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ADR-F series



Small volume and compact design



Direct drive and brushless motor



High torque density



Low cogging torque



Optional for low speed and high speed windings

ADR-F

Specifications

Performance Parameters	Unit	ADR45-F				ADR60-F			
		S	P	S	P	S	P	S	P
Series or Parallel	S/P	S	P	S	P	S	P	S	P
Continuous Torque@100°C	Nm	0.05	0.05	0.10	0.10	0.33	0.33	0.65	0.65
Peak Torque	Nm	0.15	0.15	0.31	0.31	0.98	0.98	1.95	1.95
Cogging Torque(pk to pk)	Nm	4.16E-04		8.32E-04		2.24E-03		4.48E-03	
Torque Constant	Nm/Arms	0.09	0.04	0.17	0.09	0.11	0.05	0.21	0.11
Back Emf Constant	Vpk/ krpm	7.32	3.66	14.65	7.32	8.97	4.49	17.95	8.97
Motor Constant	Nm/√ watt	0.04	0.04	0.06	0.06	0.11	0.11	0.16	0.16
Resistance (Terminal to Terminal) ^①	ohm	3.65	0.91	5.40	1.35	0.65	0.16	1.10	0.28
Inductance (Terminal to Terminal)	mH	0.79	0.20	1.30	0.33	0.47	0.12	0.81	0.20
Electric Time Constant	ms	0.22		0.24		0.72		0.74	
Continuous Current@100°C ^②	Arms	0.60	1.20	0.60	1.20	3.10	6.20	3.10	6.20
Peak Current	Arms	1.80	3.60	1.80	3.60	9.30	18.60	9.30	18.60
Continuous Power Dissipation @100°C	W	2.55	2.55	3.77	3.77	12.12	12.12	20.52	20.52
Max.Coil Temperature	°C	100							
Thermal Dissipation Constant@100°C	W/°C	0.03		0.05		0.16		0.27	
Max.Bus Voltage	Vdc	48							
Pole Number	-	16				14			
Overall Mass	g	79		112		219		346	
Rotor Inertia	kg·m ²	2.60E-06		5.20E-06		1.02E-05		2.03E-05	
Max.speed @24Vdc or 48Vdc ^③	rpm	1500	3000	1500	3000	1500	3000	1500	3000

Mechanical Parameters	Unit	ADR45-F		ADR60-F	
Stator OD	mm	45.0		60.0	
Rotor ID	mm	25.0		30.0	
Stator Lam Stack Height	mm	5.0	10.0	10.0	20.0
Stator Total Height	mm	14.0	19.0	22.0	32.0

① In the measurement of line resistance, the ambient temperature is 25°C.

② In the measurement of continuous current, the ambient temperature is 25°C.

③ The value varies with different bus voltage and encoder and is an absolute limit that has to be respected in any working conditions.

Note: All parameters vary in the range of ± 10% except dimensions.

ADR-F

Specifications

Performance Parameters	Unit	ADR75-F				ADR90-F			
		S	P	S	P	S	P	S	P
Series or Parallel	S/P	S	P	S	P	S	P	S	P
Continuous Torque@100°C	Nm	0.80	0.80	1.61	1.61	1.88	1.88	3.75	3.75
Peak Torque	Nm	2.41	2.41	4.82	4.82	5.63	5.63	11.26	11.26
Cogging Torque(pk to pk)	Nm	3.00E-03		6.00E-03		5.40E-03		1.10E-02	
Torque Constant	Nm/Arms	0.12	0.06	0.24	0.12	0.28	0.14	0.56	0.28
Back Emf Constant	Vpk/krpm	10.26	5.13	20.51	10.26	23.93	11.97	47.86	23.93
Motor Constant	Nm/√watt	0.20	0.20	0.32	0.32	0.38	0.38	0.61	0.61
Resistance (Terminal to Terminal) ^①	ohm	0.25	0.06	0.38	0.10	0.37	0.09	0.57	0.14
Inductance (Terminal to Terminal)	mH	0.40	0.10	0.70	0.18	0.80	0.20	1.45	0.36
Electric Time Constant	ms	1.60		1.84		2.16		2.54	
Continuous Current@100°C ^②	Arms	6.70	13.40	6.70	13.40	6.70	13.40	6.70	13.40
Peak Current	Arms	20.10	40.20	20.10	40.20	20.10	40.20	20.10	40.20
Continuous Power Dissipation @100°C	W	21.78	21.78	33.11	33.11	32.24	32.24	49.66	49.66
Max.Coil Temperature	°C	100							
Thermal Dissipation Constant@100°C	W/°C	0.29		0.44		0.43		0.66	
Max.Bus Voltage	Vdc	48							
Pole Number	-	14				14			
Overall Mass	g	458		797		852		1487	
Rotor Inertia	kg·m ²	3.25E-05		6.47E-05		1.03E-04		2.04E-04	
Max.speed @24Vdc or 48Vdc ^③	rpm	1500	3000	1500	3000	1500	3000	750	1500

Mechanical Parameters	Unit	ADR75-F		ADR90-F	
Stator OD	mm	75.0		90.0	
Rotor ID	mm	35.0		40.0	
Stator Lam Stack Height	mm	15.0	30.0	20.0	40.0
Stator Total Height	mm	31.0	46.0	38.5	58.5

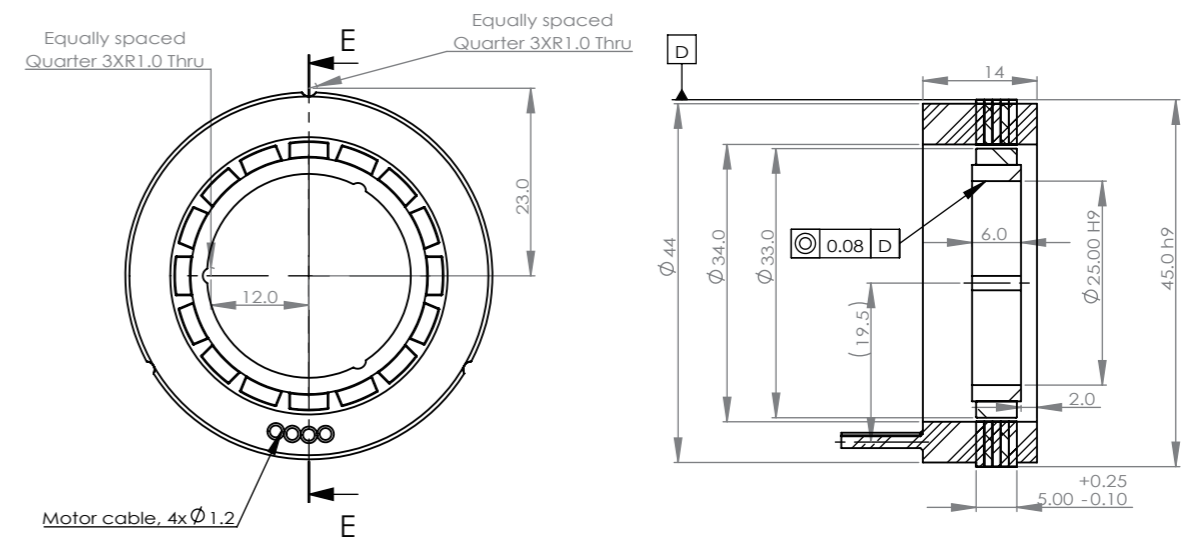
- ① In the measurement of line resistance, the ambient temperature is 25°C.
- ② In the measurement of continuous current, the ambient temperature is 25°C.
- ③ The value varies with different bus voltage and encoder and is an absolute limit that has to be respected in any working conditions.

Note: All parameters vary in the range of ± 10% except dimensions.

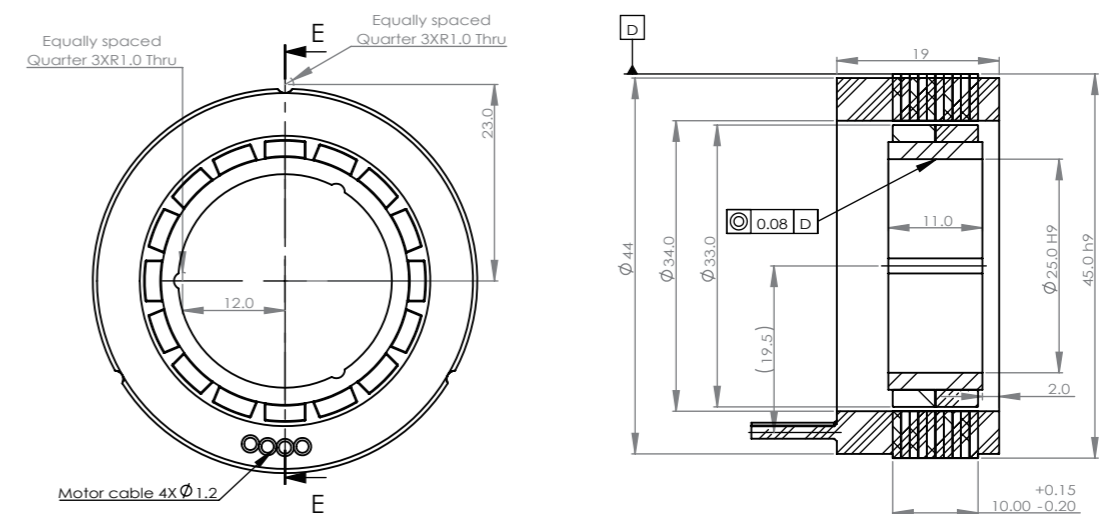
ADR-F

Dimensions

ADR45-F-5



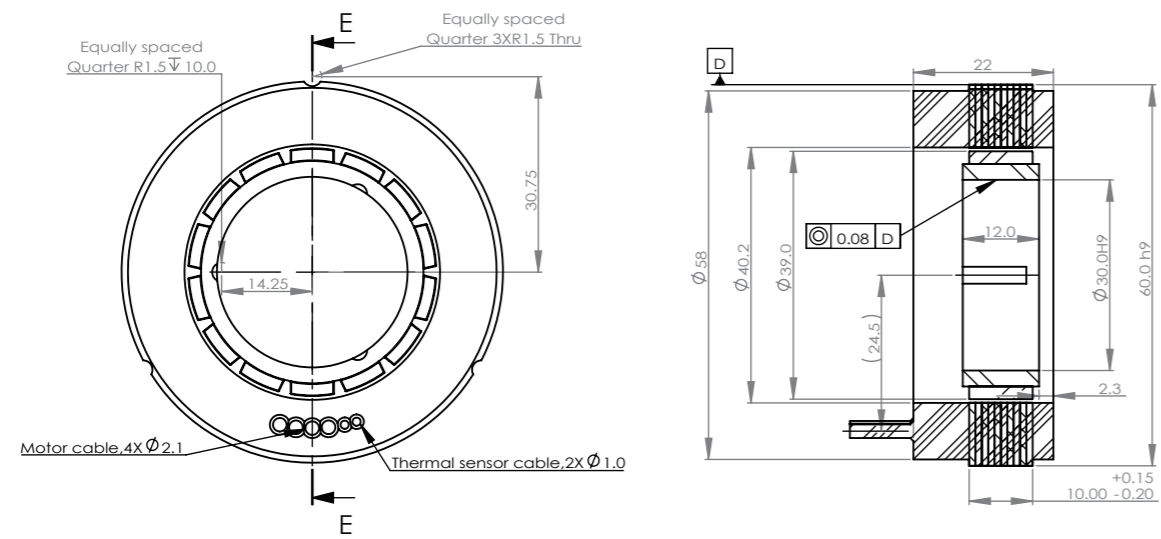
ADR45-F-10



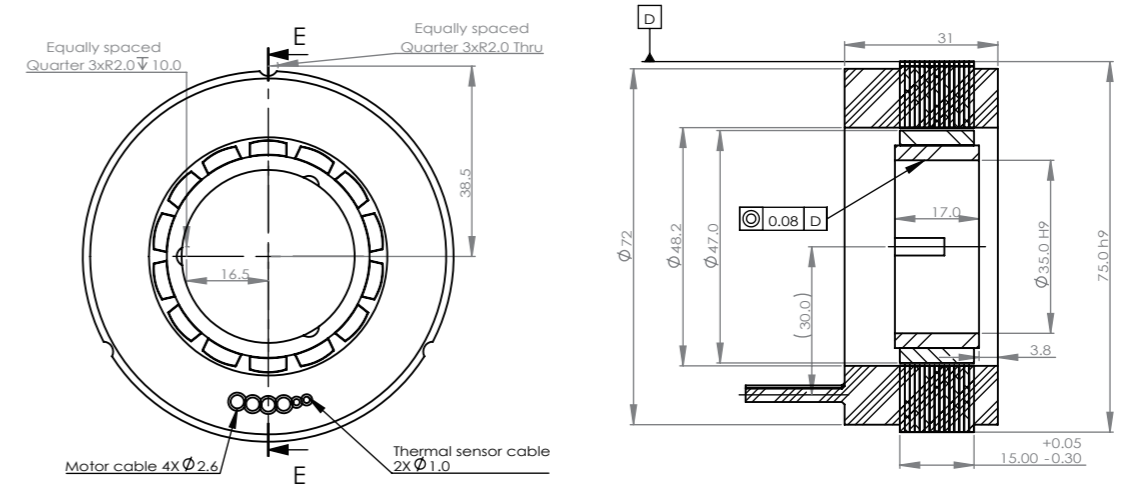
ADR-F

Dimensions

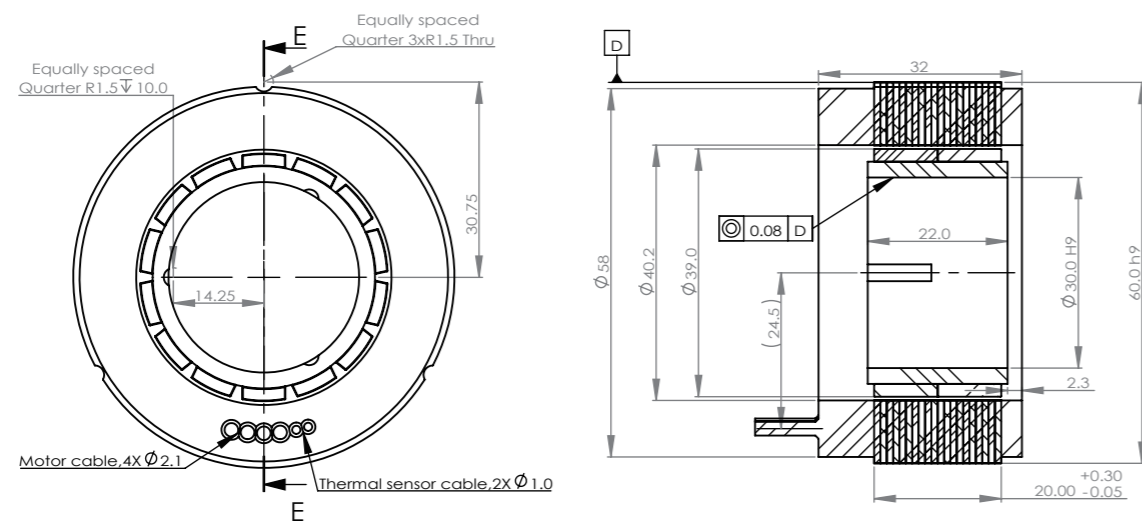
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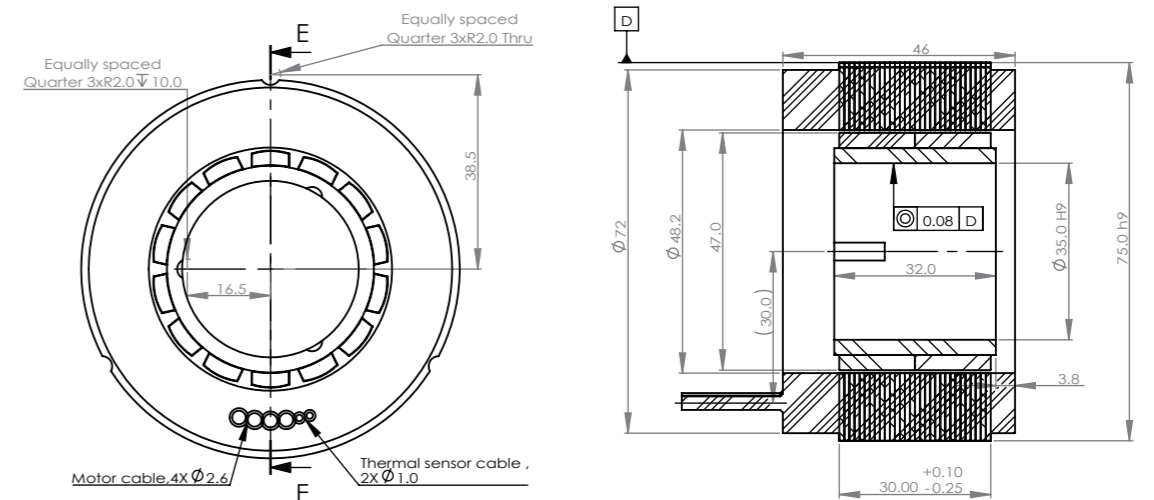
ADR75-F-15



ADR60-F-20



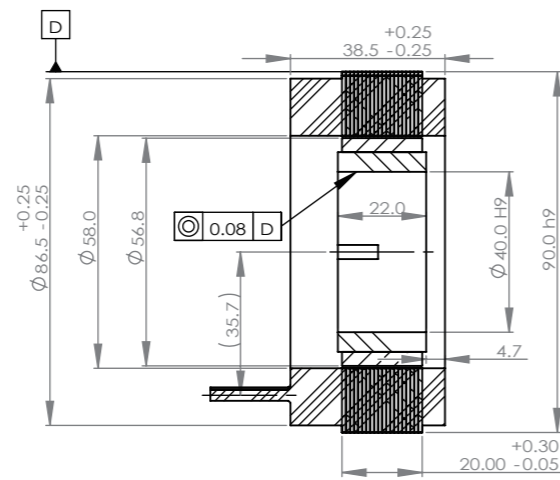
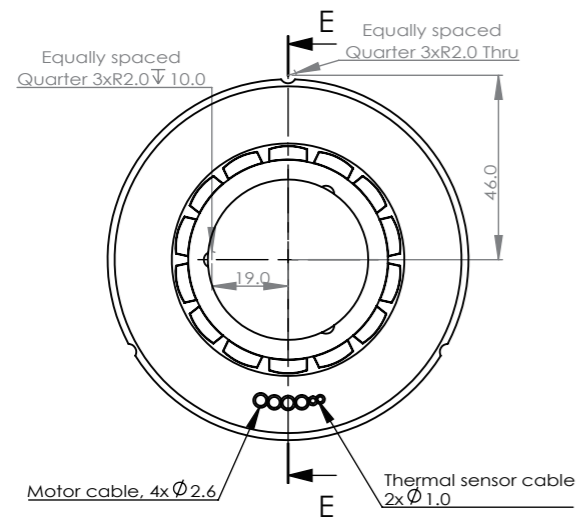
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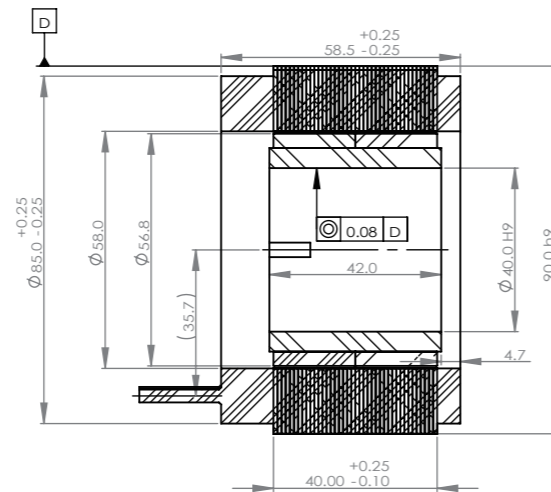
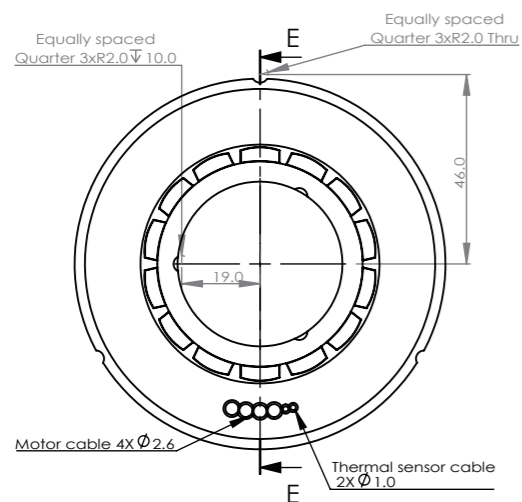
ADR-F

Dimensions

ADR90-F-20



ADR90-F-40



ADR-F

Part Numbering



Coil

ADR45-F-5-S-0.5

Motor
ADR45-F-5
ADR45-F-10

Cable Length(m)
0.5

Winding
S/P

ADR60-F-20-P-K-0.5

Motor
ADR60-F-10
ADR60-F-20
ADR75-F-15
ADR75-F-30
ADR90-F-20
ADR90-F-40

Cable Length(m)
0.5

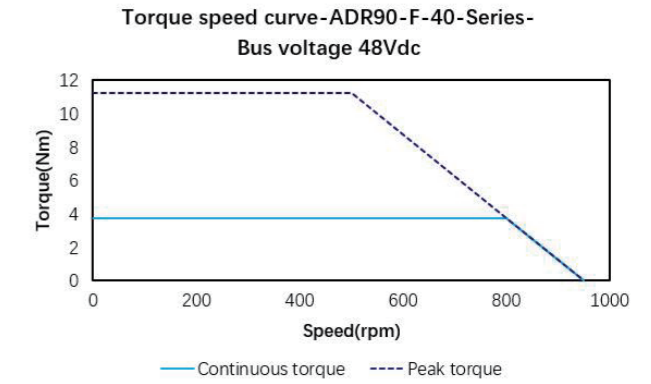
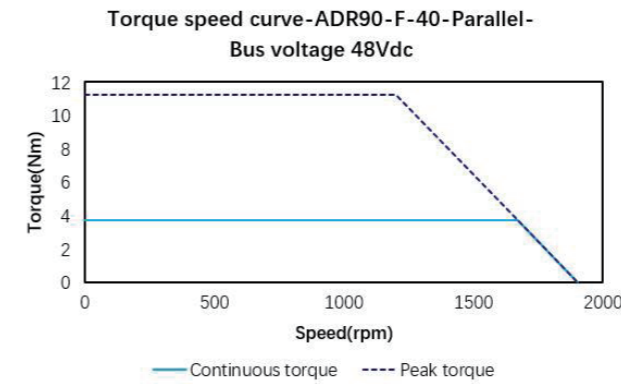
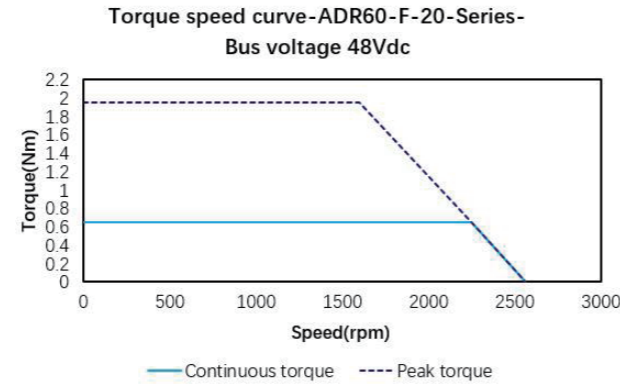
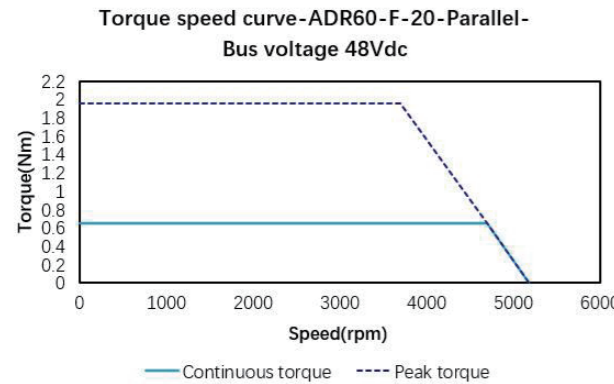
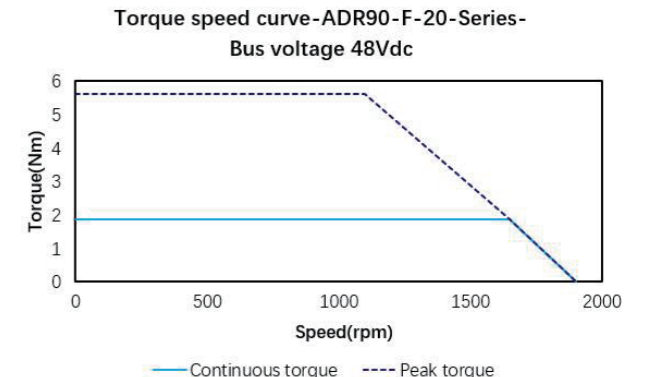
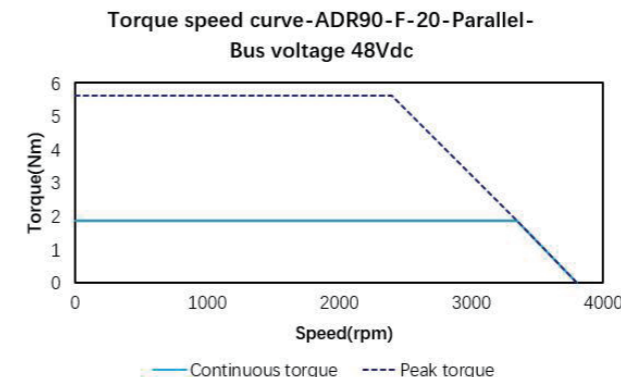
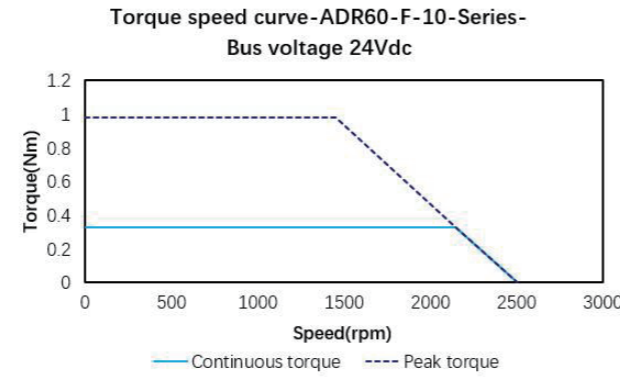
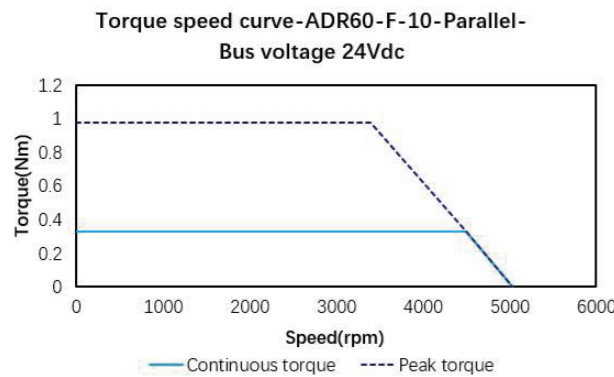
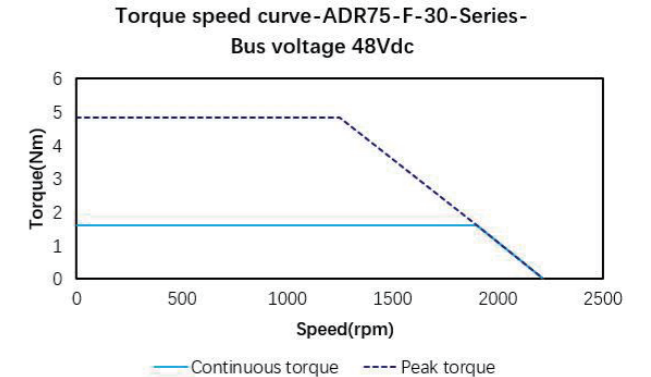
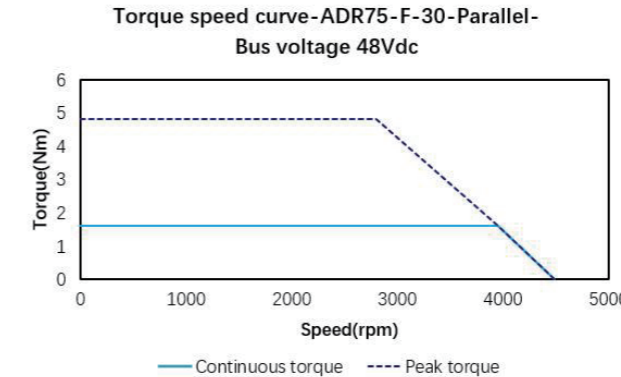
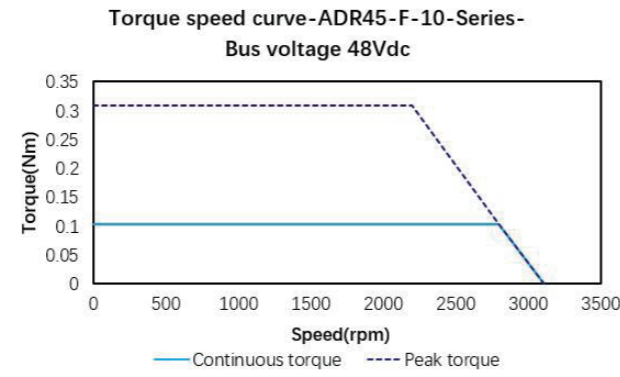
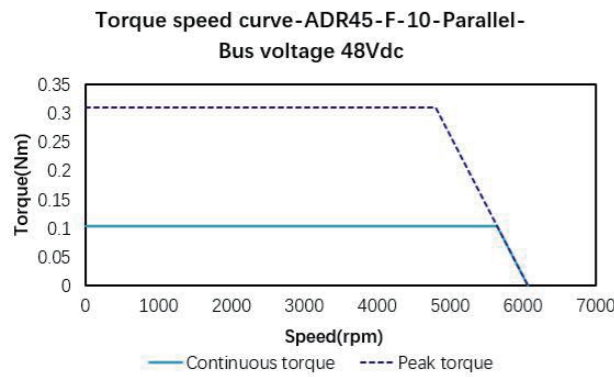
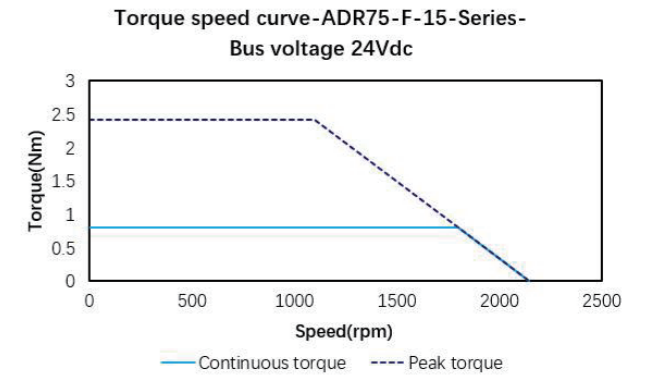
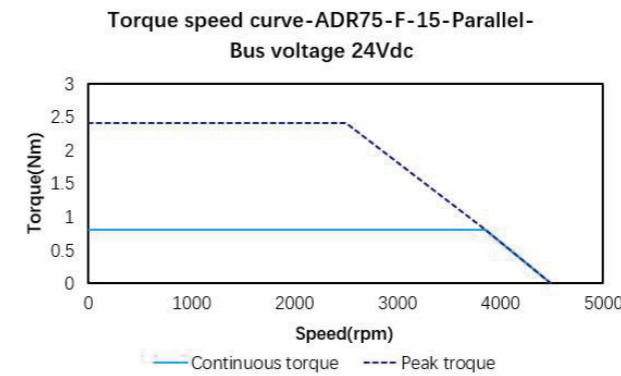
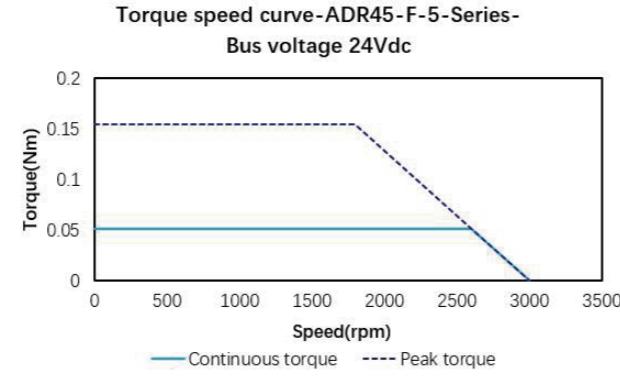
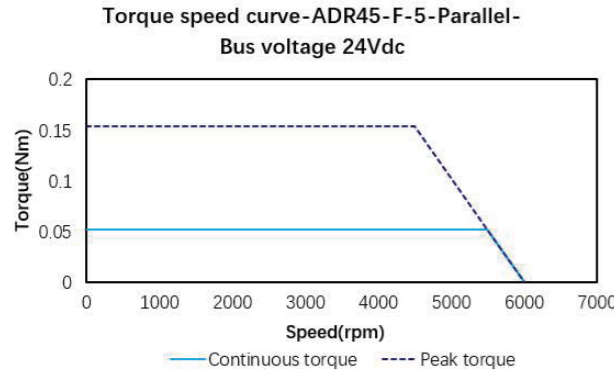
Winding
S/P

Thermal Sensor
K=PT100 (RTD)

ADR-F-Series torque speed curve

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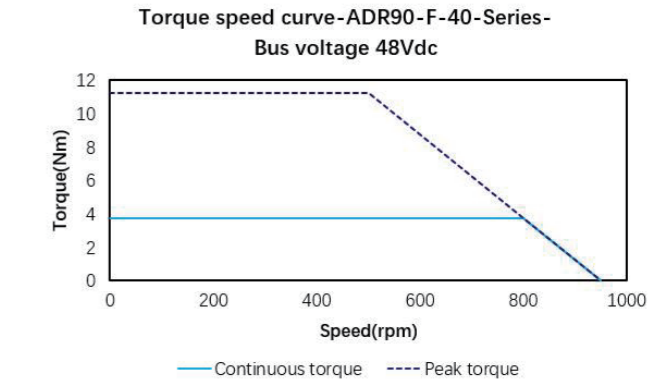
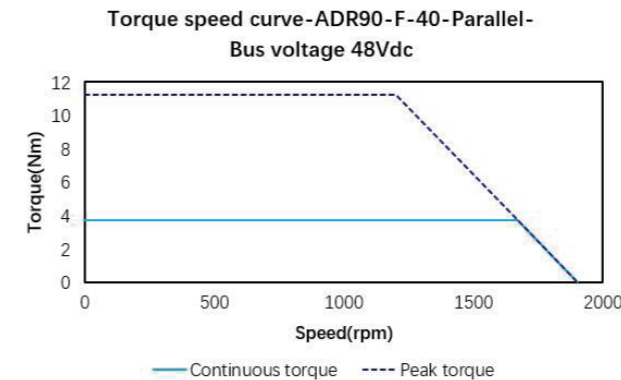
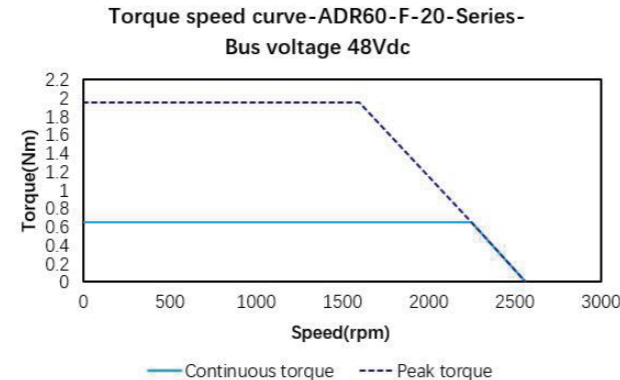
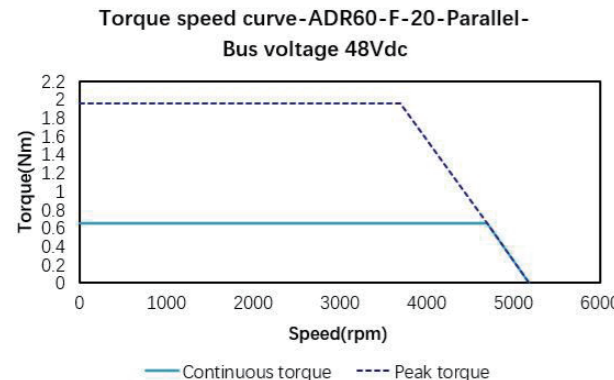
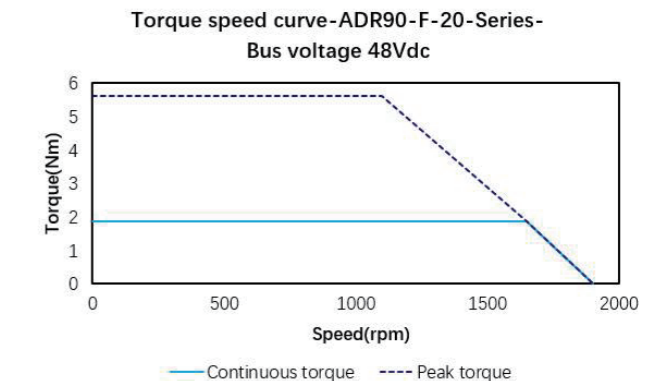
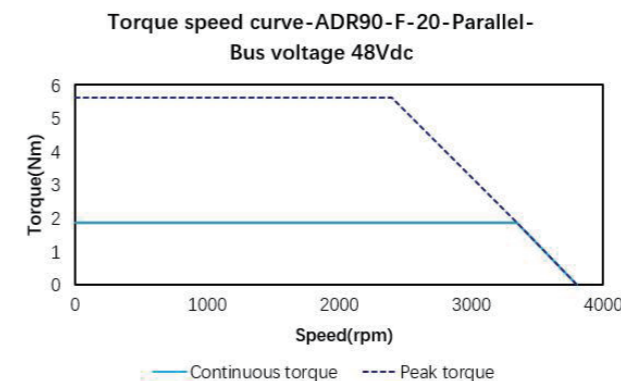
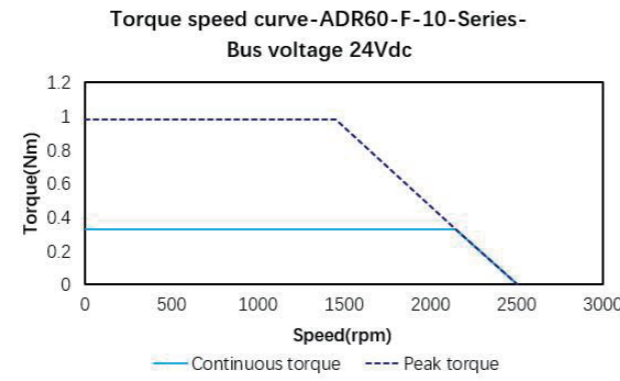
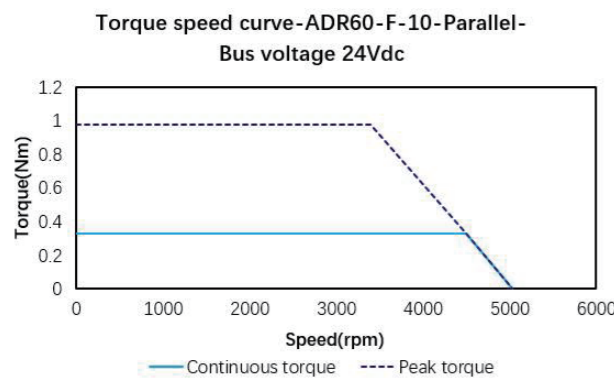
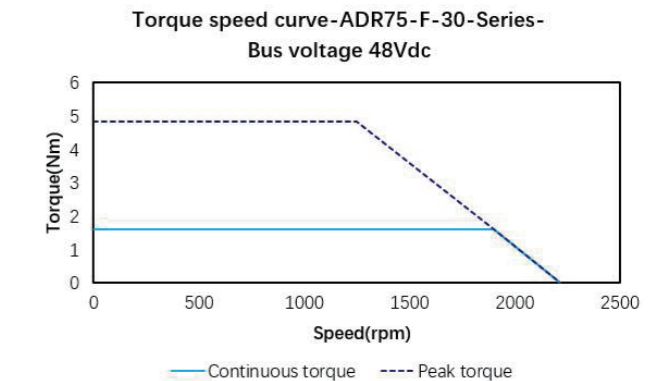
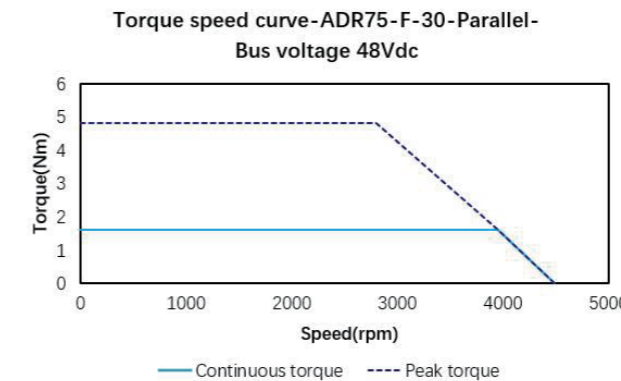
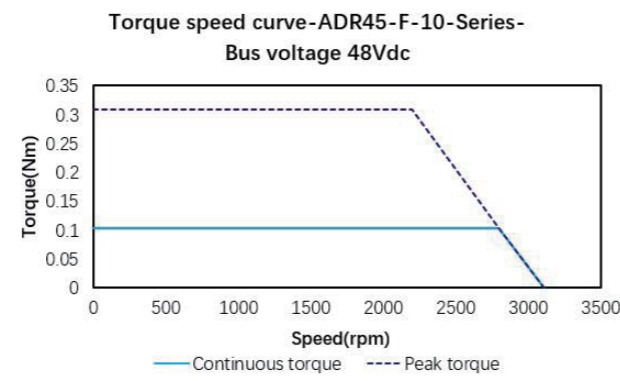
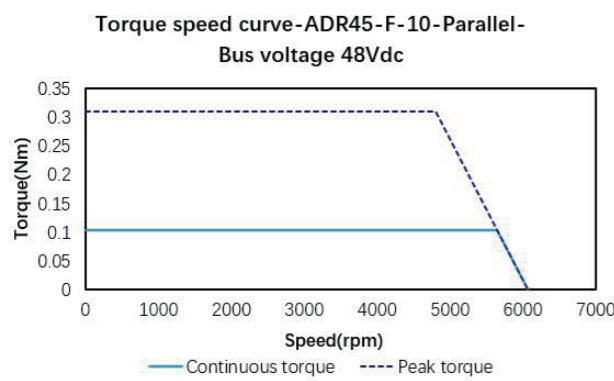
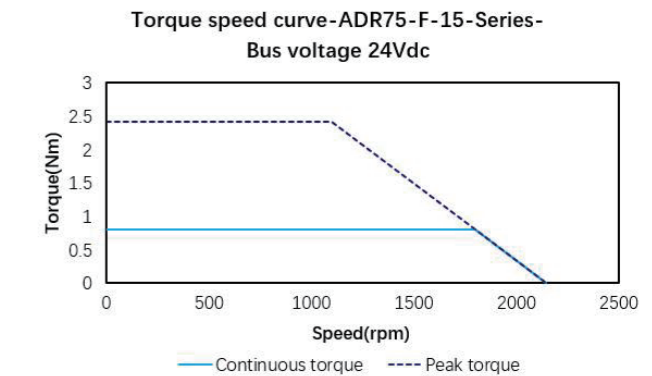
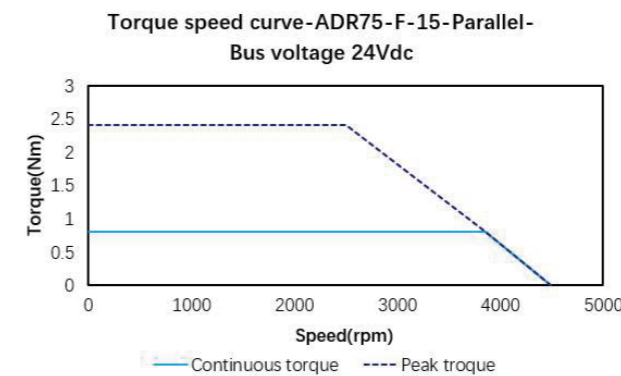
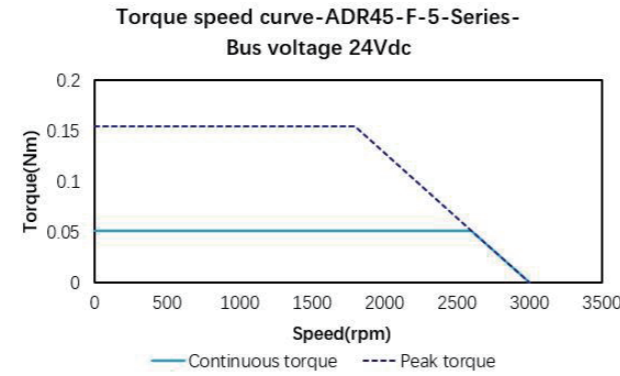
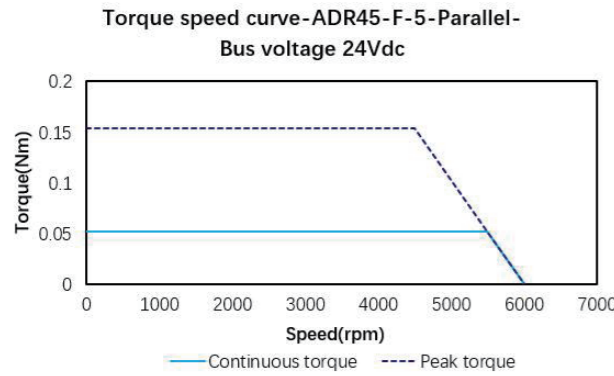
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ADR-F-Series torque speed curve

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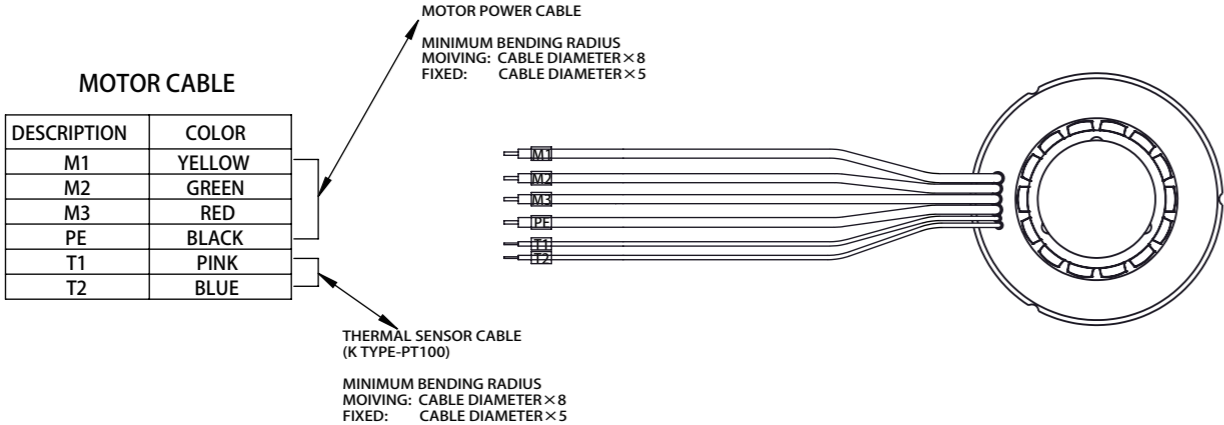
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Akribis systems

Motor & Thermal Sensor Cable Wiring

ADR-F



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