FANUC | GE FANUC
Computer Numerical Control

Presented by - MRO Electric and Supply Company, Inc.

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FANUC SERVO MOTOR

αi series

High Speed, High Precision and High Efficiency Nano Control
FANUC SERVO MOTOR αi series

FANUC SERVO MOTOR αi series is a high-speed, high-precision and high-efficiency servo system designed for the new generation of highspeed, precise and compact machines.

- Servo motor with extremely smooth rotation
- Super high-resolution Pulsecoder with 16,000,000/rev.
- Servo amplifier with high-precision current detector
- High speed and high precision with SERVO HRV Control

High Speed, High Efficiency

- High-speed and high-acceleration spindle motor (winding switching control)
- Quick acceleration and high response with SPINDLE HRV Control
Compact & Reduced Wiring

- Servo & spindle motor with shorter length
- Compact and space-saving servo amplifier
- Either 200V or 400V power input available

Simplified Maintenance

- Simplified maintenance with electronic motor identification and precise thermal information
- Connector for amplifier power connection

Large Selection of Products to Fit Many Applications

- Smooth rotation and quick acceleration
  - FANUC AC SERVO MOTOR 
  - i series
- High power at high speed
  - FANUC AC SPINDLE MOTOR 
  - i series
- Compact and energy-saving
  - FANUC SERVO AMPLIFIER 
  - i series
- Quick and easy tuning for Servo and Spindle
  - FANUC i TUNE

Energy-Saving Servo System

- Advanced energy-saving servo system, succession to a series of products which won the 1999 MITI Award for Energy-Saving Equipment
- Features the latest Intelligent Power Device

Conformance to Safety Standards (EN, UL/CSA)

- Conform to UL/CSA standard for North America, and Safety/EMC standards required to comply with CE Marking of machines shipped to the European market
The high-speed serial bus uses an optical fiber cable to connect several servo amplifiers to the CNC control unit.
Compact, Reduced Wiring and Easy Maintenance

Hardware Configuration Featuring Advanced Technology

**FANUC AC SERVO MOTOR αi series**

Very smooth rotation and quick acceleration

AC SERVO MOTORS suitable for axis feed in machine tools

- **Compact size**
  A new structure design makes the axial length of the motors shorter and contributes to downsizing the machines.

- **Compact and super high-resolution αi series Pulsecoder**
  High resolution (standard: 1,000,000/rev., option: 16,000,000/rev.) and compact size, contribute to compact and precise machine.

- **Intelligent Servo Motor**
  The αi Series Servo Motor features automatic identification of the motor and pulsecoder to greatly ease the maintenance operations.

**FANUC AC SPINDLE MOTOR αi series**

High-performance AC SPINDLE MOTOR with high power at high speed suitable for spindles in machine tools

- **High power and high acceleration**
  The motors have constant power up to high speed and can be accelerated quickly. They feature an optimum winding design and an effective cooling structure.

- **Coolant through Spindle Motor**
  Center through coolant is possible through a direct connection with spindle of the machining center. Air-cooled α Ti series and oil-cooled α Li series are also available.

- **Built-in Spindle Motor**
  When high speed, high accuracy, and low vibration need to be achieved with simple mechanical structure.

**FANUC SERVO AMPLIFIER αi series**

Compact and energy-saving Servo Amplifier

- **Compact size**
  Width is reduced by 20% (average) and depth is reduced by 11% compared to previous model.

- **Energy-saving**
  Power loss is reduced by 10% using the latest IPM technology.

- **Smart maintenance**
  Smart maintenance is possible using ID and motor thermal information.
High-speed and high-precision servo control
The combination of "Smooth command by Nano Interpolation" and "High gain servo system" (SERVO HRV Control), allows high-speed and high-precision control at the nano-meter level.

Ultrasmooth rotation
Ultrasmooth servo feed is ensured by combining "Servo motor with ultrasmooth rotation", "Accurate current detection", "High-response and high-resolution Pulsecoder", and "High-speed and high-precision servo control".

SPINDLE HRV Control
Quick acceleration and high response (SPINDLE HRV Control)
Quick response and high stability of current control has been enhanced with high-speed DSP and advanced control algorithm (SPINDLE HRV Control).
High-response and high-precision spindle control is realized with faster velocity loop sampling time and a high-resolution detector circuit.
Control of C-axis contouring is now easier than ever.
High Speed, High Precision and High Efficiency
State-of-the-Art Servo Control Technology

**Servo Tuning Tool**

*Quick & easy tuning for Servo and Spindle*

This software provides the integrated environment to test programs, set parameters and measure data, needed for servo and spindle tuning.

Direct connection is possible between the PC and the CNC through a PCMCIA-LAN card, attached on the CNC front panel.

*i TUNE* allows a quick and easy optimization of servos and spindles.

**Energy-Saving**

FANUC has promoted energy-saving of the servo system with direct energy consumption reduction:

- improving the efficiency of the servo system
- indirect energy consumption reduction by shortening the cycle time with high speed and high-acceleration control.

*αi* series is a further advanced energy-saving servo system, successor of the *α* series which won the 1999 MITI Award for Energy Saving Equipment.

**Conformity to Safety Standards (EN, UL/CSA)**

Motors and amplifier modules meet UL/CSA standard for North America, and Safety/EMC standards required to comply with CE Marking of machines shipped to the European market.
Maintenance and Customer Support

Worldwide Customer Service and Support

FANUC operates customer service and support system anywhere in the world through subsidiaries and affiliates. FANUC provides the highest quality service with the quickest response at the location nearest you.

Training

We offer structured training for machine tool builders, distributors and product end users. Training packages cover installation and maintenance, part programming, Conversational Automatic Programming (CAP), and PMC programming.

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