

Brushless Motors

1/2 to 400 hp



POWERTEC
INDUSTRIAL MOTORS

When Performance Counts, It Has To Be POWERTEC!

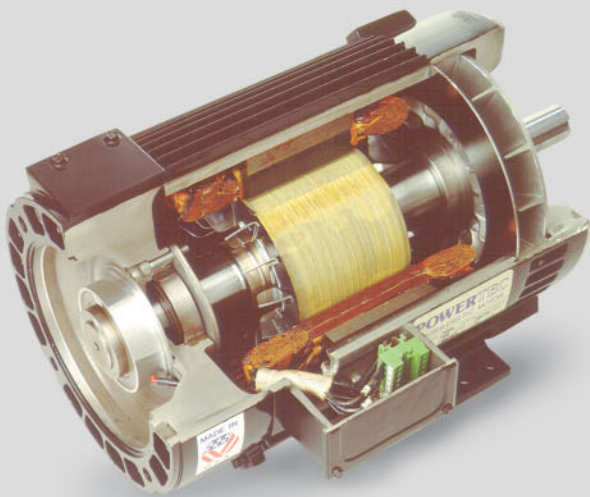
Why Use Brushless ?

Size: This technology provides the smallest motor capable of continuous duty, high RMS Applications in 40°C ambient, not 25° C like most servo motors.

Performance: High torque-to-inertia ratio provides the best performance available in an industrial motor. Available in all NEMA standard base speeds and also custom speeds.

Efficiency: No slip losses and a stator design similar to an induction motor assure that Brushless motors with permanent magnet rotors provide the highest efficiency available.

Genesis Ferrite Permanent Magnet Motors



F182 Frame cutaway showing construction details.

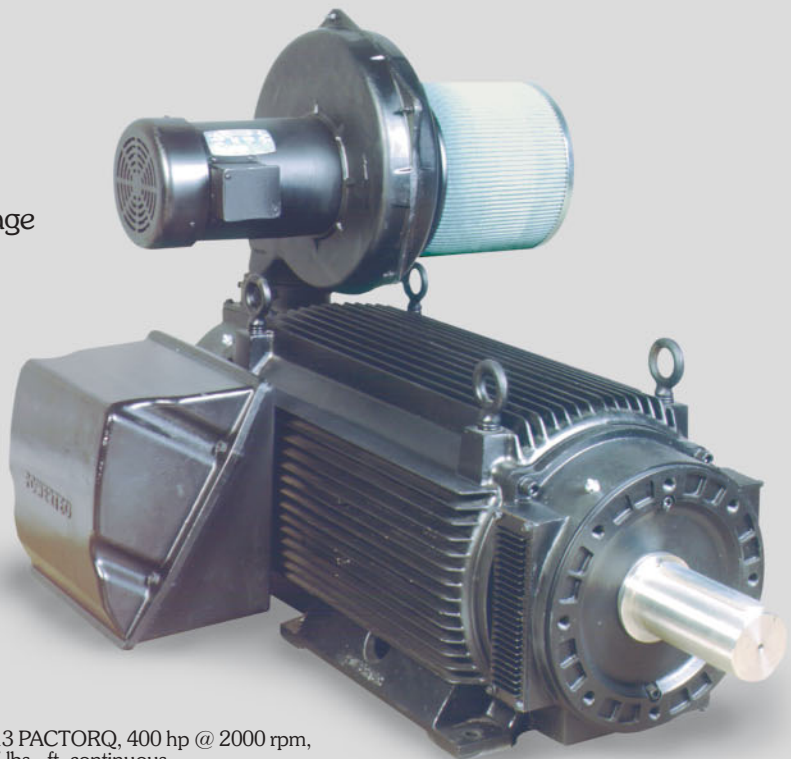
- Perfect for trapezoidal output drives
- Non-conductive ferrite magnets-no eddy current losses
- High speed applications (10,000 rpm or more)
- Better inertia match for medium to high-inertia loads
- Ratings from 1/2 to 300 hp Continuous Duty

PACTORQ Neodymium-Iron-Boron (Rare-Earth) Permanent Magnet Motors

- Perfect for sinusoidal drives
- Highest torque to inertia ratio
- Lowest mechanical time constant
- World's smallest frames per HP rating
- High performance, small, lightweight package
- Cost advantage at most power ratings
- Ratings from 5 to 400 hp, continuous duty

NEMA Standard Frames

- Foot-mounted
- NEMA C Face
- NEMA D Flange
- Double C Face
- Metric IEC Face
- Metric IEC Flange



E3213 PACTORQ, 400 hp @ 2000 rpm,
1367 lbs.- ft. continuous.

Enclosure Choices

- Drip-proof blower ventilated
- Drip-proof fully guarded
- Drip-proof separately ventilated
- Blower ventilated, axial mount
- TE Non-Vent
- TE Fan Cooled
- TE Water Cooled
- Weather, water, chemical duty
- TE Air Over
- TE Explosion Proof

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POWERTEC can provide both Sinusoidal and Trapezoidal drives for use with our motors or we can help you apply a drive of your choice. Most state-of-the-art drive manufacturers make drives that will operate very well with either the “Genesis” ferrite designs or the PACTORQ rare-earth designs.

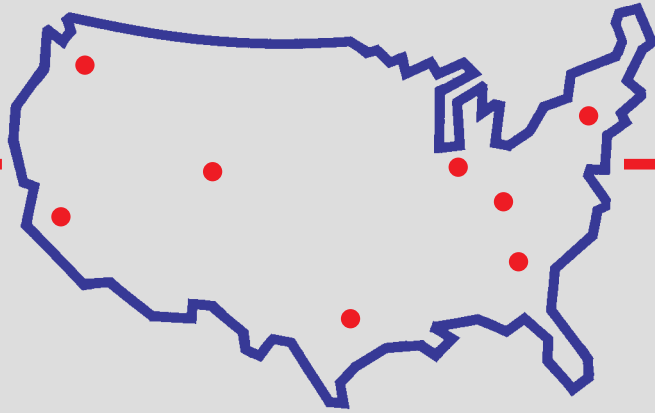
Primary and secondary feedback devices available:

- Thru-shaft original “Genesis” 30 or 60 pole encoder device with comm tracks
- High count 1024, 2048, 4096 or other pole count device with comm tracks + marker pulse
- Thru-shaft resolver for 5 volt supply or with 8 volt supply, one sine per rev
- Sinusoidal encoder
- Custom devices as needed, such as absolute position encoder
- Thermal sensors: Thermal Switches, PTC and NTC Thermistors
- Thru-shaft devices (internal “Genesis” and resolver) have no circuitry and no couplings

NEMA Frame Size, Weight, and Rotor Inertia Comparison

1800 rpm Rated Speed	Induction Motor TEBC 1000:1			Brushless Blower Cooled 1000:1					
	Motor HP Rating	AC Frame	Weight lbs	Inertia lb-ft ²	Genesis Frame	Weight lbs	Inertia lb-ft ²	Pactorq Frame	Weight lbs
10 hp	215T	182	1.1	184T	126	0.5	E182TZ	86	0.3
15 hp	254T	235	1.8	215T	208	1.1	ES184TZ	113	0.4
20 hp	256T	300	2.3	254T	254	1.8	E184TZ	129	0.5
25 hp	284T	450	4.0	256T	337	2.8	E213TZ	175	0.8
30 hp	286T	450	4.7	256T	337	2.8	E213TZ	175	0.8
40 hp	324T	565	7.8	259T	428	3.7	E215TZ	211	0.9
50 hp	326T	645	9.7	287T	370	4.3	E218TZ	261	1.1
60 hp	364T	797	12.2	287T	370	4.3	E254TZ	295	2.4
75 hp	365T	869	15.3	288T	472	6.4	E256TZ	345	2.9
100 hp	405T	1166	27.0	2810T	575	8.6	ES259TZ	440	3.8
125 hp	444T	1533	45.1	2812T	681	10.8	EL259TZ	515	4.8
150 hp	445T	1708	50.8	328T	695	18	E2810TZ	669	8.2
200 hp	447T	1886	67.7	3211T	843	24	E2812TZ	826	10.8
300 hp	x	x	x	x	x	x	E3211TZ	993	16.5
400 hp	x	x	x	x	x	x	E3213TZ	1227	21.2

***Based on Baldor™ Vector Drive motor catalog BR400



Drive and Motor Service Locations: There are a number of qualified service locations throughout the country for repair and service of POWERTEC motors and drives. Please contact POWERTEC for current information on these locations. We also offer complete motor and drive rebuilding and service at the factory in Rock Hill, SC and can do all the testing to assure that your refurbished product will work to new specifications.

POWERTEC, Genesis and PACTORQ motors can be run by all major drive manufacturers:



- Amicon
- Allen Bradley
- ABB
- Bosch
- Control Technique
- General Electric
- IDM
- Magnetec
- Mimarik
- Pacific Scientific
- POWERTEC
- Safronics
- Semi-Power
- SEW
- Siemens
- SIEI
- TAE
- TB Woods
- Thor
- Unico
- Yaskawa

POWERTEC INDUSTRIAL MOTORS

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