

## TNC-G12 Single Axis Pulse Generator



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THIS MANUAL CONTAINS INFORMATION FOR INSTALLING AND OPERATING THE FOLLOWING PRODUCT:

- SINGLE AXIS PULSE GENERATOR (SPG-G12)

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## *GENERAL DESCRIPTION*

The single axis pulse generator (SPG) is a powerful and versatile step pulse generator capable of generating step pulse and direction signal output for stepper drive. It is a standalone linear ramping pulse generator designed to be used with Pulse/Dir Stepper or Servo motor drives.

It drives low jitter pulse train of frequency 40 KHz. The pulse train is smooth with linear ramps, preventing the motor stalling at high speeds. It accepts input in four manual modes.

Manual mode allows direct interface of sensors/ switches to fed respective input signals at the input terminals according to sub modes selected. These are Start/ Stop- Dir, Start Dir CW-Start Dir CCW and Start-Stop. These signals are given to controller at their respective inputs. These sub-modes in manual mode are configured by using jumper settings. The SPG features adjustable Starting Speed & Maximum speed along with an independent adjustment of acceleration.

Four ranges of speed are included and these ranges can be configured by jumper adjustments. Preset for base speed and acceleration are given on the board. The potentiometers for maximum speed gives a provision to set the maximum speed at any value according to range selected. The base speed remains always lower than the maximum speed.

SPG consist three input terminals in which IN1 and IN2 are control signals and IN3 is an emergency/ limit input. All these inputs are opto-isolated for noise immunity.

## **FEATURES**

- 3 opto-solated inputs.
- Low jitter 50 KHz Pulse rate.
- Continuously adjustable Max motor velocity (steps/sec).
- Adjustable Acceleration (steps/sec/sec)
- Smooth pulse train with linear ramps, no more motor stalls at high motor speeds.
- Differential Step / Direction outputs interface to Stepper/Servo drives.

## PHYSICAL AND ELECTRICAL CHARACTERISTICS

<b>Contents</b>	<b>Specifications</b>
Processor	32 bit processor
Axes	Single axis
Max frequency of Step signal	40 KHz
Digital inputs	3
Supply voltage	8V-24V DC
Max Power Consumption	2.5 W
Ambient temperature range	0°-55° Celsius
Relative Humidity	< 90% (without condensation)
Dimensions	70x40 ( in mm)
Weight	20g

<b>Operation Mode Setting</b>		
<i>Mode</i>	<i>JP1</i>	<i>JP2</i>
<b><i>IN1=StartCW, IN2=StartCCW (IN1 priority)</i></b>	<i>Jumper mounted</i>	<i>Jumper mounted</i>
<b><i>IN1=StartCW, IN2=StartCCW (IN2 priority)</i></b>	<i>Jumper not mounted</i>	<i>Jumper mounted</i>
<b><i>IN1=Start/Stop, IN2=Direction</i></b>	<i>Jumper mounted</i>	<i>Jumper not mounted</i>
<b><i>IN1=Start, IN2=Stop</i></b>	<i>Jumper not mounted</i>	<i>Jumper not mounted</i>

<b>Frequency Range Setting</b>		
<i>Frequency range</i>	<i>JP3</i>	<i>JP4</i>
<b><i>1667 Hz</i></b>	<i>Jumper not mounted</i>	<i>Jumper not mounted</i>
<b><i>6667 Hz</i></b>	<i>Jumper not mounted</i>	<i>Jumper mounted</i>
<b><i>16667 Hz</i></b>	<i>Jumper mounted</i>	<i>Jumper not mounted</i>
<b><i>40000 Hz</i></b>	<i>Jumper mounted</i>	<i>Jumper mounted</i>

**Connection Diagram:**

