

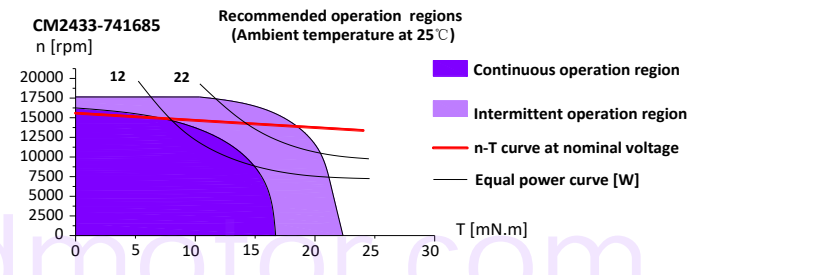
Scale:2:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5/7 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	78g	

CM2433 Series			060786	741685										
Motor Data														
1	Nominal voltage	U_N	V	6.0	7.4									
2	No load speed	n_0	rpm	7050	15925									
3	No load current	I_0	A	0.035	0.048									
4	Nominal speed	n_N	rpm	6578	14765									
5	Nominal torque	T_N	mN.m	4.15	5.0									
6	Nominal current	I_N	A	0.488	0.614									
7	Stall torque	T_S	mN.m	62	69									
8	Stall current	I_S	A	6.88	7.85									
9	Max. efficiency	η	%	86.2	85									
Characteristics														
10	Terminal resistance	R_{t-h}	Ω	0.88	0.94									
11	Terminal inductance	L_{t-h}	mH	0.07	0.06									
12	Torque constant	K_T	mN.m/A	9.16	8.84									
13	Speed constant	K_n	rpm/V	1181	2165									
14	Speed/torque gradient	K_v	rpm/mN.m	100	115									
15	Mechanical time constant	K_m	ms	7.20	8.26									
16	Rotor inertia	J	gcm ²	6.85	6.85									

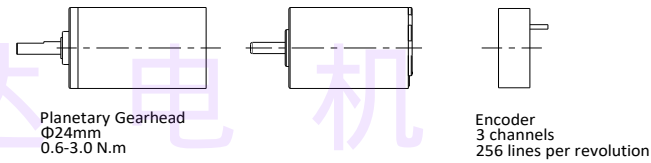
Thermal data		
17	Thermal resistance housing-ambient	14K/W
18	Thermal resistance winding-housing	3.1K/W
19	Thermal time constant winding	12.5 s
20	Thermal time constant motor	612 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+125°C
Mechanical data (sleeve bearings)		
23	Max. permissible speed	18000rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.025 mm
26	Max. axial load (dynamic)	3.2 N
27	Max. force for press fits (static)	5 N
28	Max. radial loading, 5 mm from flange	16 N

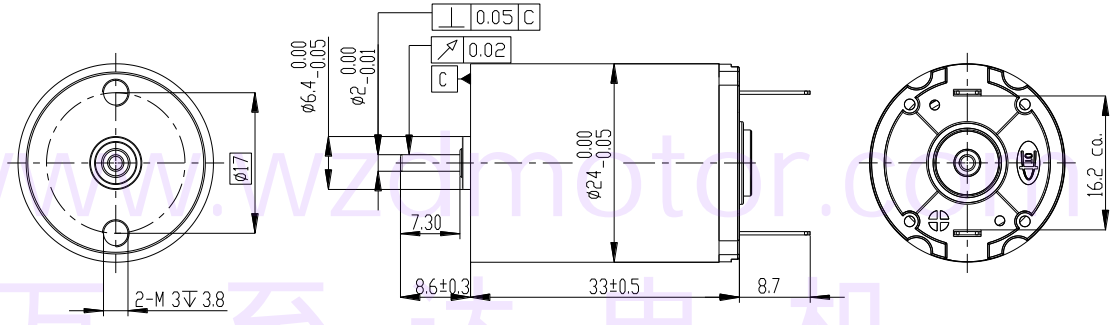
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:2:1 Unit:mm

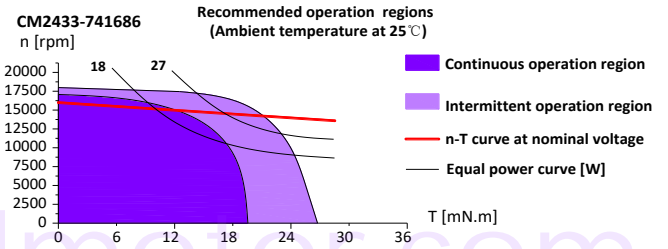
Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		5/7 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		81g

CM2433 Series			060788	741686										
Motor Data														
1	Nominal voltage	U_N	V	6.0	7.4									
2	No load speed	n_0	rpm	7400	15925									
3	No load current	I_0	A	0.090	0.102									
4	Nominal speed	n_N	rpm	6950	15742									
5	Nominal torque	T_N	mN.m	8.02	8.63									
6	Nominal current	I_N	A	1.391	1.41									
7	Stall torque	T_s	mN.m	132	128									
8	Stall current	I_s	A	21.5	19.5									
9	Max. efficiency	η	%	87.5	86.1									

Characteristics														
10	Terminal resistance	R_{t-h}	Ω	0.28	0.31									
11	Terminal inductance	L_{t-h}	mH	0.03	0.05									
12	Torque constant	K_T	mN.m/A	6.17	6.6									
13	Speed constant	K_n	rpm/V	1239	2828									
14	Speed/torque gradient	K_v	rpm/mN.m	70	67									
15	Mechanical time constant	K_m	ms	5.54	5.34									
16	Rotor inertia	J	gcm ²	7.55	7.55									

Thermal data		
17	Thermal resistance housing-ambient	14K/W
18	Thermal resistance winding-housing	3.1K/W
19	Thermal time constant winding	12.5 s
20	Thermal time constant motor	612 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+125°C

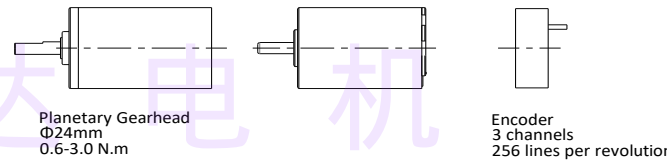
Operating Characteristic Curve

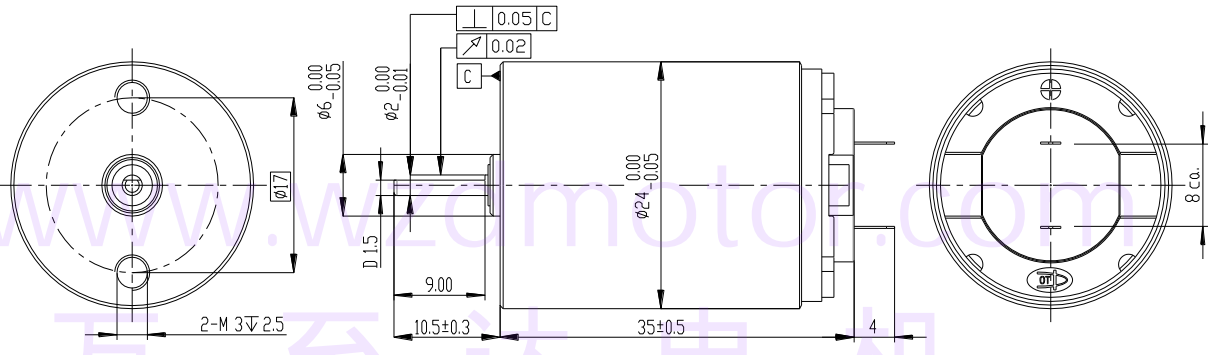


Mechanical data (sleeve bearings)		
23	Max. permissible speed	18000rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.025 mm
26	Max. axial load (dynamic)	3.2 N
27	Max. force for press fits (static)	5 N
28	Max. radial loading, 5 mm from flange	16 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
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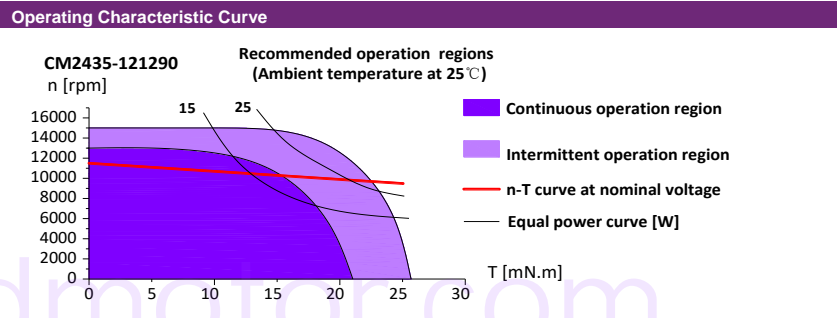


Scale:2:1 Unit:mm

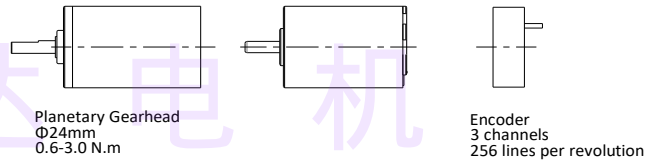
Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5/7 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	84g	

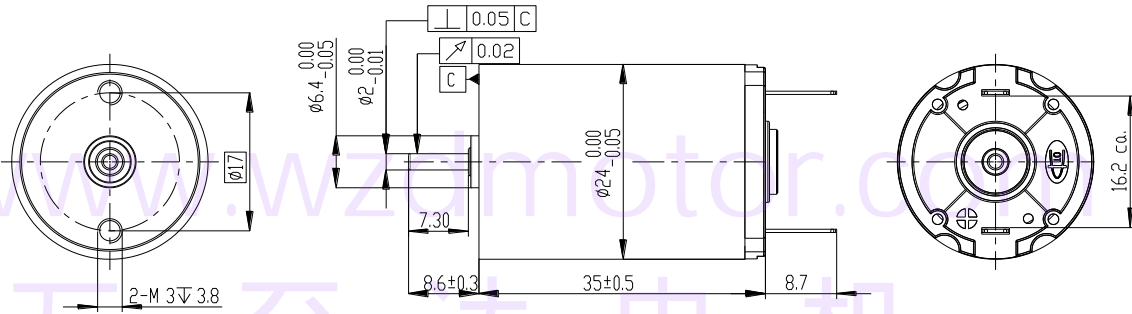
CM2435 Series			121290	241187	
Motor Data					
1	Nominal voltage	U_N	V	12.0	24.0
2	No load speed	n_0	rpm	11500	11200
3	No load current	I_0	A	0.039	0.014
4	Nominal speed	n_N	rpm	10931	10500
5	Nominal torque	T_N	mN.m	5.45	6.88
6	Nominal current	I_N	A	0.672	0.24
7	Stall torque	T_s	mN.m	110	110
8	Stall current	I_s	A	12.9	3.6
9	Max. efficiency	η	%	89.9	87.1
Characteristics					
10	Terminal resistance	R_{t-h}	Ω	0.93	6.67
11	Terminal inductance	L_{t-h}	mH	0.23	0.35
12	Torque constant	K_T	mN.m/A	8.55	30.69
13	Speed constant	K_n	rpm/V	961	469
14	Speed/torque gradient	K_v	rpm/mN.m	122	68
15	Mechanical time constant	K_m	ms	9.19	6.97
16	Rotor inertia	J	gcm^2	7.22	9.85

Thermal data	
17	Thermal resistance housing-ambient 14K/W
18	Thermal resistance winding-housing 3.1K/W
19	Thermal time constant winding 12.5 s
20	Thermal time constant motor 612 s
21	Ambient temperature -30...+100°C
22	Max. permissible winding temperature +125°C
Mechanical data (sleeve bearings)	
23	Max. permissible speed 15000rpm
24	Axial play 0.05-0.15 mm
25	Radial play 0.025 mm
26	Max. axial load (dynamic) 3.2 N
27	Max. force for press fits (static) 5 N
28	Max. radial loading, 5 mm from flange 16 N



Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:2:1 Unit:mm

Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			5/7 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			87g

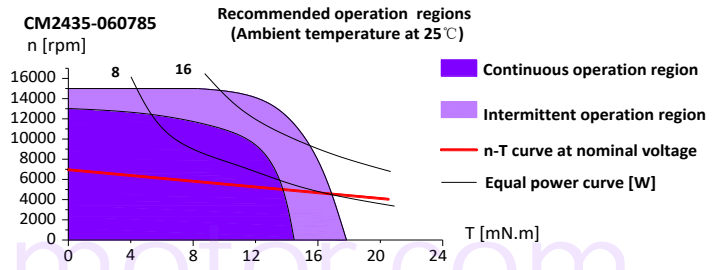
CM2435 Series 060785

Motor Data			
1	Nominal voltage	U_N	V 6.0
2	No load speed	n_0	rpm 6950
3	No load current	I_0	A 0.036
4	Nominal speed	n_N	rpm 6354
5	Nominal torque	T_N	mN.m 4.71
6	Nominal current	I_N	A 0.461
7	Stall torque	T_S	mN.m 65
8	Stall current	I_S	A 5.9
9	Max. efficiency	η	% 85

Characteristics			
10	Terminal resistance	R_{t-h}	Ω 1.02
11	Terminal inductance	L_{t-h}	mH 0.07
12	Torque constant	K_T	mN.m/A 11.081
13	Speed constant	K_n	rpm/V 1149
14	Speed/torque gradient	K_v	rpm/mN.m 79
15	Mechanical time constant	K_m	ms 8.15
16	Rotor inertia	J	gcm ² 9.85

Thermal data		
17	Thermal resistance housing-ambient	14K/W
18	Thermal resistance winding-housing	3.1K/W
19	Thermal time constant winding	12.5 s
20	Thermal time constant motor	612 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+125°C

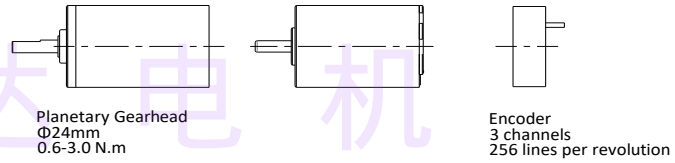
Operating Characteristic Curve

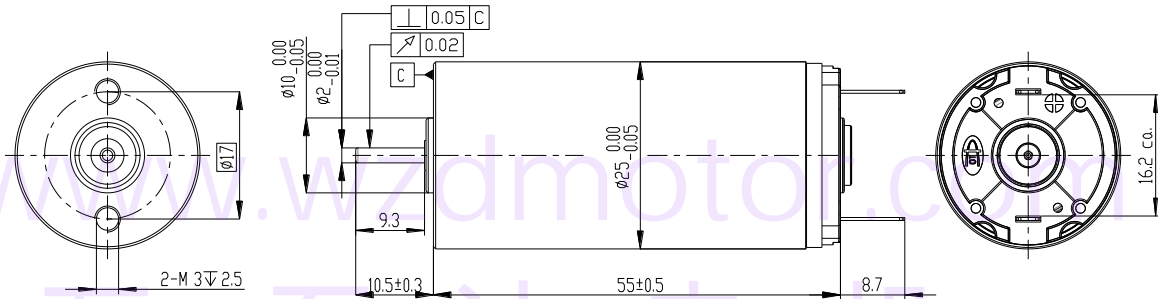


Mechanical data (sleeve bearings)		
23	Max. permissible speed	15000rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.025 mm
26	Max. axial load (dynamic)	3.2 N
27	Max. force for press fits (static)	5 N
28	Max. radial loading, 5 mm from flange	16 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:1.5:1 Unit:mm

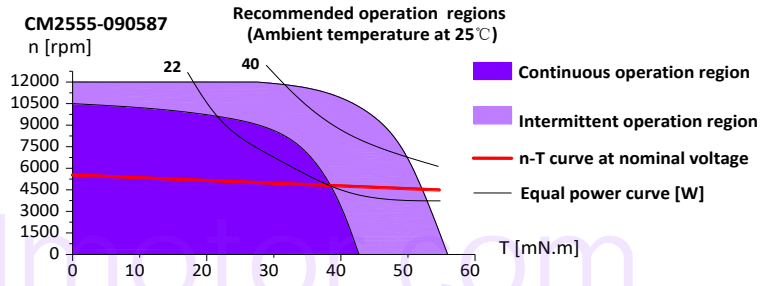
Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		11 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		150g

CM2555 Series			090587	120590								
Motor Data												
1	Nominal voltage	U_N	V	9.0	12.0							
2	No load speed	n_0	rpm	5400	5350							
3	No load current	I_0	A	0.090	0.050							
4	Nominal speed	n_N	rpm	5056	5081							
5	Nominal torque	T_N	mN.m	22.27	19.13							
6	Nominal current	I_N	A	1.325	0.943							
7	Stall torque	T_s	mN.m	350	380							
8	Stall current	I_s	A	19.5	17.8							
9	Max. efficiency	η	%	86.9	89.7							

Characteristics												
10	Terminal resistance	R_{t-h}	Ω	0.46	0.677							
11	Terminal inductance	L_{t-h}	mH	0.07	0.25							
12	Torque constant	K_T	mN.m/A	18.03	21.41							
13	Speed constant	K_n	rpm/V	603	447							
14	Speed/torque gradient	K_v	rpm/mN.m	14	14							
15	Mechanical time constant	K_m	ms	3.19	2.99							
16	Rotor inertia	J	gcm ²	22.5	20.3							

Thermal data		
17	Thermal resistance housing-ambient	14K/W
18	Thermal resistance winding-housing	3.1K/W
19	Thermal time constant winding	12.5 s
20	Thermal time constant motor	612 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+125°C

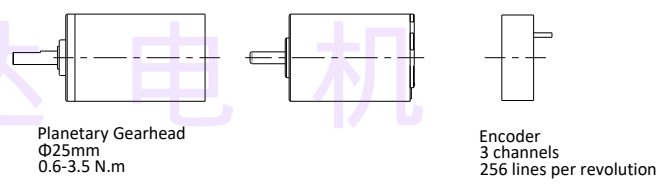
Operating Characteristic Curve

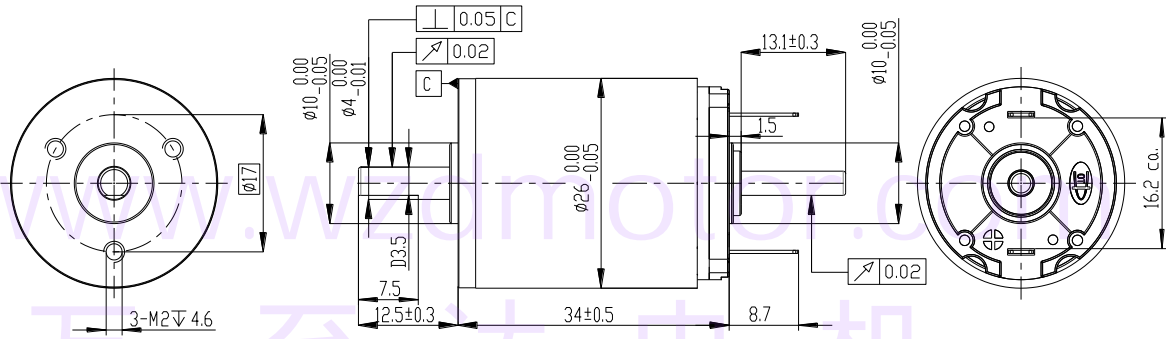


Mechanical data (ball bearings)		
23	Max. permissible speed	10000rpm
24	Axial play at axial load < 5N	0 mm
	> 5N	Max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	3.2 N
27	Max. force for press fits (static)	5 N
28	Max. radial loading, 5 mm from flange	16 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity (with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale 1.5:1 Unit: mm

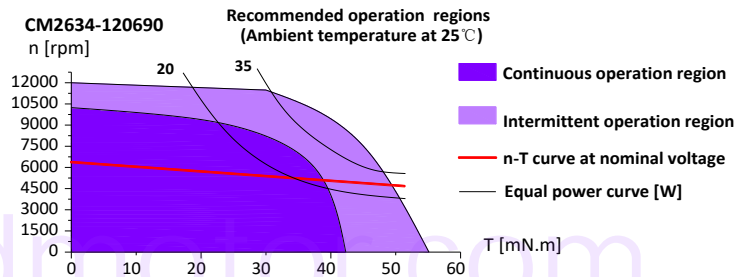
Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	11 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	85g	

CM2634 Series			120690	240690	241289	480689	
Motor Data							
1	Nominal voltage	U_N	V	12.0	24.0	24.0	48.0
2	No load speed	n_0	rpm	6200	6300	11600	6250
3	No load current	I_0	A	0.09	0.035	0.038	0.021
4	Nominal speed	n_N	rpm	5907	5998	11003	5923
5	Nominal torque	T_N	mN.m	16.56	14.86	15.7	16.06
6	Nominal current	I_N	A	1.81	0.695	0.70	0.38
7	Stall torque	T_s	mN.m	350	310	305	307
8	Stall current	I_s	A	36.5	13.8	12.9	6.89
9	Max. efficiency	η	%	90.3	90.2	89.4	89.3

Characteristics							
10	Terminal resistance	R_{t-h}	Ω	0.33	1.74	1.86	6.97
11	Terminal inductance	L_{t-h}	mH	0.04	0.24	0.26	0.85
12	Torque constant	K_T	mN.m/A	9.61	22.52	23.71	44.69
13	Speed constant	K_n	rpm/V	518	263	485	131
14	Speed/torque gradient	K_v	rpm/mN.m	34	33	32	33
15	Mechanical time constant	K_m	ms	5.557	5.35	5.56	5.68
16	Rotor inertia	J	gcm ²	15.6	15.6	16.8	16.3

Thermal data		
17	Thermal resistance housing-ambient	14K/W
18	Thermal resistance winding-housing	3.1K/W
19	Thermal time constant winding	12.5 s
20	Thermal time constant motor	612 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+125°C

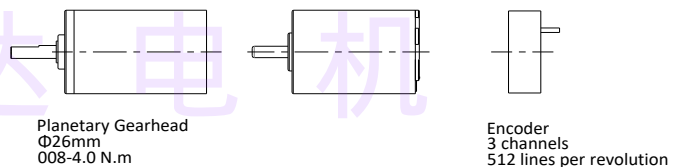
Operating Characteristic Curve

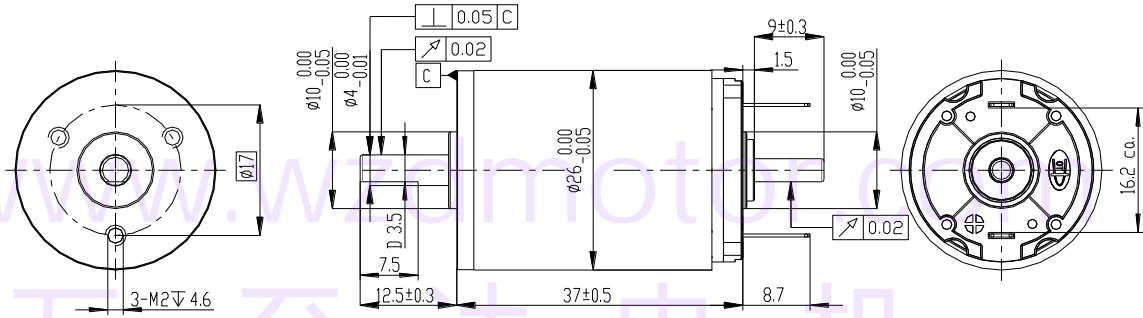


Mechanical data (ball bearings)		
23	Max. permissible speed	12000rpm
24	Axial play at axial load < 5N	0 mm
	> 5N	Max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	3.2 N
27	Max. force for press fits (static)	5 N
28	Max. radial loading, 5 mm from flange	16 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity (with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
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Scale 1.5:1 Unit: mm

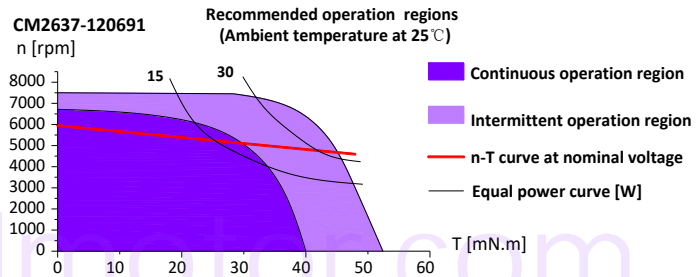
Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	11 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	98g	

CM2637 Series			120691	180691	240691	
Motor Data						
1	Nominal voltage	U_N	V	12.0	18.0	24.0
2	No load speed	n_0	rpm	5980	5900	5860
3	No load current	I_0	A	0.075	0.052	0.031
4	Nominal speed	n_N	rpm	5710	5650	5592
5	Nominal torque	T_N	mN.m	15.34	16.12	17.15
6	Nominal current	I_N	A	1.587	1.17	0.65
7	Stall torque	T_s	mN.m	340	380	375
8	Stall current	I_s	A	33.6	26.5	13.5
9	Max. efficiency	η		90.8	91.3	90.6

Characteristics						
10	Terminal resistance	R_{t-h}	Ω	0.36	0.68	1.78
11	Terminal inductance	L_{t-h}	mH	0.05	0.11	0.25
12	Torque constant	K_T	mN.m/A	10.14	14.37	27.84
13	Speed constant	K_n	rpm/V	499	328	245
14	Speed/torque gradient	K_v	rpm/mN.m	33	31	22
15	Mechanical time constant	K_m	ms	5.63	5.33	4.63
16	Rotor inertia	J	gcm^2	16.2	16.2	20.2

Thermal data		
17	Thermal resistance housing-ambient	14K/W
18	Thermal resistance winding-housing	3.1K/W
19	Thermal time constant winding	12.5 s
20	Thermal time constant motor	612 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+125°C

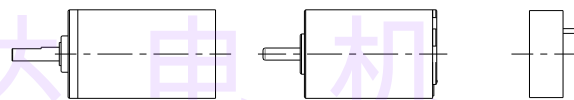
Operating Characteristic Curve



Mechanical data (ball bearings)		
23	Max. permissible speed	7500rpm
24	Axial play at axial load < 5N	0 mm
	> 5N	Max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	3.2 N
27	Max. force for press fits (static)	5 N
28	Max. radial loading, 5 mm from flange	16 N

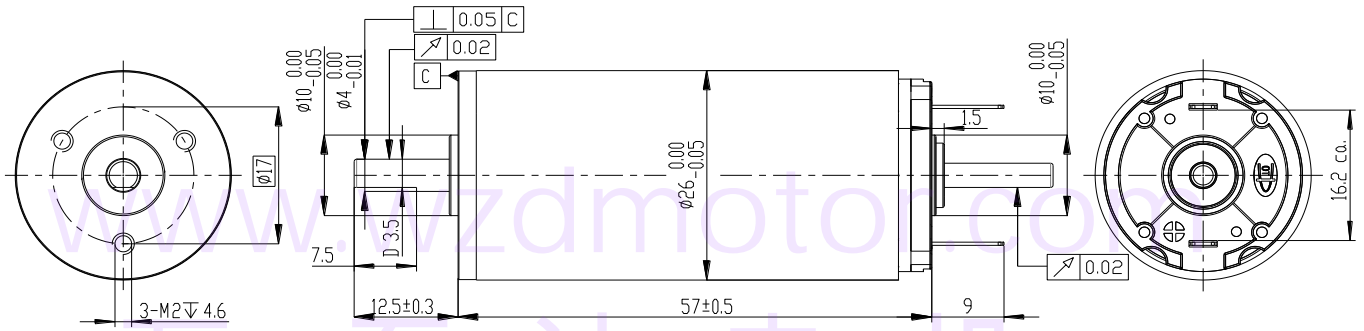
Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity (with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
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Planetary Gearhead
Φ26mm
008-4.0 N.m

Encoder
3 channels
512 lines per revolution



Scale 1.5:1 Unit: mm

Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		11 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		160g

CM2657 Series

Motor Data			090690	120590	180689
1 Nominal voltage	U_N	V	9.0	12.0	18.0
2 No load speed	n_0	rpm	5533	5332	5530
3 No load current	I_0	A	0.061	0.05	0.042
4 Nominal speed	n_N	rpm	5275	5066	5222
5 Nominal torque	T_N	mN.m	17.3	19.67	20.59
6 Nominal current	I_N	A	1.25	0.954	0.713
7 Stall torque	T_s	mN.m	370	395	370
8 Stall current	I_s	A	25.5	18.2	12.1
9 Max. efficiency	η	%	90.5	89.8	88.6

Characteristics					
10 Terminal resistance	R_{t-h}	Ω	0.35	0.66	1.49
11 Terminal inductance	L_{t-h}	mH	0.07	0.14	0.25
12 Torque constant	K_T	mN.m/A	14.54	21.76	30.69
13 Speed constant	K_n	rpm/V	616	446	308
14 Speed/torque gradient	K_v	rpm/mN.m	16	13	15
15 Mechanical time constant	K_m	ms	3.92	3.27	3.71
16 Rotor inertia	J	gcm^2	23.5	23.5	23.5

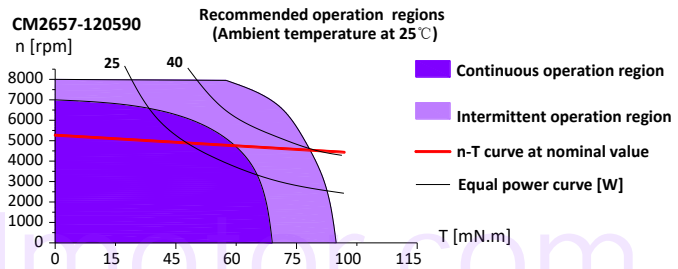
Thermal data

17 Thermal resistance housing-ambient	14K/W
18 Thermal resistance winding-housing	3.1K/W
19 Thermal time constant winding	12.5 s
20 Thermal time constant motor	612 s
21 Ambient temperature	-30...+100°C
22 Max. permissible winding temperature	+125°C

Mechanical data (ball bearings)

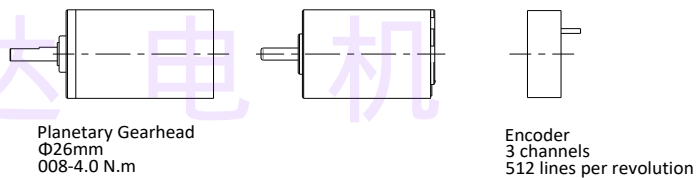
23 Max. permissible speed	8000rpm
24 Axial play at axial load < 5N	0 mm
> 5N	Max 0.3 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	3.2 N
27 Max. force for press fits (static)	5 N
28 Max. radial loading, 5 mm from flange	16 N

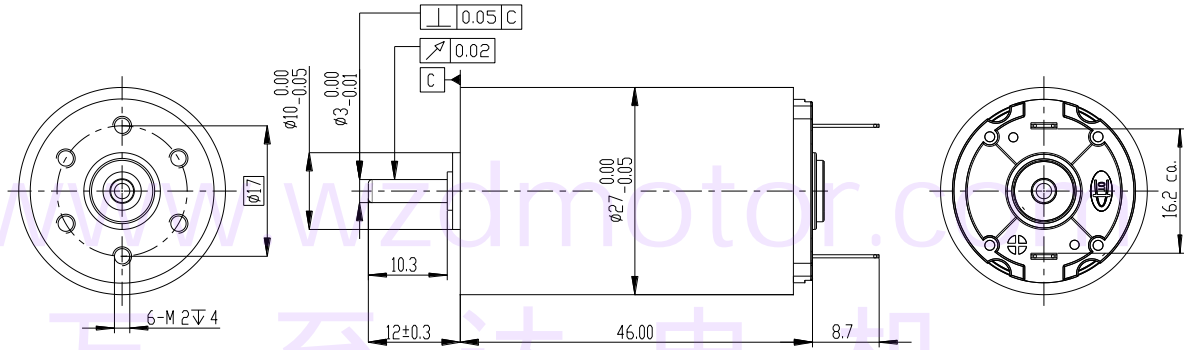
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity (with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale 1.5:1 Unit: mm

Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		11 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		120g

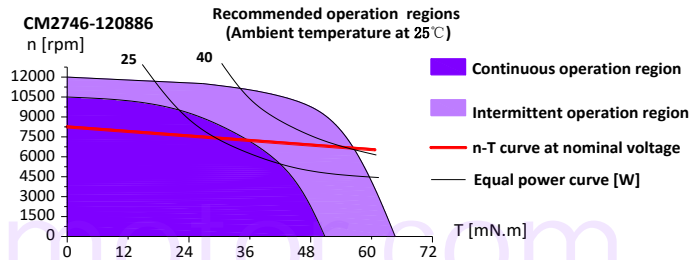
CM2746 Series		120886								
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Motor Data			
1	Nominal voltage	U_N	V 12.0
2	No load speed	n_0	rpm 8200
3	No load current	I_0	A 0.09
4	Nominal speed	n_N	rpm 7651
5	Nominal torque	T_N	mN.m 24.42
6	Nominal current	I_N	A 1.255
7	Stall torque	T_S	mN.m 365
8	Stall current	I_S	A 17.5
9	Max. efficiency	η	% 86.2

Characteristics			
10	Terminal resistance	R_{t-h}	Ω 0.69
11	Terminal inductance	L_{t-h}	mH 0.22
12	Torque constant	K_T	mN.m/A 20.96
13	Speed constant	K_n	rpm/V 687
14	Speed/torque gradient	K_v	rpm/mN.m 15
15	Mechanical time constant	K_m	ms 3.04
16	Rotor inertia	J	gcm ² 19.5

Thermal data			
17	Thermal resistance housing-ambient		6 K/W
18	Thermal resistance winding-housing		1.7 K/W
19	Thermal time constant winding		16.3 s
20	Thermal time constant motor		593 s
21	Ambient temperature		-30...+100°C
22	Max. permissible winding temperature		+125°C

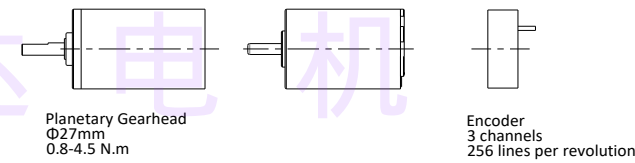
Operating Characteristic Curve

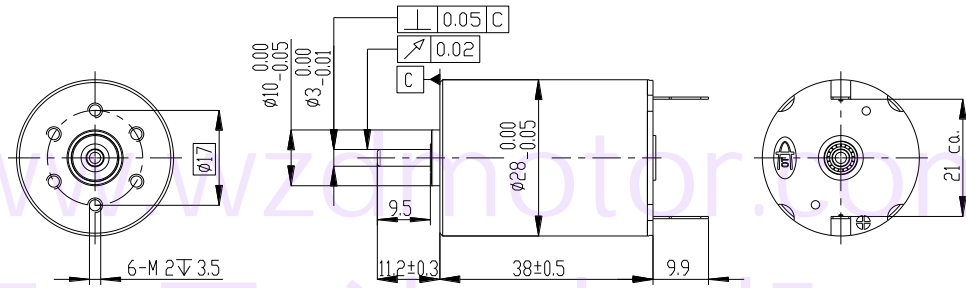


Mechanical data (ball bearings)			
23	Max. permissible speed		12000 rpm
24	Axial play at axial load < 5N		0 mm
	> 5N	Max	0.3 mm
25	Radial play		preloaded
26	Max. axial load (dynamic)		5.6 N
27	Max. force for press fits (static)		110 N
28	Max. radial loading, 5 mm from flange		28 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity (with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:1:1 Unit:mm

Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		11 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		115g

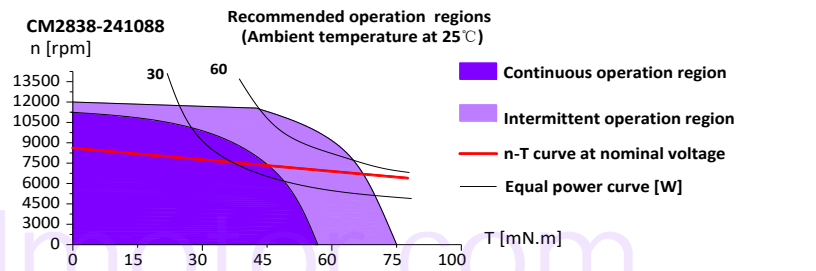
CM2838 Series 241088

Motor Data	Symbol	Unit	Value
1	Nominal voltage	U_N	V 24
2	No load speed	n_0	rpm 9500
3	No load current	I_0	A 0.064
4	Nominal speed	n_N	rpm 8958
5	Nominal torque	T_N	mN.m 19.4
6	Nominal current	I_N	A 1.06
7	Stall torque	T_S	mN.m 340
8	Stall current	I_S	A 17.5
9	Max. efficiency	η	% 88.3

Characteristics	Symbol	Unit	Value
10	Terminal resistance	R_{t-h}	Ω 1.37
11	Terminal inductance	L_{t-h}	mH 0.36
12	Torque constant	K_T	mN.m/A 19.54
13	Speed constant	K_n	rpm/V 397
14	Speed/torque gradient	K_v	rpm/mN.m 34
15	Mechanical time constant	K_m	ms 7.03
16	Rotor inertia	J	gcm ² 19.5

Thermal data	Value
17	Thermal resistance housing-ambient 6 K/W
18	Thermal resistance winding-housing 1.7 K/W
19	Thermal time constant winding 16.3 s
20	Thermal time constant motor 593 s
21	Ambient temperature -30...+100°C
22	Max. permissible winding temperature +125°C

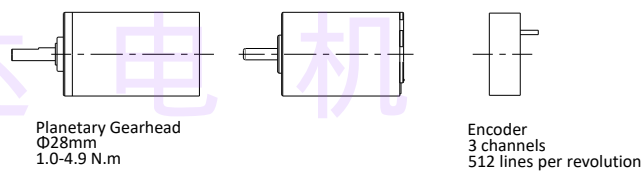
Operating Characteristic Curve

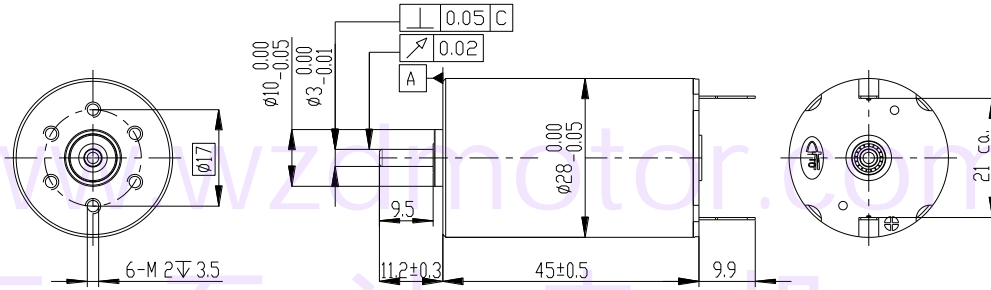


Mechanical data (ball bearings)	Value
23	Max. permissible speed 12000 rpm
24	Axial play at axial load < 6N 0 mm
	> 6N Max 0.3 mm
25	Radial play preloaded
26	Max. axial load (dynamic) 5.6 N
27	Max. force for press fits (static) 110 N
28	Max. radial loading, 5 mm from flange 28 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:1:1 Unit:mm

Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			11 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			130g

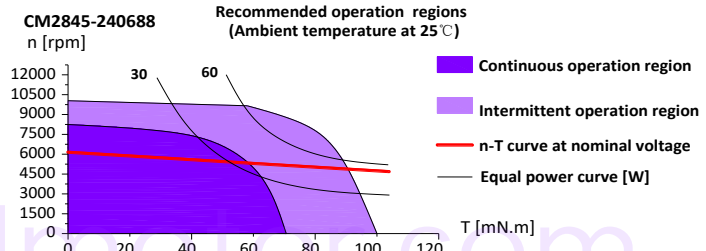
CM2845 Series			120689	240688	480688
Motor Data					
1	Nominal voltage	U_N V	12.0	24.0	48.0
2	No load speed	n_0 rpm	6100	6150	6160
3	No load current	I_0 A	0.056	0.032	0.015
4	Nominal speed	n_N rpm	5776	5803	5811
5	Nominal torque	T_N mN.m	19.76	21.2	20.85
6	Nominal current	I_N A	0.998	0.54	0.25
7	Stall torque	T_s mN.m	372	375	368
8	Stall current	I_s A	17.8	8.95	4.16
9	Max. efficiency	η %	89.1	88.4	88.4

Characteristics					
10	Terminal resistance	R_{t-h} Ω	0.67	2.68	11.54
11	Terminal inductance	L_{t-h} mH	0.13	0.65	2.32
12	Torque constant	K_T mN.m/A	20.96	42.0	88.78
13	Speed constant	K_n rpm/V	510	257	129
14	Speed/torque gradient	K_v rpm/mN.m	15	14	14
15	Mechanical time constant	K_m ms	3.44	3.4	3.28
16	Rotor inertia	J gcm ²	22.4	22.4	22.4

Thermal data	
17	Thermal resistance housing-ambient 6 K/W
18	Thermal resistance winding-housing 1.7 K/W
19	Thermal time constant winding 16.3 s
20	Thermal time constant motor 593 s
21	Ambient temperature -30...+100°C
22	Max. permissible winding temperature +125°C

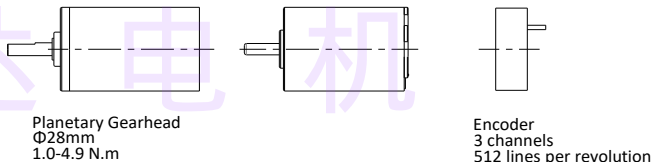
Mechanical data (ball bearings)	
23	Max. permissible speed 10000 rpm
24	Axial play at axial load < 6N 0 mm
	> 6N Max 0.3 mm
25	Radial play preloaded
26	Max. axial load (dynamic) 5.6 N
27	Max. force for press fits (static) 110 N
28	Max. radial loading, 5 mm from flange 28 N

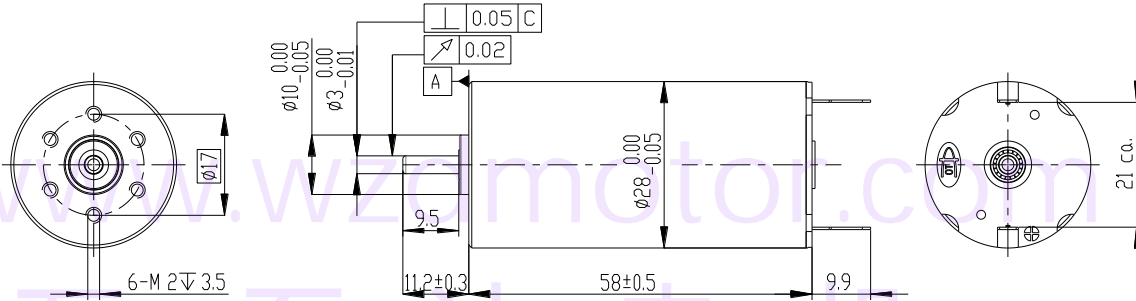
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity (with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:1:1 Unit:mm

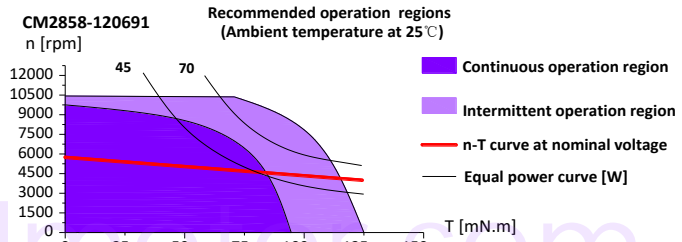
Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		11 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		180g

CM2858 Series			120691	240690	480691	
Motor Data						
1	Nominal voltage	U_N	V	12.0	24.0	48.0
2	No load speed	n_0	rpm	5700	5800	5800
3	No load current	I_0	A	0.115	0.072	0.035
4	Nominal speed	n_N	rpm	5436	5527	5545
5	Nominal torque	T_N	mN.m	23.66	29.7	29.5
6	Nominal current	I_N	A	2.36	1.46	0.76
7	Stall torque	T_s	mN.m	510	630	670
8	Stall current	I_s	A	48.6	29.5	16.5
9	Max. efficiency	η	%	90.5	90.4	91.0

Characteristics						
10	Terminal resistance	R_{t-h}	Ω	0.25	0.81	2.91
11	Terminal inductance	L_{t-h}	mH	0.035	0.16	0.65
12	Torque constant	K_T	mN.m/A	10.52	21.41	40.7
13	Speed constant	K_n	rpm/V	476	242	1212
14	Speed/torque gradient	K_v	rpm/mN.m	21	17	17
15	Mechanical time constant	K_m	ms	5.09	4.35	4.48
16	Rotor inertia	J	gcm^2	22.8	24.5	25.5

Thermal data		
17	Thermal resistance housing-ambient	6 K/W
18	Thermal resistance winding-housing	1.7 K/W
19	Thermal time constant winding	16.3 s
20	Thermal time constant motor	593 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+125°C

Operating Characteristic Curve



Mechanical data (ball bearings)		
23	Max. permissible speed	10000 rpm
24	Axial play at axial load < 6N	0 mm
	> 6N	Max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	5.6 N
27	Max. force for press fits (static)	110 N
28	Max. radial loading, 5 mm from flange	28 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)

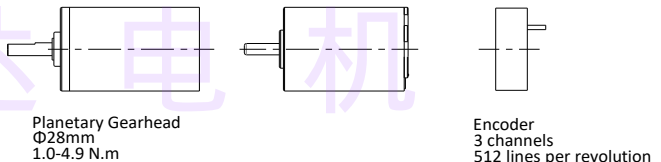
Commutator: Pressure-sensitive/electric capacity (with precious metal brushes or graphite)

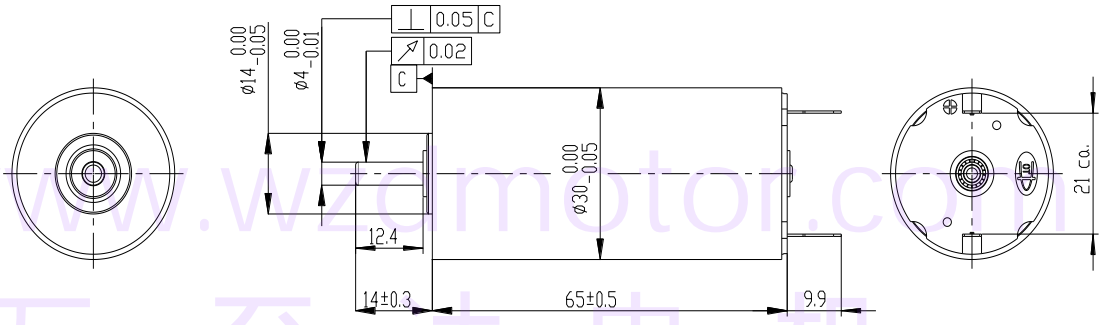
Bearing: Ball bearing/sleeve bearing

Shaft: Length/diameter/flat face

Electric connection: Terminals or cable/alignment of connection/ cable length/connector type

More: Customized according to customer requirements, please contact our sales engineers





Scale:1:1 Unit:mm

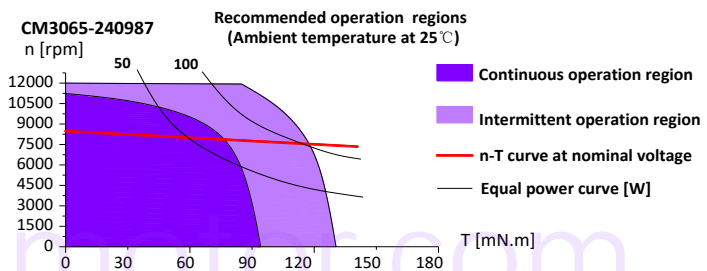
Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator		11 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	Terminals
Weight		295g	

CM3065 Series			120886	240987	480889	
Motor Data						
1	Nominal voltage	U_N	V	12.0	24.0	48.0
2	No load speed	n_0	rpm	8050	8720	8320
3	No load current	I_0	A	0.31	0.19	0.075
4	Nominal speed	n_N	rpm	7504	8154	7866
5	Nominal torque	T_N	mN.m	55.85	63.56	50.04
6	Nominal current	I_N	A	4.26	2.74	1.23
7	Stall torque	T_s	mN.m	823	980	990
8	Stall current	I_s	A	58.5	39.5	22.5
9	Max. efficiency	η	%	86.0	86.6	88.8

Characteristics						
10	Terminal resistance	R_{t-h}	Ω	0.21	0.61	2.13
11	Terminal inductance	L_{t-h}	mH	0.03	0.52	1.51
12	Torque constant	K_T	mN.m/A	14.14	24.93	44.15
13	Speed constant	K_n	rpm/V	674	365	174
14	Speed/torque gradient	K_v	rpm/mN.m	10	9	10
15	Mechanical time constant	K_m	ms	4.67	4.45	4.98
16	Rotor inertia	J	gcm^2	45.5	45.5	45.5

Thermal data		
17	Thermal resistance housing-ambient	6 K/W
18	Thermal resistance winding-housing	1.7 K/W
19	Thermal time constant winding	16.3 s
20	Thermal time constant motor	593 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+125°C

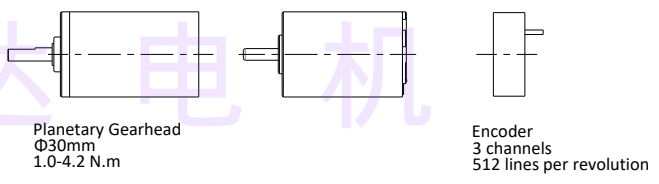
Operating Characteristic Curve

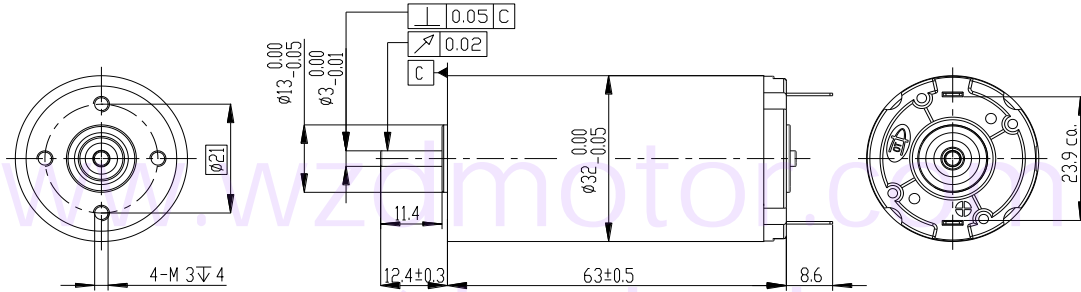


Mechanical data (ball bearings)		
23	Max. permissible speed	12000 rpm
24	Axial play at axial load < 7N	0 mm
	> 7N	Max 0.25 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	5.6 N
27	Max. force for press fits (static)	110 N
28	Max. radial loading, 5 mm from flange	28 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity (with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:1:1 Unit:mm

Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			13 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			290g

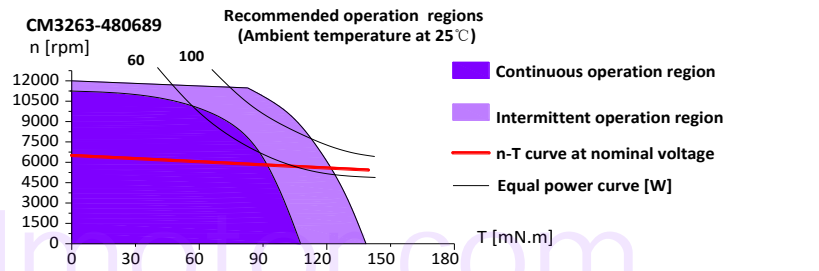
CM3263 Series			480689												
Motor Data															
1	Nominal voltage	U_N	V	48											
2	No load speed	n_0	rpm	6400											
3	No load current	I_0	A	0.105											
4	Nominal speed	n_N	rpm	6068											
5	Nominal torque	T_N	mN.m	87.24											
6	Nominal current	I_N	A	1.92											
7	Stall torque	T_S	mN.m	1680											
8	Stall current	I_S	A	35											
9	Max. efficiency	η	%	89.3											

Characteristics															
10	Terminal resistance	R_{t-h}	Ω	1.376											
11	Terminal inductance	L_{t-h}	mH	2.85											
12	Torque constant	K_T	mN.m/A	48.14											
13	Speed constant	K_n	rpm/V	134											
14	Speed/torque gradient	K_v	rpm/mN.m	5.7											
15	Mechanical time constant	K_m	ms	3.25											
16	Rotor inertia	J	gcm ²	55											

Thermal data															
17	Thermal resistance housing-ambient		6.1K/W												
18	Thermal resistance winding-housing		1.8K/W												
19	Thermal time constant winding		21 s												
20	Thermal time constant motor		622 s												
21	Ambient temperature		-30...+100°C												
22	Max. permissible winding temperature		+125°C												

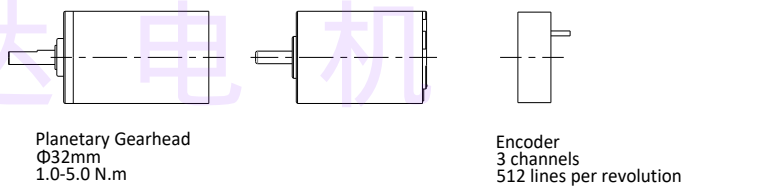
Mechanical data (ball bearings)															
23	Max. permissible speed		8000 rpm												
24	Axial play at axial load < 7N		0 mm												
	> 7N		Max 0.25 mm												
25	Radial play		preloaded												
26	Max. axial load (dynamic)		5.6 N												
27	Max. force for press fits (static)		110 N												
	(static, shaft supported)		1200 N												
28	Max. radial loading, 5 mm from flange		28 N												

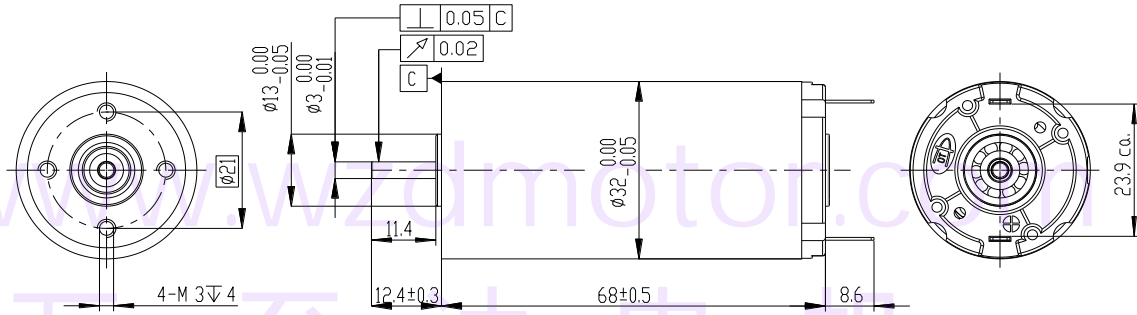
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/
 cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:1:1 Unit:mm

Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		13 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		310g

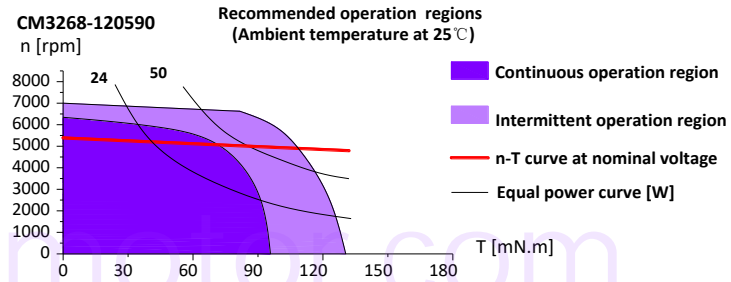
CM3268 Series			120590	480790						
Motor Data										
1	Nominal voltage	U_N	V	12.0	48.0					
2	No load speed	n_0	rpm	5400	6500					
3	No load current	I_0	A	0.29	0.085					
4	Nominal speed	n_N	rpm	5130	6190					
5	Nominal torque	T_N	mN.m	82.38	88.6					
6	Nominal current	I_N	A	5.52	1.70					
7	Stall torque	T_S	mN.m	1650	1860					
8	Stall current	I_S	A	105	34.0					
9	Max. efficiency	η	%	89.8	90.3					

Characteristics										
10	Terminal resistance	R_{t-h}	Ω	0.11	1.41					
11	Terminal inductance	L_{t-h}	mH	0.05	0.62					
12	Torque constant	K_T	mN.m/A	15.76	54.84					
13	Speed constant	K_n	rpm/V	451	136					
14	Speed/torque gradient	K_v	rpm/mN.m	4.4	4.5					
15	Mechanical time constant	K_m	ms	3.77	3.85					
16	Rotor inertia	J	gcm ²	82	82					

Thermal data		
17	Thermal resistance housing-ambient	6.1K/W
18	Thermal resistance winding-housing	1.8K/W
19	Thermal time constant winding	21 s
20	Thermal time constant motor	622 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+125°C

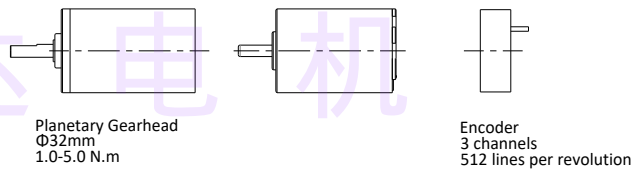
Mechanical data (ball bearings)		
23	Max. permissible speed	7000 rpm
24	Axial play at axial load < 7N	0 mm
	> 7N	Max 0.25 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	5.6 N
27	Max. force for press fits (static)	110 N
	(static, shaft supported)	1200 N
28	Max. radial loading, 5 mm from flange	28 N

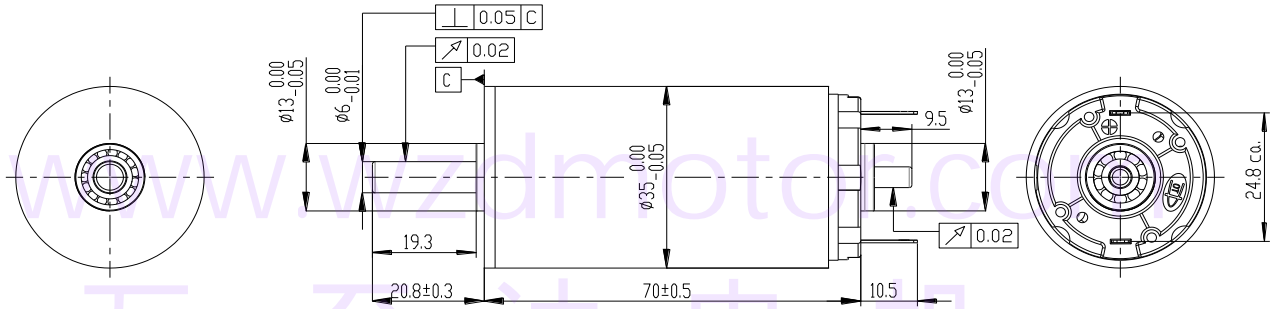
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/
 cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





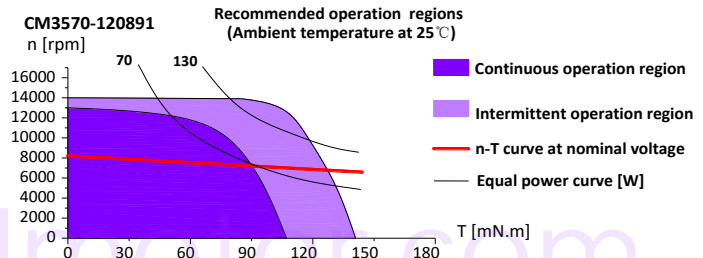
Scale:1:1 Unit:mm

Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			13 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			370g

CM3570 Series			120891	240890	480790	
Motor Data						
1	Nominal voltage	U_N	V	12.0	24	48
2	No load speed	n_0	rpm	8200	7900	6900
3	No load current	I_0	A	0.35	0.20	0.068
4	Nominal speed	n_N	rpm	7826	7499	6576
5	Nominal torque	T_N	mN.m	93.57	102.5	89.24
6	Nominal current	I_N	A	7.32	3.74	1.38
7	Stall torque	T_s	mN.m	2050	2020	1900
8	Stall current	I_s	A	153	70	28
9	Max. efficiency	η	%	90.7	89.6	90.4
Characteristics						
10	Terminal resistance	R_{t-h}	Ω	0.08	0.34	1.71
11	Terminal inductance	L_{t-h}	mH	0.09	0.29	0.87
12	Torque constant	K_T	mN.m/A	13.43	28.94	68.02
13	Speed constant	K_n	rpm/V	685	330	144
14	Speed/torque gradient	K_v	rpm/mN.m	4.2	3.9	3.5
15	Mechanical time constant	K_m	ms	4.78	4.58	4.15
16	Rotor inertia	J	gcm^2	110	112	112

Thermal data		
17	Thermal resistance housing-ambient	6.2K/W
18	Thermal resistance winding-housing	2.0K/W
19	Thermal time constant winding	30.2 s
20	Thermal time constant motor	644 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+155°C

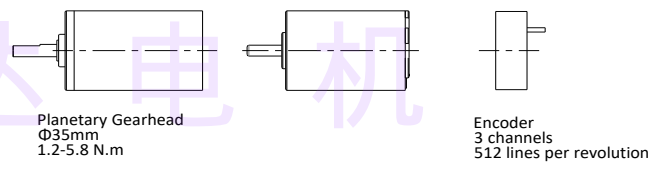
Operating Characteristic Curve

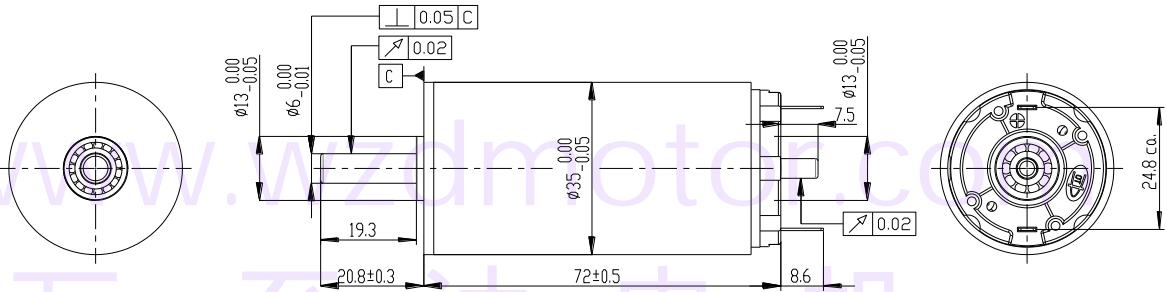


Mechanical data (ball bearings)		
23	Max. permissible speed	14000 rpm
24	Axial play at axial load < 7.5N	0 mm
	> 7.5N	Max 0.25 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	5.6 N
27	Max. force for press fits (static)	110 N
	(static, shaft supported)	1200 N
28	Max. radial loading, 5 mm from flange	28 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity (with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:1:1 Unit:mm

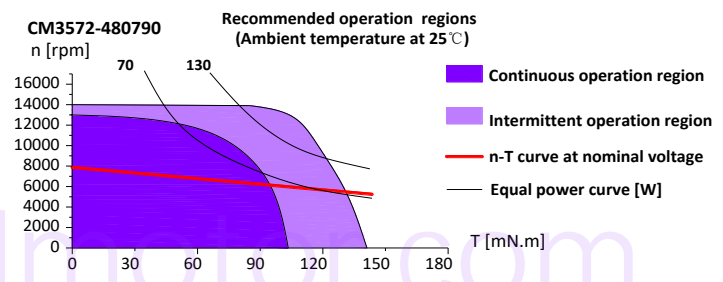
Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		13 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		378g

CM3572 Series			120891	240889	480790	
Motor Data						
1	Nominal voltage	U_N	V	12.0	24	48
2	No load speed	n_0	rpm	8150	7900	6800
3	No load current	I_0	A	0.330	0.20	0.066
4	Nominal speed	n_N	rpm	7794	7446	6485
5	Nominal torque	T_N	mN.m	91.34	104.94	90.60
6	Nominal current	I_N	A	7.22	3.69	1.36
7	Stall torque	T_s	mN.m	2090	2040	2000
8	Stall current	I_s	A	158	68	28
9	Max. efficiency	η	%	91.1	89.4	90.5
Characteristics						
10	Terminal resistance	R_{t-h}	Ω	0.08	0.35	1.71
11	Terminal inductance	L_{t-h}	mH	0.09	0.29	0.97
12	Torque constant	K_T	mN.m/A	13.26	30.09	71.60
13	Speed constant	K_n	rpm/V	681	328	142
14	Speed/torque gradient	K_v	rpm/mN.m	4.1	3.7	3.2
15	Mechanical time constant	K_m	ms	4.97	4.48	3.85
16	Rotor inertia	J	gcm^2	115	115	115

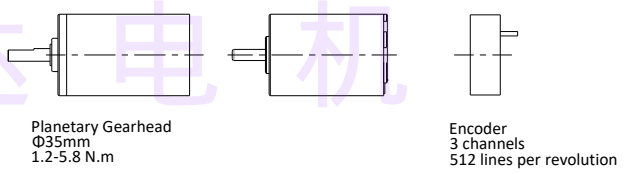
Thermal data		
17	Thermal resistance housing-ambient	6.2K/W
18	Thermal resistance winding-housing	2K/W
19	Thermal time constant winding	30.2 s
20	Thermal time constant motor	644 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+155°C

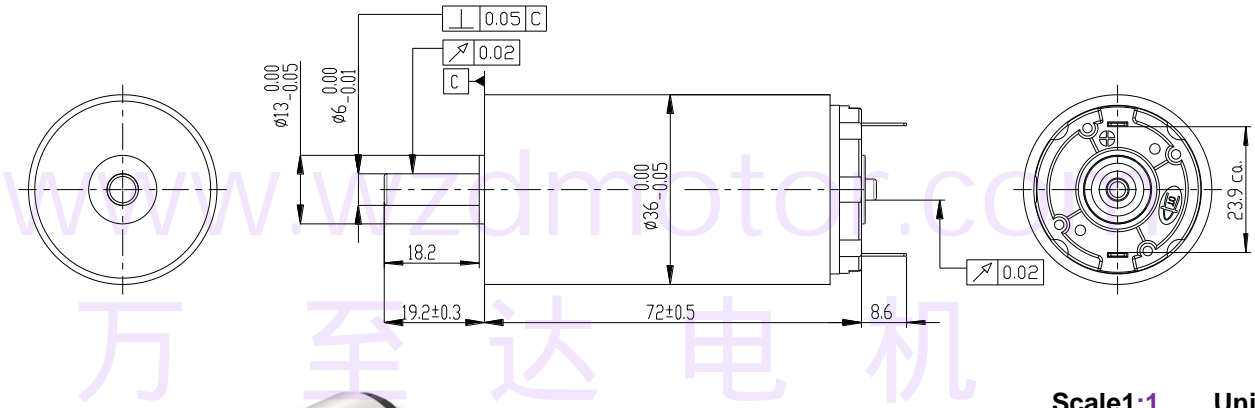
Mechanical data (ball bearings)		
23	Max. permissible speed	14000 rpm
24	Axial play at axial load < 7.5N	0 mm
	> 7.5N	Max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	5.6 N
27	Max. force for press fits (static)	110 N
	(static, shaft supported)	1200 N
28	Max. radial loading, 5 mm from flange	28 N

Operating Characteristic Curve



Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





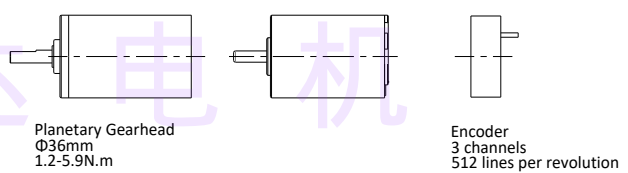
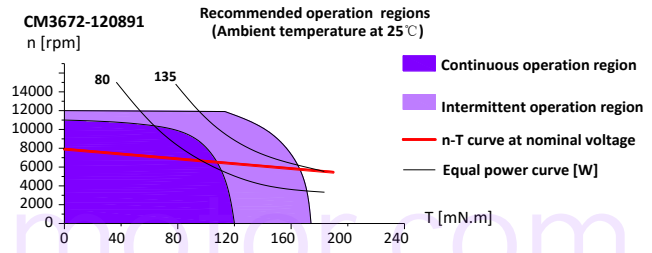
Scale:1:1 Unit:mm

Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		13 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		385g

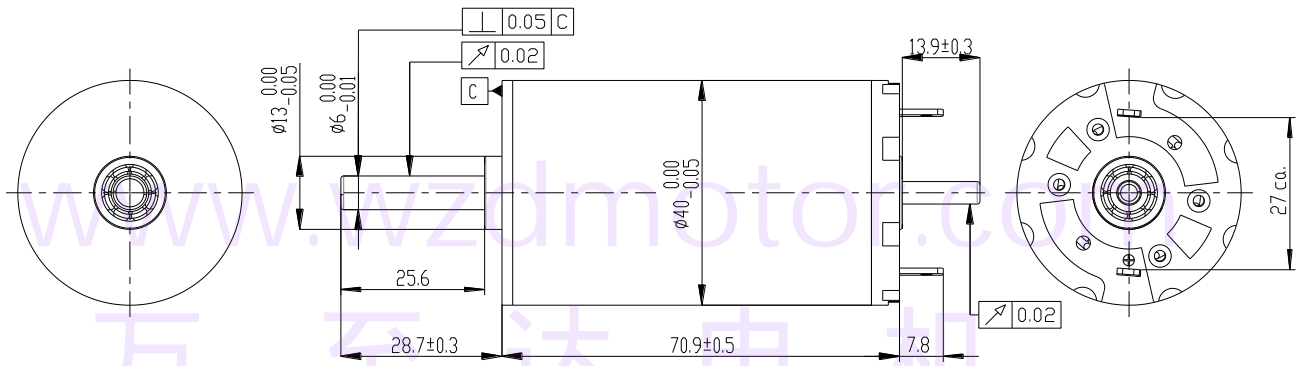
CM3672 Series			120891	480790						
Motor Data										
1	Nominal voltage	U_N	V	12.0	48.0					
2	No load speed	n_0	rpm	7900	6500					
3	No load current	I_0	A	0.32	0.070					
4	Nominal speed	n_N	rpm	7551	6158					
5	Nominal torque	T_N	mN.m	93.6	94.48					
6	Nominal current	I_N	A	6.93	1.375					
7	Stall torque	T_S	mN.m	2120	1950					
8	Stall current	I_S	A	150	27					
9	Max. efficiency	η	%	91.0	90.1					
Characteristics										
10	Terminal resistance	R_{t-h}	Ω	0.08	1.78					
11	Terminal inductance	L_{t-h}	mH	0.03	0.75					
12	Torque constant	K_T	mN.m/A	14.16	72.41					
13	Speed constant	K_n	rpm/V	660	136					
14	Speed/torque gradient	K_v	rpm/mN.m	3.8	3.2					
15	Mechanical time constant	K_m	ms	4.79	4.07					
16	Rotor inertia	J	gcm ²	120	120					

Thermal data		
17	Thermal resistance housing-ambient	6.5K/W
18	Thermal resistance winding-housing	2.0K/W
19	Thermal time constant winding	31.5 s
20	Thermal time constant motor	655 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+155°C
Mechanical data (ball bearings)		
23	Max. permissible speed	12000 rpm
24	Axial play at axial load < 8N	0 mm
	> 8N	Max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	5.6 N
27	Max. force for press fits (static)	110 N
	(static, shaft supported)	1200 N
28	Max. radial loading, 5 mm from flange	28 N

Operating Characteristic Curve



Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers



Scale:1:1 Unit:mm

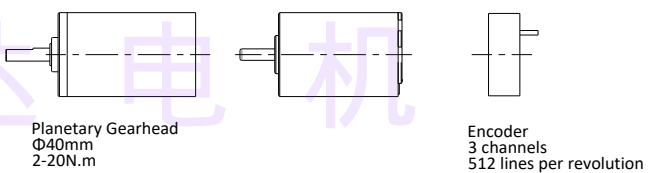
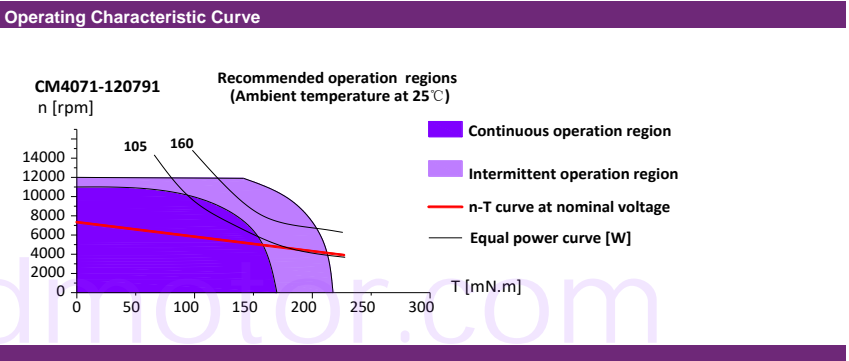
Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			13 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			488g

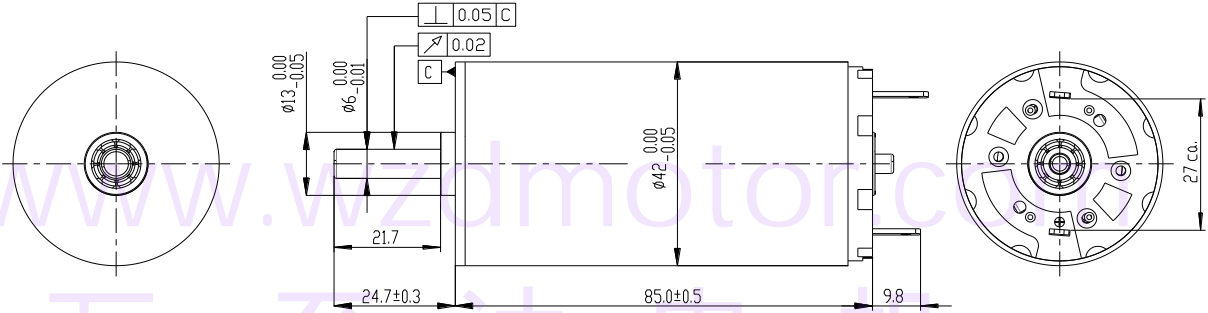
		CM4071 Series			120791	240889	480790						
Motor Data													
1	Nominal voltage	U_N	V	12.0	24.0	48.0							
2	No load speed	n_0	rpm	7020	7650	6900							
3	No load current	I_0	A	0.240	0.25	0.068							
4	Nominal speed	n_N	rpm	6697	7243	6576							
5	Nominal torque	T_N	mN.m	75.98	117.2	89.24							
6	Nominal current	I_N	A	4.97	4.444	1.38							
7	Stall torque	T_S	mN.m	1650	2200	1900							
8	Stall current	I_S	A	103	79	28							
9	Max. efficiency	η	%	90.7	89.1	90.4							
Characteristics													
10	Terminal resistance	R_{th}	Ω	0.12	0.30	1.71							
11	Terminal inductance	L_{th}	mH	0.02	0.08	0.33							
12	Torque constant	K_T	mN.m/A	16.06	27.94	68.02							
13	Speed constant	K_n	rpm/V	586	320	144							
14	Speed/torque gradient	K_v	rpm/mN.m	4.3	3.7	3.5							
15	Mechanical time constant	K_m	ms	6.55	5.64	5.37							
16	Rotor inertia	J	gcm ²	145	145	145							

Thermal data		
17	Thermal resistance housing-ambient	4.65K/W
18	Thermal resistance winding-housing	1.93K/W
19	Thermal time constant winding	41.5 s
20	Thermal time constant motor	809 s
21	Ambient temperature	-20...+85°C
22	Max. permissible winding temperature	+100°C

Mechanical data (ball bearings)		
23	Max. permissible speed	12000 rpm
24	Axial play at axial load < 9N	0 mm
	> 9N	Max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	5.6 N
27	Max. force for press fits (static)	110 N
	(static, shaft supported)	1200 N
28	Max. radial loading, 5 mm from flange	28 N

Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:1:1 Unit:mm

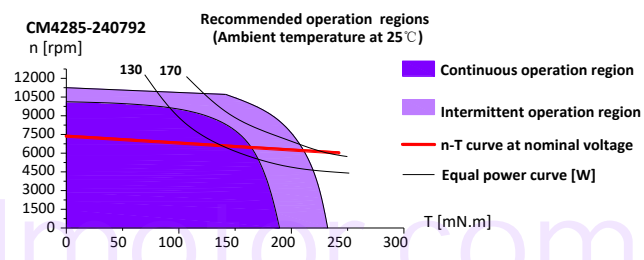
Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			13 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			718g

CM4285 Series			240792	480792						
Motor Data										
1	Nominal voltage	U_N	V	24.0	48.0					
2	No load speed	n_0	rpm	7200	7400					
3	No load current	I_0	A	0.150	0.08					
4	Nominal speed	n_N	rpm	6906	7091					
5	Nominal torque	T_N	mN.m	99.9	125.5					
6	Nominal current	I_N	A	3.53	1.83					
7	Stall torque	T_S	mN.m	2450	3000					
8	Stall current	I_S	A	83	42					
9	Max. efficiency	η	%	91.7	91.5					

Characteristics										
10	Terminal resistance	R_{t-h}	Ω	0.29	1.15					
11	Terminal inductance	L_{t-h}	mH	0.08	0.65					
12	Torque constant	K_T	mN.m/A	29.57	71.56					
13	Speed constant	K_n	rpm/V	301	154					
14	Speed/torque gradient	K_v	rpm/mN.m	3.2	2.1					
15	Mechanical time constant	K_m	ms	5.95	4.02					
16	Rotor inertia	J	gcm ²	180	180					

Thermal data		
17	Thermal resistance housing-ambient	4.1K/W
18	Thermal resistance winding-housing	1.5K/W
19	Thermal time constant winding	50 s
20	Thermal time constant motor	1000 s
21	Ambient temperature	-30...+100°C
22	Max. permissible winding temperature	+155°C

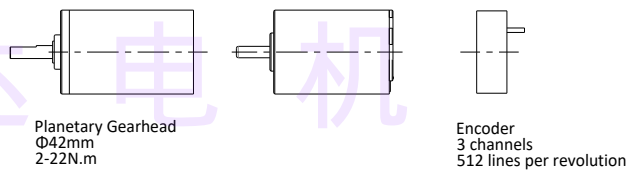
Operating Characteristic Curve

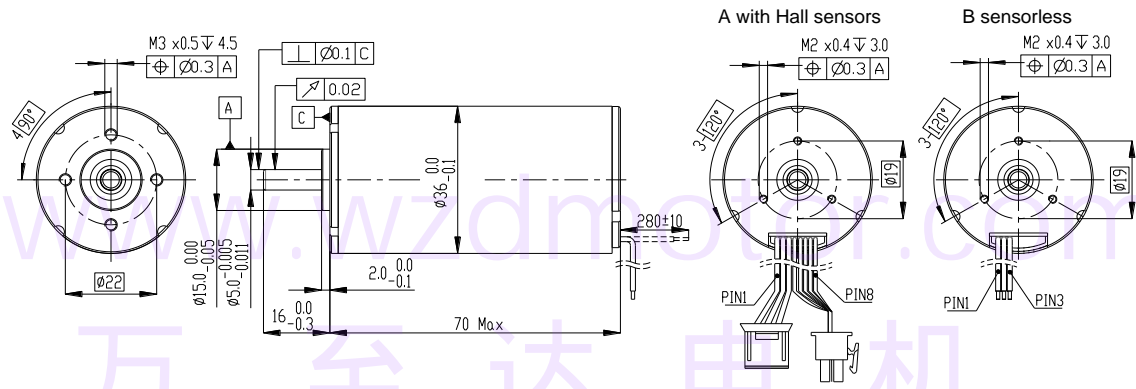


Mechanical data (ball bearings)		
23	Max. permissible speed	11000 rpm
24	Axial play at axial load < 10N	0 mm
	> 10N	Max 0.25 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	5.6 N
27	Max. force for press fits (static)	110 N
	(static, shaft supported)	1200 N
28	Max. radial loading, 5 mm from flange	28 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/
 cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





比例尺: 1:2 单位: mm



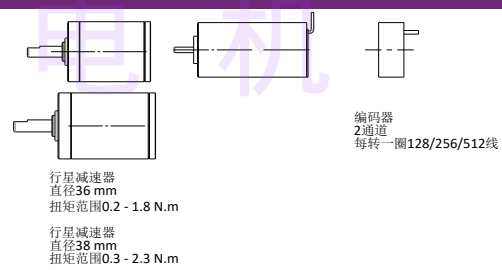
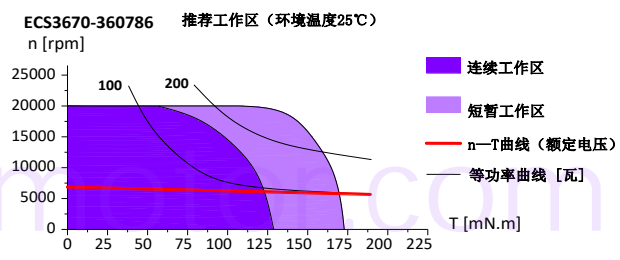
连接方式			
A 型连接	B 型连接		
黄 A 相	线 1	黄 A 相	线 1
绿 B 相	线 2	绿 B 相	线 2
蓝 C 相	线 3	蓝 C 相	线 3
红 正极	线 4		
黑 接地	线 5		
黄 A 相霍尔信号线	线 6	规格	
绿 B 相霍尔信号线	线 7	极对数	1 对
蓝 C 相霍尔信号线	线 8	相数	3 相
		电机重量	380 克

	A 型带霍尔传感器	120782	240783	360785	480782
	B 型无位置传感器	120783	240784	360786	480783

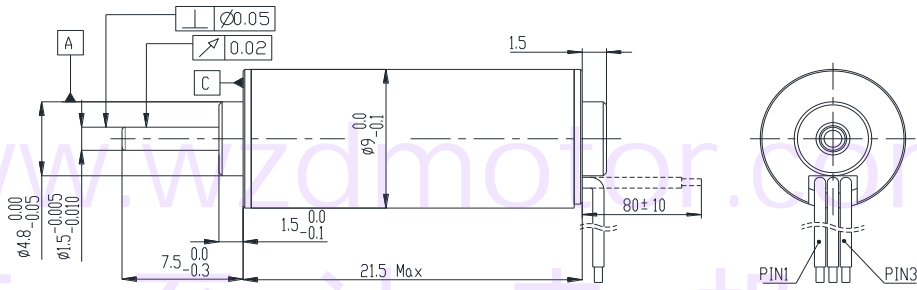
电机基本参数							
1	额定电压	U_N	V	12	24	36	48
2	空载转速	n_0	rpm	6600	6580	6670	6580
3	空载电流	I_0	mA	295	140	105	83
4	额定转速	n_N	rpm	6052	6065	6213	6028
5	额定转矩	T_N	mN.m	51.22	52.85	46.26	57.46
6	额定电流	I_N	A	3.26	1.65	1.43	0.91
7	堵转转矩	T_S	mN.m	617	675	675	685
8	堵转电流	I_S	A	36	19.4	19.4	9.9
9	最大电流	η	%	82.7	83.74	85.8	82.5
电机特性参数							
10	端电阻	R_{th}	Ω	0.33	1.24	1.86	4.81
11	端电感	L_{th}	mH	0.09	0.38	0.85	1.52
12	转矩常数	K_T	mN.m/A	17.28	35.05	34.98	69.78
13	速度常数	K_n	rpm/V	555	276	186	138
14	速度/转矩梯度	K_v	rpm/mN.m	10.7	9.6	14.5	9.5
15	机械时间常数	K_m	ms	2.57	2.32	3.49	2.29
16	转子转动惯量	J	gcm ²	23	23	23	23

温度参数和机械性能参数 (滚珠轴承)		
17	热阻 (机壳—环境)	5.2 K/W
18	热阻 (绕组—机壳)	2.4 K/W
19	绕组热时间常数	45 s
20	电机热时间常数	870 s
21	环境温度	-20...+100°C
22	绕组最大允许温度	+125°C
机械性能参数 (预载荷滚珠轴承)		
23	最大允许速度	20000 rpm
24	轴向负载小于 8N 时的轴向游隙	0 mm
	轴向负载大于 8N 时的轴向游隙	max 0.3 mm
25	径向游隙	预载荷
26	最大轴向载荷 (动态)	7.0 N
27	最大承压力 (静态)	100 N
	(静态, 轴在支撑条件下)	2700 N
28	最大径向负载 (距离法兰 5mm)	25 N

工作特性曲线



特殊配置
更多需求: 根据客户需求独家定制, 详情请联系我们的售后工程师。



Scale:5:1 Unit:mm



Connection

Connection A		
Blue	Phase A	PIN 1
Red	Phase B	PIN 2
Black	Phase C	PIN 3

Specifications

Number of pole pairs	1
Number of phases	3
Weight of motor	6.4 g

	A Sensorless	375351	075552				
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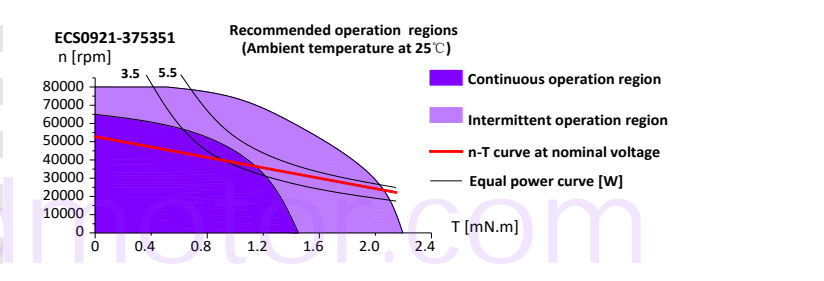
Motor Data							
1	Nominal voltage	U_N	V	3.7	7		
2	No load speed	n_0	rpm	52500	55000		
3	No load current	I_0	mA	500	380		
4	Nominal speed	n_N	rpm	40815	42923		
5	Nominal torque	T_N	mN.m	0.73	0.88		
6	Nominal current	I_N	A	1.746	1.35		
7	Stall torque	T_s	mN.m	3.3	4.0		
8	Stall current	I_s	A	6.1	4.8		
9	Max. efficiency	η	%	50.9	51.6		

Characteristics							
10	Terminal resistance phase to phase	R_{t-h}	Ω	0.61	1.46		
11	Terminal inductance phase to phase	L_{t-h}	mH	0.025	0.031		
12	Torque constant	K_T	mN.m/A	0.59	0.90		
13	Speed constant	K_n	rpm/V	15456	8533		
14	Speed/torque gradient	K_v	rpm/mN.m	16680	17004		
15	Mechanical time constant	K_m	ms	4.54	4.63		
16	Rotor inertia	J	gcm^2	0.026	0.026		

Thermal data and Mechanical Data (Ball Bearing)

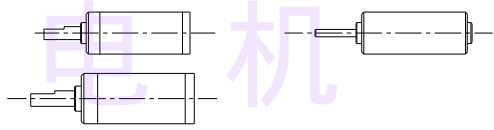
17	Thermal resistance housing-ambient	85 K/W
18	Thermal resistance winding-housing	15 K/W
19	Thermal time constant winding	0.6 s
20	Thermal time constant motor	85 s
21	Ambient temperature	-20...+100°C
22	Max. permissible winding temperature	+125°C
Mechanical data (preloaded ball bearings)		
23	Max. permissible speed	80000 rpm
24	Axial play at axial load <0.1N	0 mm
	>0.1N	max 0.25 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	0.1 N
27	Max. force for press fits (static)	8 N
	(static, shaft supported)	8 N
28	Max. radial loading, 2 mm from flange	1.8 N

Operating Characteristic Curve

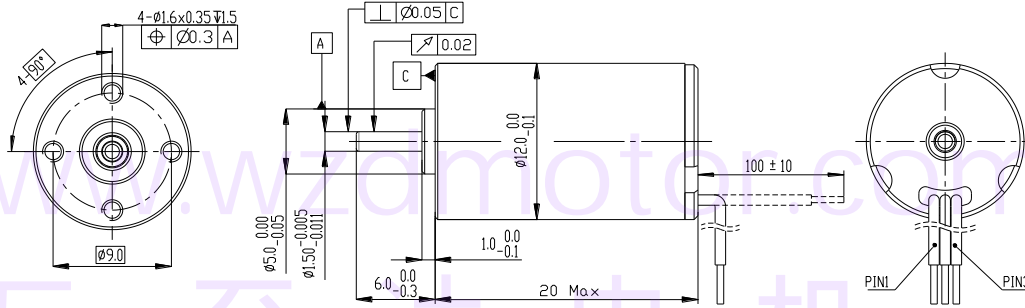


Configuration

More: Customized according to customer requirements, please contact our sales engineers



Planetary Gearhead
 Φ8 mm
 0.01 - 0.05 N.m
 Planetary Gearhead
 Φ10 mm
 0.01 - 0.08 N.m



Scale:3:1 Unit:mm



Connection		
Connection A		
Yellow	Phase A	PIN 1
Green	Phase B	PIN 2
Blue	Phase C	PIN 3

Specifications	
Number of pole pairs	1
Number of phases	3
Weight of motor	10 g

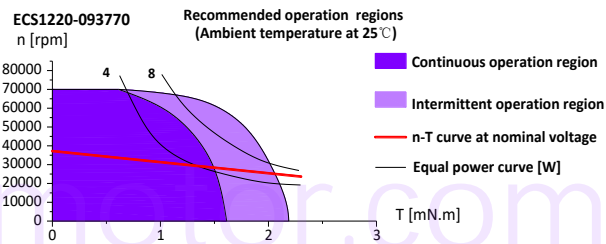
	A Sensorless	062567	742768	093770		
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Motor Data						
1	Nominal voltage	U_N	V	6	7.4	9
2	No load speed	n_0	rpm	25000	27000	36800
3	No load current	I_0	mA	70	120	82
4	Nominal speed	n_N	rpm	21117	22926	31652
5	Nominal torque	T_N	mN.m	0.69	1.36	0.96
6	Nominal current	I_N	A	0.381	0.675	0.504
7	Stall torque	T_s	mN.m	4.45	9.0	6.85
8	Stall current	I_s	A	2.07	3.8	3.1
9	Max. efficiency	η	%	66.6	67.6	70.1

Characteristics						
10	Terminal resistance phase to phase	R_{t-h}	Ω	2.90	1.95	2.9
11	Terminal inductance phase to phase	L_{t-h}	mH	0.19	0.18	0.19
12	Torque constant	K_T	mN.m/A	2.23	2.45	2.27
13	Speed constant	K_n	rpm/V	4313	3768	4210
14	Speed/torque gradient	K_v	rpm/mN.m	5591	3109	5382
15	Mechanical time constant	K_m	ms	9.95	6.19	9.58
16	Rotor inertia	J	gcm ²	0.17	0.19	0.17

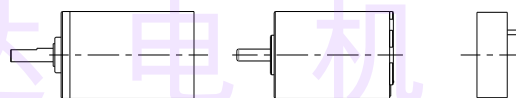
Thermal data and Mechanical Data (Ball Bearing)		
17	Thermal resistance housing-ambient	38.3 K/W
18	Thermal resistance winding-housing	9.6 K/W
19	Thermal time constant winding	5 s
20	Thermal time constant motor	196 s
21	Ambient temperature	-40...+100°C
22	Max. permissible winding temperature	+125°C
Mechanical data (preloaded ball bearings)		
23	Max. permissible speed	70000 rpm
24	Axial play at axial load <0.8N	0 mm
	>0.8N	max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	0.3 N
27	Max. force for press fits (static) (static, shaft supported)	11 N
28	Max. radial loading, 5 mm from flange	4.3 N

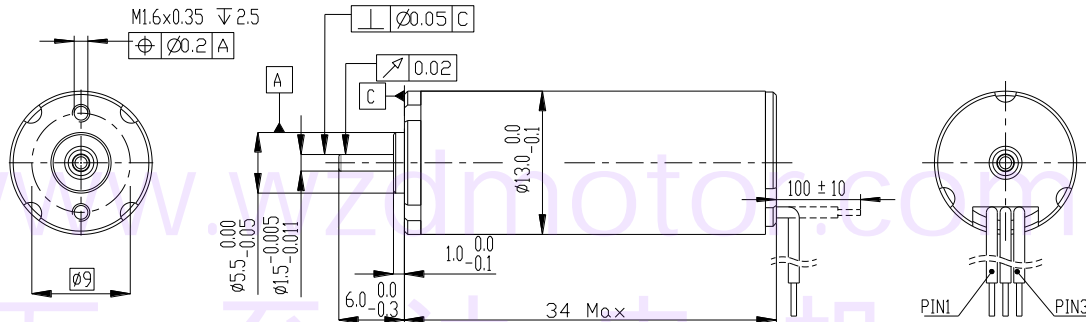
Operating Characteristic Curve



Configuration

More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm



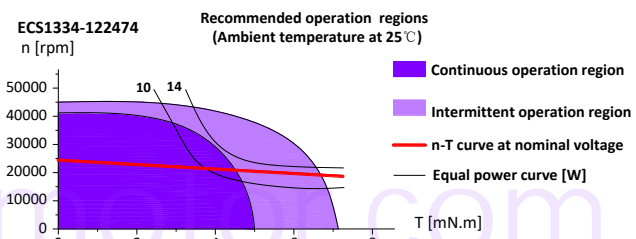
Connection		
Connection A		
Yellow	Phase A	PIN 1
Green	Phase B	PIN 2
Blue	Phase C	PIN 3

Specifications	
Number of pole pairs	1
Number of phases	3
Weight of motor	30.0 g

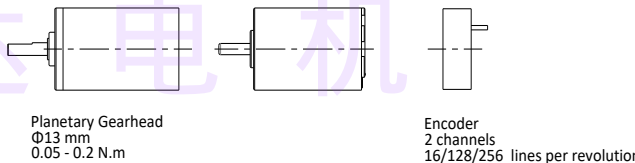
		A Sensorless	092476	122474				
Motor Data								
1	Nominal voltage	U_N	V	9	12			
2	No load speed	n_0	rpm	24250	24200			
3	No load current	I_0	mA	130	100			
4	Nominal speed	n_N	rpm	21485	21228			
5	Nominal torque	T_N	mN.m	3.12	2.92			
6	Nominal current	I_N	A	1.01	0.714			
7	Stall torque	T_s	mN.m	27.4	23.8			
8	Stall current	I_s	A	7.85	5.1			
9	Max. efficiency	η	%	75.9	74			
Characteristics								
10	Terminal resistance phase to phase	R_{t-h}	Ω	1.15	2.35			
11	Terminal inductance phase to phase	L_{t-h}	mH	0.0234	0.0412			
12	Torque constant	K_T	mN.m/A	3.55	4.76			
13	Speed constant	K_n	rpm/V	2740	2057			
14	Speed/torque gradient	K_v	rpm/mN.m	869	991.7			
15	Mechanical time constant	K_m	ms	3.0	3.43			
16	Rotor inertia	J	gcm ²	0.33	0.33			

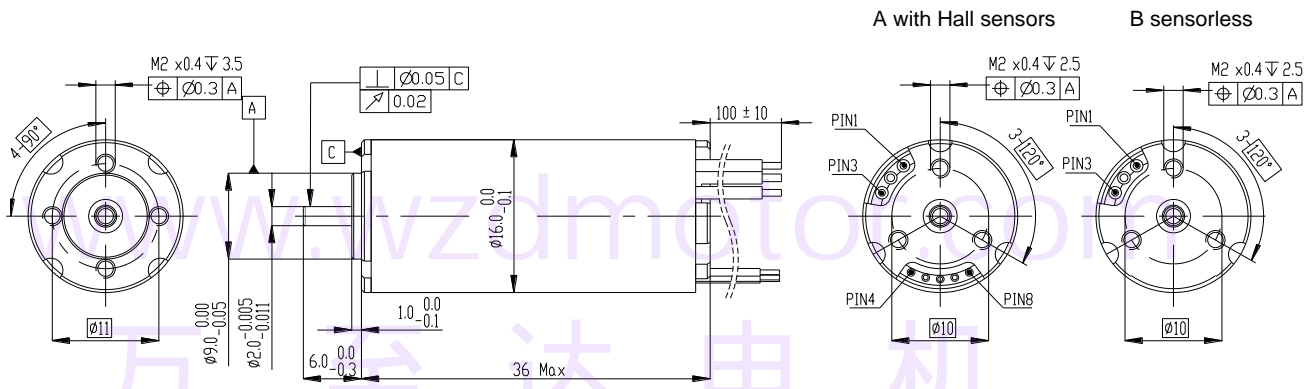
Thermal data and Mechanical Data (Ball Bearing)		
17	Thermal resistance housing-ambient	24.0 K/W
18	Thermal resistance winding-housing	1.26 K/W
19	Thermal time constant winding	0.6 s
20	Thermal time constant motor	260 s
21	Ambient temperature	-40...+100°C
22	Max. permissible winding temperature	+125°C
Mechanical data (preloaded ball bearings)		
23	Max. permissible speed	45000 rpm
24	Axial play at axial load <0.9N	0 mm
	>0.9N	max 0.1 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	0.6 N
27	Max. force for press fits (static)	16 N
	(static, shaft supported)	250 N
28	Max. radial loading, 5 mm from flange	4.0 N

Operating Characteristic Curve



Configuration
 More: Customized according to customer requirements, please contact our sales engineers





Scale:2:1 Unit:mm

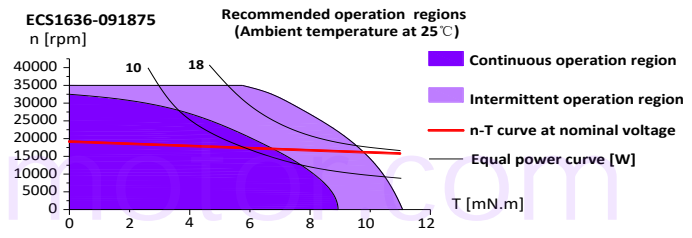


Connection					
Connection A			Connection B		
Yellow	Phase A	PIN 1	Yellow	Phase A	PIN 1
Green	Phase B	PIN 2	Green	Phase B	PIN 2
Blue	Phase C	PIN 3	Blue	Phase C	PIN 3
Red	Vhall 3-18 VDC	PIN 4			
Black	GND	PIN 5			
Yellow	Hall Sensor HA	PIN 6	Specifications		
Green	Hall Sensor HB	PIN 7	Number of pole pairs		1
Blue	Hall Sensor HC	PIN 8	Number of phases		3
			Weight of motor		35 g

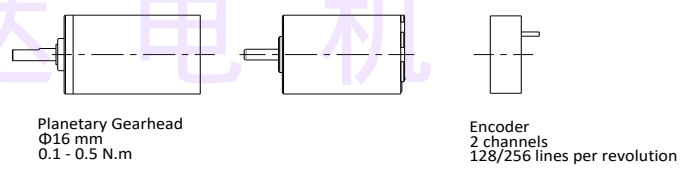
		A with Hall-Sensor	091874	121974	241871		
		B Sensorless	091875	121975	241872		
Motor Data							
1	Nominal voltage	U_N	V	9	12	24	
2	No load speed	n_0	rpm	18200	18900	18200	
3	No load current	I_0	mA	130	110	70	
4	Nominal speed	n_N	rpm	16052	16691	15778	
5	Nominal torque	T_N	mN.m	3.92	4.31	4.78	
6	Nominal current	I_N	A	0.971	0.831	0.456	
7	Stall torque	T_S	mN.m	33.2	36.9	35.9	
8	Stall current	I_S	A	7.26	6.28	2.97	
9	Max. efficiency	η	%	75.0	75.3	71.7	
Characteristics							
10	Terminal resistance phase to phase	R_{t-h}	Ω	1.24	1.91	8.08	
11	Terminal inductance phase to phase	L_{t-h}	mH	0.05	0.09	0.34	
12	Torque constant	K_T	mN.m/A	4.66	5.98	12.38	
13	Speed constant	K_n	rpm/V	2059	1603	777	
14	Speed/torque gradient	K_v	rpm/mN.m	546	510	504	
15	Mechanical time constant	K_m	ms	3.49	3.26	3.22	
16	Rotor inertia	J	gcm ²	0.61	0.61	0.61	

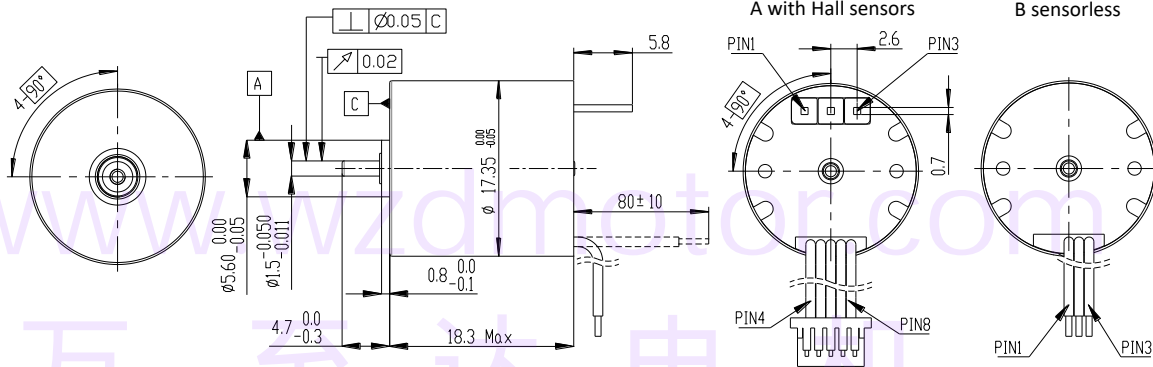
Thermal data and Mechanical Data (Ball Bearing)		
17	Thermal resistance housing-ambient	20.0 K/W
18	Thermal resistance winding-housing	8.8 K/W
19	Thermal time constant winding	8 s
20	Thermal time constant motor	240 s
21	Ambient temperature	-40...+100°C
22	Max. permissible winding temperature	+150°C
Mechanical data (preloaded ball bearings)		
23	Max. permissible speed	35000 rpm
24	Axial play at axial load < 1.8N	0 mm
	< 1.8N	max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	1.3 N
27	Max. force for press fits (static) (static, shaft supported)	15 N
		350 N
28	Max. radial loading, 5 mm from flange	5 N

Operating Characteristic Curve



Configuration
 More: Customized according to customer requirements, please contact our sales engineers





Scale:2:1 Unit:mm



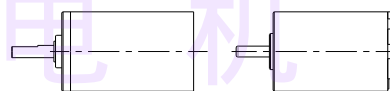
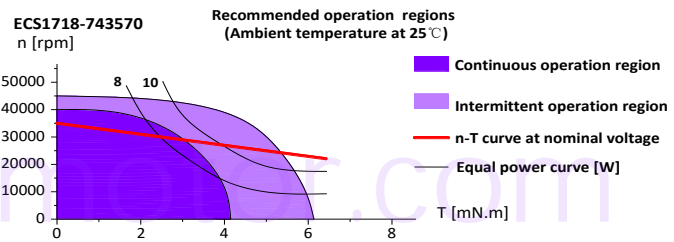
Connection		Connection A		Connection B	
Silvery	Phase A	PIN 1	Blue	Phase A	PIN 1
Silvery	Phase B	PIN 2	Blue	Phase B	PIN 2
Silvery	Phase C	PIN 3	Blue	Phase C	PIN 3
Blue	Vhall 3-18 VDC	PIN 4			
Blue	GND	PIN 5			
Blue	Hall Sensor HA	PIN 6			
Blue	Hall Sensor HB	PIN 7			
Blue	Hall Sensor HC	PIN 8			

Specifications	
Number of pole pairs	1
Number of phases	3
Weight of motor	25 g

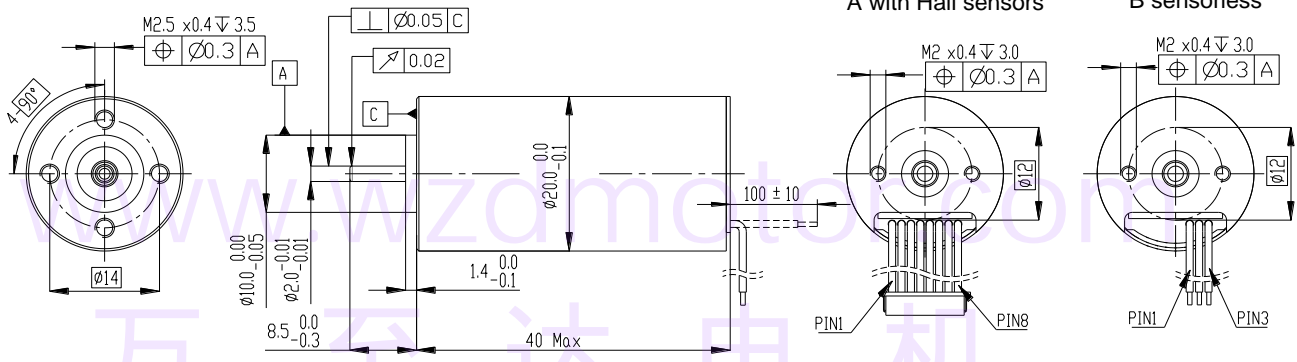
Motor Data		A with Hall-Sensor	743569				
		B Sensorless	743570				
1	Nominal voltage	U_N	V	7.4			
2	No load speed	n_0	rpm	35000			
3	No load current	I_0	mA	230			
4	Nominal speed	n_N	rpm	30153			
5	Nominal torque	T_N	mN.m	2.48			
6	Nominal current	I_N	A	1.43			
7	Stall torque	T_S	mN.m	17.9			
8	Stall current	I_S	A	8.9			
9	Max. efficiency	η	%	70.4			
Characteristics							
10	Terminal resistance phase to phase	R_{t-h}	Ω	0.83			
11	Terminal inductance phase to phase	L_{t-h}	mH	0.03			
12	Torque constant	K_T	mN.m/A	2.06			
13	Speed constant	K_n	rpm/V	4855			
14	Speed/torque gradient	K_v	rpm/mN.m	1863			
15	Mechanical time constant	K_m	ms	17.56			
16	Rotor inertia	J	gcm ²	0.9			

Thermal data and Mechanical Data (sleeve bearings)		
17	Thermal resistance housing-ambient	25.0 K/W
18	Thermal resistance winding-housing	3.5 K/W
19	Thermal time constant winding	2 s
20	Thermal time constant motor	290 s
21	Ambient temperature	-20...+100°C
22	Max. permissible winding temperature	+125°C
Mechanical data (sleeve bearings)		
23	Max. permissible speed	45000 rpm
24	Axial play	0.1-0.25 mm
25	Radial play	0.02 mm
26	Max. axial load (dynamic)	0.7 N
27	Max. force for press fits (static) (static, shaft supported)	15 N
28	Max. radial loading, 5 mm from flange	350 N

Operating Characteristic Curve



Configuration
More: Customized according to customer requirements, please contact our sales engineers



Scale:3:2 Unit:mm



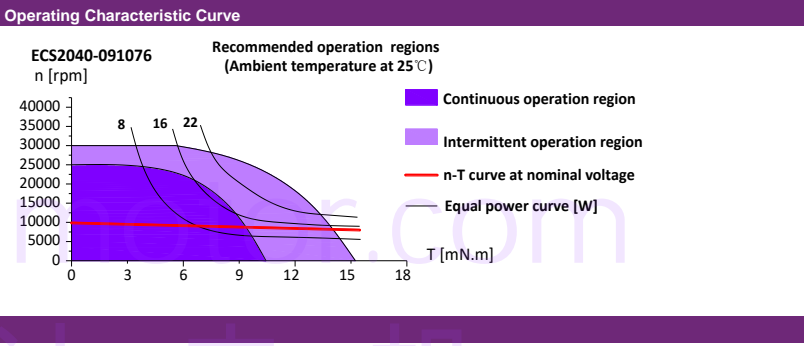
Connection					
Connection A			Connection B		
Yellow	Phase A	PIN 1	Yellow	Phase A	PIN 1
Green	Phase B	PIN 2	Green	Phase B	PIN 2
Blue	Phase C	PIN 3	Blue	Phase C	PIN 3
Red	Vhall 3-18 VDC	PIN 4			
Black	GND	PIN 5			
Yellow	Hall Sensor HA	PIN 6	Specifications		
Green	Hall Sensor HB	PIN 7	Number of pole pairs		1
Blue	Hall Sensor HC	PIN 8	Number of phases		3
			Weight of motor		54 g

A with Hall-Sensor		091075	
B Sensorless		091076	

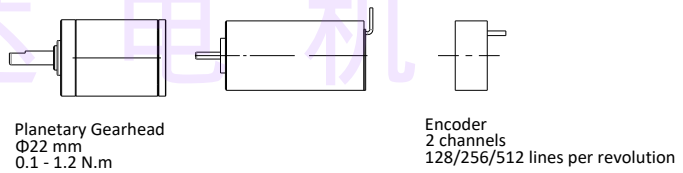
Motor Data			
1	Nominal voltage	U_N	V 9
2	No load speed	n_0	rpm 9500
3	No load current	I_0	mA 180
4	Nominal speed	n_N	rpm 8431
5	Nominal torque	T_N	mN.m 7.76
6	Nominal current	I_N	A 1.42
7	Stall torque	T_s	mN.m 69
8	Stall current	I_s	A 11.2
9	Max. efficiency	η	% 76.3

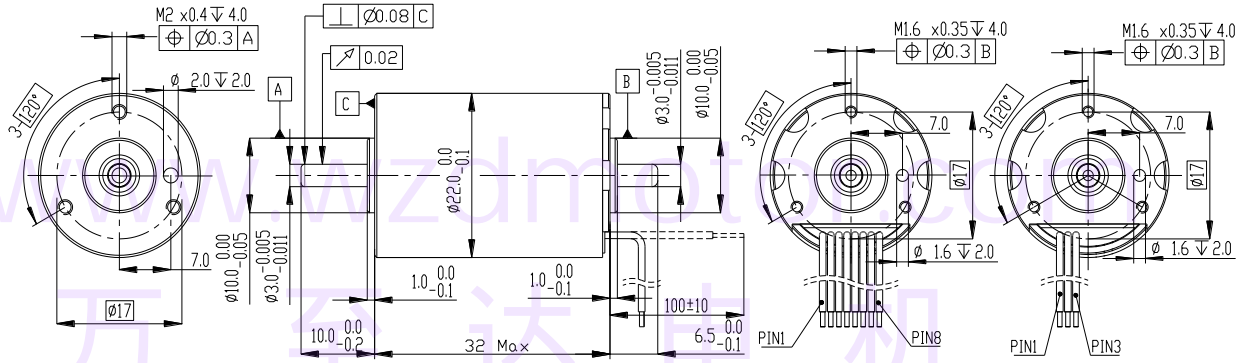
Characteristics			
10	Terminal resistance phase to phase	R_{t-h}	Ω 0.8
11	Terminal inductance phase to phase	L_{t-h}	mH 0.06
12	Torque constant	K_T	mN.m/A 6.26
13	Speed constant	K_n	rpm/V 1073
14	Speed/torque gradient	K_v	rpm/mN.m 196
15	Mechanical time constant	K_m	ms 4.51
16	Rotor inertia	J	gcm ² 2.2

Thermal data and Mechanical Data (Ball Bearing)		Operating Characteristic Curve	
17	Thermal resistance housing-ambient	14.6	K/W
18	Thermal resistance winding-housing	4.2	K/W
19	Thermal time constant winding	8	s
20	Thermal time constant motor	375	s
21	Ambient temperature	-40...+100	°C
22	Max. permissible winding temperature	+150	°C
Mechanical data (preloaded ball bearings)			
23	Max. permissible speed	30000	rpm
24	Axial play at axial load < 4N	0	mm
	<4N	max 0.3	mm
25	Radial play	preloaded	
26	Max. axial load (dynamic)	3.5	N
27	Max. force for press fits (static) (static, shaft supported)	42	N
28	Max. radial loading, 5 mm from flange	1200	N



Configuration
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:2 Unit:mm

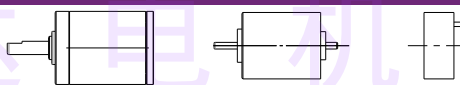
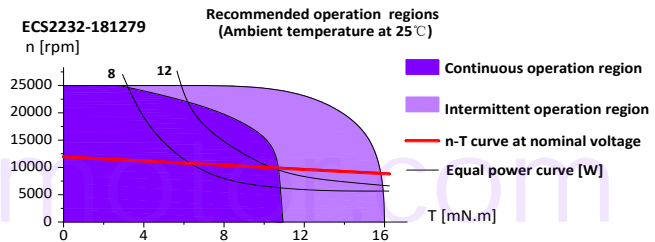
Connection A		Connection B	
Yellow	Phase A	PIN 1	Yellow Phase A
Green	Phase B	PIN 2	Green Phase B
Blue	Phase C	PIN 3	Blue Phase C
Red	Vhall 3-24 VDC	PIN 4	
Black	GND	PIN 5	
Yellow	Hall Sensor HA	PIN 6	
Green	Hall Sensor HB	PIN 7	
Blue	Hall Sensor HC	PIN 8	

Specifications	
Number of pole pairs	1
Number of phases	3
Weight of motor	84 g

Motor Data	A with Hall-Sensor		B Sensorless			
	121277	181278	241263	361276		
1 Nominal voltage	U_N	V	12	18	24	36
2 No load speed	n_0	rpm	12100	12100	12100	12100
3 No load current	I_0	mA	160	105	77	51
4 Nominal speed	n_N	rpm	10823	10863	10090	10797
5 Nominal torque	T_N	mN.m	11.1	10.1	5.57	6.68
6 Nominal current	I_N	A	1.36	0.92	0.39	0.422
7 Stall torque	T_S	mN.m	105	99	33.5	62
8 Stall current	I_S	A	11.5	8.1	1.94	3.5
9 Max. efficiency	η	%	77.8	78.5	64.1	77.3
Characteristics						
10 Terminal resistance phase to phase	R_{t-h}	Ω	1.04	1.48	12.37	10.3
11 Terminal inductance phase to phase	L_{t-h}	mH	0.125	0.277	0.485	1.10
12 Torque constant	K_T	mN.m/A	9.26	12.38	17.98	17.98
13 Speed constant	K_n	rpm/V	1023	681	525	341
14 Speed/torque gradient	K_v	rpm/mN.m	116	138.4	365.4	304
15 Mechanical time constant	K_m	ms	2.62	3.1208	8.23	6.84
16 Rotor inertia	J	gcm ²	2.15	2.15	2.15	2.15

Thermal data and Mechanical Data (Ball Bearing)	
17 Thermal resistance housing-ambient	13.9 K/W
18 Thermal resistance winding-housing	1.8 K/W
19 Thermal time constant winding	2.15 s
20 Thermal time constant motor	520 s
21 Ambient temperature	-20...+100°C
22 Max. permissible winding temperature	+155°C
Mechanical data (preloaded ball bearings)	
23 Max. permissible speed	25000 rpm
24 Axial play at axial load < 5N	0 mm
<5N	max 0.25 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	3.5 N
27 Max. force for press fits (static)	44 N
(static, shaft supported)	1200 N
28 Max. radial loading, 5 mm from flange	15 N

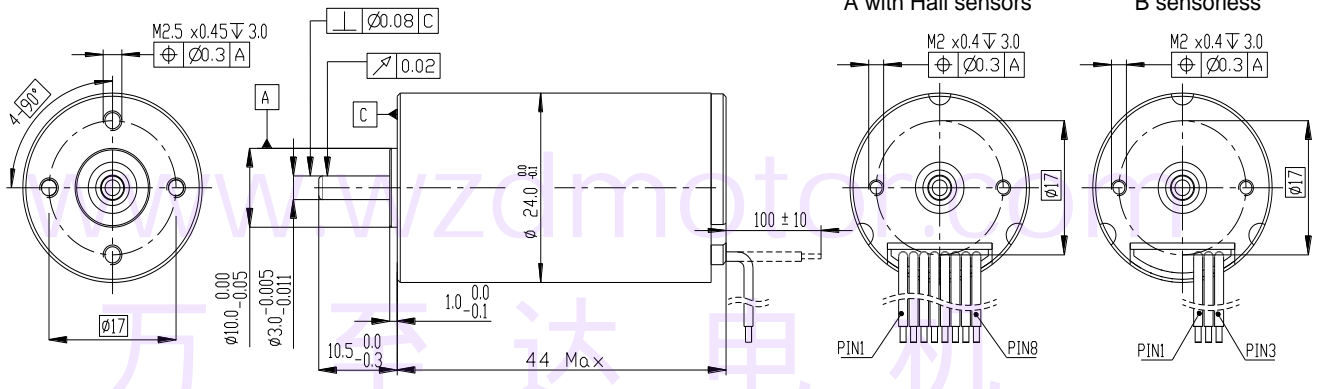
Operating Characteristic Curve



Planetary Gearhead
 $\Phi 22$ mm
 0.1 - 1.5 N.m

Encoder
 2 channels
 128/256/512 lines per revolution

Configuration
 More: Customized according to customer requirements, please contact our sales engineers



Scale:3:2 Unit:mm

Connection A			Connection B		
Yellow	Phase A	PIN 1	Yellow	Phase A	PIN 1
Green	Phase B	PIN 2	Green	Phase B	PIN 2
Blue	Phase C	PIN 3	Blue	Phase C	PIN 3
Red	Vhall 3-18 VDC	PIN 4			
Black	GND	PIN 5			
Yellow	Hall Sensor HA	PIN 6	Specifications		
Green	Hall Sensor HB	PIN 7	Number of pole pairs		1
Blue	Hall Sensor HC	PIN 8	Number of phases		3
			Weight of motor		99 g

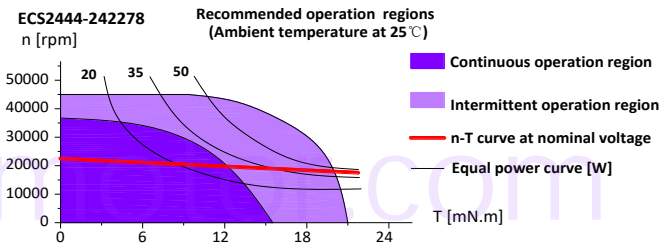
	A with Hall-Sensor	242277				
	B Sensorless	242278				

Motor Data			
1	Nominal voltage	U_N	V 24
2	No load speed	n_0	rpm 22300
3	No load current	I_0	mA 160
4	Nominal speed	n_N	rpm 19970
5	Nominal torque	T_N	mN.m 12.64
6	Nominal current	I_N	A 1.371
7	Stall torque	T_S	mN.m 121
8	Stall current	I_S	A 11.75
9	Max. efficiency	η	% 78

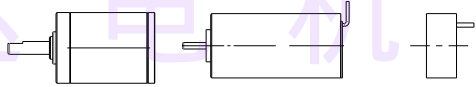
Characteristics			
10	Terminal resistance phase to phase	R_{t-h}	Ω 2.04
11	Terminal inductance phase to phase	L_{t-h}	mH 0.18
12	Torque constant	K_T	mN.m/A 10.44
13	Speed constant	K_n	rpm/V 942
14	Speed/torque gradient	K_v	rpm/mN.m 179
15	Mechanical time constant	K_m	ms 10.49
16	Rotor inertia	J	gcm ² 5.6

Thermal data and Mechanical Data (Ball Bearing)	
17	Thermal resistance housing-ambient 12 K/W
18	Thermal resistance winding-housing 3.8 K/W
19	Thermal time constant winding 7 s
20	Thermal time constant motor 475 s
21	Ambient temperature -40...+100°C
22	Max. permissible winding temperature +150°C
Mechanical data (preloaded ball bearings)	
23	Max. permissible speed 45000 rpm
24	Axial play at axial load < 4N 0 mm
	> 4N max 0.3 mm
25	Radial play preloaded
26	Max. axial load (dynamic) 3.8 N
27	Max. force for press fits (static) 45 N
	(static, shaft supported) 1200 N
28	Max. radial loading, 5 mm from flange 15 N

Operating Characteristic Curve

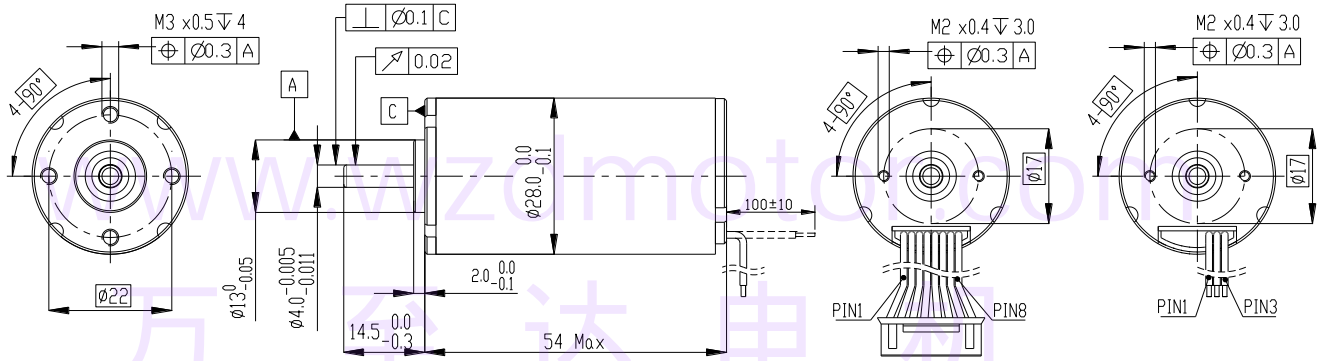


Configuration
More: Customized according to customer requirements, please contact our sales engineers



Planetary Gearhead
Φ22 mm
0.1 - 1.6 N.m

Encoder
2 channels
128/256/512 lines per revolution



Scale:1:1 Unit:mm



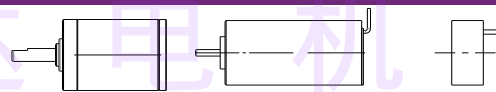
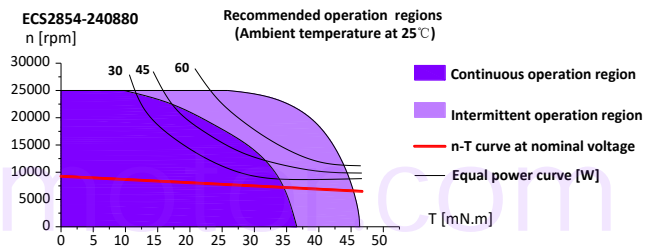
Connection A			Connection B		
Yellow	Phase A	PIN 1	Yellow	Phase A	PIN 1
Green	Phase B	PIN 2	Green	Phase B	PIN 2
Blue	Phase C	PIN 3	Blue	Phase C	PIN 3
Red	Vhall 3-18 VDC	PIN 4			
Black	GND	PIN 5			
Yellow	Hall Sensor HA	PIN 6	Specifications		
Green	Hall Sensor HB	PIN 7	Number of pole pairs		1
Blue	Hall Sensor HC	PIN 8	Number of phases		3
			Weight of motor		155 g

Motor Data	A with Hall-Sensor		B Sensorless			
	120880	240879	360878			
1 Nominal voltage	U_N	V	12	24	36	
2 No load speed	n_0	rpm	8100	8350	8200	
3 No load current	I_0	mA	144	95	65	
4 Nominal speed	n_N	rpm	7366	7558	7391	
5 Nominal torque	T_N	mN.m	18.4	22.2	22.0	
6 Nominal current	I_N	A	1.445	0.91	0.594	
7 Stall torque	T_S	mN.m	203	234	223	
8 Stall current	I_S	A	14.5	8.66	5.43	
9 Max. efficiency	η	%	81.1	80.1	79.3	

Characteristics					
10 Terminal resistance phase to phase	R_{t-h}	Ω	0.83	2.77	6.63
11 Terminal inductance phase to phase	L_{t-h}	mH	0.16	0.61	1.41
12 Torque constant	K_T	mN.m/A	14.10	27.32	41.6
13 Speed constant	K_n	rpm/V	682	352	231
14 Speed/torque gradient	K_v	rpm/mN.m	39.5	35.5	36.6
15 Mechanical time constant	K_m	ms	3.48	3.12	3.22
16 Rotor inertia	J	gcm ²	8.4	8.4	8.4

Thermal data and Mechanical Data (Ball Bearing)	
17 Thermal resistance housing-ambient	12 K/W
18 Thermal resistance winding-housing	3.8 K/W
19 Thermal time constant winding	7 s
20 Thermal time constant motor	475 s
21 Ambient temperature	-40...+100°C
22 Max. permissible winding temperature	+150°C
Mechanical data (preloaded ball bearings)	
23 Max. permissible speed	45000 rpm
24 Axial play at axial load < 6N	0 mm
	> 6N max 0.3 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	3.8 N
27 Max. force for press fits (static) (static, shaft supported)	45 N
28 Max. radial loading, 5 mm from flange	1200 N

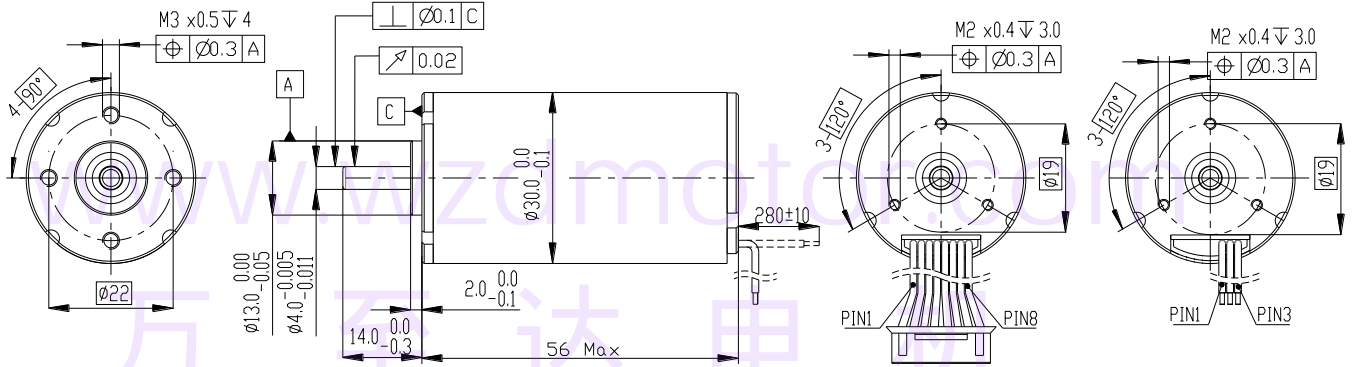
Operating Characteristic Curve



Planetary Gearhead
 $\Phi 28$ mm
 0.1 - 2.0 N.m

Encoder
 2 channels
 128/256/512 lines per revolution

Configuration
 More: Customized according to customer requirements, please contact our sales engineers



Scale:1:1 Unit:mm



Connection A			Connection B		
Yellow	Phase A	PIN 1	Yellow	Phase A	PIN 1
Green	Phase B	PIN 2	Green	Phase B	PIN 2
Blue	Phase C	PIN 3	Blue	Phase C	PIN 3
Red	Vhall 3-18 VDC	PIN 4			
Black	GND	PIN 5			
Yellow	Hall Sensor HA	PIN 6			
Green	Hall Sensor HB	PIN 7			
Blue	Hall Sensor HC	PIN 8			

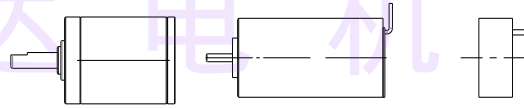
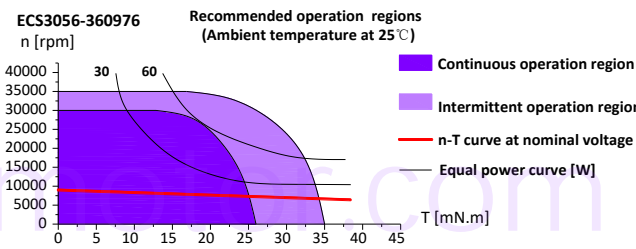
Specifications		
Number of pole pairs		1
Number of phases		3
Weight of motor		194 g

	A with Hall-Sensor	120975	240875	360975	480974	
	B Sensorless	120976	240876	360976	480975	

Motor Data							
1	Nominal voltage	U_N	V	12	24	36	48
2	No load speed	n_0	rpm	8850	8150	8950	8950
3	No load current	I_0	mA	130	60	46	35
4	Nominal speed	n_N	rpm	7264	7320	7947	7907
5	Nominal torque	T_N	mN.m	11.53	11.6	12.32	11.9
6	Nominal current	I_N	A	1.01	0.472	0.365	0.265
7	Stall torque	T_S	mN.m	101	103	110	102
8	Stall current	I_S	A	7.83	3.71	2.89	2.01
9	Max. efficiency	η	%	75.9	76.2	76.4	75.3
Characteristics							
10	Terminal resistance phase to phase	R_{t-h}	Ω	1.53	6.5	12.5	23.9
11	Terminal inductance phase to phase	L_{t-h}	mH	0.16	0.73	1.4	2.6
12	Torque constant	K_T	mN.m/A	13.12	28.22	38.7	51.7
13	Speed constant	K_n	rpm/V	695	345	253	190
14	Speed/torque gradient	K_v	rpm/mN.m	85.1	77.6	79.5	86.5
15	Mechanical time constant	K_m	ms	14.25	13.0	13.3	14.3
16	Rotor inertia	J	gcm ²	16	16	16	16

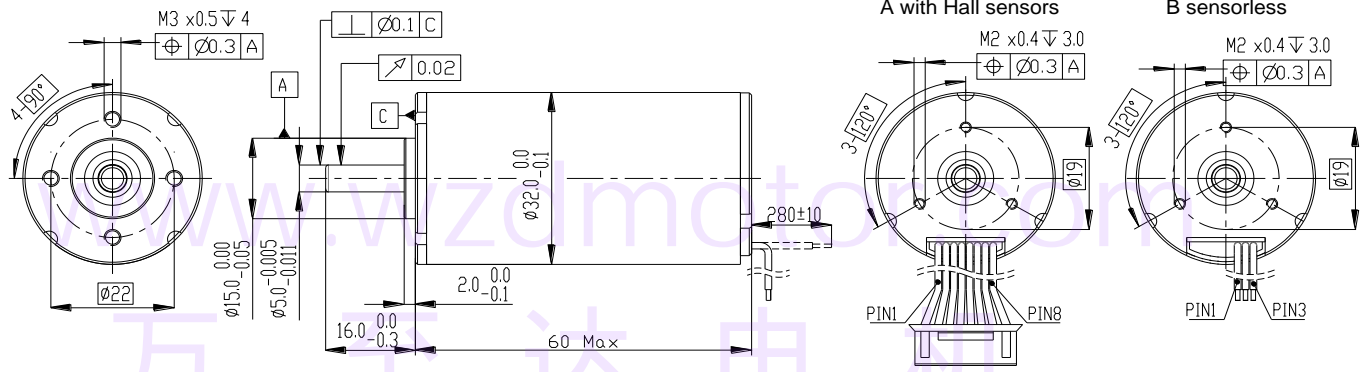
Thermal data and Mechanical Data (Ball Bearing)		
17	Thermal resistance housing-ambient	5.6 K/W
18	Thermal resistance winding-housing	2.8 K/W
19	Thermal time constant winding	8 s
20	Thermal time constant motor	850 s
21	Ambient temperature	-40...+100°C
22	Max. permissible winding temperature	+150°C
Mechanical data (preloaded ball bearings)		
23	Max. permissible speed	35000 rpm
24	Axial play at axial load < 7N	0 mm
	> 7N	max 0.25 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	4.0 N
27	Max. force for press fits (static) (static, shaft supported)	75 N
28	Max. radial loading, 5 mm from flange	1200 N

Operating Characteristic Curve



Planetary Gearhead
 Φ30 mm
 0.1 - 2.2N.m

Encoder
 2 channels
 128/256/512 lines per revolution



Scale:1:1 Unit:mm

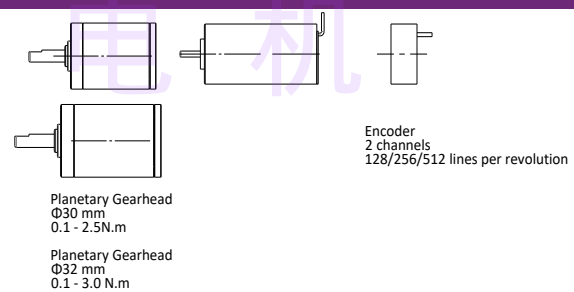
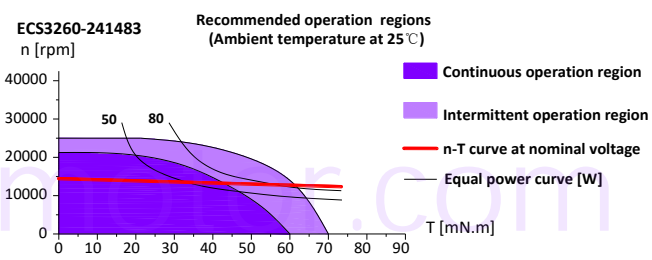
Connection A			Connection B		
Yellow	Phase A	PIN 1	Yellow	Phase A	PIN 1
Green	Phase B	PIN 2	Green	Phase B	PIN 2
Blue	Phase C	PIN 3	Blue	Phase C	PIN 3
Red	Vhall 3-18 VDC	PIN 4			
Black	GND	PIN 5			
Yellow	Hall Sensor HA	PIN 6	Specifications		
Green	Hall Sensor HB	PIN 7	Number of pole pairs		1
Blue	Hall Sensor HC	PIN 8	Number of phases		3
			Weight of motor		265 g

	A with Hall-Sensor	181480	241482	361480	481482	
	B Sensorless	181481	241483	361481	481483	

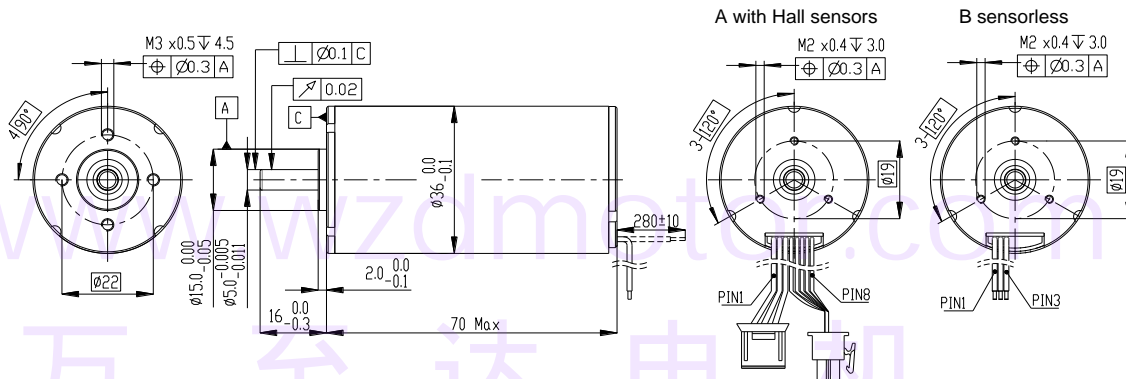
Motor Data							
1	Nominal voltage	U_N	V	18	24	36	48
2	No load speed	n_0	rpm	14000	14300	13900	14200
3	No load current	I_0	mA	485	300	225	170
4	Nominal speed	n_N	rpm	12745	13160	12654	13028
5	Nominal torque	T_N	mN.m	54.9	49.8	50.8	54.9
6	Nominal current	I_N	A	4.92	3.46	2.29	1.90
7	Stall torque	T_S	mN.m	612	625	567	665
8	Stall current	I_S	A	50	40	23.2	21
9	Max. efficiency	η	%	81.3	83.4	81.3	82.8
Characteristics							
10	Terminal resistance phase to phase	R_{t-h}	Ω	0.36	0.6	1.55	2.29
11	Terminal inductance phase to phase	L_{t-h}	mH	0.1	0.17	0.4	1.83
12	Torque constant	K_T	mN.m/A	12.36	15.74	24.7	31.9
13	Speed constant	K_n	rpm/V	785	600	390	298
14	Speed/torque gradient	K_v	rpm/mN.m	22.5	23.1	24.3	21.4
15	Mechanical time constant	K_m	ms	4.01	4.12	4.33	3.81
16	Rotor inertia	J	gcm ²	17	17	17	17

Thermal data and Mechanical Data (Ball Bearing)		
17	Thermal resistance housing-ambient	5.6 K/W
18	Thermal resistance winding-housing	2.8 K/W
19	Thermal time constant winding	8 s
20	Thermal time constant motor	850 s
21	Ambient temperature	-20...+100°C
22	Max. permissible winding temperature	+125°C
Mechanical data (preloaded ball bearings)		
23	Max. permissible speed	35000 rpm
24	Axial play at axial load < 7N	0 mm
	> 7N	max 0.25 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	4.0 N
27	Max. force for press fits (static)	75 N
	(static, shaft supported)	1200 N
28	Max. radial loading, 5 mm from flange	20 N

Operating Characteristic Curve



Configuration
More: Customized according to customer requirements, please contact our sales engineers



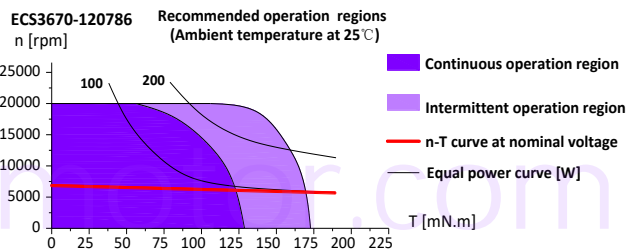
Scale:1:2 Unit:mm

Connection					
Connection A			Connection B		
Yellow	Phase A	PIN 1	Yellow	Phase A	PIN 1
Green	Phase B	PIN 2	Green	Phase B	PIN 2
Blue	Phase C	PIN 3	Blue	Phase C	PIN 3
Red	Vhall 3-18 VDC	PIN 4			
Black	GND	PIN 5			
Yellow	Hall Sensor HA	PIN 6	Specifications		
Green	Hall Sensor HB	PIN 7	Number of pole pairs		1
Blue	Hall Sensor HC	PIN 8	Number of phases		3
			Weight of motor		380 g

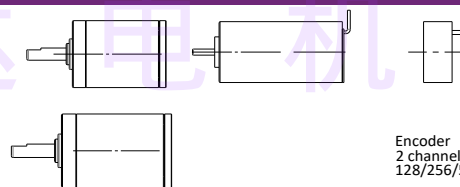
		A with Hall-Sensor	120782	240783	360785	480782	
		B Sensorless	120783	240784	360786	480783	
Motor Data							
1	Nominal voltage	U_N	V	12	24	36	48
2	No load speed	n_0	rpm	6600	6580	6670	6580
3	No load current	I_0	mA	295	140	105	83
4	Nominal speed	n_N	rpm	6052	6065	6213	6028
5	Nominal torque	T_N	mN.m	51.22	52.85	46.26	57.46
6	Nominal current	I_N	A	3.26	1.65	1.43	0.91
7	Stall torque	T_S	mN.m	617	675	675	685
8	Stall current	I_S	A	36	19.4	19.4	9.9
9	Max. efficiency	η	%	82.7	83.7	85.8	82.5
Characteristics							
10	Terminal resistance phase to phase	R_{t-h}	Ω	0.33	1.24	1.86	4.81
11	Terminal inductance phase to phase	L_{t-h}	mH	0.09	0.38	0.85	1.52
12	Torque constant	K_T	mN.m/A	17.28	35.05	34.98	69.78
13	Speed constant	K_n	rpm/V	555	276	186	138
14	Speed/torque gradient	K_v	rpm/mN.m	10.7	9.6	14.5	9.5
15	Mechanical time constant	K_m	ms	2.57	2.32	3.49	2.29
16	Rotor inertia	J	gcm ²	23	23	23	23

Thermal data and Mechanical Data (Ball Bearing)		
17	Thermal resistance housing-ambient	5.2 K/W
18	Thermal resistance winding-housing	2.4 K/W
19	Thermal time constant winding	45 s
20	Thermal time constant motor	870 s
21	Ambient temperature	-20...+100°C
22	Max. permissible winding temperature	+125°C
Mechanical data (preloaded ball bearings)		
23	Max. permissible speed	20000 rpm
24	Axial play at axial load < 8N	0 mm
	> 8N	max 0.3 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	7.0 N
27	Max. force for press fits (static)	100 N
	(static, shaft supported)	2700 N
28	Max. radial loading, 5 mm from flange	25 N

Operating Characteristic Curve



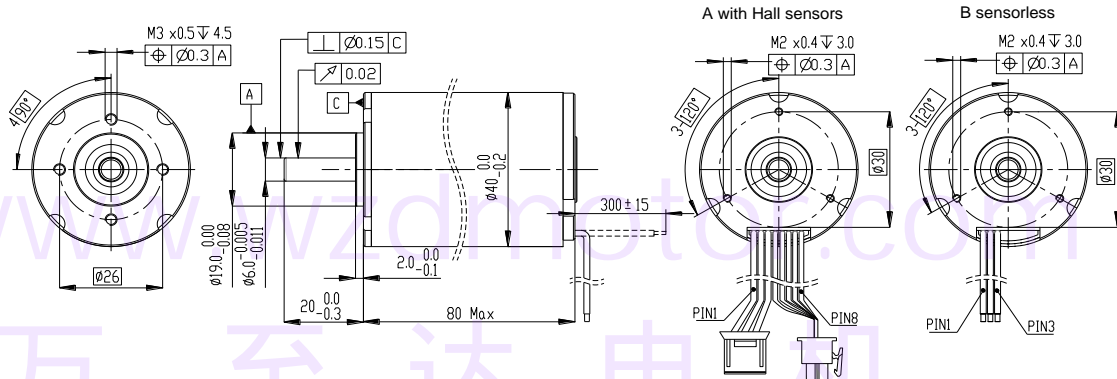
Configuration
More: Customized according to customer requirements, please contact our sales engineers



Planetary Gearhead
Φ36 mm
0.2 - 1.8 N.m

Planetary Gearhead
Φ38 mm
0.3 - 2.3 N.m

Encoder
2 channels
128/256/512 lines per revolution



Scale:1:2 Unit:mm



Connection A			Connection B		
Yellow	Phase A	PIN 1	Yellow	Phase A	PIN 1
Green	Phase B	PIN 2	Green	Phase B	PIN 2
Blue	Phase C	PIN 3	Blue	Phase C	PIN 3
Red	Vhall 3-18 VDC	PIN 4			
Black	GND	PIN 5			
Yellow	Hall Sensor HA	PIN 6			
Green	Hall Sensor HB	PIN 7			
Blue	Hall Sensor HC	PIN 8			

Specifications	
Number of pole pairs	1
Number of phases	3
Weight of motor	575 g

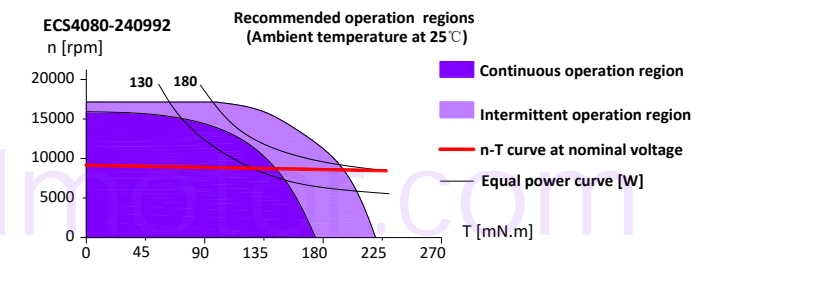
	A with Hall-Sensor	240991				
	B Sensorless	240992				

Motor Data			
1	Nominal voltage	U_N	V 24
2	No load speed	n_0	rpm 8850
3	No load current	I_0	mA 170
4	Nominal speed	n_N	rpm 8508
5	Nominal torque	T_N	mN.m 88.2
6	Nominal current	I_N	A 4.23
7	Stall torque	T_s	mN.m 2280
8	Stall current	I_s	A 105
9	Max. efficiency	η	% 92.1

Characteristics			
10	Terminal resistance phase to phase	R_{t-h}	Ω 0.23
11	Terminal inductance phase to phase	L_{t-h}	mH 0.08
12	Torque constant	K_T	mN.m/A 21.8
13	Speed constant	K_n	rpm/V 369
14	Speed/torque gradient	K_v	rpm/mN.m 4.6
15	Mechanical time constant	K_m	ms 2.61
16	Rotor inertia	J	gcm^2 54

Thermal data and Mechanical Data (Ball Bearing)	
17	Thermal resistance housing-ambient 4.8 K/W
18	Thermal resistance winding-housing 1.3 K/W
19	Thermal time constant winding 46 s
20	Thermal time constant motor 1310 s
21	Ambient temperature -20...+100°C
22	Max. permissible winding temperature +150°C
Mechanical data (preloaded ball bearings)	
23	Max. permissible speed 17000 rpm
24	Axial play at axial load < 9N 0 mm
	> 9N max 0.3 mm
25	Radial play preloaded
26	Max. axial load (dynamic) 7 N
27	Max. force for press fits (static) 100 N
	(static, shaft supported) 4500 N
28	Max. radial loading, 5 mm from flange 75 N

Operating Characteristic Curve



Configuration
 More: Customized according to customer requirements, please contact our sales engineers

