CJ1W-NC☐☐

Position control units

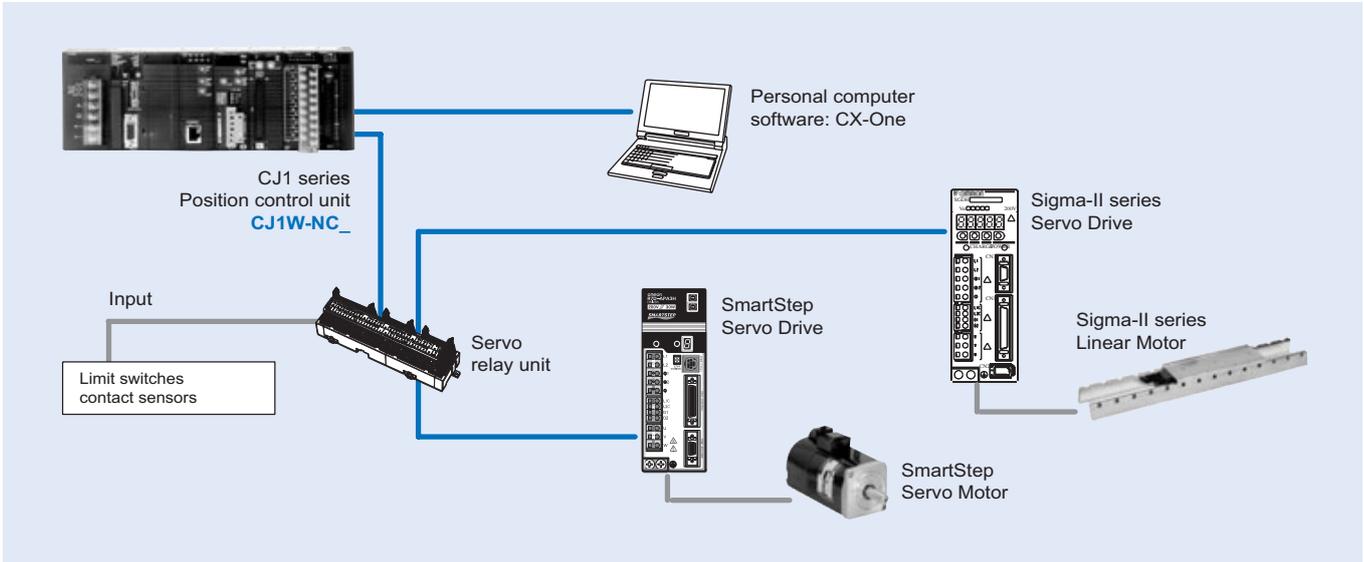### High-speed, High-precision positioning with 1, 2, or 4 axes

- Positioning can done by direct ladder commands
- Position and speed control
- Linear interpolation
- Interrupt feeding function
- Positioning of 100 points done from memory
- S-curve acceleration/deceleration, origin search, backlash compensation, and other features are also supported.
- Positioning data is saved in internal flash memory, eliminating the need to maintain a backup battery.
- Use Windows-based support software (CX-position) to easily create positioning data and store data and parameters in files.

Function

These position control units support positioning control via pulse-train outputs. Positioning is performed using trapezoid al or S-curve acceleration and deceleration. Models are available with 1, 2, or 4 axes control, and can be used in combination with servo drives or stepping motors what accept pulse-train control.

System configuration

Personal computer software: CX-One

CJ1 series
Position control unit
CJ1W-NC_

Input

Limit switches
contact sensors

Servo
relay unit

SmartStep
Servo Drive

Sigma-II series
Servo Drive

Sigma-II series
Linear Motor

SmartStep
Servo Motor

OMRON

Model	CJ1W-NC113 CJ1W-NC133	CJ1W-NC213 CJ1W-NC233	CJ1W-NC413 CJ1W-NC433
Unit name	Position control unit		
Classification	Special I/O unit		
Unit numbers	0 to 95		0 to 94
Control method	Open-loop control by pulse train output		
Control output interface	CJ1W-NC□13: Open-collector output CJ1W-NC□33: Line-driver output		
Controlled axes	1	2	4
Operating modes	Direct operation or memory operation		
Data format	Binary (hexadecimal)		
Affect on scan time for end refresh	0.29 to 0.41 ms max./unit		
Affect on scan time for IOWR/IORD	0.6 to 0.7 ms max./instructions		
Startup time	2 ms max. (refer to operation manual for conditions)		
Position data	-1,073,741,823 to +1,073,741,823 pulses		
No. of positions	100 per axis		
Speed data	1 to 500 kpps (in 1 pps units)		
No. of speeds	100 per axis		
Acceleration/deceleration times	0 t 250 s (time to max. speed)		
Acceleration/deceleration curves	Trapezoidal or S-curve		
Saving data in CPU	Flash memory		
Windows-based support software	CX-position (WS02-NCTC1-E)		
Ambient operating temperature	0 to 55 °C		0 to 50 °C
External power supply	24 VDC ±10%, 5 VDC ±5% (line driver only)		24 VDC ±5%, 5 VDC ±5% (line driver only)

Ordering information

Position control unit

Name	Model
1 axis position control unit. Open-collector output.	CJ1W-NC113
2 axes position control unit. Open-collector output.	CJ1W-NC213
4 axes position control unit. Open-collector output.	CJ1W-NC413
1 axis position control unit. Line-driver output.	CJ1W-NC133
2 axes position control unit. Line-driver output.	CJ1W-NC233
4 axes position control unit. Line-driver output.	CJ1W-NC433

Servo drive cables

Note: Refer the selected servo systems section for cable and servo relay units information.

Computer software

Specifications	Model
CX-One	CX-One

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. I04E-EN-02   In the interest of product improvement, specifications are subject to change without notice.

CS1W-NC□□□, C200HW-NC□□□

Position control units

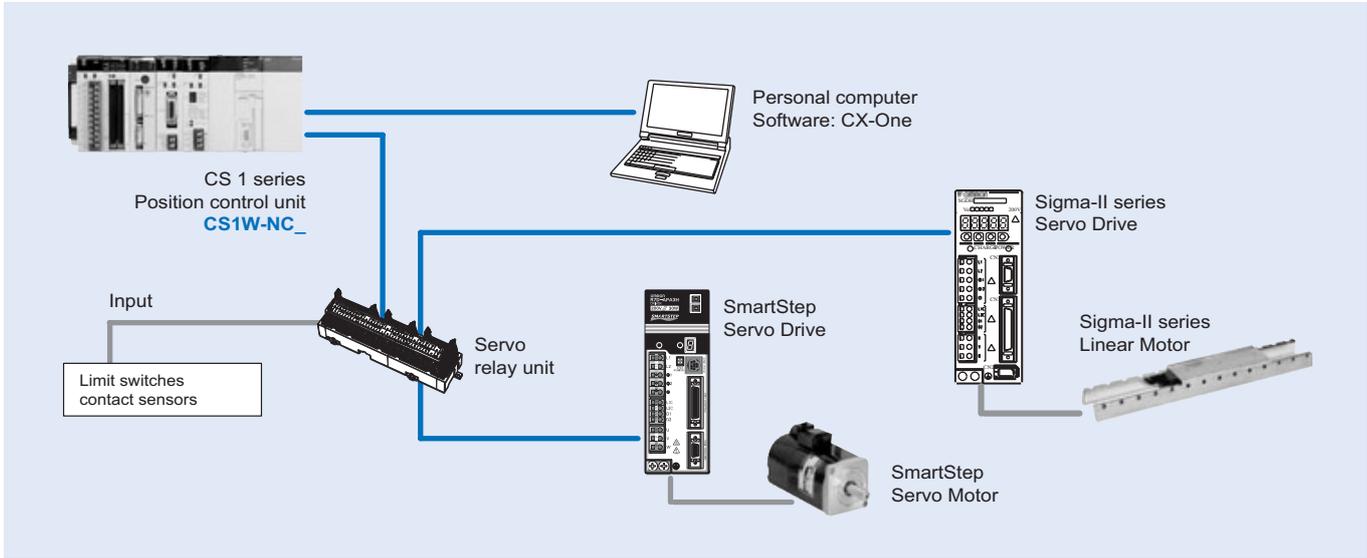## High-speed, high-precision positioning with 1, 2, or 4 axes

- Positioning can done by direct ladder commands
- Position and speed control
- Linear interpolation
- Interrupt feeding function
- Positioning of 100 points done from memory
- S-curve acceleration/deceleration, origin search, backlash compensation, and other features are also supported.
- Positioning data is saved in internal flash memory, eliminating the need to maintain a backup battery.
- Use Windows-based support software to easily create positioning data and store data and parameters in files.

Function

These position control units support positioning control via pulse-train outputs. Positioning is performed using trapezoid al or S-curve acceleration and deceleration. Models are available with 1, 2, or 4 axes control, and can be used in combination with servo drives or stepping motors what accept pulse-train control.

System configuration

CS 1 series
Position control unit
CS1W-NC_

Personal computer
Software: CX-One

Input

Limit switches
contact sensors

Servo
relay unit

SmartStep
Servo Drive

SmartStep
Servo Motor

Sigma-II series
Servo Drive

Sigma-II series
Linear Motor

OMRON

Specifications

Model	CS1W-NC113 CS1W-NC133	CS1W-NC213 CS1W-NC233	CS1W-NC413 CS1W-NC433	C200HW-NC113	C200HW-NC213	C200HW-NC413
Unit name	Position control unit					
Classification	CS1 special I/O units			C200H special I/O units		
Unit numbers	0 to 95			0 to 15 (0 to F)		
Control method	Open-loop, automatic trapezoid acceleration/deceleration					
Control output signals	CS1W-NC☐13: Open-collector outputs CS1W-NC☐33: Line-driver outputs			Open-collector		
Controlled axes	1	2	4	1	2	4
Operating modes	Direct operation or memory operation					
Data format	Binary (hexadecimal)			BCD		
Affect on scan time for end refresh	0.29 to 0.41 ms max./unit			2.6 to 4.5 ms max./unit		
Affect on scan time for IOWR/IORD	0.6 to 0.7 ms max./instructions			2.6 to 5.5 ms max./instructions		
Startup time	2 ms min. (Refer to operation manual for conditions.)			7.51 ms min. (Refer to operation manual for conditions.)		
Position data	-1,073,741,823 to +1,073,741,823 pulses			-9,999,999 to +9,999,999 pulses		
No. of positions	100 per axis					
Speed data	1 to 500 kpps (in 1 pps units)			1 to 500 kpps (specified as factor)		
No. of speeds	100 per axis					
Acceleration/deceleration times	0 to 250 s (time to max. speed)					
Acceleration/deceleration curves	Trapezoidal or S-curve					
Saving data in CPU	Flash memory					
Windows-based support software	CX-position			SYSMAC-NCT (WS01-NCTF1-E)		

Ordering information

Position control unit

Name	Model
1 axis position control unit. Open-collector output.	CS1W-NC113
2 axes position control unit. Open-collector output.	CS1W-NC213
4 axes position control unit. Open-collector output.	CS1W-NC413
1 axis position control unit. Line-driver output.	CS1W-NC133
2 axes position control unit. Line-driver output.	CS1W-NC233
4 axes position control unit. Line-driver output.	CS1W-NC433
1 axis position control unit. Open-collector output.	C200HW-NC113
2 axes position control unit. Open-collector output.	C200HW-NC213
4 axes position control unit. Open-collector output.	C200HW-NC413

Servo drive cables

Note: Refer to selected servo systems section for cable and servo relay units information.

Computer software

Specifications	Model
CX-One	CX-One

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. I05E-EN-02   In the interest of product improvement, specifications are subject to change without notice.