# Stored Data Controller
SG8030J

The **SG8030J** incorporates a jerk limiting control function that minimizes vibrations during motor operation. All operations including data setting can easily be performed using the four touchpads on the front panel. In addition, the number of signal lines is reduced to a minimum for easy connection.

RoHS

DIN Rail Mounting Model   Recessed Mounting Model

■Features

●Jerk Limiting Control Function Suppresses Motor Drive Vibrations

The jerk limiting control function lets you suppress vibration that otherwise occurs when the motor is being driven or stopped.
For example, this function is particularly useful when a belt pulley is used to drive the motor and you want the load to be moved with low vibration.

●Measurement Conditions
Mechanism: Belt drive
Operation mode: Positioning operation
Load: 10 kg (22 lb.)

Vibration that occurs when the operation mode is switched from acceleration/deceleration to constant speed manifests as vibration of the mechanism.

By suppressing vibration that otherwise occurs when the operation mode is switched from acceleration/deceleration to constant speed, vibration of the mechanism is suppressed.

Motor Shaft Speed | Time

Motor Shaft Speed | Time
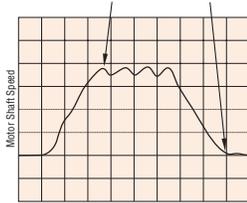
Linear Acceleration/Deceleration Pattern
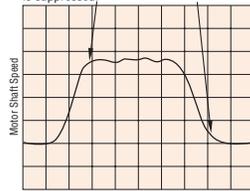
Jerk Acceleration/Deceleration Pattern

●These graphes are provided only as a reference. The actual effect of this function will vary depending on the mechanism of your equipment.

To achieve the same positioning time with jerk controlled acceleration/deceleration, set the acceleration/deceleration rate to 1/2 that of linear controlled acceleration/deceleration.

●Sequential Positioning Operation/External Signal Operation Possible

In sequential positioning operation, the start signal always causes execution from step No. 1 in a preselected sequence.
In external signal operation, when the CW scan (or CCW scan) signal input goes ON, operation starts. When the signal goes OFF, slowdown stop occurs. This is useful for moving the load manually to a desired position.

Step No.1   Step No.2   Step No.3

Step No.4

Sequential Positioning

CW (CCW) Scan OFF

CW (CCW) Scan ON

Operation of External Signals

Speed | Time

CW (CCW) Scan | ON OFF
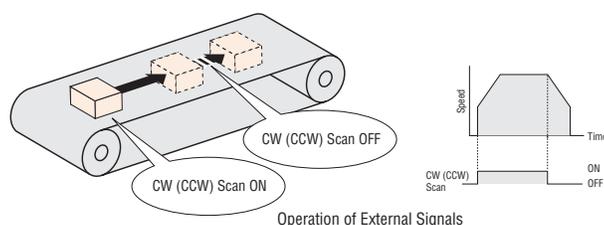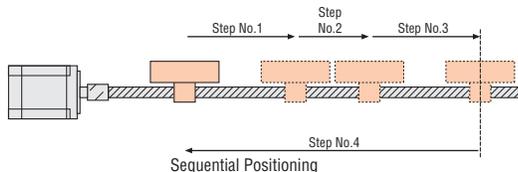
### ●Maximum Oscillation Frequency 200 kHz

The maximum oscillation frequency of 200 kHz allows motor control in micro steps.

●1-Pulse Output/2-Pulse Output Mode Select Possible

In addition to the 2-pulse output mode, the controller can also provide 1-pulse output mode, which makes it compatible with a wide range of motor drivers.

●Front Panel Single Interface for All Settings and Operation Checks

All operations including setting of various data can be performed using the four touchpads on the front panel. You can also check the status of each operation simply by checking the display on the front panel.

SG8030J
VEXTA   CONTROLLER

Touchpads

●48×48 mm (1.89×1.89 in.) DIN Size and Two Mounting Configurations are Provided

The unit is very compact, measuring only W 48 mm (1.89 in.)× D 48 mm (1.89 in.)×H 83.7 mm (3.3 in.).
Two mounting configurations are available for DIN rail mounting and recessed mounting.

48 mm
(**1.89** in.)

83.7 mm
(**3.3** in.)

DIN Rail Mounting Model   Recessed Mounting Model

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■System Configuration

Programmable Controller
(Not supplied)

Stepping Motors Servo Motors Linear and Rotary Actuators

24 VDC Power Supply
(Not supplied)
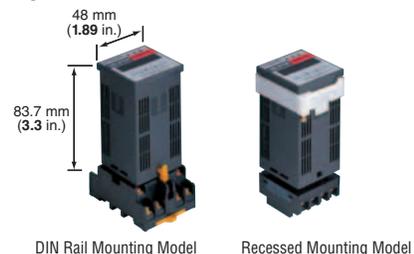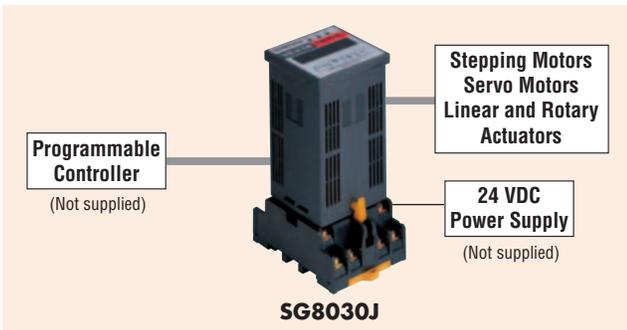
SG8030J

■Product Line

Type	Model
DIN Rail Mounting Model	**SG8030J-D**
Recessed Mounting Model	**SG8030J-U**

The following items are included in each product.
Controller, Flush Mounting Socket, Recessed Mounting Adapter∗, Operating Manual
∗Only for **SG8030J-U**

■Specifications (RoHS)

Model		SG8030J-D SG8030J-U
Number of Control Axes		1 axis
Positioning Data	Number of Settings	4 steps
	Setting Method	Set with touchpads on front panel (stored in EEPROM)
	Setting Mode	Incremental mode (point to point)
Positioning Control	Mode	Sequential positioning Data-select positioning
	Travel Amount Setting Range	Incremental 1～99 999 pulses
	Starting Pulse Speed Setting Range (VS)	100 Hz～10 kHz (100 Hz increments)
	Operating Pulse Speed Setting Range (VR)	100 Hz～200 kHz (100 Hz increments)
	Acceleration/Deceleration Rate Setting Range (TR)	1～100 msec/kHz (28 rates∗)
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) 1-pulse operation (JOG operation: Test mode only)
Control Modes		External input mode (EXT) Program mode (PROG) Test mode (TEST)
Number of Maximum Return Pulses		—
Return to Mechanical Home 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 24 VDC maximum 25 mA maximum
Power Source		24 VDC±5%, Current consumption 0.1 A
Ambient Temperature		0～+40°C (+32～+104°F) (non-freezing)
Ambient Humidity		20～85% (non-condensing)

∗The following 28 acceleration/deceleration rates can be selected. [unit: msec/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

CAD Data Manuals www.orientalmotor.com **Technical Support** **TEL: (800) 468-3982** E-mail: techsupport@orientalmotor.com

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Side tab navigation:

Introduction

AC Input Motor & Driver
- αSTEP AR — 0.36°/Geared
- αSTEP AS — 0.72°/Geared
- RK — 0.9°/1.8°
- UMK

DC Input Motor & Driver
- αSTEP/Geared αSTEP AR — 0.36°
- αSTEP ASX — 0.36°
- CRK — 0.36°/0.72°/Geared
- CMK — 0.9°/1.8°/Geared
- RBK — 1.8°/Geared

Motor Only
- PK — 0.36°
- PK — 0.72°
- PK — 0.9°
- PK/PV — 1.8°
- PK — Geared

Controllers SCX10/EMP400/SG8030J

Accessories

■Dimensions Unit = mm (in.)

●DIN Rail Mounting Model

◇SG8030J-D

Mass: 0.17 kg (0.37 lb.)

DXF B094

●Recessed Mounting Model

◇SG8030J-U

Mass: 0.15 kg (0.33 lb.)

DXF B095

Panel Thickness Range 1～4 (**0.04**～**0.16**)
Recessed Mounting Adapter
Rear Connection Socket
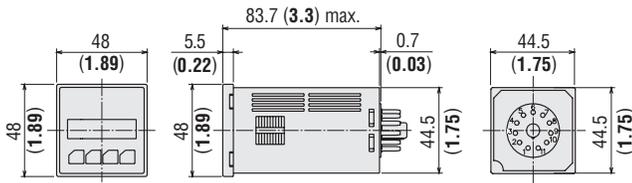
◇Flush Mounting Socket (Included)
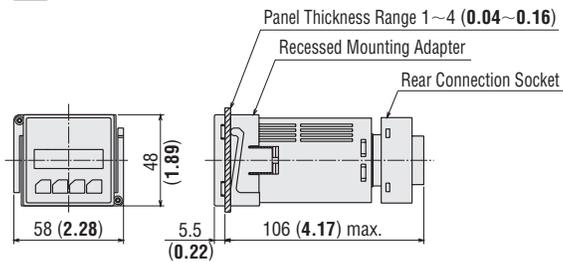
◇Panel Mounting Cut-Out Dimension
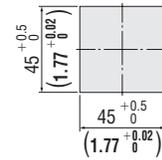
■Connection and Operation

●Names and Functions of Controller Parts

①External input mode LED
②Program mode LED
③Test mode LED
④Data display
⑧SET key
⑦Down key
⑤MODE key ⑥Up key
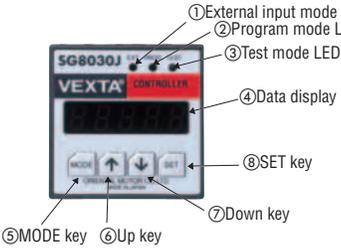
①	EXT (LED): Lights up when external input is selected.
②	PROG (LED): Lights up when program mode is selected.
③	TEST (LED): Lights up when test mode is selected.
④	Data display: Shows operation and setting status.
⑤	MODE key: Switches control mode
⑥	↑ key: Changes data
⑦	↓ key: Changes data
⑧	SET key: Stores set data

◇Connection Socket Signal Table

Pin No.	Signal Name	Input/Output	Function
1*	Operation mode switch	Input	S: Positioning/home detection operation D: Positioning/home detection operation and continuous operation
2	GND	Input	GND connecting terminal
3	+24V	Input	24 VDC power supply input terminal
4	BUSY	Output	Output during pulse oscillation
5	HOMELS	Input	Mechanical home detection sensor
6	Start	Input	Start signal
7	Pulse/CW pulse	Output	1-pulse output mode: Pulse 2-pulse output mode: CW pulse
8	Rotation direction/CCW pulse	Output	1-pulse output mode: Rotation direction 2-pulse output mode: CCW pulse
9	External stop	Input	Stop all operations (including busy output)
10*	S: CW scan D: M0 [CW scan]	Input	S: CW continuous operation D: M0 data select signal [CW continuous operation]
11*	S: CCW scan D: M1 [CCW scan]	Input	S: CCW continuous operation D: M1 data select signal [CCW continuous operation]

● Indications in brackets [ ] apply to state when operation mode switch signal was input.
＊Only pins 1, 10, 11 differ for sequential positioning and data-select positioning.
"S" in the table indicates sequential positioning and "D" indicates data-select positioning.

●Connection Diagrams

SG8030J

24 VDC Power Supply
+24 VDC
GND
Programmable Controller
Operation Mode Switch
Pin No.
Driver
GND ②
+24 V ③
＊1 Busy Output ④
HOMELS ⑤
Start ⑥
⑦
⑧
＊2 External Stop ⑨
CW Scan <M0> ⑩
CCW Scan <M1> ⑪
＊3
Pulse (CW)
Rotation Direction (CCW)
CW+ (PLS +)
CW− (PLS−)
CCW+ (DIR.+)
CCW− (DIR.−)

＊1 This is the mechanical home detection sensor. Use a sensor rated for 24 VDC.
＊2 Connect to the ground [B contact (normally closed)] in normal operation.
＊3 Designations in < > brackets are for data-select positioning mode.

Note

● Note that as the length of the pulse signal line increases, the maximum transmission frequency decreases.

●Description of Input/Output Signal

◇Output Signals to Driver

12 mA max.
Pin No.7,8
Constant Current Circuit
120 Ω
0 V
0 V
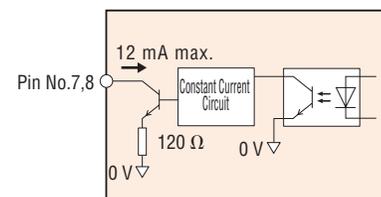
◇Input Signals from Programmable Controller and Limit Sensor

+24 VDC
Pin No. 1,5,6, 9,10,11
680 Ω
4.7 kΩ
2
0 V
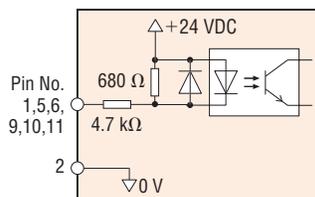
◇Output Signals to Programmable Controller

+12 VDC
25 mA max.
Pin No.4
10 kΩ
10 kΩ
0 V

Introduction

AC Input Motor & Driver

αSTEP AR 0.36°/Geared
αSTEP AS 0.72°/Geared
RK
UMK 0.9°/1.8°

DC Input Motor & Driver

αSTEP AR 0.36°/Geared
αSTEP ASX 0.36°
CRK 0.36°/0.72°/Geared
CMK 0.9°/1.8°/Geared
RBK 1.8°/Geared

Motor Only

PK 0.36°
PK 0.72°
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