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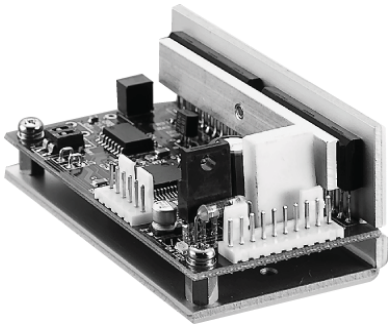
Compact Driver

SG-5M / SG-5MA



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A. Features

Can be driven with a single 20 to 40Vdc input power supply.
Bipolar constant current pentagon driver type.
Can be switched between full and half step with a switch.
Compact, lightweight and low-priced.
Applicable motor is a 5-phase stepping motor.

B. Specifications

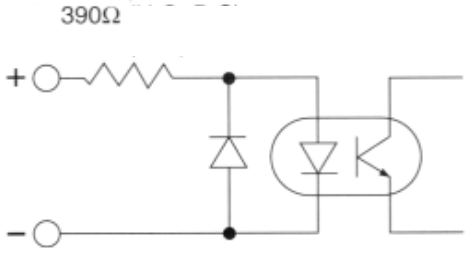
	SG-5M	SG-5MA
Driving Motor	Five phase stepping motor	
Driving Method	Bipolar constant pentagon drive	
Driving Current	0.5～1.4A/phase	0.25～0.85A/phase
	*Current setting by RUN Knob .(Refer to D-(2) Setting of Driving current)	
Input Signals	Pulse width 5 μs or higher Pulse interval 5 μm or higher Rise / fall time 1 μ s or lower Max pulse rate 50kpps Pulse voltage [H]:4~8V, [L]: -8~0.5V Internal resistance :390 Ohm	
Functions	Automatic currrent down setting	
Input voltage	DC20～40V 3A MAX	DC20～40V 1.5A MAX
Operating temperature range	0 to 40 degrees Celsius	
weight	about 100g	

C. Connection and Signal

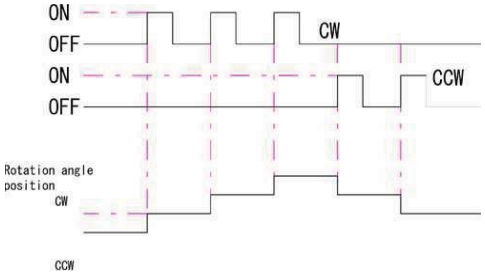
Connector	Pin No.	Signal	Functions			
CN1	1	H.O-	[ON]: Motor Excitaion OFF			
	2	H.O+				
	3	CCW-	CCW Command Input at the time of 2 clock method Direction of Motor Rotation Input at the time of 1 clock method			
	4	CCW+				
	5	CW-	CW command Input at the time of 2 clock method Pulse Signal Input at the time of 1 clock method			
	6	CW+				
CN2	1	Motor Wiring	5 Lead	Black	10 Lead	White + Gray
	2			Green		Yellow + Green
	3			Orange		Purple + Orange
	4			Red		Red + Brown
	5			Blue		Blue + Black
	6	GND	0V GND			
	7					
	8	Input Voltage	DC20～40V 3A(SG-5M), 1.5A(SG-5MA)			
	9					
	10	Output Voltage	+5V 30mA max			

Note) The CN1 input signal status is indicated by the internal photocoupler status
ON: conducting , OFF: not conducting.
Keep the input signal lines away from the power and motor lines.
Be sure that the driver is well ventilated when using in an enclosure.
When installing, place the driver with its underside - mounting surface - in close contact with a metal surface.

1) Input Signal Circuitry

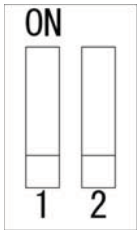


2) Input Time Chart



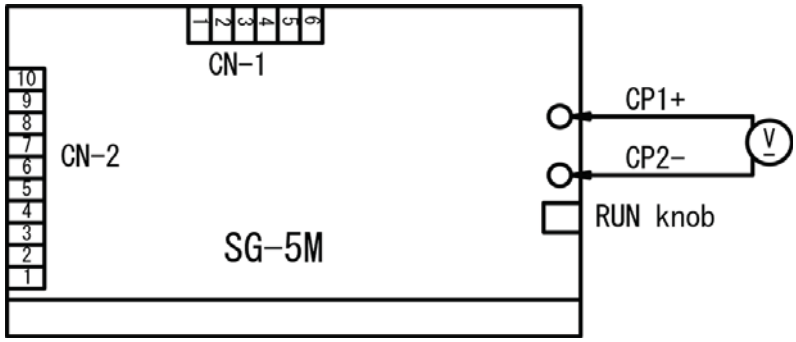
D. How to Setup

(1) Dipswitch Setting



No.	Mode	ON	OFF
1	Step	0.72/pulse	0.36/pulse
2	Clock Method	1-clock method	2-clock method

(2) Setting of Driving current



(a) Fully turn the RUN knob counterclockwise and conect a voltmeter to [CP1+] and [CP2-] as shown above. Turn the RUN knob to adjust the voltmeter reading to the voltage determined by the following formula:
For the SG-5M, check pin voltage [V] = set current [a/phase] X 2.
For the SG-5MA, check pin voltage [V] = set current [A/phase] X 4.
Referring to (b), set the RUN current by flowing a motor drive current. The SG-5M is factory-set at 1.4[A/phase], and the SG-5MA at 0.35[A/phase].

(b) To flow a current into the motor, feed a normal or reverse rotaion signal of 10pps or more, turn the RUN knob slowly and set to the calculated voltage. Be careful that feeding a signal will turn the motor.

(c) The current setting at the time of auto-current down is fixed at 65% of the rated current.

E. Dimension (Outlook)