

SANMOTION F2

2-PHASE STEPPING SYSTEMS

2-Phase Stepping Driver

DC input

Applications

Medical equipment, semiconductor manufacturing equipment, measuring instruments, analyzers, and electron microscopes

Features

High Torque

The high-power model achieves approximately 2 times higher torque at high speeds than our current model,⁽¹⁾ reducing the cycle time of your equipment and increasing productivity.

Low Vibration

Motor vibration during operation has been reduced to one-third or less compared to the current model.⁽¹⁾ These drivers help make equipment motion smoother, improving the processing precision and reducing the noise.

Various Useful Safety Functions

- Using PC software, the high-power model offers fine settings of input/output signals, maintenance timing notifications, and current value selection optimized for customer equipment.
- Overcurrents and wire breakage caused by pinched motor power cables can be detected and notified with an alarm and motors can be stopped safely. Abnormal power supply voltage and heat generation can be notified even before the alarm goes off, ensuring the safety of your system.

Easy Replacement

The basic models have mounting and interface compatibility with the current model⁽²⁾ for easy replacement. Equipment performance can be improved by simply replacing your current stepping driver with a new model, with your current motor unchanged.

Compact and Lightweight

The high-power model is newly designed to achieve a 12% reduction in volume and 33% reduction in mass compared to the current model.⁽²⁾

The basic model achieves a 7% reduction in volume and 39% reduction in mass while maintaining compatibility with the current model.⁽²⁾

(1) Current model: 2-phase stepping driver (model: BS1D200P10) combined with 56 mm sq. stepping motor (model: SM2562C□0B11)

(2) Current model: 2-phase stepping driver (model: BS1D200P10)



Specifications

Model	SANMOTION F2 high-power model	SANMOTION F2 basic model	
Model no.	F2BFD400P100	F2BED200P100	
Features	High torque, high performance	Compatible with our current models	
Basic specifications	Input voltage	24 VDC ± 10%	
	Input current	4 A	
	Environment	Protection class	Class III
		Operating environment	Installation category (Overvoltage category): I (CE), pollution level: 2
		Operating ambient temperature	0 to +50°C
		Storage temperature	-20 to +70°C
		Operating ambient humidity	Below 90% RH (non-condensing)
		Storage humidity	Below 90% RH (non-condensing)
		Operating altitude	1000 m or lower above sea level
		Vibration resistance	5 m/s ² , at frequency of 10 to 55 Hz in each X, Y, and Z direction for 2 hours
		Shock resistance	20 m/s ²
		Dielectric strength	700 VDC for 1 minute (between power input terminal and chassis)
	Insulation resistance	10 MΩ min. at 500 VDC (between power input terminal and chassis)	
Mass	60 g	55 g	
Functions	Function selections	Pulse input mode (1-/2-input mode), low vibration mode (on/off), automatic current limiting (on/off), step division mode (2-/5-phase mode), initial excitation phase (excitation origin/excitation phase of last power off), motor selection, operating current, step angle	
	Protection functions	Overcurrent protection, power supply voltage monitoring, overheat detection, motor wire breakage detection, command speed error, memory error, hardware error	
	LED indicators	Power supply monitoring, alarm status monitoring	
	PC-based functions	Parameter customization, operating status monitoring	-

Compatible motors

Driver and motor combination table

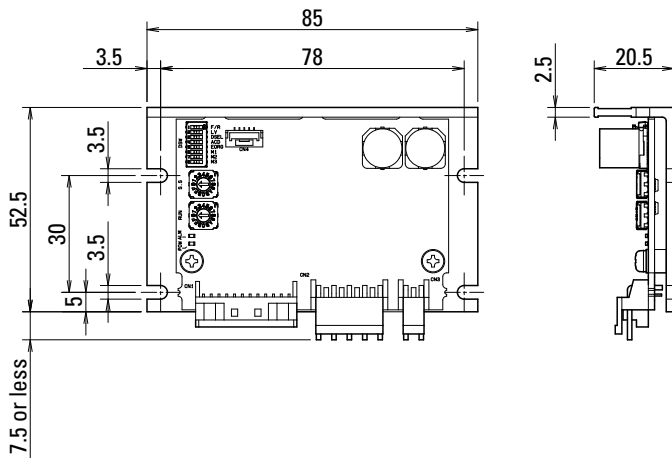
Driver model	Motor size	Single shaft	Dual shaft	Rated current	Full step angle
SANMOTION F2 high-power model	56 mm sq.	SM2561C30B41	SM2561C30B11	3 A/phase	1.8°
		SM2562C30B41	SM2562C30B11		
		SM2563C30B41	SM2563C30B11		
		SM2564C30B41	SM2564C30B11		
	56 mm sq.	SM2561C40B41	SM2561C40B11	4 A/phase	
		SM2562C40B41	SM2562C40B11		
		SM2563C40B41	SM2563C40B11		
		SM2564C40B41	SM2564C40B11		
	86 mm sq.	SH2861-5141	SH2861-5111	4 A/phase	
	SANMOTION F2 basic model	42 mm sq.	SH1421-5241	SH1421-5211	
SH1422-5241			SH1422-5211		
SH1424-5241			SH1424-5211		
SM2561C20B41			SM2561C20B11		
56 mm sq.		SM2562C20B41	SM2562C20B11	2 A/phase	1.8°
		SM2563C20B41	SM2563C20B11		
		SM2564C20B41	SM2564C20B11		
		SH1601-5240	SH1601-5210		
60 mm sq.		SH1602-5240	SH1602-5210	2 A/phase	0.9°
		SH1603-5240	SH1603-5210		
		SH2861-5041	SH2861-5011		
86 mm sq.		SH2862-5041	SH2862-5011	2 A/phase	1.8°

Note: Compatible motors are bipolar motors.

(The bipolar drive allows current to flow in both directions along the winding. The drive circuit is more complex, but it offers higher torque.)

Dimensions [Unit: mm]

SANMOTION F2 high-power model Model no.: F2BFD400P100



SANMOTION F2 basic model Model no.: F2BED200P100

