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FANUC

CNC
Product
Information

α Series Servo Systems

The GE Fanuc high performance α (Alpha) Series digital AC Servo Drives are available in a range of sizes for use with GE Fanuc CNC's, Power Mates and Series 90/30 PLC based controllers.

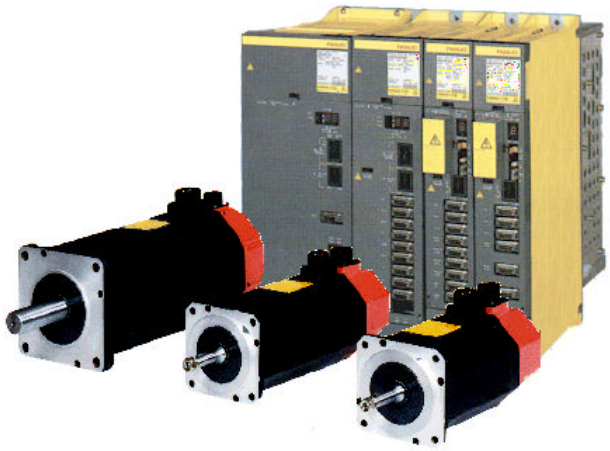
GE Fanuc Servo System features include:

- World leading reliability
- Low maintenance, no component "drift", no commutator brushes
- Digitally set parameters, no re-tuning required
- High resolution 64K count per revolution incremental encoder feedback
- An optional brake
- AC line regeneration
- An optional IP67 environmental rating; available for most motors
- Optional 64K or 1 Million count per revolution absolute encoders; eliminate re-homing
- IEC rating and CE mark compliant

With over one-million axes installed world-wide, GE Fanuc digital AC servo systems maximize machine productivity by delivering a mean-time-between-failures that exceed 10 years. All control loops are closed in the CNC, minimizing the complexity and component count in the drives, maximizing reliability. All setup information is stored digitally in the CNC, allowing motors and drives to be replaced without adjustment or tuning.

The highest possible resistance to environmental noise is provided by the fiber-optic serial servo bus (FSSB), and the serial-encoder feedback, further supporting machine uptime.

Closing the control loops in the CNC also provides comprehensive, real-time information of every aspect of the machine and drive system dynamics, enabling superior performance of the advanced algorithms particularly those used in high-speed machining.



Advanced digital signal processors in the CNC allow high speed processing of current and position feedback resulting in smoother surface finish and higher accuracy parts.

GE Fanuc delivers a comprehensive line of motor and drive configurations to support the widest range of machine applications. Industry-standard interfaces are also available to support special requirements. Motors are available in high-speed, low-inertia, with and without keys and a variety of shafts and mounting configurations. Motors are available with IP67 environmental ratings for harsh locations and with IEC and CE-mark compliance.

α AC Servo Motors

High productivity with high quality machining throughout the cutting range is provided by superior construction, and a unique skewed magnet arrangement that delivers high-acceleration to high-speeds and smooth operation and high-torque at low-speeds. Advanced 64-thousand and 1-million count-per-rev encoders produce smooth acceleration and precision with the security of absolute position feedback. A wide range of motor ratings (fig 1) and types are available to fit the toughest applications. Family members include:

- **α** - workhorse of the family
- **αC** - economical choice
- **αM** - high performance, low inertia
- **αL** - highest performance, lowest inertia

GE Fanuc Automation N.A., Inc.
GFF-4156
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α Modular Amplifiers

The modular design α Servo Amplifier offers the advantage of compact size and efficiency. A single power supply provides DC power to multiple amplifiers, either servo or spindle. This offers the advantage of higher efficiency, higher reliability, and lower cost rather than having individual power supplies for each servo and spindle.

The power supply is fully regenerative and feeds electrical energy back into the power line. This saves on electricity costs. In addition, if one axis is decelerating at the same time that another is accelerating, the deceleration energy is supplied to the accelerating axis. The regenerative design also means that less heat is dissipated into the control panel and plant environment.

The additional benefits include the absence of discharge resistors and the cost of mounting the resistors. Seven sizes of power supplies are available, from 5.5 kW to 55 kW rated output power. In addition GE Fanuc offers 2 non-regenerative power supplies for lower cost solutions. These have 3.0 and 7.5 kW rated output power.

The α Series Servo Amplifiers provide the latest IPM technology. Amplifiers are available in 7 sizes, with peak current limit ratings from 12 amps to 360 amps. In addition, both dual- and triple-axes amplifiers are offered for even more panel space savings.

β AC Servo

High quality AC β (Beta) servo motors are ideal for a wide range of machine applications and provide an economic solution for high-speed auxiliary machine axes, utilizing precise 32-thousand count-per-rev encoders. Ratings range from 0.5 to 6 Newton-meters.

Linear Motors

Linear motors simplify machine design and maintenance by eliminating the power delivery mechanisms of conventional rotary systems. Linear motors provide new levels of acceleration and speed, especially for machines with large work envelopes and reciprocating axes. Ratings range from 300 to 15,000 newtons with speeds up to 4 meters per second.

α Servo Motor Rating Chart

αModel Number	Torque Nm	Output kW	Max. Speed (RPM)
α0.5	0.6	0.2	4000
α 1	1	0.3	4000
α 2	2	0.5	4000
α 3	3	0.9	4000
α 6	6	1.4	4000
α 12	12	2.8	4000
α 22	22	3.8	2000
α 22	22	4.4	4000
α 30	30	5.3	4000
α 40	38	5.9	3000
α 40/Fan	56	7.3	3000
α 65	65	8.2	2500
α 100	100	10	2500
α 150	150	12	2500
α 300	300	30	1200
α 400	400	40	2000

Fig. 1

Artisan Technology Group is an independent supplier of quality pre-owned equipment

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