Motors Technology Update

Siemens

UNVEILS EXPANDED MOTOR RANGE AT HANNOVER FAIR

Redesigned 1FK7 Servo Motor Series. The Siemens Drive Technologies division has optimized the design of its 1FK7 servomotor series for standard motion control applications and extended its range of motors in the field of low-rated speeds. Mechanical decoupling of the encoders from the motor shaft increases both the ruggedness and serviceability of the motors, while improved integration of encoder interface electronics makes for a more compact motor design.

The servomotors are available in the basic "Compact" version, which offers the broadest range of sizes and versions. The "High Dynamic" version offers reduced rotor inertia, providing an efficient solution for tasks that involve maximum dynamics and low load inertia. The "High Inertia" design is designed for tasks that involve high load inertia.

High-efficiency Asynchronous Motors. Siemens now offers IEC motors across the efficiency classes IE2 and IE3, covering the application range of EU Regulation 640/2009 from 750 W to 375 kW. The motors are available in North America with EISA-certification in the energy efficiency and premium energy efficiency classes.

The minimum efficiency class IE2 will become mandatory in Europe after June 16 for all motors in the range of 0.75 to 375 kW. IE3 efficiency will be required beginning January 2015.

Siemens offers the new IEC motors in two different series: general purpose and severe duty. The general purpose motors come with aluminum housings and shaft heights between 80 and 160 mm and an output from 550 W to 22 kW. They are used mainly for pumps, fans and compressors. The severe duty version has a cast iron housing, making it suitable for conditions such as those found in the process industries. Severe duty motors are available from 2.2–375 kW, with shaft heights between 100 and 315 mm.

Extended Torque Motor Series. In addition to its previously available hollow-shaft motors, Siemens is now offering versions of the 1FW3 torque motor series with a plug-in shaft or a solid shaft. In addition, the rated speed range has been increased, which expands the torque motors' field of application to roller drives, cross cutters, winders and similar operations.

Previously the 1FW3 torque motors were available in hollow-shaft versions with axis heights of 150, 200 and 280 mm. The new plug-in shaft is available in the same configurations, while the

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solid shaft version is offered only for shaft heights of 150 and 200 mm.

The rated torque for all three versions remains 100–7,000 Nm, but the speed range has been increased. For example, at an axis height of 280 mm, the speed range has been increased from 250 to 600 rpm.

Asynchronous Motors With Cast Iron Housings. The 1LE1 series of asynchronous motors has been expanded to include a series of motors with cast iron housings for applications in the production and process industries.

The new severe duty series of 1LE1 motors are available in the power range from 2.2–200 kW, with shaft heights between 100 and 315 mm. They are

available in the European energy classes IE2 and IE3, as well as EISA-certified versions for the NAFTA market.

The series adopts the operating concept of the existing aluminum housing series, with terminal boxes divided at an angle, making the terminals easily accessible and reducing installation time. Specially designed versions are available for operation on frequency converters.

For more information:

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www.siemens.com

ABB Motors

RECEIVE
IECEX CONFORMITY MARK

ABB has been granted a license to use the IECEx Conformity Mark on qualified products and packaging and promotional materials related to those products. The mark shows that a product has been granted an IECEx Certificate of Conformity.

The IECEx Conformity Mark confirms that a product has the appropriate protection for use in explosive atmospheres, and that it has been manufactured under systems subject to ongoing surveillance by the certification body. It is recognized in all the countries participating in the IECEx system, and it means the product can be supplied to the market without the need for additional tests.

ABB has been granted IECEx certification for a wide range of low- and high-voltage motors. The hazardous area protection types provided by these motors include flameproof, non-sparking, pressurized and dust-tight protections.

For more information:

ABB Drives
16250 W. Glendale Drive
New Berlin, WI 53151
Phone: (262) 785-3200
Fax: (262) 785-0417
www.abb.com

Crouzet's Brushless DC Gearmotor

OFFERS
COMPACT SOLUTION
FOR VARIABLE SPEED
AND TORQUE CONTROL

Crouzet North America has introduced the 801 Series Brushless DC Gearmotor with integrated gearbox and electronics. The new all-in-one solution is designed to offer versatile control for

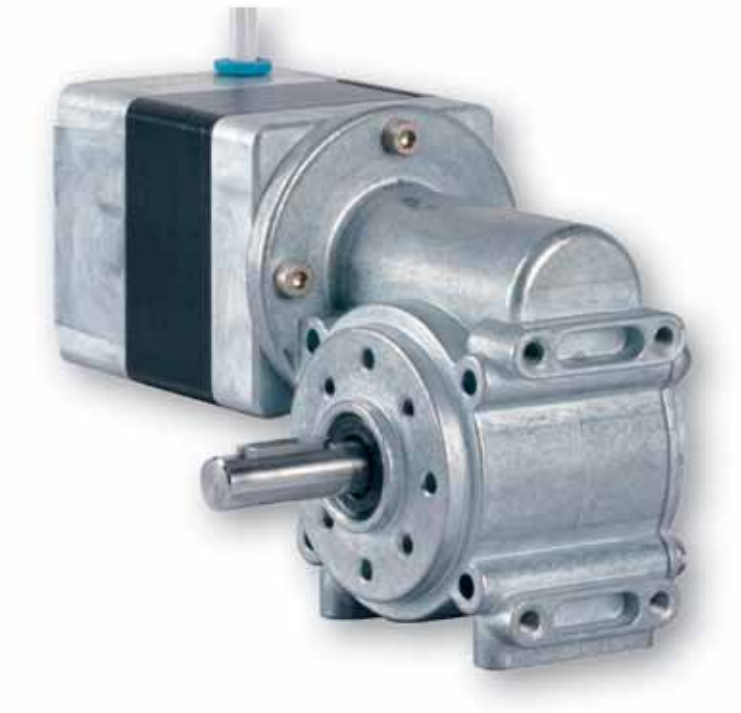
speed and torque in a compact, sealed package. With no brushes to wear out, it is well suited for medical equipment, lab automation and industrial applications where long product life and reliability are paramount.

"Typically, motors, gearboxes and controllers are purchased separately," says Jim McNamara, Crouzet application engineer. "With Crouzet's new integrated package, customers have a convenient way to purchase all three functions in one product from a single supplier."

With this product addition, Crouzet has increased its BLDC product line's power rating from 80 to 205 watts and torque range to 120 Nm, providing a significant expansion in capabilities. Other performance characteristics include speeds from 7 to 627 rpm for planetary models and 44 to 440 rpm for right-angle models. All 801 models include integrated electronics and standard IP54 sealing.

Compact in size, the new series measures 57 mm square. Sealed packaging allows for operation in harsh environments while the cast aluminum housing optimizes durability and robust operation. Crouzet's Custom Adaptation Center can modify any of the standard models to meet specific application requirements such as custom mounting options, higher IP seal ratings, or supplying without integrated controls.

The 801 Series is priced from $225.00 to $325.00 for the 40 watt, 10 Nm model, depending on volume. Delivery is eight weeks.



For more information:

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www.crouzet.com

Maxon's EC40

PACKS POWER INTO SMALL SPACE

The EC40 is a new brushless DC motor that fits 170 Watts of power into a package measuring 40 mm diameter and 80 mm length. The motor is designed for industrial, logistics equipment, mobile robotics, packaging machinery, power tools or aerospace applications.

The EC40 was designed with high-quality materials in mind, according to the company's press release. It features a neodymium permanent magnet, stainless steel housing and welded flanges.

The motor presents a flat speed/torque gradient of about 3.6 rpm/mNm, speed up to 18,000 rpm and efficiency of 89 percent. Its ironless winding offers quieter running and higher stall torque than other motors.

The EC40 can be combined with other components, such as encoders, gears, or Maxon's new AB 32 permanent-magnet brake, which is designed for operating temperatures from –40 degrees C to 100 degrees C.

A wide range of compatible controllers is available, from 1-quadrant and 4-quadrant servo amplifiers to programmable positioning controllers.

For more information:

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Fall River, MA 02720
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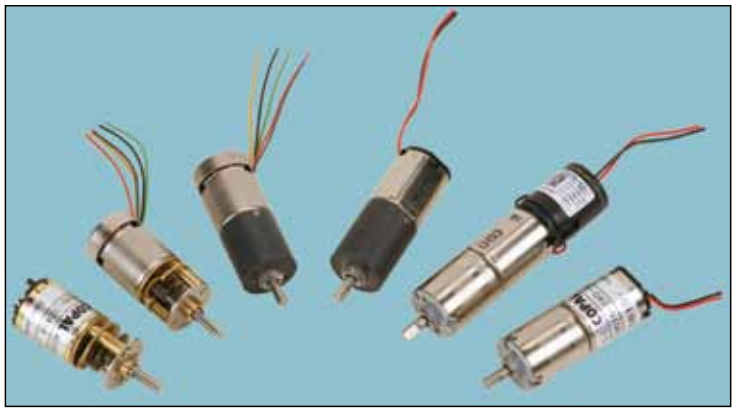
NIDEC-COPAL

INTRODUCES MINIATURE GEARMOTOR FAMILY



A new line of 16 mm miniature brush and brushless DC gearmotors and motors are designed for a wide range of office automation, medical devices and laboratory instrumentation. The motors are available with spur or planetary gearing, and planetary models are available with either metal or resin gears.

The Nidec-Copal 16 mm planetary resin models are designed for applications where lower noise is a requirement. Model HG16-XX-AA brush DC gearmotors are available in ratios of 30, 60, 120 or 240, with rated shaft speeds from 310 rpm down to 55 rpm, and torques ranging from 3.45 oz.-in. up to 6.94 oz.-in.

Models with planetary metal gearing are designed for applications requiring higher shock loads and torque. Ratios of 60, 120, 240, 300 and 500 are available. The brushless gearmotors models (LB16MG-XXX-CA and CB) and brush DC gearmotor model (MG16-XXX-AB) provide rated torques from 4.8–27.8 oz.-in. with rated shaft speeds from 164 rpm down to 21 rpm.

The Nidec-Copal spur 16 mm spur gear models are designed for applications with moderate loads where cost is a major concern. Gear ratios include 30, 60, 120 and 240 for the brushless HG16-XXX-AA and AB versions, while the brush LA16G-324XX gearmotors include ratios of 50 and 120.9. Rated torques for the spur gear models range from 3.47–6.94 oz.-in. Speeds vary from 230 down to 185 rpm for brush gearmotors, and 310 rpm down to 55 rpm for brushless.

For more information:

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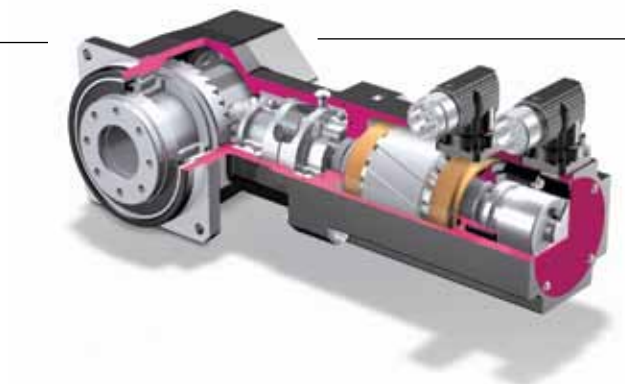
STOBER KS SERVOMOTOR

RUNS EFFICIENTLY AT HIGH SPEEDS



The KS series of servomotors from Stober Drives Inc. are designed for low backlash and smooth running, while combining the gear unit and motor for a more compact unit.

The drives are designed to be suitable for all modern servo technology applications, especially those where high dynamic, continuous duty strength or high speeds are required, according to Adam Mellenkamp, product manager. The motors are available in three sizes, with torques up to 400 Nm, and three output shaft versions.

"High torques and speeds allow a higher number of cycles and therefore better machine performance," says Mellenkamp. "The synthesis of motor and gear unit eliminates the need for motor adapter and coupling, so the advantages are obvious—higher dynamics due to lower mass moments of inertia."

Removal of the motor adapter and coupling also mean that the size and weight can be reduced, resulting in higher power density in a smaller package.

The drives are designed for greater smoothness and efficiency than other models, due to their unique drive concept. The initial input at high drive speed is to a smooth-operating helical planetary stage. The output bevel stage revolves at much lower speeds than traditional solutions.

"The drive concept also provides the option of sealing on the smallest possible shaft diameter," Mellenkamp says. "With conventional bevel gears and hypoid gears, the input bevel pinion must be stable and supported due to the internal gearing forces. Sealing is over a relatively large diameter."

For more information:

Stober Drives Inc.
1781 Downing Drive
Maysville, KY 41056
Phone: (606) 759-3615
www.stober.com

MOTOR-MOUNTED VECTOR DRIVES

DESIGNED FOR DISTRIBUTED CONTROL

Nord's new SK200E line of motor-mounted vector drives is designed for distributed, decentralized control. This makes the SK200E more cost-effective than other solutions due to reduced wiring and panel costs, as well as more efficient space utilization. The SK200E is designed for applications such as conveyors and material handling systems.

The SK200E series is available in four model sizes, ranging from 0.33–10 hp (0.25–7.5 kW), 3-phase 230 V and 460 V, 1-phase 120 V and 230 V. The drives come standard with IP55 rating (NEMA 12), and IP66 (NEMA 4) versions are available for use in wet or washdown environments.

Full torque and accurate speed regulation can be achieved down to a 30:1 turndown ratio when operating in sensorless vector control mode, and 1,000:1 turndown in closed-loop vector control mode.

For more information:

Nord Drivesystems
800 Nord Drive
Waunakee, WI 53597
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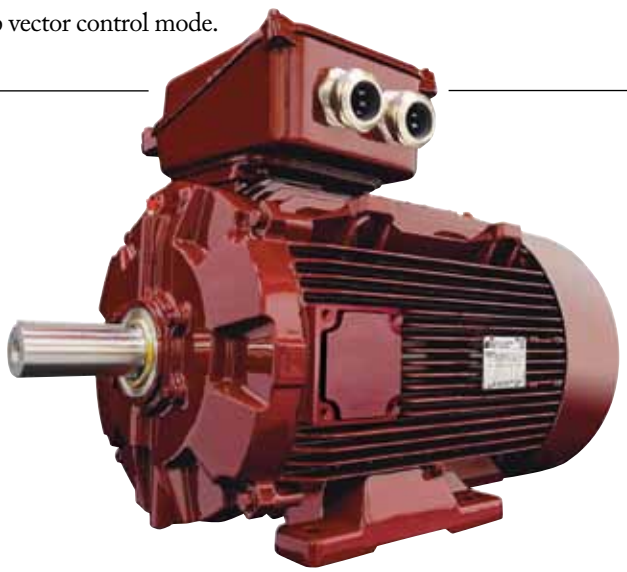
PERMANENT-MAGNET SYNCHRONOUS MOTORS

OFFER HIGH-EFFICIENCY SOLUTIONS



The Dyneo 3000 range of permanent-magnet synchronous geared motors from Leroy-Somer offer a possible torque gain of up to 30 percent within the same sized motor package. In addition, the Dyneo range has extended capacities up to 14,500 Nm and a variety of mounting options for fixed or variable speed operation in all types of applications and environments.

The Dyneo series features the LSRPM permanent magnet synchronous motor, which is designed for energy saving. According to company literature, the LSRPM can be combined with a variable speed drive to offer significantly greater efficiency than a class IE2 or IE3 asynchronous motor in all operating conditions (variable speed, fixed or variable load, constant or quadratic torque, constant power).

The gear technology, based on helical teeth, makes it possible to achieve mechanical efficiencies in excess of 95 percent. It also facilitates integration as close as possible to the transmission shaft, thus eliminating the need for any intermediate devices, such as pinion, chain or belt pulley.

Another advantage of these new drive solutions is a more compact geared motor. The size of the motor is roughly half that of conventional technologies, thus reducing overall weight by approximately 20 percent.

The Dyneo 3000 series is available in a variety of configurations. The Compabloc 3000 offers axial output in five sizes, with output torques from 210–3,150 Nm and power ratings from 4.8–80 kW. The Orthobloc 3000 helical-bevel series is available in eight sizes, with output torqes from 250–14,200 Nm and power ratings from 4.8–100 kW. The Manubloc 3000 with parallel output offers eight sizes, with output torques from 250–14,500 Nm and power ratings from 4.8–100 kW.

For more information:

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