

## AWT range

Electric motor  
performance for  
3 phase supplies



## Electric Motor Performance Data for AWT 3 Phase Power Supplies

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### Introduction

This guide provides AWT motor data for standard class F, 15 minute rated actuators at the following 3 phase supply voltages:

**60Hz** - 200 208 220 230 240 380 440 460 480 575 600

**50Hz** - 200 220 240 380 400 415 440 460 500 525 550

### AWT is available in two versions:

**Syncropak** - with integral motor control

**Syncroset** - no integral motor control (user supplied and installed)

### Important Notes

At any voltage, “apply” indicates that the particular motor has not been systemised. Contact Rotork.

90A at 48 rpm and higher speeds are not available at voltages up to and including 240V

91A is not available at 60Hz voltages below 440.

91A is not available 50Hz voltages below 380.

### Glossary

Rated Torque – Corresponds to 100% torque switch setting

Locked Rotor – motor starting and stalled condition

Rated Amps – current at 100% torque switch setting

Average (nominal) load.-. Corresponds to 33% of rated torque. This average value has been confirmed as conservative after 40 years of experience in valve motorisation. It encompasses low torque values around the open position with rising torque as flow throttling takes place to final seating torque.

Efficiency – electrical efficiency of the actuator motor.

### Design criteria

Motors designed for operation of valve actuators require special consideration. As continuous running is not a requirement with isolating and “inching” or regulating duty valves, motors need only be short duty time rated. Valve load can vary dramatically across stroke and from stroke to stroke as process and valve conditions vary. Varying from light running to rated torque with a facility to exceed rated in unseating “sticky” valves, actual motor loading has no constant. To apply traditional motor protection to actuator motors is therefore flawed, leading to spurious tripping or no protection at all.

Rotork recognise the special nature of actuator motors and have therefore designed the AWT motor and its control package with this unique duty at the forefront.

### AWT Motor Design

AWT motors are of a low inertia, squirrel cage induction design, reaching full speed in 3 cycles of the mains frequency. In their standard 3 phase form they are class F insulated, rated 15 minutes at average load. The motor torque/speed characteristic has been designed to fulfil the following requirements:

High stall torque in comparison with that required to operate and seat the valve. This is essential in maintaining rated torque at depressed voltage conditions as torque varies with the square of the voltage. Rotork are able to guarantee actuator performance at –10% of nominal voltage.

Pull out torque available at speed (50-70% of synchronous) which combined with the lost motion drive, allows the motor to reach full speed with maximum available torque before the drive is applied to the valve, ensuring unseating for all except jammed valves. For “inching” duty when the lost motion has been taken up, starting torque is high, at least 80% of pull out torque.

### **AWT motor control protection**

The primary protection for the motor is torque switch protection. By measuring the actuator output torque and using it to trip the torque switch when the output torque reaches that of the switch setting effective motor and more importantly, valve protection is achieved.

AWT motors are also protected by two thermostats embedded in the motor end windings providing over-temperature protection if the duty cycle exceeds actuator rating. The thermostats may also offer protection under motor stall conditions. For AWT Syncroset type actuators it is essential that the thermostats are connected in series with the motor reversing contactors. Refer to wiring diagram.

AWT Syncropak have phase rotation correction as standard.

\*If "Boost" open torque is set the actuator will develop torque in excess of rated and can stall in attempting to unseat a jammed valve.

### **Power supply cable sizing**

As a minimum requirement, cables must be sized to ensure volt drop does not exceed 15% of nominal supply voltage at locked rotor current.

### **Actuator supply fuse selection**

The embedded thermostats will provide motor protection under operating conditions where the actuator duty cycle is exceeded.

Under stall conditions actuators can be protected by selecting supply fuses/trip devices to disconnect between 6 and 10 seconds at locked rotor current. This will reduce the risk of severe motor heating under stall conditions while preventing spurious trips under normal operation.

### **Frequency converters and UPS**

Frequency converters for variable speed drives are not recommended as a suitable supply for AWT actuators. Where UPS systems are required, the power supply should have negligible harmonic distortion. In general terms actuators are designed to operate on power supplies conforming to recognised power supply standards such as EN 50160 – Voltage Characteristics of Electricity Supplied by Public Distribution systems. Please apply to Rotork with specific UPS supply characteristics if different from above.

### **Motor Options**

AWT motors are available with extended duty cycles and Class H insulation. Please apply.

**200 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	3.70	0.83	1.20	0.91	0.06	0.35	58.00	
29	25	4	3.70	0.83	1.40	1.13	0.08	0.35	58.00	
43	25	4	4.40	0.80	1.65	1.25	0.11	0.41	60.00	
57	25	4	4.40	0.80	1.75	1.51	0.13	0.41	60.00	
86	25	4	9.00	0.85	2.65	1.78	0.18	0.46	62.00	
115	25	4	11.30	0.81	3.50	1.80	0.23	0.40	50.00	
<b>12A</b>										
21	60	4	9.00	0.85	2.60	2.21	0.15	0.40	50.00	
29	60	4	11.30	0.81	3.30	2.74	0.19	0.40	50.00	
43	60	4	11.30	0.81	4.10	3.10	0.26	0.40	50.00	
57	50	4	11.30	0.81	4.10	3.10	0.26	0.40	50.00	
86	35	4	11.30	0.81	4.00	3.10	0.25	0.40	50.00	
115	30	4	11.30	0.81	4.30	3.10	0.27	0.40	50.00	
<b>18A</b>										
21	80	4	11.30	0.81	3.40	2.95	0.20	0.40	50.00	
29	80	4	11.30	0.81	4.00	3.07	0.25	0.45	53.00	
<b>19A</b>										
21	100	4	14.00	0.84	4.60	4.10	0.26	0.40	45.00	
29	100	4	19.00	0.80	6.00	5.03	0.32	0.35	52.00	
43	100	4	19.00	0.80	6.70	5.26	0.43	0.41	57.00	
57	100	4	27.00	0.83	10.60	7.57	0.51	0.35	56.00	
86	100	4				Apply				
<b>20A</b>										
21	150	4	27.00	0.83	9.00	5.53	0.38	0.40	50.00	
29	150	4	27.00	0.83	9.10	6.86	0.48	0.40	50.00	
43	150	4	27.00	0.83	11.00	9.22	0.64	0.40	50.00	
57	150	4	34.00	0.82	11.80	9.28	0.77	0.40	60.00	
86	130	4	47.00	0.83	13.00	9.60	0.92	0.43	60.00	
115	105	4	47.00	0.83	13.20	9.60	0.95	0.43	60.00	
173	75	4	47.00	0.83	13.30	9.60	0.97	0.43	60.00	
<b>25A</b>										
21	295	4	47.00	0.83	11.00	7.90	0.75	0.43	60.00	
29	295	4	47.00	0.83	13.10	7.90	0.93	0.43	60.00	
43	220	4	47.00	0.83	13.20	7.90	0.94	0.43	60.00	
57	180	4	47.00	0.83	13.10	7.90	0.93	0.43	60.00	
86	180	2	50.00	0.84	14.00	6.54	1.27	0.70	80.00	
115	170	2	50.00	0.84	16.00	7.00	1.54	0.70	80.00	
173	110	2	50.00	0.84	15.00	7.00	1.43	0.70	80.00	
<b>35A</b>										
21	450	4	51.00	0.84	13.50	6.81	1.15	0.65	75.00	
29	450	4	60.00	0.88	16.00	11.90	1.43	0.51	65.00	
43	400	4	60.00	0.88	19.00	11.90	1.70	0.51	65.00	
57	350	2	90.00	0.85	20.00	11.00	1.80	0.50	65.00	
86	350	2	60.00	0.88	15.00	11.00	2.47	0.51	65.00	
115	270	2	90.00	0.85	25.00	11.00	2.45	0.50	65.00	
173	190	2	90.00	0.85	25.00	11.00	2.47	0.50	65.00	
<b>40A</b>										
21	750	4				Apply				
29	750	4				Apply				
43	625	4				Apply				
57	500	2				Apply				
86	500	2				Apply				
115	400	2				Apply				
173	300	2				Apply				
<b>70A</b>										
21	1100	4				Apply				
29	1100	4				Apply				
43	950	2				Apply				
57	750	2				Apply				
86	750	2				Apply				
115	550	2				Apply				
173	475	2				Apply				
230	400	2				Apply				
<b>90A</b>										
21	1500	4				Apply				
29	1500	4				Apply				
43	1250	4				Apply				
57	1000	2				Not available at 200-3-60				
86	1000	2				Not available at 200-3-60				
115	750	2				Not available at 200-3-60				
173	640	2				Not available at 200-3-60				
230	540	2				Not available at 200-3-60				
<b>95A</b>										
29	2200	4				Apply				

91A not available at 200-3-60

**208 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	3.70	0.83	1.20	0.87	0.06	0.35	58.00	
29	25	4	3.70	0.83	1.40	1.08	0.08	0.35	58.00	
43	25	4	4.40	0.80	1.65	1.20	0.11	0.41	60.00	
57	25	4	4.40	0.80	1.75	1.45	0.13	0.41	60.00	
86	25	4	9.00	0.85	2.65	1.72	0.18	0.46	62.00	
115	25	4	9.00	0.85	3.00	2.21	0.23	0.46	62.00	
<b>12A</b>										
21	60	4	9.00	0.85	2.60	1.49	0.15	0.46	62.00	
29	60	4	9.00	0.85	2.70	1.85	0.19	0.46	62.00	
43	60	4	11.30	0.81	4.10	3.55	0.26	0.40	50.00	
57	50	4	11.30	0.81	4.10	3.57	0.26	0.40	50.00	
86	35	4	11.30	0.81	4.00	3.42	0.25	0.40	50.00	
115	30	4	11.30	0.81	4.30	3.78	0.27	0.40	50.00	
<b>18A</b>										
21	80	4	11.30	0.81	3.40	2.84	0.20	0.40	50.00	
29	80	4	11.30	0.81	4.00	2.95	0.25	0.45	53.00	
<b>19A</b>										
21	100	4	9.60	0.82	3.00	1.95	0.26	0.52	70.00	
29	100	4	15.00	0.84	5.00	4.58	0.32	0.40	48.00	
43	100	4	20.00	0.80	6.40	5.06	0.43	0.41	57.00	
57	100	4	20.00	0.80	7.30	5.12	0.51	0.45	62.00	
86	100	4				Apply				
<b>20A</b>										
21	150	4	20.00	0.80	5.50	5.32	0.38	0.40	50.00	
29	150	4	22.00	0.83	9.10	6.60	0.48	0.40	50.00	
43	150	4	27.00	0.83	11.00	8.87	0.64	0.40	50.00	
57	150	4	34.00	0.82	11.80	8.92	0.77	0.40	60.00	
86	130	4	34.00	0.82	13.00	9.86	0.92	0.43	60.00	
115	105	4	34.00	0.82	13.20	10.26	0.95	0.43	60.00	
173	75	4	34.00	0.82	13.30	10.47	0.97	0.43	60.00	
<b>25A</b>										
21	295	4	34.00	0.82	11.00	8.11	0.75	0.43	60.00	
29	295	4	34.00	0.82	13.10	10.06	0.93	0.43	60.00	
43	220	4	34.00	0.82	13.20	10.08	0.94	0.43	60.00	
57	180	4	34.00	0.82	13.10	9.96	0.93	0.43	60.00	
86	180	2	50.00	0.84	14.00	6.29	1.27	0.70	80.00	
115	170	2	50.00	0.84	16.00	7.66	1.54	0.70	80.00	
173	110	2	50.00	0.84	15.00	7.08	1.43	0.70	80.00	
<b>35A</b>										
21	450	4	51.00	0.84	13.50	6.55	1.15	0.65	75.00	
29	450	4	60.00	0.88	16.00	11.94	1.43	0.51	65.00	
43	400	4	60.00	0.88	19.00	14.26	1.70	0.51	65.00	
57	350	2	75.00	0.82	20.00	15.37	1.80	0.50	65.00	
86	350	2	90.00	0.85	25.00	21.07	2.47	0.50	65.00	
115	270	2	90.00	0.85	25.00	20.95	2.45	0.50	65.00	
173	190	2	90.00	0.85	25.00	21.06	2.47	0.50	65.00	
<b>40A</b>										
21	750	4	90.00	0.87	31.00	13.29	1.92	0.50	80.00	
29	750	4	90.00	0.87	35.00	16.49	2.38	0.50	80.00	
43	625	4	90.00	0.87	36.00	18.47	2.66	0.50	80.00	
57	500	2	116.00	0.93	29.00	16.99	2.57	0.60	70.00	
86	500	2	116.00	0.93	32.00	20.06	3.52	0.65	75.00	
115	400	2	116.00	0.93	32.00	20.69	3.63	0.65	75.00	
173	300	2	116.00	0.93	32.00	22.17	3.89	0.65	75.00	
<b>70A</b>										
21	1100	4	120.00	0.87	35.00	20.81	2.81	0.50	75.00	
29	1100	4	120.00	0.87	40.00	25.80	3.49	0.50	75.00	
43	950	2				Apply				
57	750	2				Apply				
86	750	2				Apply				
115	550	2				Apply				
173	475	2				Apply				
230	400	2				Apply				
<b>90A</b>										
21	1500	4				Apply				
29	1500	4				Apply				
43	1250	4				Apply				
57	1000	2				Not available at 200-3-60				
86	1000	2				Not available at 200-3-60				
115	750	2				Not available at 200-3-60				
173	640	2				Not available at 200-3-60				
230	540	2				Not available at 200-3-60				
<b>95A</b>										
29	2200	4				Apply				

91A not available at 208-3-60

**220 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	4.70	0.87	1.20	0.83	0.06	0.35	58.00	
29	25	4	4.30	0.87	1.40	1.02	0.08	0.35	58.00	
43	25	4	4.30	0.87	1.65	1.38	0.11	0.35	58.00	
57	25	4	4.40	0.80	1.75	1.37	0.13	0.41	60.00	
86	25	4	7.70	0.78	2.40	1.31	0.18	0.59	60.00	
115	25	4	9.00	0.85	3.00	1.70	0.23	0.46	62.00	
<b>12A</b>										
21	60	4	9.00	0.85	2.60	1.41	0.15	0.46	62.00	
29	60	4	9.00	0.85	2.70	1.75	0.19	0.46	62.00	
43	60	4	9.00	0.85	3.00	2.35	0.26	0.46	62.00	
57	50	4	11.30	0.81	4.10	2.80	0.26	0.40	50.00	
86	35	4	11.30	0.81	4.00	2.80	0.25	0.40	50.00	
115	30	4	11.30	0.81	4.30	2.80	0.27	0.40	50.00	
<b>18A</b>										
21	80	4	9.00	0.85	2.70	1.88	0.20	0.46	62.00	
29	80	4	11.30	0.81	4.00	2.79	0.25	0.45	53.00	
<b>19A</b>										
21	100	4	10.00	0.82	2.80	1.84	0.26	0.52	70.00	
29	100	4	15.00	0.84	4.90	4.33	0.32	0.40	48.00	
43	100	4	21.00	0.80	6.10	4.78	0.43	0.41	57.00	
57	100	4	21.00	0.80	6.90	4.84	0.51	0.45	62.00	
86	100	4	27.00	0.83	11.40	9.25	0.70	0.40	50.00	
<b>20A</b>										
21	150	4	20.00	0.80	5.50	4.50	0.38	0.40	50.00	
29	150	4	20.00	0.80	6.50	6.24	0.48	0.40	50.00	
43	150	4	27.00	0.83	11.00	8.38	0.64	0.40	50.00	
57	150	4	27.00	0.83	11.80	8.70	0.77	0.40	50.00	
86	130	4	34.00	0.82	13.00	8.70	0.92	0.43	60.00	
115	105	4	34.00	0.82	13.20	8.70	0.95	0.43	60.00	
173	75	4	34.00	0.82	13.30	8.70	0.97	0.43	60.00	
<b>25A</b>										
21	295	4	34.00	0.82	11.00	7.20	0.75	0.43	60.00	
29	295	4	34.00	0.82	13.10	7.20	0.93	0.43	60.00	
43	220	4	34.00	0.82	13.20	7.20	0.94	0.43	60.00	
57	180	4	34.00	0.82	13.10	7.20	0.93	0.43	60.00	
86	180	2	57.00	0.84	12.00	5.95	1.27	0.70	80.00	
115	170	2	57.00	0.84	14.00	6.40	1.54	0.70	80.00	
173	110	2	57.00	0.84	13.00	6.40	1.43	0.70	80.00	
<b>35A</b>										
21	450	4	51.00	0.84	14.50	6.19	1.15	0.65	75.00	
29	450	4	51.00	0.84	17.00	7.68	1.43	0.65	75.00	
43	400	4	60.00	0.88	19.00	10.80	1.70	0.51	65.00	
57	350	2	75.00	0.82	20.00	11.00	1.80	0.50	65.00	
86	350	2	90.00	0.85	25.00	11.00	2.47	0.50	65.00	
115	270	2	90.00	0.85	25.00	11.00	2.45	0.50	65.00	
173	190	2	90.00	0.85	25.00	11.00	2.47	0.50	65.00	
<b>40A</b>										
21	750	4	89.00	0.87	19.00	11.70	1.92	0.50	75.00	
29	750	4	89.00	0.87	27.00	11.70	2.38	0.58	75.00	
43	625	4	89.00	0.87	30.00	11.70	2.66	0.60	75.00	
57	500	2	145.00	0.73	25.00	11.75	2.57	0.70	82.00	
86	500	2	145.00	0.73	33.00	14.40	3.52	0.73	85.00	
115	400	2	145.00	0.73	34.00	14.40	3.63	0.74	85.00	
173	300	2	145.00	0.73	35.00	14.40	3.89	0.74	85.00	
<b>70A</b>										
21	1100	4	115.00	0.88	30.00	14.60	2.81	0.65	70.00	
29	1100	4	115.00	0.88	30.00	14.60	3.49	0.70	75.00	
43	950	2	180.00	0.90	36.00	20.50	4.05	0.65	75.00	
57	750	2	180.00	0.90	35.00	20.50	3.86	0.65	75.00	
86	750	2	180.00	0.90	43.00	20.50	5.29	0.70	80.00	
115	550	2	180.00	0.90	41.00	20.50	5.00	0.70	80.00	
173	475	2	180.00	0.90	50.00	20.50	6.17	0.74	85.00	
230	400	2	180.00	0.90	60.00	20.50	6.71	0.74	85.00	
<b>90A</b>										
21	1500	4	130.00	0.87	34.00	20.63	3.83	0.65	75.00	
29	1500	4	130.00	0.87	43.00	21.00	4.75	0.68	78.00	
43	1250	4	130.00	0.87	52.00	21.00	5.32	0.70	82.00	
57	1000	2							Not available at 220-3-60	
86	1000	2							Not available at 220-3-60	
115	750	2							Not available at 220-3-60	
173	640	2							Not available at 220-3-60	
230	540	2							Not available at 220-3-60	
<b>95A</b>										
29	2200	4	180.00	0.86	70.00	21.20	6.97	0.75	80.00	

91A not available at 220-3-60

**230 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	4.70	0.87	1.10	0.79	0.06	0.35	58.00	
29	25	4	4.70	0.87	1.15	0.98	0.08	0.35	58.00	
43	25	4	4.30	0.87	1.50	1.21	0.11	0.40	55.00	
57	25	4	4.30	0.87	1.60	1.40	0.13	0.42	55.00	
86	25	4	7.70	0.78	2.10	1.25	0.18	0.59	60.00	
115	25	4	9.00	0.85	1.65	2.00	0.23	0.46	62.00	
<b>12A</b>										
21	60	4	7.70	0.78	2.30	1.09	0.15	0.59	60.00	
29	60	4	9.00	0.85	2.70	1.67	0.19	0.46	62.00	
43	60	4	9.00	0.85	3.00	2.25	0.26	0.46	62.00	
57	50	4	9.00	0.85	3.00	2.26	0.26	0.46	62.00	
86	35	4	9.00	0.85	3.00	2.17	0.25	0.46	62.00	
115	30	4	9.00	0.85	3.10	2.40	0.27	0.46	62.00	
<b>18A</b>										
21	80	4	9.00	0.85	2.70	1.80	0.20	0.46	62.00	
29	80	4	12.00	0.82	3.50	3.18	0.25	0.40	50.00	
<b>19A</b>										
21	100	4	10.60	0.82	2.70	1.76	0.26	0.52	70.00	
29	100	4	16.00	0.84	4.80	4.14	0.32	0.40	48.00	
43	100	4	16.00	0.84	4.90	4.30	0.43	0.46	54.00	
57	100	4	22.00	0.80	6.60	4.63	0.51	0.45	62.00	
86	100	4	27.00	0.83	11.40	8.85	0.70	0.40	50.00	
<b>20A</b>										
21	150	4	20.00	0.80	5.50	4.81	0.38	0.40	50.00	
29	150	4	20.00	0.80	6.50	5.97	0.48	0.40	50.00	
43	150	4	22.00	0.86	11.00	8.02	0.64	0.40	50.00	
57	150	4	27.00	0.83	11.80	9.68	0.77	0.40	50.00	
86	130	4	34.00	0.82	13.00	8.92	0.92	0.43	60.00	
115	105	4	34.00	0.82	13.20	9.28	0.95	0.43	60.00	
173	75	4	34.00	0.82	13.30	9.47	0.97	0.43	60.00	
<b>25A</b>										
21	295	4	34.00	0.82	11.00	7.33	0.75	0.43	60.00	
29	295	4	34.00	0.82	13.10	9.10	0.93	0.43	60.00	
43	220	4	34.00	0.82	13.20	9.12	0.94	0.43	60.00	
57	180	4	34.00	0.82	13.10	9.01	0.93	0.43	60.00	
86	180	2	57.00	0.84	12.00	5.69	1.27	0.70	80.00	
115	170	2	57.00	0.84	14.00	6.92	1.54	0.70	80.00	
173	110	2	57.00	0.84	13.00	6.40	1.43	0.70	80.00	
<b>35A</b>										
21	450	4	42.00	0.81	14.50	5.92	1.15	0.65	75.00	
29	450	4	51.00	0.84	17.00	7.34	1.43	0.65	75.00	
43	400	4	60.00	0.88	19.00	12.90	1.70	0.51	65.00	
57	350	2	75.00	0.82	20.00	6.80	1.80	0.50	65.00	
86	350	2	75.00	0.82	25.00	19.06	2.47	0.50	65.00	
115	270	2	75.00	0.82	25.00	18.95	2.45	0.50	65.00	
173	190	2	75.00	0.82	25.00	19.05	2.47	0.50	65.00	
<b>40A</b>										
21	750	4	115.00	0.77	23.00	13.95	1.92	0.55	65.00	
29	750	4	115.00	0.77	28.00	13.11	2.38	0.65	70.00	
43	625	4	115.00	0.77	29.00	13.49	2.66	0.66	75.00	
57	500	2	145.00	0.73	25.00	11.24	2.57	0.70	82.00	
86	500	2	145.00	0.73	33.00	14.25	3.52	0.73	85.00	
115	400	2	145.00	0.73	34.00	14.50	3.63	0.74	85.00	
173	300	2	145.00	0.73	35.00	15.54	3.89	0.74	85.00	
<b>70A</b>										
21	1100	4	140.00	0.71	30.00	13.85	2.81	0.68	75.00	
29	1100	4	140.00	0.71	36.00	14.62	3.49	0.73	82.00	
43	950	2	180.00	0.90	36.00	20.83	4.05	0.65	75.00	
57	750	2	180.00	0.90	35.00	19.86	3.86	0.65	75.00	
86	750	2	180.00	0.90	43.00	23.69	5.29	0.70	80.00	
115	550	2	180.00	0.90	41.00	22.40	5.00	0.70	80.00	
173	475	2	180.00	0.90	50.00	24.60	6.17	0.74	85.00	
230	400	2	180.00	0.90	60.00	26.77	6.71	0.74	85.00	
<b>90A</b>										
21	1500	4					Apply			
29	1500	4					Apply			
43	1250	4					Apply			
57	1000	2					Not available at 230-3-60			
86	1000	2					Not available at 230-3-60			
115	750	2					Not available at 230-3-60			
173	640	2					Not available at 230-3-60			
230	540	2					Not available at 230-3-60			
<b>95A</b>										
29	2200	4					Apply			

91A not available at 230-3-60

**240 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	4.70	0.87	0.94	0.77	0.06	0.35	57.00	
29	25	4	4.70	0.87	1.00	0.91	0.08	0.35	60.00	
43	25	4	4.30	0.87	1.40	1.16	0.11	0.40	55.00	
57	25	4	4.30	0.87	1.50	1.34	0.13	0.42	55.00	
86	25	4	6.60	0.82	1.99	1.14	0.18	0.53	70.00	
115	25	4	9.00	0.85	2.58	1.70	0.23	0.51	63.00	
<b>12A</b>										
21	60	4	8.44	0.80	1.75	1.13	0.15	0.50	65.00	
29	60	4	8.44	0.80	2.22	1.70	0.19	0.44	61.00	
43	60	4	9.00	0.85	3.00	2.16	0.26	0.46	62.00	
57	50	4	9.00	0.85	3.00	2.17	0.26	0.46	62.00	
86	35	4	9.00	0.85	3.00	2.08	0.25	0.46	62.00	
115	30	4	9.00	0.85	3.10	2.30	0.27	0.46	62.00	
<b>18A</b>										
21	80	4	9.00	0.85	2.70	1.72	0.20	0.46	62.00	
29	80	4	9.00	0.85	3.00	2.14	0.25	0.46	62.00	
<b>19A</b>										
21	100	4	10.00	0.80	2.60	1.36	0.26	0.58	78.00	
29	100	4	11.00	0.82	3.00	2.09	0.32	0.52	70.00	
43	100	4	17.00	0.84	4.70	4.12	0.43	0.46	54.00	
57	100	4	18.00	0.84	5.80	3.89	0.51	0.43	74.00	
86	100	4	33.00	0.83	11.40	8.48	0.70	0.40	50.00	
<b>20A</b>										
21	150	4	18.00	0.81	6.00	4.61	0.38	0.40	50.00	
29	150	4	18.00	0.84	6.50	5.72	0.48	0.40	50.00	
43	150	4	22.00	0.86	11.00	7.68	0.64	0.40	50.00	
57	150	4	22.00	0.86	11.80	9.28	0.77	0.40	50.00	
86	130	4	33.00	0.83	12.50	8.55	0.92	0.43	60.00	
115	105	4	33.00	0.83	12.60	8.90	0.95	0.43	60.00	
173	75	4	33.00	0.83	12.70	9.08	0.97	0.43	60.00	
<b>25A</b>										
21	295	4	30.00	0.84	12.00	7.56	0.75	0.40	60.00	
29	295	4	30.00	0.84	14.00	8.52	0.93	0.44	60.00	
43	220	4	33.00	0.83	12.60	8.74	0.94	0.43	60.00	
57	180	4	33.00	0.83	12.60	8.63	0.93	0.43	60.00	
86	180	2	48.00	0.84	13.00	5.45	1.27	0.70	80.00	
115	170	2	48.00	0.84	13.50	6.64	1.54	0.70	80.00	
173	110	2	48.00	0.84	13.20	6.13	1.43	0.70	80.00	
<b>35A</b>										
21	450	4	42.00	0.81	14.50	5.67	1.15	0.65	75.00	
29	450	4	51.00	0.84	17.00	7.04	1.43	0.65	75.00	
43	400	4	60.00	0.88	19.00	12.36	1.70	0.51	65.00	
57	350	2	72.00	0.82	20.00	6.77	1.80	0.80	80.00	
86	350	2	75.00	0.82	25.00	18.26	2.47	0.50	65.00	
115	270	2	75.00	0.82	25.00	18.16	2.45	0.50	65.00	
173	190	2	75.00	0.82	25.00	18.25	2.47	0.50	65.00	
<b>40A</b>										
21	750	4	84.00	0.90	20.00	12.80	1.92	0.45	80.00	
29	750	4	84.00	0.90	22.00	14.58	2.38	0.49	80.00	
43	625	4	84.00	0.90	23.00	16.00	2.66	0.50	80.00	
57	500	2	140.00	0.90	30.00	14.69	2.57	0.69	61.00	
86	500	2	140.00	0.90	34.00	18.11	3.52	0.72	65.00	
115	400	2	140.00	0.90	36.00	18.68	3.63	0.72	65.00	
173	300	2	140.00	0.90	38.00	20.01	3.89	0.72	65.00	
<b>70A</b>										
21	1100	4	120.00	0.88	23.00	17.33	2.81	0.60	65.00	
29	1100	4	120.00	0.88	26.00	18.43	3.49	0.65	70.00	
43	950	2	166.00	0.78	36.00	16.22	4.05	0.75	80.00	
57	750	2	166.00	0.78	36.00	15.46	3.86	0.75	80.00	
86	750	2	166.00	0.78	46.00	19.62	5.29	0.80	81.00	
115	550	2	166.00	0.78	45.00	18.55	5.00	0.80	81.00	
173	475	2	166.00	0.78	55.00	21.53	6.17	0.83	83.00	
230	400	2	166.00	0.78	65.00	23.15	6.71	0.83	84.00	
<b>90A</b>										
21	1500	4				Apply				
29	1500	4				Apply				
43	1250	4				Apply				
57	1000	2	271.00	0.82	46.00	23.79	5.14	0.65	80.00	
86	1000	2	271.00	0.82	60.00	30.04	7.05	0.68	83.00	
115	750	2	271.00	0.82	58.00	29.04	6.81	0.68	83.00	
173	640	2	271.00	0.82	72.00	32.65	8.31	0.72	85.00	
230	540	2	271.00	0.82	84.00	32.07	9.06	0.79	86.00	
<b>95A</b>										
29	2200	4	170.00	0.86	60.00	24.69	6.97	0.79	86.00	

91A not available at 240-3-60



**380 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	2.00	0.85	0.60	0.39	0.06	0.46	54.00	
29	25	4	2.90	0.83	0.75	0.51	0.08	0.42	56.00	
43	25	4	2.90	0.83	0.80	0.69	0.11	0.42	56.00	
57	25	4	4.00	0.84	1.20	0.58	0.13	0.75	45.00	
86	25	4	4.36	0.83	1.25	1.01	0.18	0.52	51.00	
115	25	4	6.00	0.87	1.55	1.53	0.23	0.47	48.00	
<b>12A</b>										
21	60	4	6.00	0.87	1.40	1.15	0.15	0.44	46.00	
29	60	4	6.00	0.87	1.50	1.34	0.19	0.46	47.00	
43	60	4	7.00	0.84	2.00	1.73	0.26	0.45	50.00	
57	50	4	6.00	0.87	1.70	1.66	0.26	0.48	49.00	
86	35	4	7.00	0.84	2.00	1.67	0.25	0.45	50.00	
115	30	4	7.00	0.84	2.00	1.84	0.27	0.45	50.00	
<b>18A</b>										
21	80	4	7.00	0.84	1.60	1.38	0.20	0.45	50.00	
29	80	4	7.00	0.84	2.00	1.71	0.25	0.45	50.00	
<b>19A</b>										
21	100	4	5.80	0.85	2.20	1.73	0.26	0.50	45.00	
29	100	4	9.80	0.84	2.90	2.38	0.32	0.45	45.00	
43	100	4	9.80	0.84	3.60	2.59	0.43	0.50	50.00	
57	100	4	11.20	0.83	4.00	1.67	0.51	0.65	72.00	
86	100	4	12.80	0.82	5.10	2.86	0.70	0.50	75.00	
<b>20A</b>										
21	150	4	11.20	0.83	3.00	2.65	0.38	0.40	55.00	
29	150	4	11.20	0.83	3.60	3.28	0.48	0.40	55.00	
43	150	4	18.70	0.82	3.70	3.60	0.64	0.45	60.00	
57	150	4	18.70	0.82	4.40	4.34	0.77	0.45	60.00	
86	130	4	22.40	0.82	5.90	5.16	0.92	0.45	60.00	
115	105	4	22.40	0.82	6.00	5.37	0.95	0.45	60.00	
173	75	4	22.40	0.82	6.00	5.48	0.97	0.45	60.00	
<b>25A</b>										
21	295	4	22.40	0.82	5.50	4.24	0.75	0.45	60.00	
29	295	4	22.40	0.82	5.90	5.26	0.93	0.45	60.00	
43	220	4	22.40	0.82	5.90	5.27	0.94	0.45	60.00	
57	180	4	22.40	0.82	5.90	5.21	0.93	0.45	60.00	
86	180	2	32.00	0.83	6.80	4.33	1.27	0.55	81.00	
115	170	2	32.00	0.83	9.00	4.90	1.54	0.57	84.00	
173	110	2	32.00	0.83	7.50	4.72	1.43	0.56	82.00	
<b>35A</b>										
21	450	4	26.20	0.84	7.20	3.43	1.15	0.68	75.00	
29	450	4	28.80	0.86	9.50	4.24	1.43	0.70	73.00	
43	400	4	43.00	0.87	12.00	7.37	1.70	0.54	65.00	
57	350	2	40.20	0.82	11.00	3.79	1.80	0.85	85.00	
86	350	2	40.20	0.82	16.00	4.90	2.47	0.90	85.00	
115	270	2	40.20	0.82	16.00	4.87	2.45	0.90	85.00	
173	190	2	40.20	0.82	16.00	4.90	2.47	0.90	85.00	
<b>40A</b>										
21	750	4	52.00	0.88	13.00	8.31	1.92	0.50	70.00	
29	750	4	52.00	0.88	15.00	9.12	2.38	0.55	72.00	
43	625	4	52.00	0.88	18.00	9.85	2.66	0.57	72.00	
57	500	2	77.00	0.90	18.00	10.14	2.57	0.55	70.00	
86	500	2	77.00	0.90	22.00	13.04	3.52	0.57	72.00	
115	400	2	77.00	0.90	22.00	13.45	3.63	0.57	72.00	
173	300	2	77.00	0.90	23.00	14.41	3.89	0.57	72.00	
<b>70A</b>										
21	1100	4	68.00	0.88	16.00	10.16	2.81	0.60	70.00	
29	1100	4	68.00	0.88	19.00	12.26	3.49	0.60	72.00	
43	950	2	99.00	0.92	22.00	14.63	4.05	0.60	70.00	
57	750	2	99.00	0.92	22.00	13.95	3.86	0.60	70.00	
86	750	2	99.00	0.92	31.00	18.50	5.29	0.62	70.00	
115	550	2	99.00	0.92	30.00	17.00	5.00	0.62	72.00	
173	475	2	99.00	0.92	35.00	20.01	6.17	0.65	72.00	
230	400	2	99.00	0.92	37.00	19.41	6.71	0.70	75.00	
<b>90A</b>										
21	1500	4	100.00	0.85	22.00	13.86	3.83	0.60	70.00	
29	1500	4	100.00	0.85	26.00	14.81	4.75	0.65	75.00	
43	1250	4	100.00	0.85	28.00	14.44	5.32	0.70	80.00	
57	1000	2	140.00	0.99	32.00	18.60	5.14	0.60	70.00	
86	1000	2	140.00	0.99	39.00	21.97	7.05	0.65	75.00	
115	750	2	140.00	0.99	38.00	21.23	6.81	0.65	75.00	
173	640	2	140.00	0.99	45.00	22.58	8.31	0.70	80.00	
230	540	2	140.00	0.99	47.00	24.57	9.06	0.70	80.00	
<b>95A</b>										
29	2200	4	100.00	0.85	40.00	18.91	6.97	0.70	80.00	

91A not available at 380-3-60

**400 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	2.00	0.85	0.60	0.37	0.06	0.46	54.00	
29	25	4	2.00	0.85	0.65	0.46	0.08	0.46	54.00	
43	25	4	2.90	0.83	0.80	0.65	0.11	0.42	56.00	
57	25	4	2.90	0.83	0.90	0.79	0.13	0.42	56.00	
86	25	4	5.00	0.87	1.25	0.90	0.18	0.52	51.00	
115	25	4	5.00	0.87	1.35	0.90	0.23	0.52	51.00	
<b>12A</b>										
21	60	4	5.00	0.87	1.25	0.83	0.15	0.52	51.00	
29	60	4	5.00	0.87	1.35	1.04	0.19	0.52	51.00	
43	60	4	6.00	0.87	1.70	1.50	0.26	0.48	49.00	
57	50	4	6.00	0.87	1.70	1.50	0.26	0.48	49.00	
86	35	4	6.00	0.87	1.70	1.50	0.25	0.48	49.00	
115	30	4	7.00	0.84	2.00	1.50	0.27	0.45	50.00	
<b>18A</b>										
21	80	4	6.00	0.87	1.60	1.25	0.20	0.48	49.00	
29	80	4	7.00	0.84	2.00	1.63	0.25	0.45	50.00	
<b>19A</b>										
21	100	4	6.10	0.85	2.10	1.64	0.26	0.50	45.00	
29	100	4	10.30	0.84	2.80	2.26	0.32	0.45	45.00	
43	100	4	10.30	0.84	3.40	2.46	0.43	0.50	50.00	
57	100	4	10.30	0.83	3.90	2.60	0.51	0.46	62.00	
86	100	4	13.50	0.82	4.80	2.71	0.70	0.50	75.00	
<b>20A</b>										
21	150	4	11.20	0.83	3.00	2.50	0.38	0.40	55.00	
29	150	4	11.20	0.83	3.60	2.50	0.48	0.40	55.00	
43	150	4	18.70	0.82	3.70	3.40	0.64	0.45	60.00	
57	150	4	18.70	0.82	4.40	4.12	0.77	0.45	60.00	
86	130	4	18.70	0.82	5.00	4.80	0.92	0.45	60.00	
115	105	4	18.70	0.82	5.20	4.80	0.95	0.45	60.00	
173	75	4	18.70	0.82	5.20	4.80	0.97	0.45	60.00	
<b>25A</b>										
21	295	4	22.40	0.82	5.50	4.00	0.75	0.45	60.00	
29	295	4	22.40	0.82	5.90	4.00	0.93	0.45	60.00	
43	220	4	18.70	0.82	5.00	4.10	0.94	0.45	60.00	
57	180	4	18.70	0.82	5.00	4.10	0.93	0.45	60.00	
86	180	2	25.00	0.84	6.80	3.50	1.27	0.60	81.00	
115	170	2	25.00	0.84	8.00	3.50	1.54	0.60	84.00	
173	110	2	25.00	0.84	7.50	3.50	1.43	0.60	82.00	
<b>35A</b>										
21	450	4	26.20	0.84	7.20	3.25	1.15	0.68	75.00	
29	450	4	28.80	0.86	9.50	4.03	1.43	0.70	73.00	
43	400	4	28.80	0.86	10.50	4.81	1.70	0.70	73.00	
57	350	2	40.20	0.82	11.00	3.60	1.80	0.85	85.00	
86	350	2	40.20	0.82	16.00	4.66	2.47	0.90	85.00	
115	270	2	40.20	0.82	16.00	4.63	2.45	0.90	85.00	
173	190	2	40.20	0.82	16.00	4.65	2.47	0.90	85.00	
<b>40A</b>										
21	750	4								
29	750	4								
43	625	4								
57	500	2								
86	500	2								
115	400	2								
173	300	2								
<b>70A</b>										
21	1100	4								
29	1100	4								
43	950	2								
57	750	2								
86	750	2								
115	550	2								
173	475	2								
230	400	2								
<b>90A</b>										
21	1500	4								
29	1500	4								
43	1250	4								
57	1000	2								
86	1000	2								
115	750	2								
173	640	2								
230	540	2								
<b>95A</b>										
29	2200	4								

91A not available at 200-3-60

**440 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	2.00	0.84	0.52	0.42	0.06	0.35	57.00	
29	25	4	2.40	0.86	0.75	0.45	0.08	0.42	55.00	
43	25	4	2.40	0.86	0.80	0.60	0.11	0.42	55.00	
57	25	4	2.70	0.86	1.00	0.88	0.13	0.35	55.00	
86	25	4	3.30	0.83	1.10	0.62	0.18	0.53	70.00	
115	25	4	4.90	0.82	1.50	0.80	0.23	0.50	53.00	
<b>12A</b>										
21	60	4	4.90	0.82	1.20	0.89	0.15	0.45	50.00	
29	60	4	4.90	0.82	1.30	0.94	0.19	0.50	53.00	
43	60	4	4.90	0.82	1.70	1.11	0.26	0.55	55.00	
57	50	4	6.70	0.82	2.10	1.40	0.26	0.39	52.00	
86	35	4	6.70	0.82	2.10	1.40	0.25	0.39	52.00	
115	30	4	6.70	0.82	2.20	1.40	0.27	0.39	52.00	
<b>18A</b>										
21	80	4	6.70	0.82	2.00	1.32	0.20	0.39	52.00	
29	80	4	6.70	0.82	2.10	1.64	0.25	0.39	52.00	
<b>19A</b>										
21	100	4	5.00	0.82	1.40	0.92	0.26	0.52	70.00	
29	100	4	8.00	0.84	2.50	2.17	0.32	0.40	48.00	
43	100	4	10.40	0.80	2.80	2.29	0.43	0.42	58.00	
57	100	4	10.40	0.80	3.50	2.42	0.51	0.45	62.00	
86	100	4	17.30	0.83	5.70	4.63	0.70	0.40	50.00	
<b>20A</b>										
21	150	4	10.40	0.80	2.80	2.29	0.38	0.40	55.00	
29	150	4	10.40	0.80	3.10	2.30	0.48	0.40	55.00	
43	150	4	17.30	0.83	4.60	3.49	0.64	0.40	60.00	
57	150	4	17.30	0.83	5.00	4.22	0.77	0.40	60.00	
86	130	4	18.68	0.82	5.20	5.02	0.92	0.41	62.00	
115	105	4	18.68	0.82	5.20	4.40	0.95	0.41	62.00	
173	75	4	18.68	0.82	5.30	5.03	0.97	0.41	62.00	
<b>25A</b>										
21	295	4	18.68	0.82	4.50	3.60	0.75	0.41	62.00	
29	295	4	17.00	0.82	6.50	3.60	0.93	0.43	60.00	
43	220	4	18.68	0.82	5.20	3.60	0.94	0.41	62.00	
57	180	4	18.68	0.82	5.20	3.60	0.93	0.41	62.00	
86	180	2	28.90	0.82	5.30	2.97	1.27	0.70	80.00	
115	170	2	28.90	0.82	7.20	3.20	1.54	0.74	85.00	
173	110	2	28.90	0.82	6.50	3.17	1.43	0.72	82.00	
<b>35A</b>										
21	450	4	29.00	0.85	6.90	3.38	1.15	0.62	72.00	
29	450	4	32.70	0.88	9.00	5.40	1.43	0.40	60.00	
43	400	4	32.70	0.88	10.00	5.40	1.70	0.40	60.00	
57	350	2	44.50	0.80	9.20	3.79	1.80	0.81	77.00	
86	350	2	47.00	0.88	12.00	4.48	2.47	0.85	85.00	
115	270	2	47.00	0.88	12.00	4.46	2.45	0.85	85.00	
173	190	2	47.00	0.88	12.00	4.48	2.47	0.85	85.00	
<b>40A</b>										
21	750	4	42.00	0.87	10.00	6.60	1.92	0.50	75.00	
29	750	4	42.00	0.87	13.00	6.60	2.38	0.58	75.00	
43	625	4	42.00	0.87	15.00	6.60	2.66	0.60	75.00	
57	500	2	72.00	0.73	13.00	5.87	2.57	0.70	82.00	
86	500	2	72.00	0.73	16.00	7.45	3.52	0.73	85.00	
115	400	2	72.00	0.73	17.00	7.58	3.63	0.74	85.00	
173	300	2	72.00	0.73	18.00	7.70	3.89	0.74	85.00	
<b>70A</b>										
21	1100	4	57.00	0.88	15.00	7.50	2.81	0.65	70.00	
29	1100	4	57.00	0.88	15.00	7.50	3.49	0.70	75.00	
43	950	2	90.00	0.90	18.00	9.60	4.05	0.65	75.00	
57	750	2	90.00	0.90	17.50	9.60	3.86	0.65	75.00	
86	750	2	90.00	0.90	21.00	9.60	5.29	0.70	80.00	
115	550	2	90.00	0.90	21.00	9.60	5.00	0.70	80.00	
173	475	2	90.00	0.90	25.00	9.60	6.17	0.74	85.00	
230	400	2	90.00	0.90	30.00	9.60	6.71	0.74	85.00	
<b>90A</b>										
21	1500	4	65.00	0.87	17.00	10.31	3.83	0.65	75.00	
29	1500	4	65.00	0.87	21.00	11.00	4.75	0.68	78.00	
43	1250	4	65.00	0.87	26.00	11.00	5.32	0.70	82.00	
57	1000	2	115.00	0.90	26.00	9.92	5.14	0.80	85.00	
86	1000	2	115.00	0.90	33.00	12.96	7.05	0.82	87.00	
115	750	2	115.00	0.90	33.00	12.53	6.81	0.82	87.00	
173	640	2	115.00	0.90	42.00	14.57	8.31	0.85	88.00	
230	540	2	115.00	0.90	43.00	15.89	9.06	0.85	88.00	
<b>95A</b>										
29	2200	4	90.00	0.86	35.00	11.10	6.97	0.75	80.00	

91A not available at 440-3-60

**460 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	2.00	0.84	0.52	0.40	0.06	0.35	57.00	
29	25	4	2.00	0.84	0.57	0.46	0.08	0.37	58.00	
43	25	4	2.40	0.86	0.80	0.58	0.11	0.42	55.00	
57	25	4	2.40	0.86	0.90	0.70	0.13	0.42	55.00	
86	25	4	3.30	0.83	1.10	0.60	0.18	0.53	70.00	
115	25	4	4.90	0.82	1.50	1.08	0.23	0.50	53.00	
<b>12A</b>										
21	60	4	3.30	0.83	1.05	0.52	0.15	0.53	70.00	
29	60	4	4.90	0.82	1.30	0.90	0.19	0.50	53.00	
43	60	4	4.90	0.82	1.70	1.06	0.26	0.55	55.00	
57	50	4	4.90	0.82	1.70	1.07	0.26	0.55	55.00	
86	35	4	4.90	0.82	1.60	1.02	0.25	0.55	55.00	
115	30	4	4.90	0.82	1.80	1.07	0.27	0.57	56.00	
<b>18A</b>										
21	80	4	4.90	0.82	1.40	0.97	0.20	0.50	53.00	
29	80	4	4.90	0.82	1.70	1.05	0.25	0.55	55.00	
<b>19A</b>										
21	100	4	5.30	0.82	1.40	0.88	0.26	0.52	70.00	
29	100	4	8.00	0.84	2.40	2.07	0.32	0.40	48.00	
43	100	4	8.00	0.84	2.50	2.15	0.43	0.46	54.00	
57	100	4	10.40	0.80	3.30	2.31	0.51	0.45	62.00	
86	100	4	17.30	0.83	5.60	4.42	0.70	0.40	50.00	
<b>20A</b>										
21	150	4	10.40	0.80	2.80	2.19	0.38	0.40	55.00	
29	150	4	10.40	0.80	3.10	2.71	0.48	0.40	55.00	
43	150	4	10.00	0.85	2.90	2.59	0.64	0.50	62.00	
57	150	4	17.30	0.83	5.00	4.03	0.77	0.40	60.00	
86	130	4	18.68	0.82	5.20	4.52	0.92	0.41	62.00	
115	105	4	18.68	0.82	5.20	4.71	0.95	0.41	62.00	
173	75	4	18.68	0.82	5.30	4.81	0.97	0.41	62.00	
<b>25A</b>										
21	295	4	18.68	0.82	4.50	3.72	0.75	0.41	62.00	
29	295	4	18.68	0.82	5.20	4.62	0.93	0.41	62.00	
43	220	4	18.68	0.82	5.20	4.63	0.94	0.41	62.00	
57	180	4	18.68	0.82	5.20	4.57	0.93	0.41	62.00	
86	180	2	28.90	0.82	5.30	2.84	1.27	0.70	80.00	
115	170	2	28.90	0.82	7.20	3.08	1.54	0.74	85.00	
173	110	2	28.90	0.82	6.50	3.04	1.43	0.72	82.00	
<b>35A</b>										
21	450	4	23.00	0.85	4.50	3.08	1.15	0.65	72.00	
29	450	4	31.00	0.87	5.90	7.46	1.43	0.40	60.00	
43	400	4	32.70	0.88	10.00	8.91	1.70	0.40	60.00	
57	350	2	44.50	0.80	9.20	3.40	1.80	0.81	77.00	
86	350	2	44.50	0.80	11.50	4.55	2.47	0.85	80.00	
115	270	2	44.50	0.80	11.50	4.53	2.45	0.85	80.00	
173	190	2	44.50	0.80	11.50	4.55	2.47	0.85	80.00	
<b>40A</b>										
21	750	4	40.00	0.84	10.50	6.68	1.92	0.45	80.00	
29	750	4	40.00	0.84	11.00	7.61	2.38	0.49	80.00	
43	625	4	48.00	0.86	14.00	8.09	2.66	0.75	55.00	
57	500	2	70.00	0.90	15.00	7.66	2.57	0.69	61.00	
86	500	2	70.00	0.90	17.00	9.45	3.52	0.72	65.00	
115	400	2	70.00	0.90	18.00	9.74	3.63	0.72	65.00	
173	300	2	70.00	0.90	19.00	10.44	3.89	0.72	65.00	
<b>70A</b>										
21	1100	4	64.00	0.87	14.00	6.36	2.81	0.72	77.00	
29	1100	4	64.00	0.87	16.00	7.39	3.49	0.74	80.00	
43	950	2	85.00	0.78	18.00	8.46	4.05	0.75	80.00	
57	750	2	85.00	0.78	18.00	8.06	3.86	0.75	80.00	
86	750	2	85.00	0.78	23.00	10.24	5.29	0.80	81.00	
115	550	2	85.00	0.78	22.00	9.67	5.00	0.80	81.00	
173	475	2	85.00	0.78	27.00	11.23	6.17	0.83	83.00	
230	400	2	85.00	0.78	32.00	12.07	6.71	0.83	84.00	
<b>90A</b>										
21	1500	4	75.00	0.88	18.00	10.57	3.83	0.65	70.00	
29	1500	4	75.00	0.88	19.50	12.02	4.75	0.68	73.00	
43	1250	4	75.00	0.88	20.50	12.72	5.32	0.70	75.00	
57	1000	2	135.00	0.82	24.00	12.41	5.14	0.65	80.00	
86	1000	2	135.00	0.82	30.00	15.67	7.05	0.68	83.00	
115	750	2	135.00	0.82	29.00	15.15	6.81	0.68	83.00	
173	640	2	135.00	0.82	34.00	17.03	8.31	0.72	85.00	
230	540	2	135.00	0.82	42.00	16.73	9.06	0.79	86.00	
<b>91A</b>										
173	1000	2	230.00	0.85	58.00	29.09	12.98	0.70	80.00	
230	1000	2	230.00	0.85	75.00	37.59	16.77	0.70	80.00	
<b>95A</b>										
29	2200	4	80.00	0.86	35.00	12.88	6.97	0.79	86.00	

**480 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	2.16	0.85	0.50	0.34	0.06	0.32	70.00	
29	25	4	2.16	0.85	0.55	0.43	0.08	0.32	70.00	
43	25	4	2.71	0.84	0.70	0.69	0.11	0.42	44.00	
57	25	4	2.71	0.84	0.80	0.70	0.13	0.46	48.00	
86	25	4	3.25	0.81	1.00	0.57	0.18	0.53	70.00	
115	25	4	4.10	0.79	1.50	0.99	0.23	0.44	63.00	
<b>12A</b>										
21	60	4	4.10	0.79	0.90	0.67	0.15	0.44	63.00	
29	60	4	4.10	0.79	1.00	0.83	0.19	0.44	63.00	
43	60	4	5.35	0.81	1.70	1.16	0.26	0.48	55.00	
57	50	4	5.35	0.81	1.70	1.17	0.26	0.48	55.00	
86	35	4	5.35	0.81	1.69	1.12	0.25	0.48	55.00	
115	30	4	5.35	0.81	1.75	1.24	0.27	0.48	55.00	
<b>18A</b>										
21	80	4	5.35	0.81	1.50	1.08	0.20	0.43	53.00	
29	80	4	5.35	0.81	1.70	1.16	0.25	0.48	55.00	
<b>19A</b>										
21	100	4	5.00	0.80	1.30	0.68	0.26	0.58	78.00	
29	100	4	5.50	0.82	1.50	1.05	0.32	0.52	70.00	
43	100	4	8.50	0.84	2.40	2.06	0.43	0.46	54.00	
57	100	4	9.00	0.81	2.90	1.94	0.51	0.43	74.00	
86	100	4	16.95	0.83	4.00	2.83	0.70	0.50	60.00	
<b>20A</b>										
21	150	4	9.00	0.81	3.00	2.31	0.38	0.40	50.00	
29	150	4	9.00	0.76	2.40	2.31	0.48	0.45	55.00	
43	150	4	12.90	0.83	2.74	2.71	0.64	0.45	63.00	
57	150	4	12.90	0.83	3.22	2.86	0.77	0.50	65.00	
86	130	4	16.95	0.83	4.10	3.08	0.92	0.55	65.00	
115	105	4	16.95	0.83	4.30	3.21	0.95	0.55	65.00	
173	75	4	16.95	0.83	4.30	3.28	0.97	0.55	65.00	
<b>25A</b>										
21	295	4	15.00	0.84	6.00	4.53	0.75	0.40	50.00	
29	295	4	15.00	0.84	7.00	5.62	0.93	0.40	50.00	
43	220	4	16.95	0.83	4.20	3.15	0.94	0.55	65.00	
57	180	4	16.95	0.83	4.20	3.11	0.93	0.55	65.00	
86	180	2	24.00	0.84	5.30	2.39	1.27	0.75	85.00	
115	170	2	24.00	0.84	7.95	2.91	1.54	0.75	85.00	
173	110	2	24.00	0.84	7.00	2.69	1.43	0.75	85.00	
<b>35A</b>										
21	450	4	24.00	0.85	4.50	2.78	1.15	0.70	71.00	
29	450	4	31.80	0.87	5.90	3.57	1.43	0.65	74.00	
43	400	4	31.80	0.87	6.60	4.20	1.70	0.65	75.00	
57	350	2	37.60	0.82	7.60	3.38	1.80	0.80	80.00	
86	350	2	48.60	0.80	10.60	4.66	2.47	0.85	75.00	
115	270	2	48.60	0.80	10.60	4.63	2.45	0.85	75.00	
173	190	2	48.60	0.80	10.60	4.65	2.47	0.85	75.00	
<b>40A</b>										
21	750	4	42.00	0.90	10.00	6.40	1.92	0.45	80.00	
29	750	4	42.00	0.90	11.00	7.29	2.38	0.49	80.00	
43	625	4	42.00	0.90	12.00	8.00	2.66	0.50	80.00	
57	500	2	70.00	0.90	15.00	7.34	2.57	0.69	61.00	
86	500	2	70.00	0.90	17.00	9.05	3.52	0.72	65.00	
115	400	2	70.00	0.90	18.00	9.34	3.63	0.72	65.00	
173	300	2	70.00	0.90	19.00	10.00	3.89	0.72	65.00	
<b>70A</b>										
21	1100	4	60.00	0.88	13.00	8.66	2.81	0.60	65.00	
29	1100	4	60.00	0.88	14.00	9.21	3.49	0.65	70.00	
43	950	2	85.00	0.78	18.00	8.11	4.05	0.75	80.00	
57	750	2	85.00	0.78	18.00	7.73	3.86	0.75	80.00	
86	750	2	85.00	0.78	23.00	9.81	5.29	0.80	81.00	
115	550	2	85.00	0.78	22.00	9.27	5.00	0.80	81.00	
173	475	2	85.00	0.78	27.00	10.76	6.17	0.83	83.00	
230	400	2	85.00	0.78	32.00	11.57	6.71	0.83	84.00	
<b>90A</b>										
21	1500	4	75.00	0.88	18.00	10.13	3.83	0.65	70.00	
29	1500	4	75.00	0.88	19.50	11.52	4.75	0.68	73.00	
43	1250	4	75.00	0.88	20.50	12.19	5.32	0.70	75.00	
57	1000	2	135.00	0.82	24.00	11.89	5.14	0.65	80.00	
86	1000	2	135.00	0.82	30.00	15.02	7.05	0.68	83.00	
115	750	2	135.00	0.82	29.00	14.52	6.81	0.68	83.00	
173	640	2	135.00	0.82	34.00	16.32	8.31	0.72	85.00	
230	540	2	135.00	0.82	42.00	16.03	9.06	0.79	86.00	
<b>91A</b>										
173	1000	2	217.00	0.59	57.00	27.87	12.98	0.70	80.00	
230	1000	2				Apply				
<b>95A</b>										
29	2200	4	85.00	0.86	30.00	12.34	6.97	0.79	86.00	

**575 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	1.51	0.83	0.44	0.32	0.06	0.35	58.00	
29	25	4	1.95	0.83	0.51	0.40	0.08	0.44	45.00	
43	25	4	1.95	0.83	0.58	0.43	0.11	0.46	54.00	
57	25	4	2.59	0.85	0.80	0.70	0.13	0.41	45.00	
86	25	4	3.25	0.87	1.40	0.69	0.18	0.44	58.00	
115	25	4	3.88	0.81	1.30	0.83	0.23	0.50	55.00	
<b>12A</b>										
21	60	4	3.88	0.81	0.88	0.56	0.15	0.50	55.00	
29	60	4	3.88	0.81	1.02	0.69	0.19	0.50	55.00	
43	60	4	3.88	0.81	1.40	0.93	0.26	0.50	55.00	
57	50	4	5.26	0.81	1.55	1.29	0.26	0.40	50.00	
86	35	4	3.88	0.81	1.40	0.90	0.25	0.50	55.00	
115	30	4	5.26	0.81	1.55	1.37	0.27	0.40	50.00	
<b>18A</b>										
21	80	4	3.88	0.81	1.10	0.75	0.20	0.50	55.00	
29	80	4	5.26	0.81	1.55	1.27	0.25	0.40	50.00	
<b>19A</b>										
21	100	4	4.80	0.83	1.20	0.61	0.26	0.60	70.00	
29	100	4	6.20	0.80	2.20	1.22	0.32	0.40	65.00	
43	100	4	8.32	0.83	2.60	1.48	0.43	0.45	64.00	
57	100	4	8.32	0.83	2.90	1.61	0.51	0.50	64.00	
86	100	4	10.90	0.76	3.25	1.61	0.70	0.55	80.00	
<b>20A</b>										
21	150	4	8.32	0.83	2.50	1.46	0.38	0.47	56.00	
29	150	4	8.32	0.83	2.85	1.81	0.48	0.47	56.00	
43	150	4	10.90	0.76	3.00	1.62	0.64	0.50	79.00	
57	150	4	10.90	0.76	3.60	1.63	0.77	0.60	79.00	
86	130	4	15.50	0.83	3.75	3.25	0.92	0.45	63.00	
115	105	4	15.50	0.83	3.80	3.38	0.95	0.45	63.00	
173	75	4	15.50	0.83	3.83	3.45	0.97	0.45	63.00	
<b>25A</b>										
21	295	4	15.50	0.83	3.10	2.67	0.75	0.45	63.00	
29	295	4	15.50	0.83	3.80	3.31	0.93	0.45	63.00	
43	220	4	15.50	0.83	3.80	3.32	0.94	0.45	63.00	
57	180	4	15.50	0.83	3.75	3.28	0.93	0.45	63.00	
86	180	2	17.76	0.84	4.60	2.12	1.27	0.75	80.00	
115	170	2	17.76	0.84	5.20	2.58	1.54	0.75	80.00	
173	110	2	17.76	0.84	4.90	2.39	1.43	0.75	80.00	
<b>35A</b>										
21	450	4	20.60	0.87	5.50	2.63	1.15	0.61	72.00	
29	450	4	20.60	0.87	6.30	3.26	1.43	0.61	72.00	
43	400	4	25.98	0.87	8.90	3.35	1.70	0.68	75.00	
57	350	2	30.40	0.83	8.00	2.59	1.80	0.85	82.00	
86	350	2	38.23	0.88	12.00	3.44	2.47	0.89	81.00	
115	270	2	38.23	0.88	12.00	3.42	2.45	0.89	81.00	
173	190	2	38.23	0.88	12.00	3.44	2.47	0.89	81.00	
<b>40A</b>										
21	750	4				Apply				
29	750	4				Apply				
43	625	4	44.00	0.74	11.40	4.13	2.66	0.76	85.00	
57	500	2	55.00	0.74	9.80	6.50	2.57	0.81	80.00	
86	500	2	55.00	0.74	14.00	5.26	3.52	0.82	82.00	
115	400	2	55.00	0.74	14.50	5.42	3.63	0.82	82.00	
173	300	2	55.00	0.74	16.00	5.81	3.89	0.82	82.00	
<b>70A</b>										
21	1100	4	59.00	0.73	12.00	5.16	2.81	0.70	78.00	
29	1100	4	59.00	0.73	14.20	5.83	3.49	0.75	80.00	
43	950	2	85.00	0.90	18.00	7.73	4.05	0.70	75.00	
57	750	2	85.00	0.90	18.00	7.37	3.86	0.70	75.00	
86	750	2	85.00	0.90	22.00	9.57	5.29	0.72	77.00	
115	550	2	85.00	0.90	21.00	9.05	5.00	0.72	77.00	
173	475	2	85.00	0.90	24.00	10.44	6.17	0.75	79.00	
230	400	2	85.00	0.90	28.00	10.93	6.71	0.77	80.00	
<b>90A</b>										
21	1500	4	71.00	0.70	15.00	6.87	3.83	0.70	80.00	
29	1500	4	71.00	0.70	19.00	8.18	4.75	0.72	81.00	
43	1250	4	71.00	0.70	23.00	9.05	5.32	0.72	82.00	
57	1000	2				Apply				
86	1000	2				Apply				
115	750	2				Apply				
173	640	2				Apply				
230	540	2				Apply				
<b>91A</b>										
173	1000	2				Apply				
230	1000	2				Apply				
<b>95A</b>										
29	2200	4				Apply				

**600 60Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
21	25	4	1.57	0.83	0.37	0.30	0.06	0.35	58.00	
29	25	4	1.57	0.83	0.40	0.33	0.08	0.51	45.00	
43	25	4	2.03	0.83	0.50	0.37	0.11	0.48	57.00	
57	25	4	2.03	0.83	0.60	0.45	0.13	0.48	57.00	
86	25	4	3.38	0.87	0.80	0.58	0.18	0.50	58.00	
115	25	4	4.05	0.81	1.30	0.71	0.23	0.51	60.00	
<b>12A</b>										
21	60	4	3.38	0.87	0.85	0.51	0.15	0.50	58.00	
29	60	4	4.05	0.81	1.00	0.47	0.19	0.60	65.00	
43	60	4	4.05	0.81	1.30	0.63	0.26	0.60	65.00	
57	50	4	4.05	0.81	1.30	0.86	0.26	0.48	60.00	
86	35	4	4.05	0.81	1.30	0.86	0.25	0.47	59.00	
115	30	4	4.05	0.81	1.40	0.88	0.27	0.49	61.00	
<b>18A</b>										
21	80	4	4.05	0.81	1.10	0.86	0.20	0.44	52.00	
29	80	4	4.05	0.81	1.30	0.74	0.25	0.48	69.00	
<b>19A</b>										
21	100	4	5.00	0.83	1.20	0.59	0.26	0.60	70.00	
29	100	4	6.50	0.80	2.10	1.17	0.32	0.40	65.00	
43	100	4	6.50	0.80	2.50	1.40	0.43	0.45	65.00	
57	100	4	8.69	0.83	2.80	1.55	0.51	0.50	64.00	
86	100	4	13.20	0.82	3.10	1.54	0.70	0.55	80.00	
<b>20A</b>										
21	150	4	8.69	0.83	2.00	1.68	0.38	0.43	51.00	
29	150	4	8.69	0.83	2.30	1.74	0.48	0.47	56.00	
43	150	4	8.88	0.85	2.30	1.86	0.64	0.55	60.00	
57	150	4	13.20	0.82	3.10	2.33	0.77	0.54	59.00	
86	130	4	13.20	0.86	3.30	2.15	0.92	0.65	63.00	
115	105	4	13.20	0.86	3.35	2.24	0.95	0.65	63.00	
173	75	4	13.20	0.86	3.40	2.29	0.97	0.65	63.00	
<b>25A</b>										
21	295	4	13.20	0.86	3.00	1.77	0.75	0.65	63.00	
29	295	4	13.20	0.86	3.30	2.20	0.93	0.65	63.00	
43	220	4	13.20	0.86	3.30	2.20	0.94	0.65	63.00	
57	180	4	13.20	0.86	3.30	2.18	0.93	0.65	63.00	
86	180	2	18.60	0.84	5.70	2.46	1.27	0.62	80.00	
115	170	2	18.60	0.84	6.60	3.00	1.54	0.62	80.00	
173	110	2	18.60	0.84	6.20	2.77	1.43	0.62	80.00	
<b>35A</b>										
21	450	4	18.00	0.85	5.50	2.52	1.15	0.61	72.00	
29	450	4	21.60	0.85	6.10	3.07	1.43	0.62	72.00	
43	400	4	21.60	0.85	7.20	3.21	1.70	0.68	75.00	
57	350	2	26.40	0.83	7.30	2.49	1.80	0.85	82.00	
86	350	2	40.80	0.82	11.00	3.29	2.47	0.89	81.00	
115	270	2	31.40	0.82	10.80	3.27	2.45	0.89	81.00	
173	190	2	31.40	0.82	10.80	3.29	2.47	0.89	81.00	
<b>40A</b>										
21	750	4	40.00	0.80	7.50	5.30	1.92	0.47	74.00	
29	750	4	40.00	0.80	9.50	5.47	2.38	0.55	76.00	
43	625	4				Apply				
57	500	2	55.00	0.78	9.00	4.66	2.57	0.68	78.00	
86	500	2	55.00	0.78	13.00	5.88	3.52	0.72	80.00	
115	400	2	55.00	0.78	13.25	5.61	3.63	0.75	83.00	
173	300	2	55.00	0.78	13.50	5.65	3.89	0.78	85.00	
<b>70A</b>										
21	1100	4	52.00	0.78	10.70	6.44	2.81	0.60	70.00	
29	1100	4	52.00	0.78	13.00	6.88	3.49	0.65	75.00	
43	950	2				Apply				
57	750	2				Apply				
86	750	2				Apply				
115	550	2				Apply				
173	475	2				Apply				
230	400	2				Apply				
<b>90A</b>										
21	1500	4	63.00	0.78	15.00	8.59	3.83	0.55	78.00	
29	1500	4	63.00	0.78	19.00	8.79	4.75	0.65	80.00	
43	1250	4	63.00	0.78	21.00	8.92	5.32	0.70	82.00	
57	1000	2	100.00	0.98	20.00	11.78	5.14	0.60	70.00	
86	1000	2	100.00	0.98	25.00	14.74	7.05	0.63	73.00	
115	750	2	100.00	0.98	25.00	14.25	6.81	0.63	73.00	
173	640	2	100.00	0.98	30.00	14.27	8.31	0.70	80.00	
230	540	2	100.00	0.98	31.00	13.67	9.06	0.75	85.00	
<b>91A</b>										
173	1000	2				Apply				
230	1000	2				Apply				
<b>95A</b>										
29	2200	4	63.00	0.78	30.00	9.51	6.97	0.83	85.00	

**200 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	3.86	0.85	0.94	0.77	0.05	0.35	57.00	
24	25	4	3.86	0.85	1.00	0.91	0.07	0.35	60.00	
36	25	4	4.82	0.85	1.40	1.16	0.09	0.40	55.00	
48	25	4	4.82	0.85	1.50	1.34	0.11	0.42	55.00	
72	25	4	5.78	0.85	1.99	1.14	0.15	0.53	70.00	
96	25	4	7.69	0.85	2.58	1.70	0.19	0.51	63.00	
<b>12A</b>										
18	60	4	7.69	0.85	1.73	1.13	0.13	0.50	65.00	
24	60	4	7.69	0.85	2.22	1.70	0.16	0.44	61.00	
36	60	4	9.93	0.85	3.28	2.83	0.21	0.41	53.00	
48	50	4	9.93	0.85	3.28	2.85	0.21	0.41	53.00	
72	35	4	9.93	0.85	3.24	2.73	0.21	0.41	53.00	
96	30	4	9.93	0.85	3.39	3.00	0.23	0.41	53.00	
<b>18A</b>										
18	80	4	9.93	0.85	2.89	2.59	0.17	0.38	50.00	
24	80	4	9.93	0.85	3.28	2.80	0.21	0.41	53.00	
<b>19A</b>										
18	100	4	8.50	0.80	2.60	1.36	0.21	0.58	78.00	
24	100	4	5.50	0.82	3.30	1.96	0.26	0.52	75.00	
36	100	4	14.00	0.84	5.80	4.12	0.35	0.46	54.00	
48	100	4	15.00	0.81	4.80	4.01	0.43	0.46	67.00	
72	100	4	26.99	0.83	7.50	5.65	0.59	0.50	60.00	
<b>20A</b>										
18	150	4	15.00	0.81	6.00	4.60	0.32	0.40	50.00	
24	150	4	16.00	0.84	5.70	4.62	0.40	0.45	55.00	
36	150	4	18.12	0.85	5.28	5.42	0.53	0.45	63.00	
48	150	4	18.12	0.85	6.21	5.71	0.64	0.50	65.00	
72	130	4	26.99	0.83	7.90	6.17	0.76	0.55	65.00	
96	105	4	26.99	0.83	8.29	6.42	0.80	0.55	65.00	
144	75	4	26.99	0.83	8.29	6.55	0.81	0.55	65.00	
<b>25A</b>										
18	295	4	25.00	0.84	12.00	6.30	0.63	0.40	60.00	
24	295	4	25.00	0.84	14.00	6.30	0.78	0.44	60.00	
36	220	4	26.99	0.83	8.10	6.30	0.78	0.55	65.00	
48	180	4	26.99	0.83	8.10	6.23	0.77	0.55	65.00	
72	180	2	42.41	0.82	10.22	4.79	1.06	0.75	85.00	
96	170	2	42.41	0.82	15.33	5.83	1.29	0.75	85.00	
144	110	2	42.41	0.82	13.49	5.39	1.19	0.75	85.00	
<b>35A</b>										
18	450	4	38.55	0.85	8.67	5.57	0.96	0.70	71.00	
24	450	4	51.08	0.87	10.22	7.13	1.19	0.65	74.00	
36	400	4	51.08	0.87	12.72	8.41	1.42	0.65	75.00	
48	350	2	60.53	0.82	14.65	6.77	1.50	0.80	80.00	
72	350	2	78.07	0.80	20.43	9.30	2.06	0.85	75.00	
96	270	2	78.07	0.80	20.43	9.26	2.04	0.85	75.00	
144	190	2	78.07	0.80	20.43	9.30	2.06	0.85	75.00	
<b>40A</b>										
18	750	4	84.00	0.90	20.00	12.80	1.60	0.45	80.00	
24	750	4	84.00	0.90	22.00	14.58	1.98	0.49	80.00	
36	625	4	84.00	0.90	23.00	16.00	2.22	0.50	80.00	
48	500	2	140.00	0.90	30.00	14.69	2.14	0.69	61.00	
72	500	2	140.00	0.90	34.00	18.11	2.94	0.72	65.00	
96	400	2	140.00	0.90	36.00	18.68	3.03	0.72	65.00	
144	300	2	140.00	0.90	38.00	19.00	3.24	0.72	65.00	
<b>70A</b>										
18	1100	4	120.00	0.88	23.00	17.33	2.34	0.60	65.00	
24	1100	4	120.00	0.88	26.00	17.00	2.91	0.65	70.00	
36	950	2	166.00	0.78	36.00	16.22	3.37	0.75	80.00	
48	750	2	166.00	0.78	36.00	15.46	3.21	0.75	80.00	
72	750	2	166.00	0.78	46.00	19.62	4.41	0.80	81.00	
96	550	2	166.00	0.78	45.00	18.55	4.16	0.80	81.00	
144	475	2	166.00	0.78	55.00	21.53	5.14	0.83	83.00	
192	400	2	166.00	0.78	65.00	23.10	5.59	0.83	84.00	
<b>90A</b>										
18	1500	4					Apply			
24	1500	4					Apply			
36	1250	4					Apply			
48	1000	2					Not available at 200-3-50			
72	1000	2					Not available at 200-3-50			
96	750	2					Not available at 200-3-50			
144	640	2					Not available at 200-3-50			
192	540	2					Not available at 200-3-50			
<b>95A</b>										
24	2200	4	170.00	0.86	60.00	24.69	5.81	0.79	86.00	

91A not available at 200-3-50



**220 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	2.90	0.83	1.00	0.67	0.05	0.36	58.00	
24	25	4	2.90	0.83	1.00	0.76	0.07	0.38	60.00	
36	25	4	4.70	0.87	1.20	1.02	0.09	0.38	60.00	
48	25	4	4.70	0.87	1.36	1.01	0.11	0.45	62.00	
72	25	4	6.40	0.82	1.86	1.26	0.15	0.51	60.00	
96	25	4	8.44	0.83	2.84	1.60	0.19	0.44	52.00	
<b>12A</b>										
18	60	4	6.40	0.82	1.76	1.10	0.13	0.51	60.00	
24	60	4	6.40	0.82	2.04	1.07	0.16	0.60	65.00	
36	60	4	8.44	0.83	3.04	1.94	0.21	0.48	60.00	
48	50	4	8.44	0.83	3.04	1.95	0.21	0.48	60.00	
72	35	4	8.44	0.83	3.00	1.95	0.21	0.47	59.00	
96	30	4	8.44	0.83	3.10	1.99	0.23	0.49	61.00	
<b>18A</b>										
18	80	4	8.44	0.83	2.60	1.95	0.17	0.44	52.00	
24	80	4	8.44	0.83	3.02	1.67	0.21	0.48	69.00	
<b>19A</b>										
18	100	4	9.40	0.80	2.40	1.24	0.21	0.58	78.00	
24	100	4	6.00	0.82	3.00	1.78	0.26	0.52	75.00	
36	100	4	6.00	0.82	4.00	3.23	0.35	0.45	64.00	
48	100	4	16.00	0.84	6.00	3.54	0.43	0.53	60.00	
72	100	4	20.40	0.86	6.10	4.84	0.59	0.54	59.00	
<b>20A</b>										
18	150	4	15.60	0.84	4.80	3.82	0.32	0.43	51.00	
24	150	4	15.60	0.84	5.70	3.95	0.40	0.47	56.00	
36	150	4	17.00	0.84	7.40	4.23	0.53	0.55	60.00	
48	150	4	20.40	0.86	6.20	5.30	0.64	0.54	59.00	
72	130	4	30.00	0.85	7.50	6.00	0.76	0.45	63.00	
96	105	4	30.00	0.85	7.60	6.00	0.80	0.45	63.00	
144	75	4	30.00	0.85	7.66	6.00	0.81	0.45	63.00	
<b>25A</b>										
18	295	4	30.00	0.85	7.40	5.70	0.63	0.40	60.00	
24	295	4	30.00	0.85	7.60	5.70	0.78	0.45	60.00	
36	220	4	30.00	0.85	7.60	5.70	0.78	0.45	60.00	
48	180	4	30.00	0.85	7.50	5.70	0.77	0.45	60.00	
72	180	2	44.00	0.85	11.40	5.30	1.06	0.62	80.00	
96	170	2	44.00	0.85	13.20	5.30	1.29	0.62	80.00	
144	110	2	44.00	0.85	12.40	5.30	1.19	0.62	80.00	
<b>35A</b>										
18	450	4	33.00	0.85	11.00	5.73	0.96	0.61	72.00	
24	450	4	42.00	0.85	14.00	6.12	1.19	0.68	75.00	
36	400	4	42.00	0.85	17.80	7.31	1.42	0.68	75.00	
48	350	2	65.80	0.82	16.00	5.65	1.50	0.85	82.00	
72	350	2	65.80	0.82	24.00	7.48	2.06	0.89	81.00	
96	270	2	65.80	0.82	24.00	7.44	2.04	0.89	81.00	
144	190	2	65.80	0.82	24.00	7.48	2.06	0.89	81.00	
<b>40A</b>										
18	750	4					Apply			
24	750	4					Apply			
36	625	4					Apply			
48	500	2	140.00	0.90	30.00	13.36	2.14	0.69	61.00	
72	500	2	140.00	0.90	34.00	16.47	2.94	0.72	65.00	
96	400	2	140.00	0.90	36.00	16.98	3.03	0.72	65.00	
144	300	2	140.00	0.90	38.00	18.00	3.24	0.72	65.00	
<b>70A</b>										
18	1100	4					Apply			
24	1100	4					Apply			
36	950	2	166.00	0.78	36.00	14.74	3.37	0.75	80.00	
48	750	2	166.00	0.78	36.00	14.05	3.21	0.75	80.00	
72	750	2	166.00	0.78	46.00	17.84	4.41	0.80	81.00	
96	550	2	166.00	0.78	45.00	16.86	4.16	0.80	81.00	
144	475	2	166.00	0.78	55.00	19.57	5.14	0.83	83.00	
192	400	2	166.00	0.78	65.00	21.04	5.59	0.83	84.00	
<b>90A</b>										
18	1500	4					Apply			
24	1500	4					Apply			
36	1250	4					Apply			
48	1000	2					Not available at 220-3-50			
72	1000	2					Not available at 220-3-51			
96	750	2					Not available at 220-3-52			
144	640	2					Not available at 220-3-53			
192	540	2					Not available at 220-3-54			
<b>95A</b>										
24	2200	4					Apply			

91A not available at 220-3-50

**240 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	2.60	0.83	0.74	0.61	0.05	0.36	58.00	
24	25	4	2.90	0.83	1.00	0.70	0.07	0.38	60.00	
36	25	4	2.90	0.87	1.00	0.94	0.09	0.38	60.00	
48	25	4	4.70	0.87	1.36	0.92	0.11	0.45	62.00	
72	25	4	5.20	0.85	1.60	1.22	0.15	0.50	58.00	
96	25	4	6.60	0.82	2.60	1.49	0.19	0.51	60.00	
<b>12A</b>										
18	60	4	6.40	0.82	1.76	1.00	0.13	0.51	60.00	
24	60	4	6.40	0.82	2.04	0.98	0.16	0.60	65.00	
36	60	4	6.40	0.82	2.60	1.31	0.21	0.60	65.00	
48	50	4	8.44	0.83	3.04	1.79	0.21	0.48	60.00	
72	35	4	8.44	0.83	3.00	1.78	0.21	0.47	59.00	
96	30	4	8.44	0.83	3.10	1.83	0.23	0.49	61.00	
<b>18A</b>										
18	80	4	6.60	0.82	2.20	1.79	0.17	0.44	52.00	
24	80	4	8.44	0.83	3.02	1.53	0.21	0.48	69.00	
<b>19A</b>										
18	100	4	8.00	0.83	2.20	1.22	0.21	0.60	70.00	
24	100	4	10.20	0.84	2.80	1.40	0.26	0.58	78.00	
36	100	4	14.40	0.83	4.40	2.96	0.35	0.45	64.00	
48	100	4	14.40	0.83	5.10	3.22	0.43	0.50	64.00	
72	100	4	18.00	0.82	7.90	3.21	0.59	0.55	80.00	
<b>20A</b>										
18	150	4	14.40	0.83	4.00	3.50	0.32	0.43	51.00	
24	150	4	14.40	0.83	4.60	3.62	0.40	0.47	56.00	
36	150	4	18.00	0.82	7.40	3.88	0.53	0.55	60.00	
48	150	4	18.00	0.82	6.20	4.85	0.64	0.54	59.00	
72	130	4	22.00	0.86	6.60	6.48	0.76	0.45	63.00	
96	105	4	22.00	0.86	6.70	6.75	0.80	0.45	63.00	
144	75	4	30.00	0.86	6.80	6.88	0.81	0.45	63.00	
<b>25A</b>										
18	295	4	22.00	0.86	6.00	6.30	0.63	0.40	60.00	
24	295	4	22.00	0.86	6.60	6.94	0.78	0.45	60.00	
36	220	4	22.00	0.86	6.60	6.96	0.78	0.45	60.00	
48	180	4	22.00	0.86	6.60	6.87	0.77	0.45	60.00	
72	180	2	31.00	0.84	11.40	5.13	1.06	0.62	80.00	
96	170	2	31.00	0.84	13.20	6.24	1.29	0.62	80.00	
144	110	2	31.00	0.84	12.40	5.77	1.19	0.62	80.00	
<b>35A</b>										
18	450	4	33.00	0.85	11.00	5.25	0.96	0.61	72.00	
24	450	4	33.00	0.85	12.20	6.41	1.19	0.62	72.00	
36	400	4	42.00	0.85	17.80	6.70	1.42	0.68	75.00	
48	350	2	49.00	0.83	16.00	5.18	1.50	0.85	82.00	
72	350	2	65.80	0.82	24.00	6.86	2.06	0.89	81.00	
96	270	2	65.80	0.82	24.00	6.82	2.04	0.89	81.00	
144	190	2	65.80	0.82	24.00	6.86	2.06	0.89	81.00	
<b>40A</b>										
18	750	4								
24	750	4								
36	625	4								
48	500	2								
72	500	2								
96	400	2								
144	300	2								
<b>70A</b>										
18	1100	4								
24	1100	4								
36	950	2								
48	750	2								
72	750	2								
96	550	2								
144	475	2								
192	400	2								
<b>90A</b>										
18	1500	4								
24	1500	4								
36	1250	4								
48	1000	2								
72	1000	2								
96	750	2								
144	640	2								
192	540	2								
<b>95A</b>										
24	2200	4								

91A not available at 240-3-50

**380 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	1.80	0.84	0.52	0.41	0.05	0.35	57.00	
24	25	4	1.80	0.84	0.60	0.48	0.07	0.35	60.00	
36	25	4	2.20	0.86	0.75	0.58	0.09	0.42	55.00	
48	25	4	2.50	0.86	1.00	0.85	0.11	0.35	55.00	
72	25	4	3.00	0.83	1.10	0.60	0.15	0.53	70.00	
96	25	4	4.65	0.82	1.50	0.90	0.19	0.50	53.00	
<b>12A</b>										
18	60	4	4.65	0.82	1.20	0.86	0.13	0.45	50.00	
24	60	4	4.65	0.82	1.30	0.91	0.16	0.50	53.00	
36	60	4	4.65	0.82	1.70	1.07	0.21	0.55	55.00	
48	50	4	4.65	0.82	1.70	1.08	0.21	0.55	55.00	
72	35	4	4.65	0.82	1.68	1.03	0.21	0.55	55.00	
96	30	4	4.65	0.82	1.76	1.14	0.23	0.55	55.00	
<b>18A</b>										
18	80	4	4.65	0.82	1.50	0.98	0.17	0.50	53.00	
24	80	4	6.00	0.82	1.75	1.50	0.21	0.40	50.00	
<b>19A</b>										
18	100	4	5.30	0.82	1.40	0.89	0.21	0.52	70.00	
24	100	4	7.00	0.84	2.50	2.09	0.26	0.40	48.00	
36	100	4	7.00	0.84	3.00	2.17	0.35	0.46	54.00	
48	100	4	9.25	0.85	3.30	2.06	0.43	0.48	66.00	
72	100	4	12.00	0.85	3.50	2.98	0.59	0.50	60.00	
<b>20A</b>										
18	150	4	9.25	0.85	2.70	2.10	0.32	0.42	55.00	
24	150	4	9.25	0.85	3.00	2.16	0.40	0.45	62.00	
36	150	4	9.40	0.85	2.74	2.85	0.53	0.45	63.00	
48	150	4	12.00	0.85	3.70	3.26	0.64	0.50	60.00	
72	130	4	16.50	0.83	5.90	3.50	0.76	0.43	58.00	
96	105	4	16.50	0.83	6.00	3.50	0.80	0.43	58.00	
144	75	4	16.50	0.83	6.10	3.50	0.81	0.43	58.00	
<b>25A</b>										
18	295	4	16.50	0.83	5.30	3.83	0.63	0.43	58.00	
24	295	4	16.50	0.83	5.90	4.75	0.78	0.43	58.00	
36	220	4	16.50	0.83	6.00	4.76	0.78	0.43	58.00	
48	180	4	16.50	0.83	5.90	3.30	0.77	0.43	58.00	
72	180	2	25.00	0.82	5.70	2.52	1.06	0.75	85.00	
96	170	2	25.00	0.82	7.20	3.07	1.29	0.75	85.00	
144	110	2	25.00	0.82	6.30	2.84	1.19	0.75	85.00	
<b>35A</b>										
18	450	4	20.00	0.85	4.50	2.93	0.96	0.70	71.00	
24	450	4	26.50	0.87	5.90	3.75	1.19	0.65	74.00	
36	400	4	28.00	0.87	9.00	4.40	1.42	0.51	68.00	
48	350	2	37.00	0.80	9.30	3.61	1.50	0.82	77.00	
72	350	2	40.50	0.90	12.00	4.23	2.06	0.88	84.00	
96	270	2	40.50	0.80	10.60	4.87	2.04	0.85	75.00	
144	190	2	40.50	0.80	10.60	4.90	2.06	0.85	75.00	
<b>40A</b>										
18	750	4	40.00	0.84	10.50	6.74	1.60	0.45	80.00	
24	750	4	40.00	0.84	11.00	7.67	1.98	0.49	80.00	
36	625	4	48.00	0.86	14.00	8.00	2.22	0.75	55.00	
48	500	2	70.00	0.90	15.00	7.73	2.14	0.69	61.00	
72	500	2	70.00	0.90	17.00	9.53	2.94	0.72	65.00	
96	400	2	70.00	0.90	18.00	9.83	3.03	0.72	65.00	
144	300	2	70.00	0.90	19.00	10.10	3.24	0.72	65.00	
<b>70A</b>										
18	1100	4	64.00	0.87	14.00	6.41	2.34	0.72	77.00	
24	1100	4	64.00	0.87	16.00	7.45	2.91	0.74	80.00	
36	950	2	85.00	0.78	18.00	8.53	3.37	0.75	80.00	
48	750	2	85.00	0.78	18.00	8.13	3.21	0.75	80.00	
72	750	2	85.00	0.78	23.00	10.33	4.41	0.80	81.00	
96	550	2	85.00	0.78	22.00	9.76	4.16	0.80	81.00	
144	475	2	85.00	0.78	27.00	11.33	5.14	0.83	83.00	
192	400	2	85.00	0.78	32.00	12.18	5.59	0.83	84.00	
<b>90A</b>										
18	1500	4	75.00	0.88	18.00	10.66	3.19	0.65	70.00	
24	1500	4	75.00	0.88	19.50	12.12	3.96	0.68	73.00	
36	1250	4	75.00	0.88	20.50	12.83	4.44	0.70	75.00	
48	1000	2	135.00	0.82	24.00	12.52	4.29	0.65	80.00	
72	1000	2	135.00	0.82	30.00	15.81	5.87	0.68	83.00	
96	750	2	135.00	0.82	29.00	15.28	5.68	0.68	83.00	
144	640	2	135.00	0.82	34.00	17.18	6.92	0.72	85.00	
192	540	2	135.00	0.82	42.00	16.88	7.55	0.79	86.00	
<b>91A</b>										
144	1000	2	230.00	0.85	58.00	29.34	10.82	0.70	80.00	
192	1000	2	230.00	0.85	75.00	37.92	13.98	0.70	80.00	
<b>95A</b>										
24	2200	4	80.00	0.86	35.00	12.99	5.81	0.79	86.00	

**400 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	2.00	0.85	0.49	0.39	0.05	0.35	57.00	
24	25	4	2.00	0.85	0.52	0.45	0.07	0.35	60.00	
36	25	4	2.50	0.86	0.75	0.55	0.09	0.42	55.00	
48	25	4	2.50	0.86	0.78	0.67	0.11	0.42	55.00	
72	25	4	3.00	0.81	1.03	0.57	0.15	0.53	70.00	
96	25	4	3.99	0.82	1.34	0.85	0.19	0.51	63.00	
<b>12A</b>										
18	60	4	3.99	0.82	1.00	0.77	0.13	0.40	60.00	
24	60	4	3.99	0.82	1.15	0.85	0.16	0.44	61.00	
36	60	4	5.15	0.83	1.70	1.41	0.21	0.41	53.00	
48	50	4	5.15	0.83	1.70	1.42	0.21	0.41	53.00	
72	35	4	5.15	0.83	1.68	1.37	0.21	0.41	53.00	
96	30	4	5.15	0.83	1.76	1.50	0.23	0.41	53.00	
<b>18A</b>										
18	80	4	5.15	0.83	1.50	1.29	0.17	0.38	50.00	
24	80	4	5.15	0.83	1.70	1.40	0.21	0.41	53.00	
<b>19A</b>										
18	100	4	4.25	0.80	1.30	0.68	0.21	0.58	78.00	
24	100	4	5.60	0.82	1.30	0.98	0.26	0.52	75.00	
36	100	4	7.00	0.84	2.80	2.06	0.35	0.46	54.00	
48	100	4	9.00	0.81	2.40	2.01	0.43	0.46	67.00	
72	100	4	14.00	0.83	3.50	2.37	0.59	0.55	65.00	
<b>20A</b>										
18	150	4	9.00	0.81	3.00	2.30	0.32	0.40	50.00	
24	150	4	7.00	0.85	2.40	2.31	0.40	0.45	55.00	
36	150	4	9.40	0.85	2.74	2.71	0.53	0.45	63.00	
48	150	4	9.40	0.85	3.22	2.86	0.64	0.50	65.00	
72	130	4	14.00	0.83	4.10	3.08	0.76	0.55	65.00	
96	105	4	14.00	0.83	4.30	3.21	0.80	0.55	65.00	
144	75	4	14.00	0.83	4.30	3.28	0.81	0.55	65.00	
<b>25A</b>										
18	295	4	14.00	0.84	6.00	3.20	0.63	0.40	50.00	
24	295	4	14.00	0.84	7.00	3.20	0.78	0.40	50.00	
36	220	4	14.00	0.83	4.20	3.15	0.78	0.55	65.00	
48	180	4	14.00	0.83	4.20	3.11	0.77	0.55	65.00	
72	180	2	22.00	0.82	5.30	2.39	1.06	0.75	85.00	
96	170	2	22.00	0.82	7.95	2.90	1.29	0.75	85.00	
144	110	2	22.00	0.82	7.00	2.69	1.19	0.75	85.00	
<b>35A</b>										
18	450	4	20.00	0.85	4.50	2.78	0.96	0.70	71.00	
24	450	4	26.50	0.87	5.90	3.57	1.19	0.65	74.00	
36	400	4	26.50	0.87	6.60	4.20	1.42	0.65	75.00	
48	350	2	31.40	0.82	7.60	3.38	1.50	0.80	80.00	
72	350	2	40.50	0.80	10.60	4.66	2.06	0.85	75.00	
96	270	2	40.50	0.80	10.60	4.63	2.04	0.85	75.00	
144	190	2	40.50	0.80	10.60	4.65	2.06	0.85	75.00	
<b>40A</b>										
18	750	4	42.00	0.90	10.00	6.40	1.60	0.45	80.00	
24	750	4	42.00	0.90	11.00	7.29	1.98	0.49	80.00	
36	625	4	42.00	0.90	12.00	8.00	2.22	0.50	80.00	
48	500	2	70.00	0.90	15.00	7.34	2.14	0.69	61.00	
72	500	2	70.00	0.90	17.00	9.05	2.94	0.72	65.00	
96	400	2	70.00	0.90	18.00	9.34	3.03	0.72	65.00	
144	300	2	70.00	0.90	19.00	10.00	3.24	0.72	65.00	
<b>70A</b>										
18	1100	4	60.00	0.88	13.00	8.66	2.34	0.60	65.00	
24	1100	4	60.00	0.88	14.00	8.80	2.91	0.65	70.00	
36	950	2	85.00	0.78	18.00	8.11	3.37	0.75	80.00	
48	750	2	85.00	0.78	18.00	7.73	3.21	0.75	80.00	
72	750	2	85.00	0.78	23.00	9.81	4.41	0.80	81.00	
96	550	2	85.00	0.78	22.00	9.27	4.16	0.80	81.00	
144	475	2	85.00	0.78	27.00	10.76	5.14	0.83	83.00	
192	400	2	85.00	0.78	32.00	11.57	5.59	0.83	84.00	
<b>90A</b>										
18	1500	4	75.00	0.88	18.00	10.13	3.19	0.65	70.00	
24	1500	4	75.00	0.88	19.50	11.52	3.96	0.68	73.00	
36	1250	4	75.00	0.88	20.50	12.19	4.44	0.70	75.00	
48	1000	2	135.00	0.82	24.00	11.89	4.29	0.65	80.00	
72	1000	2	135.00	0.82	30.00	15.02	5.87	0.68	83.00	
96	750	2	135.00	0.82	29.00	14.52	5.68	0.68	83.00	
144	640	2	135.00	0.82	34.00	16.32	6.92	0.72	85.00	
192	540	2	135.00	0.82	42.00	16.03	7.55	0.79	86.00	
<b>91A</b>										
144	1000	2	217.00	0.59	57.00	27.87	10.82	0.70	80.00	
192	1000	2				Apply				
<b>95A</b>										
24	2200	4	85.00	0.86	30.00	12.34	5.81	0.79	86.00	

**415 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	1.36	0.85	0.49	0.37	0.05	0.35	57.00	
24	25	4	2.00	0.85	0.52	0.44	0.07	0.35	60.00	
36	25	4	2.00	0.85	0.60	0.52	0.09	0.38	62.00	
48	25	4	2.50	0.86	0.78	0.65	0.11	0.42	55.00	
72	25	4	3.00	0.81	1.03	0.55	0.15	0.53	70.00	
96	25	4	3.99	0.82	1.34	0.80	0.19	0.51	63.00	
<b>12A</b>										
18	60	4	3.00	0.81	0.90	0.55	0.13	0.50	65.00	
24	60	4	3.99	0.82	1.15	0.82	0.16	0.44	61.00	
36	60	4	3.99	0.82	1.50	0.90	0.21	0.52	63.00	
48	50	4	5.15	0.83	1.70	1.37	0.21	0.41	53.00	
72	35	4	5.15	0.83	1.68	1.32	0.21	0.41	53.00	
96	30	4	5.15	0.83	1.76	1.45	0.23	0.41	53.00	
<b>18A</b>										
18	80	4	5.15	0.83	1.50	1.25	0.17	0.38	50.00	
24	80	4	5.15	0.83	1.70	1.35	0.21	0.41	53.00	
<b>19A</b>										
18	100	4	4.40	0.80	1.25	0.65	0.21	0.58	78.00	
24	100	4	5.80	0.83	1.25	0.94	0.26	0.52	75.00	
36	100	4	6.60	0.84	2.70	1.99	0.35	0.46	54.00	
48	100	4	6.60	0.84	3.10	1.81	0.43	0.55	60.00	
72	100	4	9.40	0.85	3.10	2.55	0.59	0.50	64.00	
<b>20A</b>										
18	150	4	6.60	0.85	2.40	2.22	0.32	0.40	50.00	
24	150	4	7.00	0.85	2.40	2.23	0.40	0.45	55.00	
36	150	4	9.40	0.85	2.74	2.61	0.53	0.45	63.00	
48	150	4	9.40	0.85	3.22	2.75	0.64	0.50	65.00	
72	130	4	14.00	0.83	4.10	2.97	0.76	0.55	65.00	
96	105	4	14.00	0.83	4.30	3.09	0.80	0.55	65.00	
144	75	4	14.00	0.83	4.30	3.16	0.81	0.55	65.00	
<b>25A</b>										
18	295	4	14.00	0.83	4.00	2.67	0.63	0.52	63.00	
24	295	4	14.00	0.84	7.00	3.00	0.78	0.40	50.00	
36	220	4	14.00	0.83	4.20	3.00	0.78	0.55	65.00	
48	180	4	14.00	0.83	4.20	3.00	0.77	0.55	65.00	
72	180	2	22.00	0.82	5.30	2.31	1.06	0.75	85.00	
96	170	2	22.00	0.82	7.95	2.81	1.29	0.75	85.00	
144	110	2	22.00	0.82	7.00	2.60	1.19	0.75	85.00	
<b>35A</b>										
18	450	4	20.00	0.85	4.50	2.68	0.96	0.70	71.00	
24	450	4	20.00	0.85	5.30	3.29	1.19	0.68	74.00	
36	400	4	26.50	0.87	6.60	4.05	1.42	0.65	75.00	
48	350	2	31.40	0.82	7.60	3.26	1.50	0.80	80.00	
72	350	2	40.50	0.80	10.60	4.49	2.06	0.85	75.00	
96	270	2	40.50	0.80	10.60	4.46	2.04	0.85	75.00	
144	190	2	40.50	0.80	10.60	4.49	2.06	0.85	75.00	
<b>40A</b>										
18	750	4	36.00	0.92	8.50	3.60	1.60	0.80	77.00	
24	750	4	36.00	0.92	10.50	4.21	1.98	0.85	77.00	
36	625	4	36.00	0.92	13.00	4.54	2.22	0.87	78.00	
48	500	2	65.00	0.91	14.00	9.00	2.14	0.70	65.00	
72	500	2	70.00	0.90	17.00	8.73	2.94	0.72	65.00	
96	400	2	70.00	0.90	18.00	9.00	3.03	0.72	65.00	
144	300	2	70.00	0.90	19.00	9.64	3.24	0.72	65.00	
<b>70A</b>										
18	1100	4	55.00	0.86	12.00	7.79	2.34	0.55	76.00	
24	1100	4	55.00	0.86	16.00	8.42	2.91	0.60	80.00	
36	950	2	85.00	0.78	18.00	7.81	3.37	0.75	80.00	
48	750	2	85.00	0.78	18.00	7.45	3.21	0.75	80.00	
72	750	2	85.00	0.78	23.00	9.45	4.41	0.80	81.00	
96	550	2	85.00	0.78	22.00	8.94	4.16	0.80	81.00	
144	475	2	85.00	0.78	27.00	10.37	5.14	0.83	83.00	
192	400	2	85.00	0.78	32.00	10.50	5.59	0.83	84.00	
<b>90A</b>										
18	1500	4	75.00	0.88	18.00	9.76	3.19	0.65	70.00	
24	1500	4	75.00	0.88	19.50	11.10	3.96	0.68	73.00	
36	1250	4	75.00	0.88	20.50	11.75	4.44	0.70	75.00	
48	1000	2	135.00	0.82	24.00	11.46	4.29	0.65	80.00	
72	1000	2	135.00	0.82	30.00	14.48	5.87	0.68	83.00	
96	750	2	135.00	0.82	29.00	13.99	5.68	0.68	83.00	
144	640	2	135.00	0.82	34.00	15.73	6.92	0.72	85.00	
192	540	2	135.00	0.82	42.00	15.45	7.55	0.79	86.00	
<b>91A</b>										
144	1000	2	217.00	0.59	57.00	26.87	10.82	0.70	80.00	
192	1000	2				apply				
<b>95A</b>										
24	2200	4	90.00	0.86	32.00	12.68	5.81	0.75	85.00	

**440 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	1.45	0.83	0.50	0.33	0.05	0.36	58.00	
24	25	4	1.45	0.83	0.50	0.38	0.07	0.38	60.00	
36	25	4	2.35	0.87	0.60	0.51	0.09	0.38	60.00	
48	25	4	2.35	0.87	0.68	0.50	0.11	0.45	62.00	
72	25	4	3.20	0.82	0.93	0.63	0.15	0.51	60.00	
96	25	4	4.22	0.83	1.42	1.09	0.19	0.44	52.00	
<b>12A</b>										
18	60	4	3.20	0.82	0.88	0.55	0.13	0.51	60.00	
24	60	4	3.20	0.82	1.02	0.53	0.16	0.60	65.00	
36	60	4	4.22	0.83	1.52	0.97	0.21	0.48	60.00	
48	50	4	4.22	0.83	1.52	0.98	0.21	0.48	60.00	
72	35	4	4.22	0.83	1.50	0.97	0.21	0.47	59.00	
96	30	4	4.22	0.83	1.55	1.00	0.23	0.49	61.00	
<b>18A</b>										
18	80	4	4.22	0.83	1.30	0.98	0.17	0.44	52.00	
24	80	4	4.22	0.83	1.51	0.84	0.21	0.48	69.00	
<b>19A</b>										
18	100	4	4.70	0.80	1.20	0.62	0.21	0.58	78.00	
24	100	4	6.40	0.83	2.10	0.89	0.26	0.52	75.00	
36	100	4	6.40	0.83	2.50	1.62	0.35	0.45	64.00	
48	100	4	7.80	0.84	3.00	1.70	0.43	0.55	60.00	
72	100	4	10.20	0.86	3.00	2.41	0.59	0.50	64.00	
<b>20A</b>										
18	150	4	7.80	0.84	2.40	1.91	0.32	0.43	51.00	
24	150	4	7.80	0.84	2.85	1.98	0.40	0.47	56.00	
36	150	4	7.80	0.84	3.70	2.12	0.53	0.55	60.00	
48	150	4	10.20	0.86	3.10	2.65	0.64	0.54	59.00	
72	130	4	15.00	0.85	3.75	3.53	0.76	0.45	63.00	
96	105	4	15.00	0.85	3.80	3.68	0.80	0.45	63.00	
144	75	4	15.00	0.85	3.83	3.75	0.81	0.45	63.00	
<b>25A</b>										
18	295	4	15.00	0.85	3.70	2.80	0.63	0.40	60.00	
24	295	4	15.00	0.85	3.80	2.80	0.78	0.45	60.00	
36	220	4	15.00	0.85	3.80	2.80	0.78	0.45	60.00	
48	180	4	15.00	0.85	3.75	2.80	0.77	0.45	60.00	
72	180	2	22.00	0.85	5.70	2.70	1.06	0.62	80.00	
96	170	2	22.00	0.85	6.60	2.70	1.29	0.62	80.00	
144	110	2	22.00	0.85	6.20	2.70	1.19	0.62	80.00	
<b>35A</b>										
18	450	4	16.50	0.85	5.50	2.86	0.96	0.61	72.00	
24	450	4	21.00	0.85	7.00	3.06	1.19	0.68	75.00	
36	400	4	21.00	0.85	8.90	3.65	1.42	0.68	75.00	
48	350	2	32.90	0.82	8.00	2.82	1.50	0.85	82.00	
72	350	2	32.90	0.82	12.00	3.74	2.06	0.89	81.00	
96	270	2	32.90	0.82	12.00	3.72	2.04	0.89	81.00	
144	190	2	32.90	0.82	12.00	3.74	2.06	0.89	81.00	
<b>40A</b>										
18	750	4								
24	750	4								
36	625	4								
48	500	2								
72	500	2	70.00	0.90	17.00	8.83	2.94	0.72	65.00	
96	400	2	70.00	0.90	18.00	8.49	3.03	0.72	65.00	
144	300	2	70.00	0.90	19.00	9.09	3.24	0.72	65.00	
<b>70A</b>										
18	1100	4								
24	1100	4								
36	950	2	95.00	0.80	18.00	7.37	3.37	0.75	80.00	
48	750	2	95.00	0.80	18.00	7.02	3.21	0.75	80.00	
72	750	2	95.00	0.80	23.00	8.92	4.41	0.80	81.00	
96	550	2	95.00	0.80	22.00	8.43	4.16	0.80	81.00	
144	475	2	95.00	0.80	27.00	9.78	5.14	0.83	83.00	
192	400	2	95.00	0.80	32.00	10.52	5.59	0.83	84.00	
<b>90A</b>										
18	1500	4								
24	1500	4								
36	1250	4								
48	1000	2								
72	1000	2								
96	750	2								
144	640	2								
192	540	2								
<b>91A</b>										
144	1000	2								
192	1000	2								
<b>95A</b>										
24	2200	4								

**460 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	1.45	0.83	0.50	0.32	0.05	0.36	58.00	
24	25	4	1.45	0.83	0.50	0.36	0.07	0.38	60.00	
36	25	4	1.45	0.83	0.60	0.49	0.09	0.38	60.00	
48	25	4	2.35	0.87	0.68	0.48	0.11	0.45	62.00	
72	25	4	2.59	0.85	1.40	0.72	0.15	0.44	58.00	
96	25	4	3.20	0.82	1.30	0.78	0.19	0.51	60.00	
<b>12A</b>										
18	60	4	3.20	0.82	0.88	0.52	0.13	0.51	60.00	
24	60	4	3.20	0.82	1.02	0.51	0.16	0.60	65.00	
36	60	4	3.20	0.82	1.40	0.69	0.21	0.60	65.00	
48	50	4	4.22	0.83	1.52	0.93	0.21	0.48	60.00	
72	35	4	4.22	0.83	1.50	0.93	0.21	0.47	59.00	
96	30	4	4.22	0.83	1.55	0.95	0.23	0.49	61.00	
<b>18A</b>										
18	80	4	4.22	0.83	1.30	0.93	0.17	0.44	52.00	
24	80	4	4.22	0.83	1.51	0.80	0.21	0.48	69.00	
<b>19A</b>										
18	100	4	4.90	0.80	1.15	0.59	0.21	0.58	78.00	
24	100	4	6.60	0.83	2.00	0.85	0.26	0.52	75.00	
36	100	4	6.60	0.83	2.40	1.55	0.35	0.45	64.00	
48	100	4	7.80	0.84	2.80	1.63	0.43	0.55	60.00	
72	100	4	10.20	0.86	2.80	2.30	0.59	0.50	64.00	
<b>20A</b>										
18	150	4	7.80	0.84	2.40	1.83	0.32	0.43	51.00	
24	150	4	6.60	0.83	2.85	1.89	0.40	0.47	56.00	
36	150	4	7.80	0.84	3.70	2.02	0.53	0.55	60.00	
48	150	4	10.20	0.86	3.10	2.53	0.64	0.54	59.00	
72	130	4	10.20	0.86	3.75	3.38	0.76	0.45	63.00	
96	105	4	10.20	0.86	3.80	3.52	0.80	0.45	63.00	
144	75	4	10.20	0.86	3.83	3.59	0.81	0.45	63.00	
<b>25A</b>										
18	295	4	10.20	0.86	3.10	2.78	0.63	0.45	63.00	
24	295	4	10.20	0.86	3.80	3.45	0.78	0.45	63.00	
36	220	4	10.20	0.86	3.80	3.46	0.78	0.45	63.00	
48	180	4	10.20	0.86	3.75	3.42	0.77	0.45	63.00	
72	180	2	22.00	0.85	5.70	2.68	1.06	0.62	80.00	
96	170	2	22.00	0.85	6.60	3.26	1.29	0.62	80.00	
144	110	2	22.00	0.85	6.20	3.01	1.19	0.62	80.00	
<b>35A</b>										
18	450	4	16.50	0.85	5.50	2.74	0.96	0.61	72.00	
24	450	4	16.50	0.85	6.30	3.34	1.19	0.62	72.00	
36	400	4	21.00	0.85	8.90	3.49	1.42	0.68	75.00	
48	350	2	24.40	0.83	8.00	2.70	1.50	0.85	82.00	
72	350	2	32.90	0.82	12.00	3.58	2.06	0.89	81.00	
96	270	2	32.90	0.82	12.00	3.56	2.04	0.89	81.00	
144	190	2	32.90	0.82	12.00	3.58	2.06	0.89	81.00	
<b>40A</b>										
18	750	4				Apply				
24	750	4				Apply				
36	625	4				Apply				
48	500	2				Apply				
72	500	2				Apply				
96	400	2				Apply				
144	300	2				Apply				
<b>70A</b>										
18	1100	4				Apply				
24	1100	4				Apply				
36	950	2				Apply				
48	750	2				Apply				
72	750	2				Apply				
96	550	2				Apply				
144	475	2				Apply				
192	400	2				Apply				
<b>90A</b>										
18	1500	4				Apply				
24	1500	4				Apply				
36	1250	4				Apply				
48	1000	2				Apply				
72	1000	2				Apply				
96	750	2				Apply				
144	640	2				Apply				
192	540	2				Apply				
<b>91A</b>										
144	1000	2				Apply				
192	1000	2				Apply				
<b>95A</b>										
24	2200	4				Apply				

**500 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	1.30	0.83	0.37	0.29	0.05	0.36	58.00	
24	25	4	1.30	0.83	0.40	0.35	0.07	0.38	58.00	
36	25	4	1.45	0.83	0.50	0.45	0.09	0.38	60.00	
48	25	4	1.50	0.83	0.60	0.54	0.11	0.38	60.00	
72	25	4	2.60	0.85	0.80	0.58	0.15	0.50	58.00	
96	25	4	3.30	0.82	1.30	0.71	0.19	0.51	60.00	
<b>12A</b>										
18	60	4	2.60	0.85	0.80	0.51	0.13	0.50	58.00	
24	60	4	3.30	0.82	1.00	0.47	0.16	0.60	65.00	
36	60	4	3.30	0.82	1.30	0.63	0.21	0.60	65.00	
48	50	4	3.30	0.82	1.30	0.86	0.21	0.48	60.00	
72	35	4	3.30	0.82	1.30	0.86	0.21	0.47	59.00	
96	30	4	3.30	0.82	1.40	0.88	0.23	0.49	61.00	
<b>18A</b>										
18	80	4	3.30	0.82	1.10	0.86	0.17	0.44	52.00	
24	80	4	3.30	0.82	1.30	0.74	0.21	0.48	69.00	
<b>19A</b>										
18	100	4	4.20	0.83	1.10	0.59	0.21	0.60	70.00	
24	100	4	5.50	0.83	1.90	0.74	0.26	0.55	75.00	
36	100	4	5.50	0.83	2.10	1.26	0.35	0.50	65.00	
48	100	4	7.20	0.83	2.60	1.55	0.43	0.50	64.00	
72	100	4	11.00	0.82	3.00	2.13	0.59	0.54	59.00	
<b>20A</b>										
18	150	4	7.20	0.83	2.00	1.68	0.32	0.43	51.00	
24	150	4	7.20	0.83	2.30	1.74	0.40	0.47	56.00	
36	150	4	7.40	0.85	2.30	1.86	0.53	0.55	60.00	
48	150	4	11.00	0.82	3.10	2.33	0.64	0.54	59.00	
72	130	4	11.00	0.86	3.30	2.15	0.76	0.65	63.00	
96	105	4	11.00	0.86	3.35	2.24	0.80	0.65	63.00	
144	75	4	11.00	0.86	3.40	2.29	0.81	0.65	63.00	
<b>25A</b>										
18	295	4	11.00	0.86	3.00	1.77	0.63	0.65	63.00	
24	295	4	11.00	0.86	3.30	2.20	0.78	0.65	63.00	
36	220	4	11.00	0.86	3.30	2.20	0.78	0.65	63.00	
48	180	4	11.00	0.86	3.30	2.18	0.77	0.65	63.00	
72	180	2	15.50	0.84	5.70	2.46	1.06	0.62	80.00	
96	170	2	15.50	0.84	6.60	3.00	1.29	0.62	80.00	
144	110	2	15.50	0.84	6.20	2.77	1.19	0.62	80.00	
<b>35A</b>										
18	450	4	15.00	0.85	5.50	2.52	0.96	0.61	72.00	
24	450	4	18.00	0.85	6.10	3.07	1.19	0.62	72.00	
36	400	4	18.00	0.85	7.20	3.21	1.42	0.68	75.00	
48	350	2	22.00	0.83	7.30	2.49	1.50	0.85	82.00	
72	350	2	34.00	0.82	11.00	3.29	2.06	0.89	81.00	
96	270	2	26.20	0.82	10.80	3.27	2.04	0.89	81.00	
144	190	2	26.20	0.82	10.80	3.29	2.06	0.89	81.00	
<b>40A</b>										
18	750	4	40.00	0.80	7.50	5.30	1.60	0.47	74.00	
24	750	4	40.00	0.80	9.50	5.47	1.98	0.55	76.00	
36	625	4	40.00	0.80	10.00	5.47	2.22	0.60	78.00	
48	500	2	55.00	0.78	9.00	4.66	2.14	0.68	78.00	
72	500	2	55.00	0.78	13.00	5.88	2.94	0.72	80.00	
96	400	2	55.00	0.78	13.25	5.61	3.03	0.75	83.00	
144	300	2	55.00	0.78	13.50	5.65	3.24	0.78	85.00	
<b>70A</b>										
18	1100	4	52.00	0.78	10.70	6.44	2.34	0.60	70.00	
24	1100	4	52.00	0.78	13.00	6.88	2.91	0.65	75.00	
36	950	2				Apply				
48	750	2				Apply				
72	750	2				Apply				
96	550	2				Apply				
144	475	2				Apply				
192	400	2				Apply				
<b>90A</b>										
18	1500	4	63.00	0.78	15.00	8.59	3.19	0.55	78.00	
24	1500	4	63.00	0.78	19.00	8.79	3.96	0.65	80.00	
36	1250	4	63.00	0.78	21.00	8.92	4.44	0.70	82.00	
48	1000	2	100.00	0.98	20.00	11.78	4.29	0.60	70.00	
72	1000	2	100.00	0.98	25.00	14.74	5.87	0.63	73.00	
96	750	2	100.00	0.98	25.00	14.25	5.68	0.63	73.00	
144	640	2	100.00	0.98	30.00	14.27	6.92	0.70	80.00	
192	540	2	100.00	0.98	31.00	13.67	7.55	0.75	85.00	
<b>91A</b>										
144	1000	2				Apply				
192	1000	2				Apply				
<b>95A</b>										
24	2200	4	63.00	0.78	30.00	9.51	5.81	0.83	85.00	



**525 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	1.30	0.83	0.37	0.28	0.05	0.36	58.00	
24	25	4	1.30	0.83	0.40	0.33	0.07	0.38	58.00	
36	25	4	1.30	0.83	0.48	0.43	0.09	0.38	60.00	
48	25	4	1.50	0.83	0.60	0.50	0.11	0.38	60.00	
72	25	4	2.60	0.85	0.80	0.56	0.15	0.50	58.00	
96	25	4	2.60	0.85	0.80	0.68	0.19	0.51	60.00	
<b>12A</b>										
18	60	4	2.60	0.85	0.80	0.48	0.13	0.50	58.00	
24	60	4	2.60	0.85	0.80	0.60	0.16	0.50	58.00	
36	60	4	3.30	0.82	1.30	0.60	0.21	0.60	65.00	
48	50	4	3.30	0.82	1.30	0.60	0.21	0.48	60.00	
72	35	4	3.30	0.82	1.30	0.60	0.21	0.47	59.00	
96	30	4	3.30	0.82	1.40	0.60	0.23	0.49	61.00	
<b>18A</b>										
18	80	4	3.30	0.82	1.10	0.82	0.17	0.44	52.00	
24	80	4	3.30	0.82	1.30	0.70	0.21	0.48	69.00	
<b>19A</b>										
18	100	4	3.50	0.84	1.60	1.16	0.21	0.45	45.00	
24	100	4	4.60	0.83	1.70	1.45	0.26	0.40	50.00	
36	100	4	5.90	0.82	2.00	1.20	0.35	0.50	65.00	
48	100	4	5.90	0.82	2.40	1.51	0.43	0.46	68.00	
72	100	4	7.40	0.85	2.40	1.96	0.59	0.55	60.00	
<b>20A</b>										
18	150	4	5.90	0.82	1.80	1.30	0.32	0.45	60.00	
24	150	4	5.90	0.82	2.15	1.61	0.40	0.45	60.00	
36	150	4	7.40	0.85	2.30	1.77	0.53	0.55	60.00	
48	150	4	7.40	0.85	2.50	2.14	0.64	0.55	60.00	
72	130	4	10.80	0.85	3.30	2.05	0.76	0.65	63.00	
96	105	4	10.80	0.85	3.35	2.14	0.80	0.65	63.00	
144	75	4	10.80	0.85	3.40	2.18	0.81	0.65	63.00	
<b>25A</b>										
18	295	4	10.80	0.85	3.00	1.69	0.63	0.65	63.00	
24	295	4	11.00	0.86	3.30	2.00	0.78	0.65	63.00	
36	220	4	10.80	0.85	3.30	2.00	0.78	0.65	63.00	
48	180	4	10.80	0.85	3.30	2.00	0.77	0.65	63.00	
72	180	2	15.50	0.84	5.70	2.20	1.06	0.62	80.00	
96	170	2	15.50	0.84	6.60	2.20	1.29	0.62	80.00	
144	110	2	15.50	0.84	6.20	2.20	1.19	0.62	80.00	
<b>35A</b>										
18	450	4	15.00	0.85	5.50	2.40	0.96	0.61	72.00	
24	450	4	15.00	0.85	6.10	2.40	1.19	0.62	72.00	
36	400	4	18.00	0.85	7.20	2.40	1.42	0.68	75.00	
48	350	2	22.00	0.83	7.30	2.37	1.50	0.85	82.00	
72	350	2	26.20	0.82	10.80	2.70	2.06	0.89	81.00	
96	270	2	26.20	0.82	10.80	2.70	2.04	0.89	81.00	
144	190	2	26.20	0.82	10.80	2.70	2.06	0.89	81.00	
<b>40A</b>										
18	750	4	41.00	0.80	7.50	5.05	1.60	0.47	74.00	
24	750	4	41.00	0.80	9.50	5.21	1.98	0.55	76.00	
36	625	4	41.00	0.80	10.00	5.21	2.22	0.60	78.00	
48	500	2				Apply				
72	500	2				Apply				
96	400	2				Apply				
144	300	2				Apply				
<b>70A</b>										
18	1100	4	52.00	0.78	10.70	6.13	2.34	0.60	70.00	
24	1100	4	52.00	0.78	13.00	6.55	2.91	0.65	75.00	
36	950	2	70.50	0.77	14.00	6.18	3.37	0.75	80.00	
48	750	2	70.50	0.77	14.00	5.89	3.21	0.75	80.00	
72	750	2	70.50	0.77	19.50	7.48	4.41	0.78	83.00	
96	550	2	70.50	0.77	18.50	7.07	4.16	0.78	83.00	
144	475	2	70.50	0.77	22.00	8.20	5.14	0.82	84.00	
192	400	2	70.50	0.77	25.00	8.92	5.59	0.82	84.00	
<b>90A</b>										
18	1500	4	66.00	0.79	15.00	8.18	3.19	0.55	78.00	
24	1500	4	66.00	0.79	19.00	8.37	3.96	0.65	80.00	
36	1250	4	66.00	0.79	21.00	8.49	4.44	0.70	82.00	
48	1000	2	100.00	0.98	20.00	11.22	4.29	0.60	70.00	
72	1000	2	100.00	0.98	25.00	14.04	5.87	0.63	73.00	
96	750	2	100.00	0.98	25.00	13.57	5.68	0.63	73.00	
144	640	2	100.00	0.98	30.00	13.59	6.92	0.70	80.00	
192	540	2	100.00	0.98	31.00	13.02	7.55	0.75	85.00	
<b>91A</b>										
144	1000	2				Apply				
192	1000	2				Apply				
<b>95A</b>										
24	2200	4	66.00	0.79	28.00	9.39	5.81	0.80	85.00	

**550 50Hz 3ph**

ACTUATOR rpm	TORQUE lbs.ft.	MOTOR Poles	LOCKED ROTOR		RATED Amps	AVERAGE (NOMINAL) LOAD				
			Amps	P.Factor		Amps	Kw	P.Factor	Effy.%	
<b>10A</b>										
18	25	4	1.20	0.83	0.37	0.27	0.05	0.36	58.00	
24	25	4	1.30	0.83	0.40	0.31	0.07	0.38	58.00	
36	25	4	1.30	0.83	0.48	0.41	0.09	0.38	60.00	
48	25	4	1.50	0.83	0.60	0.49	0.11	0.38	60.00	
72	25	4	2.40	0.85	0.90	0.53	0.15	0.50	58.00	
96	25	4	2.60	0.85	0.80	0.65	0.19	0.51	60.00	
<b>12A</b>										
18	60	4	2.60	0.85	0.80	0.46	0.13	0.50	58.00	
24	60	4	2.60	0.85	0.80	0.57	0.16	0.50	58.00	
36	60	4	2.60	0.85	0.85	0.77	0.21	0.50	58.00	
48	50	4	2.60	0.85	0.85	0.78	0.21	0.50	58.00	
72	35	4	2.60	0.85	0.82	0.74	0.21	0.50	58.00	
96	30	4	3.30	0.82	1.40	0.80	0.23	0.49	61.00	
<b>18A</b>										
18	80	4	3.30	0.82	1.10	0.78	0.17	0.44	52.00	
24	80	4	3.30	0.82	1.30	0.67	0.21	0.48	69.00	
<b>19A</b>										
18	100	4	3.70	0.84	1.50	1.10	0.21	0.45	45.00	
24	100	4	4.80	0.83	1.60	1.39	0.26	0.40	50.00	
36	100	4	5.90	0.82	1.90	1.15	0.35	0.50	65.00	
48	100	4	5.90	0.82	2.30	1.44	0.43	0.46	68.00	
72	100	4	7.40	0.85	2.30	1.87	0.59	0.55	60.00	
<b>20A</b>										
18	150	4	5.90	0.82	1.80	1.24	0.32	0.45	60.00	
24	150	4	5.90	0.82	2.15	1.54	0.40	0.45	60.00	
36	150	4	6.90	0.83	2.30	1.69	0.53	0.55	60.00	
48	150	4	7.40	0.85	2.50	2.05	0.64	0.55	60.00	
72	130	4	10.80	0.85	3.30	1.96	0.76	0.65	63.00	
96	105	4	10.80	0.85	3.35	2.04	0.80	0.65	63.00	
144	75	4	10.80	0.85	3.40	2.08	0.81	0.65	63.00	
<b>25A</b>										
18	295	4	10.80	0.85	3.00	1.61	0.63	0.65	63.00	
24	295	4	10.80	0.85	3.30	2.00	0.78	0.65	63.00	
36	220	4	10.80	0.85	3.30	2.00	0.78	0.65	63.00	
48	180	4	10.80	0.85	3.30	1.98	0.77	0.65	63.00	
72	180	2	16.50	0.82	4.50	1.85	1.06	0.80	75.00	
96	170	2	16.50	0.82	5.20	2.25	1.29	0.80	75.00	
144	110	2	16.50	0.82	5.00	2.08	1.19	0.80	75.00	
<b>35A</b>										
18	450	4	15.00	0.85	5.50	2.29	0.96	0.61	72.00	
24	450	4	15.00	0.85	6.10	2.80	1.19	0.62	72.00	
36	400	4	18.00	0.85	7.20	2.92	1.42	0.68	75.00	
48	350	2	25.00	0.83	6.50	2.13	1.50	0.88	84.00	
72	350	2	25.00	0.83	8.50	2.92	2.06	0.88	84.00	
96	270	2	25.00	0.83	8.50	2.90	2.04	0.88	84.00	
144	190	2	25.00	0.83	8.50	2.92	2.06	0.88	84.00	
<b>40A</b>										
18	750	4				Apply				
24	750	4				Apply				
36	625	4				Apply				
48	500	2				Apply				
72	500	2				Apply				
96	400	2				Apply				
144	300	2				Apply				
<b>70A</b>										
18	1100	4				Apply				
24	1100	4				Apply				
36	950	2	76.00	0.78	14.00	5.89	3.37	0.75	80.00	
48	750	2	76.00	0.78	14.00	5.62	3.21	0.75	80.00	
72	750	2	76.00	0.78	19.50	7.14	4.41	0.78	83.00	
96	550	2	76.00	0.78	18.50	6.75	4.16	0.78	83.00	
144	475	2	76.00	0.78	22.00	7.83	5.14	0.82	84.00	
192	400	2	76.00	0.78	25.00	8.52	5.59	0.82	84.00	
<b>90A</b>										
18	1500	4				Apply				
24	1500	4				Apply				
36	1250	4				Apply				
48	1000	2	100.00	0.98	20.00	10.71	4.29	0.60	70.00	
72	1000	2	100.00	0.98	25.00	13.40	5.87	0.63	73.00	
96	750	2	100.00	0.98	25.00	12.96	5.68	0.63	73.00	
144	640	2	100.00	0.98	30.00	12.97	6.92	0.70	80.00	
192	540	2	100.00	0.98	31.00	12.42	7.55	0.75	85.00	
<b>91A</b>										
144	1000	2				Apply				
192	1000	2				Apply				
<b>95A</b>										
24	2200	4				Apply				