PWM Servo Controller for Use with DC Motors

Maxon’s new ESCON 36/2 DC is a 4-quadrant PWM servo controller for use with DC motors up to 72 Watt. This very fast digital current controller, with enormous bandwidth for optimal motor current/torque control, provides drift-free yet extremely dynamic speed behavior through a speed range of 1 to 150,000 rpm.
When matched up with maxon’s range of motors, high demanding and dynamic drive solutions are possible. Additionally, it can be run in various operating modes (speed controller (closed loop), speed controller (open loop), current controller).

This ultra-compact servo controller is controlled by means of an analog set value. The value can be specified by means of analog voltage, an external or internal potentiometer, a defined value or by means of a PWM signal with variable duty cycle. Other functions include the ability to enable or disable the power stage depending on the direction of rotation, or to use speed ramps for acceleration and deceleration. The speed can be regulated by means of a digital incremental encoder (2-channel, with/without line driver), DC tacho or without encoder (IxR compensation).

Designed to be user-friendly with an easy start-up, no in-depth knowledge of drive technology is required. When the servo controller is connected to a PC via a USB port, it can easily and efficiently be configured with the “ESCON Studio” graphical user interface. During startup and configuration of the inputs and outputs, monitoring, data recording and diagnostics, the user has access to a large variety of functions and is assisted by user-friendly software wizards, as well as an automatic procedure for fine-tuning the controller. It comes fully equipped with everything that is needed. No additional external filters or motor chokes are required and pre-assembled cables for the startup are available as accessories.

The ESCON 36/2 DC has protective circuits against over current, excess temperature, under- and over-voltage, against voltage transients and against short-circuits in the motor cable. It is equipped with protected digital inputs and outputs and an adjustable current limitation for protecting the motor and the load. The motor current and the actual speed of the motor shaft can be monitored by means of the analog output voltage.

The large range for the input voltage and the operating temperature allows flexible use in a variety of drive applications. With its exceptional efficiency of 95%, the inexpensive ESCON 36/2 DC is a first-class choice for mobile, highly efficient yet consumption-optimized applications.

More information on the ESCON 36/2 Servo Amplifier can be viewed at http://www.electromate.com/products/series.php?&series_id=105450 [1].

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