SMART EC LINEUP

MANUAL

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DSM72 Geard ECG Series Drawing

DSM72-24V + IG52

The Smart EC motor is a high-performance BLDC motor with a hollow shaft and an electronic commutation circuit.

The gear train of the smart EC motor is a cycloid gear train and IG planetary gearhead

The use of existing DSM series products with an adapted design results in robust, space-saving drive solution with high power density.

Configured, combine and order EC motors(DSM), driver(ECIP), gearheads(ECG), brakes(BXW) and encoders(ECM) that match your individual needs.

Smart EC motors can be configured and ordered online. Fast , easy and online : **www.dnj.co.kr (dnj@dnj.co.kr)**

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(주)디엔지위드
D&J WITH Co., Ltd.

[DSM 721B 24V 25P IG52] Smart EC Geared Motor

#REF!

DSM721B, 24V, 25 Watt, IG52 Planetary Gearhead, Brushless

- Planetary Gearhead : straight teeth
- Output shaft : stainless steel
- Bearing at output : ball bearing
- Rotation direction : CW/CCW (View from output shaft)
- Motor posture : Horizontal (output shaft)
- For transferring high torques up to 10N.m
- High reduction ratio in a small space
- Reduction ratios of 3:1 to 936:1
- Hall sensor (5~24Vdc, open-collector)

Nominal data [Geared motor]		DSM 721B -24V -25P + IG52 [Reduction Ratio]															
Reduction Ratio		3	4	12	15	19	21	26	43	53	66	81	100	113	126	150	230
		285	353	488	546	676	756	936									
Gearhead Length L	mm	53.0	53.0	68.5	68.5	68.5	68.5	68.5	84.0	84.0	84.0	84.0	84.0	84.0	84.0	99.5	99.5
		99.5	99.5	99.5	99.5	99.5	99.5	99.5									
Rated Torque	N.m	0.19	0.26	0.67	0.84	1.06	1.18	1.46	2.06	2.54	3.17	9.81	9.81	9.81	9.81	9.81	9.81
		9.81	9.81	9.81	9.81	9.81	9.81	9.81									
Max. momentary tolerance torqu	N.m	2.94	2.94	8.83	8.83	14.7	14.7	14.7	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
		29.4	29.4	29.4	29.4	29.4	29.4	29.4									
Efficiency	%	80	80	70	70	70	70	70	60	60	60	60	60	60	60	50	50
		50	50	50	50	50	50	50									
Rated Speed	rpm	953.8	715.4	236.0	188.8	149.1	134.9	108.9	65.2	52.9	42.5	34.6	28.0	24.8	22.2	18.7	12.2
		9.8	7.9	5.7	5.1	4.1	3.7	3.0									
No load speed	rpm	1133.3	850.0	283.3	226.7	178.9	161.9	130.8	79.1	64.2	51.5	42.0	34.0	30.1	27.0	22.7	14.8
		11.9	9.6	7.0	6.2	5.0	4.5	3.6									
Weigth	g	1135	1135	1320	1320	1320	1320	1320	1510	1510	1510	1510	1510	1510	1510	1680	1680
		1680	1680	1680	1680	1680	1680	1680									

Temperature ratings (Operation)	Dry bulb temp (-10~50℃), Relative humidity (0~85%)
Temperature ratings (Storage)	Dry bulb temp (-10~60℃), Relative humidity (10~90%)

Motor specification		DSM721B-24V-25P
Rated Voltage	V	24
Rated Speed	RPM	2950
Rated Torque	N.m	0.08
Rated Current	A	1.4
Rated Power	W	25
No load speed	RPM	3400
No load current	mA	400
Weight	g	440

PIN Allocation			(Molex 5557-08R)	
1	black	GND	Motor	UL1061 AWG 22
2	blue	Motor winding W	Hall sensor	UL1061 AWG 26
3	green	Motor winding V		
4	yellow	Motor winding U		
5	red	Vhall 5 .... 24Vdc		
6	brown	Hall sensor C		
7	gray	Hall sensor B		
8	white	Hall sensor A		

[DSM 721N 24V 35P IG52]	Smart EC Geared Motor

DSM721N, 24V, 35 Watt, IG52 Planetary Gearhead, Brushless

#REF!

- Planetary Gearhead : straight teeth
- Output shaft : stainless steel
- Bearing at output : ball bearing
- Rotation direction : CW/CCW (View from output shaft)
- Motor posture : Horizontal (output shaft)
- For transferring high torques up to 10N.m
- High reduction ratio in a small space
- Reduction ratios of 3:1 to 936:1
- Hall sensor (5~24Vdc, open-collector)

Nominal data [Geared motor]		DSM 721N-24V -35P + IG52 [Reduction Ratio]															
Reduction Ratio		3	4	12	15	19	21	26	43	53	66	81	100	113	126	150	230
		285	353	488	546	676	756	936									
Gearhead Length L	mm	53.0	53.0	68.5	68.5	68.5	68.5	68.5	84.0	84.0	84.0	84.0	84.0	84.0	84.0	99.5	99.5
		99.5	99.5	99.5	99.5	99.5	99.5	99.5									
Rated Torque	N.m	0.36	0.48	1.26	1.58	2.00	2.21	2.73	3.87	4.77	5.94	9.81	9.81	9.81	9.81	9.81	9.81
		9.81	9.81	9.81	9.81	9.81	9.81	9.81									
Max. momentary tolerance torqu	N.m	2.94	2.94	8.83	8.83	14.7	14.7	14.7	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
		29.4	29.4	29.4	29.4	29.4	29.4	29.4									
Efficiency	%	80	80	70	70	70	70	70	60	60	60	60	60	60	60	50	50
		50	50	50	50	50	50	50									
Rated Speed	rpm	711.3	533.5	176.0	140.8	111.2	100.6	81.2	48.6	39.4	31.7	25.8	20.9	18.5	16.6	13.9	9.1
		7.3	5.9	4.3	3.8	3.1	2.8	2.2									
No load speed	rpm	866.7	650.0	216.7	173.3	136.8	123.8	100.0	60.5	49.1	39.4	32.1	26.0	23.0	20.6	17.3	11.3
		9.1	7.4	5.3	4.8	3.8	3.4	2.8									
Weigth	g	1135	1135	1320	1320	1320	1320	1320	1510	1510	1510	1510	1510	1510	1510	1680	1680
		1680	1680	1680	1680	1680	1680	1680									

Temperature ratings (Operation)	Dry bulb temp (-10~50℃), Relative humidity (0~85%)
Temperature ratings (Storage)	Dry bulb temp (-10~60℃), Relative humidity (10~90%)

Motor specification		DSM721N-24V-35P
Rated Voltage	V	24
Rated Speed	RPM	2200
Rated Torque	N.m	0.15
Rated Current	A	2.2
Rated Power	W	35
No load speed	RPM	2600
No load current	mA	400
Weight	g	440

PIN Allocation			(Molex 5557-08R)	
1	black	GND	Motor	UL1061 AWG 22
2	blue	Motor winding W	Hall sensor	UL1061 AWG 26
3	green	Motor winding V		
4	yellow	Motor winding U		
5	red	Vhall 5 .... 24Vdc		
6	brown	Hall sensor C		
7	gray	Hall sensor B		
8	white	Hall sensor A		

[DSM 721B 24V 40P IG52]	Smart EC Geared Motor

DSM721B, 24V, 40 Watt, IG52 Planetary Gearhead, Brushless

#REF!

- Planetary Gearhead : straight teeth
- Output shaft : stainless steel
- Bearing at output : ball bearing
- Rotation direction : CW/CCW (View from output shaft)
- Motor posture : Horizontal (output shaft)
- For transferring high torques up to 10N.m
- High reduction ratio in a small space
- Reduction ratios of 3:1 to 936:1
- Hall sensor (5~24Vdc, open-collector)

Nominal data [Geared motor]		DSM 721B-24V -40P + IG52 [Reduction Ratio]															
Reduction Ratio		3	4	12	15	19	21	26	43	53	66	81	100	113	126	150	230
		285	353	488	546	676	756	936									
Gearhead Length L	mm	53.0	53.0	68.5	68.5	68.5	68.5	68.5	84.0	84.0	84.0	84.0	84.0	84.0	84.0	99.5	99.5
		99.5	99.5	99.5	99.5	99.5	99.5	99.5									
Rated Torque	N.m	0.24	0.32	0.84	1.05	1.33	1.47	1.82	2.58	3.18	3.96	9.81	9.81	9.81	9.81	9.81	9.81
		9.81	9.81	9.81	9.81	9.81	9.81	9.81									
Max. momentary tolerance torqu	N.m	2.94	2.94	8.83	8.83	14.7	14.7	14.7	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
		29.4	29.4	29.4	29.4	29.4	29.4	29.4									
Efficiency	%	80	80	70	70	70	70	70	60	60	60	60	60	60	60	50	50
		50	50	50	50	50	50	50									
Rated Speed	rpm	1228.7	921.5	304.0	243.2	192.0	173.7	140.3	84.0	68.1	54.7	44.6	36.1	31.9	28.7	24.1	15.7
		12.7	10.2	7.4	6.6	5.3	4.8	3.9									
No load speed	rpm	1466.7	1100.0	366.7	293.3	231.6	209.5	169.2	102.3	83.0	66.7	54.3	44.0	38.9	34.9	29.3	19.1
		15.4	12.5	9.0	8.1	6.5	5.8	4.7									
Weigth	g	1135	1135	1320	1320	1320	1320	1320	1510	1510	1510	1510	1510	1510	1510	1680	1680
		1680	1680	1680	1680	1680	1680	1680									

Temperature ratings (Operation)	Dry bulb temp (-10~50℃), Relative humidity (0~85%)
Temperature ratings (Storage)	Dry bulb temp (-10~60℃), Relative humidity (10~90%)

Motor specification		DSM721B-24V-40P
Rated Voltage	V	24
Rated Speed	RPM	3800
Rated Torque	N.m	0.10
Rated Current	A	2.2
Rated Power	W	40
No load speed	RPM	4400
No load current	mA	700
Weight	g	440

PIN Allocation			(Molex 5557-08R)	
1	black	GND	Motor	UL1061 AWG 22
2	blue	Motor winding W	Hall sensor	UL1061 AWG 26
3	green	Motor winding V		
4	yellow	Motor winding U		
5	red	Vhall 5 .... 24Vdc		
6	brown	Hall sensor C		
7	gray	Hall sensor B		
8	white	Hall sensor A		

[DSM 721N 24V 50P IG52]	Smart EC Geared Motor

DSM721N, 24V, 50 Watt, IG52 Planetary Gearhead, Brushless

#REF!

- Planetary Gearhead : straight teeth
- Output shaft : stainless steel
- Bearing at output : ball bearing
- Rotation direction : CW/CCW (View from output shaft)
- Motor posture : Horizontal (output shaft)
- For transferring high torques up to 10N.m
- High reduction ratio in a small space
- Reduction ratios of 3:1 to 936:1
- Hall sensor (5~24Vdc, open-collector)

Nominal data [Geared motor]		DSM 721N -24V -50P + IG52 [Reduction Ratio]															
Reduction Ratio		3	4	12	15	19	21	26	43	53	66	81	100	113	126	150	230
		285	353	488	546	676	756	936									
Gearhead Length L	mm	53.0	53.0	68.5	68.5	68.5	68.5	68.5	84.0	84.0	84.0	84.0	84.0	84.0	84.0	99.5	99.5
		99.5	99.5	99.5	99.5	99.5	99.5	99.5									
Rated Torque	N.m	0.36	0.48	1.26	1.58	2.00	2.21	2.73	3.87	4.77	5.94	9.81	9.81	9.81	9.81	9.81	9.81
		9.81	9.81	9.81	9.81	9.81	9.81	9.81									
Max. momentary tolerance torqu	N.m	2.94	2.94	8.83	8.83	14.7	14.7	14.7	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
		29.4	29.4	29.4	29.4	29.4	29.4	29.4									
Efficiency	%	80	80	70	70	70	70	70	60	60	60	60	60	60	60	50	50
		50	50	50	50	50	50	50									
Rated Speed	rpm	970.0	727.5	240.0	192.0	151.6	137.1	110.8	66.3	53.8	43.2	35.2	28.5	25.2	22.6	19.0	12.4
		10.0	8.1	5.8	5.2	4.2	3.8	3.0									
No load speed	rpm	1133.3	850.0	283.3	226.7	178.9	161.9	130.8	79.1	64.2	51.5	42.0	34.0	30.1	27.0	22.7	14.8
		11.9	9.6	7.0	6.2	5.0	4.5	3.6									
Weigth	g	1135	1135	1320	1320	1320	1320	1320	1510	1510	1510	1510	1510	1510	1510	1680	1680
		1680	1680	1680	1680	1680	1680	1680									

Temperature ratings (Operation)	Dry bulb temp (-10~50℃), Relative humidity (0~85%)
Temperature ratings (Storage)	Dry bulb temp (-10~60℃), Relative humidity (10~90%)

Motor specification		DSM721N-24V-50P
Rated Voltage	V	24
Rated Speed	RPM	3000
Rated Torque	N.m	0.15
Rated Current	A	2.7
Rated Power	W	50
No load speed	RPM	3400
No load current	mA	800
Weight	g	440

PIN Allocation			(Molex 5557-08R)	
1	black	GND	Motor	UL1061 AWG 22
2	blue	Motor winding W	Hall sensor	UL1061 AWG 26
3	green	Motor winding V		
4	yellow	Motor winding U		
5	red	Vhall 5 .... 24Vdc		
6	brown	Hall sensor C		
7	gray	Hall sensor B		
8	white	Hall sensor A		

[DSM 722B 24V 70P IG52]	Smart EC Geared Motor

DSM722B, 24V, 70 Watt, IG52 Planetary Gearhead, Brushless

#REF!

- Planetary Gearhead : straight teeth
- Output shaft : stainless steel
- Bearing at output : ball bearing
- Rotation direction : CW/CCW (View from output shaft)
- Motor posture : Horizontal (output shaft)
- For transferring high torques up to 10N.m
- High reduction ratio in a small space
- Reduction ratios of 3:1 to 936:1
- Hall sensor (5~24Vdc, open-collector)

Nominal data [Geared motor]		DSM 722B -24V -70P +IG52 [Reduction Ratio]															
Reduction Ratio		3	4	12	15	19	21	26	43	53	66	81	100	113	126	150	230
		285	353	488	546	676	756	936									
Gearhead Length L	mm	53.0	53.0	68.5	68.5	68.5	68.5	68.5	84.0	84.0	84.0	84.0	84.0	84.0	84.0	99.5	99.5
		99.5	99.5	99.5	99.5	99.5	99.5	99.5									
Rated Torque	N.m	0.58	0.77	2.02	2.52	3.19	3.53	4.37	6.19	7.63	9.50	9.81	9.81	9.81	9.81	9.81	9.81
		9.81	9.81	9.81	9.81	9.81	9.81	9.81									
Max. momentary tolerance torqu	N.m	2.94	2.94	8.83	8.83	14.7	14.7	14.7	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
		29.4	29.4	29.4	29.4	29.4	29.4	29.4									
Efficiency	%	80	80	70	70	70	70	70	60	60	60	60	60	60	60	50	50
		50	50	50	50	50	50	50									
Rated Speed	rpm	905.3	679.0	224.0	179.2	141.5	128.0	103.4	61.9	50.2	40.3	32.8	26.6	23.5	21.1	17.7	11.6
		9.3	7.5	5.5	4.9	3.9	3.5	2.8									
No load speed	rpm	1166.7	875.0	291.7	233.3	184.2	166.7	134.6	81.4	66.0	53.0	43.2	35.0	31.0	27.8	23.3	15.2
		12.3	9.9	7.2	6.4	5.2	4.6	3.7									
Weigth	g	1325	1325	1510	1510	1510	1510	1510	1700	1700	1700	1700	1700	1700	1700	1870	1870
		1870	1870	1870	1870	1870	1870	1870									

Temperature ratings (Operation)	Dry bulb temp (-10~50℃), Relative humidity (0~85%)
Temperature ratings (Storage)	Dry bulb temp (-10~60℃), Relative humidity (10~90%)

Motor specification		DSM722B-24V-70P
Rated Voltage	V	24
Rated Speed	RPM	2800
Rated Torque	N.m	0.24
Rated Current	A	4.0
Rated Power	W	70
No load speed	RPM	3500
No load current	mA	800
Weight	g	630

PIN Allocation			(Molex 5557-08R)	
1	black	GND	Motor	UL1061 AWG 22
2	blue	Motor winding W	Hall sensor	UL1061 AWG 26
3	green	Motor winding V		
4	yellow	Motor winding U		
5	red	Vhall 5 .... 24Vdc		
6	brown	Hall sensor C		
7	gray	Hall sensor B		
8	white	Hall sensor A		

[DSM 722B 24V 80P IG52]	Smart EC Geared Motor

DSM722B, 24V, 80 Watt, IG52 Planetary Gearhead, Brushless

#REF!

- Planetary Gearhead : straight teeth
- Output shaft : stainless steel
- Bearing at output : ball bearing
- Rotation direction : CW/CCW (View from output shaft)
- Motor posture : Horizontal (output shaft)
- For transferring high torques up to 10N.m
- High reduction ratio in a small space
- Reduction ratios of 3:1 to 936:1
- Hall sensor (5~24Vdc, open-collector)

Nominal data [Geared motor]		DSM 722B -24V -80P + IG52 [Reduction Ratio]															
Reduction Ratio		3	4	12	15	19	21	26	43	53	66	81	100	113	126	150	230
		285	353	488	546	676	756	936									
Gearhead Length L	mm	53.0	53.0	68.5	68.5	68.5	68.5	68.5	84.0	84.0	84.0	84.0	84.0	84.0	84.0	99.5	99.5
		99.5	99.5	99.5	99.5	99.5	99.5	99.5									
Rated Torque	N.m	0.48	0.64	1.68	2.10	2.66	2.94	3.64	5.16	6.36	7.92	9.81	9.81	9.81	9.81	9.81	9.81
		9.81	9.81	9.81	9.81	9.81	9.81	9.81									
Max. momentary tolerance torqu	N.m	2.94	2.94	8.83	8.83	14.7	14.7	14.7	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
		29.4	29.4	29.4	29.4	29.4	29.4	29.4									
Efficiency	%	80	80	70	70	70	70	70	60	60	60	60	60	60	60	50	50
		50	50	50	50	50	50	50									
Rated Speed	rpm	1228.7	921.5	304.0	243.2	192.0	173.7	140.3	84.0	68.1	54.7	44.6	36.1	31.9	28.7	24.1	15.7
		12.7	10.2	7.4	6.6	5.3	4.8	3.9									
No load speed	rpm	1500.0	1125.0	375.0	300.0	236.8	214.3	173.1	104.7	84.9	68.2	55.6	45.0	39.8	35.7	30.0	19.6
		15.8	12.7	9.2	8.2	6.7	6.0	4.8									
Weigth	g	1325	1325	1510	1510	1510	1510	1510	1700	1700	1700	1700	1700	1700	1700	1870	1870
		1870	1870	1870	1870	1870	1870	1870									
Temperature ratings (Operation)		Dry bulb temp (-10~50℃), Relative humidity (0~85%)															
Temperature ratings (Storage)		Dry bulb temp (-10~60℃), Relative humidity (10~90%)															

Motor specification		DSM722B-24V-80P
Rated Voltage	V	24
Rated Speed	RPM	3800
Rated Torque	N.m	0.20
Rated Current	A	4.5
Rated Power	W	80
No load speed	RPM	4500
No load current	mA	700
Weight	g	630

PIN Allocation			(Molex 5557-08R)	
1	black	GND	Motor	UL1061 AWG 22
2	blue	Motor winding W	Hall sensor	UL1061 AWG 26
3	green	Motor winding V		
4	yellow	Motor winding U		
5	red	Vhall 5 .... 24Vdc		
6	brown	Hall sensor C		
7	gray	Hall sensor B		
8	white	Hall sensor A		

[DSM 722N 24V 110P IG52]	Smart EC Geared Motor

DSM722N, 24V, 110 Watt, IG52 Planetary Gearhead, Brushless

#REF!

- Planetary Gearhead : straight teeth
- Output shaft : stainless steel
- Bearing at output : ball bearing
- Rotation direction : CW/CCW (View from output shaft)
- Motor posture : Horizontal (output shaft)
- For transferring high torques up to 10N.m
- High reduction ratio in a small space
- Reduction ratios of 3:1 to 936:1
- Hall sensor (5~24Vdc, open-collector)

Nominal data [Geared motor]		DSM 722N -24V -110P + IG52 [Reduction Ratio]															
Reduction Ratio		3	4	12	15	19	21	26	43	53	66	81	100	113	126	150	230
		285	353	488	546	676	756	936									
Gearhead Length L	mm	53.0	53.0	68.5	68.5	68.5	68.5	68.5	84.0	84.0	84.0	84.0	84.0	84.0	84.0	99.5	99.5
		99.5	99.5	99.5	99.5	99.5	99.5	99.5									
Rated Torque	N.m	0.86	1.15	3.02	3.78	4.79	5.29	6.55	9.29	11.45	14.26	9.81	9.81	9.81	9.81	9.81	9.81
		9.81	9.81	9.81	9.81	9.81	9.81	9.81									
Max. momentary tolerance torqu	N.m	2.94	2.94	8.83	8.83	14.7	14.7	14.7	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
		29.4	29.4	29.4	29.4	29.4	29.4	29.4									
Efficiency	%	80	80	70	70	70	70	70	60	60	60	60	60	60	60	50	50
		50	50	50	50	50	50	50									
Rated Speed	rpm	970.0	727.5	240.0	192.0	151.6	137.1	110.8	66.3	53.8	43.2	35.2	28.5	25.2	22.6	19.0	12.4
		10.0	8.1	5.8	5.2	4.2	3.8	3.0									
No load speed	rpm	1166.7	875.0	291.7	233.3	184.2	166.7	134.6	81.4	66.0	53.0	43.2	35.0	31.0	27.8	23.3	15.2
		12.3	9.9	7.2	6.4	5.2	4.6	3.7									
Weigth	g	1325	1325	1510	1510	1510	1510	1510	1700	1700	1700	1700	1700	1700	1700	1870	1870
		1870	1870	1870	1870	1870	1870	1870									

Temperature ratings (Operation)	Dry bulb temp (-10~50℃), Relative humidity (0~85%)
Temperature ratings (Storage)	Dry bulb temp (-10~60℃), Relative humidity (10~90%)

Motor specification		DSM722N-24V-110P
Rated Voltage	V	24
Rated Speed	RPM	3000
Rated Torque	N.m	0.36
Rated Current	A	6.0
Rated Power	W	110
No load speed	RPM	3500
No load current	mA	700
Weight	g	630

PIN Allocation			(Molex 5557-08R)	
1	black	GND	Motor	UL1061 AWG 22
2	blue	Motor winding W	Hall sensor	UL1061 AWG 26
3	green	Motor winding V		
4	yellow	Motor winding U		
5	red	Vhall 5 .... 24Vdc		
6	brown	Hall sensor C		
7	gray	Hall sensor B		
8	white	Hall sensor A		

Table.1 Reduction ratio

Reduction ratio	1/3	1/4	1/12	1/15	1/19	1/26	1/43	1/53	1/66	1/81	1/100	1/113	1/150	1/230	1/285	1/353	1/488	1/546	1/936
Length "L2"(mm)	47		62.5				78						93.5						

Table.2 Reduction ratio

Motor Type	Length "L1"(mm)
DSM721	40.5
DSM722	50.5

REV.	DATE	DESCRIPTION	DRWN

MATERIAL	-	PLATING	-		
SCALE	N/S	PAPER	A4	QUANTITY	-
DWG NO.	DSM72-24V + IG52				DIMENSION mm

(주)디엔지위드
D&J WITH Co.,Ltd

SUBJECT

IG52 감속기