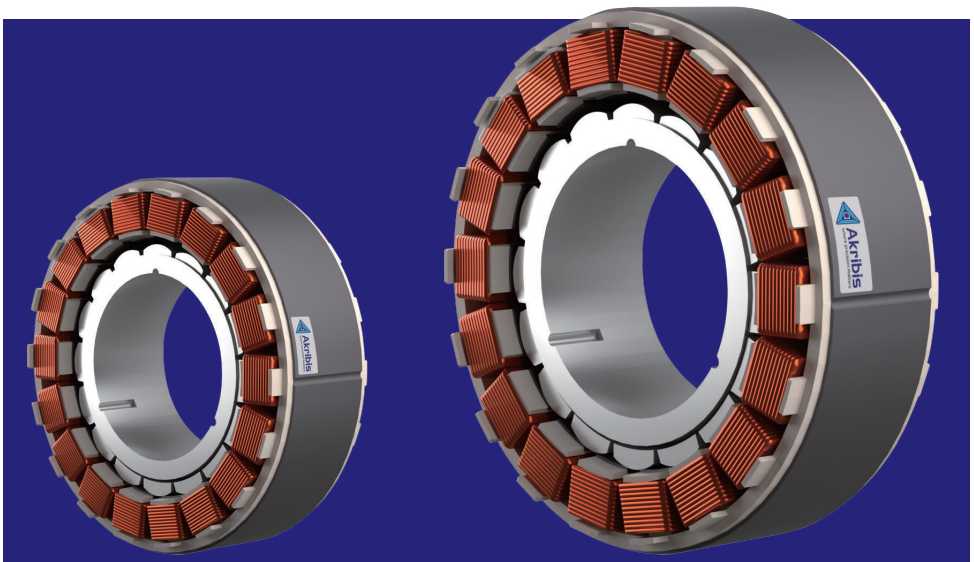


ADR-T SERIES

- Compact design
- Large center bore
- Direct drive technology
- High torque density
- Low cogging effect
- High rotating speed
- Cost effective

EN-26.3.1

Akribis systems

ADR050-T-014

ADR050-T-014				
Performance Parameters	Symbol	Unit	L	H
Continuous Torque (NC) @130°C ❶	T_{cn}	Nm	0.48	0.48
Peak Torque	T_{pk}	Nm	1.44	1.44
Torque Constant ±10%	K_t	Nm/Arms	0.21	0.11
Back EMF Constant ±10%	K_e	Vpeak/rpm	0.018	0.009
Motor Constant @25°C	K_m	Nm/Sqrt(W)	0.10	0.09
Resistance (L-L) 25°C ±10% ❷	R_{25}	Ω	3.30	0.86
Inductance (L-L) ±20% ❸	L	mH	1.25	0.32
Electrical Time Constant	τ_e	ms	0.38	0.37
Continuous Current (NC) @130°C ❶	I_{cn}	Arms	2.3	4.5
Peak Current	I_{pk}	Arms	7.9	15.8
Continuous Power Dissipation (NC) @130°C ❶	P_{cn}	W	35	37
Max. Coil Temperature	t_{max}	℃	130	130
Thermal Dissipation Constant (NC) ❶	K_{thn}	W/℃	0.34	0.35
Max. Bus Voltage	U_{bus}	Vdc	48	48
Pole Number	2_P	-	20	20
Max. Speed @continuous torque ❹	Ω_{max}	rpm	1750	3000
Max. Speed @peak torque ❹	Ω_{max}	rpm	600	2500
Mechanical Parameters				
Overall Mass (NC)	m_n	kg	0.12	0.12
Rotor Inertia	J_r	kg·m²	1.12E-05	1.12E-05
Other Information				
Insulation Class		Class B (130°C)		
Protection Grade		IP00		
Compliance with Global Standards		RoHS		
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. NC-Natural cooling

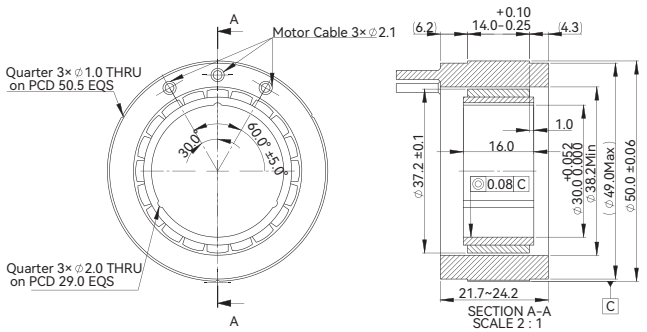
❷ Resistance is measured by DC current with standard 0.5 m cable.

❸ Inductance is measured by current frequency of 1 kHz.

❹ The value is based on max. bus voltage.

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

Dimension



Note:

❶ The concentricity of stator and rotor to be within 0.08mm when mounted;

❷ User to ensure flatness of mounting surface within 0.01/300mm;

❸ Comes without temperature sensor;

❹ Motor must be used with a Variable Frequency Driver;

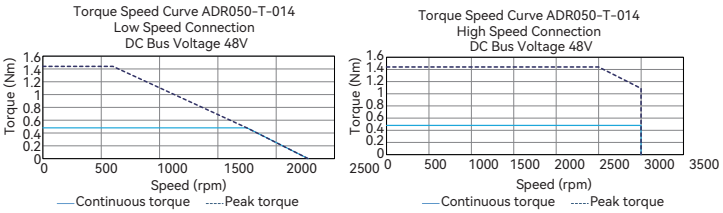
❺ Cable diameter within +/-0.3mm tolerance, cable length within +/-30.0mm tolerance;

❻ Certain specifications in the drawing are subject to change;

❼ Customers need to connect ground wire by themselves;

❽ No epoxy on either end.

Torque-Speed Curve



ADR080-T-020

ADR080-T-020				
Performance Parameters	Symbol	Unit	L	H
Continuous Torque (NC) @130°C ❶	T_{cn}	Nm	1.41	1.41
Peak Torque	T_{pk}	Nm	4.22	4.22
Torque Constant ±10%	K_t	Nm/Arms	0.32	0.16
Back EMF Constant ±10%	K_e	Vpeak/rpm	0.027	0.014
Motor Constant @25°C	K_m	Nm/Sqrt(W)	0.27	0.26
Resistance (L-L) 25°C ±10% ❷	R_{25}	Ω	0.95	0.25
Inductance (L-L) ±20% ❸	L	mH	1.15	0.29
Electrical Time Constant	τ_e	ms	1.21	1.16
Continuous Current (NC) @130°C ❶	I_{cn}	Arms	4.4	8.8
Peak Current	I_{pk}	Arms	15.2	30.4
Continuous Power Dissipation (NC) @130°C ❶	P_{cn}	W	39	41
Max. Coil Temperature	t_{max}	℃	130	130
Thermal Dissipation Constant (NC) ❶	K_{thn}	W/℃	0.37	0.39
Max. Bus Voltage	U_{bus}	Vdc	48	48
Pole Number	2_P	-	16	16
Max. Speed @continuous torque ❹	Ω_{max}	rpm	1350	3000
Max. Speed @peak torque ❹	Ω_{max}	rpm	850	2285
Mechanical Parameters				
Overall Mass (NC)	m_n	kg	0.58	0.58
Rotor Inertia	J_r	kg·m²	8.27E-05	8.27E-05
Other Information				
Insulation Class		Class B (130°C)		
Protection Grade		IP00		
Compliance with Global Standards		RoHS		
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. NC-Natural cooling

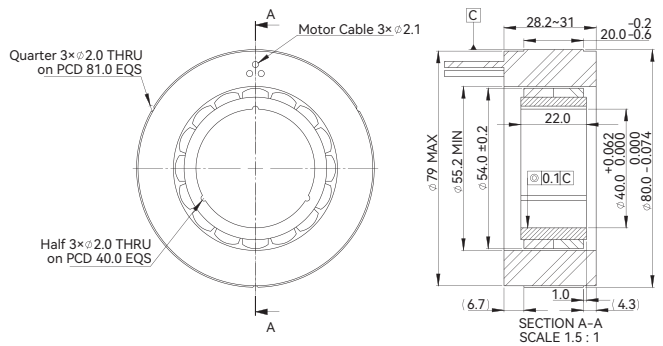
❷ Resistance is measured by DC current with standard 0.5 m cable.

❸ Inductance is measured by current frequency of 1 kHz.

❹ The value is based on max. bus voltage.

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

Dimension



Note:

❶ The concentricity of stator and rotor to be within 0.1mm when mounted;

❷ User to ensure flatness of mounting surface within 0.01/300mm;

❸ Comes without temperature sensor;

❹ Motor must be used with a Variable Frequency Driver;

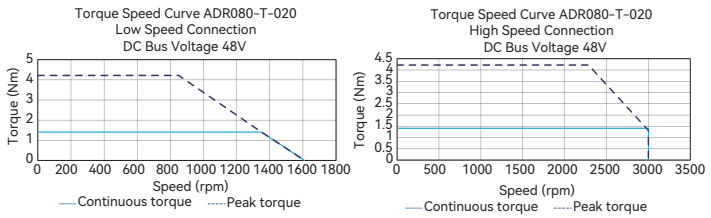
❺ Cable diameter within +/-0.3mm tolerance, cable length within +/-30.0mm tolerance;

❻ Certain specifications in the drawing are subject to change;

❼ Customers need to connect ground wire by themselves;

❽ No epoxy on either end.

Torque-Speed Curve



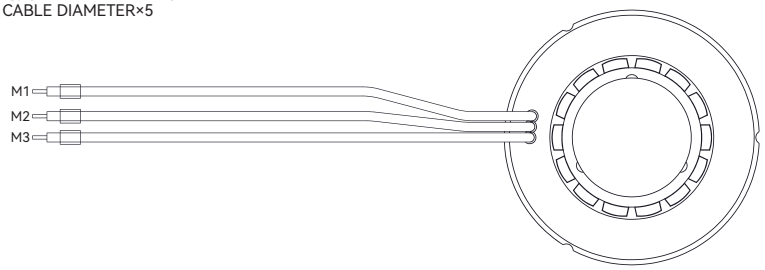
Motor Cable Connection

MOTOR CABLE

DESCRIPTION	COLOR
M1	BLACK
M2	BLUE
M3	RED

MOTOR POWER CABLE

MINIMUM BENDING RADIUS
MOIVING: CABLE DIAMETER×8
FIXED: CABLE DIAMETER×5



Part Numbering

ADR050-T-014-N-XX-H-NF-005-XF-000

Motor Model:
ADR050-T / ADR080-T

Stack Height:
ADR050-T: 014
ADR080-T: 020

Cooling Type:
N = No Water Cooling

Thermal Sensor:
XX = No Thermal Sensor

Design Control Code:
000[5]

Power Cable:
XF[4]

Cable Length (m):
005 = 0.5

Sensor Cable:
NF[3]

Winding Code:
H / L[1][2]

1. H = High Speed Winding
2. L = Low Speed Winding
3. NF = Without Built-in Hall Sensor C/W Flying Leads
4. XF = Without Ferrite Bead C/W Flying Leads
5. 000 = Standard Model (for more options, please consult cust-service@akribis-sys.com)