

SMC Feels the Force with its Range of Electric Actuators

SMC offers optimum solutions for almost any industrial process

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With numerous dynamic industrial processes requiring sophistication and precision, processes such as the assembly of circuit boards, positioning of workpieces and sorting of goods all look to a high level of automation to make it possible.

Ernst Smith, Product Manager at SMC Pneumatics says that grippers and actuators are able to fill a broad range of requirements such as thrust, positioning, repeatability, mechanical resilience, geometry and control options amongst other criteria.

“SMC combines the advantages of pneumatics with the world of electronics in its uniquely comprehensive assortment of electrical actuators, motors and controllers,” says Smith. “The standard product assortment alone provides solutions for countless applications and a wide range of solutions from miniature and carriage actuators to compact slides, grippers, cylinders and controllers”.

Offering stepper and servomotors connected to belt and screw drives for a wide range of applications, SMC also offers motorless actuators for users who prefer to use their own motors and controllers. “To enable a connection to higher-level fieldbus and SPS systems, the components support current industrial Ethernet protocols” explains Smith.

Solutions for three tiers

SMC organises its assortment of electrical actuators and controllers into three tiers that represent typical user requirements, from easy operation to absolute effectiveness and flexibility. Smith explains the tiers and levels of flexibility, all based around customer's unique needs: “For customers whose operating conditions rarely change and who prefer quick start-up times to high flexibility, SMC's standard assortment actuators with pre-set actuator parameters are especially easy-to-use”.

“For those customers who require more complexity, SMC's progressively programmable actuators with pre-set parameters are able to move into many positions and are connected with a step motor power amplifier (type LECPA),” says Smith. “Finally, AC servomotor amplifiers (series LECS) provide the highest level of precision in terms of position, speed and force control.”

The AC servomotor power amplifier LECY was developed for machines and systems with quick and high-precision axis motion. It is equipped with an STO function (Safe Torque-Off), which prevents the drive from starting up unexpectedly. Such safety functions are becoming increasingly more important for machine manufacturers with regard to EN ISO13849 machine safety guidelines.

The LE range

“If you take a glance at the assortment of electrical actuators in SMC's LE series, you might be impressed with the enormous number of different components.”

Step motors and servomotors can be found alongside screw and belt drives for various motor installation positions, and guidance systems such as sliding guides, cross-rolling guides and recirculating ball bearing guides round off the assortment. Each of the series (over a dozen in total)

contains numerous products with various sizes and specifications as well as additional equipment options. These include, for instance, an integrated motor brake and cleanroom-suitable versions.

“SMC has designed the range over time to meet a wide range of customer requirements and today, the great product variety covers the needs of most industrial applications.” concludes Smith.

An overview of the LE series:

- LEF series: Electrical actuators with recirculating ball bearing guide for all transfer applications (in both belt or screw types)
- LEL series: Space-saving electrical belt drive with guide rod
- LEJ series: Electrical actuators with high rigidity through double linear recirculating ball bearing guide
- LEM series: Electrical actuators with low profile
- LEY series: Electrical cylinder with excellent speed control
- LEYG series: Electrical cylinder with guide rod
- LES series: Electrical compact slide for quick, controlled pick & place applications
- LEP series: Electrical actuators in miniature versions as rod or slide type
- LER series: Electric rotary table
- LEH series: Electrical gripper with 2 or 3 fingers
- LEC series: A range of controllers, from programming-free to highly flexible programming
- LAT3 series: Card motors in extremely thin and light housings (linear motor)
- LE series: Motorless electrical actuators in the series LEFS, LEFB, LEJS and LEY(G)
- JXC73/83 series: 4-axis step motor controllers
- JXC93 series: Step motor controller for Ethernet/IP™