

SANYO DENKI Develops Stepping Systems Featuring High Torque and Low Vibration

SANYO DENKI CO., LTD. has expanded its lineup of the SANMOTION F2 2-phase stepping system and SANMOTION F5 5-phase stepping system by adding 2 new stepping driver models—a high-power model and a basic model—to each series.

The high-power models can drive motors with high torque, contributing to shortening the cycle time of your equipment.

The basic models are designed for easy replacement of our current models⁽¹⁾ while also being smaller and lighter. Both models achieve significantly reduced motor vibration during operation.

They are suitable for medical equipment, semiconductor manufacturing equipment, measuring instruments, analyzers, and electron microscopes.

Features

1. High Torque

The high-power models achieve approximately 1.5 times higher or more torque at high speeds than our current models,⁽²⁾ reducing the cycle time of your equipment and increasing productivity.

2. Low Vibration

Motor vibration during operation has been reduced to one-third or less compared to the current models.⁽²⁾ These drivers help make equipment motion smoother, improving the processing precision and reducing the noise.

3. Various Useful Safety Functions

- Using PC software, the high-power models offer 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.

4. Easy Replacement

The basic models have mounting and interface compatibility with the current models⁽¹⁾ for easy replacement. Equipment performance can be improved by simply replacing your current stepping driver with a new model, with your current motor unchanged.

5. Compact and Lightweight

The high-power models are newly designed to achieve a 63% reduction in volume and 73% reduction in mass compared to the current model.⁽³⁾ The basic models achieve a 7% reduction in volume and 39% reduction in mass while maintaining compatibility with the current models.⁽¹⁾

(1) Current models: 2-phase stepping driver (model: BS1D200P10), 5-phase stepping driver (model: FS1D140P10)

(2) Current models: 2-phase stepping driver (model: BS1D200P10) combined with 56 mm sq. stepping motor (model: SM2562C-0B11), or 5-phase stepping driver (model: F5PAE140P100) combined with 60 mm sq. stepping motor (model: S-5601-200)

(3) Current model: 5-phase stepping driver (model: F5PAE140P100)

Driver Specifications

| | | | | | | |
|-----------------------------|---|---|--|--|--|--|
| Type | SANMOTION F2 high-power model (2-phase) | SANMOTION F5 high-power model (5-phase) | SANMOTION F2 basic model (2-phase) | SANMOTION F5 basic model (5-phase) | | |
| Features | High torque, high performance | | Compact, lightweight, compatible with our current models | | | |
| Driver model no. | F2BFD400P100 | F5PFD280P100 | F2BED200P100 | F5PED140P100 | | |
| Input voltage | 24 VDC, 4 A | | 24 VDC, 2 A | | | |
| Operating temperature range | 0 to +50°C | | | | | |
| Operating humidity range | 90% RH or below (non-condensing) | | | | | |
| Dimensions | 85 × 20.5 × 52.5 mm | | 64 × 28 × 54 mm | | | |
| Mass | 60 g | | 55 g | | | |
| Function selections | Pulse input mode, resolution settings, low vibration mode, current at rest, excitation phase saving, motor selection, operating current, step angle | | | | | |
| Protection functions | Overcurrent protection, power supply voltage monitoring, overheat detection, wire breakage detection, command speed error, memory error, hardware error | | | | | |
| PC-based functions | Parameter customization, operating status monitoring | | - | | | |
| Rated current | 3 A/phase, 4 A/phase | 2.8 A/phase | 2 A/phase | 1.4 A/phase | | |
| Compatible motors | 56/86 mm sq. | 60 mm sq. | 42/56/60/86 mm sq. | 28/42/60/86 mm sq. | | |

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

Release Date March 1, 2023

Price Open

Photo



SANMOTION F2 high-power model

SANMOTION F5 high-power model



SANMOTION F2 basic model

SANMOTION F5 basic model

The information stated in this release is current as of February 28, 2023.

SANMOTION is a registered trademark of SANYO DENKI CO., LTD.