

The stepper motor drive modules of the USDxxxx series have been designed to drive permanent magnet bipolar stepping motors.

In plastic or metal housing they are suitable for circuit board assembling. High performance, compact sizes and cost effective are their main characteristics.

The availability of twelve different models allows the application of the USD modules on many different kinds of machine. The power supply voltage range goes from 12VDC up to 85VDC and the current between 0.3A and 6A.

Each model is provided with full short circuit protection (phase to phase, phase to ground and phase to supply), with over/under voltage and over temperature protection. A fault output allows to always monitor the driver conditions.

A particular current control assures a proper driving of the motor in any condition, reducing resonances and heating. Automatic current reduction minimises heat losses when the motor is not running.

Internal pull-up resistors on each input allow the use of the modules with the addition of a few external components.



The twelve different models are split into three current sizes and four different functionalities.

The simplest series (coded USD20xxx) enable the stepping motor to move at full or half step through the DIRECTION, STEP and ENABLE signals.

The USD10xxx series use the same control signals but enhance the step motor resolution up to 1/128.

Thanks to the possibility to change step resolution at any time ("at the fly") without loss of position, i.e. with the motor still moving, it is possible to cover a wide range of speed maintaining the STEP input frequency at low value.

The drivers coded USD60xxx and USD50xxx have built-in indexer and they can be remote controlled by a simple serial link. They have a max step resolution of half and 1/128 respectively.

Through a proprietary protocol designed to minimize communication latency it is possible to connect up to 32 different drivers using a simple two wires serial link. The commands set is wide and complete: it allows to set up the operative parameters of the driver (as for example the acceleration times, the minimum and maximum frequency, etc.); it allows to execute absolute positioning or relative to the current position and, furthermore, it allows to read in real time the functioning state of the module and the instant position of the motor.

The motor position is represented with 31bit plus sign allowing positioning between 2.147.483.647 and -2.147.483.638 at step resolution of 1/128.

Three general purposes I/O lines freely settable as input or output, complete the USD50/60xxx drive modules.



Models reference table

<i>Model</i>	<i>Functionality</i>	<i>Resolution</i>	<i>Voltage</i>	<i>Current</i>	<i>Dimension</i>
USD10361	STEP and DIRECTION	Up to 1/128	12Vdc..42Vdc	0.15A..1.2A	55xx29x45mm
USD10362	STEP and DIRECTION	Up to 1/128	12Vdc..42Vdc	0.3A..2.4A	55xx29x45mm
USD10606	STEP and DIRECTION	Up to 1/128	22Vdc..85Vdc	1A...7.5A	86x40x61mm
USD20361	STEP and DIRECTION	Up to ½	12Vdc..42Vdc	0.15A..1.2A	55xx29x45mm
USD20362	STEP and DIRECTION	Up to ½	12Vdc..42Vdc	0.3A..2.4A	55xx29x45mm
USD20606	STEP and DIRECTION	Up to ½	22Vdc..85Vdc	1A...7.5A	86x40x61mm
USD50361	Intelligent serial controllable	Up to 1/128	12Vdc..42Vdc	0.15A..1.2A	55xx29x45mm
USD50362	Intelligent serial controllable	Up to 1/128	12Vdc..42Vdc	0.3A..2.4A	55xx29x45mm
USD50606	Intelligent serial controllable	Up to 1/128	22Vdc..85Vdc	1A...7.5A	86x40x61mm
USD60361	Intelligent serial controllable	Up to ½	12Vdc..42Vdc	0.15A..1.2A	55xx29x45mm
USD60362	Intelligent serial controllable	Up to ½	12Vdc..42Vdc	0.3A..2.4A	55xx29x45mm
USD60606	Intelligent serial controllable	Up to ½	22Vdc..85Vdc	1A...7.5A	86x40x61mm