

Nippon Pulse's AD1431 is a constant current driver board designed for 2-phase bipolar stepper motors. Available with five different excitation modes (Full, Half, 1/4, 1/8, and 1/16), the AD1431 driver board also features an auto current down function (25%, 50%, or 75%) to prevent excess heat generation during motor stop.

AD1431 Driver Board		
Electrical Specs	Input Voltage	Control power : DC12V -10% to DC24V +10% Capacity: 2A, with fuse.
	Control Method	Bipolar constant current
	Excitation Method	2 phase (FULL), 1-2 phase (HALF), W1-2 phase (1/4), 4W1-2 phase (1/16)
	Output Current	0.11A (MIN) to 1.20A (MAX) / phase Selectable by the rotary switch.
	Auto Current Down Control (ACD)	Current down operation starts in approximately 0.1s after pulse input stops and lowers the output current automatically. Selectable from 25%, 50% or 75% of the current by using the switch.
	Input Interface	Pins 1 to 4 of CN2: Photocoupler (Toshiba TLP109 or equivalent) Built-in 300 ohm resistor Forward voltage 1.64V (TYP) Recommended forward current $I_F$ : 11mA (Operation forward current $I_F$ : 10 to 20mA) Maximum response frequency 160kpps (Input voltage 5V, duty rate 50%) Pins 5 to 8 of CN2 : Photocoupler (Toshiba TLP281 or equivalent) Built-in 330 ohm resistor Forward voltage 1.15V (TYP) Recommended forward current $I_F$ : 12mA (Operation forward current $I_F$ : 5 to 50mA)
	Output Interface	Pins 9 to 10 of CN2: Photocoupler (Toshiba TLP281 or equivalent) Recommended collector current $I_C$ : 10mA (Saturation voltage between collector and emitter : 0.7V)
	CW/CCW Command Pulse	One of the following methods can be selected by the switch. *2 1. Two pulse method (CW/CCW) 2. One pulse method (CLK/DIR) Photocoupler ON: CCW Photocoupler OFF : CW
	MOT/OFF Signals	Motor excitation signal Photocoupler ON : Excitation OFF Photocoupler OFF : Excitation ON
	ACD/OFF Signals	Auto current down signal Photocoupler ON : ACD_OFF Photocoupler OFF : ACD_ON
Environmental Conditions	EORG Output Signals	Display signal of initial excitation condition *3 Photocoupler ON : Initial excitation Photocoupler OFF: other than initial excitation
	Operating Temp. Range	0 to 50°C
	Operating Humidity Range	0 to 80%RH (No condensation)
Misc. Specs	Storage Temp. Range	-10 to 60 °C
	Dimensions	60(W) x 50(D) x 30(H) [mm] (including heatsink)
	Weight	35g (including heatsink)
	Cooling System	Natural cooling
	RoHS	RoHS Compliant



### Features of the AD1431

1. AD1431 is a constant current driver for 2-phase bipolar stepper motors.
2. Output current is easily set with a rotary switch.
3. Comes with auto current down function to prevent heat generation during motor stop.
4. Excitation method available from 2-phase (full) to 4W1-2 phase (1/16) modes.
5. Design into a system or use during prototyping and evaluation phases.