

AER SERIES



Outer rotor PMSM



Water cooling



Low speed high torque

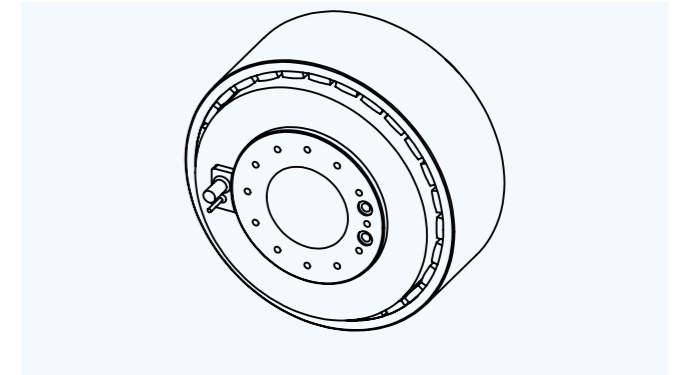


Suitable for CNC rotary table

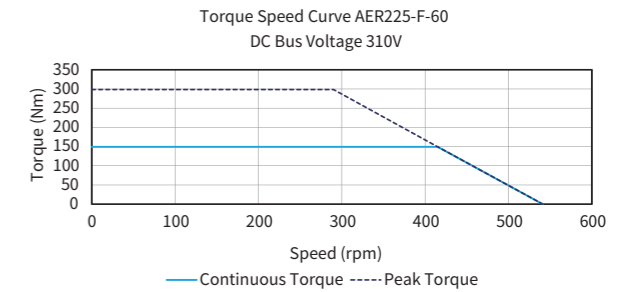
AER225-F-60

Performance Parameters	Symbol	Unit	AER225-F-60
Continuous Torque (WC) @100°C	T _{cw}	Nm	149.5
Peak Torque	T _{pk}	Nm	299.0
Torque Constant ±10%	K _t	Nm/Arms	6.5
Back EMF Constant ±10%	K _e	Vpeak/rpm	0.56
Motor Constant @25°C	K _m	Nm/Sqrt(W)	5.7
Resistance (L-L) 25°C ±10%	R ₂₅	Ω	0.9
Inductance (L-L) ±20%	L	mH	6.7
Electrical Time Constant	τ _e	ms	7.8
Continuous Current (WC) @100°C	I _{cw}	Arms	23
Peak Current	I _{pk}	Arms	50.6
Continuous Power Dissipation (WC) @100°C	P _{cw}	W	883.0
Max. Coil Temperature	t _{max}	°C	100
Thermal Dissipation Constant (WC)	K _{thw}	W/°C	11.8
Max. Bus Voltage	U _{bus}	Vdc	600
Pole Number	2p	-	28
Max.Speed	Ω _{max}	rpm	400
Mechanical Parameters			
Overall Mass (WC)	m _w	kg	18.5
Rotor Inertia	J _r	kg·m ²	8.20E-02
Cooling Parameters			
Water Pressure Drop	ΔP _w	bar	5
Water Flow Rate	Q _w	L/min	5
Inlet Water Temperature	t _w	°C	20
Other Information			
Insulation Class	Class A (105°C)		
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.		

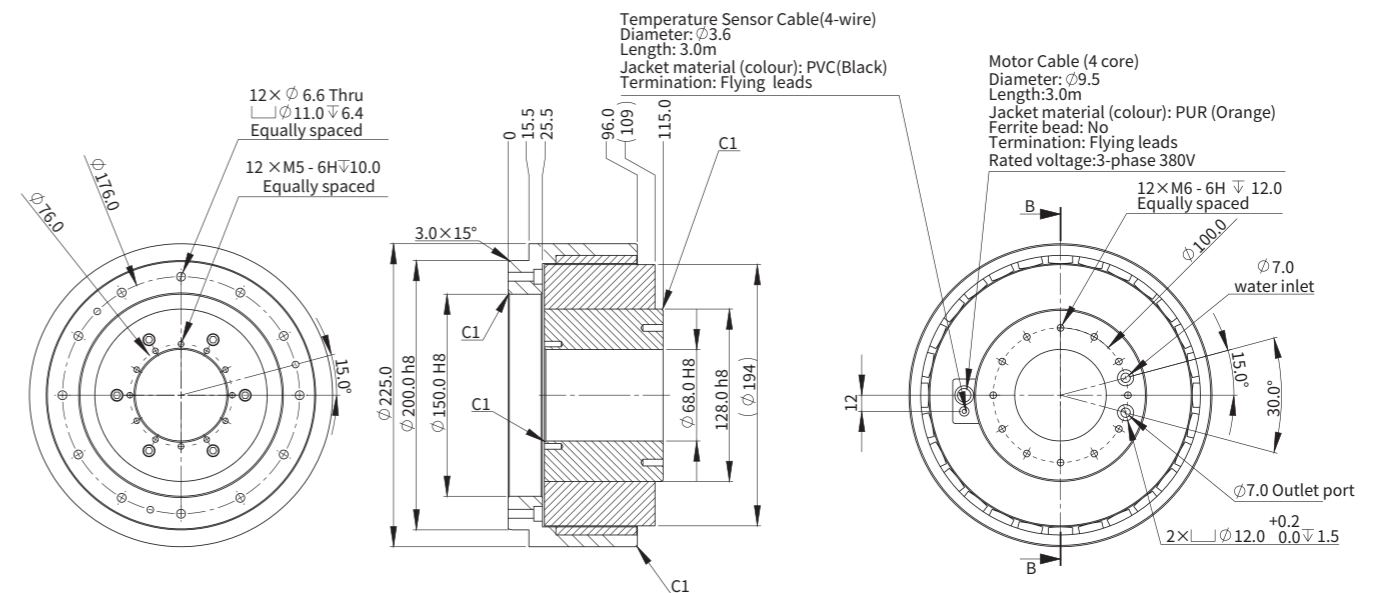
- ① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: WC-Water Cooling.
 - ② Resistance is measured by DC current with standard 3 m cable.
 - ③ Inductance is measured by current frequency of 1 kHz.
 - ④ The value is based on ABI optical SIN/COS encoder (4096x interpolation) under max. bus voltage.
- The contents of datasheet are subject to change without prior notice.



Torque-Speed Curve



Dimension



AER225-F-160

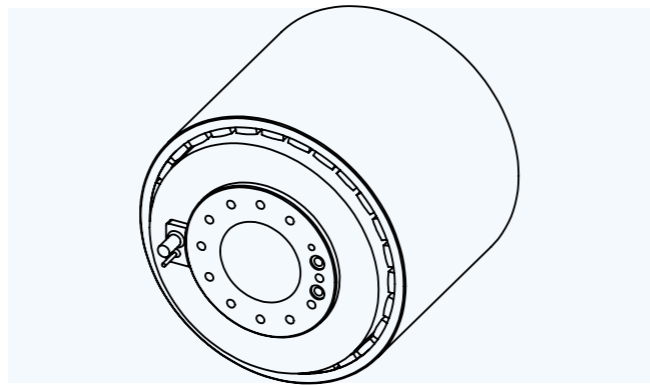
Performance Parameters	Symbol	Unit	AER225-F-160
Continuous Torque (WC) @100°C	T _{cw}	Nm	389.4
Peak Torque	T _{pk}	Nm	778.8
Torque Constant ±10%	K _t	Nm/Arms	17.7
Back EMF Constant ±10%	K _e	Vpeak/rpm	1.51
Motor Constant @25°C	K _m	Nm/Sqrt(W)	10.9
Resistance (L-L) 25°C ±10%	R ₂₅	Ω	1.8
Inductance (L-L) ±20%	L	mH	15.9
Electrical Time Constant	τ _e	ms	9.0
Continuous Current (WC) @100°C	I _{cw}	Arms	22
Peak Current	I _{pk}	Arms	48.4
Continuous Power Dissipation (WC) @100°C	P _{cw}	W	1662.8
Max. Coil Temperature	t _{max}	°C	100
Thermal Dissipation Constant (WC)	K _{thw}	W/°C	22.2
Max. Bus Voltage	U _{bus}	Vdc	600
Pole Number	2p	-	28
Max.Speed	Ω _{max}	rpm	250

Mechanical Parameters			
Overall Mass (WC)	m _w	kg	37
Rotor Inertia	J _r	kg·m ²	1.50E-01

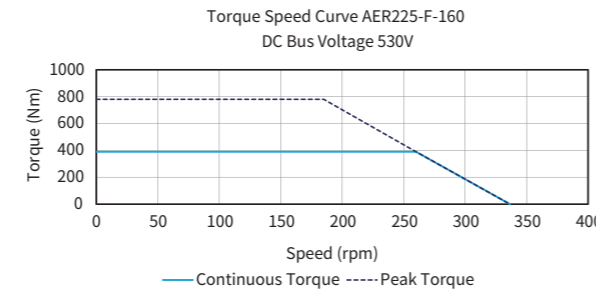
Cooling Parameters			
Water Pressure Drop	ΔP _w	bar	5
Water Flow Rate	Q _w	L/min	7
Inlet Water Temperature	t _w	°C	20

Other Information			
Insulation Class		Class A (105°C)	
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.	

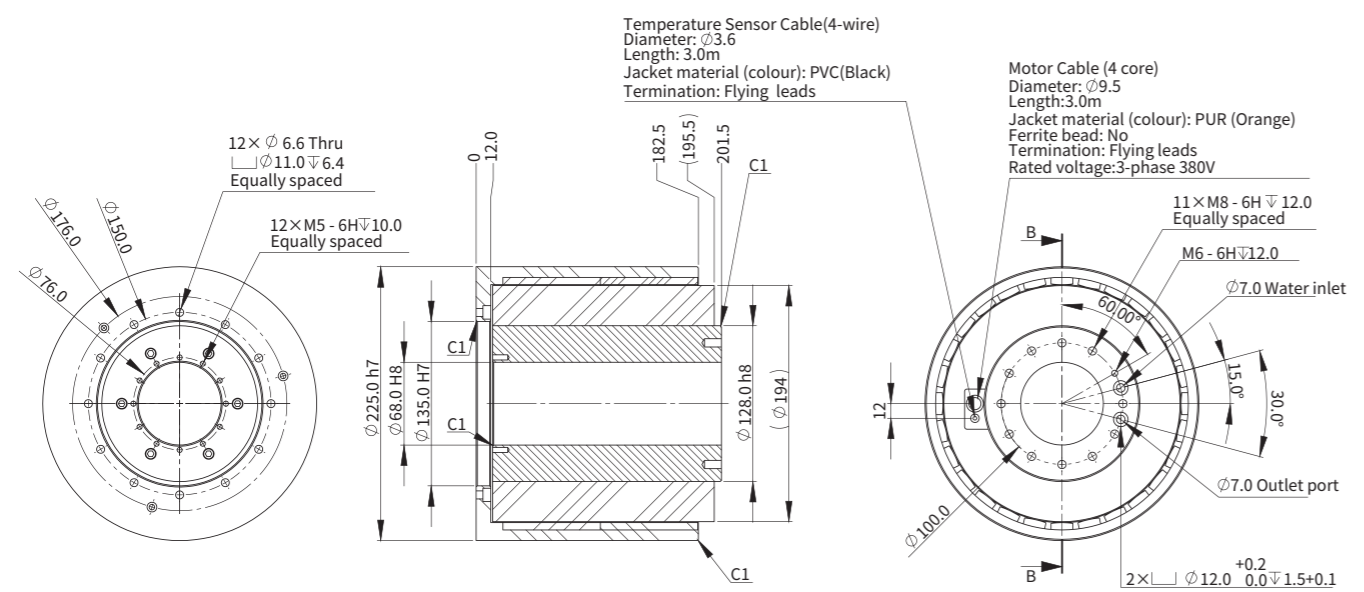
Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
Abbreviations: WC-Water Cooling.
Resistance is measured by DC current with standard 3 m cable.
Inductance is measured by current frequency of 1 kHz.
The value is based on ABI optical SIN/COS encoder (4096x interpolation) under max. bus voltage.
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Torque-Speed Curve



Dimension



AER285-F-180

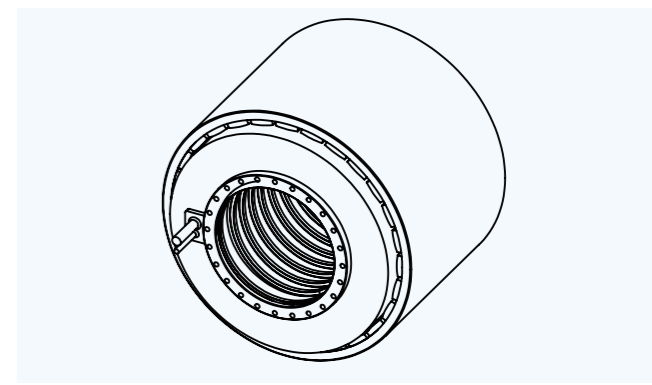
Performance Parameters	Symbol	Unit	AER285-F-180
Continuous Torque (WC) @100°C	T _{cw}	Nm	613.8
Peak Torque	T _{pk}	Nm	1227.6
Torque Constant ±10%	K _t	Nm/Arms	26.1
Back EMF Constant ±10%	K _e	Vpeak/rpm	2.23
Motor Constant @25°C	K _m	Nm/Sqrt(W)	17.6
Resistance (L-L) 25°C ±10%	R ₂₅	Ω	1.47
Inductance (L-L) ±20%	L	mH	22.3
Electrical Time Constant	τ _e	ms	15.2
Continuous Current (WC) @100°C	I _{cw}	Arms	23.5
Peak Current	I _{pk}	Arms	50.1
Continuous Power Dissipation (WC) @100°C	P _{cw}	W	1575.7
Max. Coil Temperature	t _{max}	°C	100
Thermal Dissipation Constant (WC)	K _{thw}	W/°C	21.0
Max. Bus Voltage	U _{bus}	Vdc	600
Pole Number	2p	-	28
Max.Speed	Ω _{max}	rpm	150

Mechanical Parameters			
Overall Mass (WC)	m _w	kg	68
Rotor Inertia	J _r	kg·m ²	3.90E-01

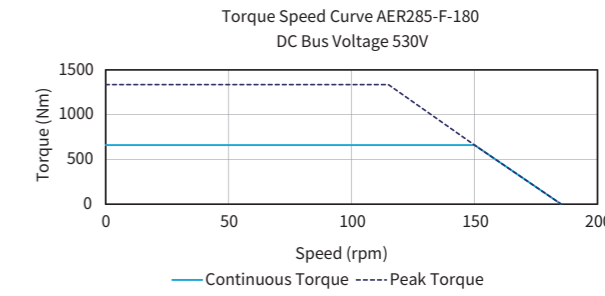
Cooling Parameters			
Water Pressure Drop	ΔP _w	bar	5
Water Flow Rate	Q _w	L/min	7
Inlet Water Temperature	t _w	°C	20

Other Information			
Insulation Class		Class A (105°C)	
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.	

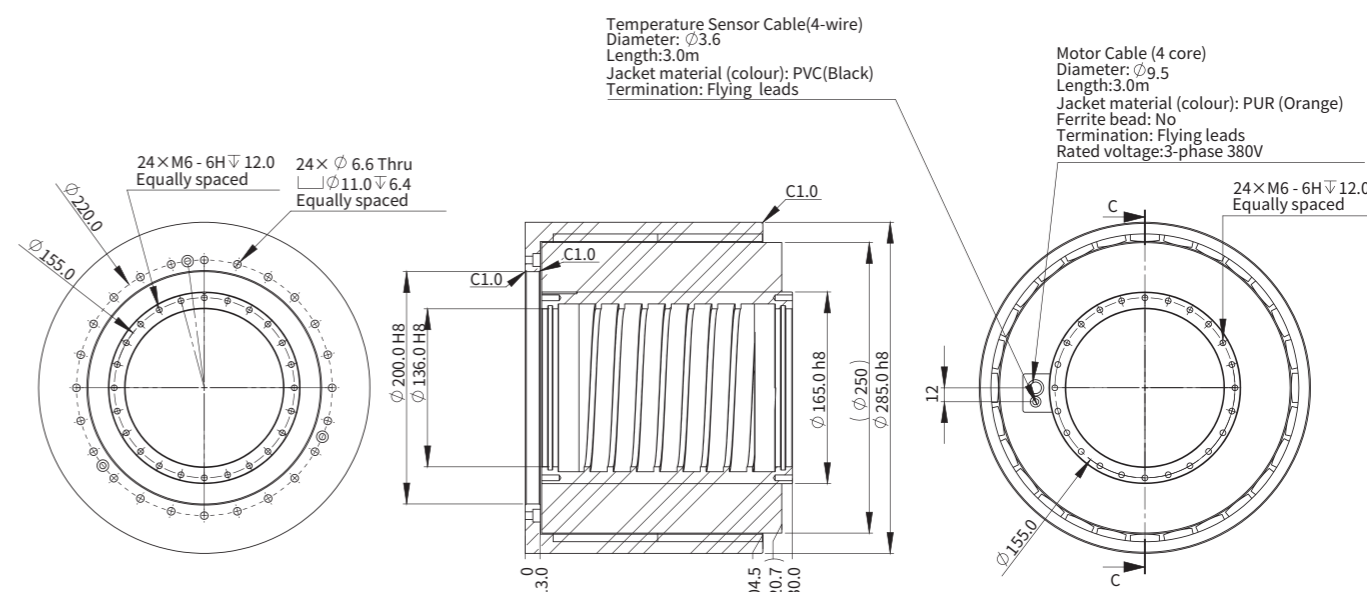
Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
Abbreviations: WC-Water Cooling.
Resistance is measured by DC current with standard 3 m cable.
Inductance is measured by current frequency of 1 kHz.
The value is based on ABI optical SIN/COS encoder (4096x interpolation) under max. bus voltage.
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Torque-Speed Curve



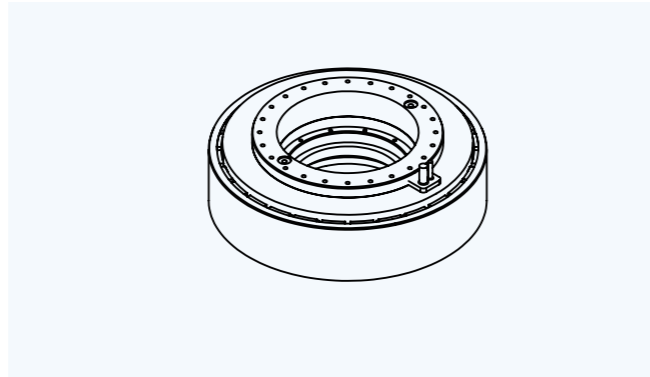
Dimension



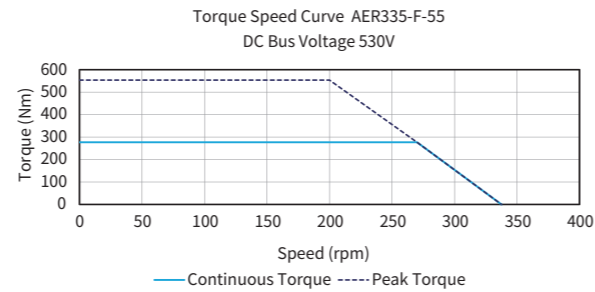
AER335-F-55

Performance Parameters		Symbol	Unit	AER335-F-55
Continuous Torque (WC) @100°C	T_{cw}	Nm		277.1
Peak Torque	T_{pk}	Nm		554.2
Torque Constant $\pm 10\%$	K_t	Nm/Arms		17.0
Back EMF Constant $\pm 10\%$	K_e	Vpeak/rpm		1.45
Motor Constant @25°C	K_m	Nm/Sqrt(W)		9.3
Resistance (L-L) 25°C $\pm 10\%$	R_{25}	Ω		2.22
Inductance (L-L) $\pm 20\%$	L	mH		22.0
Electrical Time Constant	τ_e	ms		9.9
Continuous Current (WC) @100°C	I_{cw}	Arms		16.3
Peak Current	I_{pk}	Arms		36.7
Continuous Power Dissipation (WC) @100°C	P_{cw}	W		1144.9
Max. Coil Temperature	t_{max}	°C		100
Thermal Dissipation Constant (WC)	K_{thw}	W/°C		15.3
Max. Bus Voltage	U_{bus}	Vdc		600
Pole Number	2p	-		28
Max.Speed	Ω_{max}	rpm		250
Mechanical Parameters				
Overall Mass (WC)	m_w	kg		40
Rotor Inertia	J_r	kg·m ²		1.50E-01
Cooling Parameters				
Water Pressure Drop	ΔP_w	bar		5
Water Flow Rate	Q_w	L/min		6
Inlet Water Temperature	t_w	°C		20
Other Information				
Insulation Class	Class A (105°C)			
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.			

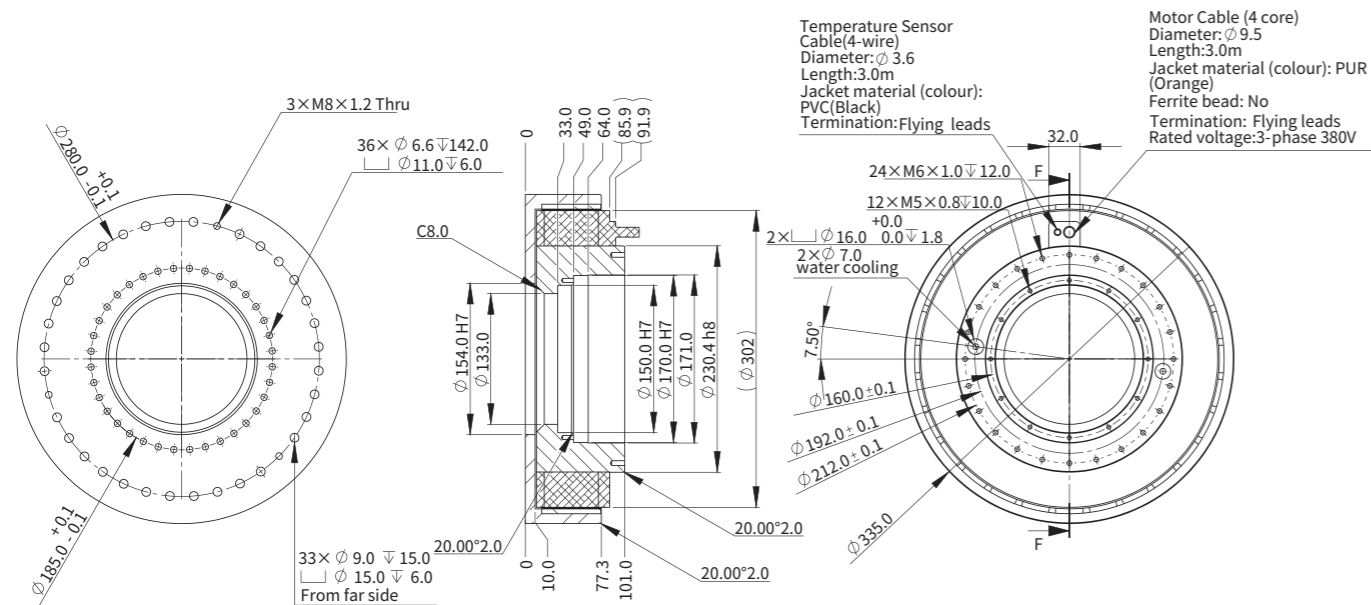
Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
Abbreviations: WC-Water Cooling.
Resistance is measured by DC current with standard 3 m cable.
Inductance is measured by current frequency of 1 kHz.
The value is based on ABI optical SIN/COS encoder (4096x interpolation) under max. bus voltage.
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Torque-Speed Curve



Dimension



Part Numbering

