

PWM Generator

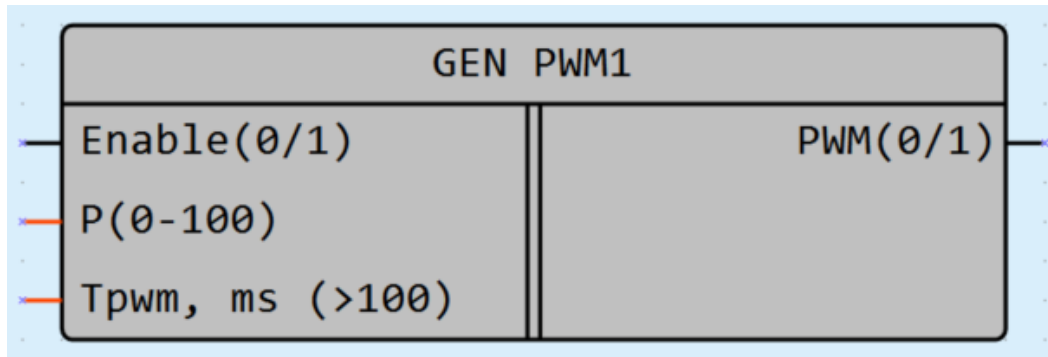


Figure 1 – Symbol

Inputs	Data type	Comment	Range
Enable	bool		0/1
P	int	Output power setting	0-100
Tpwm	int	PWM signal period, ms	>100*
Outputs	Data type	Comment	Range
PWM	bool	PWM output	0/1

*-period value is set in ms, when setting <100, Tpwm=100 ms.

Description of how the macro works

The macro works by changing the duration of the on state of the PWM output at a constant pulse repetition period. The pulse repetition period is selected based on the characteristics of the controlled object. The minimum PWM period is limited below to 100 ms. The value of the power at the input P is limited from above at 100.

Figure 2 shows diagrams of the macro output signal with different setting values at the P input; if the input value is P=100, the PWM output will be constantly on.

The output signal from the macro can be assigned to either an output relay or an analogue relay output, in which case it must be converted to float format, as shown in Fig. 3

When working with output relays, it is not recommended to set the period of the PWM signal at the Tpwm input to less than 2-3 seconds (2000-3000) this will save the resource of the output relay.

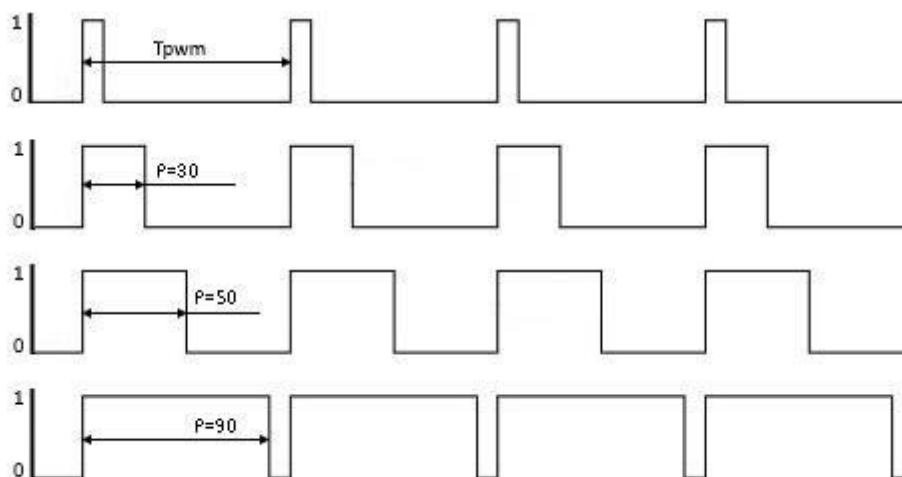


Figure 2 – Diagram of the macro output signal, at different settings of the control power, Fig. 2

Example of work

Figure 3 shows an example of how the macro works in simulation mode. The pulse repetition period is 1 second, power level is 50, operation is allowed. In this mode, output relay Q1 (and LED F1) will be 500ms closed and 500ms open, analog output AO1 will be 500ms 20mA(10V) and 500ms 4mA(0V) depending on the type of analog output used

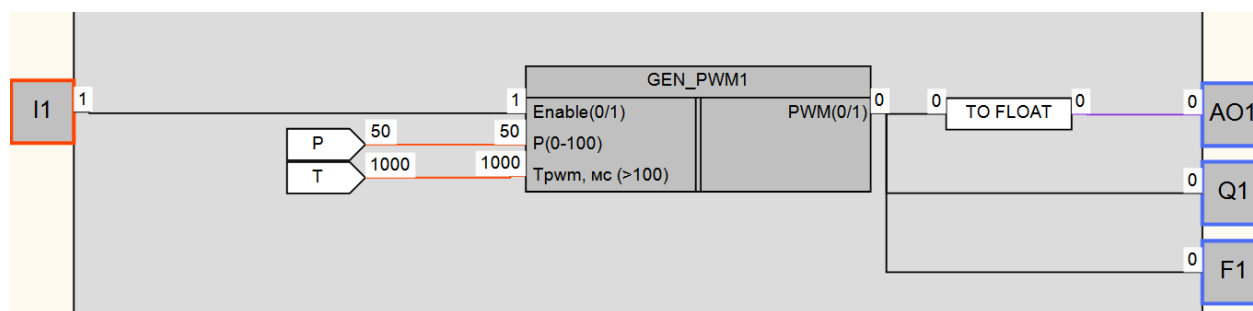


Figure 3 – Example of a macro

Scope of the macro:

1) In PWM control algorithms via an analogue or discrete output

Version	1.0
Last modification	22.04.2024.