

# DINGS'

Precision Motion Specialist

## FRAMELESS MOTOR PRODUCT CATALOG

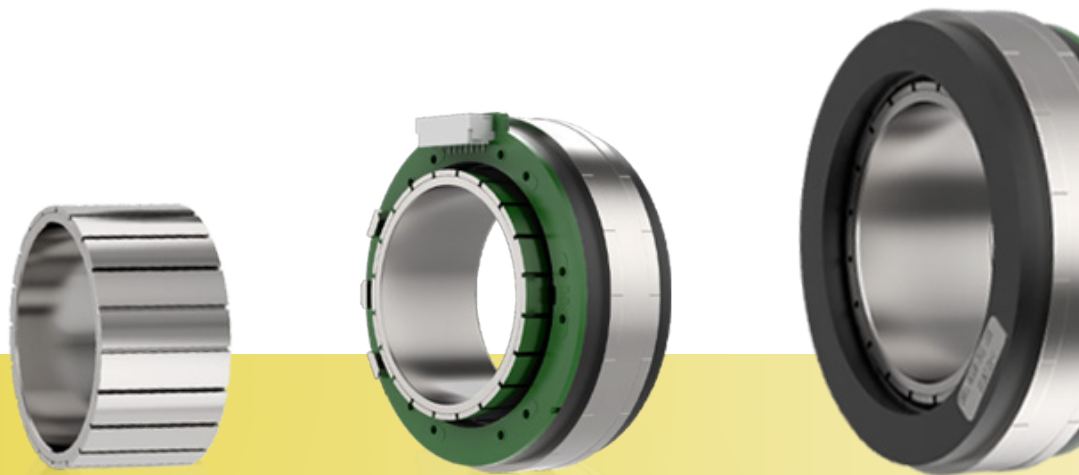


The modular design of the stator and rotor, along with optimized slot ratios, improves the motor's torque density.

The rotor has a large inner bore space, and the stator is designed for embedded installation by the customer, facilitating personalized design including mounting structures and cooling systems, offering greater flexibility for custom systems.

The optimized slot-pole combination reduces motor cogging torque, ensuring smooth motor operation.

The structure is compact and highly integrated.



# FRAMELESS MOTOR

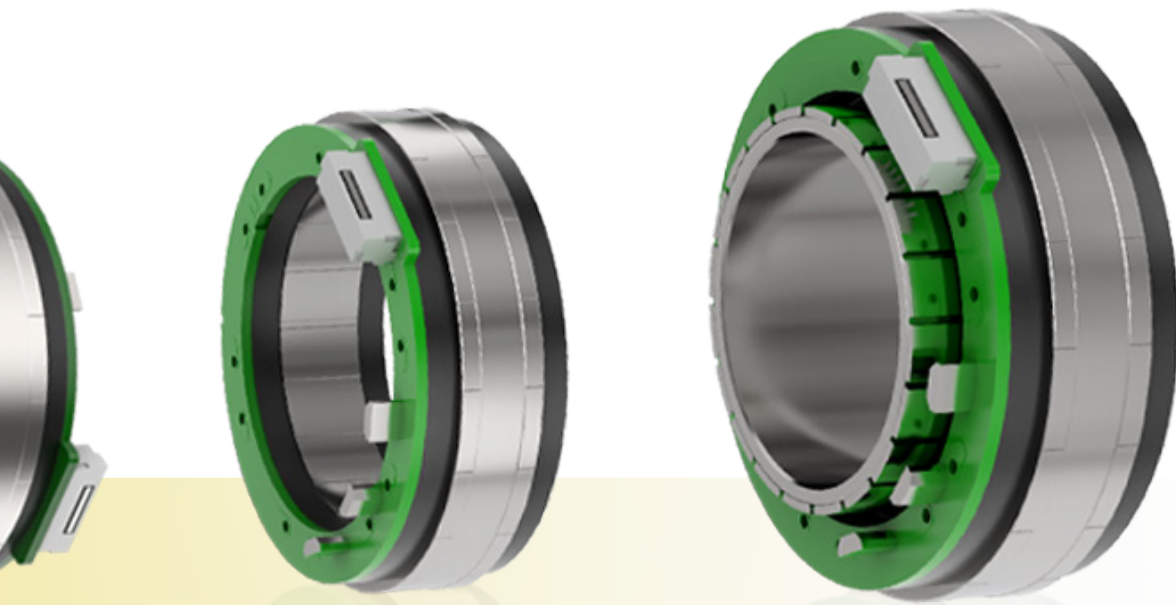
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Part number construction

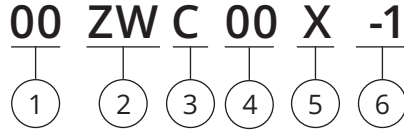
50mm series

70 mm series

85 mm series



## Part Number Construction



① Motor Size

Motor Size (mm)	50	70	85
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② Product Name

ZW = Slotted Brushless DC Motor

③ Motor Shape

C = Circular type

④ Motor Length

Unit : mm

when the length involves decimal points, use "\_" instead

⑤ Motor Casing

X = Inorganic Shell

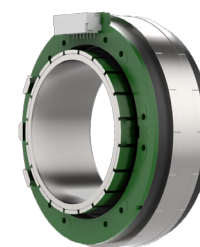
⑥ Customer Sequence Number

Example

Part Number            50ZWC15X-001

Description            50mm frame size  
 Round frameless torque motor  
 Body length: 15mm  
 Without housing  
 Customization number 001

## 50mm Frameless Motor

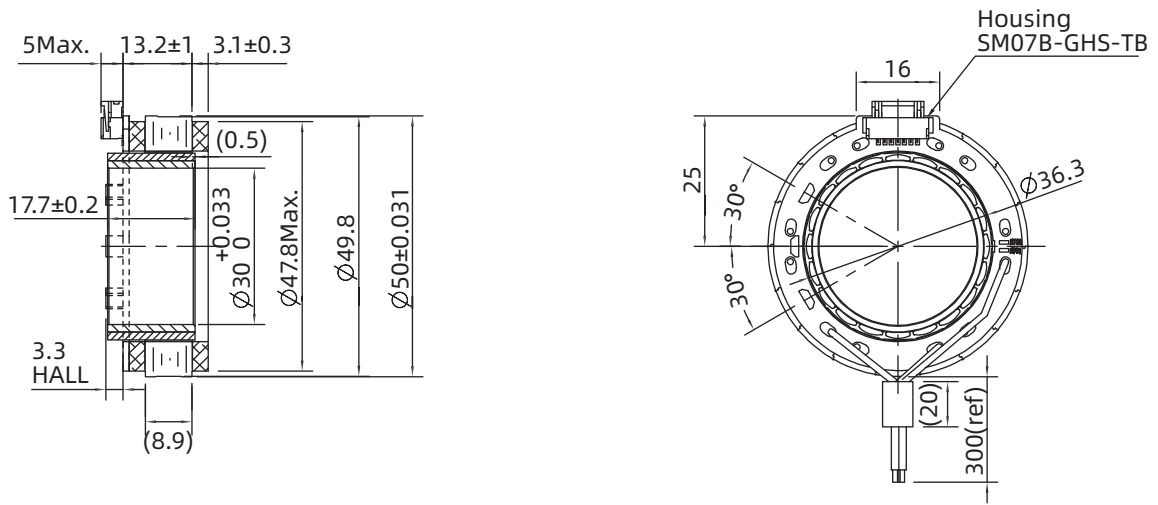


### Motor Characteristics

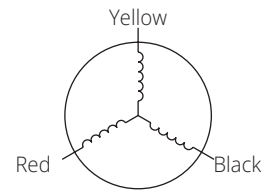
Motor part number		50ZWC15X-1
Stator Outer Diameter	mm	50±0.031
Rotor Inner Bore	mm	30+0.033
Number of Slots	-	18
Number of Pole Pairs	-	10
Phase Resistance	Ω	0.62
Phase Inductance	mH	0.43
Winding Connection Type	-	Star shape
Insulation Class	-	B
Duty Cycle	-	S2
Feedback Method	-	Hall sensor
Commutation Angle	-	120°
Insulation Strength (Dielectric Strength)	-	500VAC/1mA/1s
Insulation Resistance	-	100 MΩ/500VDC
Stator Weight	g	77.5
Rotor Weight	g	38
No-Load Speed	RPM	6400
No-Load Current	A	0.4(REF)
Rated Voltage	VDC	48
Rated Power	W	163
Rated Torque	N·m	0.3
Rated Speed	RPM	5200
Rated Current	A	3.6
Torque Constant	Nm/A	0.09
Back EMF Constant (RMS)	Vrms/Krpm	5.5
Peak Torque	N·m	0.96
Peak Current	A	10.7
Moment of Inertia	g·cm <sup>2</sup>	100

# 50mm Frameless Motor

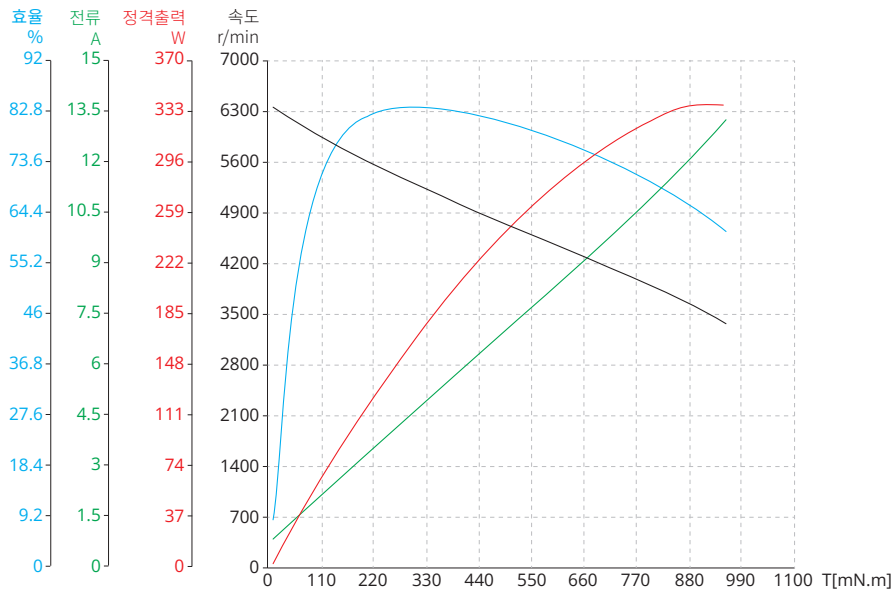
## Dimensional Drawings



Lead-out type	Lead-out color	Function
UL1332 AWG20	Yellow	U phase
	Red	V phase
	Black	W phase

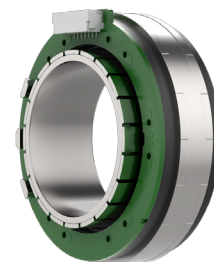


## Torque Performance Curves





## 70mm Frameless Motor



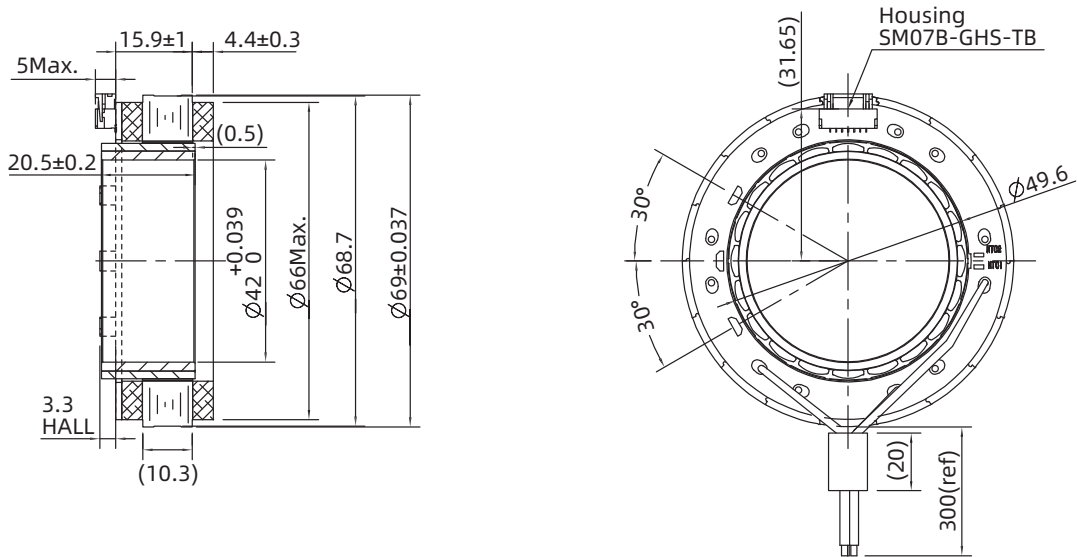
### Motor Characteristics

Motor part number		70ZWC20X-1
Stator Outer Diameter	mm	69±0.037
Rotor Inner Bore	mm	42+0.039
Number of Slots	-	18
Number of Pole Pairs	-	10
Phase Resistance	Ω	0.36
Phase Inductance	mH	0.51
Winding Connection Type	-	Star shape
Insulation Class	-	B
Duty Cycle	-	S2
Feedback Method	-	Hall sensor
Commutation Angle	-	120°
Insulation Strength (Dielectric Strength)	-	500VAC/1mA/1s
Insulation Resistance	-	100 MΩ/500VDC
Stator Weight	g	167.5
Rotor Weight	g	72
No-Load Speed	RPM	4350
No-Load Current	A	0.5(REF)
Rated Voltage	VDC	48
Rated Power	W	201
Rated Torque	N·m	0.55
Rated Speed	RPM	3500
Rated Current	A	4.4
Torque Constant	Nm/A	0.134
Back EMF Constant (RMS)	Vrms/Krpm	8.1
Peak Torque	N·m	1.65
Peak Current	A	13.2
Moment of Inertia	g·cm <sup>2</sup>	358

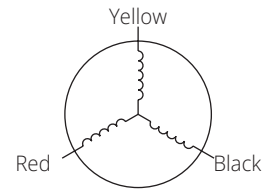
For stroke customization, please contact DINGS' or local representative.

# 70mm Frameless Motor

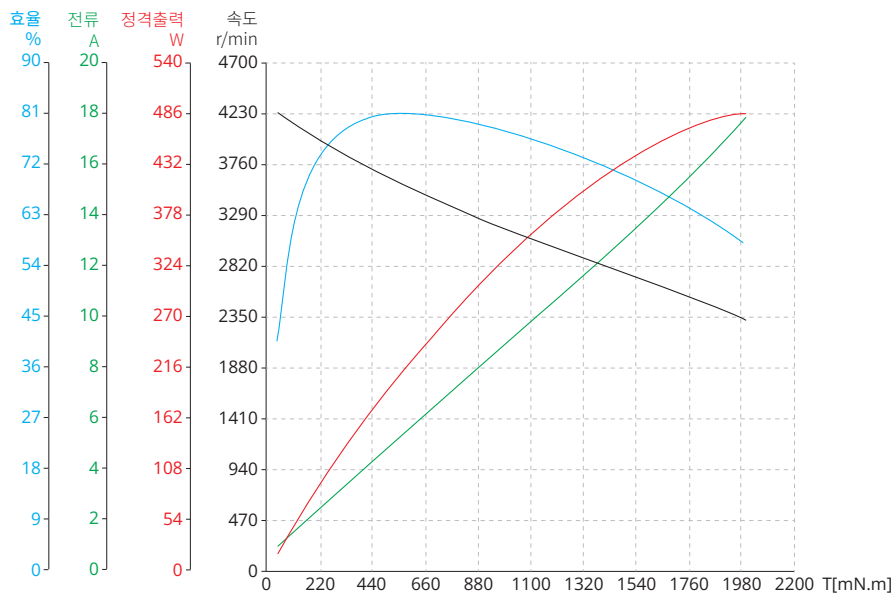
## Dimensional Drawings



Lead-out type	Lead-out color	Function
UL1332 AWG20	Yellow	U phase
	Red	V phase
	Black	W phase

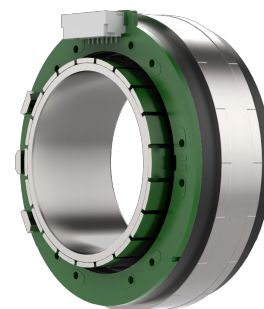


## Torque Performance Curves





## 85mm Frameless Motor

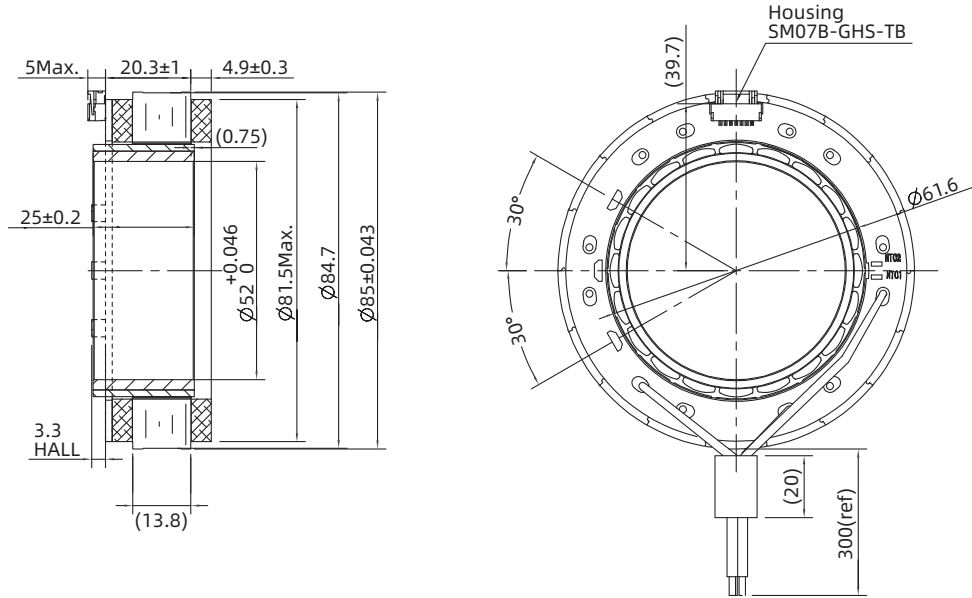


### Motor Characteristics

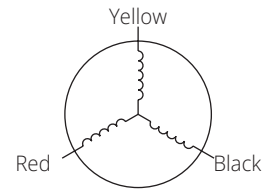
Motor part number		85ZWC25X-1
Stator Outer Diameter	mm	85±0.043
Rotor Inner Bore	mm	52+0.046
Number of Slots	-	18
Number of Pole Pairs	-	10
Phase Resistance	Ω	0.165
Phase Inductance	mH	0.33
Winding Connection Type	-	Star shape
Insulation Class	-	B
Duty Cycle	-	S2
Feedback Method	-	Hall sensor
Commutation Angle	-	120°
Insulation Strength (Dielectric Strength)	-	500VAC/1mA/1s
Insulation Resistance	-	100 MΩ/500VDC
Stator Weight	g	324
Rotor Weight	g	136
No-Load Speed	RPM	3650
No-Load Current	A	0.6(REF)
Rated Voltage	VDC	48
Rated Power	W	408
Rated Torque	N·m	1.3
Rated Speed	RPM	3000
Rated Current	A	8.6
Torque Constant	Nm/A	0.16
Back EMF Constant (RMS)	Vrms/Krpm	9.7
Peak Torque	N·m	3.9
Peak Current	A	25.7
Moment of Inertia	g·cm <sup>2</sup>	1086

# 85mm Frameless Motor

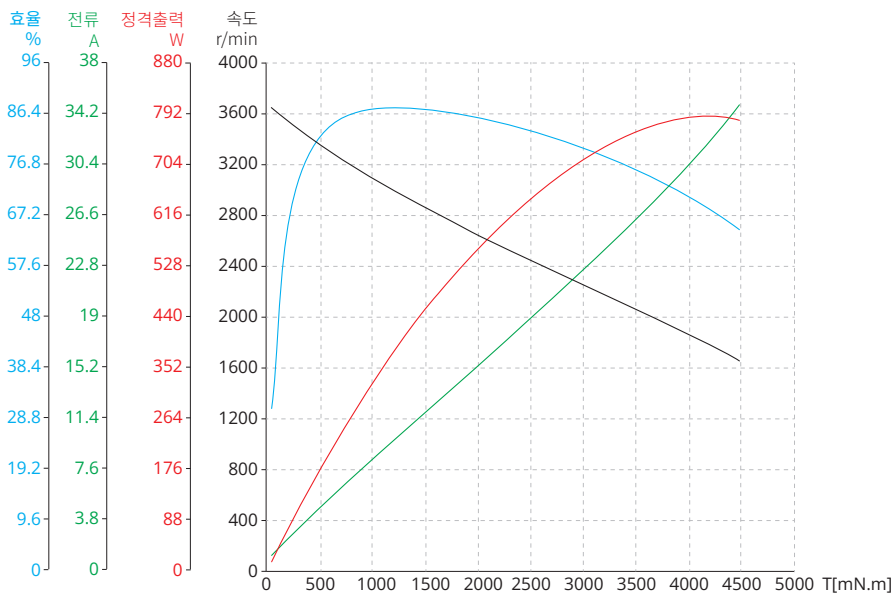
## Dimensional Drawings



Lead-out type	Lead-out color	Function
UL1332 AWG16	Yellow	U phase
	Red	V phase
	Black	W phase



## Torque Performance Curves



Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

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Precision Motion Specialist

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