AC Servo Motors
BL 40/50/70 Series

The BL Series are synchronous electrical servomotors, with 3 winding phases, supplied with Sinusoidal or Trapezoidal current wave forms. The Feed-Back devices that produce the synchronization signal and speed (position, also in the Sinusoidal case), are a Resolver (BLS Series) or a Hall Effect devices (BLT Series). This "BRUSHLESS" technology provides:

- High dynamic response.
- Full speed condition, not limited by the "Brush Sparking effect".
- High thermal and dynamic characteristics, because of the motor's windings which are located in the stators.
- Very low maintenance.

BLS ~ Technical Specifications

ALL CHARACTERISTICS MEASURED AT 25°C AMBIENT TEMPERATURE	SYMBOLS	UNITS
MAX MECHANICAL SPEED	n	rpm
STALL TORQUE (1) ±10%	M_S	Nm
STALL CURRENT	I_S	A
PEAK TORQUE ±10%	M_J	Nm
TORQUE-WEIGHT RATIO	T_W	Nm/kg
EMF CONSTANT ±5%	K_E	Vs/rad
TORQUE CONSTANT ±5%	K_T	Nm/A
RELUCTANCE TORQUE (*)	T_R	Nm
WINDING RESISTANCE ±5%	R	Ω
WINDING INDUCTANCE ±5%	L	mH
ROTOR INERTIA	J	kg m^2 10^{-3}
MECHANICAL TIME CONSTANT	τ_M	ms
ELECTRICAL TIME CONSTANT	τ_E	ms
THERMAL TIME CONSTANT	τ_{TH}	s
THERMAL RESISTANCE	R_{TH}	°C/W
MASS	M	kg
RADIAL LOAD (at mid-length of shaft)	F_R	N
AXIAL LOAD	F_A	N
INSULATION		
PROTECTION		

(1) With an aluminium heat sink plate

(*) Respect to the Stall Torque

BLT ⌒ Technical Specifications

ALL CHARACTERISTICS MEASURED AT 25°C AMBIENT TEMPERATURE	SYMBOLS	UNITS
MAX MECHANICAL SPEED	n	rpm
STALL TORQUE (1) ±10%	M_S	Nm
STALL CURRENT	I_S	A
PEAK TORQUE ±10%	M_J	Nm
TORQUE-WEIGHT RATIO	T_W	Nm/kg
EMF CONSTANT ±5%	K_E	Vs/rad
TORQUE CONSTANT ±5%	K_T	Nm/A
RELUCTANCE TORQUE (*)	T_R	Nm
WINDING RESISTANCE ±5%	R	Ω
WINDING INDUCTANCE ±5%	L	mH
ROTOR INERTIA	J	kg m^2 10^{-3}
MECHANICAL TIME CONSTANT	τ_M	ms
ELECTRICAL TIME CONSTANT	τ_E	ms
THERMAL TIME CONSTANT	τ_{TH}	s
THERMAL RESISTANCE	R_{TH}	°C/W
MASS	M	kg
RADIAL LOAD (at mid-length of shaft)	F_R	N
AXIAL LOAD	F_A	N
INSULATION		
PROTECTION		

(1) With an aluminium heat sink plate

(*) Respect to the Stall Torque

BLS-40		BLS-55		BLS-71		BLS-72		BLS-73		BLS-74	
110 VAC	220 VAC	220 VAC	400 VAC	220 VAC	400 VAC	220 VAC	400 VAC	220 VAC	400 VAC	220 VAC	400 VAC
10,000		10,000		11,000		11,000		11,000		11,000	
0.36	0.36	0.7	0.7	0.8	0.8	1.9	1.9	2.7	2.7	3.4	3.4
2.57	1.24	1.4	0.77	2.11	1.13	3.96	2.37	3.91	2.2	4.2	2.25
1.44	1.44	2.8	2.8	3.2	3.2	7.6	7.6	10.8	10.8	13.6	13.6
0.6	0.6	0.5	0.5	0.53	0.53	1	1	1.17	1.17	1.21	1.21
0.08	0.17	0.29	0.53	0.22	0.41	0.28	0.46	0.4	0.71	0.47	0.87
0.14	0.29	0.5	0.91	0.38	0.71	0.48	0.8	0.69	1.23	0.81	1.51
<6%		<4%		<3.5%		<3.5%		<3.5%		<3.5%	
6	24.4	14.7	47	10.7	33.8	5.3	15.5	6.4	18.9	5.7	18.6
3.23	12	18.6	61	7.4	24	5.4	13.2	6.4	20	6.7	22
0.0024	0.0024	0.017	0.017	0.027	0.027	0.051	0.051	0.074	0.074	0.097	0.097
1.19	1.19	1.72	1.66	3.46	3.14	2.01	2.15	1.72	1.6	1.45	1.37
0.54	0.49	1.27	1.3	0.69	0.71	1.02	0.85	1	1.06	1.18	1.18
1,190	1,190	1,120	1,120	1,100	1,100	1,280	1,280	1,560	1,560	1,990	1,990
1.53	1.53	1.99	2.06	1.21	1.34	0.69	0.69	0.59	0.63	0.57	0.61
0.6	0.6	1.4	1.4	1.5	1.5	1.9	1.9	2.3	2.3	2.8	2.8
150		250		216		245		274		314	
80		100		98		98		98		98	
CLASS-F		CLASS-F		CLASS-F		CLASS-F		CLASS-F		CLASS-F	
IP-65		IP-65		IP-65		IP-65		IP-65		IP-65	
300x300x10		300x300x10		300x300x10		300x300x10		300x300x10		300x300x10	

BLT-40		BLT-55		BLT-71		BLT-72		BLT-73		BLT-74	
110 VAC	220 VAC	220 VAC	400 VAC	220 VAC	400 VAC	220 VAC	400 VAC	220 VAC	400 VAC	220 VAC	400 VAC
10,000		10,000		11,000		11,000		11,000		11,000	
0.36	0.36	0.7	0.7	0.8	0.8	1.9	1.8	2.7	2.7	3.4	3.4
3	1.50	1.71	0.95	2.58	1.4	4.87	2.77	4.82	2.7	5.15	2.76
1.44	1.44	2.8	2.8	3.2	3.2	7.6	7.20	10.8	10.8	13.6	13.6
0.6	0.63	0.51	0.51	0.54	0.54	1.02	0.96	1.19	1.19	1.23	1.23
0.12	0.24	0.41	0.74	0.31	0.57	0.39	0.65	0.56	1	0.66	1.23
0.12	0.24	0.41	0.74	0.31	0.57	0.39	0.65	0.56	1	0.66	1.23
<6%		<4%		<3.5%		<3.5%		<3.5%		<3.5%	
6	24.4	14.7	47	10.7	33.8	5.3	15.5	6.4	18.9	5.7	18.6
3.23	12	18.6	61	7.4	24	5.4	13.2	6.4	20	6.7	22
0.0024	0.0024	0.017	0.017	0.027	0.027	0.051	0.051	0.074	0.074	0.097	0.097
1.02	1.02	1.49	1.46	3.01	2.81	1.78	1.87	1.51	1.4	1.27	1.19
0.54	0.49	1.27	1.3	0.69	0.71	1.02	0.85	1	1.06	1.18	1.18
1,190	1,190	1,120	1,120	1,100	1,100	1,280	1,280	1,560	1,560	1,990	1,990
1.53	1.57	2.01	2.05	1.21	1.29	0.68	0.72	0.58	0.62	0.57	0.61
0.6	0.57	1.37	1.37	1.47	1.47	1.87	1.87	2.27	2.27	2.77	2.77
150		250		216		245		274		314	
80		100		98		98		98		98	
CLASS-F		CLASS-F		CLASS-F		CLASS-F		CLASS-F		CLASS-F	
IP-65		IP-65		IP-65		IP-65		IP-65		IP-65	
300x300x10		300x300x10		300x300x10		300x300x10		300x300x10		300x300x10	