



YASKAWA

# APPLICATION MODULE FOR SGDh SERVOPACK INDEXER MODULE

MODEL: JUSP-NS600



*Simple*

*Smart*

*Speedy*

Certified for  
ISO9001 and  
ISO14001



JQA-0422

JQA-EM0202

# Yaskawa leads the way

## A Servo Drive with Program Operation Capability

Yaskawa introduces the INDEXER Module that acts as a controller.

The SERVOPACK-INDEXER Module combination enhances the conventional servo drive and allows positioning by a program table.

The INDEXER Module, based on the concepts of user-friendly operation such as its simplicity in programming, adaptability in application, and wide availability of functions, can provide support for your system configuration.



### **Simple** ➔ See pages 4 and 5.

#### ◆ Simple programming

The desired operation pattern can be easily realized by simply setting the required data, such as position and speed, in the program table. No programming languages are required. With **SigmaWin+**, a Windows-based setup support PC software, you can easily configure your system.

### **Smart** ➔ See page 6.

#### ◆ Refined methods and functions

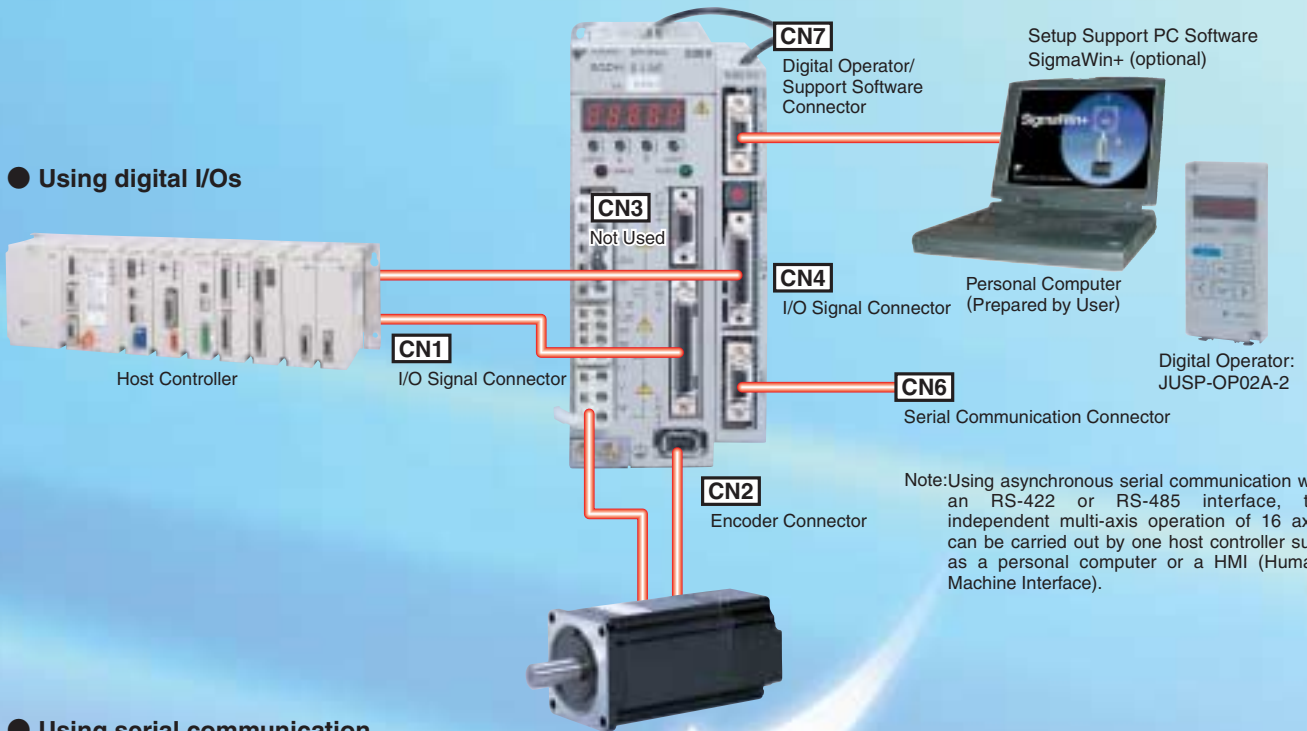
The best operation method can be selected for your application. Useful functions such as ZONE signal outputs, JOG speed tables, and homing are available.

<Operation Methods>

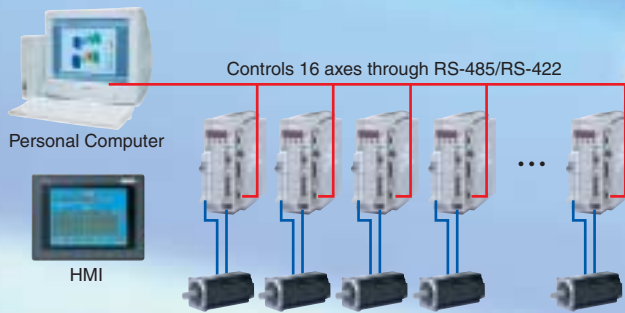
- Program tables
- Position and speed tables (station positioning)
- General-purpose serial communications
- Registration (positioning by external signals)

# System Configuration

## ● Using digital I/Os



## ● Using serial communication

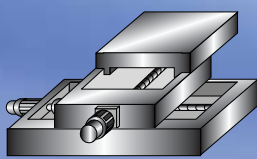


## ■ Serial Communication Specifications

Item	Specifications
Interface	Full-duplex (RS-422, RS-485, or RS-232C) or Half-duplex (RS-485)
Synchronization	Asynchronous (ASYNC)
Baud rate	9600, 19200, and 39400 bps
Start bit	1 bit
Data	7 bits; ASCII codes
Parity	1 bit; even parity
Stop bit	1 bit
Connection	Multi-drop (16 axes)

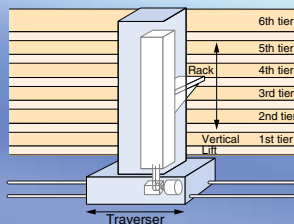
## ■ Applications

### Point-to-point positioning



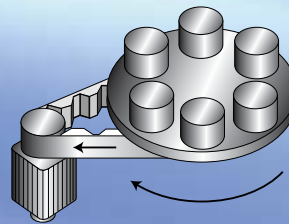
X-Y Table

### Fixed point positioning



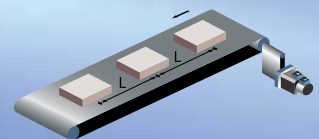
Unmanned Warehouses

### Station positioning (Indexing)



Rotary Table

### Feeding



Conveyor

# Speedy

## ◆ Quick installation and start-up

It only takes a few seconds to mount and connect the INDEXER Module to the connector on a high-performance SGD<sub>H</sub> SERVOPACK. If combined with a high-resolution serial encoder on a  $\Sigma$ -II servomotor, high-precision and high-speed positioning can be realized. Also, the wiring to the host controller is reduced.

## ■ Applicable AC Servo Drives in the $\Sigma$ -II Series

SERVOPACK <sup>*2</sup>	100V	200V		400V
	Single-phase	Single-phase	Three-phase	Three-phase
SGMAH (3000 min <sup>-1</sup> )	30W to 200W	30W to 750W	750W	300W to 650W
SGMPH (3000 min <sup>-1</sup> )	100W to 200W	100W to 1500W	750W to 1500W	200W to 1500W
SGMGH (1500 min <sup>-1</sup> )	—	—	0.45kW to 15 kW	0.45kW to 15 kW
SGMGH (1000 min <sup>-1</sup> )	—	—	0.3kW to 5.5 kW	—
SGMSH (3000 min <sup>-1</sup> )	—	—	1.0kW to 5.0 kW	1.0kW to 5.0 kW
SGMDH (2000 min <sup>-1</sup> )	—	—	2.2kW to 4.0 kW	—
SGMUH (6000 min <sup>-1</sup> )	—	—	—	1.0kW to 4.0 kW

\*1: Servomotors with gears are available. Servomotors can be used with a linear motor or a direct drive motor.

\*2: SGD<sub>H</sub> type

# Simple

By adopting program tables that require no sophisticated programming languages, the settings for positioning are easy and simple to make.



## Settings for Program tables

A motion pattern with 128 steps can be registered as a program step in a program table. Define the position, speed, acceleration, and deceleration data required for positioning in the steps of the program table, and select the step numbers to be executed. To start positioning, send a start command from the master (from a PLC or via serial communications).

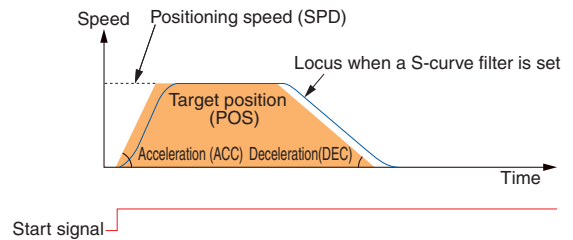
### Basic Settings

#### ● POS / SPD / ACC / DEC commands

- Select the target position (POS), positioning speed (SPD), acceleration rate (ACC), and deceleration rate (DEC) in a program table.
- S-curve acceleration/deceleration filters can be set to suppress shocks at acceleration/deceleration.

PGMSTEP	POS	SPD	ACC*	DEC*
0	I+400000	2000	200	100
1	I+100000	1000	100	50
2	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮
n	A-100000	2000	100	50
⋮	⋮	⋮	⋮	⋮
127	+INFINITE	3000	100	50

A: Absolute position  
I: Relative distance  
INFINITE: Infinite length

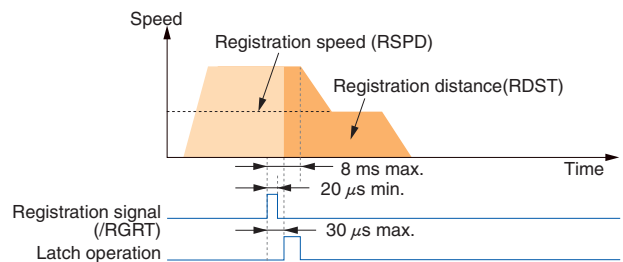


#### ● RDST / RSPD commands

- If external positioning distance (RDST) and external poisoning speed (RSPD) commands are added to a program table, external signals can be used to control positioning (registration).
- Applicable for high-speed input signals (/RGRT) with a pulse width of 20 μs or more.
- The maximum delay from the time that a registration signal (/RGRT) is sent until the latch operation starts is 30 μs.
- The maximum delay\* from the time that a registration signal (/RGRT) is sent until the registration operation starts is 8 ms.

\*: This delay does not affect the latch accuracy.

PGMSTEP	POS	SPD	RDST	RSPD	ACC*	DEC*
0	I+400000	2000	100000	1000	200	100
1	I+100000	1000	200000	2000	100	50
2	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮
n	A-100000	2000	—	1000	100	50
⋮	⋮	⋮	⋮	⋮	⋮	⋮
127	+INFINITE	3000	150000	1500	100	50



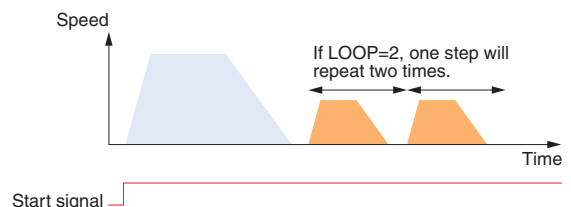
### Repeating operations and shifting to the next step

#### ● LOOP command

If a LOOP command is added to a program table, the operation can be repeated 99.999 times.

PGMSTEP	POS	SPD	RDST	RSPD	ACC*	DEC*	LOOP
0	I+400000	2000	100000	1000	200	100	1
1	I+100000	1000	200000	2000	100	50	2
2	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
n	A-100000	2000	—	1000	100	50	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
127	+INFINITE	3000	150000	1500	100	50	1

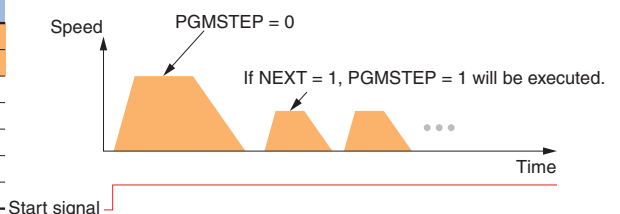
Note: A LOOP command is valid from the start of positioning for each step in the program table until the EVENT command.



#### ● NEXT command

After executing the step, the operation shifts to the step specified by a NEXT command. To not shift to the next step, set the NEXT command to "END".

PGMSTEP	POS	SPD	RDST	RSPD	ACC*	DEC*	LOOP	NEXT
0	I+400000	2000	100000	1000	200	100	1	1
1	I+100000	1000	200000	2000	100	50	2	2
2	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
n	A-100000	2000	—	1000	100	50	1	END
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
127	+INFINITE	3000	150000	1500	100	50	1	END



## Completion condition

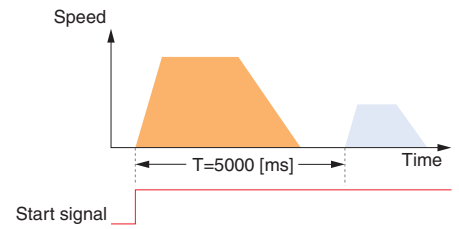
### ● EVENT command

Conditions can be set to determine the completion of a step. If the conditions are met, the execution of the step is judged as being completed.

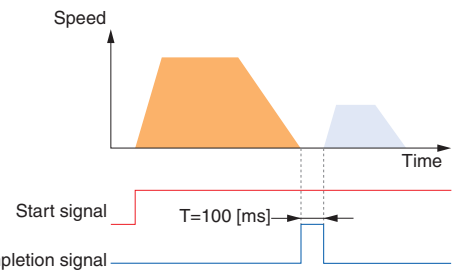
Setting in Program Table	Condition
I	The current position is within the Positioning Completion (INPOSITION) range.
N	The current position is within the Positioning Near (NEAR) range.
D	Distribution of the reference completed.
SELn	The Step Selection signal (/SELn) is ON. The Step Selection signals are used to select the step numbers to be executed before starting the program operation. During operation, they are used as trigger signals to shift to the next step. ( n = 0 to 6 )
Tn	The specified time, n ms, has elapsed.
:	Same specifications as the previously executed step

PGMSTEP	POS	SPD	RDST	RSPD	ACC*	DEC*	EVENT	LOOP	NEXT
0	I+400000	2000	500000	1000	200	100	T5000	1	1
1	I+100000	1000	200000	2000	100	50	IT0	1	END
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
n	I+400000	2000	500000	1000	100	50	IT100	1	n+1
n+1	I+100000	1000	200000	2000	⋮	⋮	NT0	1	END
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
126	I+400000	2000	500000	1000	100	50	SEL3T200	1	127
127	I+100000	1000	200000	2000	100	50	DT0	1	END

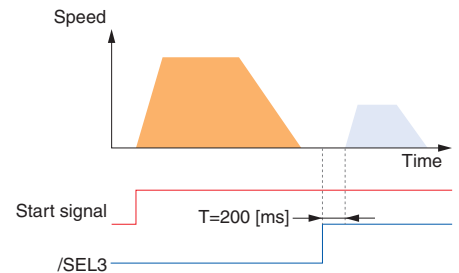
### ● If waiting time (T5000) is set:



### ● If positioning completion range (INPOSITION) and waiting time (IT100) are set:



### ● If step selection signal (/SELn) and waiting time (SEL3T200) are set:



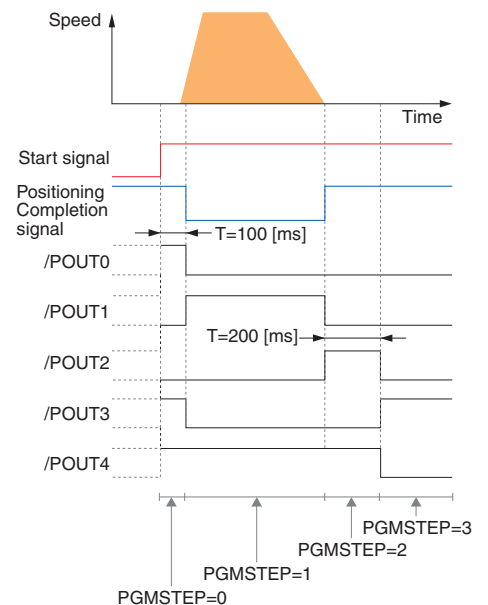
## Programmable output signals

### ● POUT command

The status of five output signals (/POUT0 to 4) can be set for each step. These signals can be used to indicate the status of a program step before, during, and after execution. Read the setting for each POUT signal from right to left as the output to /POUT0, /POUT1, and so on.

Setting in Program Table	Condition
A	Active (Photocoupler ON)
N	Inactive (Photocoupler OFF)
:	Continuation of the previous status
Z	Used as a ZONE signal

PGMSTEP	POS	SPD	RDST	RSPD	ACC*	DEC*	POUT	EVENT	LOOP	NEXT
0	—	1000	—	1000	200	100	AANNA	T100	1	1
1	I+400000	2000	500000	3000	100	50	:N:AN	IT0	1	2
2	—	1000	—	1000	⋮	⋮	::AN:	T200	1	3
3	—	1000	—	1000	⋮	⋮	NAN::	T0	1	END
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
n	A+100000	2000	100000	1000	100	50	ZZZZZ	DT0	1	END
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
127	+INFINITE	3000	150000	1500	100	50	:::::	NT50	1	END



\*: ACC and DEC commands are available for firmware version 4 or later.

With special functions for positioning, the INDEXER Module provides optimum control for your application.

Note: You can switch between “Mode 0” for program tables and “Mode 1” for JOG speed tables and homing with the Mode 0/ Mode1 selection signal (/MODE 0/1).



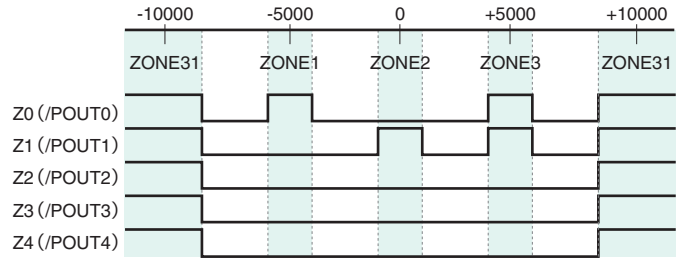
## ZONE Signal Outputs

### ● ZONE signals to recognize the current position within a predefined zone

- The programmable signals (/POUT0 to /POUT4) are used as ZONE signals (Z0 to Z4).
- 32 zones can be defined in the ZONE table.
- To leave a zone undefined, set the boundary positions, ZONEN and ZONEP, on the negative and positive sides to 0.
- When setting ZONEN > ZONEP, the status of signals Z0 to Z4 (see ZONE ID 31) is output when the motor current position  $\leq$  ZONEP and ZONEN  $\geq$  the motor current position.

ZONE ID	Z4	Z3	Z2	Z1	Z0	ZONEN	ZONEP
0	N	N	N	N	N	0	0
1	N	N	N	N	A	-6000	-4000
2	N	N	N	A	N	-1000	+1000
3	N	N	N	A	A	+4000	+6000
⋮	⋮	⋮	⋮	⋮	⋮	0	0
⋮	⋮	⋮	⋮	⋮	⋮	0	0
⋮	⋮	⋮	⋮	⋮	⋮	0	0
31	A	A	A	A	A	+9000	-9000

A: Active N: Inactive



## JOG Speed Tables

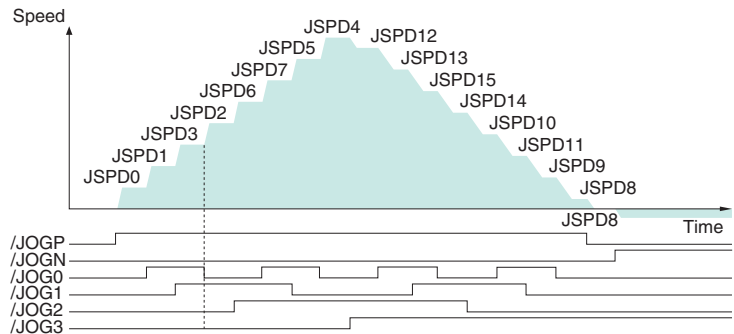
### ● 16-speed selectable JOG operation

- 16 speeds can be set in the JOG speed table.
- In Mode 1, the JOG operation, at the speed specified by the JOG Speed Selection signal (/JOGn), starts when the forward run signal (/JOGP) or reverse run signal (/JOGN) is received.

JOG ID	JOG3	JOG2	JOG1	JOG0	JSPD*
0	N	N	N	N	1000
1	N	N	N	A	2000
2	N	N	A	N	4000
⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮
15	A	A	A	A	5500

A: Active N: Inactive

\*: The setting unit for the JOG speed (JSPD) is "×1,000 reference units/min".



## Homing

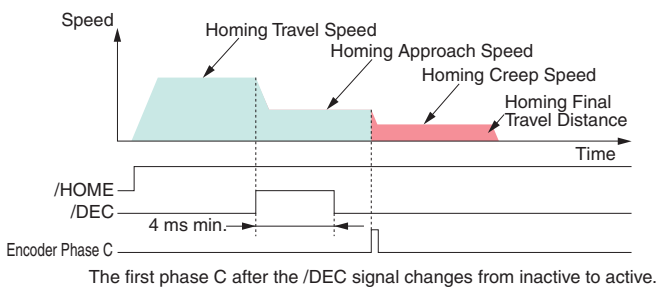
### ● Three types of homing

In Mode 1, the selected type of homing starts when the homing start signal (/HOME) is received.

Homing Mode	Explanation
1	Uses the homing deceleration signal (/DEC) and the encoder zero-point pulse (phase C).
2	Uses only the homing deceleration signal (/DEC).
3	Uses only the encoder zero-point pulse (phase C).

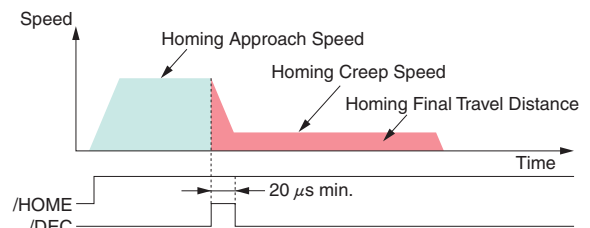
#### ● Homing Mode 1

Uses the homing deceleration signal (/DEC) and the encoder zero-point pulse (phase C).



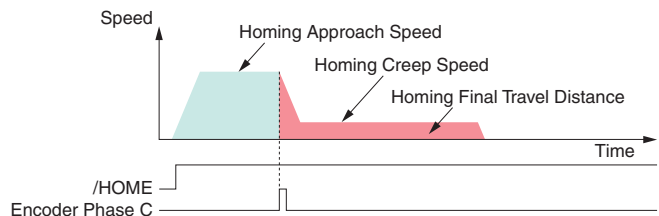
#### ● Homing Mode 2

Uses only the homing deceleration signal (/DEC).



#### ● Homing Mode 3

Uses only the encoder zero-point pulse (phase C).



# Setup Support PC Software

## SigmaWin+ (optional)

SigmaWin+ is a Windows-based engineering PC tool to be used to make adjustments to not only the INDEXER module but also to Yaskawa's  $\Sigma$ -series of servo drives. By installing an INDEXER component from SigmaWin+ in your PC, everything from setup to program table editing can be done by following a series of dialog boxes in an interactive style.

### Table Editing

To display and edit the program table, the ZONE table, and the JOG speed table in the INDEXER Module.

A station-positioning window is also available to simplify station positioning.



▲ Program Table Edit window

**New** Station-positioning window  
By specifying a positioning range and a number of stations, the position of each station can be automatically set in the program table.



▲ ZONE Table Edit window



▲ JOG Speed Table Edit window

### Parameter Editing

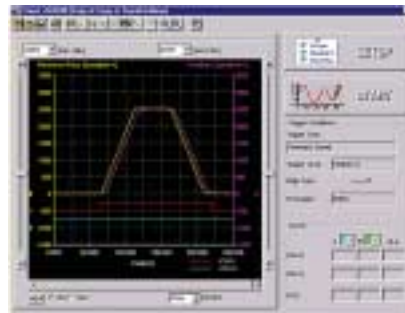
To edit, save, and read out the parameters used for the INDEXER Module.



▲ Parameter Editing window

### Trace Display

To display the data stored in the SERVOPACK's internal memory as a graph like those used for oscilloscopes. The graph can be printed and saved.



▲ Trace Display window

### Monitoring

To monitor the SERVOPACK's status, operation, and I/O signals in each window.



▲ Monitor windows

### Functions

Parameters	Parameter editing	To edit, download, upload, save, and load parameters	
	Parameter online editing	To edit parameters	
Alarm	Alarm display	To display alarms and the alarm history, and to reset and clear alarms.	
Monitor	Product information display	To display information on the Servopack and motor used.	
	Monitoring	Status monitor, I/O signal monitor, operation monitor, and serial command monitor	
Setup	Monitor selection	To select the monitor for viewing monitored items.	
	Absolute encoder setting	To initialize the encoder and set the multi-turn limit	
	Online autotuning	Machine rigidity setting	To make settings for the Autotuning function
		Identified inertia ratio setting	
	Offset adjustment	Analog monitor output adjustment	To manually adjust the analog monitor output gain and zero level.
		Motor current detection offset adjustment	To manually or automatically adjust the offset amount for detection of the motor current.
Origin search	Password setting	To return to the encoder's origin(phase C) To enable the write protection	
Trace and Tuning	Trace	To display trace data in the SERVOPACK	
Test Run	JOG operation	JOG setting and operation	
Table Editing	Program table editing	To display and edit a program table; To position stations	
	JOG speed table editing	To display and edit a JOG speed table	
	ZONE table editing	To display and edit a ZONE table	

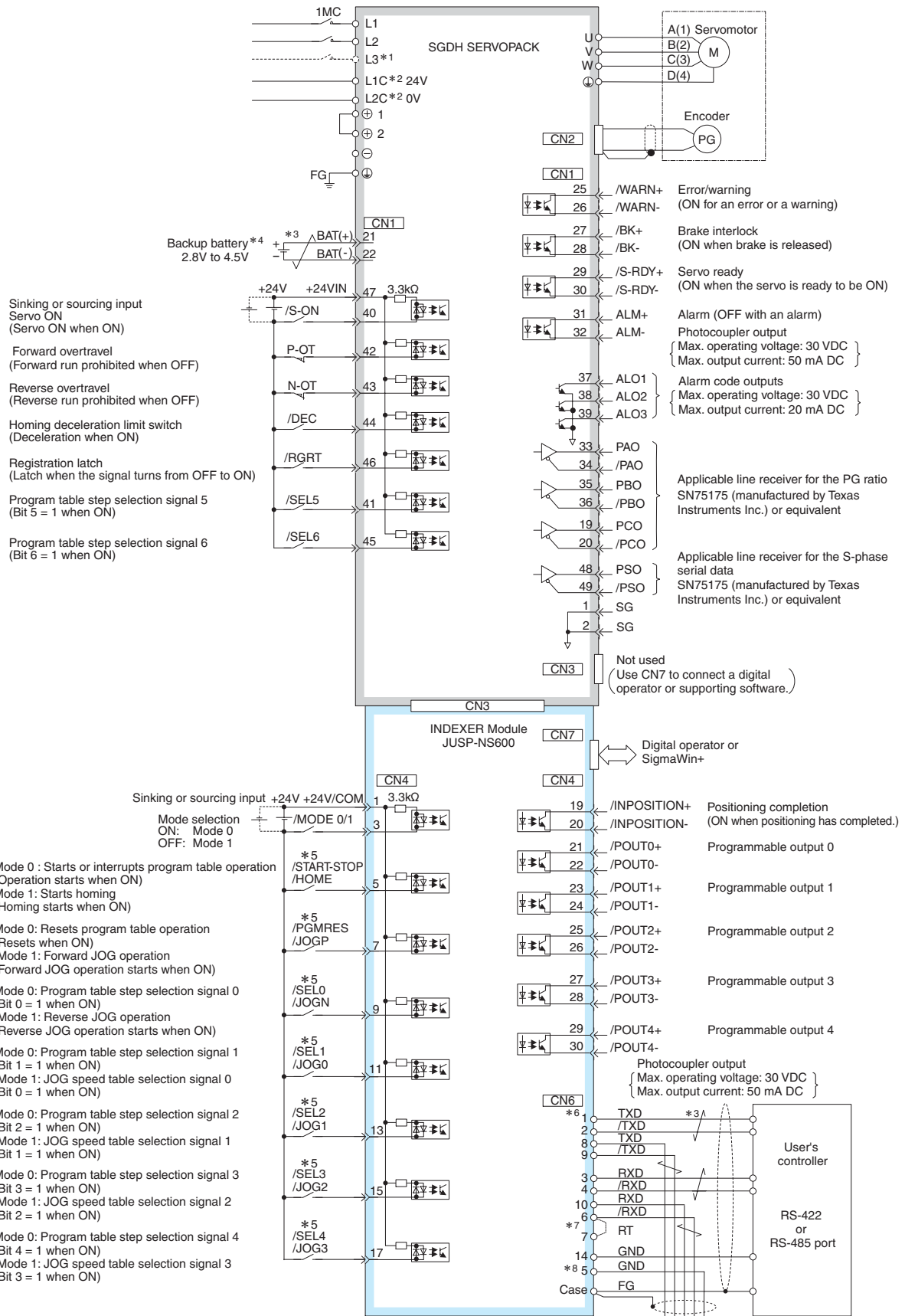
\* : Available for INDEXER components version 2.10 or later in SigmaWin+.

Note: Pentium is a registered trademark of Intel Corporation. Windows and Windows NT are registered trademarks of Microsoft Corporation, U.S.A.

### System Requirements

PC	PC/AT, DOS/V-compatible device
CPU	Pentium 200 MHz
Main Memory	64 MB (96 MB recommended)
Free Hard Disk Space	For standard setup • 200MB (300MB recommended for installation)
	For customized setup • 60MB (160MB recommended for installation)
Resolution	Super VGA monitor (800 × 600 pixels, small fonts)
Number of Colors	256 colors (65,536 colors recommended)
OS	• Windows 95 OSR2 or later (IE4.01 Service Pack2 or later)
	• Windows 98
	• Windows NT4.0 Service Pack3 or later (IE4.01 Service Pack2 or later)
	• Windows 2000 • Windows ME
Cable between SERVOPACK and PC	JZSP-CMS02 (D-SUB 9-pin connector supported)
Others	• RS-232C or RS-422A I/F • CD-ROM drive (for installation only)

# Connection Diagram



\*1: The L3 terminal is for specifications requiring a three-phase power supply.  
 \*2: The control power supply for 400V-class SERVOPACK is 24 VDC.  
 \*3: represents a twisted-pair cable.  
 \*4: Connect a backup battery when an absolute encoder is used and no battery is connected to CN8.

\*5: The signal on the first line is in Mode 0, and the signal on the second line is in Mode 1.  
 \*6: The wiring for CN6 shown here is full-duplex wiring for RS-422 or RS-485 communications.  
 \*7: Short-circuit RT and /RXD at the last axis.  
 \*8: Grounding for pin No.5 is available for hardware version 04 or later. The grounding for pin No.14 is shared with the other pins for hardware version 03 or earlier. The hardware version is shown in the VER. column of the nameplate located on the side of the device (VER. ).

# Specifications

## Specifications

Applicable SERVOPACK		Σ-II Series SERVOPACKs SGDH-□□□ E		
Mounting Method		On the side of SGDH SERVOPACK		
Basic Specifications	Power Input	From SGDH SERVOPACK control power supply		
	Max. Power Consumption	2.6 W		
	Max. Current Consumption	500 mA		
	Dimensions	20 (W)×142 (H)×128 (D) mm		
	Approx. Mass	0.2 kg		
	Environmental Conditions	Operating Temperature / Storage Temperature	0°C to +55 °C / -20°C to +85 °C	
Operating and Storage Humidity		90 %RH max. (No condensation)		
Altitude		1,000 m or less		
Vibration Resistance / Shock Resistance		4.9 m/s <sup>2</sup> / 19.6 m/s <sup>2</sup>		
Control Specifications	Program Table Operation	Positioning by the use of a program table(max.128 steps) whose starting step is specified by the contact input or by serial communications. Positioning by the use of a station (max. 128 points) whose station number is specified by the contact input or by serial communications.		
	Serial Communications Operation	Commands: ASCII codes Communications: RS-422/RS-485 (max. transmission distance 50m) or RS-232C (max. transmission distance 3 m) Connection form: Multi-drop (max. 16 axes) Baud rate: 9600, 19200, and 39400 bps		
Other Functions		Registration (positioning by external signals) Homing ("No homing", "Homing using /DEC and encoder C-phase", "Homing using /DEC only", and "Homing using Encoder C-phase only" are available.) JOG speed table operation (max. 16 speeds)		
I/O Signals	Input	SERVOPACK	Servo ON (/S-ON), Forward run prohibited (P-OT), Reverse run prohibited (N-OT), Homing deceleration limit switch (/DEC), Registration latch (/RGRT), Program table step selection signal 5 (/SEL5), Program table step selection signal 6 (/SEL6)	
		Module	Mode 0 or 1 (/MODE 0/1)	
			Mode 0	Starts or interrupts program table operation (/START-STOP) Resets program table operation (/PGMRES) Program table step selection signal 0 (/SEL0) Program table step selection signal 1 (/SEL1) Program table step selection signal 2 (/SEL2) Program table step selection signal 3 (/SEL3) Program table step selection signal 4 (/SEL4)
			Mode 1	Starts homing (/HOME) Forward JOG (/JOGF) Reverse JOG (/JOGN) JOG speed table selection signal 0 (/JOG0) JOG speed table selection signal 1 (/JOG1) JOG speed table selection signal 2 (/JOG2) JOG speed table selection signal 3 (/JOG3)
Output	SERVOPACK	Servo alarm (ALM), Error/warning (WARN), Brake interlock (/BK), Servo ready (/S-RD), Alarm code output 0 (ALO0), Alarm code output 1 (ALO1), and Alarm code output 2 (ALO2)		
	Module	Positioning completion (/INPOSITION), Programmable output 0 (/POUT0), Programmable output 1 (/POUT1), Programmable output 2 (/POUT2), Programmable output 3 (/POUT3), Programmable output 4 (/POUT4)		

# Program Table

## Program Table

Name	Setting Range	Setting Unit	Description
PGMSTEP	Program step	—	Program step number from 0 to 127
POS	Target position	-99,999,999 to +99,999,999	Reference unit Target position A: Absolute position, I: Relative distance, INFINITE: Infinite length, STOP: Stop, and -: No positioning specified
SPD	Positioning speed	1 to 99,999,999	×1,000 reference units/min Positioning speed
RDST	External positioning distance	0 to 99,999,999	Reference unit Travel distance at registration Set "-" when registration is not used.
RSPD	External positioning speed	1 to 99,999,999	×1,000 reference units/min/ms Speed at registration
ACC	Acceleration*	1 to 99,999,999	×1,000 reference units/min/ms Acceleration at registration or at positioning. Set to "-" when the speed is the same as that in the previous step.
DEC	Deceleration*	1 to 99,999,999	×1,000 reference units/min/ms Deceleration at registration or at positioning. Set to "-" when the speed is the same as that in the previous step.
POUT	Programmable output signals	—	Setting for outputs /POUT0 to 4 A: Active, N: Inactive, Z: ZONE signal, and ::Retain previous status
EVENT	Positioning completion judgment	0 to 99,999 (Waiting time)	ms Sets the waiting time, Tn, in combination with one of the following signals: I: Positioning completion, D: Reference distribution completion, N: Positioning NEAR, or SELn: Selection
LOOP	Number of executions	1 to 99,999	— Specifies how many times the execution is to be repeated from the start of positioning to the EVENT.
NEXT	PGMSTEP to be executed next	0 to 127	— Specifies the program step, PGMSTEP, to be executed next. Select "END" to end the program table operation.

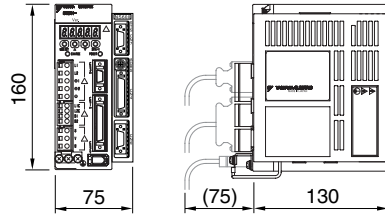
\*: Available for firmware version 4 or later.

# Dimensions

■ Dimensions (When mounted on SGDH SERVOPACK) Units:mm

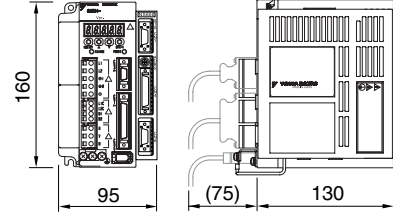
## Single-phase

- SGDH-A3AE to -02AE (200V, 30W to 200W)  
SGDH-A3BE to -01BE (100V, 30W to 100W)



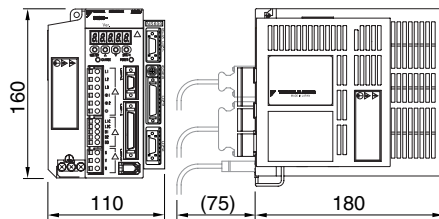
Approx. mass: 1.0 kg

- SGDH-04AE (200V, 400W)  
SGDH-02BE (100V, 200W)



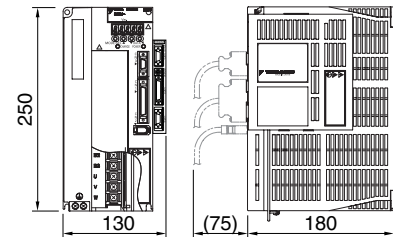
Approx. mass: 1.3 kg

- SGDH-08AE-S (220V, 0.75 kW)



Approx. mass: 1.9 kg

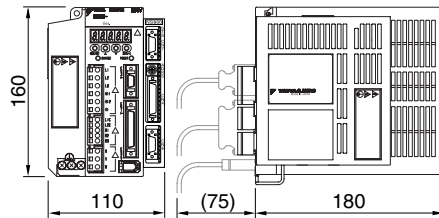
- SGDH-15AE-S (220V, 1.5 kW)



Approx. mass: 4.0 kg

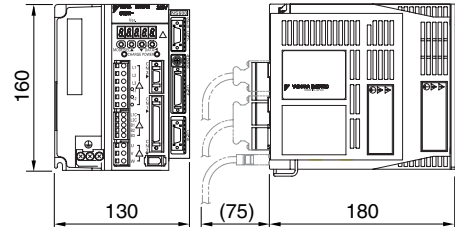
## Three-phase

- SGDH-05AE to -10AE (200V, 0.5 kW to 1.0 kW)



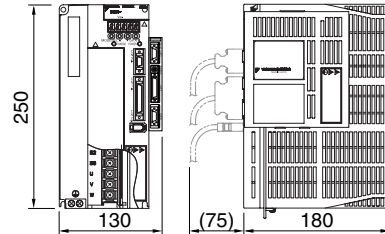
Approx. mass: 1.9 kg

- SGDH-15AE (200V, 1.5 kW)  
SGDH-05DE to -15DE (400V, 0.5 kW to 1.5 kW)



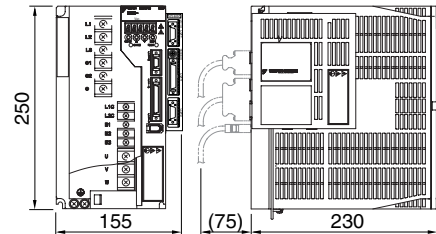
Approx. mass: 3.0 kg

- SGDH-20AE, -30AE (200V, 2.0/3.0 kW)  
SGDH-20DE, -30DE (400V, 2.0/3.0 kW)



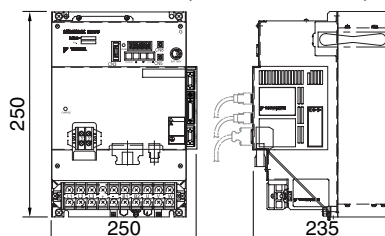
Approx. mass : 4.0 kg

- SGDH-50AE (200V, 5.0 kW)  
SGDH-50DE (400V, 5.0 kW)



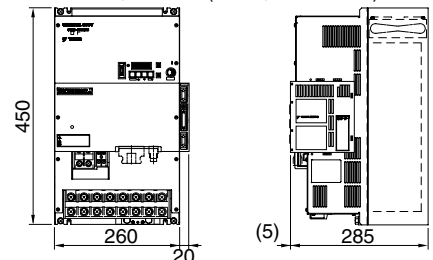
Approx. mass : 5.7 kg

- SGDH-60AE, -75AE (200V, 6.0/7.5 kW)  
SGDH-60DE, -75DE (400V, 6.0/7.5 kW)



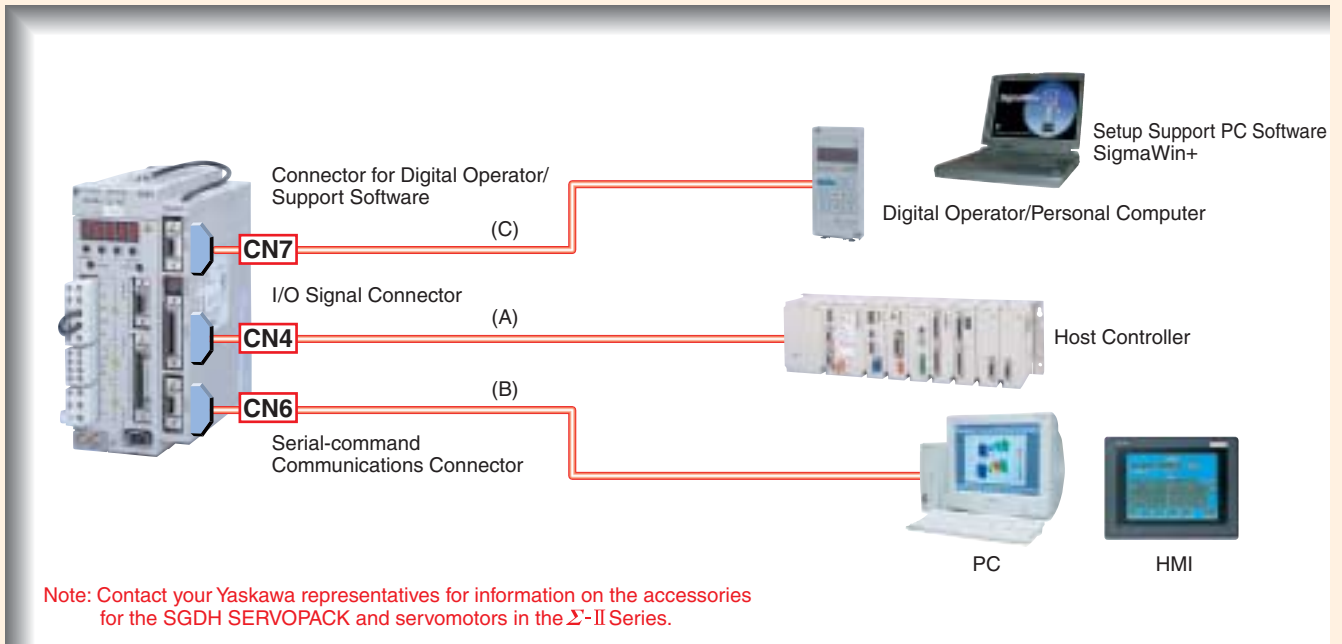
Approx. mass : 15.0 kg

- SGDH-1AAE, -1EAE (200V, 11/15 kW)  
SGDH-1ADE, -1EDE (400V, 11/15 kW)



Approx. mass: 22 kg

# Ordering Reference



## Peripheral Devices

Name	Type	Specifications
Digital Operator	JUSP-OP02A-2	A cable (1m) is provided.
Digital Operator Cable	JZSP-CMS00-1	1m Required when a JUSP-OP02A-1 digital operator for $\Sigma$ series is used.
	JZSP-CMS00-2	1.5m
	JZSP-CMS00-3	2m

## Cables and Connectors

Name	Type	Specifications	
(A) <b>CN4</b> For I/O Signals	Connector to Terminal Block Conversion Unit	JZSP-TA36P Terminal block and cable (0.5m)	
	Cable with Single Connector	DE9404859-1	1m
		DE9404859-2	2m
		DE9404859-3	3m
Connector Kit (for CN4)	DP9420007		
(B) <b>CN6</b> For Serial-command Communications	Connector Kit (for CN6)	JZSP-VNS60	
	Cable for PC	JZSP-CMS02 2m with D-SUB 9-pin connector applicable for RS-232 port	
(C) <b>CN7</b> For Digital Operator/PC	Cable for Digital Operator	— Not required for the JUSP-OP02A-2 digital operator with a cable. Required when a JUSP-OP02A-1 digital operator for $\Sigma$ series is used.	
	Cable for PC	JZSP-CMS02 2m with D-sub 9-pin connector	

## Setup Support PC Software

Name	Type	Specifications	
SigmaWin+	Standard	JZSP-WP001	For single user
		JZSP-WP001-05	For 5 users
		JZSP-WP001-10	For 10 users
		JZSP-WP001-20	For 20 users
	Professional	JZSP-WP002	For single user
		JZSP-WP002-05	For 5 users
		JZSP-WP002-10	For 10 users
		JZSP-WP002-20	For 20 users
		CD-ROM See SigmaWin+ on page 7 for details.	

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YASKAWA ELECTRIC CORPORATION

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In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply.

Specifications are subject to change without notice for ongoing product modifications and improvements.

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