

# Get the right position

The new CJ1W-CTL41-E counter unit provides easy connection of up to 4 incremental encoders or high-speed pulse-train inputs to any CJ1 PLC system.



## Encoder inputs

Incremental encoders remain the most economical way to accurately acquire fast-changing position data in machine automation. These encoders provide speed, direction and position information through quadrature outputs consisting of phase-offset A- and B-pulse signals. Optionally, there may be a Z-pulse or index signal to mark the encoder's 'zero' position.

With the addition of the CJ1W-CTL41-E 4-channel counter unit, Omron's powerful CJ1 Programmable controller range now offers a wide choice of functionality and performance levels to choose from, to always exactly meet your application's needs; up to 24 of these units can be controlled by a single CJ1 CPU.

## Fast response

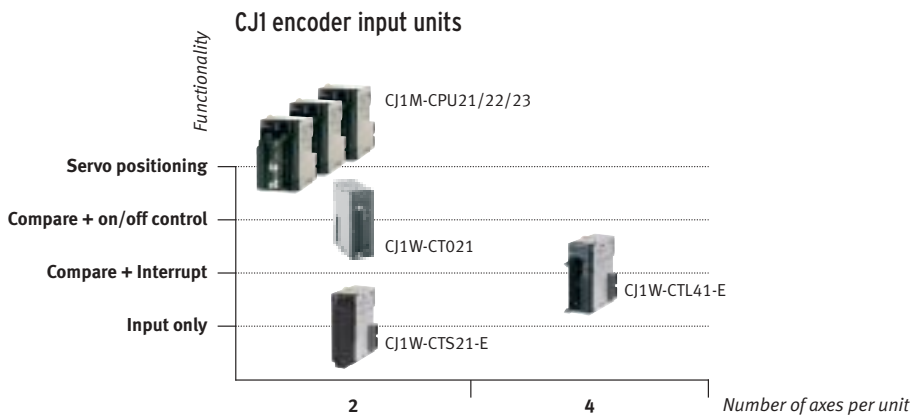
The A/B/Z counter inputs of the CTL41-E can process pulse signals up to 100 kHz, effectively allowing count frequencies up to 400,000 counts per second on all 4 channels simultaneously. The resulting counter data is copied to the CPU each PLC scan cycle as four 32-bit values. By internally comparing the counter values with 8 preset values (or 4 ranges) per channel, the CTL41-E can also issue interrupts to the CPU for sub-millisecond response.

## Flexible

Linear or circular counter modes can be selected for each channel individually. And besides processing A/B/Z or quadrature encoder signals, each channel can also be configured for up/down pulse counting, or pulse+direction signals. Reconfiguration of counter properties, like ranges or comparison values or control hysteresis, can be made on-the-fly by issuing commands from the PLC program. For efficient commissioning and troubleshooting, the unit has an internal error log of 30 messages that can be accessed from CX-Programmer, Omron's universal PLC programming software.

## Easy to connect

To provide fast and easy connection of any incremental encoder to the new 4-channel counter unit, there is a new optional terminal block. This links to the CJ1W-CTL41-E by means of a standard 40-point cable, available in several standard lengths. Conveniently grouped terminal blocks allow full wiring of A/B/Z and power supply for 4 encoders, at either 24V- or line-driver signal levels. Screwless technology will reduce the time required for installation and maintenance, and assure that even thin-gauge encoder wires are reliably connected, even under harsh vibration conditions.



- CJ1W-CTS21-E:** 2-channel SSI-encoder interface unit. Configurable to accept all known variations of the Synchronous Serial Interface protocol. Transfers position data to the PLC, but has no ranges/comparison values, no local I/O.
- CJ1W-CT021:** 2-channel high-speed counter unit. For 2 A/B/Z encoders with pulse frequencies up to 500 kHz. Built-in digital in- and outputs allow control actions to be configured that are executed autonomously (i.e. without delay due to communication with the CPU)
- CJ1M-CPU21/22/23:** CJ1M CPU units with 2 built-in counter inputs (100 kHz) and 2 pulse outputs. Include special instructions for positioning control using servo drives. Available in 3 different memory capacities.

**CJ1W-CTL41-E key features:**

- 4 Encoder inputs
- 100 kHz pulse frequency
- 32-bit counter values
- Linear + circular mode
- 32 comparison values
- Interrupts to PLC CPU
- On-the-fly reconfiguration
- Easy wiring

Model name	Description	Key features
<b>CJ1W-CTS21-E</b>	2-Channel SSI input unit	Fully configurable SSI communication parameters per channel
<b>CJ1W-CTL41-E</b>	4-Channel Counter Unit	100 kHz line driver inputs (or 24V through XW2G terminal block), 32 comparison values, interrupt to PLC CPU
	<b>XW2Z-xxxK</b>	Cable for CJ1W-CTL41-E xxx = cable length in cm (100, 150, 200, 300, 500)
	<b>XW2G-40G7-E</b>	Terminal block for CJ1W-CTL41-E Screwless connection of encoder wiring, 24 V or line driver selection per channel, DIN rail or screw mounting
<b>CJ1W-CT021</b>	2-Channel High-speed Counter Unit	500 kHz inputs (24 V, 5V, line driver), 32 comparison values, 2 control inputs, 2 control outputs, interrupt to PLC CPU
	<b>XW2Z-xxxB</b>	Cable for CJ1W-CT021 xxx = cable length in cm (050, 100, 150, 200, 300, 500)
	<b>XW2D-40G6</b>	General-purpose 40-pt terminal block 1:1 connection, 40 M3 screw terminals, DIN rail or screw mounting
<b>CJ1M-CPU21/22/23</b>	2-Channel Positioning CPU	100 kHz inputs, 2 pulse frequency / pulse width control outputs Program memory: 5 / 10 / 20 kSteps Max. I/O points: 160 / 320 / 640 Max. I/O units: 10 / 10 / 20 (with expansion rack)
	<b>XW2Z-xxxK</b>	Cable for CJ1M-CPU21/22/23 xxx = cable length in cm (100, 150, 200, 300, 500)
	<b>XW2B-40J6-9A</b>	Terminal block for CJ1M-CPU21/22/23 Connection for 2 servo axes including encoders, limit switches and pulse control signals. M3 screw terminals

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