

Stepping Motor & Driver

2-Phase Hybrid Stepping Motor Driver

FSD2U2P14-01



Features

1. Ultra-compact driver measuring a mere 2.2 x 2.9 x 1.7 inches.
2. Uni-polar constant current driver.
3. The micro-stepping feature may be selected from any one of the following settings: 1/1 (full step), 1/2 (micro-step), and 1/4 (micro step).
4. Through the use of 3-bit external signals, electric current settings may be specified to any one of 8 different settings from 0.33 - 2.00 A/phase.
5. Input commands may be selected from either direction-of-rotation separate serial pulse signals or a combination of directional signals and pulse signals.

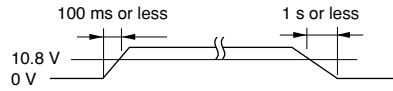
Applicable Motor

KH4234-B901
KH4238-B901
KH4238-B902
KH4242-B901
KH4242-B902
KH4248-B901
KH4254-B901

Power Supply Specifications

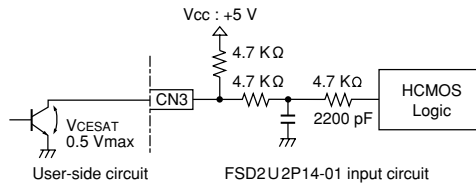
Motor Power Supply Voltage (VM): 10.8 V ~ 33.0 V

Set up time



Motor output current: About 2 A max. (different depending on the drive parameters of the motor being used)

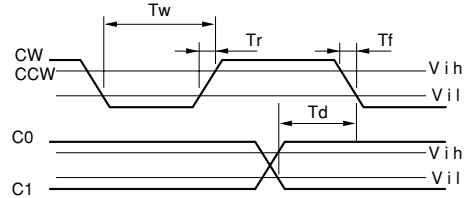
Input Circuit: C0, C1, C2, H-OFF, CW, CCW



Input Signal Specifications

Item	Signal	Specification	
		MIN	MAX
High Level Input Voltage	Vih(V)	3.5	5.3
Low Level Input Voltage	Vil(V)	0	0.8
Rise Time	Tr(μs)	—	25
Fall Time	Tf(μs)	—	15
Input Pulse Range	Twl(μs)	18	—
Direction of Rotation Change Timing	Twh(μs)	10	—

Note: Specified by the voltage waveform between the user circuit ground and the FSD2U2P14-01 terminal



Required Operating Environment Conditions

	In Operation	In Storage	Comments
Ambient Temperature (°C)	0 ~ +50	-20 ~ +60	
Ambient Humidity %	35 ~ 85	35 ~ 85	Non Condensation

Functions, Setting and Connections

[CN1 Input Signal Connector]

Terminal No.	Signal Name	Function
1 (Red)	VM	Motor power supply (to be connected to 12-30 V power supply)
2 (Black)	P.GND	Motor power supply ground (GND)
3 (Orange)	CW (Note 1)	CW directional drive pulse and serial pulse signal input
4 (Yellow)	CCW (Note 1)	CCW directional drive pulse and direction-of-rotation signal input
(Note 2)	Motor Current (A)	0.33 0.57 0.81 1.09 1.28 1.52 1.76 2.00
7 (Purple)	C0	H L H L L L H L H L
6 (Blue)	C1	H L H L L L H L H L
5 (Green)	C2	H H H H L L L L
	Current (A) (save)	0.25 0.39 0.51 0.70 0.81 0.98 1.12 1.29
8 (Gray)	H.OFF	Motor on/off (H: off)
9 (White)	S.GND	Signal ground (GND)

Note1: The CW or CCW rotation starts at the falling edge of the signal. (Please refer to Table.1)

Note2: It is defined at the RMS value of each winding when the motor is in holding mode (0 PPS) at full step without current saving stops.

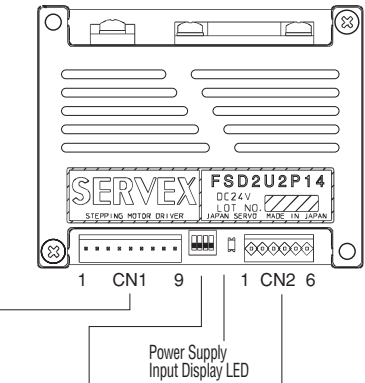
Table.1 Input Signal and Motor Direction Relation

Drive Pulse Format	Terminal No.3	Terminal No.4	Motor Direction
CW/CCW		HIGH	CW
		HIGH	CCW
CLK/DIR		LOW	CW
		HIGH	CCW
	HIGH	X	HOLDING

[Functions Setting Switch] On Name Plate Side

Switch No.	Name	Function	Switch Settings		
			OFF	ON	
1	SEL	Drive Pulse Format	CW/CCW	CLK/DIR	
2	SAVE (Note 3)	Automatic Power Saving	Saving	Not Saving	
			Division of Step Angle	1/2	1/1
3	MS0	ON	OFF	ON	OFF
4	MS1	ON	ON	OFF	OFF

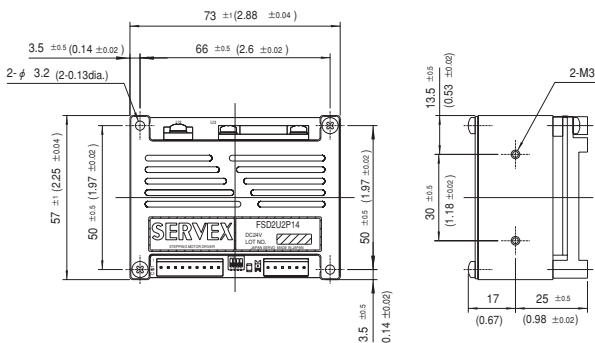
Note3: The motor enters current saving mode about 0.25 sec. after the input pulse signal stops.



[CN2 Motor connector]

Terminal No.	Name	Function
1 (Red)	A	To Motor Phase A
2 (Black)	A.COM	To Motor Phase A Common Line
3 (White/Red)	A̅	To Motor Phase A̅
4 (Green)	B	To Motor Phase B
5 (White)	B.COM	To Motor Phase B Common Line
6 (White/Green)	B̅	To Motor Phase B̅

Dimensions Unit: mm (inch)



Connector Specifications

	FSD2U2P14-01 Side Maker Model	Lead Wire	User Side		Maker
			Applicable Housing	Applicable Terminal (reel)	
CN1	IL-G-9P-S3T2-SA	UL3266, AWG22	IL-G-9S-S3C2-SA	IL-G-C2-SC-10000	J. A. E.
CN2	IL-G-6P-S3T2-SA	UL3266, AWG22	IL-G-6S-S3C2-SA	IL-G-C2-SC-10000	J. A. E.

Accessory Leadwire Assembly

