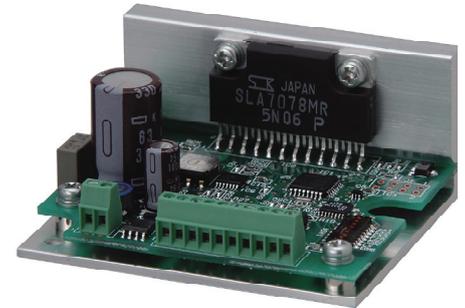


# SANMOTION

## New Product Information

### 2-Phase & 5-Phase DC Stepping Drivers

SANYO DENKI EUROPE SA. is pleased to introduce their new generation of **2-phase and 5-phase DC stepping drivers**. This serie of stepping drivers is very compact, achieve low vibration and comply with safety standards and environmental regulations. Furthermore, these drivers offer a high cost performance and increase customer satisfaction.



#### Specifications :

**3 models** : 2-phase bipolar & unipolar and 5-phase pentagon  
**Input Voltage** : 24/36 VDC (+/-10%)  
**Current per phase** : 2 A max.  
**Input type** : Photocoupler or C-MOS input  
**3 inputs** ( Pulse & Direction, Power down) - **2 outputs** (Phase origin monitor, Alarm)  
**Connection** : connectors or screw terminals  
**Standards** : UL/CE/RoHS  
**Applicable motors** : 28 mm (NEMA 11) to 86 mm (NEMA 34) square size

#### Main features :

##### 1) Size and Weight Reductions :

The use of smaller parts, better integration, and reduction of the size of the heat sink due to decreased heat generation from power module has allowed a **68% reduction in size and a 57% reduction in weight** over conventional models.

##### 2) Low Vibration and Micro-Step Functions :

To achieve low vibration level, the 2-phase drivers have a micro-step function. Resolution can be set from 1/1 to 1/16 with DIP switch. Additionally, a low vibration mode enables smooth operation even in full or half step setting.

##### 3) Built-in Protection Functions :

To avoid the damage of the drivers, we have developed an open phases detection and a protection against them while outputting an alarm and lighting a LED.

##### 4) Easy Wiring :

In addition to connector models, we have also created models that use screw terminals. Wiring can now be done without the need for a special crimp tool.

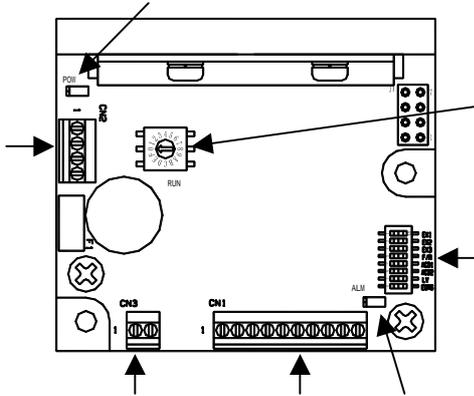
#### Target Applications :

Chip Mounters, PCB production & inspection, Office Automation.

# 3 . FUNCTIONS, FEATURES, AND CONFIGURATION

## 3.1 Driver Part Names

Photo coupler input type



Power supply connector (CN3)

Connect the main circuit power supply.

Input/Output signal connector (CN1)

Connect the input/output signal.

LED for power supply monitor (POW)

Lit up when the main circuit power supply is connected.

Function selection dip switch

You can select functions according to the specifications.

Driving current selection switch (RUN)

You can select the value of the motor current when driving.

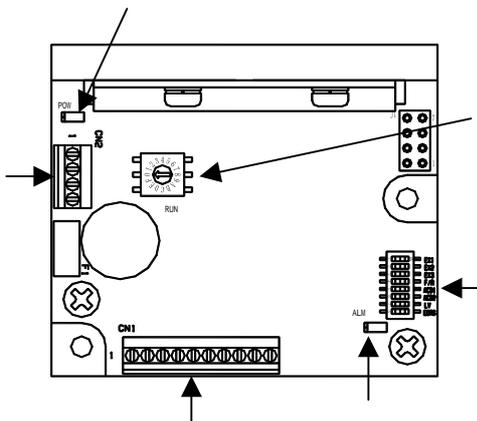
LED for alarm display (ALM)

Lit when an alarm is generated.

Motor connector (CN2)

Connect the motor's power line.

C-MOS input type



Power supply and input/output signal connector (CN1)

Connect the main circuit power supply, the control Power supply, and the input/output signal.

LED for power supply monitor (POW)

Lit up when the main circuit power supply is connected.

Function selection dip switch

You can select functions according to the specifications.

Driving current selection switch (RUN)

You can select the value of the motor current when driving.

LED for alarm display (ALM)

Lit when an alarm is generated.

Motor connector (CN2)

Connect the motor's power line.

## 2 . FUNCTIONS AND FEATURES

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### 2.1 Built-in Functions

This section explains the driver's main built-in functions.

- **Input pulse mode select function**  
By using the dip switch you can select input method 1 or input method 2.
- **Current switch function when driving**  
By using the rotary switch, you can set the motor current when driving.
- **Current switch function when stopping**  
By using the dip switch, you can set the motor current when stopping.
- **Low vibration mode**  
Even for the pulse stream corresponding to Full steps and Half steps it can perform low vibration and smooth driving.
- **Micro step function**  
By using the dip switch to set the resolution, micro step driving can be performed.

## 2 . FUNCTIONS AND FEATURES

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### 2.2 Features

This section explains the driver's features.

- **Interface**

Two kinds of input/output interface, photo coupler and C-MOS, are provided.

- **Wiring method**

As well as the usual connector type, a terminal block type is also provided.

For the terminal block type, you can wire without using any special tools.

# 1. BEFORE OPERATION

## 1.5 Standard Combination

The following shows combinations of stepping motors and drivers.  
If the combination is different, it does not drive properly.

Standard combination of F Series “BS1D200 ”

Motor flange size	Single-axis shaft	Dual-axis shaft	Basic step angle	Rated current
28mm	103H3205-5770	103H3205-5730	1.8°	1A
	103H3215-5770	103H3215-5770	1.8°	1A
42mm	103H5205-5240	103H5205-5210	1.8°	1A
	103H5208-5240	103H5208-5210	1.8°	1A
	103H5210-5240	103H5210-5210	1.8°	1A
	SH1421-5241	SH1421-5211	0.9°	2A
	SH1422-5241	SH1422-5211	0.9°	2A
	SH1424-5241	SH1424-5211	0.9°	2A
50mm	103H6701-5040	103H6701-5010	1.8°	2A
	103H6703-5040	103H6703-5010	1.8°	2A
60mm	103H7821-5740	103H7821-5710	1.8°	2A
	103H7822-5740	103H7822-5710	1.8°	2A
	103H7823-5740	103H7823-5710	1.8°	2A
	SH1601-5241	SH1601-5211	0.9°	2A
	SH1602-5241	SH1602-5211	0.9°	2A
	SH1603-5241	SH1603-5211	0.9°	2A

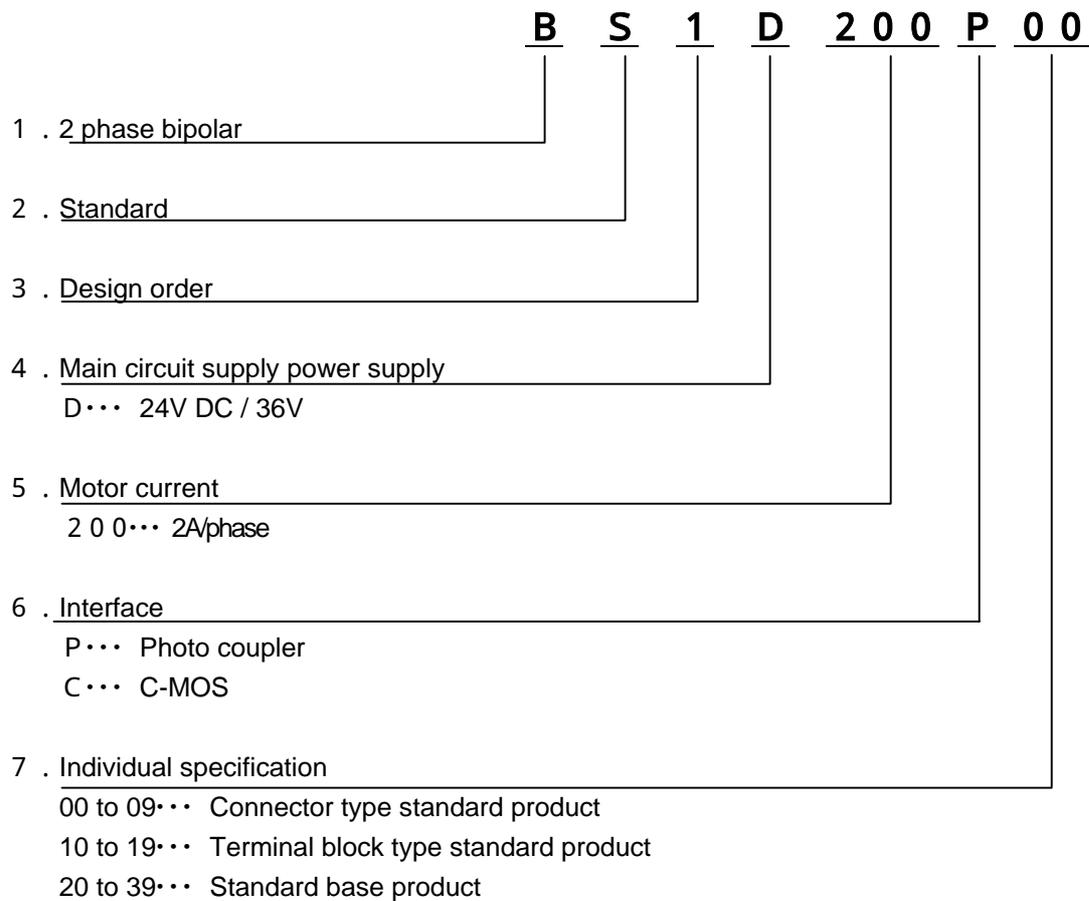
## 1.6 Accessories

There are no accessory parts for the F Series “BS1D200 ”.

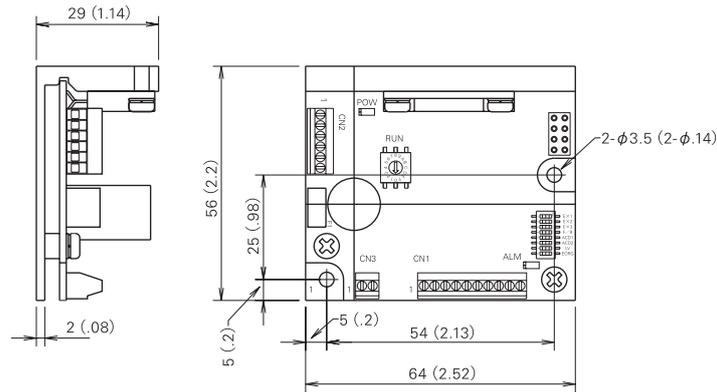
# 1. BEFORE OPERATION

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## 1.4.2 Model Number of Driver



# Drivers [ Unit: mm (inch) ]



## Safety standards

### driver

UL	Acquired standards		File No.	Standard part
UL	UL		E179775	UL508C
	UL for Canada			
CE (TÜV)	Directives	Category	Name	Standard part
	Low-voltage directives	-	-	EN61010-1
		EMC directives	Emission	Terminal disturbance voltage
	Electromagnetic radiation disturbance			EN55011-A
	Immunity		ESD( Electrostatic discharge )	EN61000-4-2
			RS( Radio-frequency amplitude modulated electromagnetic field )	EN61000-4-3
			Fast transients	EN61000-4-4
Surges	EN61000-4-6			

### SM series motor(UL/CE),H series motor(CE)

UL	Acquired standards		File No.	Standard part
UL	UL		E208878	EN-60034-1
	UL for Canada			
CE	Standard category		IEC34-5	(EN-60034-5)
	Low-voltage directives			

EMC characteristics may vary depending on the configuration of the users control panel, which contains the driver or stepping motor, or the arrangement and wiring of other electrical devices. Parts for EMC noise suppression like noise filters and toroidal type ferrite cores may be required depending on circumstances. Validation test of F series driver has been performed for low-voltage EMC directives at TÜV( TÜV product service ) for self-declaration of CE marking.