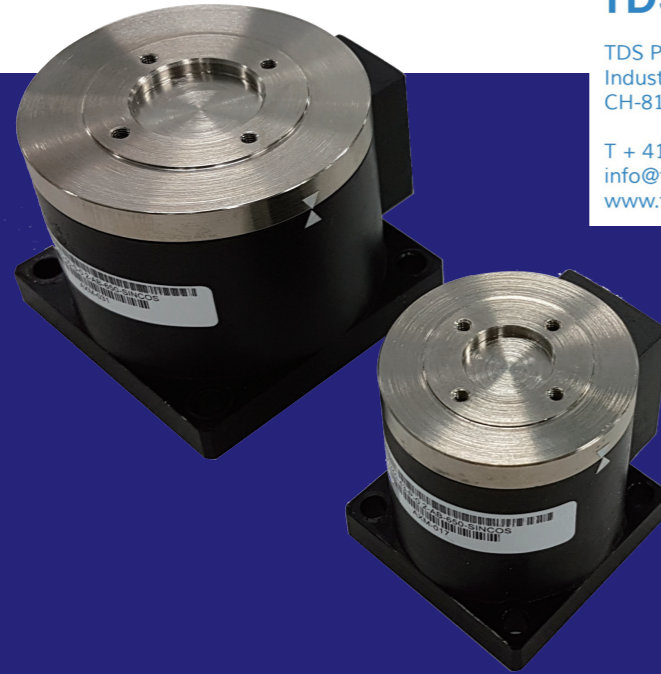




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# AXM SERIES

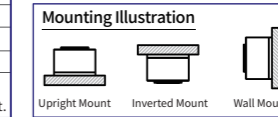
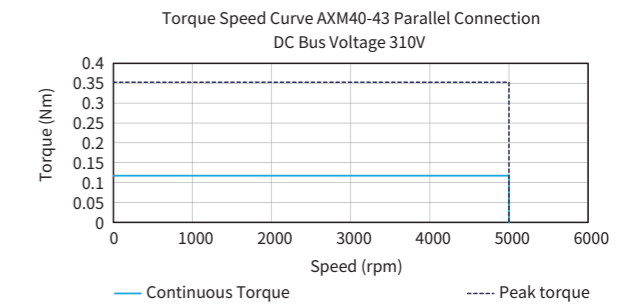
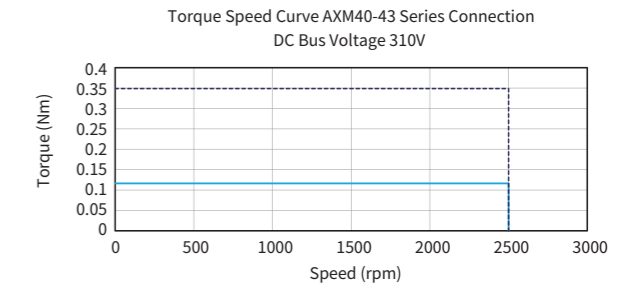
- ▶ Direct drive and brushless motor
- ▶ Fully integrated with encoder and bearing
- ▶ Low cogging torque
- ▶ Optional for low speed and high speed windings
- ▶ High torque density
- ▶ Built-in high precision grating scale

## AXM40-43

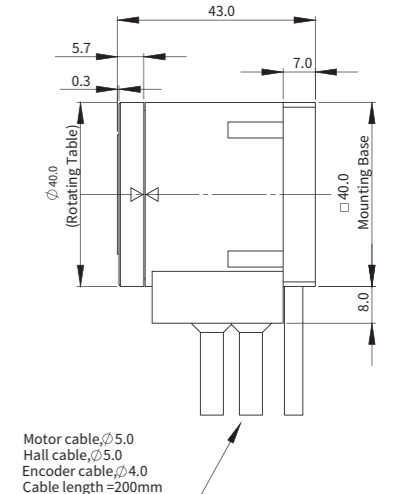
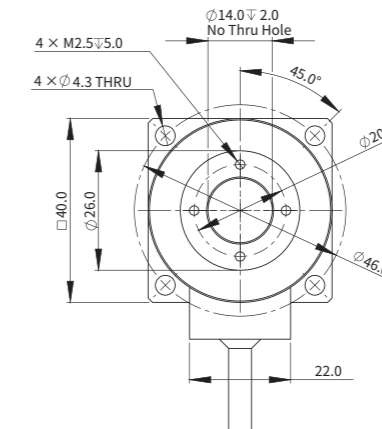
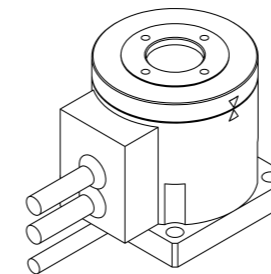
AXM40-43				
Performance Parameters	Symbol	Unit	Series	Parallel
Continuous Torque (NC) @100°C	T <sub>cn</sub>	Nm	0.11	0.11
Peak Torque	T <sub>pk</sub>	Nm	0.30	0.30
Torque Constant ±10%	K <sub>t</sub>	Nm/Arms	0.09	0.05
Back EMF Constant ±10%	K <sub>e</sub>	Vpeak/rpm	0.008	0.004
Motor Constant @25°C	K <sub>m</sub>	Nm/Sqrt(W)	0.03	0.03
Resistance (L-L) @25°C ±10%	R <sub>25</sub>	Ω	8.4	2.1
Inductance (L-L) ±20%	L	mH	6.8	1.7
Electrical Time Constant	τ <sub>e</sub>	ms	0.8	0.8
Continuous Current (NC) @100°C	I <sub>cn</sub>	Arms	1.2	2.4
Peak Current	I <sub>pk</sub>	Arms	4.9	9.8
Continuous Power Dissipation (NC) @100°C	P <sub>cn</sub>	W	24.3	24.3
Max. Coil Temperature	t <sub>max</sub>	°C	100	100
Thermal Dissipation Constant (NC)	K <sub>thn</sub>	W/°C	0.32	0.32
Max. Bus Voltage	U <sub>bus</sub>	Vdc	330	330
Pole Number	2P	-	10	10
Max Speed	Ω <sub>max</sub>	rpm	2500	5000
Mechanical Parameters				
Overall Mass (NC)	m <sub>n</sub>	kg	0.24	0.24
Rotor Inertia	J <sub>r</sub>	kg·m <sup>2</sup>	1.18E-05	1.18E-05
Axial Runout	-	μm	25	25
Radial Runout	-	μm	25	25
Max Axial Load (Upright Mounting)	-	N	20	20
Max Axial Load (Inverted / Wall Mounting)	-	N	6	6
Max Moment Load (Upright Mounting)	-	Nm	0.3	0.3
Max Moment Load (Inverted / Wall Mounting)	-	Nm	0.1	0.1
Encoder Parameters				
ABI Optical Incremental Encoder (SIN/COS)	-	lines / rev	650	650
ABI Optical Incremental Encoder (80x)	-	counts / rev	52000	52000
ABI Optical Incremental Encoder (160x)	-	counts / rev	104000	104000
ABI Optical Incremental Encoder (400x)	-	counts / rev	260000	260000
Accuracy after Error Mapping	-	arc sec	+/-20	+/-20
Repeatability	-	arc sec	+/-10	+/-10
Other Information				
Insulation Class	Class A (105°C)			
Protection Grade	IP40			
Compliance with Global Standards	Chinese 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.			

- ① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
  - ② Resistance is measured by DC current with standard 0.2 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.
  - ⑤ The runout value in parenthesis is optional.
  - ⑥ Please refer to the illustration for different mountings.
  - ⑦ Based on ABI optical SIN/COS encoder (4096x interpolation) with standard runout.
- The contents of datasheet are subjected to change without prior notice.

### Torque-Speed Curve



### Dimension



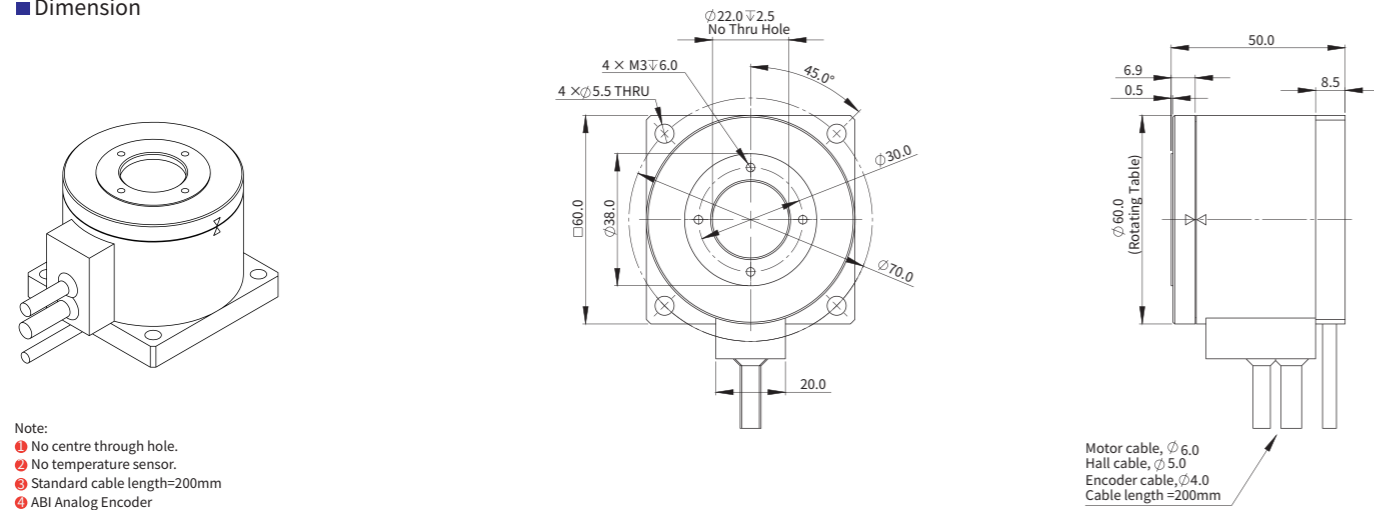
- Note:
- ① No centre through hole.
  - ② No temperature sensor.
  - ③ Standard cable length=200mm
  - ④ ABI Analog Encoder

AXM60-50

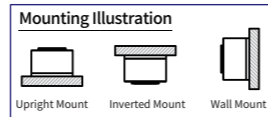
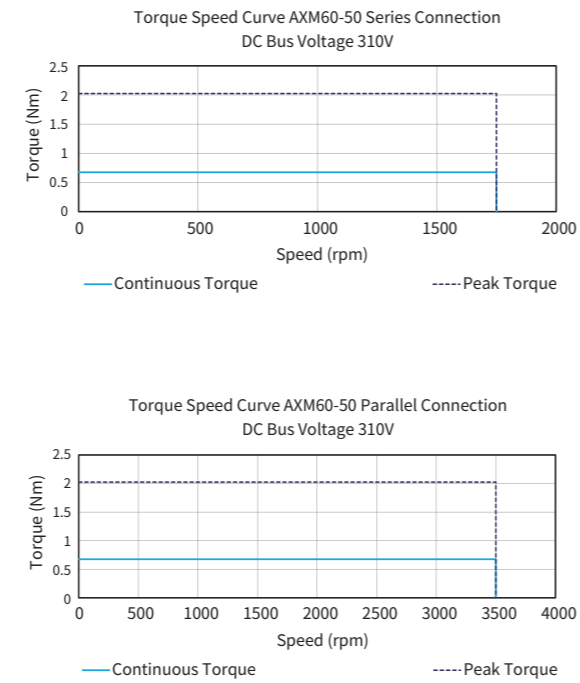
AXM60-50					
Performance Parameters		Symbol	Unit	Series	Parallel
Continuous Torque (NC) @100°C		T <sub>cn</sub>	Nm	0.71	0.71
Peak Torque		T <sub>pk</sub>	Nm	2.00	2.00
Torque Constant ±10%		K <sub>t</sub>	Nm/Arms	0.47	0.24
Back EMF Constant ±10%		K <sub>e</sub>	Vpeak/rpm	0.040	0.020
Motor Constant @25°C		K <sub>m</sub>	Nm/Sqrt(W)	0.11	0.11
Resistance (L-L) @25°C ±10%		R <sub>25</sub>	Ω	12.8	3.2
Inductance (L-L) ±20%		L	mH	28	7
Electrical Time Constant		τ <sub>e</sub>	ms	2.2	2.2
Continuous Current (NC) @100°C		I <sub>cn</sub>	Arms	1.5	3.0
Peak Current		I <sub>pk</sub>	Arms	6.0	12.0
Continuous Power Dissipation (NC) @100°C		P <sub>cn</sub>	W	55.9	55.9
Max. Coil Temperature		t <sub>max</sub>	°C	100	100
Thermal Dissipation Constant (NC)		K <sub>thn</sub>	W/°C	0.75	0.75
Max. Bus Voltage		U <sub>bus</sub>	Vdc	330	330
Pole Number		2P	-	10	10
Max Speed		Ω <sub>max</sub>	rpm	1750	3500
Mechanical Parameters					
Overall Mass (NC)		m <sub>n</sub>	kg	0.64	0.64
Rotor Inertia		J <sub>r</sub>	kg·m <sup>2</sup>	7.38E-05	7.38E-05
Axial Runout		-	μm	25	25
Radial Runout		-	μm	25	25
Max Axial Load (Upright Mounting)		-	N	50	50
Max Axial Load (Inverted / Wall Mounting)		-	N	15	15
Max Moment Load (Upright Mounting)		-	Nm	0.7	0.7
Max Moment Load (Inverted / Wall Mounting)		-	Nm	0.2	0.2
Encoder Parameters					
ABI Optical Incremental Encoder (SIN/COS)		-	lines / rev	650	650
ABI Optical Incremental Encoder (80x)		-	counts / rev	52000	52000
ABI Optical Incremental Encoder (160x)		-	counts / rev	104000	104000
ABI Optical Incremental Encoder (400x)		-	counts / rev	260000	260000
Accuracy after Error Mapping		-	arc sec	+/-20	+/-20
Repeatability		-	arc sec	+/-10	+/-10
Other Information					
Insulation Class		Class A (105°C)			
Protection Grade		IP40			
Compliance with Global Standards		Chinese 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.			

- Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
  - Resistance is measured by DC current with standard 0.2 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 runout value in parenthesis is optional.
  - Please refer to the illustration for different mountings.
  - Based on ABI optical SIN/COS encoder (4096x interpolation) with standard runout.
- The contents of datasheet are subjected to change without prior notice.

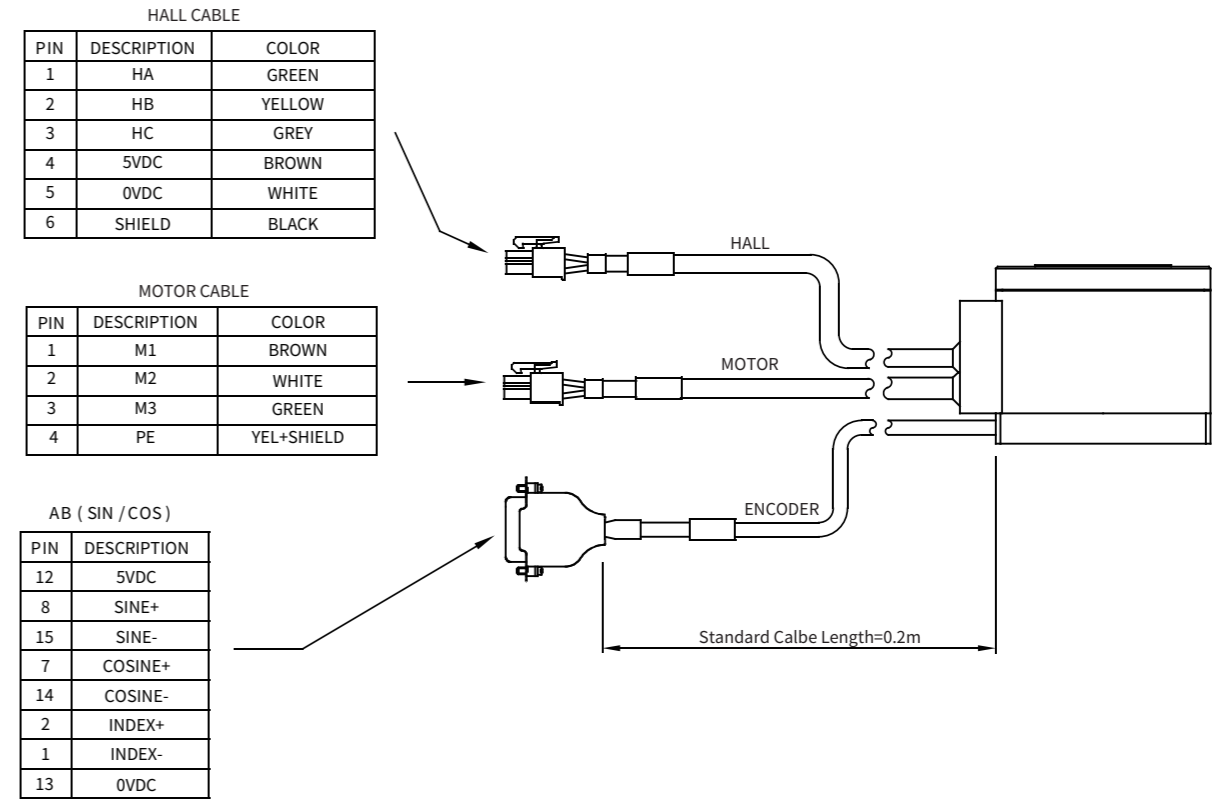
Dimension



Torque-Speed Curve



Motor Cable Connection



Part Numbering



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