

## Stepping Motor Controller

# SG8030J

The **SG8030J** is a compact controller that switches between two control methods according to the application: sequential positioning and data selection positioning.

With sequential positioning mode, up to four positioning control operations can be executed in the pre-determined sequence by simply inputting the start command from a programmable controller. In data selection positioning mode, positioning is controlled by selecting one of four sets of pre-registered positioning data and inputting the start command from a programmable controller.

### ■ Features

#### ● High Performance, Compact Size

With dimensions of 1.89 in.×1.89 in.×3.3 in. (48 mm×48 mm×84 mm), the **SG8030J** is the smallest Oriental Motor controller. They come in DIN-rail-mount and panel mount versions.

#### ● High-Speed Positioning & Low Vibration

The jerk-limit control function allows you to set a shorter acceleration/deceleration time compared with the use of linear acceleration/deceleration patterns. This reduces the overall positioning time.



DIN Rail Mounting Model

Recessed Mounting Model

#### ● Switch Control Methods Easily

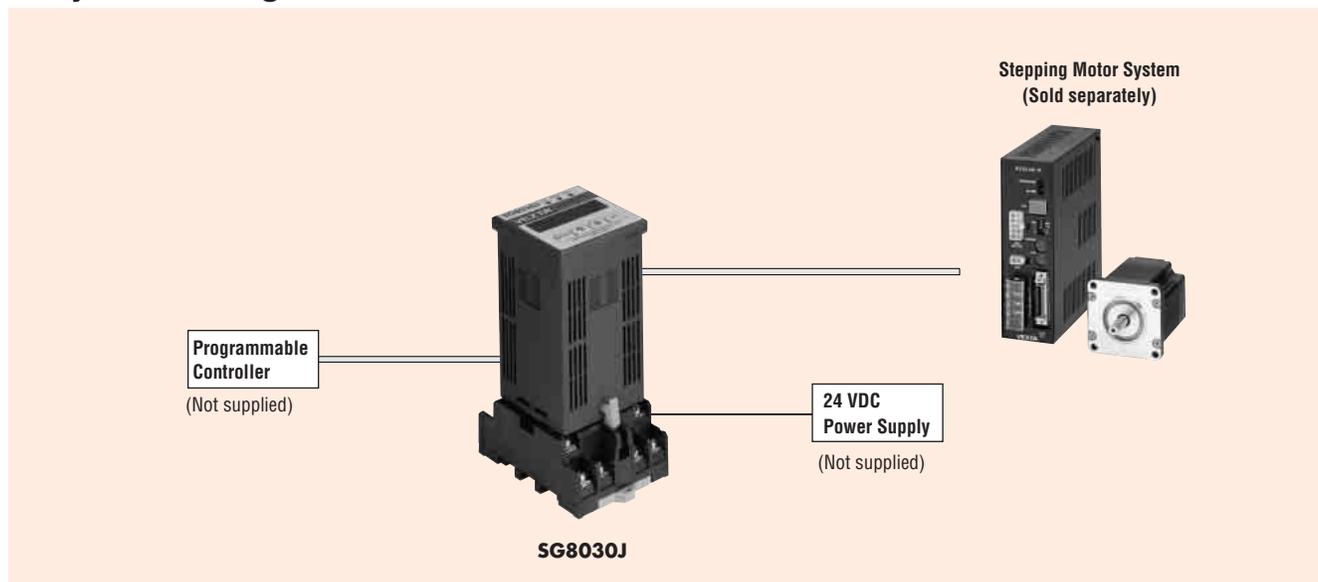
Switch control between sequential positioning and data selection positioning.

#### ● Functions

The **SG8030J** offers commonly used functions including:

- Control modes: External, program, test
- Operating modes: Positioning, return to mechanical home, continuous operation

### ■ System Configuration



## Product Line

Type	Model
DIN Rail Mounting Model	<b>SG8030J-D</b>
Recessed Mounting Model	<b>SG8030J-U</b>

## Specifications

Model	SG8030J-D SG8030J-U	
Number of Control Axes	1 Axis	
Number of Settings	4 Profiles	
Positioning Data	Setting Mode	Set with touch key on front panel (stored in EEPROM)
	Setting Method	Incremental Mode (point to point)
Positioning Control	Mode	Sequential-Step Positioning Step-Select Positioning
	Move Distance Setting Range	Incremental 1~99999 Pulses
	Starting Pulse Speed Setting Range (VS)	100 Hz~10 kHz (100 Hz Units)
	Operating Pulse Speed Setting Range (VR)	100 Hz~200 kHz (100 Hz Units)
	Acceleration/Deceleration Rate Setting Range (TR)	1~100 ms/kHz (28 rate*)
Pulse Output Mode	1-Pulse Output/2-Pulse Output Mode select possible	
Operation Modes		Positioning Operation (INDEX Operation) Return to Mechanical Home Operation (HOME Operation) Continuous Operation (SCAN Operation) JOG Operation * Test mode only
	Control Modes	External Input Mode (EXT) Program Mode (PROG) Test Mode (TEST)
Mechanical Home Return Function	Sensor detection of home through designation of mechanical home detection direction of rotation	
Input Signals	24 VDC Photocoupler Input, Input Resistance 4.7 kΩ	
Output Signals	Transistor Output Linked to Photocoupler 24VDC 25 mA maximum	
Power Supply Input	24 VDC±5% Current Consumption 0.1 A	
Ambient Temperature	32°F~104°F (0°C~+40°C) (Nonfreezing)	
Ambient Humidity	20%~85% (Noncondensing)	

\* The following 28 acceleration/deceleration rates can be selected. (unit: ms/kHz)

1, 2, 4, 5, 6, 8, 10, 12, 14, 15, 16, 18, 20, 22, 24, 25, 26, 28, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100

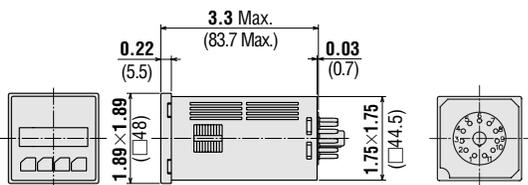
## Dimensions Scale 1/4, Unit = inch (mm)

### ● DIN Rail Mounting Model

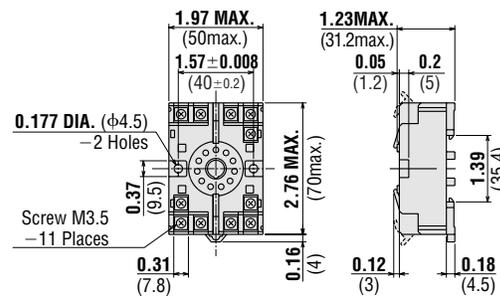
#### ◆ SG8030J-D

Weight: 0.37 lb. (0.17 kg)

DXF B094



### ◆ Flush Connection Socket (Included)

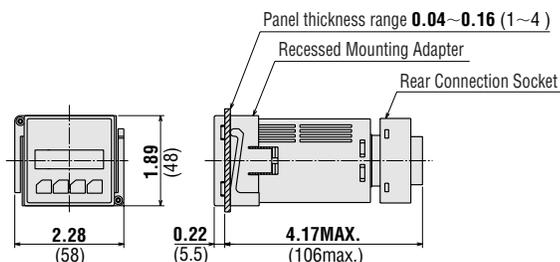


### ● Recessed Mounting Model

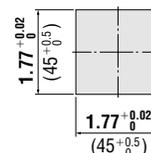
#### ◆ SG8030J-U

Weight: 0.33 lb. (0.15 kg)

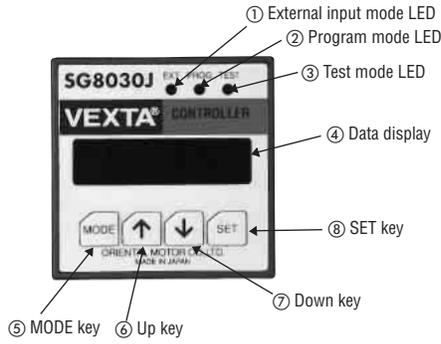
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### ◆ Panel Mounting Cut-Out Dimensions



## Connection and Operation



①	EXT (LED): Lights up when external input is selected.
②	PROG (LED): Lights up when program mode is selected.
③	TEST (LED): Lights up when test mode is selected.
④	Data display: Shows operation and setting status.
⑤	MODE key
⑥	↑ key
⑦	↓ key
⑧	SET key

## Connection Socket Signal Table

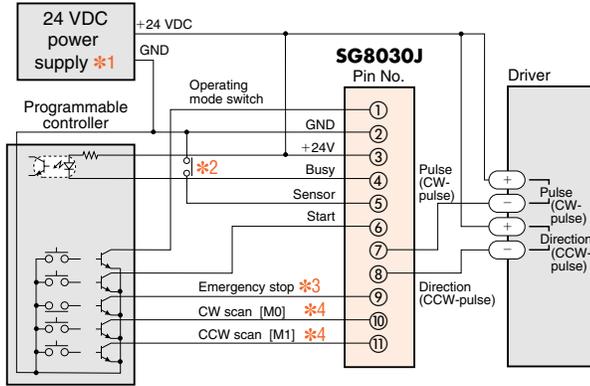
Pin No.	Signal Designation	I/O	Function
1	Operation Mode Input	Input	S: Switching Positioning/Home Detection Operation D: Switching Positioning/Home Detection Operation and Continuous Operation
2	GND	Input	24 VDC Power Supply
3	+24 VDC	Input	
4	Busy	Output	Output during Pulse Oscillation
5	Sensor	Input	Mechanical Home Detection Sensor
6	Start	Input	Start Signal
7	CW Pulse/Pulse	Output	CW Pulse (2-pulse input mode)/Pulse (1-pulse input mode)
8	CCW Pulse/Rotation Direction	Output	CCW Pulse (2-pulse input mode)/Rotation Direction (1-pulse input mode)
9	Emergency Stop	Input	Stop all operations (including busy output)
10	S: CW Scan	Input	S: CW Continuous Operation
	D: M0 [CW Scan]		D: Data Select Signal [CW Continuous Operation]
11	S: CCW Scan	Input	S: CCW Continuous Operation
	D: M1 [CCW Scan]		D: Data Select Signal [CCW Continuous Operation]

Indications in brackets [ ] apply to state when mode switching signal was input.

\* Only pins 1, 10, 11 differ for sequential positioning and selection positioning.

"S" in the table indicates sequential positioning and "D" indicates selection positioning.

## Connection Diagram



\*1 The pulse output section uses a constant-current circuit, so no external resistor is required.

Connect +5 V power directly to the driver + terminals and connect the 24 VDC and 5 VDC GND terminals to each other.

\*2 Use a 24 VDC home sensor.

\*3 This should be normally closed during normal operation.

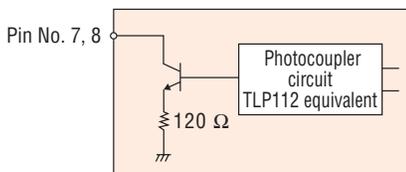
When not using the emergency stop input signal, always connect to the +24 VDC terminal.

The "E.STOP" message is displayed when the power supply turns off.

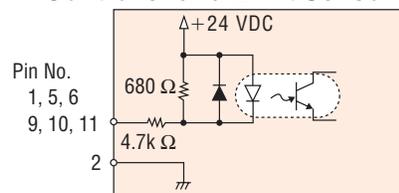
\*4 The names in brackets [ ] are for data selection positioning type.

## Description of Input/Output Signals

### Output Signals to Driver



### Input Signals from Programmable Controller and Limit Sensor



### Output Signals to Programmable Controller

