



USER MANUAL

FREQUENCY GENERATOR V1.10

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1. Introduction

Product: FreqGenerator
Applicable product Version: V1.00



2. Features

- Two frequency generator channels.
- Channel 1 can generate frequency up to 50 KHz.
- Channel 3 can generate frequency up to 3 KHz.
- Four digital inputs.
- Four digital outputs.
- RS232 serial interface with seven settable baud rates.
- 24V external DC power supply.

3. Electrical Specification

Power Supply

- 12V to 24VDC power supply.
- On board transient suppressors available for protection
- Main processing unit and RS232 communication isolated from supplied power supply

Digital Inputs

There is provision for 4 digital inputs, which can take up to 30V DC signal. Threshold for logic high is approximately 5V.

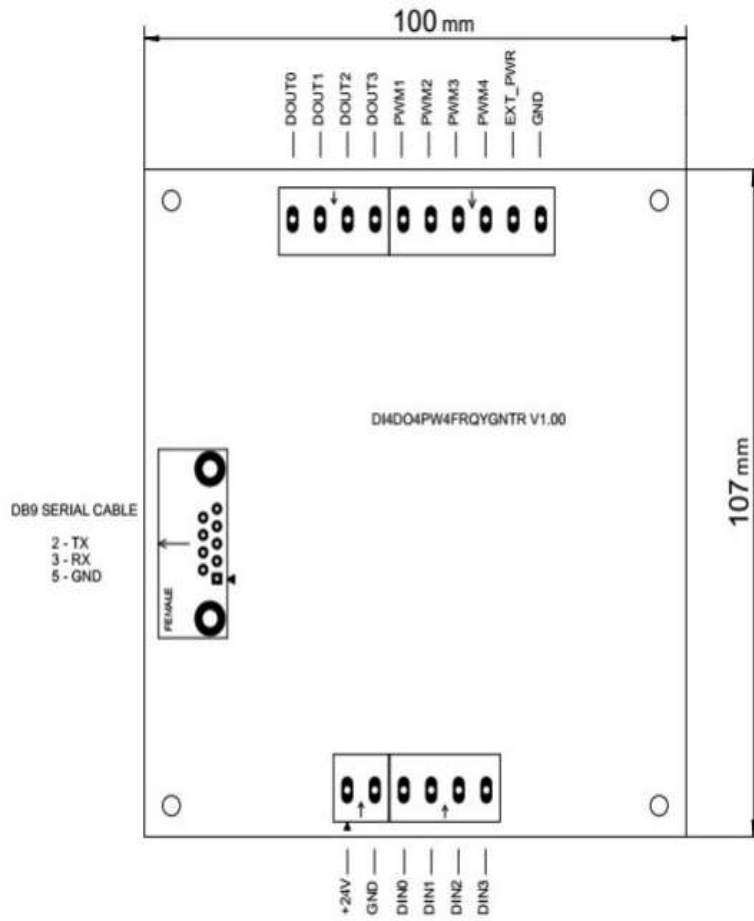
Digital Outputs

There is provision for 4 digital outputs.

Frequency Channels

Board has two frequency generator channels. Channel 1 can generate frequency up to 50KHz and Channel 3 can generate frequency up to 3KHz.

4. Board Layout



5. Board Layout Notations Meaning

Power Supply

Designation	Description
+24 V	External DC Power Supply to board
GND	Ground

Digital Inputs

Designation	Description
DIN0	Digital Input 0
DIN1	Digital Input 1
DIN2	Digital Input 2
DIN3	Digital Input 3

Digital Outputs

Designation	Description
DOUT0	Digital Output 0
DOUT1	Digital Output 1
DOUT2	Digital Output 2
DOUT3	Digital Output 3

Frequency Channels

Designation	Description
PWM1	PWM Channel 1
PWM2	Not Available
PWM3	PWM Channel 3
PWM4	Not Available

6. Serial Communication

The frequency generator board has provision of RS-232 serial communication with external device. A D type 9 pin female connector has been provided on the PCB and its connection details are as mentioned in the following table.

Pin No	Purpose
2	RS232 TXD
3	RS232RXD
5	GND
1,4,6,7,8,9	No Connection

Communication Settings

Data Bits : 8
Parity Bit : None
Stop Bits : 1
Flow Control : None
Baud Rate : Settable as 2400, 4800, 9600, 19200, 38400, 57600 and 115200.
(Factory default is 19200)

General Notes

1. All commands starts with CMD_ and end with <CR>.
2. Command Format:

CMD_Command Text = Optional payload depending on command code<CR>

7. Commands

1. Read Product Name and Firmware Version

Product name and firmware version can be obtained by issuing this command.

Command Format : CMD_TITLE<CR>
Response : Frequency Generator <Firmware Version>,<Product Serial Number>

2. Change Communication Baud Rate

Communication baud rate of frequency generator board can be changed by issuing this command. This is one time setting and user need not to set it every time. The new baud rate is saved in non-volatile memory and takes effect only after the board is power cycled.

Command Format : CMD_BAUD = Baud Rate<CR>
Example : CMD_BAUD = 9600<CR>

Possible communication baud rates are 2400, 4800, 9600,19200,38400,57600 and 115200.

3. Operate Outputs

This command allows changing each individual outputs. '0' turns off the specific output and '1' turns on the specific output. Any other character will not change the output state.

Command Format : CMD_OUTPUT = '0' Turn off output/ '1' Turn on output/'2' No Change<CR>
Example : CMD_OUTPUT = 0102 <CR>

4. Read Inputs

Using this command user can query current status of digital inputs. '1' indicates that input is on and '0' indicates that input is off.

Command Format : CMD_INPUTS<CR>.
Response : DIN<Current status of digital inputs separated by comma><CR>

5. Generate Frequency

Using this command user can generate frequency at PWM channels. Using channel 1 it is possible to generate frequency up to 50KHz. And at channel 3 up to 3KHz.

Command Format : CMD_PWM = Channel Number, 5 Digit Frequency Value<CR>.

Example : CMD_PWM = 1, 05000<CR>

Frequency at channel 1 should be 5KHz.

8. Warranty Statement

The Frequency Generator V1.10 unit specified in this document is covered under warranty for a period of 12 months against manufacturing defects, workmanship and malfunction under normal operating conditions. The warranty is subject to the terms and conditions mentioned below.

1. The warranty commences from the date of sale for a period of 12 months irrespective of the actual installation date.
2. The warranty is against manufacturing defects and any subsequent malfunction of the instrument during the normal operation. The warranty shall not be applicable in case of accidental damage, damage due to wrong operation, connection or conditions that are out of normal operating specifications.
3. KARL PL, at its discretion may repair or replace the product depending on the condition of instrument, availability of spare parts and type of failure.
4. In case of warranty claim, the warranty period will not be extended and remains same as stated earlier from the date of sale.
5. Maximum liability of KARL PL remains up to repair or replacement of the product only. Any damages or losses raised out of use of the instrument are not covered by this warranty. In any case, cost of the product will not be refunded.
6. In case of warranty claim, the product should be sent over to KARL PL immediately after noticing the defect or failure. A detailed note of operating conditions in which fault occurred will be helpful in rectifying the defect.
7. Do not try to open or repair the instrument on your own. Warranty will stand null and void in such case. Products with tampered warranty seal will not be considered for warranty claims and regular service charges will be applicable.
8. In all claims, the company's decision will be final and legally binding.
9. Any and all disputes are subject to pune jurisdiction only.

Kurolikar Automation Research Labs Ltd
#226, Laxmi colony, Behind manish market,
Hadpasar, Pune- 411028
www.AutomationResearchLabs.com
Email:sales@AutomationResearchLabs.com