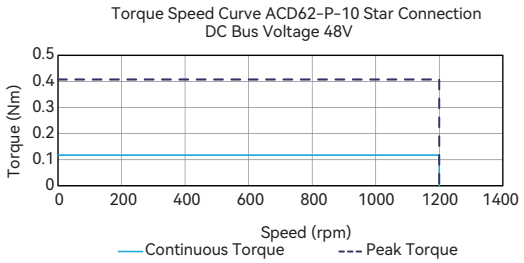
❶ Measurement is taken at ambient temperature 25℃. Value depends on the thermal environment.
❷ Resistance is measured by DC current with standard 0.5m cable.
❸ Inductance is measured by current frequency of 1 kHz.
The contents of datasheet are subject to change without prior notice.

Mounting Illustration



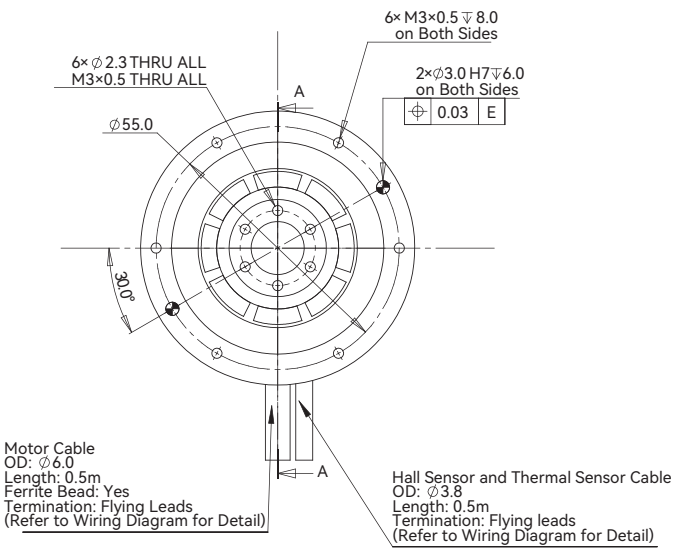
Torque-Speed Curve

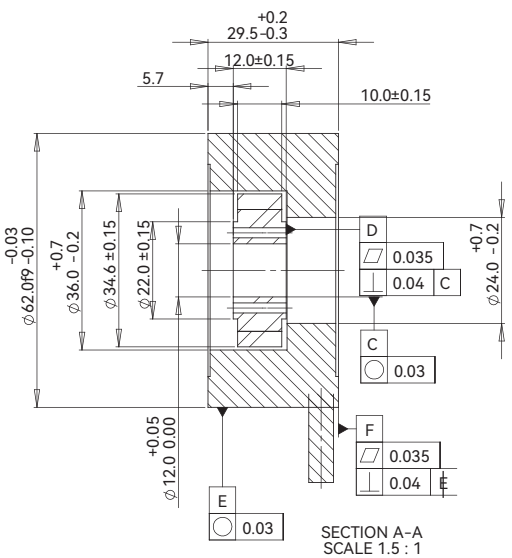




Note:
The maximum speed shown does not take into account bearing and encoder selection, and other factor that could restrict the speed limit.

Dimension





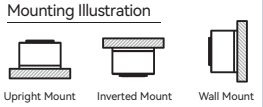
Note:
❶ User to ensure the concentricity of stator and rotor to be within 0.15mm when mounted;
❷ User to ensure flatness of mounting surface within 0.015/300mm;
❸ User to ensure perpendicularity of rotor inner bore relative to datum F within 0.1mm when mounted;
❹ The cable diameter tolerance +0.3, and cable length tolerance +60.0

ACD62-P-30

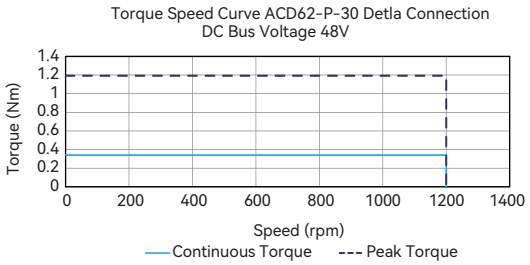
ACD62-P-30				
Performance Parameters	Symbol	Unit	D	Y
Continuous Torque @100°C ❶	T_{cn}	Nm	0.341	0.341
Peak Torque	T_{pk}	Nm	1.19	1.19
Torque Constant ±10%	K_t	Nm/Arms	0.071	0.123
Back EMF Constant ±10%	K_e	Vpeak/rpm	0.006	0.011
Motor Constant @25°C	K_m	Nm/Sqrt(W)	0.058	0.068
Resistance (L-L) @25°C ±10% ❷	R_{25}	Ω	1.01	2.21
Inductance (L-L) ±20% ❸	L	mH	0.144	0.316
Electrical Time Constant	τ_e	ms	0.14	0.14
Continuous Current @100°C ❶	I_{cn}	Arms	4.8	2.8
Peak Current	I_{pk}	Arms	16.8	9.7
Continuous Power Dissipation @100°C ❶	P_{cn}	W	44.8	32.7
Max. Coil Temperature	t_{max}	°C	100	100
Thermal Dissipation Constant ❶	K_{thn}	W/°C	0.597	0.436
Max. Bus Voltage	U_{bus}	Vdc	48.0	48.0
Pole Number	2P	-	8	8
Mechanical Parameters				
Overall Mass	m_n	kg	0.8	0.8
Rotor Inertia	J_r	kg·m²	2.883E-05	2.883E-05
Other Information				
Insulation Class		Class B (130°C)		
Protection Grade		IP00		
Compliance with Global Standards		RoHS, CE		
Ambient Temperature	Operation	0°C to 40°C (non-freezing)		
	Storage	-15°C to 70°C (non-freezing)		
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)		
	Storage	10%RH to 90%RH (non-condensing)		
Recommended Ambience		Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.		

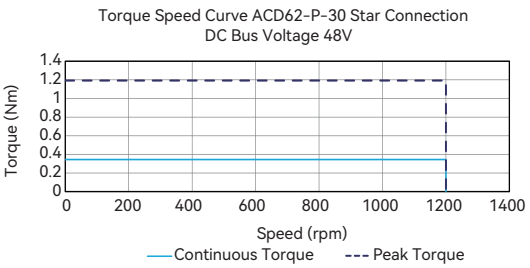
❶ Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
❷ Resistance is measured by DC current with standard 0.5m cable.
❸ Inductance is measured by current frequency of 1 kHz.
The contents of datasheet are subject to change without prior notice.

Mounting Illustration



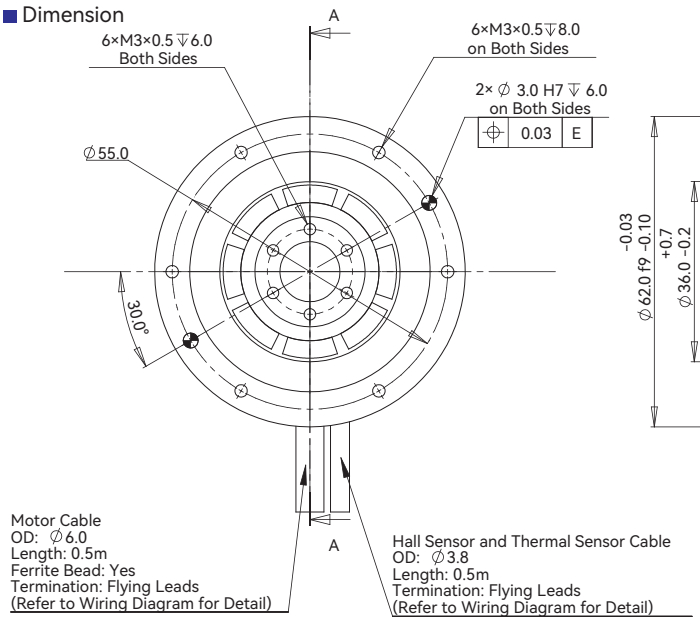
Torque-Speed Curve

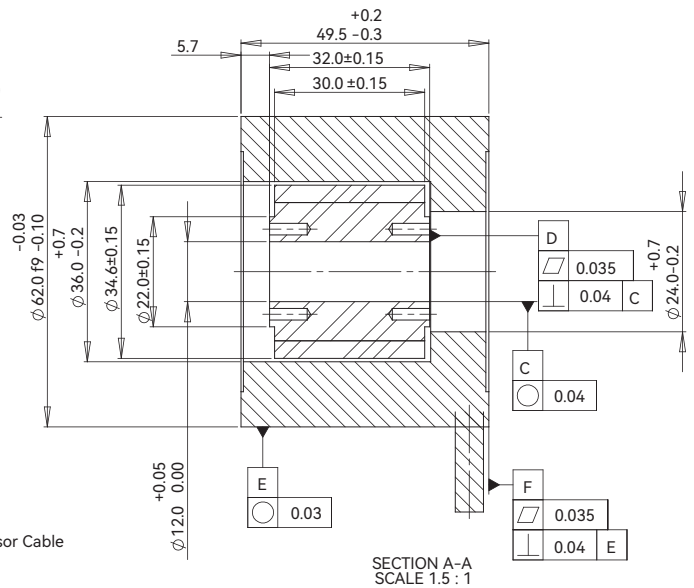




Note:
The maximum speed shown does not take into account bearing and encoder selection, and other factor that could restrict the speed limit.

Dimension





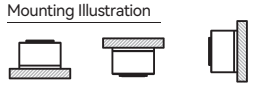
Note:
❶ User to ensure the concentricity of stator and rotor to be within 0.15mm when mounted;
❷ User to ensure flatness of mounting surface within 0.015/300mm;
❸ User to ensure perpendicularity of rotor inner bore relative to datum F within 0.1mm when mounted;
❹ The cable diameter tolerance +0.3, and cable length tolerance +60.0

ACD85-P-15

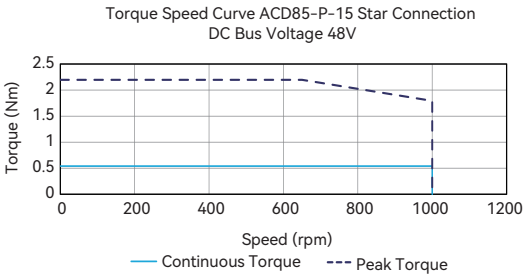
ACD85-P-15			
Performance Parameters	Symbol	Unit	Y
Continuous Torque @100°C ❶	T_{cn}	Nm	0.54
Peak Torque	T_{pk}	Nm	2.19
Torque Constant ±10%	K_t	Nm/Arms	0.18
Back EMF Constant ±10%	K_e	Vpeak/rpm	0.015
Motor Constant @25°C	K_m	Nm/Sqrt(W)	0.106
Resistance (L-L) @25°C ±10% ❷	R_{25}	Ω	1.92
Inductance (L-L) ±20% ❸	L	mH	0.54
Electrical Time Constant	τ_e	ms	0.28
Continuous Current @100°C ❶	I_{cn}	Arms	3.8
Peak Current	I_{pk}	Arms	12.2
Continuous Power Dissipation @100°C ❶	P_{cn}	W	53.6
Max. Coil Temperature	t_{max}	℃	100
Thermal Dissipation Constant ❶	K_{thn}	W/℃	0.715
Max. Bus Voltage	U_{bus}	Vdc	48.0
Pole Number	2_P	-	8
Mechanical Parameters			
Overall Mass	m_n	kg	0.47
Rotor Inertia	J_r	kg·m²	8.144E-05
Other Information			
Insulation Class		Class B (130°C)	
Protection Grade		IP01	
Compliance with Global Standards		RoHS, CE	
Ambient Temperature	Operation	0°C to 40°C (non-freezing)	
	Storage	-15°C to 70°C (non-freezing)	
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)	
	Storage	10%RH to 90%RH (non-condensing)	
Recommended Ambience		Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.	

❶ Measurement is taken at ambient temperature 25℃. Value depends on the thermal environment.
❷ Resistance is measured by DC current with standard 0.2m cable.
❸ Inductance is measured by current frequency of 1 kHz.
The contents of datasheet are subject to change without prior notice.

Mounting Illustration

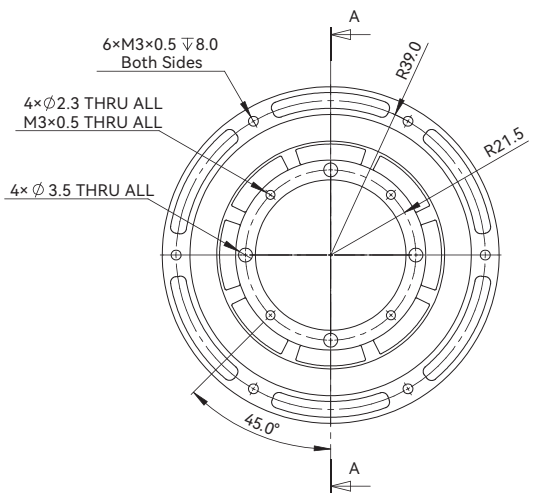


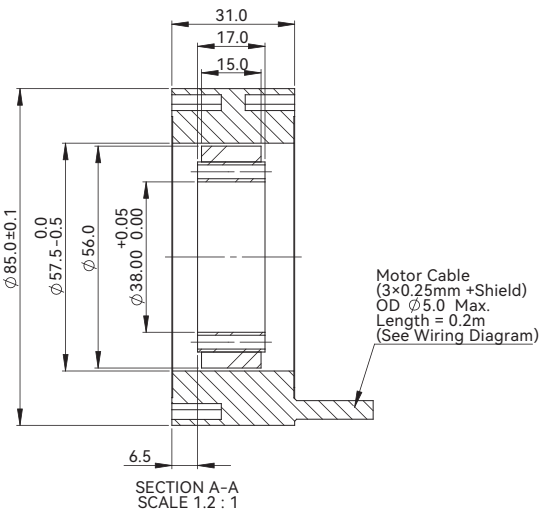
Torque-Speed Curve



Note:
The maximum speed shown does not take into account bearing and encoder selection, and other factor that could restrict the speed limit.

Dimension





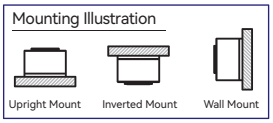
Note:
❶ Cable diameter within +/-0.3 tolerance, cable length within +/-5.0 tolerance.

ACD120-P-20

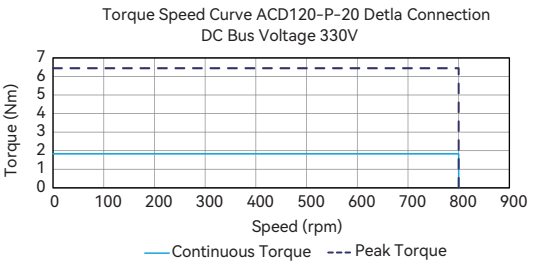
ACD120-P-20				
Performance Parameters	Symbol	Unit	D	Y
Continuous Torque @100°C ❶	T_{cn}	Nm	1.85	1.85
Peak Torque	T_{pk}	Nm	6.46	6.46
Torque Constant ±10%	K_t	Nm/Arms	0.36	0.63
Back EMF Constant ±10%	K_e	Vpeak/rpm	0.031	0.054
Motor Constant @25°C	K_m	Nm/Sqrt(W)	0.220	0.238
Resistance (L-L) @25°C ±10% ❷	R_{25}	Ω	1.80	4.64
Inductance (L-L) ±20% ❸	L	mH	0.628	1.900
Electrical Time Constant	τ_e	ms	0.35	0.41
Continuous Current @100°C ❶	I_{cn}	Arms	5.1	2.9
Peak Current	I_{pk}	Arms	17.9	10.3
Continuous Power Dissipation @100°C ❶	P_{cn}	W	90.4	77.7
Max. Coil Temperature	t_{max}	℃	100	100
Thermal Dissipation Constant ❶	K_{thn}	W/℃	1.205	1.036
Max. Bus Voltage	U_{bus}	Vdc	330.0	330.0
Pole Number	2p	-	12	12
Mechanical Parameters				
Overall Mass	m_n	kg	1.8	1.8
Rotor Inertia	J_r	kg·m²	5.950E-04	5.950E-04
Other Information				
Insulation Class		Class B (130°C)		
Protection Grade		IP00		
Compliance with Global Standards		RoHS, CE		
Ambient Temperature	Operation	0°C to 40°C (non-freezing)		
	Storage	-15°C to 70°C (non-freezing)		
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)		
	Storage	10%RH to 90%RH (non-condensing)		
Recommended Ambience		Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.		

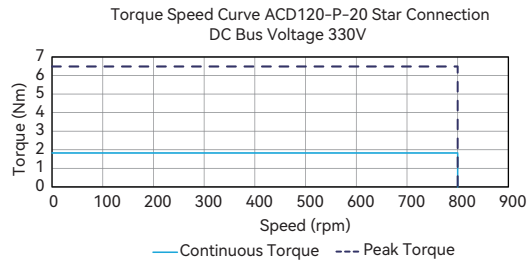
❶ Measurement is taken at ambient temperature 25℃. Value depends on the thermal environment.
❷ Resistance is measured by DC current with standard 0.5m cable.
❸ Inductance is measured by current frequency of 1 kHz.
The contents of datasheet are subject to change without prior notice.

Mounting Illustration



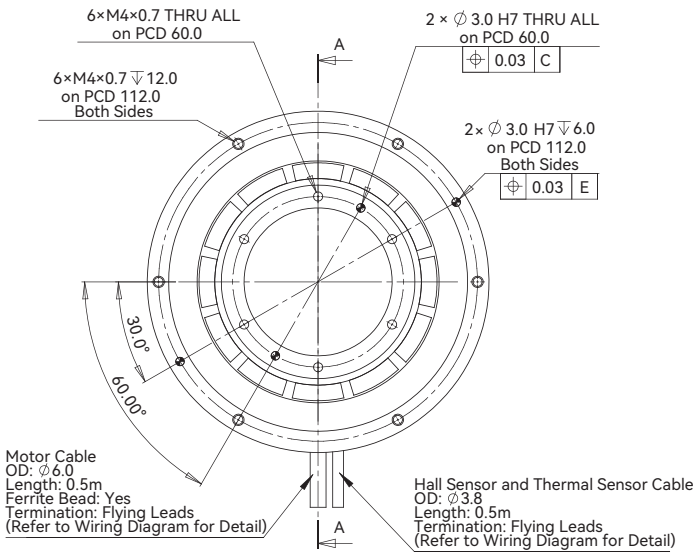
Torque-Speed Curve

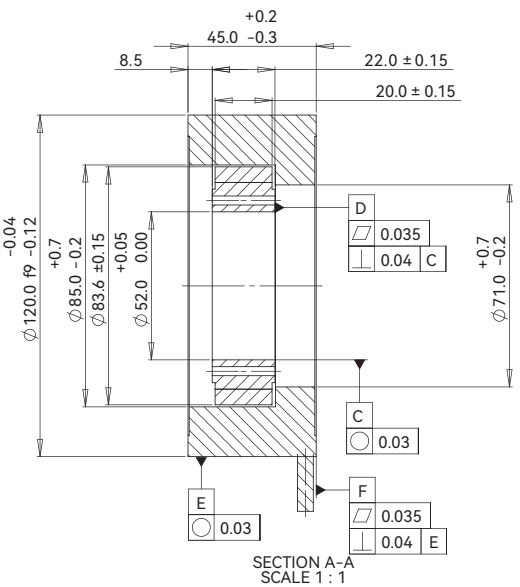




Note:
The maximum speed shown does not take into account bearing and encoder selection, and other factor that could restrict the speed limit.

Dimension





Note:
❶ User to ensure the concentricity of stator and rotor to be within 0.15mm when mounted;
❷ User to ensure flatness of mounting surface within 0.015/300mm;
❸ User to ensure perpendicularity of rotor inner bore relative to datum F within 0.1mm when mounted;
❹ The cable diameter tolerance +0.3, and cable length tolerance +60.0

Part Numbering

ACD62-P-10-D-K-NH-0.5-FB

- Motor Model: ACD62-P-10 / ACD62-P-30
- Winding Code: D = Delta / Y = Wye
- Thermal Sensor: K = PT100 (RTD)
- Power Cable: FB[3] / 9W4M[4]
- Cable Length (m): 0.5
- Sensor Cable: NH[1] / H9D[2]

ACD85-P-15-Y-NH-0.2-NFB

- Motor Model: ACD85-P-15
- Winding Code: Y = Wye
- Sensor Cable: NH[1]
- Power Cable: NFB[5]
- Cable Length (m): 0.2

ACD120-P-20-Y-J-NH-0.5-FB

- Motor Model: ACD120-P-20
- Winding Code: D = Delta / Y = Wye
- Thermal Sensor: J = Thermostat / K = PT100 (RTD)
- Power Cable: FB[3] / 9W4M[4]
- Cable Length (m): 0.5
- Sensor Cable: NH[1] / H9D[2]

1. NH = Without Built-in Hall Sensor C/W Flying Leads
2. H9D = With Built-in Hall Sensor C/W 9-Pins D-Sub Connector
3. FB = With Ferrite Bead C/W Flying Leads
4. 9W4M = Without Ferrite Bead C/W D-Sub 9W4 Male Connector
5. NFB = Without Ferrite Bead C/W Flying Leads

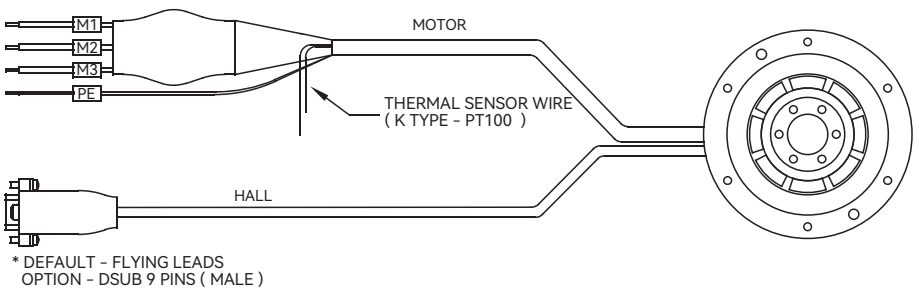
Motor Cable Connection

MOTOR CABLE

PIN	DESCRIPTION	COLOR
-	M1	YELLOW / GREY
-	M2	BLUE / ORANGE
-	M3	RED / GREEN
-	PE	YELLOW / GREEN

HALL CABLE

PIN	DESCRIPTION	COLOR
1	HA	GREY
2	HB	YELLOW
3	HC	BLUE
4	5VDC	RED
5	0VDC	BLACK



* DEFAULT - FLYING LEADS
OPTION - DSUB 9 PINS (MALE)