11.1 ATL 10 – BSA 10 MOTORS FEATURES

AC 3-PHASE MOTORS

AC asynhcronous three-phase motors, totally enclosed fan cooled, with cage rotor dynamically balanced. For actuator ATL 10 standard motor available with fan for service factor S3 30%; on request available motor without fan or fan cooled with brake. For actuator BSA 10, use of motor with brake and fan is advised.

High pressure die-casting housing with fins, aluminium alloy made.

FEATURES	MOTOR WITHOUT BRAKE	MOTOR WITH BRAKE
Winding	multivoltage 230/400 V 50Hz – 266/460 V 60Hz	
Number of poles, rated speed at 50 Hz	2 poles 2740 rpm	2 poles 2830 rpm
Output power	0.06 kW	0.09 kW
Rated current at 400 V	0.25 A	0.42 A
Rated torque	0.25 Nm	0.31 Nm
Starting torque	0.8 Nm	1.27 Nm
Protection – Insulation class	IP 55 - F	IP 54 - F
Weight	2.4 kg	3.4 kg

MOTOR BRAKE: normally closed mechanical brake activated by direct current electromagnet DC 205 V. The electromagnet is internally, on the motor terminal box, powered by rectifier from AC 230 V to DC 205 V.

Braking torque: 1.7 Nm	Current: 0.05 A	Protection: IP 44

AC 1-PHASE MOTORS

AC asynchronous single-phase motors, totally enclosed fan cooled, with cage rotor dynamically balanced. For actuator ATL 10 standard motor available with fan for service factor S3 30%; on request available motor without fan or fan cooled with brake. For actuator BSA 10, use of motor with brake and fan is advised.

High pressure die-casting housing with fins, aluminium alloy made.

Balanced windings for clockwise and anti-clockwise running without vibrations. Condenser, supplied with motor, with capacity 12.5 μF, for increased starting torque.

Winding	230 V 50 Hz	Number of poles – Rated speed	2 poles – 2710 rpm
Output power	0.09 kW	Starting current – Rated current	3.2 A – 2.2 A
		Starting torque – Rated torque	0.73 Nm – 0.32 Nm
Weight	3 kg	Protection – Insulation class	IP 55 – F

MOTOR BRAKE normally closed mechanical brake activated by a direct current electromagnet. Brake powered internally, by an independent line at 230 Vac (cable terminals to be fastened into the terminal box), through a rectifier with output voltage 205 Vdc, present in the terminal box. Motor with brake total weight 3.6 kg.

Braking torque: 1.7 Nm	Current: 0.05 A	Protection: IP 44

DC MOTORS 24 V OR 12 V

DC motors with high coercive ferrite permanent magnet field, available without fan; with or without brake. Long-life brushes easy to replace.

Power supply cable 1.5 m long with wires 2 × 1 mm^2. Motor weight: 1.3 kg.

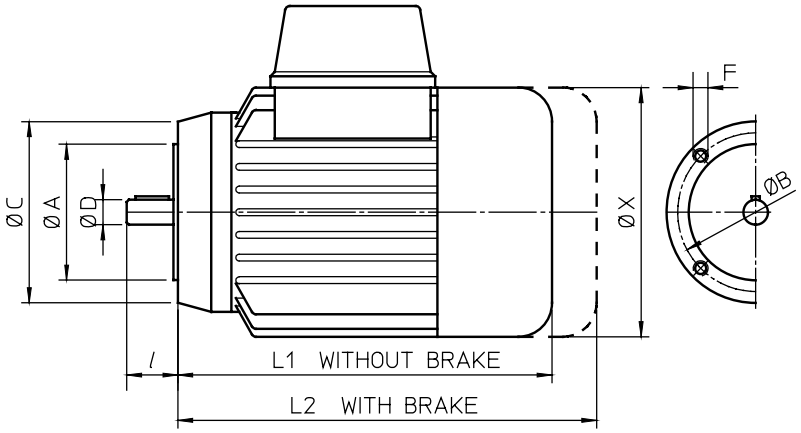
Output power	70 W		Rated speed	3000 rpm
Rated current	3.7 A (24 V)	8.4 A (12 V)	Rated torque	0.22 Nm
Peak current	18 A (24 V)	30 A (12 V)	Peak torque	1.1 Nm
Armature resistance	0.85 Ω (24 V)	0.23 Ω (12 V)	Inductance	1.34 mH (24 V) 0.36 mH (12 V)
Protection	IP 54		Insulation class	F

MOTOR BRAKE: On request, normally closed emergency brake for positioning, activated by an electromagnet, is available. Brake with independent power supply line with cable 1 m long, wires 2 × 1 mm^2. Motor with brake total weight: 1.8 kg.

Power supply: 0.4 A at 24 Vdc; 0.85 A at 12 Vdc	Braking torque: 0.5 Nm

WARNING! The brake is normally closed: independent power supply line with the rated voltage is required to disengage it. Feed the brake before switching on the motor.

11.2 AC 3-PHASE AND 1-PHASE MOTORS FEATURES



MOTOR SIZE IEC	ØA	ØB	ØC	ØD	l	F	L1	L2	ØX
56 B14	50	65	80	9	20	M5	167	193	110
63 B14	60	75	90	11	23	M5	193	229	123
71 B14	70	85	105	14	30	M6	215	304	138
80 B14	80	100	120	19	40	M6	235	340	156
90 B14	95	115	140	24	50	M8	250	355	176

AC 3-PHASE MOTORS WITHOUT BRAKE

AC asynhcronous three-phase motors, totally enclosed fan cooled, with cage rotor dynamically balanced. Available with multivoltage 230/400 V 50 Hz – 255/440 V 60 Hz winding, on request different voltage and frequency.

Standard motors insulation class F and protection IP 55.

On request insulation class H and higher protection are available.

Klixons thermal protection devices available on request.

Performance with 400 V 50 Hz.

POWER [kW] N° of poles	RATED CURRENT [A]	RATED TORQUE [Nm]	STARTING CURRENT [A]	STARTING TORQUE [Nm]	WEIGHT [kg]
0.09 kW 4 poles	0.45	0.66	1.3	1.9	2.9
0.12 kW 2 poles	0.46	0.46	1.5	1.5	3
0.18 kW 4 poles	0.80	1.3	2.2	3.9	4.4
0.25 kW 2 poles	0.74	0.88	3.6	2.8	4.6
0.37 kW 4 poles	1.2	2.6	4.8	6.4	6.1
0.55 kW 2 poles	1.9	1.8	10.7	7.2	6.3
0.75 kW 4 poles	2	5	9.4	12.5	10
1.1 kW 2 poles	3	3.7	17.1	13.7	10.1

AC 3-PHASE MOTORS WITH BRAKE

① – AC 3-phase brake-motors with multivoltage 230/400 V 50 Hz – 255/440 V 60 Hz winding
Motor: protection IP 55, insulation Class F; brake protection IP 44

② – AC 3-phase brake-motors with multivoltage 230/400 V 50 Hz – 277/480 V 60 Hz winding
Motor: protection IP 54, insulation Class F; brake protection IP 54

On request different voltage and frequency available.

On request insulation class H and higher protection are available.

Klixons thermal protection devices available on request.

Performance with 400 V 50 Hz:

POWER [kW] N° of poles	RATED CURRENT [A]	RATED TORQUE [Nm]	STARTING CURRENT [A]	STARTING TORQUE [Nm]	WEIGHT [kg]	NOTE
0.09 kW 4 poles	0.45	0.66	1.3	1.9	3.5	①
0.12 kW 2 poles	0.46	0.46	1.5	1.5	3.7	①
0.18 kW 4 poles	0.73	1.26	2.1	3.2	5	②
0.25 kW 2 poles	0.71	0.85	3	2.5	4.9	②
0.37 kW 4 poles	1.2	2.5	4.5	6.6	9.4	②
0.55 kW 2 poles	1.4	1.9	6.8	5	9.1	②
0.75 kW 4 poles	2	5.1	9.8	14.3	14	②
1.1 kW 2 poles	2.7	3.7	13.5	10	14	②

11.2 AC 3-PHASE AND AC 1-PHASE MOTORS FEATURES

MOTOR BRAKE 0.09 kW 4 poles – 0.12 kW 2 poles:

normally closed mechanical brake activated by direct current electromagnet 205 V DC. The electromagnet is internally, on the motor terminal box, powered by rectifier from AC 230 V to DC 205 V.

Rated braking torque: 1.7 Nm	Current: 0.05 A

MOTOR BRAKE 0.18 kW 4 poles – 0.25 kW 2 poles:

normally closed mechanical brake activated by direct current electromagnet 104 V DC. The electromagnet is internally, on the motor terminal box, powered by rectifier from AC 230 V to DC 104 V.

Rated braking torque: 2.5 Nm	Current: 0.17 A

MOTOR BRAKE 0.37 kW 4 poles – 0.55 kW 2 poles:

normally closed mechanical brake activated by alternate current electromagnet AC 230/400 V 50 Hz. The electromagnet is internally, on motor terminal box, wired.

Rated braking torque: 7 Nm	Max. braking torque: 10 Nm	Current at 400 V 50 Hz: 0.15 A

MOTOR BRAKE 0.75 kW 4 poles – 1.1 kW 2 poles:

normally closed mechanical brake activated by alternate current electromagnet AC 230/400 V 50 Hz. The electromagnet is internally, on the motor terminal box, wired.

Rated braking torque: 14 Nm	Max. braking torque: 20 Nm	Current at 400 V 50 Hz: 0.27 A

NOTE: On request all frame sizes brake motors are available with brake activation from separate power supply. Solution advised for frequency inverter driver application.

AC 1-PHASE MOTORS WITHOUT BRAKE

AC asynchronous single-phase motors, totally enclosed fan cooled, with cage rotor dynamically balanced. High pressure die-casting housing with fins, aluminum alloy made.

Balanced winding for clockwise and anti-clockwise running without vibrations. Condenser with increased capacity, supplied with motor, for higher starting torque.

Standard motor insulation class F and protection IP 55.

On request insulation class H and higher protection are available.

Klixons thermal protection devices available on request.

Performances with 230 V 50 Hz:

POWER [kW] N° of poles	RATED CURRENT [A]	RATED TORQUE [Nm]	STARTING CURRENT [A]	STARTING TORQUE [Nm]	CAPAC. [μF]	WEIGHT [kg]
0.09 kW 4 poles	1.6	0.64	1.9	1.03	12.5	3
0.12 kW 2 poles	2.6	0.43	3.7	0.71	12.5	4
0.18 kW 4 poles	1.9	1.31	3.2	1.37	16	4.2
0.25 kW 2 poles	2.1	0.84	6.3	0.97	20	5
0.37 kW 4 poles	2.8	2.64	6.1	2.82	25	7.2
0.55 kW 2 poles	3.9	1.88	11.2	1.66	30	7
0.75 kW 4 poles	5.6	5.20	15.7	3.40	30	10.3
1.1 kW 2 poles	8.8	3.90	29	9.85	40	13.4

AC 1-PHASE MOTORS WITH BRAKE

AC asynchronous single-phase brake-motors, totally enclosed fan cooled, with cage rotor dynamically balanced. High pressure die-casting housing with fins, aluminium alloy made.
Balanced windings for clockwise and anti-clockwise running without vibrations. Condenser with increased capacity, supplied with motor, for higher starting torque.

Standard motor insulation class F and protection IP 55. Brake protection IP 44.

On request insulation class H and higher protection are available.

Klixons thermal protection devices available on request.

11.2 AC 3-PHASE AND AC 1-PHASE MOTORS FEATURES

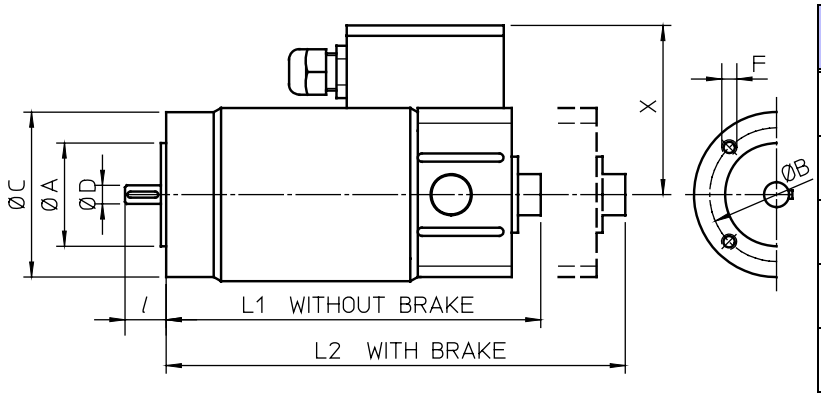
Performance with 230 V 50 Hz:

POWER [kW] N° of poles	RATED CURRENT [A]	RATED TORQUE [Nm]	STARTING CURRENT [A]	STARTING TORQUE [Nm]	CAPAC. [µF]	WEIGHT [kg]
0.09 kW 4 poles	1.6	0.64	1.9	1.03	12.5	3.6
0.12 kW 2 poles	2.6	0.43	3.7	0.71	12.5	4.6
0.18 kW 4 poles	1.9	1.31	3.2	1.37	16	5.4
0.25 kW 2 poles	2.1	0.84	6.3	0.97	20	8.5
0.37 kW 4 poles	2.8	2.64	6.1	2.82	25	10.2
0.55 kW 2 poles	3.9	1.88	11.2	1.66	30	13.2
0.75 kW 4 poles	5.6	5.20	15.7	3.40	30	16.2
1.1 kW 2 poles	8.8	3.90	29	9.85	40	18.3

MOTOR BRAKE: normally closed mechanical brake activated by a direct current electromagnet. Brake powered internally, by an independent line at 230 Vac (cable terminals to be fastened into the terminal box), through a rectifier with output voltage 205 Vdc, present in the terminal box.

MOTOR	BRAKING TORQUE [Nm]	CURRENT [A]
0.09 kW 4 poles	1.7	0.05
0.12 kW 2 poles	1.7	0.05
0.18 kW 4 poles	4	0.09
0.25 kW 2 poles	4	0.09
0.37 kW 4 poles	5	0.09
0.55 kW 2 poles	5	0.09
0.75 kW 4 poles	8	0.12
1.1 kW 2 poles	16	0.15

11.3 DC MOTORS



MOTOR	ØA	ØB	ØC	ØD	l	F	L1	L2	X
100 W	50	65	80	9	20	M5	144	185	80
150 W	50	65	80	9	20	M5	177	218	80
300 W	60	75	90	11	23	M5	229	270	80
500 W	70	85	105	14	40	M6	322	364	80
750 W	80	100	118	19	40	M6	317	359	118

As standard, DC permanent magnet motors are supplied without fan. On request they can be supplied also with brake without fan.

Standard motors winding: insulation class F and protection IP 54.

On request higher protection is available.

Long-life brushes easy to replace.

11.3 DC MOTORS

Performances at rated voltage:

	100 W	150 W	300 W	500 W	750 W
RATED SPEED [rpm]	3000	3000	3000	3000	3000
RATED VOLTAGE [V]	24	24	24	24	90
RATED TORQUE [Nm]	0.32	0.48	0.96	1.6	2.4
RATED CURRENT [A]	5.5	8.3	15.6	25	10.6
PEAK TORQUE [Nm]	1.6	2.4	4.8	5.7	12
PEAK CURRENT [A]	27.7	41.7	78	89	53
ARMATURE RESISTANCE [Ω]	0.4	0.29	0.16	0.1	0.71
INDUCTANCE [mH]	0.8	0.73	0.32	0.13	4.6
WEIGHT [kg]	2.9	3.5	5.3	8	9.4

MOTOR BRAKE: On request normally closed mechanical brake, activated by direct current electromagnet, is available. Brake with independent power supply line.

MOTOR	BRAKING TORQUE [Nm]	CURRENT at 24 V [A]
100 W	1.7	0.5
150 W	1.7	0.5
300 W	1.7	0.5
500 W	2	0.7
750 W	8	1

WARNING! The brake is normally closed; independent power supply line with the rated voltage is required to open it. Feed the brake before switching on the motor.

BRAKE-MOTOR: WHEN IT IS NECESSARY

- Series UBA Actuators: brake-motor standard supplied
- Serie BSA Actuators: brake-motor available on request (always reccomended)
- Series UAL Actuators: brake-motor available on request
  - To ensure the stop position
  - To guarantee positioning accuracy
  - To sustain the static load with self-locking coefficient > 0.35
- Serie ATL Actuators: brake-motor available on request
  - To guarantee positioning accuracy
  - To sustain the static load with self-locking coefficient > 0.35