ADR-F Series



ADR45-F-5

	ADR45-	F-5				
Performance Parameters		Symbol	Unit	Series	Parallel	
Continuous Torque (NC) @100°C		T _{cn}	Nm	0.05	0.05	
Peak Torque		Tpk	Nm	0.15	0.15	
Torque Constant ±10%	Kt	Nm/Arms	0.09	0.04		
Back EMF Constant ±10%		Ke	Vpeak/rpm	7.32E-03	3.66E-03	
Motor Constant @25°C		Km	Nm/Sqrt(W)	0.04	0.04	
Resistance (L-L) 25°C ±10%		R ₂₅	Ω	3.65	0.91	
Inductance (L-L) ±20%		L	mH	0.79	0.20	
Electrical Time Constant		τ _e	ms	0.22	0.22	
Continuous Current (NC) @100°C	D	Icn	Arms	0.6	1.2	
Peak Current			Arms	2.0	4.0	
Continuous Power Dissipation (NC) @100°C			W	2.6	2.6	
Max. Coil Temperature			°C	100	100	
Thermal Dissipation Constant (NC)			W/°C	0.03	0.03	
Max. Bus Voltage		Ubus	Vdc	48	48	
Pole Number		2 _P	-	16	16	
Max.Speed ^❹		Ω_{max}	rpm	1500	3000	
Mechanical Parameters						
Overall Mass (NC)		m _n	kg	0.08	0.08	
Rotor Inertia		Jr	kg·m²	2.60E-06	2.60E-06	
Other Information						
Insulation Class		Class A (105°C)				
Protection Grade		IP00				
Compliance with Global Standards		RoHS, CE				
Ambient Temperature	Operation	0°C to 40°C (non-freezing)				
Ambient remperature	Storage	-15°C to 70°C (non-freezing)				
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)				
Ambient numbers	Storage	10%RH to 90%RH (non-condensing)				

sive gas, inflammable gas, oil mist or dust. $\textcolor{red}{\textcircled{0}} \textit{Measurement is taken at ambient temperature 25 °C. Value depends on the thermal environment.}$

Indoor (no direct sunlight);

Symbol Unit Series Parallel

- @Resistance is measured by DC current with standard 0.5 m cable
- 6 Inductance is measured by current frequency of 1 kHz.
- (4096x interpolation) under max. bus voltage.

ADR45-F-10

The contents of datasheet are subject to change without prior notice.

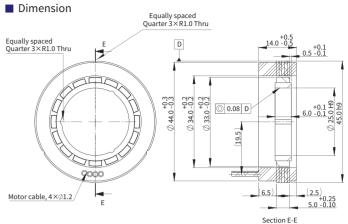
ADR45-F-10

Performance Parameters

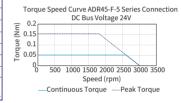
Recommended Ambience

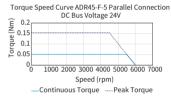
i citoritianee i aranieters		· · · · · · · · · · · · · · · · · · ·	Oine	•••••		
Continuous Torque (NC) @100°C ⁰			Nm	0.10	0.10	
Peak Torque	Tpk	Nm	0.30	0.30		
Torque Constant ±10%	Kt	Nm/Arms	0.17	0.09		
Back EMF Constant ±10%		Ke	Vpeak/rpm	1.46E-02	7.32E-03	
Motor Constant @25°C		Km	Nm/Sqrt(W)	0.06	0.06	
Resistance (L-L) 25°C ±10%€		R ₂₅	Ω	5.40	1.35	
Inductance (L-L) ±20%€		L	mH	1.30	0.33	
Electrical Time Constant		Te	ms	0.24	0.24	
Continuous Current (NC) @100°C		Icn	Arms	0.6	1.2	
Peak Current		I _{pk}	Arms	2.0	4.0	
Continuous Power Dissipation (NC) @100°C			W	3.8	3.8	
Max. Coil Temperature			°C	100	100	
Thermal Dissipation Constant (NC)			W/°C	0.05	0.05	
Max. Bus Voltage		Ubus	Vdc	48	48	
Pole Number		2 _P	-	16	16	
Max.Speed 6		Ω_{max}	rpm	1500	3000	
Mechanical Parameters						
Overall Mass (NC)		mп	kg	0.11	0.11	
Rotor Inertia		Jr	kg·m²	5.20E-06	5.20E-06	
Other Information						
Insulation Class		Class A (105°C)				
Protection Grade		IP00				
Compliance with Global Standards			RoHS, CE			
Ambient Temperature	Operation	0°C to 40°C (non-freezing)				
Ambient remperature	Storage	-15°C to 70°C (non-freezing)				
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)				
7 in biene Hammarty	Storage	10%RH to 90%RH (non-condensing)				
Recommended Ambience		Indoor (no direct sunlight);				
Reconninence Ambience		No corrosive gas inflammable gas oil mist or dus				

- Resistance is measured by DC current with standard 0.5 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.
- The contents of datasheet are subject to change without prior notice.

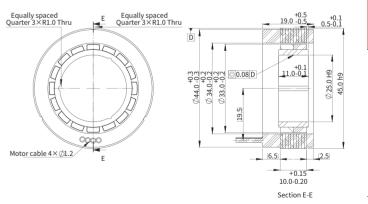


■ Torque-Speed Curve

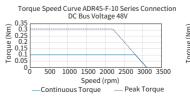


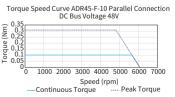


Dimension



■ Torque-Speed Curve





ADR60-F-10

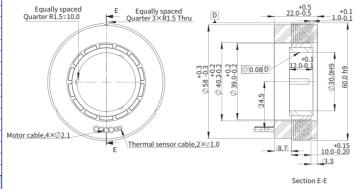
ADR60-F-10							
Performance Parameters	Symbol	Unit	Series	Parallel			
Continuous Torque (NC) @100°C			Nm	0.33	0.33		
Peak Torque		Tpk	Nm	0.95	0.95		
Torque Constant ±10%		Kt	Nm/Arms	0.11	0.05		
Back EMF Constant ±10%		Ke	Vpeak/rpm	8.97E-03	4.49E-03		
Motor Constant @25°C		Km	Nm/Sqrt(W)	0.11	0.11		
Resistance (L-L) 25°C ±10%		R ₂₅	Ω	0.65	0.16		
Inductance (L-L) ±20% [€]		L	mH	0.47	0.12		
Electrical Time Constant		Τe	ms	0.72	0.72		
Continuous Current (NC) @100°C		Icn	Arms	3.1	6.2		
Peak Current			Arms	10.9	21.7		
Continuous Power Dissipation (NC) @100°C			W	12.1	12.1		
Max. Coil Temperature			°C	100	100		
Thermal Dissipation Constant (NC)			W/°C	0.16	0.16		
Max. Bus Voltage			Vdc	48	48		
Pole Number			-	14	14		
Max.Speed ⁶			rpm	1500	3000		
Mechanical Parameters							
Overall Mass (NC)		mп	kg	0.22	0.22		
Rotor Inertia		Jr	kg·m²	1.02E-05	1.02E-05		
Other Information							
Insulation Class		Class A (105°C)					
Protection Grade		IP00					
Compliance with Global Standard	RoHS, CE						
Ambient Temperature Operation		0°C to 40°C (non-freezing)					
Ambient remperature	Storage	-15°C to 70°C (non-freezing)					
Ambient Humidity Operation Storage		10%RH to 80%RH (non-condensing)					
		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.

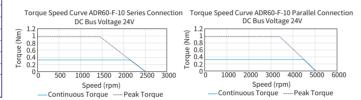
ADR60-F-20

- Resistance is measured by DC current with standard 0.5 m cable.
- 6) 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.
- The contents of datasheet are subject to change without prior notice.

Dimension



■ Torque-Speed Curve

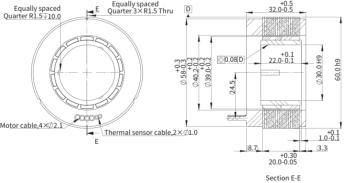


ADR60-F-20

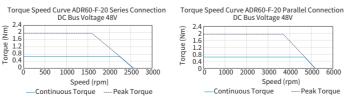
T _{cn} T _{pk} K _t K _e	Nm Nm Nm/Arms	0.65 1.90	0.65	4	
Kt		1.90			
	Nima /A was a		1.90	1	
Ke	NIII/AIIIIS	0.21	0.11	1	
	Vpeak/rpm	1.79E-02	8.97E-03	1	
Km	Nm/Sqrt(W)	0.16	0.16	1	
R ₂₅	Ω	1.10	0.28	1	
L	mH	0.81	0.20	1	
Te	ms	0.74	0.74	1	
Icn	Arms	3.1	6.2	1	
I _{pk}	Arms	10.9	21.8	1	
Pcn	W	20.5	20.5	1	
t _{max}	°C	100	100	1	
K _{thn}	W/°C	0.27	0.27	1	
Ubus	Vdc	48	48	1	
2 _P	-	14	14	1	
Ωmax	rpm	1500	3000	1	
				l	
m _n	kg	0.35	0.35	1	
Jr	kg·m²	2.03E-05	2.03E-05	1	
				1	
	Class A (105°C)				
	IP00				
	RoHS, CE				
	0°C to 40°C (non-freezing)				
	-15°C to 70	°C (non-freezi	ng)	1	
1	10%RH to 80%RH (non-condensing)				
1	0%RH to 90%	RH (non-cond	ensing)	1	
No corre	Indoor (no direct sunlight);				
1	L Te Icn Iph Pen tmax Kthn Ubus 2p Ωmax mn Jr	L mH Te ms Icn Arms Ipk	L mH 0.81 Te ms 0.74 Icn Arms 3.1 Ipk Arms 10.9 Pen W 20.5 Temax °C 100 Kthn W/°C 0.27 Ubus Vdc 48 2p - 14 Ωmax rpm 1500 Temax rpm 1500 Temax rpm 1500 Temax rpm 1500 Class A (105°C) IP00 RoHS, CE O°C to 40°C (non-freezin 10%RH to 80%RH (non-condic 10%RH to 90%RH to 90%	L mH 0.81 0.20 Te ms 0.74 0.74 Icn Arms 3.1 6.2 Ipk Arms 10.9 21.8 Pen W 20.5 20.5 Temax °C 100 100 Kthn W/°C 0.27 0.27 Ubus Vdc 48 48 2p - 14 14 Ωmax rpm 1500 3000 mn kg 0.35 0.35 Jr kg m² 2.03E-05 Class A (105°C) IP00 RoHS, CE 0 °C to 40°C (non-freezing) -15°C to 70°C (non-freezing) 1 09°RH to 80%RH (non-condensing)	

- Resistance is measured by DC current with standard 0.5 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. The contents of datasheet are subject to change without prior notice. \\

Dimension



■ Torque-Speed Curve



ADR75-F-15

	ADR75	-F-15			
Performance Parameters	Symbol	Unit	Series	Parallel	
Continuous Torque (NC) @100°C		T _{cn}	Nm	0.80	0.80
Peak Torque		Tpk	Nm	2.41	2.41
Torque Constant ±10%		Kt	Nm/Arms	0.12	0.06
Back EMF Constant ±10%		Ke	Vpeak/rpm	1.03E-02	5.13E-03
Motor Constant @25°C		Km	Nm/Sqrt(W)	0.20	0.20
Resistance (L-L) 25°C ±10%		R ₂₅	Ω	0.25	0.06
Inductance (L-L) ±20%		L	mH	0.40	0.10
Electrical Time Constant		Τ _e	ms	1.60	1.60
Continuous Current (NC) @100°C	0	Icn	Arms	6.7	13.4
Peak Current		I _{pk}	Arms	20.1	40.2
Continuous Power Dissipation (NC) @100°C			W	21.8	21.8
Max. Coil Temperature			°C	100	100
Thermal Dissipation Constant (NC)			W/°C	0.29	0.29
Max. Bus Voltage			Vdc	48	48
Pole Number			-	14	14
Max.Speed ⁶			rpm	1500	3000
Mechanical Parameters					
Overall Mass (NC)		m _n	kg	0.46	0.46
Rotor Inertia		Jr	kg·m²	3.25E-05	3.25E-05
Other Information					
Insulation Class		Class A (105°C)			
Protection Grade		IP00			
Compliance with Global Standard	RoHS, CE				
Ambient Temperature	Operation	0°C to 40°C (non-freezing)			
Ambient remperature	Storage	-15°C to 70°C (non-freezing)			
A bit bit i dib	Operation	10%RH to 80%RH (non-condensing)			
Ambient Humidity	Storage	10%RH to 90%RH (non-condensing)			
Recommended Ambience	Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dus				

- Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
- Resistance is measured by DC current with standard 0.5 m cable.
- 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.

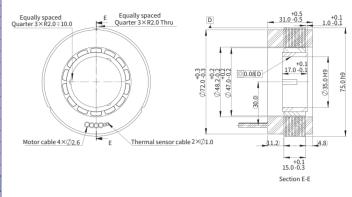
Inductance is measured by current frequency of 1 kHz.

ADR75-F-30

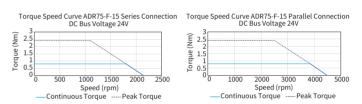
<u> </u>							
	ADR75	-F-30					
Performance Parameters		Symbol	Unit	Series	Parallel		
Continuous Torque (NC) @100°C			Nm	1.61	1.61		
Peak Torque		Tpk	Nm	4.82	4.82		
Torque Constant ±10%		Kt	Nm/Arms	0.24	0.12		
Back EMF Constant ±10%		Ke	Vpeak/rpm	2.05E-02	1.03E-02		
Motor Constant @25°C		Km	Nm/Sqrt(W)	0.32	0.32		
Resistance (L-L) 25°C ±10%		R25	Ω	0.38	0.10		
Inductance (L-L) ±20% [€]		L	mH	0.70	0.18		
Electrical Time Constant		τ _e	ms	1.84	1.84		
Continuous Current (NC) @100°C	0	Icn	Arms	6.7	13.4		
Peak Current		I _{pk}	Arms	20.1	40.2		
Continuous Power Dissipation (N	C) @100°C	Pcn	W	33.1	33.1		
Max. Coil Temperature			°C	100	100		
Thermal Dissipation Constant (NC)		Kthn	W/°C	0.44	0.44		
Max. Bus Voltage			Vdc	48	48		
Pole Number		2 _P	-	14	14		
Max.Speed ⁶		Ω_{max}	rpm	1500	3000		
Mechanical Parameters							
Overall Mass (NC)		m _n	kg	0.80	0.80		
Rotor Inertia		Jr	kg·m²	6.47E-05	6.47E-05		
Other Information							
Insulation Class		Class A (105°C)					
Protection Grade		IP00					
Compliance with Global Standards			RoHS, CE				
Ahiant Tanananatuus	Operation		0°C to 40°C (non-freezing)				
Ambient Temperature	Storage	-15°C to 70°C (non-freezing)					
Ambiant Humidity	Operation	10%RH to 80%RH (non-condensing)					
Ambient Humidity	Storage	10%RH to 90%RH (non-condensing)					
Recommended Ambience			Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.				

- ement is taken at ambient temperature 25°C. Value depends on the thermal environment.
- Resistance is measured by DC current with standard 0.5 m cable.
- 6 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. The contents of datasheet are subject to change without prior notice.

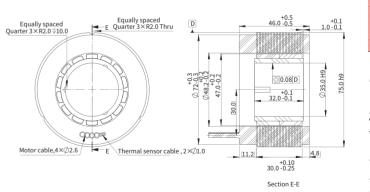
Dimension



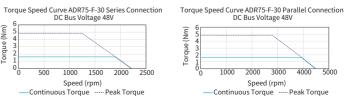
■ Torque-Speed Curve

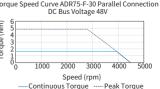


Dimension



■ Torque-Speed Curve





174

ADR90-F-20

ADR90-F-20								
Performance Parameters	Symbol	Unit	Series	Parallel				
Continuous Torque (NC) @100°C			Nm	1.88	1.88			
Peak Torque		Tpk	Nm	5.61	5.61			
Torque Constant ±10%		Kt	Nm/Arms	0.28	0.14			
Back EMF Constant ±10%		Ke	Vpeak/rpm	2.39E-02	1.20E-02			
Motor Constant @25°C		Km	Nm/Sqrt(W)	0.38	0.38			
Resistance (L-L) 25°C ±10%		R25	Ω	0.37	0.09			
Inductance (L-L) ±20% [€]		L	mH	0.80	0.20			
Electrical Time Constant		τ _e	ms	2.16	2.16			
Continuous Current (NC) @100°C		Icn	Arms	6.7	13.4			
Peak Current		I _{pk}	Arms	22.5	45.0			
Continuous Power Dissipation (NC) @100°C			W	32.2	32.2			
Max. Coil Temperature			°C	100	100			
Thermal Dissipation Constant (NC)			W/°C	0.43	0.43			
Max. Bus Voltage			Vdc	48	48			
Pole Number			-	14	14			
Max.Speed ⁴		Ω_{max}	rpm	1500	3000			
Mechanical Parameters								
Overall Mass (NC)		m _n	kg	0.85	0.85			
Rotor Inertia		Jr	kg·m²	1.03E-04	1.03E-04			
Other Information								
Insulation Class		Class A (105°C)						
Protection Grade		IP00						
Compliance with Global Standard	S	RoHS, CE						
Ambient Temperature Operation		0°C to 40°C (non-freezing)						
Ambient remperature	Storage	-15°C to 70°C (non-freezing)						
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)						
Ambient Humarty	Storage	10%RH to 90%RH (non-condensing)						
Recommended Ambience			Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust					

Dimension

Equally spaced Quarter 3×R2.0⊽10.0

Motor cable, $4 \times \emptyset 2.6$

Dimension

■ Torque-Speed Curve

Torque Speed Curve ADR90-F-20 Series Connection DC Bus Voltage 48V

Speed (rpm)

Torque Speed Curve ADR90-F-40 Series Connection DC Bus Voltage 48V

Speed (rpm)
Forque -----Peak Torque

Thermal sensor cable 2ר1.0

Equally spaced

Thermal sensor cable 2ר1.0

+0.30 20.00-0.05

Section E-E

500 1000 1500 2000 2500 3000 3500 4000 Speed (rpm)

> ⊚|0.08|D +0.1 42.0-0.1

+0.25 (12.8 40.00-0.10 5.7) Section E-E

Torque Speed Curve ADR90-F-40 Parallel Connection

Speed (rpm)
—Continuous Torque ----Peak Torque

Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.

ADR90-F-40

- @Resistance is measured by DC current with standard 0.5 m cable.
- ❸Inductance is measured by current frequency of 1 kHz.
- The value is based on ABI optical SIN/COS encoder (4096x interpolation) under max. bus voltage.

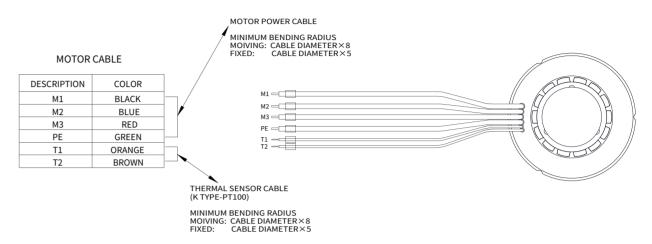
The contents of datasheet are subject to change without prior notice.

ADR90-F-40

Performance Parameters		Symbol	Unit	Series	Parallel	
Continuous Torque (NC) @100°C		Tcn	Nm	3.75	3.75	
Peak Torque			Nm	11.22	11.22	Equally spaced F Equa
Torque Constant ±10%		Kt	Nm/Arms	0.56	0.28	Quarter 3×R2.0 ↓10.0
Back EMF Constant ±10%		Ke	Vpeak/rpm	4.79E-02	2.39E-02	
Motor Constant @25°C		Km	Nm/Sqrt(W)	0.61	0.61	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Resistance (L-L) 25°C ±10% [●]		R ₂₅	Ω	0.57	0.14	
Inductance (L-L) ±20% [€]		L	mH	1.45	0.36	
Electrical Time Constant		Τe	ms	2.54	2.54	1 (41
Continuous Current (NC) @100°C	D .	Icn	Arms	6.7	13.4	1 ((((())))
Peak Current		I _{pk}	Arms	22.5	45.0	
Continuous Power Dissipation (N	C) @100°C	Pen	W	49.7	49.7	
Max. Coil Temperature		tmax	°C	100	100	00009
Thermal Dissipation Constant (No	C) 0	Kthn	W/°C	0.66	0.66	Motor cable 4×∅2.6
Max. Bus Voltage		Ubus	Vdc	48	48	The \The
Pole Number		2 _P	-	14	14	E
Max.Speed ⁴		Ω_{max}	rpm	750	1500	
Mechanical Parameters						
Overall Mass (NC)		m _n	kg	1.49	1.49]
Rotor Inertia		Jr	kg·m²	2.04E-04	2.04E-04	■ Torque-Speed Curve
Other Information						
Insulation Class		Class A (105°C)				
Protection Grade		IP00				Torque Speed Curve ADR90-F-40 Se DC Bus Voltage 48V
Compliance with Global Standard	ls	RoHS, CE				1 12
Ambient Temperature	Operation	0°C to 40°C (non-freezing)			Z 8	
Ambient remperature	Storage	-15°C to 70°C (non-freezing)				9 6 b 4
Ambient Humidity Operation Storage		10%RH to 80%RH (non-condensing)			E 2	
		10%RH to 90%RH (non-condensing)				0 200 400 600
Recommended Ambience		Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.			Speed (rpm) —Continuous TorquePo	

- nent is taken at ambient temperature 25°C. Value depends on the thermal environment.
- Resistance is measured by DC current with standard 0.5 m cable.
- 6 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.

Motor Cable Connection



Part Numbering

