

ESCON Module 50/4 EC-S Servo Motor Controller for sensorless Operation of BLDC Motors

Straightforward commissioning, excellent motor control characteristics, and peak performance.

As addition to the ESCON servo controller family, maxon motor now presents a miniaturized OEM plug-in module for sensorless BLDC applications.

The compact, powerful 4-quadrant PWM servo motor controller offers efficient control of permanent-magnet activated sensorless BLDC motors (brushless DC motors, so-called EC motors) without Hall sensors up to approximately 200 Watts. As part of the ESCON family it stands for high usability, exceptional performance, and unprecedented power density in servo motor controller technology. Sensorless operation offers the best conditions for a high reliability at low system costs.

The innovative OEM plug-in module features excellent control properties. The drift-free yet extremely dynamic speed behavior enables speeds up to 120'000 rpm and provides extensive functionality with free configurable digital and analog inputs/outputs. It perfectly matches maxon's motor range to suit even highest-demand applications and dynamic drive solutions and can be operated in speed controller (closed loop) and speed controller (open loop). All these features create ideal conditions for the use in cost-sensitive applications as well as elevated reliability requirements. The decisive factor is the low system complexity due to sensorless operation.

Thereby, it fully integrates into complex applications with little effort. This with a distinctive benefit: Customers can fully focus on their main task; the development of their own device. For the motor control part they can make use of maxon motor's vast drive know-how already built into the ESCON Module. A detailed Motherboard Design Guide is available for integration to OEM PCBs and a suitable motherboard makes initial commissioning an easy task.

The compact servo controller is controlled by an analog set value. It can be specified by means of analog voltage, by external or internal potentiometer, by defined value, or by means of a PWM signal with variable duty cycle. Other interesting features are for instance the ability to enable or disable the power stage depending on the direction of rotation as well as sensorless acceleration and deceleration by employment of defined speed ramps.

Commissioning in no time

Top performance should not be a matter of practice makes perfect. Therefore, the servo controller has been designed specifically with easy startup and user-friendliness in mind without requiring in-depth knowledge of drive technology.

When connected to a PC via a USB port, it can easily and efficiently be parameterized with the graphical user interface «ESCON Studio». A variety of functions and user-friendly wizards as well as a well-designed automated fine-tuning controller procedure assist during commissioning, for configuration of inputs and outputs, and diagnostics.

Protection at highest level

The ESCON Module 50/4 EC-S features protective circuitry against overcurrent, excess temperature, undervoltage and overvoltage, voltage transients and short-circuits in the motor cable. It also is equipped with protected digital inputs and outputs and adjustable current limitation to protect motor and load. Motor current and actual motor shaft speed can be monitored by means of analog output voltage.

Pure flexibility and efficiency

The large input voltage and operating temperature ranges allow flexible use in almost all drive solutions. Low system complexity of sensorless operation opens fields of application demanding high reliability, such as medical devices for ventilation and respiration therapy, surgery power tools, or in the dental industry. Additionally, the Hall sensor-free design reduces wiring and system costs even more without abstaining from full-grown, dynamic 4-quadrant operation. Perfect operational areas would be fans and blowers, scanners, pumps, drills and milling cutters, or grinding and cutting drives. With its exceptional efficiency of 97%, the ESCON Module 50/4 EC-S is a number one choice for mobile, highly efficient yet consumption-optimized applications.

For more information on ESCON, the new servo motor controller range of maxon motor, visit <http://escon.maxonmotor.com>.

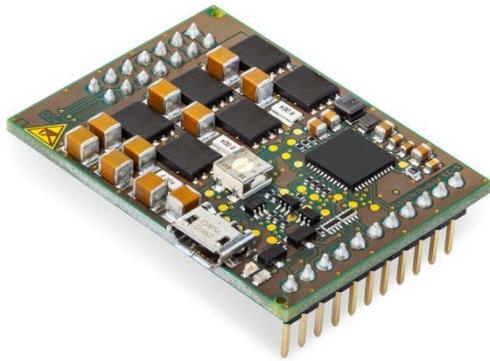


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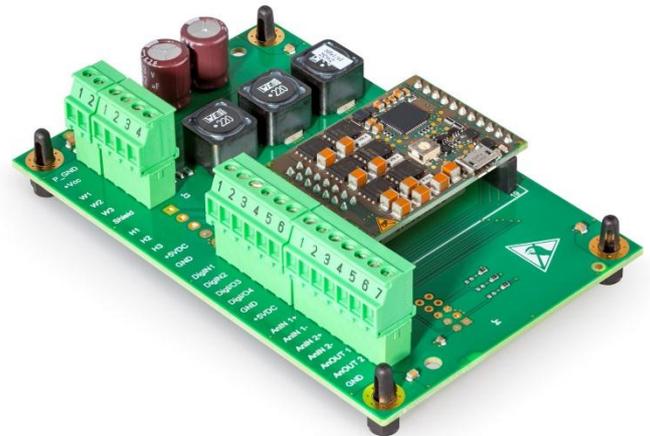
The media release is available as download on the Internet: www.maxonmotor.com

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*ESCON Module 50/4 EC-S
Digital OEM servo motor controller for sensorless
BLDC motors (brushless DC motors) without Hall
sensors up to approx. 200 Watts
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*ESCON Module Motherboard Sensorless with attached
ESCON Module 50/4 EC-S
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