Step Motor Driver SMD73
(Vers. ≤ 1.2)
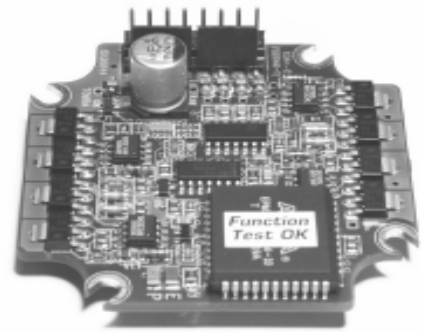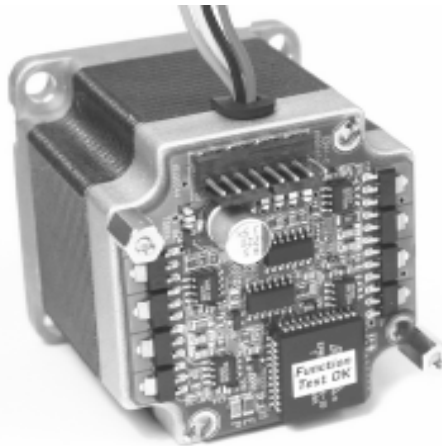
Step Motor Driver SMD73 is a miniature driver that measures only 52.4x52.4 mm and is ideal for direct mounting onto a step motor. It fits onto most types of high-torque motors, but of course can also be mounted on a surface.

The Driver can supply 2.6A RMS in each phase, and current is automatically regulated to 0.8A when the motor is not receiving step pulses. The Driver controls the motor in half-step mode, which results in 400 steps/rev. SMD73 can handle up to 50 ksteps/sec and a "half-step" current regulation ensures that the current is increased by a factor of 1.4 every second step on each phase, in order to yield maximum motor torque.

The Driver can be powered from an 18 - 28VDC supply. It is equipped with 2 indicators: a green LED indicates that power is on and a red LED indicates an error condition. For other applications, the Driver is available with step resolutions of 1/1, 1/2, 1/4, 1/5, 1/8 steps/rev., and with selectable motor current.
The Driver is equipped with an 8-pole connector. 4 terminals are used to connect the motor, 2 are used for the external power supply, and the remaining 2 are used to control the motor via step-pulse and direction signals.

For further information on the Application of Step Motor Driver SMD73, ask for Technical Note LS0001 GB, also available on www.jvl.dk

- *OEM low-price driver for Step motors*

- *Dimensions only 52.4x52.4x14 mm*

- *Power Supply from 18-28VDC*

- *LED indicators for error and power on*

- *Operates in half-step mode, 400steps/rev. 200, 800, 1000 or 1600 steps/rev. to order*

- *2.6A per phase, other values to order*

- *NPN/PNP and 5V inputs available*

- *Can be mounted on a surface or directly on NEMA23/34 High Torque motors*

- *Motor control via step-pulse and direction signals*

- *Can handle up to 50ksteps/sec.*

- *Also available with built-in step generator and as DC driver, up to 4A RMS*

- *Protected against thermal overload, current overload, short-circuit*

SMD73 Step Motor Driver

Physical Dimensions
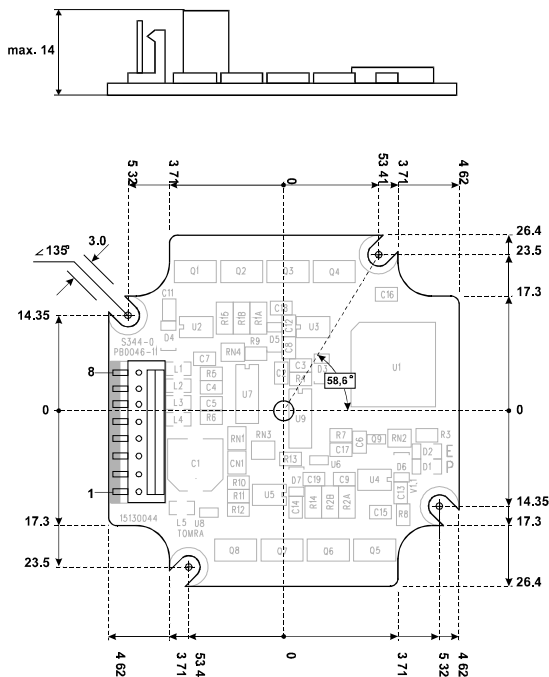
All dimensions in mm
Tolerance +/- 0.1 mm

Mounting :
Use standard M3 screws with Ø6 mm heads to avoid collision with components on the PCB. Note that there are components on the top side only. The reverse surface is plane and can therefore be mounted directly on another surface using a heat-conducting silicon plate between the Driver and surface.
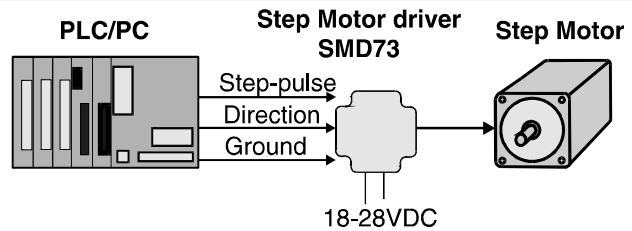
Technical Data

	Min.	Max.	Units
Power Supply:			
Supply voltage:	18	30	VDC
Supply current:		5	ADC
Driver stage:			
Chopper frequency	18	20	kHz
Motor current (per phase)	0.8	2.6	A RMS
Step-pulse input: "SCK" "IN1"			
Voltage logic "1"	10	30	VDC
Voltage logic "0"	0	5	VDC
Pulse width logic "1"	10		µs
Pulse width logic "0"	10		µs
Rise time		1	µs
Fall time		1	µs
Frequency	0	50	kHz
Step resolution:			
No. of steps per whole step*			
Direction input: "DIR" "IN2"			
Voltage logic "1"	10	30	VDC
Voltage logic "0"	0	5	VDC
Diverse:			
Temperature range	0	45	°C
Weight	14	17	gram

* As standard, SMD73 has ½ step and 2.6A RMS phase current. If required, the Driver can be supplied with step resolutions of 1/1, 1/2, 1/4, 1/5, 1/8 step/rev., and specified motor current. Also available for controlling DC motors.

Connections

Connection to the Driver is made via an 8-pole connector with 2.54 pin separation. Designations are:

1 "GND" Supply ground. Also used as ground for "DIR" and "SCK" inputs.
2 "24V" Supply. Must be fused, max. T5A
3 "SCK" Step-pulse input. Each pulse "IN1" applied to this input makes the motor move 1 step.
4 "DIR" Direction input. Selects the "IN2" direction of motor movement.
5 "MB-" Motor output, phase B-
6 "MB+" Motor output, phase B+
7 "MA-" Motor output, phase A-
8 "MA+" Motor output, phase A+

The "SCK" and "DIR" inputs must be supplied with signals from NPN outputs. Each input is equipped with a 4.7 k Ohm pull-up resistor connected to the supply voltage. Trigger level is 7.5V
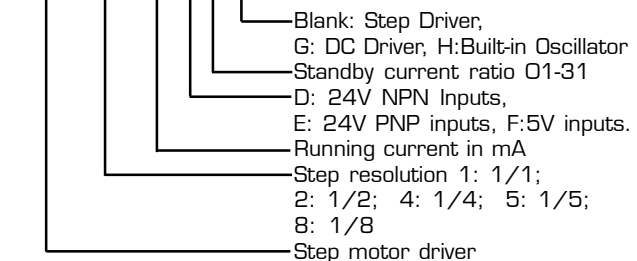
System Configuration

Other versions

Step Motor Driver SMD73 can also be configured by JVL to include a step generator and to control DC- or step motors at selectable velocity, stand-by/operating current, change of direction, etc. For example, it is possible to control a DC motor so that input 1 selects start/stop and input 2 determines velocity. Example of order number for special versions:

SMD73-2-1000E03□

Blank: Step Driver,
G: DC Driver, H:Built-in Oscillator
Standby current ratio 01-31
D: 24V NPN Inputs,
E: 24V PNP inputs, F:5V inputs.
Running current in mA
Step resolution 1: 1/1;
2: 1/2; 4: 1/4; 5: 1/5;
8: 1/8
Step motor driver

Representative