



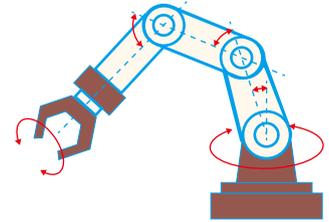
The pulse wave of the AFG - 303X / 302X can set the duty cycle with high resolution.

AFG-30XX series can set the pulse wave duty cycle with high resolution.

Therefore, it is most suitable for servo motor design and performance evaluation.



Resolution 0.0001%(<8.5kHz)



Duty Cycle Range : 0.0170%~99.983% , Resolution 0.0001%(<8.5kHz)

Duty Cycle Range (Extd.) : 0.0000%~100.0000% , Resolution 0.0001%

The settable duty times depend on the rise & fall time settings, as defined below:

$$\text{Duty} \geq 0.625 \times 100 \times [\text{rise time} - 0.6\text{ns} + \text{fall time} - 0.6\text{ns}] / \text{period}$$

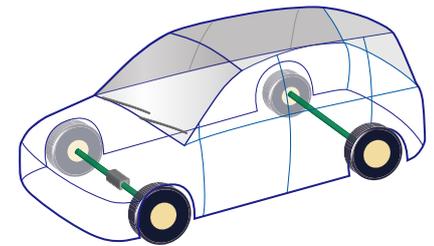
$$\text{Or Duty} \leq 100 - \{62.5 \times [(\text{rise time} - 0.6\text{ns}) + (\text{fall time} - 0.6\text{ns})] / \text{period}\}$$

Example

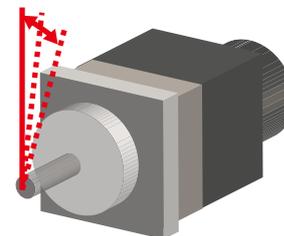
PWM control signal for Servo motors

AFG can be used for performance test of Servomotor.

The pulse duty variable resolution can be set up to 0.0001%.



Resolution 0.0001%



Servo motor

Feature

- High resolution duty setting

Freq < 25MHz (20MHz AFG-3021/3022): 0.01ns pulse width (or 3 digit resolution)

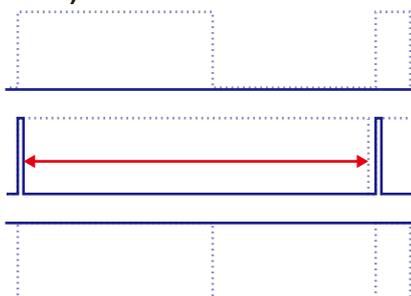
Freq < 8.5 kHz: 0.0001% duty cycle

- Extended Mode

The Extended Mode function extends the setting range of the pulse duty cycle to 0%~100% and the setting range of the width to 0.00ns-1000ks

Duty Range (Extd.)^{※2}

0.000%
0.0170%
99.9830%
100.000%



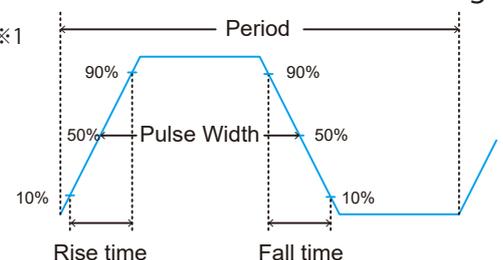
The pulse wave can be set with the following items.

Duty cycle^{※1}

Rise time

Fall time

Edge time



※1 : Duty Considerations:

$$\text{Width} - 0.625 * [(\text{Rise Time} - 0.6\text{nS}) + (\text{Fall Time} - 0.6\text{nS})] \geq 0 \text{ Period} \geq \text{Width} + 0.625 * [(\text{Rise Time} - 0.6\text{nS}) + (\text{Fall Time} - 0.6\text{nS})]$$

※2 : Loss may occur if the pulse width is beyond the setting range of the normal mode. The pulse may vanish at times.