

# Z800 Electrical Specifications

Electrical specifications for the Z800 Series drive's input and output power are provided in this section.

## Input Power

- Voltage (Nominal) 120VAC (1 or 3-phase) **or** 120VAC (1 or 3-phase )
- Voltage (Range) 92-130VAC (1 or 3-phase) **or** 205-252VAC (1 or 3-phase)
- Frequency (Range) 47-66 Hz
- Current (Max. cont.) 15A (rms) 3-phase **or** 26A (rms) 1-phase
- Power (Max. cont.) 6.2 KVA
- Fuses 20A slow blow—Not user accessible
- Isolation transformer Not required

The actual input power and current is a function of the operating point of the motor (speed and torque) and the duty cycle. You can de-rate the fuse and the isolation transformer by scaling the above numbers by your actual requirements. The data above reflects the servo motor and drive operating at rated speed and at rated torque at 100% duty.

## Output Power

- Voltage 405VDC (maximum)
- Frequency 0 - 400Hz fundamental (7 kHz PWM)
- Current 20A continuous per phase sinusoidal (14.1Arms)  
40A peak per phase sinusoidal (28.3Arms)
- Regen/power dump Optional accessory

# Z800 Motor/Drive Configuration

The Z800's hardware is pre-configured to control Z800 series motors. The Z800 drives only Z800 series motors, the Z600 drives only Z600 motors, and the Z900 drives only Z900 series motors. *Be sure that your drive type matches your motor type (Z600, Z800, or Z900).* If you have questions about the Z Series motor/drive configuration, contact your local Automation Technology Center (ATC) or distributor.

## Z800 Technical Data

	Units	Z-805	Z-806	Z-810	Z-820	Z-830	Z-840
Continuous Stall Torque (*±10%)	oz-in	346	680	991	1997	3101	4093
	lb-in	22	42	62	125	194	256
	lb-ft	1.8	3.5	5.2	10.4	16.2	21.3
	Nm		4.8	7.0	14.1	21.9	28.9
Peak Torque (*±10%)	oz-in	1005	1997	1983	3993	6203	8185
	lb-in	63	125	124	250	388	512
	lb-ft	5.2	10.4	10.3	20.8	32.3	42.6
	Nm	7.1	14.1	14.1	28.2	43.8	57.8
Rated Torque (*±10%)	oz-in	340	680	769	1651	2553	3554
	lb-in	21	42	48	103	160	222
	lb-ft	1.8	3.5	4.0	8.6	13.3	18.5
	Nm	2.4	4.8	5.4	11.7	18.0	25.1
Rated Power	hp	1.8	1.8	4.6	4.4	4.6	4.6
	kWatts	1.3	1.3	3.4	3.3	3.4	3.4
Rated Speed	rpm	5200	2600	6000	2700	1800	1300
	rps	87	43	100	45	30	22
Rated Current (line)	A (rms)	4.4	4.4	14.1	14.1	14.1	14.1
Peak Current (3.3 seconds max)	A (rms)	13.2	13.2	28.2	28.2	28.2	28.2
Max. Cont. AC input Current (3 phase 240VAC)	A (rms)	7	7	15	15	15	15
Rotor Inertia	oz-in <sup>2</sup> (mass)	12.03	19.14	26.24	114.82	166.76	210.50
	oz-in-sec <sup>2</sup>	0.03	0.05	0.07	0.30	0.43	0.55
	kg-m <sup>2</sup> x 1E-6	220	350	480	2100	3050	3850
Motor Weight	lbs	11	15	20	37	48	59
	kg(f)	5	7	9	17	22	27
Shipping Weight	lbs	52	56	61	78	89	100
	kg(f)	24	26	28	36	41	45

Z800 Indexer/Drive Performance Specifications

## Positional Repeatability

**Repeatability:**  $\pm 0.088$  degrees, unloaded

## Positional Accuracy

**Resolver Accuracy:**  $\pm 15$  arc minutes

**Resolver-to-Digital Converter Accuracy:**  $\pm 8$  arc minutes (For finer accuracies, contact Compumotor—800-722-2282.)

## Motor/Drive Compatibility

Different motors can take different amounts of current and require different tuning parameters for typical loads. The **CMTR** (Configure Motor Type) command sets up a drive for a particular motor. By issuing **CMTR**, motor current levels and default parameters are recalled from memory. Do not exceed the current level specified for the motor, excessive current levels will damage the motor.

The following information is provided in case you must modify the motor/drive configuration. This command sequence will set up a drive for a particular motor size and perform the commutation (refer to the *Chapter 6 Software Reference* for more on these commands).

### WARNING

This commutation procedure causes violent motor motion. All loads should be removed from the motor shaft before you begin this procedure.

Command	Description
> 1OFF	Turns drive off
> 1CMTRxxx	Sets drive for the motor; xxx = 805, 806, 810, 820, 830, or 840
> 1ON	Enables the drive

## Motor Brakes

These brakes are mounted directly behind the motor and come completely assembled from the factory. When ordering the brake option, please specify the motor type.

Brake Characteristics	Z805/806/810	Z820/830/840	Units
Supply voltage	24	24	VDC
Supply current	1	1	A
Static braking torque	1345	4956	oz-in
Dynamic braking torque	1133	3965	oz-in
Inertia	0.007	0.063	oz-in/sec <sup>2</sup>
Build-up time	90	140	ms
Release time	60	80	ms
Mass	3.9	11	lbs

Z800 Motor Brake Characteristics

## Motor Data

The following pages provide data on each of the motor frame sizes of Z800 series systems (Z805, Z806, Z810, Z820, Z830, Z840). The data reflecting motor torque does not assume operation from a Z800 drive. The torque specifications reflect what the motor is capable of. In most cases the motor windings are match to the drive's output power with an additional safety margin.

	Motor Size	<b>Z805</b>	Value	Units	Tolerance	
1	Constant (s):	Torque	82.0	oz-in/A rms	± 10%	
2		Voltage (Sinusoidal)	35.2	V rms/Krpm	± 10%	
3		Electrical Time	2.8	milliseconds	nominal	
4		Mechanical Time	2.3	milliseconds	nominal	
5		Thermal	41	minutes	nominal	
6	Torque (s):	Continuous, Stall	357	oz-in	min. [1]	
7		Continuous, Stall	340	oz-in	min. [2]	
8		Continuous, Rated	340	oz-in	min. [1]	
9		Peak, Max w/o Saturation	1020	oz-in	min. [1]	
10		Static Friction	—	oz-in	max	
11	Ripple (of Rated Torque)	6	percent	max		
12	Speed:	Rated	5300	rpm	reference	
13		Maximum	5300	rpm	reference	
14	Frequency:	Rated	353	Hz	max.	
15	Current:	Rated	4.4	A rms	max. [1]	
16		Peak	13.2	A rms	nominal	
17	Voltage:	Rated	220	V rms	reference	
18		Max	240	V rms	maximum	
19	Output Power:	Rated	1.4 (1.9)	kWatts (hp)	min. [1]	
20	Inductance:	Terminal (line-line)	5.6	mH	± 10%	
21	DC Resistance	Terminal (line-line)	2.0	Ohms	± 10 % [1]	
22	Acceleration at Rated Torque		10900	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		220	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		--	oz-in / krpm	nominal	
25	Weight		11.0	lbs.	max.	
26	Winding Temperature		150	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		125	°C (Celsius)	reference	
28	Insulation Class		F	—	reference	
29	Thermostat TRIP Temperature		145	°C (Celsius)	±5°C	
30	Thermostat RESET Temperature		130	°C (Celsius)	±10°C	
31	Dielectric Strength, (Winding-to-Frame)		1000	VAC	min.	
32	Winding Capacitance to Frame		--	µF	max.	
33	IP Classification		54	rated	standard	
34	Shaft: Radial-Play (front to back)		0.001	in/lb	reference	
35		Material [3]	UNI 5332	—	reference	
36		Magnet Type	SmCo	—	—	
37		Loading [4]	1000 rpm	123	lbs.	max.
			2000 rpm	101	lbs.	max.
		3000 rpm	81	lbs.	max.	
		4000 rpm	74	lbs.	max.	
		5000 rpm	67	lbs.	max.	
38	Bearing Class, Internal/External		3/1	ABEC/AFBMA	reference	
39	Bearing Grease		—	Manufacturer	reference	
40	Shaft Seal Pressure		—	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design		3 phase wye connected 4 (P/2)			
42	Stator Phase Sequence		A-B-C (CW viewed from front face plate)			
43	Vendor/Supplier		Polymotor FAS 1 020 053 00 00 01			
44	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.			
45	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3			
46	Standard Resolver Cable Part Number		71-011449-xx			
47	Standard Motor Cable Part Number		71-007200-xx			
48	Options:	Brake—24VDC (1A)—1345 oz-in Holding Torque IP65 Classification Incremental Encoder Tachometer No Keyway				
[1]	25°C ambient		[4] Loads centered 1 inch from mounting flange Life expectancy = 20000 hours			
[2]	40°C ambient					
[3]	Material 38 Ni Cr Mo 4					

Z805 Motor Specifications

	Motor Size	<b>Z806</b>	Value	Units	Tolerance	
1	Constant (s):	Torque	164.0	oz-in/A rms	± 10%	
2		Voltage (Sinusoidal)	70.4	V rms/Krpm	± 10%	
3		Electrical Time	3.8	milliseconds	nominal	
4		Mechanical Time	1.3	milliseconds	nominal	
5		Thermal	40	minutes	nominal	
6	Torque (s):	Continuous, Stall	714	oz-in	min. [1]	
7		Continuous, Stall	680	oz-in	min. [2]	
8		Continuous, Rated	680	oz-in	min. [1]	
9		Peak, Max w/o Saturation	2040	oz-in	min. [1]	
10		Static Friction	—	oz-in	max.	
11		Ripple (of Rated Torque)	5	percent	max.	
12	Speed:	Rated	2600	rpm	reference	
		Maximum	2600	rpm	reference	
14	Frequency	Rated	173	Hz	max.	
15	Current:	Rated	4.4	A rms	max. [1]	
16		Peak	13.2	A rms	nominal	
17	Voltage:	Rated	220	V rms	reference	
18		Max.	240	V rms	maximum	
19	Output Power:	Rated	1.3 (1.7)	kWatts (hp)	min. [1]	
20	Inductance:	Terminal (line-line)	11.3	mH	± 10%	
21	D.C. Resistance	Terminal (line-line)	3.0	Ohms	± 10 % [1]	
22	Acceleration at Rated Torque		13700	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		350	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		—	oz-in / krpm	nominal	
25	Weight		15.5	lbs.	max.	
26	Winding Temperature		150	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		125	°C (Celsius)	reference	
28	Insulation Class		F	—	reference	
29	Thermostat TRIP Temperature		145	°C (Celsius)	± 5 °C	
30	Thermostat RESET Temperature		130	°C (Celsius)	± 10 °C	
31	Dielectric Strength, (Winding-to-Frame)		1000	VAC	min.	
32	Winding Capacitance to Frame		—	µF	max.	
33	IP Classification		54	rated	standard	
34	Shaft: Radial-Play (front to back)		0.001	in/lb	reference	
35		Material [3]	UNI 5332	—	reference	
36		Magnet Type	SmCo	—	—	
37		Loading [4]	1000 rpm	135	lbs.	max.
			2000 rpm	105	lbs.	max.
		3000 rpm	90	lbs.	max.	
		4000 rpm	—	lbs.	max.	
		5000 rpm	—	lbs.	max.	
38	Bearing Class, Internal/External		3/1	ABEC/AFBMA	reference	
39	Bearing Grease		--	Manufacturer	reference	
40	Shaft Seal Pressure		--	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design 3 phase wye connected 4 (P/2)					
42	Stator Phase Sequence A-B-C (CW viewed from front face plate)					
43	Vendor/Supplier Polymotor FAS 1 040 026 00 00 01					
44	Resolver Type/Accuracy Single-Speed; Rotor-Excited; ± 15 arc min.					
45	Resolver Manufacturer/Model # Clifton Precision JSMBH-21-K-3					
46	Standard Resolver Cable Part Number 71-011449-xx					
47	Standard Motor Cable Part Number 71-007200-xx					
48	Options:	Brake—24VDC (1A)—1345 oz-in Holding Torque IP65 Classification Incremental Encoder Tachometer No Keyway				
[1]	25 °C ambient		[4] Loads centered 1 inch from mounting flange Life expectancy = 20000 hours			
[2]	40 °C ambient					
[3]	Material 38 Ni Cr Mo 4					

Z806 Motor Specifications

	Motor Size	<b>Z810</b>	Value	Units	Tolerance	
1	Constant (s):	Torque	74.0	oz-in/A rms	± 10%	
2		Voltage (Sinusoidal)	31.7	V rms/Krpm	± 10%	
3		Electrical Time	8.5	milliseconds	nominal	
4		Mechanical Time	1.8	milliseconds	nominal	
5		Thermal	36	minutes	nominal	
6	Torque (s):	Continuous, Stall	1086	oz-in	min. [1]	
7		Continuous, Stall	1034	oz-in	min. [2]	
8		Continuous, Rated	770	oz-in	min. [1]	
9		Peak, Max w/o Saturation	3100	oz-in	min. [1]	
10		Static Friction	—	oz-in	max.	
11	Ripple (of Rated Torque)	15	percent	max.		
12	Speed:	Rated	6000	rpm	reference	
13		Maximum	6000	rpm	reference	
14	Frequency	Rated	400	Hz	max.	
15	Current:	Rated	14.0	A rms	max. [1]	
16		Peak	42.0	A rms	nominal	
17	Voltage:	Rated	220	V rms	reference	
18		Max	240	V rms	maximum	
19	Output Power:	Rated	3.4 (4.5)	kWatts (hp)	min. [1]	
20	Inductance:	Terminal (line-line)	1.4	mH	± 10%	
21	D.C. Resistance	Terminal (line-line)	0.6	Ohms	± 10 % [1]	
22	Acceleration at Rated Torque		15200	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		480	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		—	oz-in/krpm	nominal	
25	Weight		19.5	lbs.	max.	
26	Winding Temperature		150	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		125	°C (Celsius)	reference	
28	Insulation Class		F	—	reference	
29	Thermostat TRIP Temperature		145	°C (Celsius)	± 5 °C	
30	Thermostat RESET Temperature		130	°C (Celsius)	± 10 °C	
31	Dielectric Strength, (Winding-to-Frame)		1000	VAC	min.	
32	Winding Capacitance to Frame		—	µF	max.	
33	IP Classification		54	rated	standard	
34	Shaft: Radial-Play (front to back)		0.001	in/lb	reference	
35		Material [3]	UNI 5332	—	reference	
36		Magnet Type	SmCo	—	—	
37		Loading [4]	1000 rpm	146	lbs.	max.
			2000 rpm	112	lbs.	max.
		3000 rpm	92	lbs.	max.	
		4000 rpm	85	lbs.	max.	
		5000 rpm	81	percent	max.	
38	Bearing Class, Internal/External		3/1	ABEC/AFBMA	reference	
39	Bearing Grease		—	Manufacturer	reference	
40	Shaft Seal Pressure		—	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design		3 phase wye connected 4 (P/2)			
42	Stator Phase Sequence		A-B-C (CW viewed from front face plate)			
43	Vendor/Supplier		Polymotor FAS 1 060 060 00 00 01			
44	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.			
45	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3			
46	Standard Resolver Cable Part Number		71-011449-xx			
47	Standard Motor Cable Part Number		71-007130-xx			
48	Options:	Brake—24VDC (1A)—1345 oz-in Holding Torque IP65 Classification Incremental Encoder Tachometer No Keyway				
[1] 25°C ambient			[4] Loads centered 1 inch from mounting flange Life expectancy = 20000 hours			
[2] 40°C ambient						
[3] Material 38 Ni Cr Mo 4						

Z810 Motor Specifications

	Motor Size	<b>Z820</b>	Value	Units	Tolerance	
1	Constant (s):	Torque	156.0	oz-in/A rms	± 10%	
2		Voltage (Sinusoidal)	66.5	V rms/Krpm	± 10%	
3		Electrical Time	8.5	milliseconds	nominal	
4		Mechanical Time	1.8	milliseconds	nominal	
5		Thermal	63	minutes	nominal	
6	Torque (s):	Continuous, Stall	2171	oz-in	min. [1]	
7		Continuous, Stall	2068	oz-in	min. [2]	
8		Continuous, Rated	1652	oz-in	min. [1]	
9		Peak, Max w/o Saturation	6200	oz-in	min. [1]	
10		Static Friction	—	oz-in	max.	
11	Ripple (of Rated Torque)	3	percent	max.		
12	Speed:	Rated	2700	rpm	reference	
13		Maximum	2700	rpm	reference	
14	Frequency	Rated	180	Hz	max.	
15	Current:	Rated	14.0	A rms	max. [1]	
16		Peak	42.0	A rms	nominal	
17	Voltage:	Rated	220	V rms	reference	
18		Max	240	V rms	maximum	
19	Output Power:	Rated	3.3 (4.4)	kWatts (hp)	min. [1]	
20	Inductance:	Terminal (line-line)	5.1	mH	± 10%	
21	D.C. Resistance	Terminal (line-line)	0.6	Ohms	± 10 % [1]	
22	Acceleration at Rated Torque		7000	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		2100	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		—	oz-in / krpm	nominal	
25	Weight		37.8	lbs.	max.	
26	Winding Temperature		150	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		125	°C (Celsius)	reference	
28	Insulation Class		F	—	reference	
29	Thermostat TRIP Temperature		145	°C (Celsius)	± 5 °C	
30	Thermostat RESET Temperature		130	°C (Celsius)	± 10 °C	
31	Dielectric Strength, (Winding-to-Frame)		1000	VAC	min.	
32	Winding Capacitance to Frame		—	µF	max.	
33	IP Classification		54	rated	standard	
34	Shaft: Radial-Play (front to back)		0.001	in/lb	reference	
35		Material [3]	UNI 5332	—	reference	
36		Magnet Type	SmCo	—	—	
37		Loading [4]	1000 rpm	360	lbs.	max.
			2000 rpm	281	lbs.	max.
3000 rpm	236		lbs.	max.		
4000 rpm	—		lbs.	max.		
5000 rpm	—		lbs.	max.		
38	Bearing Class, Internal/External		3/1	ABEC/AFBMA	reference	
39	Bearing Grease		—	Manufacturer	reference	
40	Shaft Seal Pressure		—	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design		3 phase wye connected 4 (P/2)			
42	Stator Phase Sequence		A-B-C (CW viewed from front face plate)			
43	Vendor/Supplier		Polymotor FAS 2 120 120 00 00 01			
44	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.			
45	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3			
46	Standard Resolver Cable Part Number		71-011449-xx			
47	Standard Motor Cable Part Number		71-007130-xx			
48	Options:	Brake—24VDC (1.7A)—4956 oz-in Holding Torque IP65 Classification Incremental Encoder Tachometer No Keyway				
[1]	25°C ambient		[4] Loads centered 1 inch from mounting flange			
[2]	40°C ambient		Life expectancy = 20000 hours			
[3]	Material 38 Ni Cr Mo 4					

Z820 Motor Specifications

	Motor Size	<b>Z830</b>	Value	Units	Tolerance	
1	Constant (s):	Torque	234.0	oz-in/A rms	± 10%	
2		Voltage (Sinusodial)	99.8	V rms/Krpm	± 10%	
3		Electrical Time	9.6	milliseconds	nominal	
4		Mechanical Time	1.6	milliseconds	nominal	
5		Thermal	67	minutes	nominal	
6	Torque (s):	Continuous, Stall	3271	oz-in	min. [1]	
7		Continuous, Stall	3115	oz-in	min. [2]	
8		Continuous, Rated	2554	oz-in	min. [1]	
9		Peak, Max w/o Saturation	9345	oz-in	min. [1]	
10		Static Friction	—	oz-in	max.	
11		Ripple (of Rated Torque)	6	percent	max.	
12	Speed:	Rated	1800	rpm	reference	
13		Maximum	1800	rpm	reference	
14	Frequency	Rated	120	Hz	max.	
15	Current:	Rated	14.0	A rms	max. [1]	
16		Peak	42.0	A rms	nominal	
17	Voltage:	Rated	220	V rms	reference	
18		Max	240	V rms	maximum	
19	Output Power:	Rated	3.4 (4.6)	kWatts (hp)	min. [1]	
20	Inductance:	Terminal (line-line)	7.7	mH	± 10%	
21	D.C. Resistance	Terminal (line-line)	0.8	Ohms	± 10 % [1]	
22	Acceleration at Rated Torque		7200	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		3050	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		—	oz-in / krpm	nominal	
25	Weight		48.0	lbs.	max.	
26	Winding Temperature		150	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		125	°C (Celsius)	reference	
28	Insulation Class		F	—	reference	
29	Thermostat TRIP Temperature		145	°C (Celsius)	± 5 °C	
30	Thermostat RESET Temperature		130	°C (Celsius)	± 10 °C	
31	Dielectric Strength, (Winding-to-Frame)		1000	VAC	min.	
32	Winding Capacitance to Frame		—	µF	max.	
33	IP Classification		54	rated	standard	
34	Shaft: Radial-Play (front to back)		0.001	in/lb	reference	
35		Material [3]	UNI 5332	—	reference	
36		Magnet Type	SmCo	—	max	
37		Loading [4]	1000 rpm	370	lbs.	max
			2000 rpm	281	lbs.	max
		3000 rpm	—	lbs.	max	
		4000 rpm	—	lbs.	max	
		5000 rpm	—	lbs.	max	
38	Bearing Class, Internal/External		3/1	ABEC/AFBMA	reference	
39	Bearing Grease		—	Manufacturer	reference	
40	Shaft Seal Pressure		—	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design					
42	Stator Phase Sequence					
43	Vendor/Supplier					
44	Resolver Type/Accuracy					
45	Resolver Manufacturer/Model #					
46	Standard Resolver Cable Part Number					
47	Standard Motor Cable Part Number					
48	Options:	Brake—24VDC (1.7A)—4956 oz-in Holding Torque IP65 Classification Incremental Encoder Tachometer No Keyway				
[1] 25°C ambient			[4] Loads centered 1 inch from mounting flange			
[2] 40°C ambient			Life expectancy = 20000 hours			
[3] Material 38 Ni Cr Mo 4						

Z830 Motor Specifications

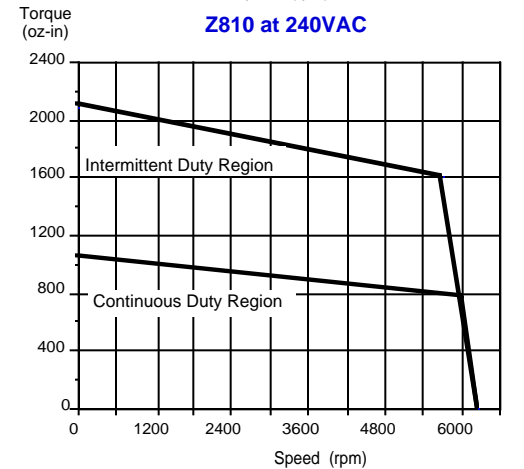
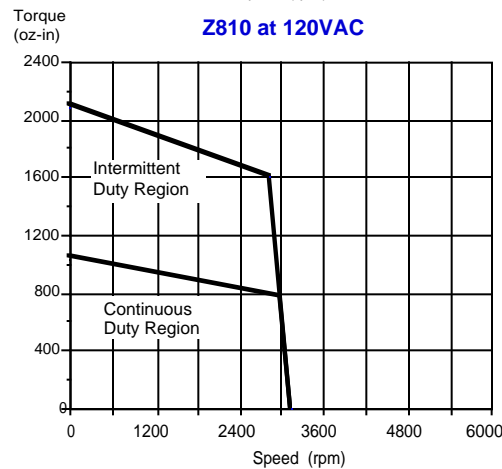
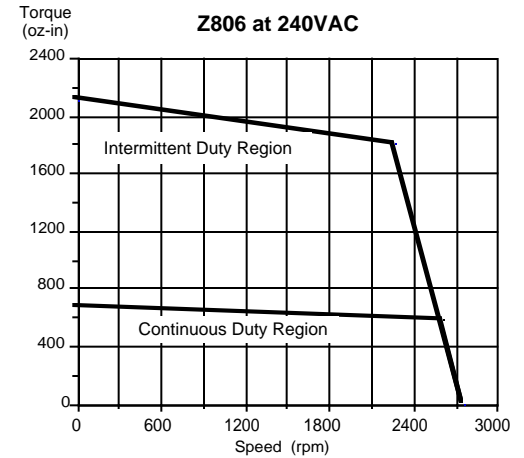
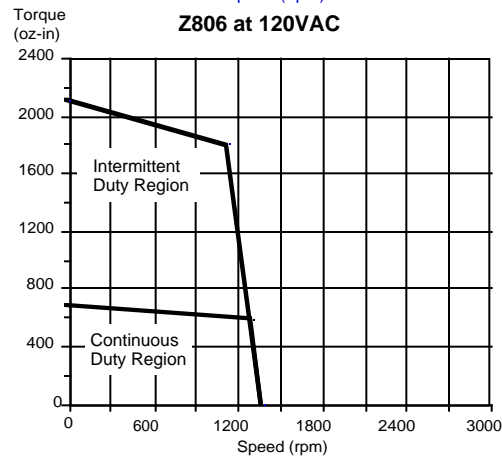
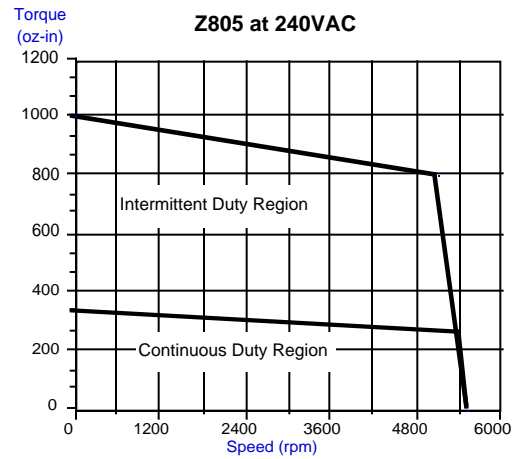
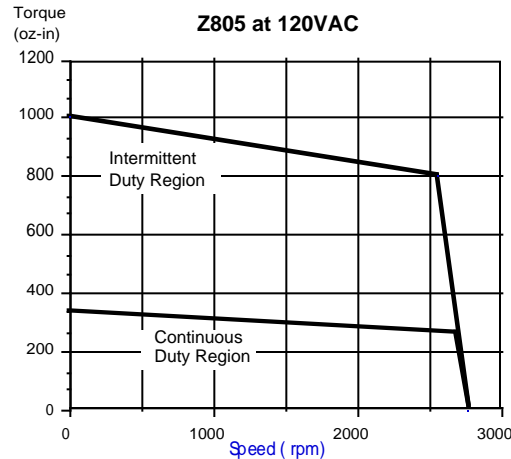
	Motor Size	<b>Z840</b>	Value	Units	Tolerance	
1	Constant (s):	Torque	312.0	oz-in/A rms	± 10%	
2		Voltage (Sinusoidal)	133.0	V rms/Krpm	± 10%	
3		Electrical Time	10.2	milliseconds	nominal	
4		Mechanical Time	1.4	milliseconds	nominal	
5		Thermal	68	minutes	nominal	
6	Torque (s):	Continuous, Stall	4311	oz-in	min. [1]	
7		Continuous, Stall	4106	oz-in	min. [2]	
8		Continuous, Rated	3554	oz-in	min. [1]	
9		Peak, Max w/o Saturation	12318	oz-in	min. [1]	
10		Static Friction	—	oz-in	max.	
11	Ripple (of Rated Torque)	8	percent	max.		
12	Speed:	Rated	1300	rpm	reference	
13		Maximum	1300	rpm	reference	
14	Frequency	Rated	86.7	Hz	max.	
15	Current:	Rated	14.0	A rms	max. [1]	
16		Peak	42.0	A rms	nominal	
17	Voltage:	Rated	220	V rms	reference	
18		Maximum	240	V rms	maximum	
19	Output Power:	Rated	3.5 (4.7)	kWatts (hp)	min. [1]	
20	Inductance:	Terminal (line-line)	10.2	mH	± 10%	
21	D.C. Resistance	Terminal (line-line)	1.0	Ohms	± 10 % [1]	
22	Acceleration at Rated Torque		7500	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		3850	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		--	oz-in / krpm	nominal	
25	Weight		59.0	lbs.	max.	
26	Winding Temperature		150	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		125	°C (Celsius)	reference	
28	Insulation Class		F	—	reference	
29	Thermostat TRIP Temperature		145	°C (Celsius)	± 5 °C	
30	Thermostat RESET Temperature		130	°C (Celsius)	± 10 °C	
31	Dielectric Strength, (Winding-to-Frame)		1000	VAC	min.	
32	Winding Capacitance to Frame		—	µF	max.	
33	IP Classification		54	rated	standard	
34	Shaft: Radial-Play (front to back)		0.001	in/lb	reference	
35		Material [3]	UNI 5332	lbs.	maximum	
36		Magnet Type	SmCo	lbs.	maximum	
37		Loading [4]	1000 rpm	393	lbs.	maximum
			2000 rpm	—	lbs.	maximum
	3000 rpm		—	lbs.	maximum	
	4000 rpm	—	lbs.	maximum		
	5000 rpm	—	lbs.	maximum		
38	Bearing Class, Internal/External		3/1	ABEC/AFBMA	reference	
39	Bearing Grease		—	Manufacturer	reference	
40	Shaft Seal Pressure		—	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design		3 phase wye connected 4 (P/2)			
42	Stator Phase Sequence		A-B-C (CW viewed from front face plate)			
43	Vendor/Supplier		Polymotor FAS 2 240 013 00 00 01			
44	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.			
45	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3			
46	Standard Resolver Cable Part Number		71-011449-xx			
47	Standard Motor Cable Part Number		71-007130-xx			
48	Options:	Brake—24VDC (1.7A)—4956 oz-in Holding Torque IP65 Classification Incremental Encoder Tachometer No Keyway				
①	25°C ambient		④ Loads centered 1 inch from mounting flange Life Expectancy = 20000 hours			
②	40°C ambient					
③	Material 38 Ni Cr Mo 4					

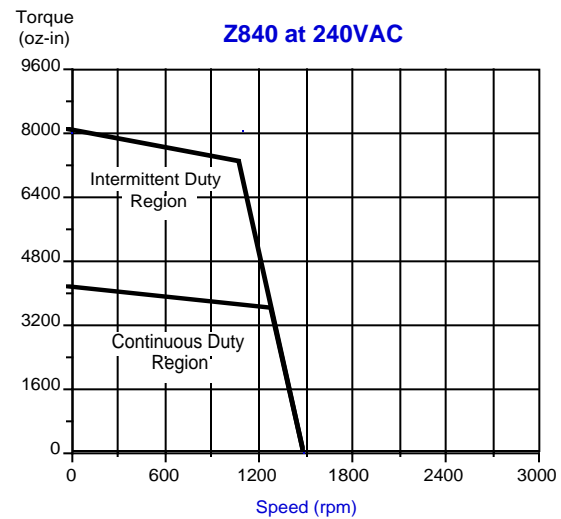
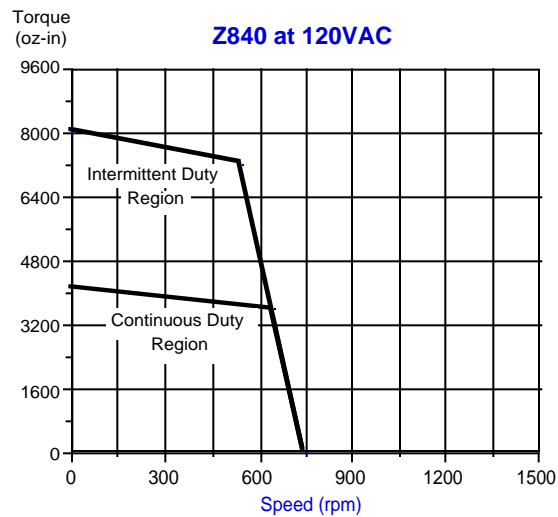
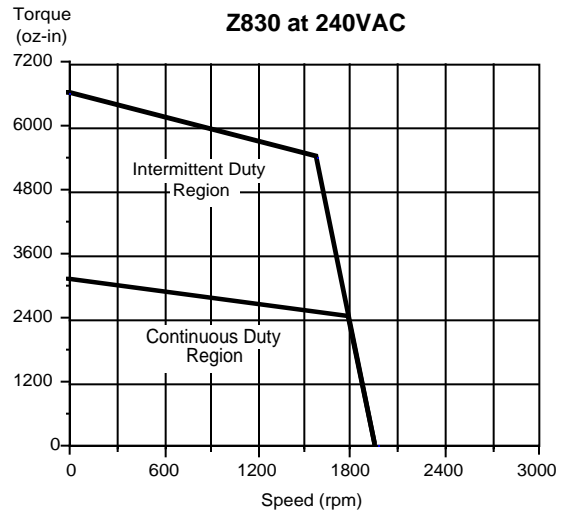
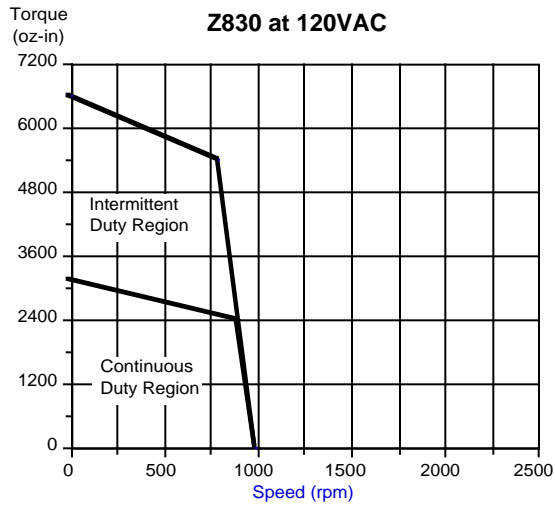
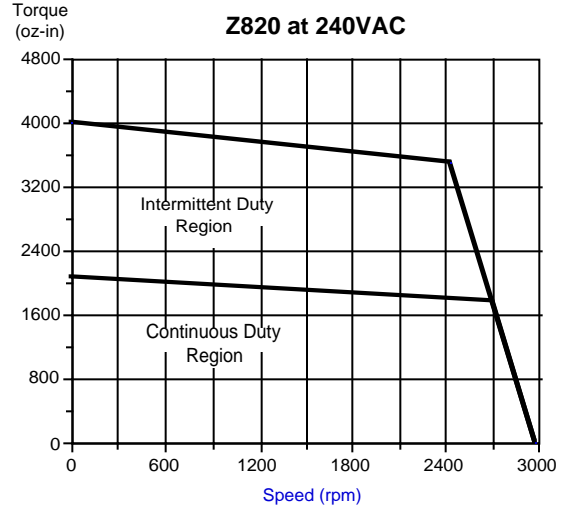
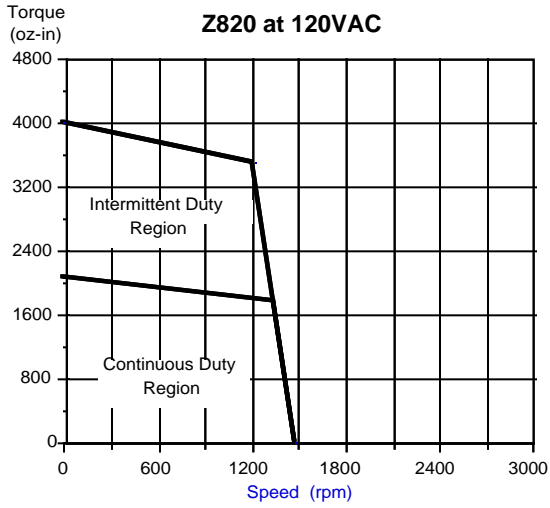
Z840 Motor Specifications

## Speed/Torque Curves

The following speed/torque curves represent the available shaft torque at different operating speeds. Operation at 120VAC and 240VAC is shown for each motor size. Actual motor torque may vary  $\pm 10\%$  due to motor manufacturing variances. For operation from a 1-phase 120VAC, the output torque stays relatively constant and the top-end speed falls off at the ratio of the input voltage (i.e., A Z810 operating at 240VAC has a rated speed of 6000 rpm; at 120VAC, it has a rated speed of 3000 rpm).

**Helpful Hint:**  
**Continuous Duty** is steady state operation for drive ambient temperatures of 0°C - 50°C. **Intermittent Duty** is operation for 3.3 seconds or less.





## Z900 Electrical Specifications

Electrical specifications for the Z900 series drive's input and output power are provided in this section.

### Input Power

<input type="checkbox"/> Voltage (Nominal)	240VAC (1-phase or 3-phase)
<input type="checkbox"/> Voltage (Range)	205-252VAC (1-phase or 3-phase)
<input type="checkbox"/> Frequency (Range)	47-66 Hz
<input type="checkbox"/> Current (Max. cont.)	30A (rms) 3-phase <b>or</b> 52A (rms) 1-phase
<input type="checkbox"/> Power (Max. cont.)	12.4 KVA
<input type="checkbox"/> Fuses	40A slow blow—User accessible
<input type="checkbox"/> Isolation transformer	Not required

The actual input power and current is a function of the motor's operating point (speed and torque) and the duty cycle. You can de-rate the fuses and isolation transformer by scaling the above numbers by your actual requirements. The numbers above reflect the servo motor and drive operating at rated speed and at rated torque at 100% duty.

### Output Power

<input type="checkbox"/> Voltage	405VDC (maximum)
<input type="checkbox"/> Frequency	0 - 400Hz fundamental (7 kHz PWM)
<input type="checkbox"/> Current	40A continuous per phase sinusoidal (28.28 Arms) 80A per phase peak (56.56 Arms)
<input type="checkbox"/> Regen/power dump	Optional accessory

## Z900 Motor/Drive Configuration

The Z900's hardware is pre-configured to control Z900 series motors. The Z9X00 series drives only Z900 motors, the Z800 series drives only Z800 motors, and the Z600 series drives only Z600 motors. *Be sure that your drive type matches your motor type (Z600, Z800, or Z900).* If you have questions regarding the Z motor/drive configuration, contact your local Automation Technology Center (ATC) or distributor.

### Z900 Technical Data

	Units	Z910	Z920	Z930	Z940
Continuous Stall Torque (±10%)	oz-in	2407	4263	5990	9021
	lb-in	150	266	374	564
	lb-ft	12.5	22.2	31.2	47.0
	Nm	17.0	30.1	42.3	63.7
Peak Torque (±10%)	oz-in	5205	8525	11980	18041
	lb-in	325	533	749	1128
	lb-ft	27	44	62	94
	Nm	37	60	85	127
Rated Torque (±10%)	oz-in	1939	3341	4830	7480
	lb-in	121	209	302	467
	lb-ft	10.1	17.4	25.2	39.0
	Nm	13.7	23.6	34.1	52.8
Rated Power	hp	9.6	10.4	11.0	11.1
	Watts	7.2	7.8	8.2	8.3
Rated Speed	rpm	5000	3150	2300	1500
	rps	83.3	52.5	38.3	25.0
Rated Current (line)	A (rms)	27.2	27.7	28.3	28.3
Peak Current (3.3 seconds max)	A (rms)	56.6	56.6	56.6	56.6
Max. Cont. AC input current (3 phase 240VAC)	A (rms)	30	30	30	30
Rotor Inertia	oz-in <sup>2</sup> (mass)	50.79	111.21	166.21	459.48
	oz-in-sec <sup>2</sup>	0.132	0.288	0.431	1.190
	Kg m <sup>2</sup> x 1E-6	92.9	2034	3040	8404
Motor Weight	lbs	32	57	65	112
	kg(f)	15	26	29	51
Shipping Weight	lbs	89	114	122	169
	kg(f)	40	52	55	77

Z900 Series Performance Specifications

## Positional Repeatability

**Repeatability:**  $\pm 0.088$  degrees, unloaded

## Positional Accuracy

**Resolver Accuracy:**  $\pm 7$  arc minutes

**Resolver-to-Digital Converter Accuracy:**  $\pm 8$  arc minutes (For finer accuracies, contact Compumotor—800-722-2282.)

## Motor Drive Compatibility

Different motors can take different amounts of current and require different tuning parameters for typical loads. The **CMTR** (Configure Motor Type) command sets up a drive for a particular motor. By issuing **CMTR**, motor current levels and default parameters are recalled from memory. Do not exceed the current level specified for the motor, excessive current levels will damage the motor.

The following information is provided in case you must modify the motor/drive configuration. This command sequence will set up a drive for a particular motor size and perform the commutation (refer to *Chapter 6 Software Reference* for more on these commands).

### **WARNING**

This commutation procedure causes violent motor motion. All loads should be removed from the motor shaft before you begin this procedure.

<u>Command</u>	<u>Description</u>
> 1OFF	Turns drive off
> 1CMTRxxx	Sets drive for the motor; xxx = 910, 920, 930, or 940
> 1ON	Enables the drive

## Motor Brakes

These brakes are mounted directly behind the motor and come completely assembled from the factory. When ordering the brake option, please specify the motor type.

Brake Characteristics	Z910	Z920/930	Z940	Units
Supply Voltage	24	24	24	VDC
Supply Current	0.93	1.27	*	A
Static Braking Torque	1152	6720	*	oz-in

\* Same as Z920/930 Characteristics  
*Z900 Motor Brake Characteristics*

## Motor Data

The following pages provide detailed information on each of the four motor frame sizes of Z900 series systems (Z910, Z920, Z930, Z940). The data reflecting motor torque does not assume operation from a Z900 drive. The torque specifications reflect the motor's capabilities. In most cases, the motor windings match the drive's output power with an additional safety margin.

	Motor Size: <b>Z910</b>	Value	Units	Tolerance		
1	Constant (s):	Torque	88.32	oz-in/A rms	± 10%	
2		Voltage (Sinusoidal)	26.7	V rms/Krpm	± 10%	
3		Electrical Time	24	milliseconds	nominal	
4		Mechanical Time	0.672	milliseconds	nominal	
5		Thermal	43	minutes	nominal	
6	Torque (s):	Continuous, Stall	2544	oz-in	min. [1]	
7		Continuous, Stall	2400	oz-in	min. [2]	
8		Continuous, Stall	1939	oz-in	min. [2]	
9		Peak, Max w/o Saturation	6835	oz-in	min. [1]	
10		Static Friction	40.7	oz-in	max.	
11	Ripple (of Rated Torque)	4.5	percent	max. [3]		
12	Speed:	Rated	5000	rpm	reference	
13		Maximum	5000	rpm	reference	
14	Frequency	Rated	166.6	Hz	max.	
15	Current:	Rated	27.2	A rms	max. [1]	
16		Peak	81.4	A rms	nominal	
17	Voltage:	Rated	230	V rms	reference	
18		Max	250	V rms	maximum	
19	Output Power	Rated	7.2 (9.6)	kWatts (hp)	min. [1]	
20	Inductance	Terminal (line-line)	4.8	mH	± 30%	
21	D.C. Resistance	Terminal (line-line)	0.2	ohms	± 10 % [1]	
22	Acceleration at Rated Torque		51971	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		929	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		1.728	oz-in / krpm	nominal	
25	Weight		32	lbs.	max.	
26	Winding Temperature		170 [4]	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		145	°C (Celsius)	reference	
28	Insulation Class		H	—	reference	
29	Thermostat TRIP Temperature		170	°C (Celsius)	± 5° C	
30	Thermostat RESET Temperature		135	°C (Celsius)	± 10° C	
31	Dielectric Strength, (Winding-to-Frame)		1750	VAC	min.	
32	Winding Capacitance to Frame		0.00205	µF	max.	
33	IP Classification		65 [8]	rated	standard	
34	Shaft: Radial-Play (front to back)		2E-5/7E-6	in/lb	reference	
35		Material [5]	RC#30	—	reference	
36		Magnet type	NbFeB	—	—	
37		Loading [6]	1000 rp m	160	lbs.	max. [7]
			2000 rpm	127.1	lbs.	max. [7]
		3000 rpm	110.9	lbs.	max. [7]	
		4000 rpm	100.8	lbs.	max. [7]	
		5000 rpm	93.6	lbs.	max. [7]	
38	Bearing Class, Internal/External		1/Class 3	ABEC/AFBMA	reference	
39	Bearing Grease		SRI#2	manufacturer	reference	
40	Shaft Seal Pressure		0.21(3)	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design				3 phase wye connected 2(P/2)	
42	Stator Phase Sequence				A-C-B (viewed from front face plate)	
43	Vendor / Supplier				Industrial Drives B-406-C	
44	Resolver Type / Accuracy				oz-in/A rms ± 7 arc min.	
45	Resolver Manufacturer/Model #				Fasco # 21-BRCX-335-J39	
46	Standard Resolver Cable Part Number				71-011776-xx	
47	Standard Motor Cable Part Number				71-011776-xx	
48	Options:	Brake—24VDC (0.93A)—1152 oz-in Holding Torque IP67 classification Incremental Encoder Tachometer No keyway				
[1] 25°C Ambient		[5] Rotor steel is rated as <i>fatigue proof</i>				
[2] 40°C Ambient		[6] Loads centered 1 inch from mounting flange				
[3] Measured at 60 rpm (1 rps) in velocity mode		[7] Loads may be radial and axial such that the sum of the radial and two times the axial does not exceed this figure.				
[4] Rated for 20,000 hours or 40,000 hours @ 155° C		[8] Motor shaft is IP30 rated.				

Z910 Motor Specifications

	Motor Size: <b>Z920</b>	Value	Units	Tolerance		
1	Constant (s):	Torque	154.2	oz-in/A rms	± 10%	
2		Voltage (Sinusoidal)	46.6	V rms/Krpm	± 10%	
3		Electrical Time	26.9	milliseconds	nominal	
4		Mechanical Time	0.6	milliseconds	nominal	
5		Thermal	46	minutes	nominal	
6	Torque (s):	Continuous, Stall	4518	oz-in	min. [1]	
7		Continuous, Stall	4262	oz-in	min. [2]	
8		Continuous, Stall	3341	oz-in	min. [2]	
9		Peak, Max w/o Saturation	12422	oz-in	min. [1]	
10		Static Friction	65	oz-in	max	
11	Ripple (of Rated Torque)	4.5	percent	max. [3]		
12	Speed:	Rated	3150	rpm	reference	
13		Maximum	3150	rpm	reference	
14	Frequency	Rated	157.5	Hz	max.	
15	Current:	Rated	27.7	A rms	max. [1]	
16		Peak	84.8	A rms	nominal	
17	Voltage:	Rated	230	V rms	reference	
18		Max	250	V rms	maximum	
19	Output Power	Rated	7.7 (10.4)	kWatts (hp)	min. [1]	
20	Inductance	Terminal (line-line)	6.3	mH	± 30%	
21	D.C. Resistance	Terminal (line-line)	0.234	ohms	± 10 % [1]	
22	Acceleration at Rated Torque		43133	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		2034	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		15.36	oz-in / krpm	nominal	
25	Weight		51	lbs.	max.	
26	Winding Temperature		170 [4]	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		145	°C (Celsius)	reference	
28	Insulation Class		H	—	reference	
29	Thermostat TRIP Temperature		170	°C (Celsius)	± 5 °C	
30	Thermostat RESET Temperature		135	°C (Celsius)	± 10 °C	
31	Dielectric Strength, (Winding-to-Frame)		1750	VAC	min.	
32	Winding Capacitance to Frame		0.0034	µF	max.	
33	IP Classification		65 [8]	rated	standard	
34	Shaft: Radial-Play (front to back)		2E-5/7E-6	in/lb	reference	
35		Material [5]	RC#30	—	reference	
36		Magnet type	NbFeB	—	—	
37		Loading [6]	1000 rp m	255.6	lbs.	max. [7]
			2000 rpm	202.9	lbs.	max. [7]
		3000 rpm	177.2	lbs.	max. [7]	
		4000 rpm	N/A	lbs.	max. [7]	
		5000 rpm	N/A	lbs.	max. [7]	
38	Bearing Class, Internal/External		1/Class 3	ABEC/AFBMA	reference	
39	Bearing Grease		SRI#2	manufacturer	reference	
40	Shaft Seal Pressure		0.21(3)	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design				3 phase wye connected 3(P/2)	
42	Stator Phase Sequence				A-C-B (viewed from front face plate)	
43	Vendor / Supplier				Industrial Drives B-604-B	
44	Resolver Type / Accuracy				Single-Speed; Rotor-Excited; ± 7 arc min.	
45	Resolver Manufacturer/Model #				Fasco # 21-BRCX-335-J39	
46	Standard Resolver Cable Part Number				71-011777-xx	
47	Standard Motor Cable Part Number				71-012979-xx	
48	Options:	Brake—24VDC (1.27A)—6720 oz-in Holding Torque IP67 Classification Incremental Encoder Tachometer No Keyway				
[1]	25°C ambient		[5] Rotor steel is rated as <i>fatigue proof</i>			
[2]	40°C ambient		[6] Loads centered 1 inch from mounting flange			
[3]	Measured at 60 rpm (1 rps) in velocity mode		[7] Loads may be radial and axial such that the sum of the radial and two times the axial does not exceed this figure.			
[4]	Rated for 20,000 hours or 40,000 hours @ 155°C		[8] Motor shaft is IP30 rated.			

Z920 Motor Specifications

	Motor Size: <b>Z930</b>		Value	Units	Tolerance	
1	Constant (s):	Torque	212	oz-in	± 10%	
2		Voltage (Sinusoidal)	64	V rms/Krpm	±10%	
3		Electrical Time	31.1	milliseconds	nominal	
4		Mechanical Time	0.53	milliseconds	nominal	
5		Thermal	50	minutes	nominal	
6	Torque (s):	Continuous, Stall	6513	oz-in	min. [1]	
7		Continuous, Stall	6144	oz-in	min. [2]	
8		Continuous, Rated	4954	oz-in	min. [2]	
9		Peak, Max w/o Saturation	17357	oz-in	min. [1]	
10		Static Friction	133.2	oz-in	max	
11		Ripple (of Rated Torque)	4.5	percent	min. [3]	
12	Speed:	Rated	2300	rpm	reference	
13		Maximum	2300	rpm	reference	
14	Frequency	Rated	115	Hz	max.	
15	Current:	Rated	29	A rms	max. [1]	
16		Peak	86.2	A rms	nominal	
17	Voltage:	Rated	230	V rms	reference	
18		Max	250	V rms	maximum	
19	Output Power:	Rated	8.4 (11.3)	kWatts (hp)	min. [1]	
20	Inductance:	Terminal (line-line)	8.1	mH	± 30%	
21	D.C. Resistance	Terminal (line-line)	0.26	ohms	± 10 % [1]	
22	Acceleration at Rated Torque		40357	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		3040	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		2.88	oz-in / krpm	nominal	
25	Weight		65	lbs.	max.	
26	Winding Temperature		170 [4]	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		145	°C (Celsius)	reference	
28	Insulation Class		H	—	reference	
29	Thermostat TRIP Temperature		170	°C (Celsius)	± 5 °C	
30	Thermostat RESET Temperature		135	°C (Celsius)	± 10 °C	
31	Dielectric Strength, (Winding-to-Frame)		1750	VAC	min.	
32	Winding Capacitance to Frame		0.0038	µF	max.	
33	IP Classification		65 [8]	rated	standard	
34	Shaft: Radial-Play (front to back)		2E-5/7E-6	in/lb	reference	
35		Material [5]	RC#30	—	—	
36		Magnet type	NbFeB	—	max. [7]	
37		Loading [6]	1000 rpm	263	lbs.	max. [7]
			2000 rpm	208.8	lbs.	max. [7]
		3000 rpm	N/A	lbs.	max. [7]	
		4000 rpm	N/A	lbs.	max. [7]	
		5000 rpm	N/A	lbs.	max. [7]	
38	Bearing Class, Internal/External		1/Class 3	ABEC/AFBMA	reference	
39	Bearing Grease		SRI#2	manufacture	reference	
40	Shaft Seal Pressure		0.21(3)	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design		3 phase wye connected 2(P/2)			
42	Stator Phase Sequence		A-C-B (viewed from front face plate)			
43	Vendor / Supplier		Industrial Drives B-606-D			
44	Resolver Type / Accuracy		Single-Speed; Rotor-Excited; ± 7 arc min.			
45	Resolver Manufacturer/Model #		Fasco # 21-BRCX-335-J39			
46	Standard Resolver Cable Part Number		71-011777-01			
47	Standard Motor Cable Part Number		71-012979-01			
48	Options:	Brake—24VDC (1.27A)—6720 oz-in Holding Torque IP67 Classification Incremental Encoder Tachometer No keyway				
[1]	25°C Ambient		[5] Rotor steel is rated as <i>fatigue proof</i>			
[2]	40°C Ambient		[6] Loads centered 1 inch from mounting flange			
[3]	Measured at 60 rpm (1 rps) in velocity mode		[7] Loads may be radial and axial such that the sum of the radial and two times the axial does not exceed this figure.			
[4]	Rated for 20,000 hours or 40,000 hours @ 155° C		[8] Motor shaft is IP30 rated.			

Z930 Motor Specifications

	Motor Size: <b>Z940</b>	Value	Units	Tolerance		
1	Constant (s):	Torque	319	oz-in/A rms	± 10%	
2		Voltage (Sinusoidal)	96.3	V rms/Krpm	± 10%	
3		Electrical Time	56.5	milliseconds	nominal	
4		Mechanical Time	0.57	milliseconds	nominal	
5		Thermal	56	minutes	nominal	
6	Torque (s):	Continuous, Stall	12007	oz-in	min. [1]	
7		Continuous, Stall	11328	oz-in	min. [2]	
8		Continuous, Rated	9388	oz-in	min. [2]	
9		Peak, Max w/o Saturation	32870	oz-in	min. [1]	
10		Static Friction	128.6	oz-in	max.	
11	Ripple (of Rated Torque)	4.5	percent	min. [3]		
12	Speed:	Rated	1500	rpm	reference	
13		Maximum	1500	rpm	reference	
14	Frequency	Rated	75	Hz	max.	
15	Current:	Rated	35.5	A rms	max. [1]	
16		Peak	108.5	A rms	nominal	
17	Voltage:	Rated	230	V rms	reference	
18		Max	250	V rms	maximum	
19	Output Power:	Rated	10.4 (14.0)	kWatts (hp)	min. [1]	
20	Inductance:	Terminal (line-line)	13	mH	± 30%	
21	D.C. Resistance	Terminal (line-line)	0.23	ohms	± 10 % [1]	
22	Acceleration at Rated Torque		27613	rads/sec <sup>2</sup>	Theoretical	
23	Rotor Inertia		8400	kgm <sup>2</sup> * 1E-6	nominal	
24	Damping		15.36	oz-in / krpm	nominal	
25	Weight		112	lbs.	max.	
26	Winding Temperature		170 [4]	°C (Celsius)	max.	
27	Winding Temperature Rise (Above Ambient) [1]		145	°C (Celsius)	reference	
28	Insulation Class		H	—	reference	
29	Thermostat TRIP Temperature		170	°C (Celsius)	± 5 °C	
30	Thermostat RESET Temperature		135	°C (Celsius)	± 10 °C	
31	Dielectric Strength, (Winding-to-Frame)		1750	VAC	min.	
32	Winding Capacitance to Frame		0.0082	µF	max.	
33	IP Classification		65 [8]	rated	standard	
34	Shaft: Radial-Play (front to back)		1E-5/4E-6	in/lb	reference	
35		Material [5]	RC#30	—	reference	
36		Magnet type	NbFeB	—	—	
37		Loading [6]	1000 rpm	365.9	lbs.	max. [7]
			2000 rpm	N/A	lbs.	max. [7]
		3000 rpm	N/A	lbs.	max. [7]	
		4000 rpm	N/A	lbs.	max. [7]	
		5000 rpm	N/A	lbs.	max. [7]	
38	Bearing Class, Internal/External		1/Class 3	ABEC/AFBMA	reference	
39	Bearing Grease		SRI#2	manufacture	reference	
40	Shaft Seal Pressure		0.21(3)	kg/cm <sup>2</sup> (psi)	max.	
41	Basic Motor Design		3 phase wye connected 3(P/2)			
42	Stator Phase Sequence		A-C-B (viewed from front face plate)			
43	Vendor / Supplier		Industrial Drives B-804-A			
44	Resolver Type / Accuracy		Single-Speed; Rotor-Excited; ± 7 arc min.			
45	Resolver Manufacturer/Model #		Fasco # 21-BRCX-335-J39			
46	Standard Resolver Cable Part Number		71-011777-01			
47	Standard Motor Cable Part Number		71-012979-01			
48	Options:	Brake -- 24VDC (1.27A) -- 6816 oz-in Holding Torque IP67 Classification Incremental Encoder Tachometer No Keyway				
[1]	25°C Ambient		[5] Rotor steel is rated as <i>fatigue proof</i>			
[2]	40°C Ambient		[6] Loads centered 1 inch from mounting flange			
[3]	Measured at 60 rpm (1 rps) in velocity mode		[7] Loads may be radial and axial such that the sum of the radial and two times the axial does not exceed this figure.			
[4]	Rated for 20,000 hours or 40,000 hours @ 155°C		[8] Motor shaft is IP30 rated.			

Z940 Motor Specifications

## Speed/Torque Curves

The following speed/torque curves represent the available shaft torque at different operating speeds. Operation at 240VAC is shown for each motor size. Actual motor torque may vary  $\pm 10\%$  due to motor manufacturing variances.

