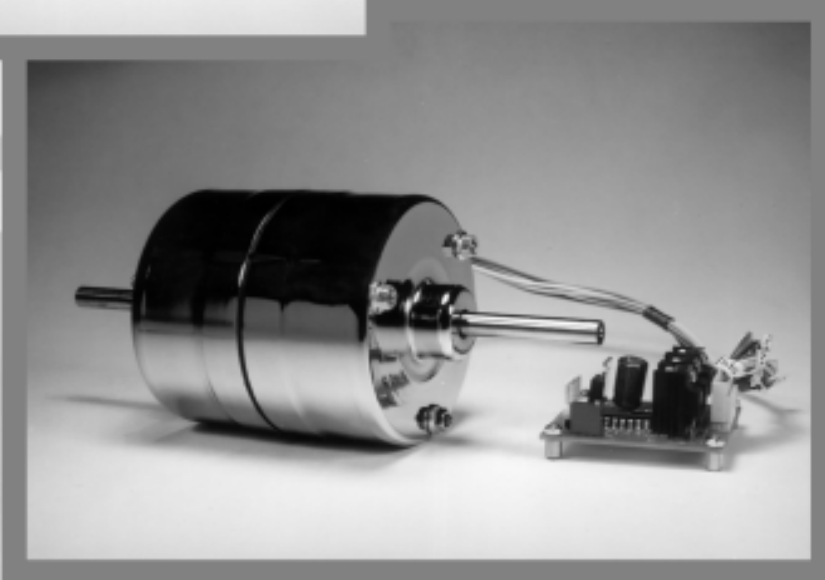


# Brushless DC (BLDC) Motors



# Brushless DC Motor

## FL42BLS SERIES

### ◆ INDICATIONS OF THE MODELS

FL 42 BLS 01

① ② ③ ④

① FULLING ② FRAME ③ BRUSHLESS MOTOR ④ SERIES

### ◆ GENERAL SPECIFICATIONS

Winding type	Delta
Hall effect angle	120 degree electrical angle
Shaft run out	0.025mm
Radial play	0.02mm@450g
End play	0.08mm@450g
Max. radial force	28N @ 20mm from the flange
Max. axial force	10N
Insulation class	Class B
Dielectric strength	500VDC for one minute
Insulation resistance	100M $\Omega$ Min., 500VDC

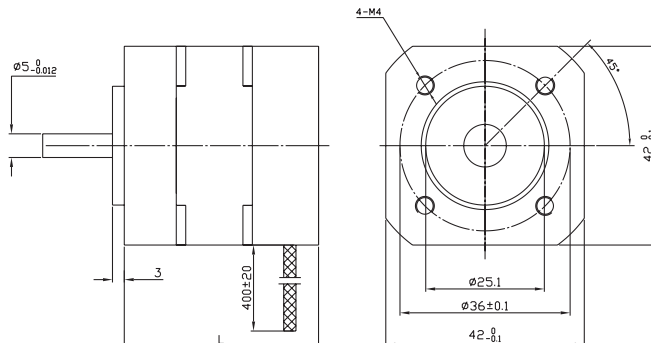
### ELECTRIC CONNECTION

Lead No.	Lead Color	Lead Gauge	FUNCTION	DESCRIPTION
1	Red	UL1007 26AWG	Vcc	SUPPLY VOLTAGE FOR HALL SENSORS
2	Blue		HALL A	
3	Green		HALL B	
4	White		HALL C	
5	Black	UL1007 20AWG	GND	GROUND FOR HALL SENSORS
6	Yellow		PHASE A	
7	Red		PHASE B	
8	Black		PHASE C	

### ◆ ELECTRICAL SPECIFICATIONS

Model	FL42BLS01	FL42BLS02	FL42BLS03	
Number of poles		8		
Number of phase		3		
Rated voltage	VDC	24		
Rated speed	RPM	4000		
Rated torque	N.m	0.0625	0.125	0.25
Rotor power	W	26	52.5	105
Peak torque	N.m	0.19	0.38	0.75
Peak current	A	5.4	10.6	20
Line to line resistance	ohms	1.8	0.72	0.28
Line to line inductance	mH	2.23	1.04	0.54
Torque constant	Nm/A	0.035	0.036	0.036
Back E.M.F	V/KRPM	3.7	3.8	3.8
Rotor inertia	g.cm <sup>2</sup>	24	48	96
Body length	mm	41	61	100
Mass	Kg	0.3	0.45	0.8

### ◆ DIMENSIONS:



# Brushless DC Motor

## FL57BL(S) SERIES

### ◆ INDICATIONS OF THE MODELS

FL 57 BL(S) 01

① ② ③ ④

① FULLING ② FRAME ③ BL:BRUSHLESS MOTOR WITH ROUND FRONT END BELL

④ SERIES

BLS:BRUSHLESS MOTOR WITH SQUARE FRONT END BELL

### ◆ GENERAL SPECIFICATIONS

Winding type	Delta
Hall effect angle	120 degree electrical angle
Shaft run out	0.025mm
Radial play	0.025mm@460g
End play	0.08mm@4000g
Max. radial force	75N @ 20mm from the flange
Max. axial force	15N
Insulation class	Class B
Dielectric strength	500VDC for one minute
Insulation resistance	100M $\Omega$ Min., 500VDC

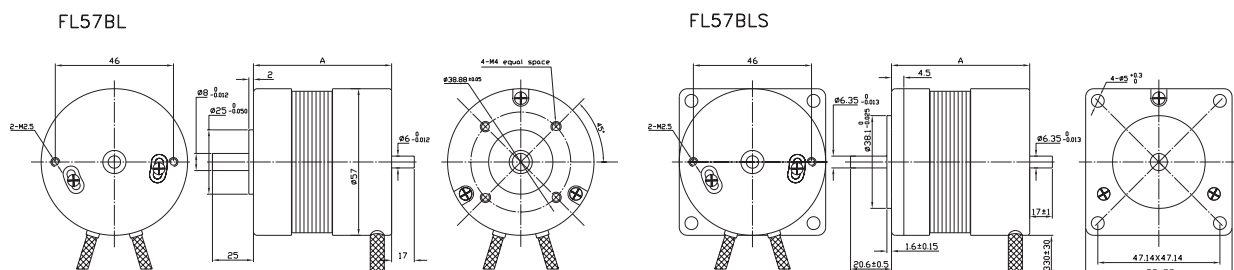
### ELECTRIC CONNECTION

Lead No.	Lead Color	Lead Gauge	FUNCTION	DESCRIPTION
1	Red	UL1007 26AWG	Vcc	SUPPLY VOLTAGE FOR HALL SENSORS
2	Blue		HALL A	
3	Green		HALL B	
4	White		HALL C	
5	Black	UL1007 20AWG	GND	GROUND FOR HALL SENSORS
6	Yellow		PHASE A	
7	Red		PHASE B	
8	Black		PHASE C	

### ◆ ELECTRICAL SPECIFICATIONS

Model	FL57BL(S)005	FL57BL(S)01	FL57BL(S)02	FL57BL(S)03	FL57BL(S)04	
Number of poles			4			
Number of phase			3			
Rated voltage	VDC		36			
Rated speed	RPM		4000			
Rated torque	N.m	0.055	0.11	0.22	0.32	0.43
Rotor power	W	23	46	92	133	180
Peak torque	N.m	0.16	0.39	0.7	1	1.27
Peak current	A	3.5	6.8	14.5	17.6	22.3
Line to line resistance	ohms	4.1	1.5	0.7	0.45	0.35
Line to line inductance	mH	10	4.2	2.16	1.4	1
Torque constant	Nm/A	0.053	0.063	0.063	0.063	0.063
Back E.M.F	V/KRPM	5.55	6.6	6.6	6.6	6.6
Rotor inertia	g.cm <sup>2</sup>	30	75	119	173	230
Body length	mm	45	55	75	95	115
Mass	Kg	0.25	0.5	0.75	1	1.25

### ◆ DIMENSIONS:



# Brushless DC Motor

## FL86BLS SERIES

### ◆ INDICATIONS OF THE MODELS

FL 86 BLS 75

① ② ③ ④

① FULLING ② FRAME ③ BRUSHLESS MOTOR ④ BODY LENGTH

### ◆ GENERAL SPECIFICATIONS

Winding type	Delta
Hall effect angle	120 degree electrical angle
Shaft run out	0.05mm
Radial play	0.02mm@450g
End play	0.08mm@450g
Max. radial force	220N @ 20mm from the flange
Max. axial force	60N
Insulation class	Class B
Dielectric strength	500VDC for one minute
Insulation resistance	100M $\Omega$ Min., 500VDC

### ELECTRIC CONNECTION

Lead No.	Lead Color	Lead Gauge	FUNCTION	DESCRIPTION
1	Red	UL1007 26AWG	Vcc	SUPPLY VOLTAGE FOR HALL SENSORS
2	Blue		HALL A	
3	Green		HALL B	
4	White	AF-200	HALL C	
5	Black		GND	GROUND FOR HALL SENSORS
6	Yellow	AF-200	PHASE A	
7	Red		PHASE B	
8	Black		PHASE C	

### ◆ ELECTRICAL SPECIFICATIONS

Model		FL86BLS75	FL86BLS105	FL86BLS135
Number of poles			8	
Number of phase			3	
Rated voltage	VDC		48	
Rated speed	RPM		3200	
Rated torque	N.m	0.6	1.2	1.8
Rotor power	W	200	400	600
Peak torque	N.m	1.8	3.6	5.4
Peak current	A	16	30	45
Line to line resistance	ohms	0.59	0.27	0.18
Line to line inductance	mH	1.2	0.56	0.37
Torque constant	Nm/A	0.113	0.12	0.12
Back E.M.F	V/KRPM	11.8	12.6	12.6
Rotor inertia	g.cm <sup>2</sup>	1260	2460	3660
Body length	mm	77	107	137
Mass	Kg	2.1	3.3	4.5

### ◆ DIMENSIONS:

