

Series 100

Variable Frequency And Vector Duty Motors



REULAND ELECTRIC
THE POWER DRIVE PEOPLE

Series 100 Motors

Hand-built to perform...and last.

Series 100 variable frequency and vector duty motors are hand built to out-perform and outlast any comparable motor on the market. For example:

- All castings are hand poured to ensure high quality
- All internal connections are braised and insulated for high reliability
- Each motor is hand wound for consistent high performance
- Class H insulation provides full 100% phase insulation
- The high-alloy steel motor shafts are thoroughly inspected
- Every motor is tested and properly balanced to ensure long-lasting, low-vibration performance.

In addition, every Series 100 motor is rigorously tested and inspected throughout the manufacturing process to ensure high reliability and consistent quality.

Series 100 motors are available separately or as complete systems with flux vector or variable frequency drives.

Incredibly, you get this extraordinary quality and performance for about the same price as an ordinary off the shelf motor.

And all Reuland-supplied products are backed with a full one-year warranty.

A commitment to customer service

Reuland Electric was built on customer service.

So while other companies use salespeople, we employ experienced engineers who know your industry inside out, who sit down with you and talk about your applications. They will tell you what the Series 100 can and can't do, what mechanical modifications are available, and what is the best way to use the motors to meet your particular needs.

Series 2000 Phasor™ Flux Vector motor

Series 100 motors are ideal for many everyday applications.

However, if you have unique applications where controlling torque and providing high power over a wide range of speeds is critical, we invite you to investigate our custom-built Series 2000 Phasor™ Vector Motor — the first motor specifically designed and built for optimum performance with flux vector drives.

Reuland Electric. Handcrafting motors for over 50 years.

At Reuland, we've been building motors for over 50 years. Our motors are a combination of painstaking craftsmanship and cutting-edge technology. Each is individually built by hand to fit your designs, your specifications, your needs. That's why a Series 100 motor out-performs and outlasts the competition.

For more information, please contact the Reuland Sales Representative for your area listed on the back page.

Built-In Benefits

MOTOR SPECIFICATIONS

SPECIFICATIONS	BENEFITS
Lamination	Custom laminations designed specifically for variable frequency applications
Copper Conductors	200°C moisture-resistant magnet wire for additional quality and integrity
Thermal Protector	Normally closed thermal protector placed on the windings. Protector opens when winding reaches 150°C (Class H temperature), providing early warning detection circuit to improve safety and reliability of entire system
Insulation System	High-temperature Class H insulation to insure improved reliability. Designed specifically for high-frequency distortion up to 15KHz
Varnish	Multiple dips and bakes, 100% solids polyester varnish
Phase Insulation	Protection against phase-to-phase winding failures
Enclosure	TENV and A-TEFC. Other NEMA enclosures also available
Cooling Package	Two types: TENV (non-ventilated) with adequate frame size and materials for convection cooling; A-TEFC (fan cooled) motors with standard frame sizes and constant velocity fan for constant cooling regardless of motor running speed
Frame	All motors are ribbed frame footed or footless construction
Mounting	Standard NEMA foot-mounted construction. C-face, D-flange. Other mounting types available upon request
Dynamic Balancing	Motor operation allowable above base speeds with acceptable vibration levels. Increases bearing life and motor life
Encoder	All vector motors equipped with shaft-mounted incremental encoders
Blower Voltages	All A-TEFC motors equipped with 3 phase blowers. Single phase available

ENCODER SPECIFICATIONS

SPECIFICATIONS	BENEFITS
<i>Encoder especially tailored to provide feedback to new generation of high-performance AC vector drives</i>	
Encoder Mounting	Shaft mounting improves acceleration repeatability by eliminating coupling backlash
Isolation	Encoder electrically isolated from motor, eliminating motor-generated noise in the feedback signal
Bearingless Encoder	Precision and reliability improved by eliminating need for small encoder shafts. No frictional components
Pulses Per Revolution	1024 PPR standard. Other line counts available
Line Drivers	5 or 12 volts DC standard for field installation flexibility. High current output increases cable lengths and improves noise immunity. 15 volts DC available
Output	Quadrature outputs with complimentary signals and gated marker pulse. Required for most vector drive controls
Cover Protection	Connector and encoder meet NEMA 4 and NEMA 12 ratings
Termination	No soldering required. 22-12 gauge wire for easy field installation. Rugged metal enclosure. Screw termination points for quick disconnect capability. Conduit connection capability for improved noise immunity and wiring safety
Base And Cover Material	Anodized aluminum
Code Disk Material	300 Series non-magnetic stainless steel (no glass)
Operating Temperatures	-20°C to +120°C



Series 100 motors include a quick disconnect cast metal connector mounted to the conduit box. A 1/2" NPT fitting provides positive cable protection. Shielded cable installs through its own conduit to reduce induced electrical noise and improve performance and reliability. Screw-terminated internal connections accommodate 22 to 12 gauge wire. No soldering required.

Series 100 Features

Scalar Type Variable Frequency Drives. (VFDs). Provide output frequencies to 1500 Hz.

Vector Controls. Provide speed and torque control.

Forced Air Cooling. Reduces the frame size and extends the motor's duty cycle.

Cast Fan Shroud. Designed to reduce noise. The fan allows for air over totally enclosed operation and for encoder mounting

Encoder Conduit Box. Motors provided with encoders include a quick disconnect mounted on the box side.

Over-Sized Conduit Box. This special box can be provided to house the encoder connections as well as all power connections. The encoder cable is connected to a terminal strip, and an electro-static shield insulates the encoder from the power connections.

Encoders. The standard Series 100 encoder improves reliability because it has fewer moving parts to fail. It is a shaft-through design that uses the motor bearings. Other encoders are available upon request.

Standard Conduit Box. Motors without encoders include Reuland's standard cast conduit box. Its rugged design withstands the most demanding industrial applications.

Frames and End Bells. Designs include cast ribbed frames to maximize heat dissipation. All Vector Class motors that permit encoder mounting have the drive end bearing locked to insure encoder reliability on footed and face-mounted motors.



Electrical Design Capabilities

GENERAL

SPECIFICATION	DESCRIPTION
Voltage	230/460V dual volts as standard. Up to 600VAC available
Frequency	Variable frequency drive: 4 and 6 pole up to 133Hz Vector: 0-133Hz standard — 4 and 6 pole (For designs down to 32 pole, refer to the Phasor® 2000 motor)
Ratings	Modified NEMA Design B
Duty	Application dependent
Rise	Class F
Insulation	Class H
Magnet Wire	200°C moisture-resistant magnet wire
Varnish	Multiple dips and bakes, 100% solids polyester varnish
Phase Insulation	NOMEX, full Class H
Thermal Protector	Normally closed thermal protector embedded in windings
Lead Wire	Class H rated
Lamination	Custom-design laminations

Mechanical Design Capabilities

MOTOR SPECIFICATION

SPECIFICATION

DESCRIPTION

FRAMES 143T-184T 213T-365T

□ = Optional ■ = Standard

Frame	Cast aluminum ribbed	□	■
	Cast iron ribbed	■	□
Endplates	Cast aluminum with steel bearing journal	□	■
	Cast iron	■	□
Foot Mounting	Integrally cast with frame — F1 Standard	■	■
	Field convertible to F2 mounting	□	■
Enclosure	TENV	■	up to 256T
	A-TEFC	■	■
Auxilliary Fan Cooled	115V, 1 phase auxiliary fan	□	□
	230/460V, 3 phase auxiliary fan	■	■
Bearing Retention	Locked bearing construction	■	■
Conduit Box	Diagonally split, 360° rotatable in 90° increments	■	■
	Fully gasketed	■	■
Ground Screw	Inside terminal box for convenience	■	■
Drain Plugs	Automatic drain and breather plugs to prevent moisture build-up	■	■
Shaft Material	High-strength alloy steel	■	■
Rotor Construction	High-pressure aluminum die cast with special slot configuration	■	■
Nameplate	Includes base volts and frequency, primary and secondary resistance full and no load amps auxiliary fan rating (volts, hertz, phase and amps), magnetization current	■	■
Lifting Provisions	Eyebolt	■	■
Bearings	Double shielded, premium grade, greased for life	■	■
Lubricant	Lithium base, -40° to 350°C	■	■

ENCODER SPECIFICATION

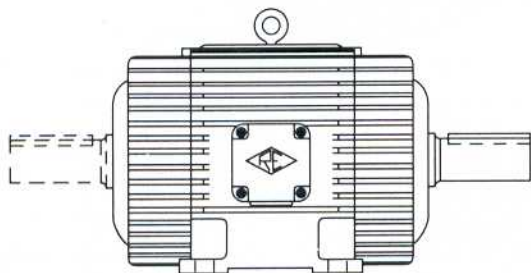
SPECIFICATION

VECTOR DRIVE MOTORS ONLY

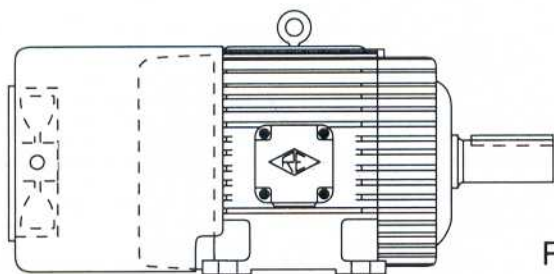
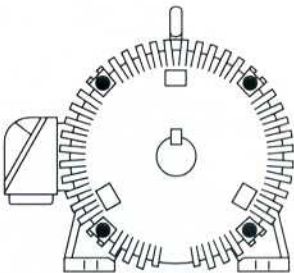
Encoder	Shaft mount	■	■
Voltage	5 or 12 volts DC standard. 15VDC available	■	■
Isolation	Encoder electrically isolated from motor to prevent motor noise interference	■	■
Connection	Screw termination points. No soldering	■	■
Signal	Channel dual quadrature with index and compliments	■	■
Encoder Bearings	No bearings or frictional components	■	■
Code	Incremental	■	■
Pulse Per Revolution	1024 PPR standard	■	■

Series 100 Motors

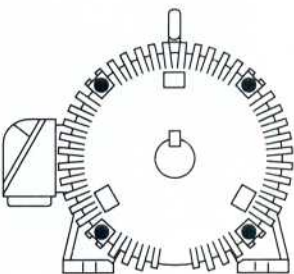
VARIABLE FREQUENCY MOTORS



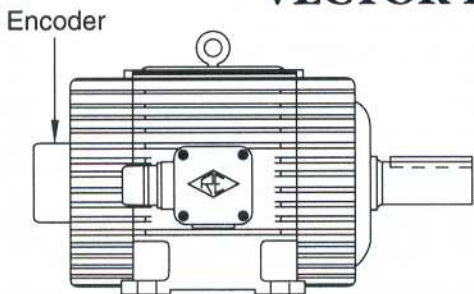
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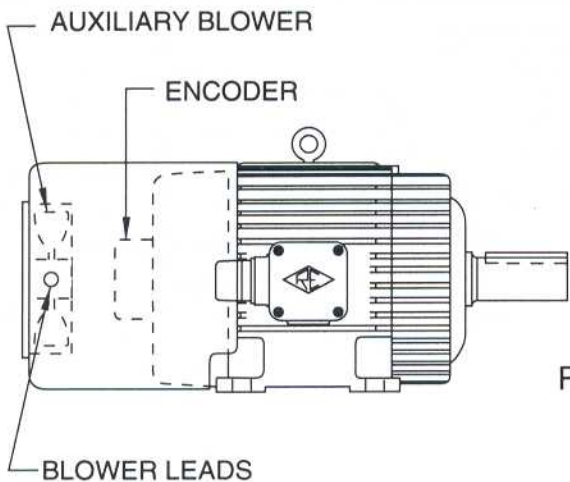
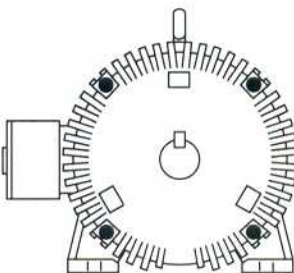
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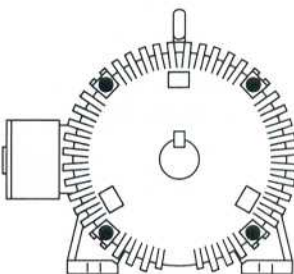
VECTOR DUTY MOTORS



RDAP1-2200



RDAP1-2201



All motors available in footless C-face construction.