

# SYSMAC CS Series Position Control Units

## CS1W-NC□□3

CSM\_CS1W-NC\_DS\_E\_6\_4

## High-speed, High-precision positioning with 1, 2, or 4 axes

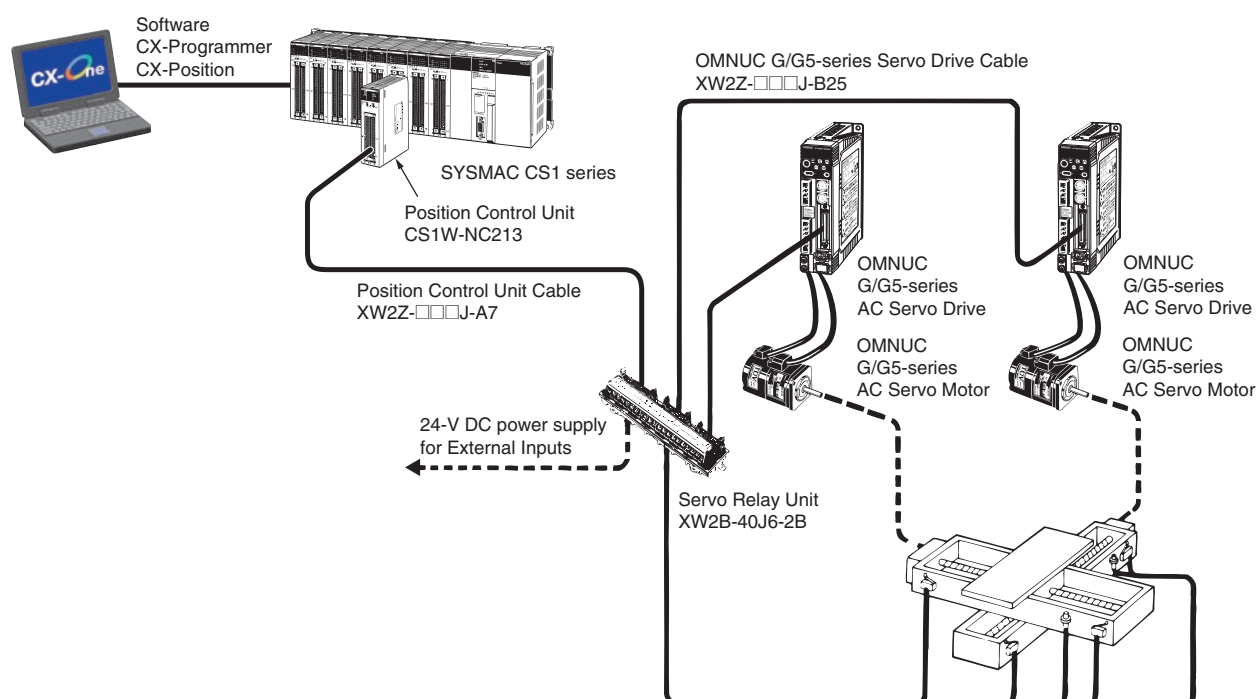
- Versatile functions and superb performance enable the construction of compact, high-performance machines.
- With its ultra-compact size of 31 × 90 mm (W × H), this highly space-efficient Position Control Unit (PCU) enables up to 4 axes of motor control.



## Features

- Two types to choose from: open collector output and line driver. Because both open collector output and line driver types feature 1-, 2-, and 4-axis models, the most appropriate model can be selected for the application at hand.
- Positioning START occurs within 2 ms (maximum speed) after receiving a command from the Programmable Controller. (Refer to the Operation Manual for conditions.)
- High-speed data transfer is possible using INTELLIGENT I/O WRITE (IOWR) and INTELLIGENT I/O READ (IORD) instructions.
- Fine control from low to high speed (500 kpps max.) is possible in 1-pps units.
- Positioning can be done from memory, by writing an operating pattern into the PCU memory in advance. Three position patterns – Terminating, Automatic, and Continuous – can be set with completion codes to respond to a wide range of operations. Positioning of up to 100 patterns (sequential data) per one axis can be possible.
- Positioning (direct operation) can be done by direct PLC ladder commands for position data, speed data, and acceleration data. This simplifies control in situations when the target position and speed cannot be decided until immediately before operation begins, or when the target position and speed change due to other circumstances. The target position and speed can also be changed during operation.
- Interrupt feeding moves the axis a specified amount, then stops it, in accordance with an interrupt input. High-speed (0.1 ms max.) processing of the interrupt input signal ensures high-precision interrupt positioning. This helps to maximize feeder precision.
- Easy-to-Use positioning can be possible with versatile functions such as Teaching, Override, Backlash compensation, Zones, Forced interrupt and Acceleration/Deceleration curve.

## System Configuration



## Ordering Information

### International Standards

- The standards are abbreviated as follows: U: UL, U1: UL(Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, and CE: EC Directives.
- Contact your OMRON representative for further details and applicable conditions for these standards.

## Position Control Unit

| Unit type             | Name                                                                                                              | Specifications                                                    |                        | No. of unit numbers allocated | Current consumption (A) |             | Model      | Standards      |
|-----------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------|-------------------------------|-------------------------|-------------|------------|----------------|
|                       |                                                                                                                   | Control method/Control output interface                           | Number of control axes |                               | 5 V system              | 26 V system |            |                |
| CS1 Special I/O Units | <b>Position control unit</b><br> | Open-loop control by pulse train output/<br>Open-collector output | 1 axis                 | 1                             | 0.25                    | –           | CS1W-NC113 | U, C, N, L, CE |
|                       |                                                                                                                   |                                                                   | 2 axes                 |                               | 0.25                    | –           | CS1W-NC213 |                |
|                       |                                                                                                                   |                                                                   | 4 axes                 | 2                             | 0.36                    | –           | CS1W-NC413 |                |
|                       |                                                                                                                   | Open-loop control by pulse train output/<br>Line-driver output    | 1 axis                 | 1                             | 0.25                    | –           | CS1W-NC133 |                |
|                       |                                                                                                                   |                                                                   | 2 axes                 |                               | 0.25                    | –           | CS1W-NC233 |                |
|                       |                                                                                                                   |                                                                   | 4 axes                 | 2                             | 0.36                    | –           | CS1W-NC433 |                |

## Software

| Name                                            | Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Number of licenses | Model          | Standards |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------|-----------|
| <b>CX-One FA Integrated Tool Package Ver. 4</b> | <p>The CX-One is a comprehensive software package that integrates Support Software for OMRON PLCs and components. CX-One runs on the following OS.<br/>OS : Windows XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit/64-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version)</p> <p>CX-One Ver.4. □ includes CX-Position Ver.2. □. For details, refer to the CX-One catalog (Cat. No.R134).</p> | 1 license *<br>DVD | CXONE-AL01D-V4 | –         |

\* Multi licenses (3, 10, 30, or 50 licenses) and DVD media without licenses are also available for the CX-One.

## Servo Relay Units/Cables

| Name                                              | Applicable units                                                |                    | Applicable drives                | Number of control axes | Cable length | Model         | Standards |  |
|---------------------------------------------------|-----------------------------------------------------------------|--------------------|----------------------------------|------------------------|--------------|---------------|-----------|--|
| Servo Relay Unit                                  | For CS1W-NC113/133<br>(No communication supported)              |                    | —                                | 1 axis                 | —            | XW2B-20J6-1B  | —         |  |
|                                                   | For CS1W-NC213/233/413/433<br>(No communication supported)      |                    | —                                | 2 axes                 | —            | XW2B-40J6-2B  |           |  |
|                                                   | For CS1W-NC113/133/213/233/413/433<br>(Communication supported) |                    | —                                | 2 axes                 | —            | XW2B-40J6-4A  |           |  |
| Position Control Unit Cables for Servo Relay Unit | Open-collector output                                           | For CS1W-NC113     | OMNUC G/G5/W Series, SMARTSTEP 2 | 1 axis                 | 0.5m         | XW2Z-050J-A6  | —         |  |
|                                                   |                                                                 |                    |                                  |                        | 1m           | XW2Z-100J-A6  |           |  |
|                                                   |                                                                 |                    | SMARTSTEP Junior/A Series        |                        | 0.5m         | XW2Z-050J-A8  |           |  |
|                                                   |                                                                 |                    |                                  |                        | 1m           | XW2Z-100J-A8  |           |  |
|                                                   |                                                                 | For CS1W-NC213/413 | OMNUC G/G5/W Series, SMARTSTEP 2 | 2 axes                 | 0.5m         | XW2Z-050J-A7  |           |  |
|                                                   |                                                                 |                    |                                  |                        | 1m           | XW2Z-100J-A7  |           |  |
|                                                   |                                                                 |                    | SMARTSTEP Junior/A Series        |                        | 0.5m         | XW2Z-050J-A9  |           |  |
|                                                   |                                                                 |                    |                                  |                        | 1m           | XW2Z-100J-A9  |           |  |
|                                                   | Line-driver output                                              | For CS1W-NC133     | OMNUC G/G5/W Series, SMARTSTEP 2 | 1 axis                 | 0.5m         | XW2Z-050J-A10 |           |  |
|                                                   |                                                                 |                    |                                  |                        | 1m           | XW2Z-100J-A10 |           |  |
|                                                   |                                                                 |                    | SMARTSTEP Junior/A Series        |                        | 0.5m         | XW2Z-050J-A12 |           |  |
|                                                   |                                                                 |                    |                                  |                        | 1m           | XW2Z-100J-A12 |           |  |
|                                                   |                                                                 | For CS1W-NC233/413 | OMNUC G/G5/W Series, SMARTSTEP 2 | 2 axes                 | 0.5m         | XW2Z-050J-A11 |           |  |
|                                                   |                                                                 |                    |                                  |                        | 1m           | XW2Z-100J-A11 |           |  |
|                                                   |                                                                 |                    | SMARTSTEP Junior/A Series        |                        | 0.5m         | XW2Z-050J-A13 |           |  |
|                                                   |                                                                 |                    |                                  |                        | 1m           | XW2Z-100J-A13 |           |  |

### Communications Cables for Serial Communications Boards/Units

| Name                                                                | Specifications                                                          | Applicable Serial Communications Units/Boards | Applicable Servo Driver               | Cable Length | Model        |
|---------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------|--------------|--------------|
| <b>Communications Cables for Serial Communications Boards/Units</b> | RS-422A Communications cable (Servo Relay Unit XW2B-40J6-4A required *) | CS1W-SCB41-V1                                 | OMNUC W Series,<br>SMARTSTEP A Series | 1m           | XW2Z-100J-C1 |
|                                                                     |                                                                         | CS1W-SCU31-V1                                 |                                       | 2m           | XW2Z-200J-C1 |

\* Communication Supported.

## Accessories

The Position Control Unit includes the 48-pin solder-type connectors (socket: Fujitsu FCN-361J048-AU, cover: Fujitsu FCN-360C048-D).

## Mountable Racks

| Model                          | CS1 System |                     |                               | CS1D System |                     |
|--------------------------------|------------|---------------------|-------------------------------|-------------|---------------------|
|                                | CPU Rack   | Expansion Backplane | Long-distance Expansion Racks | CPU Rack    | Expansion Backplane |
| CS1W-NC113/133/213/233/413/433 | Yes        | Yes                 | Yes                           | Yes         | Yes                 |

## Specifications

### Basic Specifications

| Item                                         | Model                                                                                    |                                                                                           |                                                                                           |
|----------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|                                              | CS1W-NC113/133                                                                           | CS1W-NC213/233                                                                            | CS1W-NC413/433                                                                            |
| Power supply voltage                         | 5 VDC (for the PCU itself)                                                               |                                                                                           |                                                                                           |
|                                              | 24 VDC (external power supply)                                                           |                                                                                           |                                                                                           |
|                                              | 5 VDC (external power supply; line driver output only)                                   |                                                                                           |                                                                                           |
| Allowable power supply voltage range         | 4.75 to 5.25 VDC (for the PCU itself)                                                    |                                                                                           |                                                                                           |
|                                              | 21.6 to 26.4 VDC (external power supply)                                                 |                                                                                           |                                                                                           |
|                                              | 4.75 to 5.25 VDC (external power supply; line driver output only)                        |                                                                                           |                                                                                           |
| Internal current consumption                 | 250 mA max. at 5 VDC                                                                     | 250 mA max. at 5 VDC                                                                      | 360 mA max. at 5 VDC                                                                      |
| Current consumption of external power supply | NC113: 30 mA max. at 24 VDC<br>NC133: 10 mA max. at 24 VDC<br>NC133: 60 mA max. at 5 VDC | NC213: 50 mA max. at 24 VDC<br>NC233: 20 mA max. at 24 VDC<br>NC233: 120 mA max. at 5 VDC | NC413: 90 mA max. at 24 VDC<br>NC433: 30 mA max. at 24 VDC<br>NC433: 220 mA max. at 5 VDC |
| External dimensions                          | 130 (H) × 35 (W) × 101 (D) (all models)                                                  |                                                                                           |                                                                                           |
| Weight                                       | 250 g max.                                                                               | 250 g max.                                                                                | 300 g max.                                                                                |
| Safety standards                             | UL, CSA, EC (EMC Directive)                                                              |                                                                                           |                                                                                           |

**Note:** Specifications not listed above conform to CS Series general specifications.

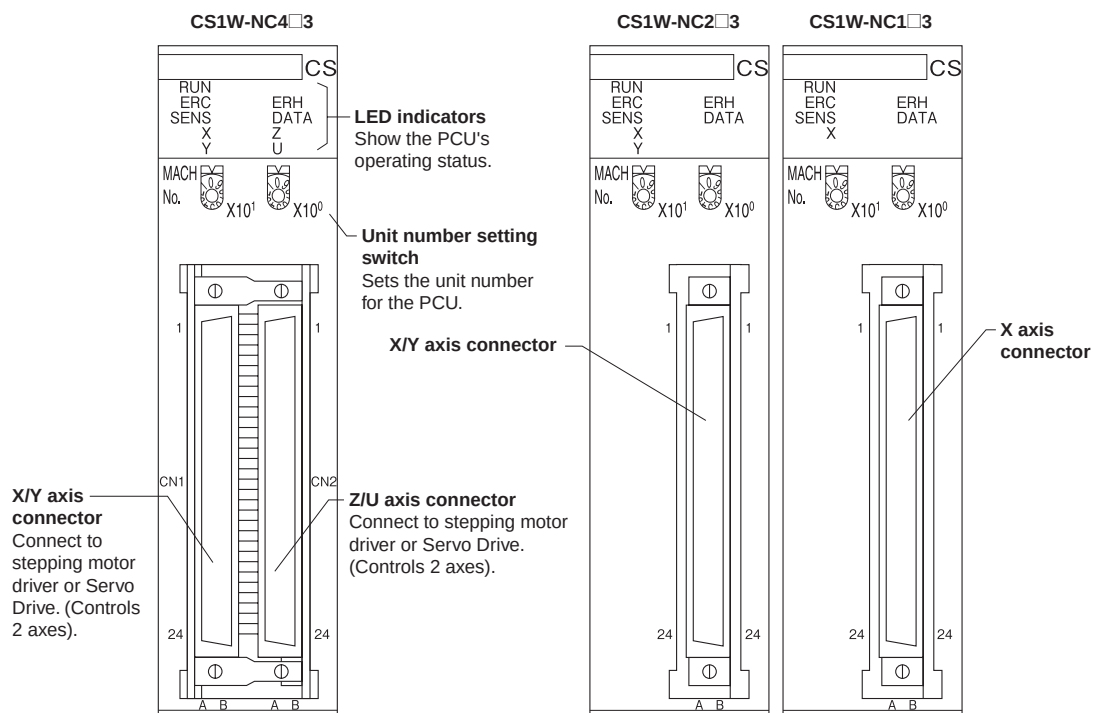
### Performance Specifications

| Item                                | Model                                                                                                                                                            |                                                    |                    |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------|
|                                     | CS1W-NC113/133                                                                                                                                                   | CS1W-NC213/233                                     | CS1W-NC413/433     |
| Applicable PLC models               | CS-series PLCs                                                                                                                                                   |                                                    |                    |
| Unit type                           | CS1 Special I/O Unit                                                                                                                                             |                                                    |                    |
| I/O requirements                    | Words                                                                                                                                                            | 5 words                                            | 10 words           |
|                                     | Slots                                                                                                                                                            | 1 slot                                             | 20 words           |
| Controlled driver                   | Pulse-train input-type Servo Drive or stepping motor driver<br>NC113/213/413 models have open collector output.<br>NC133/233/433 models have line driver output. |                                                    |                    |
| Control                             | Control system                                                                                                                                                   | Open-loop control by pulse train output            |                    |
|                                     | Number of control axes                                                                                                                                           | 1 axis                                             | 2 axes             |
| Control unit                        | Pulse                                                                                                                                                            |                                                    |                    |
| Positioning operations              | Two types: memory operation and direct operation                                                                                                                 |                                                    |                    |
|                                     | Independent                                                                                                                                                      | 1 axis                                             | 2 independent axes |
|                                     | Linear interpolation                                                                                                                                             | None                                               | 2 axes max.        |
|                                     | Speed control                                                                                                                                                    | 1 axis                                             | 2 independent axes |
|                                     | Interrupt feeding                                                                                                                                                | 1 axis                                             | 2 independent axes |
| Positions                           | Range                                                                                                                                                            | –1,073,741,823 to 1,073,741,823 pulses (See note.) |                    |
|                                     | Data items                                                                                                                                                       | 100/axis                                           |                    |
| Speeds                              | Range                                                                                                                                                            | 1 pps to 500 Kpps                                  |                    |
|                                     | Data items                                                                                                                                                       | 100/axis                                           |                    |
| Acceleration and deceleration times | Range                                                                                                                                                            | 0 to 250 s, until maximum speed is reached.        |                    |
|                                     | Data items                                                                                                                                                       | 9/axis for acceleration and deceleration each      |                    |

| Item                             |                                   | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                |
|----------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|
|                                  |                                   | CS1W-NC113/133                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CS1W-NC213/233 | CS1W-NC413/433 |
| Functions and settings           | Origin search                     | Origin proximity input signal: selectable (absent, N.O. or N.C. contact).<br>Origin input signal: selectable (N.O. or N.C. contact)<br>Origin compensation: -1,073,741,823 to 1,073,741,823 pulses<br>Origin search speed: High-speed or proximity-speed can be set.<br>Origin detection method: May be set to stop upon origin input signal after proximity input signal has turned ON, to stop upon origin input signal after proximity input signal has turned OFF, to stop upon origin input signal without using proximity input signal, or to stop upon origin input signal after limit input signal has turned OFF.<br>N.O. = Normally open<br>N.C. = Normally closed |                |                |
|                                  | Jogging                           | Jogging can be executed at a specified speed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |                |
|                                  | Dwell times                       | 19/axis can be set from 0 to 9.99 s (unit: 0.01 s).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                |
|                                  | Acceleration/ deceleration curves | Trapezoidal or S-curve (Can be set separately for each axis.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |                |
|                                  | Zones                             | Zone Flag turns ON when present position is within a specified zone. Three zones can be set for each axis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |                |
|                                  | Software limits                   | Can be set within a range of -1,073,741,823 to 1,073,741,823 pulses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |
|                                  | Backlash compensation             | 0 to 9,999 pulses. Compensation speed can also be set.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |                |
| Functions and settings           | Teaching                          | With a command from the PLC, the present position can be taken as the position data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |
|                                  | Deceleration stop                 | The STOP command causes positioning to decelerate to a stop according to the specified deceleration time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |
|                                  | Emergency stop                    | Pulse outputs are stopped by an external emergency stop command.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                |
|                                  | Present position preset           | The PRESENT POSITION PRESET command can be used to change the present position to a specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |
|                                  | Override                          | When the override enabling command is executed during positioning, the target speed is changed by applying the override coefficient. Possible to set to a value from 1 to 999% (by an increment of 1%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |                |
| External I/O                     | Inputs                            | Prepare the following inputs for each axis:<br>CW and CCW limit input signals, origin proximity input signal, origin input signal, emergency stop input signal, positioning completed signal, interrupt input signal                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |
|                                  | Outputs                           | Prepare the following outputs for each axis:<br>Pulse outputs<br>CW/CCW pulses, pulse outputs and direction outputs can be switched.<br>Either error counter reset or origin-adjustment command outputs can be selected depending on the mode.                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                |
| Pulse output distribution period |                                   | 1-axis operation: 4 ms<br>Linear interpolation: 8 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |
| Response time                    |                                   | Refer to Operation Manual <i>Appendix A Performance Characteristics</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |
| Self-diagnostic function         |                                   | Flash memory check, memory loss check, CPU bus check                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |
| Error detection function         |                                   | Overtravel, CPU error, software limit over, emergency stop                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |                |

- Note: 1.** The additional functions supported by Unit version 2.0 can be used only when the PCU is installed with a CS1-H CPU Unit (either CPU Unit Ver. 2.0 or Pre-Ver. 2.0 CPU Unit). These functions cannot be used if the PCU is installed with a CS1 CPU Unit (with -V1 suffix). For details on Unit versions, refer to *Unit Versions of CS-series Position Control Units* on Operation Manual page vi.
- 2.** When performing linear interpolation, the distances that can be moved will vary.

## External Interface



## LED Indicators

| Name | Color  | Status   | Explanation                                                                                                                                                                   |
|------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RUN  | Green  | Lit      | Lit during normal operation.                                                                                                                                                  |
|      |        | Not lit  | Hardware error, or PLC notified of PCU error.                                                                                                                                 |
| ERC  | Red    | Lit      | An error has occurred.                                                                                                                                                        |
|      |        | Not lit  | No error has occurred.                                                                                                                                                        |
| ERH  | Red    | Lit      | An error has occurred IN the CPU Unit.                                                                                                                                        |
|      |        | Not lit  | No error has occurred at the CPU Unit.                                                                                                                                        |
| SENS | Yellow | Lit      | Either a CW/CCW limit signal or an emergency stop input signal is being input. At this time the LED indicator for the relevant axis (X to U) will flash.                      |
|      |        | Flashing | Either a parameter loss, a data loss, or an operating data area designation error has occurred.                                                                               |
|      |        | Not lit  | None of the above has occurred.                                                                                                                                               |
| DATA | Yellow | Lit      | Data is incorrect (e.g., the parameters or positions transferred are out of the permissible range). At this time the LED indicator for the relevant axis (X to U) will flash. |
|      |        | Flashing | The check of all data (parameters, positions, etc.) following power up shows that data is lost or corrupted.                                                                  |
|      |        | Not lit  | None of the above has occurred.                                                                                                                                               |
| X    | Orange | Lit      | Pulses are being output to the X axis (either forward or reverse).                                                                                                            |
|      |        | Flashing | An error has occurred, such as incorrect cable type for the X axis or faulty data.                                                                                            |
|      |        | Not lit  | None of the above has occurred.                                                                                                                                               |
| Y    | Orange | Lit      | Pulses are being output to the Y axis (either forward or reverse).                                                                                                            |
|      |        | Flashing | An error has occurred, such as incorrect cable type for the Y axis or faulty data.                                                                                            |
|      |        | Not lit  | None of the above has occurred.                                                                                                                                               |
| Z    | Orange | Lit      | Pulses are being output to the Z axis (either forward or reverse).                                                                                                            |
|      |        | Flashing | An error has occurred, such as incorrect cable type for the Z axis or faulty data.                                                                                            |
|      |        | Not lit  | None of the above has occurred.                                                                                                                                               |
| U    | Orange | Lit      | Pulses are being output to the U axis (either forward or reverse).                                                                                                            |
|      |        | Flashing | An error has occurred, such as incorrect cable type for the U axis or faulty data.                                                                                            |
|      |        | Not lit  | None of the above has occurred.                                                                                                                                               |

**Note:**

- For the CS1W-NC113/NC133, this applies only to the X axis; for the CS1W-NC213/NC233, it applies only to the X and Y axes.
- When not all of the axes are used for the CS1W-NC213/NC233/ NC413/NC433, either connect the CW/CCW limit inputs for the unused axes to the input power supply and turn them ON or set the contact logic to N.O. Connect the emergency stop to the input common and turn it ON. If it is not connected, the ERC indicator will light. Operation will be normal, however, for all axes that are used.

## Functions Supported by Each Unit Version of Position Control Unit

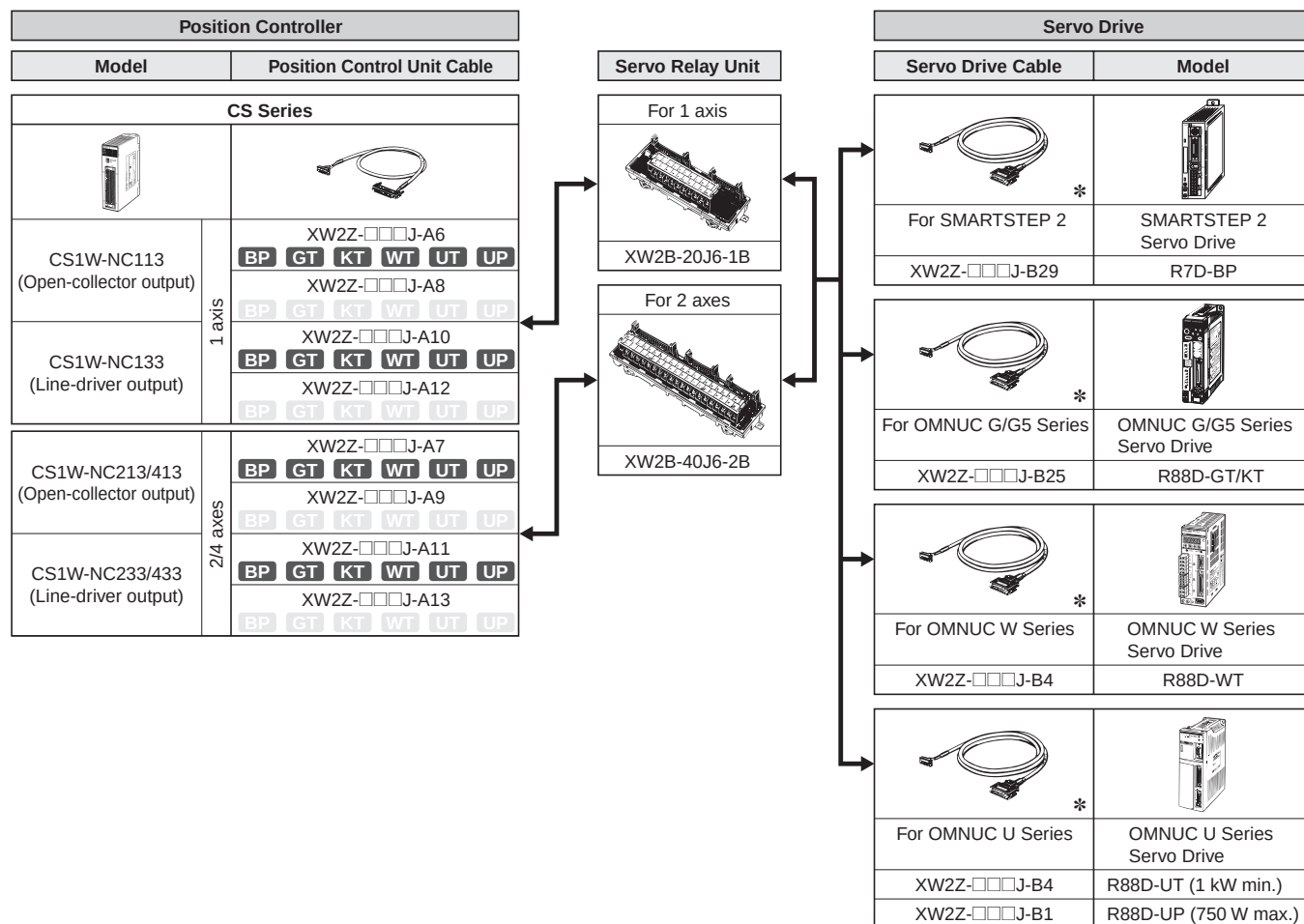
| Unit Version                     |                                                                                                                  | Pre-Ver. 2.0                   | Ver. 2.0                                                            | Ver. 2.1                                                            | Ver. 2.2                                                                                                  | Ver. 2.3                                                                                                                                        |
|----------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Internal system software version |                                                                                                                  | 1.0                            | 2.0                                                                 | 2.1                                                                 | 2.2                                                                                                       | 2.3                                                                                                                                             |
| CS-series Position Control Units |                                                                                                                  | CS1W-NC113/133/213/233/413/433 |                                                                     |                                                                     |                                                                                                           |                                                                                                                                                 |
| Functions                        | Changing the acceleration for a multiple start during relative movement or absolute movement in direct operation | Not supported                  | Supported                                                           | Supported                                                           | Supported                                                                                                 | Supported                                                                                                                                       |
|                                  | Changing acceleration/ deceleration time during jog operation                                                    | Not supported                  | Supported                                                           | Supported                                                           | Supported                                                                                                 | Supported                                                                                                                                       |
|                                  | Setting acceleration/ deceleration time for axis parameters until the target speed is reached                    | Not supported                  | Supported                                                           | Supported                                                           | Supported                                                                                                 | Supported                                                                                                                                       |
|                                  | Easy backup function                                                                                             | Not supported                  | Supported                                                           | Supported                                                           | Supported                                                                                                 | Supported                                                                                                                                       |
|                                  | Setting number of unused axes                                                                                    | Not supported                  | Not supported                                                       | Supported                                                           | Supported                                                                                                 | Supported                                                                                                                                       |
|                                  | Setting CW/CCW pulse output direction                                                                            | Not supported                  | Not supported                                                       | Not supported                                                       | Supported                                                                                                 | Supported                                                                                                                                       |
|                                  | Setting origin search pattern                                                                                    | Not supported                  | Not supported                                                       | Not supported                                                       | Supported                                                                                                 | Supported                                                                                                                                       |
|                                  | Position data setting when origin signal stops                                                                   | Not supported                  | Not supported                                                       | Not supported                                                       | Supported                                                                                                 | Supported                                                                                                                                       |
|                                  | Setting jog operation                                                                                            | Not supported                  | Not supported                                                       | Not supported                                                       | Not supported                                                                                             | Supported                                                                                                                                       |
|                                  | Setting deviation counter reset output signal                                                                    | Not supported                  | Not supported                                                       | Not supported                                                       | Not supported                                                                                             | Supported                                                                                                                                       |
|                                  | Checking parameters and data at startup                                                                          | Not supported                  | Not supported                                                       | Not supported                                                       | Not supported                                                                                             | Supported                                                                                                                                       |
| Support Software                 |                                                                                                                  | CX-Position Ver. 1.0 or later  | CX-Position Ver. 1.0 (See note 2.)<br>CX-Position Ver. 2.0 or later | CX-Position Ver. 1.0 (See note 2.)<br>CX-Position Ver. 2.0 or later | CX-Position Ver. 1.0 (See note 2.)<br>CX-Position Ver. 2.0 (See note 2.)<br>CX-Position Ver. 2.1 or later | CX-Position Ver. 1.0 (See note 2.)<br>CX-Position Ver. 2.0 (See note 2.)<br>CX-Position Ver. 2.1 (See note 2.)<br>CX-Position Ver. 2.2 or later |

- Note: 1.** The Position Control Unit must be installed with CS1-H CPU Unit to use the above functions supported for Position Control Unit Ver. 2.0. These functions cannot be used if the Position Control Unit is installed with a CS1 CPU Unit (with -V1 suffix).
- 2.** With CX-Position Ver. 1.0, new functions added to Position Control Units Ver. 2.0 or higher cannot be used.
- 3.** Please refer to the Operation Manual Page vii for the Unit Version.

## Connecting Connectors Using Servo Relay Units

Wiring requires the dedicated cables.

Position Control Unit Cables, Servo Relay Unit, Servo Drive Cable are sold separately.

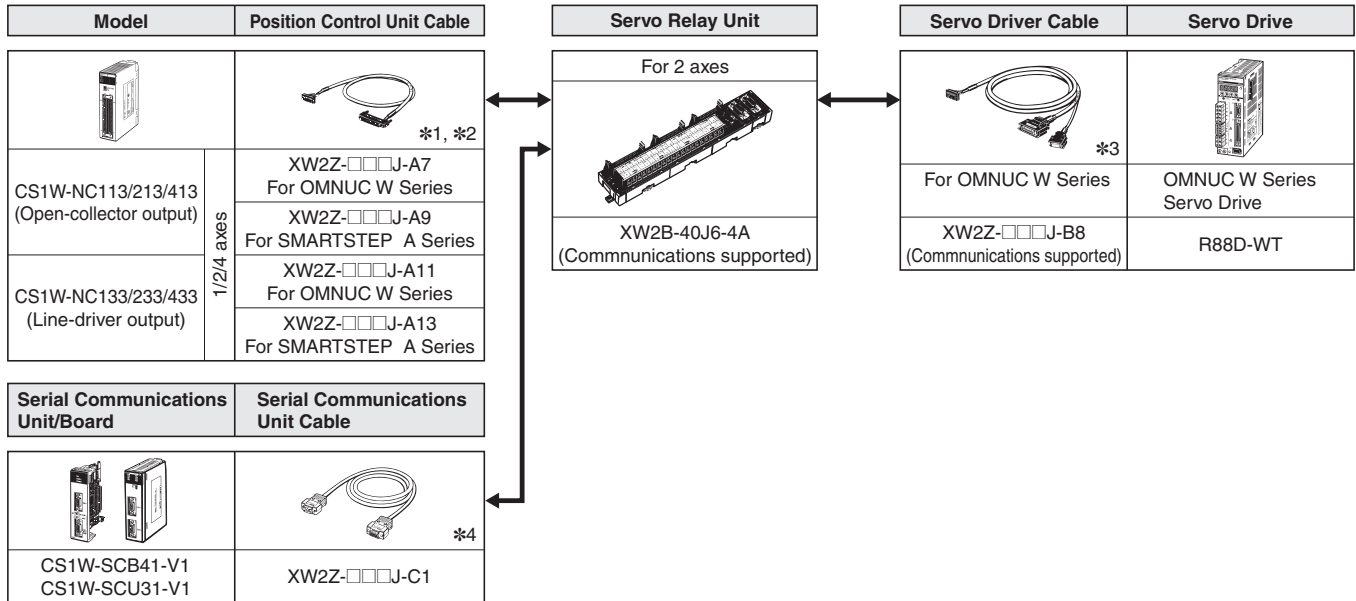


The following icons represents applicable servo drives.

- BP** : SMARTSTEP2
- GT** : OMNUC G Series
- KT** : OMNUC G5 Series
- WT** : OMNUC W Series
- UT** : OMNUC U Series (1 kW min.)
- UP** : OMNUC U Series (750 W max.)

\* Two Servo Drive Cables are required if 2-axis control is performed using one Position Control Unit.

## Using Servo Relay Unit w/communications function



\*1. When using for one-axis control, do not connect signal inputs to the Y-axis connector of XW2B-40J6-4A.

\*2. When using two-axes control, you cannot mix W Series with SMARTSTEP A Series as Servo Drives.

\*3. When using in combination with the CS1W-NC213/NC233 (2-axis control), 2 Servo Driver Connecting Cables are required. When using in combination with the CS1W-NC413/NC433 (4-axis control), 4 Servo Driver Connecting Cables are required.

\*4. When using for two or four-axes control, connect between communications connectors of XW2B-40J6-4A with this cable.

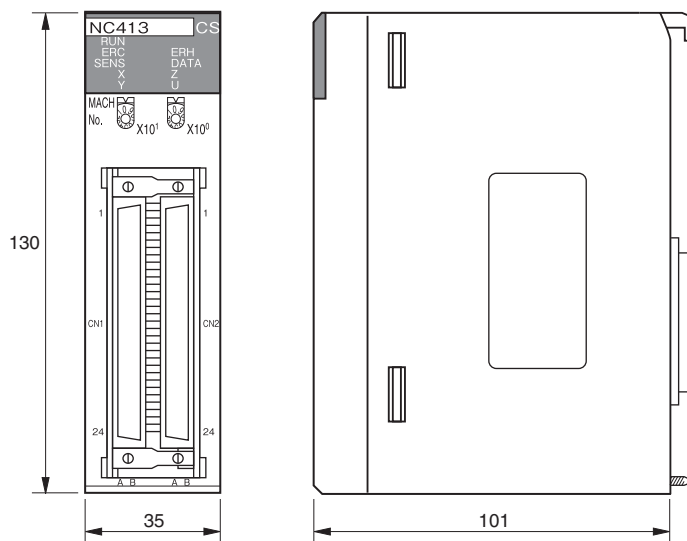


## Dimensions

(Unit: mm)

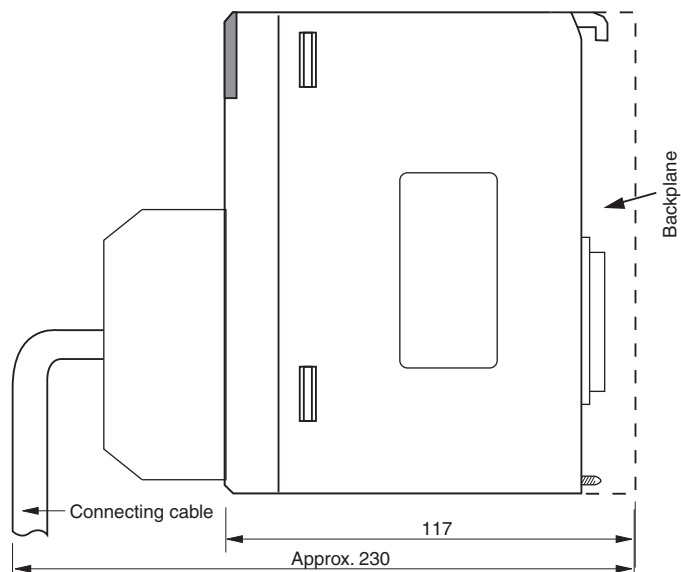
CS1W-NC113/213/413

CS1W-NC133/233/433



**Note:** The above diagram is for the CS1W-NC413.

### Mounted Dimensions



## Related Manuals

| Manual number |          | Model                          | Name                                    | Contents                                                                                                                                                                     |
|---------------|----------|--------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| English       | Japanese |                                |                                         |                                                                                                                                                                              |
| W376          | SBCE-311 | CS1W-NC113/133/213/233/413/433 | Position Control Units Operation Manual | Provides information on operating and installing Position Control Units, including details, basic settings, memory operation, direct operation from CPU and other functions. |
| W433          | SBCE-324 | CXONE-AL□□D-V□                 | CX-Position Operation Manual            | Provides an overview of CX-Position, its functions, and the system configuration, installation, and troubleshooting.                                                         |

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