ZX800 Electrical Specifications

Electrical specifications for the ZX800 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)	92-130 VAC (1 or 3-phase) **or**
	205-252 VAC (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	405 VDC (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

Motor/Drive Configuration

The ZX800's hardware is pre-configured to control ZX800 series motors. The ZX800 drives only ZX800 series motors, the ZX600 drives only ZX600 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 ZX Series motor/drive configuration, contact your local Automation Technology Center (ATC) or distributor.

Technical Data ZX800 Series

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

ZX800 Indexer/Drive Performance Specifications

Positional Repeatability

Repeatability: ±0.088 degrees, unloaded

Positional Accuracy

Resolver Accuracy: ±15 arc minutes

Resolver-to-Digital Converter Accuracy: ±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 ***ZX Indexer/Drive Software Reference Guide*** 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	ZX805/806/810	ZX820/830/840	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^2
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 ZX800 series systems (ZX805, ZX806, ZX810, ZX820, ZX830, ZX840). The data reflecting motor torque does not assume operation from a ZX800 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	**Z805**	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^2	Theoretical
23	Rotor Inertia		220	kgm^2 * 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^2 (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	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.		
44	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3		
45	Standard Resolver Cable Part Number		71-011449-xx		
46	Standard Motor Cable Part Number		71-007200-xx		
47	Options:	Brake—24VDC (1A)—1345 oz-in Holding Torque IP65 Classification Incremental Encoder Tachometer No Keyway			

[1] 25 °C ambient
[2] 40 °C ambient
[3] Material 38 Ni Cr Mo 4

[4] Loads centered 1 inch from mounting flange
Life expectancy = 20000 hours

Z805 Motor Specifications

	Motor Size	**Z806**	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^2	Theoretical
23	Rotor Inertia		350	kgm^2 * 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	—		max.
38	Bearing Class, Internal/External		3/1	ABEC/AFBMA	reference
39	Bearing Grease		--	Manufacturer	reference
40	Shaft Seal Pressure		--	kg/cm^2 (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	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.		
44	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3		
45	Standard Resolver Cable Part Number		71-011449-xx		
46	Standard Motor Cable Part Number		71-007200-xx		
47	Options:	Brake—24VDC (1A)—1345 oz-in Holding Torque			
		IP65 Classification			
		Incremental Encoder			
		Tachometer			
		No Keyway			

[1] 25 °C ambient
[2] 40 °C ambient
[3] Material 38 Ni Cr Mo 4
[4] Loads centered 1 inch from mounting flange
Life expectancy = 20000 hours

Z806 Motor Specifications

	Motor Size	**Z810**	Value	Units	Tolerance
1	Constant (s):	Torque	74.0	oz-in/A rms	± 10%
2		Voltage ()	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^2	Theoretical
23	Rotor Inertia		480	kgm^2 * 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^2 (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	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.		
44	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3		
45	Standard Resolver Cable Part Number		71-011449-xx		
46	Standard Motor Cable Part Number		71-007130-xx		
47	Options:	Brake—24VDC (1A)—1345 oz-in Holding Torque			
		IP65 Classification			
		Incremental Encoder			
		Tachometer			
		No Keyway			

[1] 25 °C ambient
[2] 40 °C ambient
[3] Material 38 Ni Cr Mo 4
[4] Loads centered 1 inch from mounting flange
Life expectancy = 20000 hours

Z810 Motor Specifications

	Motor Size	**Z820**	Value	Units	Tolerance
1	Constant (s):	Torque	156.0	oz-in/A rms	± 10%
2		Voltage ()	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^2	Theoretical
23	Rotor Inertia		2100	kgm^2 * 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^2 (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	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.		
44	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3		
45	Standard Resolver Cable Part Number		71-011449-xx		
46	Standard Motor Cable Part Number		71-007130-xx		
47	Options:	Brake—24VDC (1.7A)—4956 oz-in Holding Torque IP65 Classification Incremental Encoder Tachometer No Keyway			

[1] 25 °C ambient
[2] 40 °C ambient
[3] Material 38 Ni Cr Mo 4
[4] Loads centered 1 inch from mounting flange
Life expectancy = 20000 hours

Z820 Motor Specifications

	Motor Size	**Z830**	Value	Units	Tolerance
1	Constant (s):	Torque	234.0	oz-in/A rms	± 10%
2		Voltage ()	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^2	Theoretical
23	Rotor Inertia		3050	kgm^2 * 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^2 (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	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.		
44	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3		
45	Standard Resolver Cable Part Number		71-011449-xx		
46	Standard Motor Cable Part Number		71-007130-xx		
47	Options:	Brake—24VDC (1.7A)—4956 oz-in Holding Torque			
		IP65 Classification			
		Incremental Encoder			
		Tachometer			
		No Keyway			

[1] 25 °C ambient
[2] 40 °C ambient
[3] Material 38 Ni Cr Mo 4
[4] Loads centered 1 inch from mounting flange
Life expectancy = 20000 hours

Z830 Motor Specifications

	Motor Size	**Z840**	Value	Units	Tolerance
1	Constant (s):	Torque	312.0	oz-in/A rms	± 10%
2		Voltage ()	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^2	Theoretical
23	Rotor Inertia		3850	kgm^2 * 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^2 (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	Resolver Type/Accuracy		Single-Speed; Rotor-Excited; ± 15 arc min.		
44	Resolver Manufacturer/Model #		Clifton Precision JSMBH-21-K-3		
45	Standard Resolver Cable Part Number		71-011449-xx		
46	Standard Motor Cable Part Number		71-007130-xx		
47	Options:	Brake—24VDC (1.7A)—4956 oz-in Holding Torque IP65 Classification Incremental Encoder Tachometer No Keyway			

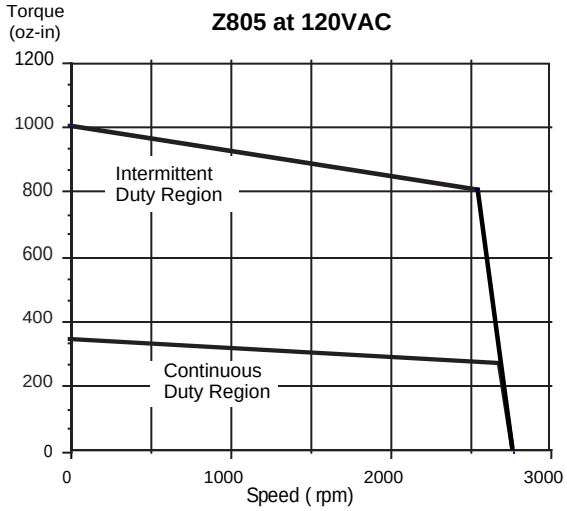
① 25 °C ambient
② 40 °C ambient
③ Material 38 Ni Cr Mo 4
④ Loads centered 1 inch from mounting flange
Life Expectancy = 20000 hours

Z840 Motor Specifications

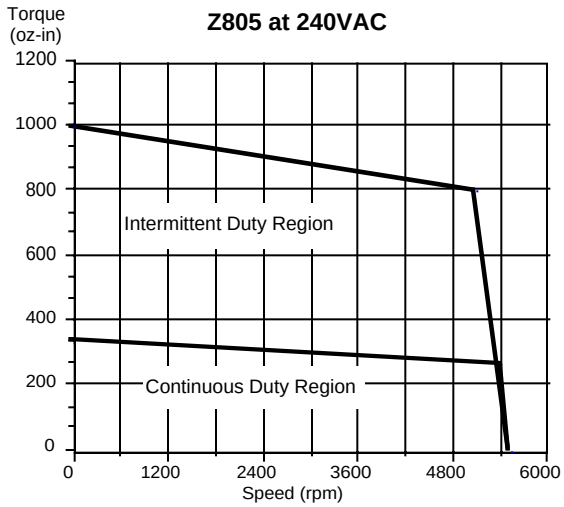
Speed/Torque Curves

The speed/torque curves below represent available shaft torque at different speeds. Operation at 120VAC and 240VAC is shown for each motor size. Actual motor torque may vary ±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; operating at 120VAC, it will have a rated speed of 3000 rpm). **Continuous Duty** means steady state operation for drive ambient temperatures of 0°C to 50°C. **Intermittent Duty** means operation for 3.3 seconds or less.

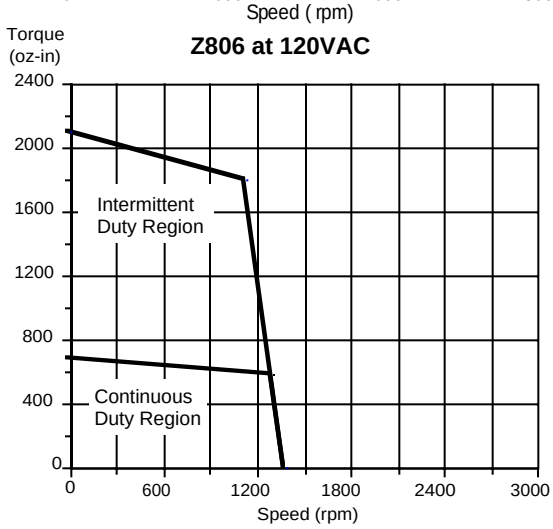
Z805 at 120VAC



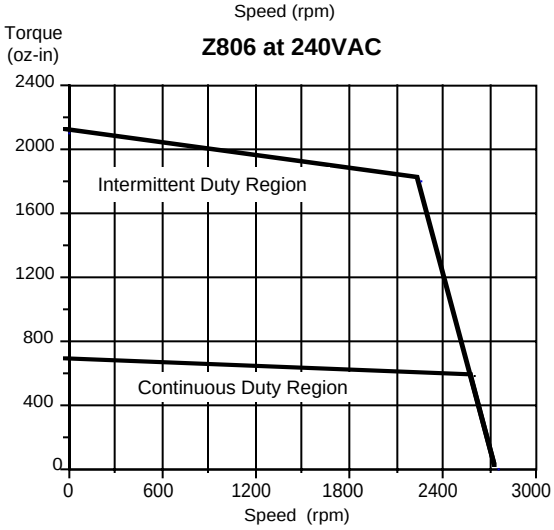
Z805 at 240VAC



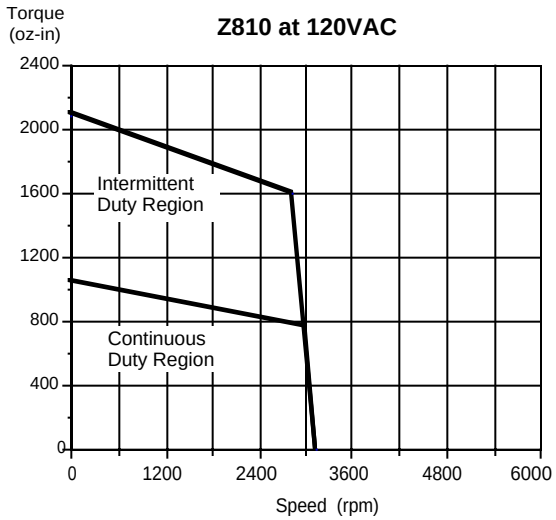
Z806 at 120VAC



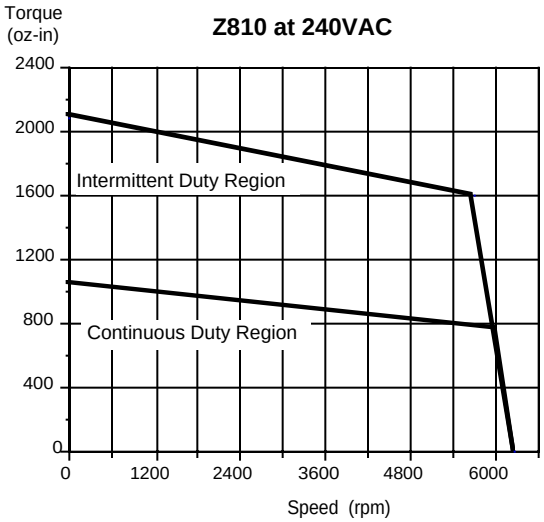
Z806 at 240VAC

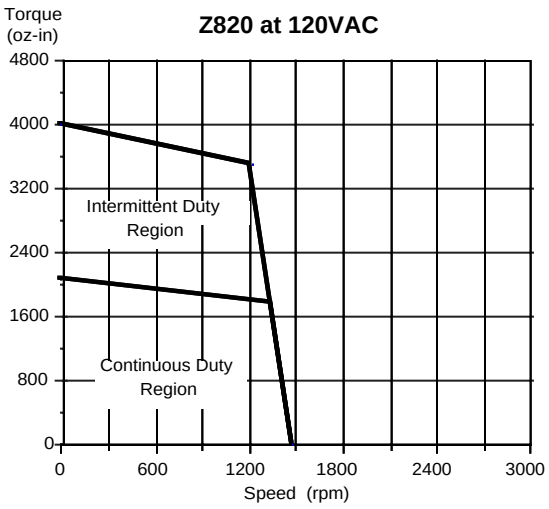


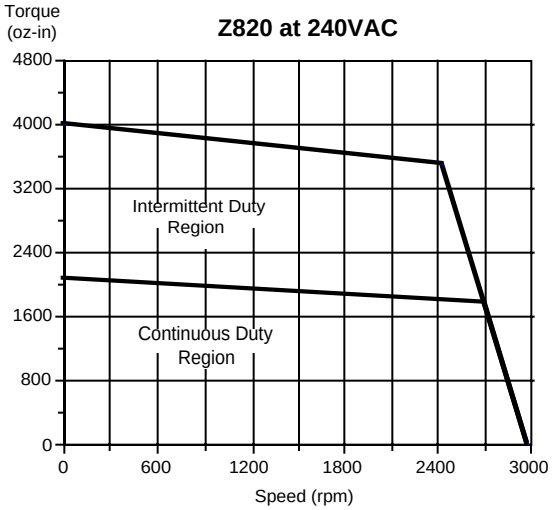
Z810 at 120VAC

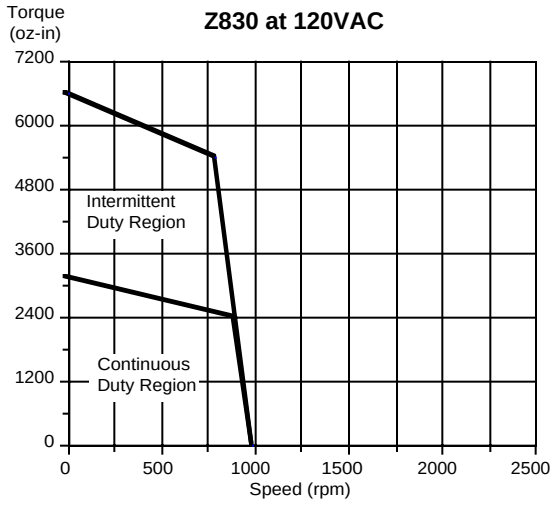


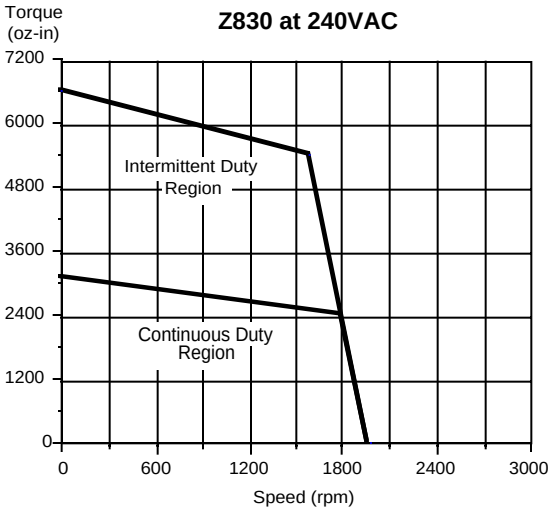
Z810 at 240VAC

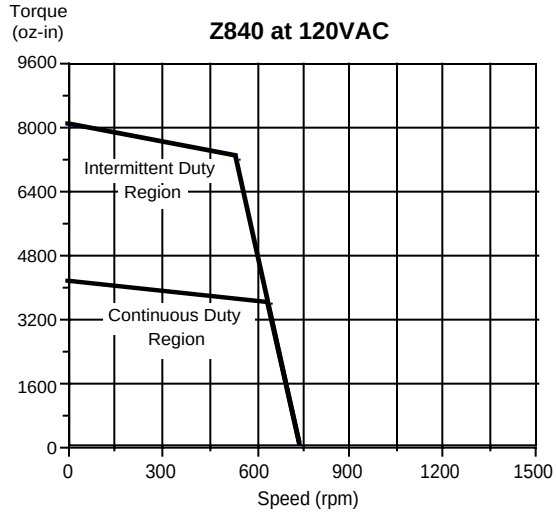


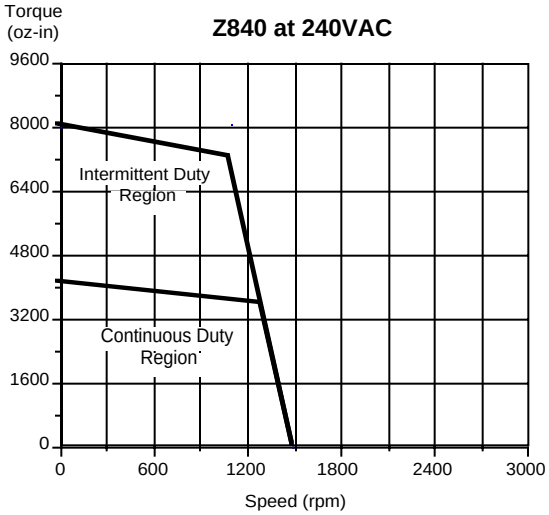

Z820 at 120VAC
Torque (oz-in)
4800
4000
3200
2400
1600
800
0
Intermittent Duty Region
Continuous Duty Region
0
600
1200
1800
2400
3000
Speed (rpm)


Z820 at 240VAC
Torque (oz-in)
4800
4000
3200
2400
1600
800
0
Intermittent Duty Region
Continuous Duty Region
0
600
1200
1800
2400
3000
Speed (rpm)


Z830 at 120VAC
Torque (oz-in)
7200
6000
4800
3600
2400
1200
0
Intermittent Duty Region
Continuous Duty Region
0
500
1000
1500
2000
2500
Speed (rpm)


Z830 at 240VAC
Torque (oz-in)
7200
6000
4800
3600
2400
1200
0
Intermittent Duty Region
Continuous Duty Region
0
600
1200
1800
2400
3000
Speed (rpm)


Z840 at 120VAC
Torque (oz-in)
9600
8000
6400
4800
3200
1600
0
Intermittent Duty Region
Continuous Duty Region
0
300
600
900
1200
1500
Speed (rpm)


Z840 at 240VAC
Torque (oz-in)
9600
8000
6400
4800
3200
1600
0
Intermittent Duty Region
Continuous Duty Region
0
600
1200
1800
2400
3000
Speed (rpm)