

High-speed counter & edge control for reducing waste and loss on the production sites

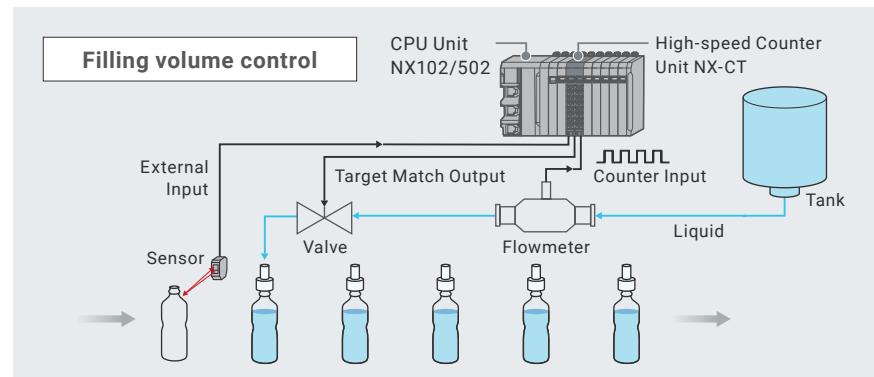


High-speed, high-precision control maximizing added value on the production sites

Reducing overfill through correction for delays and fluctuations

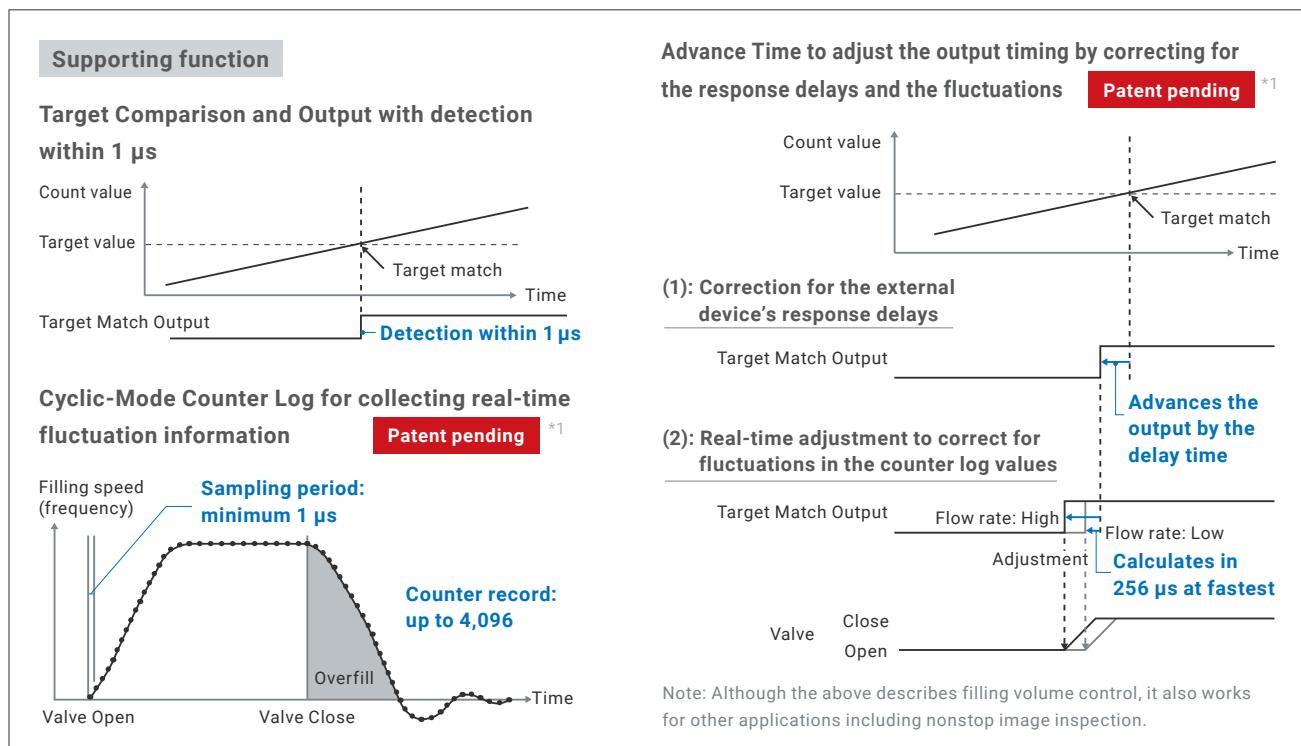
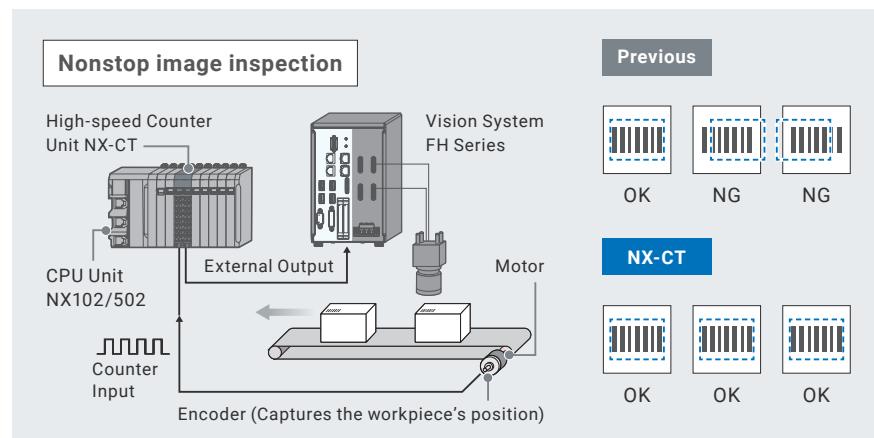
Outputting a valve close signal at the timing of the count value reaching the target value often causes overfilling, as there is a delay until the valve closes completely.

NX-CT features the Advance Time setting that outputs the signal earlier by the delay time. It also monitors the filling speed internally and adjusts the closing time to prevent overfilling or underfilling caused by flow rate fluctuations.



Inspection without slowing down conveyor speed or causing false positive

During inline inspection, variations in conveyor speed prevent capturing an image so that it fits into the camera's field of view, requiring workpieces to pause or slow down. NX-CT's Advance Time setting compensates for vision sensor delays and adjusts output timing in real time, ensuring correct positioning for image capture. This enables both high speed and high inspection quality.

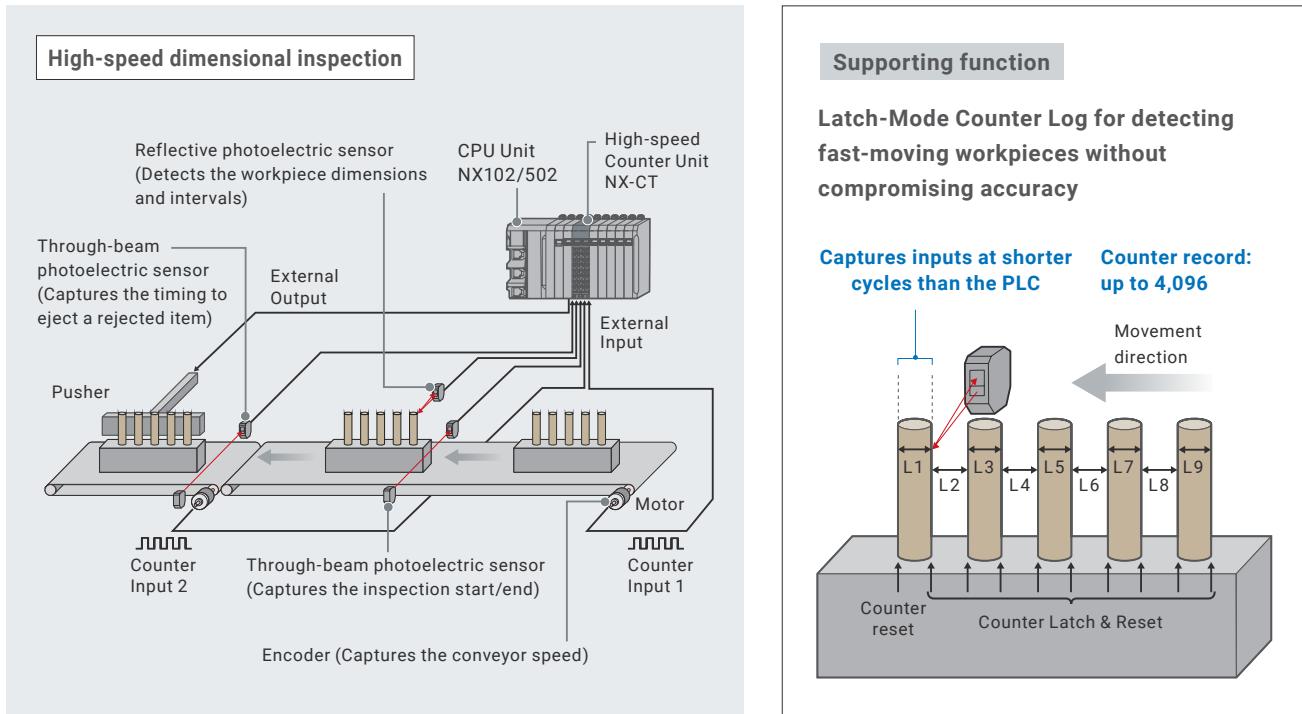


*1. As of January 2026, patent applications are pending in Japan.

NX-CT features the Counter Comparison function with detection within 1 μ s. It achieves high-speed, high-precision control through lightning-fast edge control, which processes signals instantly within the unit. It can reduce waste and loss on production sites caused by control delays, and contribute to production environments that can maximize added value.

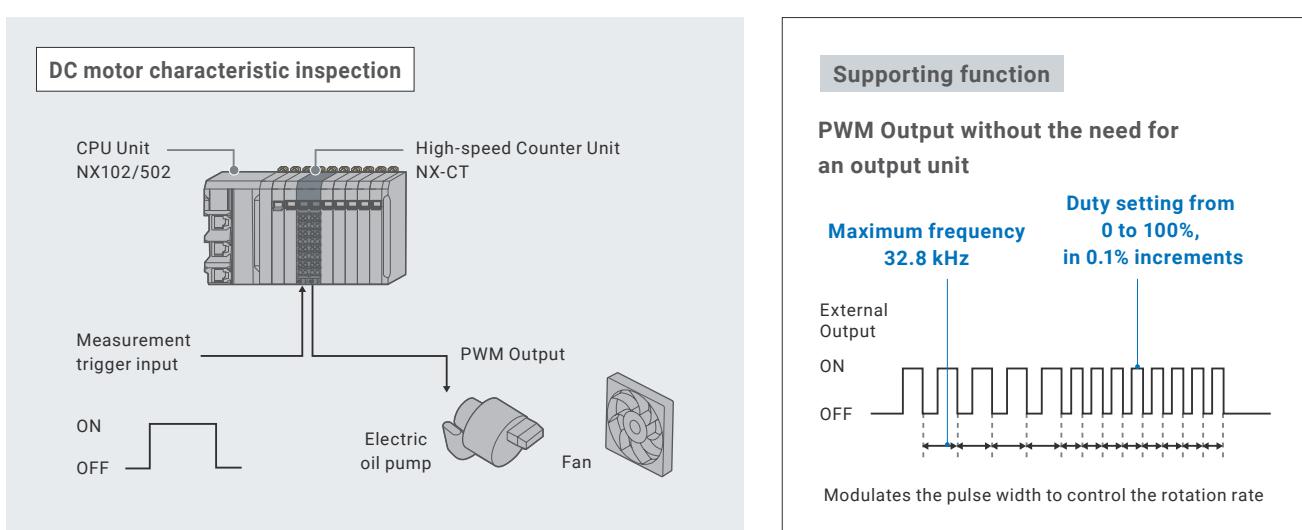
Reducing false positives/negatives with pass/fail determination by capturing data for even fast-moving workpieces

Transferring workpieces at shorter cycles than the PLC (several ms) generally overwrites the dimensional log and causes missing measurement data, preventing thorough pass/fail determination. NX-CT can capture external inputs at shorter cycles than the PLC and use the latch log mode to record up to 4,096 count values, ensuring acquisition of complete data utilized for pass/fail determination and improvement.



Reducing unnecessary design man-hours, equipment space, and costs

During DC motor shipping inspection, operational testing needs to be performed by simulating actual usage conditions. NX-CT features PWM Output for enabling/disabling output and making the duty cycle setting in 0.1% increments. No special PWM output device is required to perform the inspection. This contributes to reduced design man-hours, space saving, and cost reduction.



Four functions enabling high-speed, high-precision control

| | | | |
|--|--|--|---|
| Target Comparison and Output with detection within 1 μ s | Advance Time configurable in 1- μ s increments | Counter Log capable of recording up to 4,096 entries (Latch Log mode/ Cyclic Log mode) | PWM Output with a maximum frequency of 32.8 kHz and duty setting in 0.1% increments |
|--|--|--|---|

Two functions supporting stable operation and flexible line configuration

| | | |
|---|--|---|
| <p>Space-saving, low-cost multi-channel input counter (switchable between three-phase (Phase A/Phase B/Phase Z) \times 2 channels and single-phase \times 6 channels) Patented</p> <p>Previous</p> <p>When connecting single-phase pulse output devices \times 6 Ch</p> | <p>NX-CT</p> <p>Number of units reduced to 1/3</p> | <p>Counter Noise Filter for reducing miscounts even in noisy environments</p> |
|---|--|---|

Ordering Information

| Product name | Specification | | | | | | Model | |
|-------------------------|----------------------|----------------|-----------------|------------------------------|---|----------------------------|-----------|--|
| | Number of channels*1 | External Input | External Output | Maximum response frequency*2 | I/O refreshing method | Input method | | |
| High-speed Counter Unit | 2 (NPN) | 6 (NPN) | 6 (NPN) | 1 MHz | <ul style="list-style-type: none"> Free-Run refreshing Synchronous I/O refreshing Task period prioritized refreshing | 5 V/24 V voltage input | NX-CT2120 | |
| | 2 (PNP) | 6 (PNP) | 6 (PNP) | | | RS-422 Line receiver input | NX-CT2220 | |
| | 2 | 6 (NPN) | 6 (NPN) | 4 MHz | | | NX-CT2320 | |
| | 2 | 6 (PNP) | 6 (PNP) | | | | NX-CT2420 | |

*1. When set to 6ch mode, the counter channel number is 6 channels.

*2. When set to 6ch mode, the maximum response frequency is 100 kHz.

For details, refer to the NX Series High-speed Counter Unit NX-CT□□□□ Datasheet (Cat. No. P174).

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Note: Do not use this document to operate the Unit.

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