TECHNICAL DESCRIPTION

MODEL: PMC-2001

(Piezoelectric Multi channel Master Controller)

VER. 100

Piezoelectric Technology Co., Ltd.

#501 Sinnae Technotown, 485 Sangbong1 – dong,
Jungrang –gu, Seoul, Korea, 131 - 863
Tel. +82- 2 - 3421 – 0370~3 , Fax. +82 – 2 - 3421 – 0374
http://www.piezo-tech.com

Revision History

Version	Date	Changes	Status	Author/Approver
100	2020/12/14	First revision	draft	J.H.Nam

- The information is subject to change without notice for technical improvement

CONTENTS

1. Introduction

This user manual provides information about the electrical specifications of the PMC-2001 Controller is offered in single axis configurations.

The PMC2001 performs digital position and velocity control for one axis, using incremental encoder devices as the main position feedback. It does role of Master device of multiple channel system.

2. Features

- Industry's smallest TULA controller solution.
- PID Control and IIR filter Algorithm.
- USB (Serial over USB) or I2C interface.
- Data Recording.
- multiple Axis configuration.

3. Safety Precautions

Connect/disconnect the stage cable from/to PMC-2001 , only when the main power cord is disconnected from the wall outlet.

4. Specification

Model	**PMC-2001**
Power	
Operating Voltage	5V [±10%]
Electrical power	1.5W
Power consumption	0.3A
Communication	USB (Serial over USB)
Baud rate	115200 bps
Transmission code	ASC II
Data length	8 bit
Stop bit length	1 bit
Parity check	Nil
User software	TULA Controller PC Manager
Environmental	
Ambient operating temperature	0 to +50℃
Storage temperature	-20℃ to +70℃
Operating humidity	0 to 80%
Dimensions	72 mm x 25 mm x 18 mm
Weight	12g

Table 1: Technical data

5. Block Diagram

This section describes the block diagram of PMC-2001

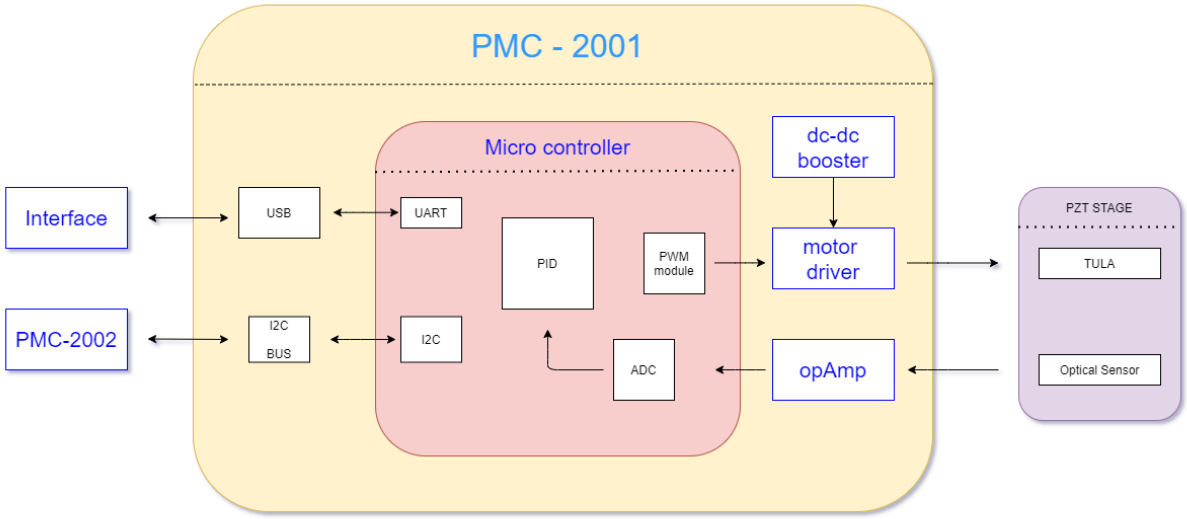


Figure 1: PMC-2001 Block diagram

6. Layout

This section describes the layout of PMC-2001.

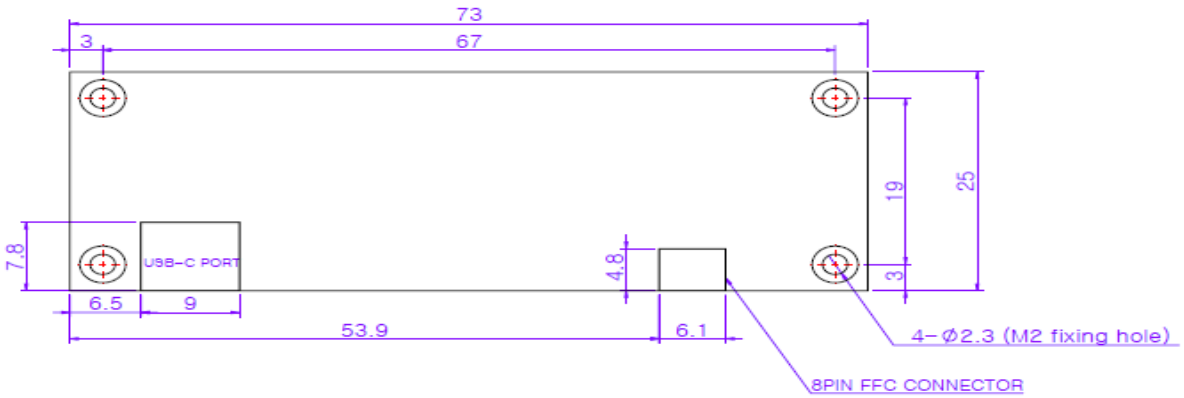


Figure 2: PMC-2001 Dimension

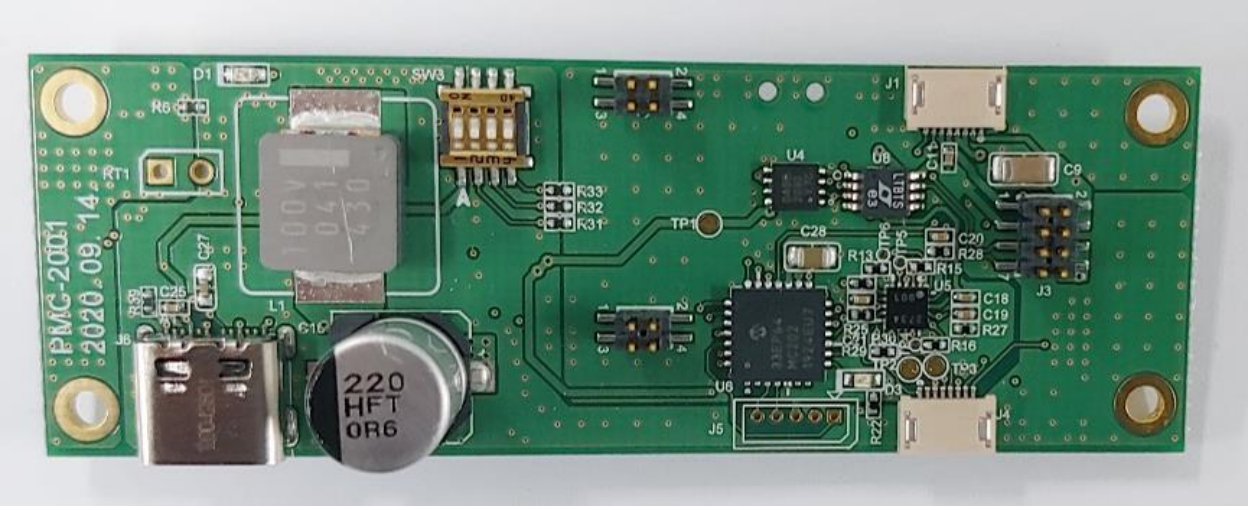


figure 3 : PMC-2001 Top view

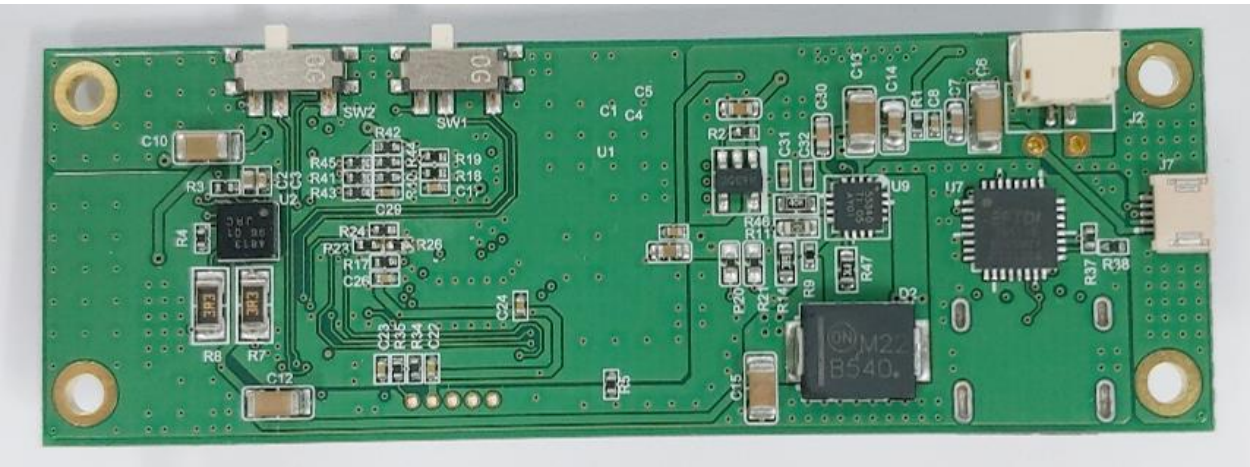


Figure 4. PMC-2001 Bottom view

7. Switch setup

This section describes the switch1,2,3 which are select sensor type of PMC-2001 .

7-1. SW1,SW2

Select sensor type

optical sensor mode (PT-XDT series)

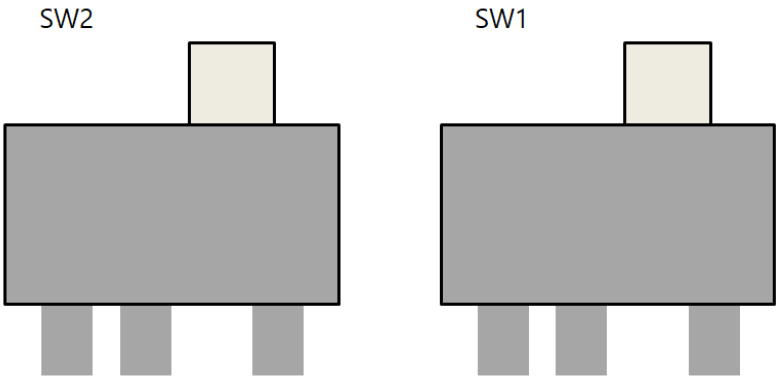


Figure 3: optical sensor mode

I2C mode

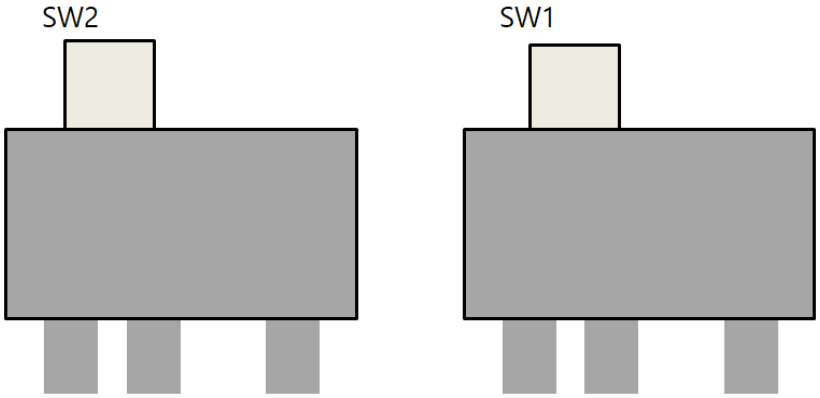
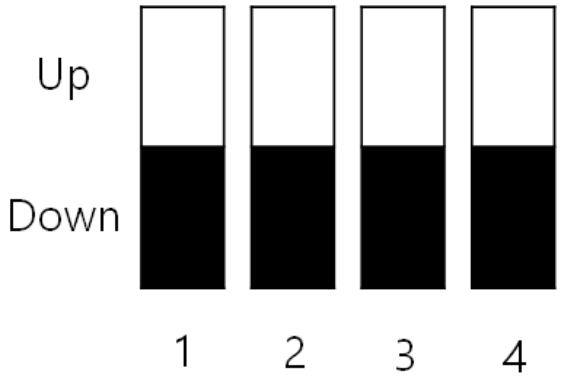


Figure 4: I2C encoder mode

7-2. SW3 (not function)



SW 3.

8. CONNECTOR PIN CONFIGURATION

This section describes the motor and encoder connector pin out.

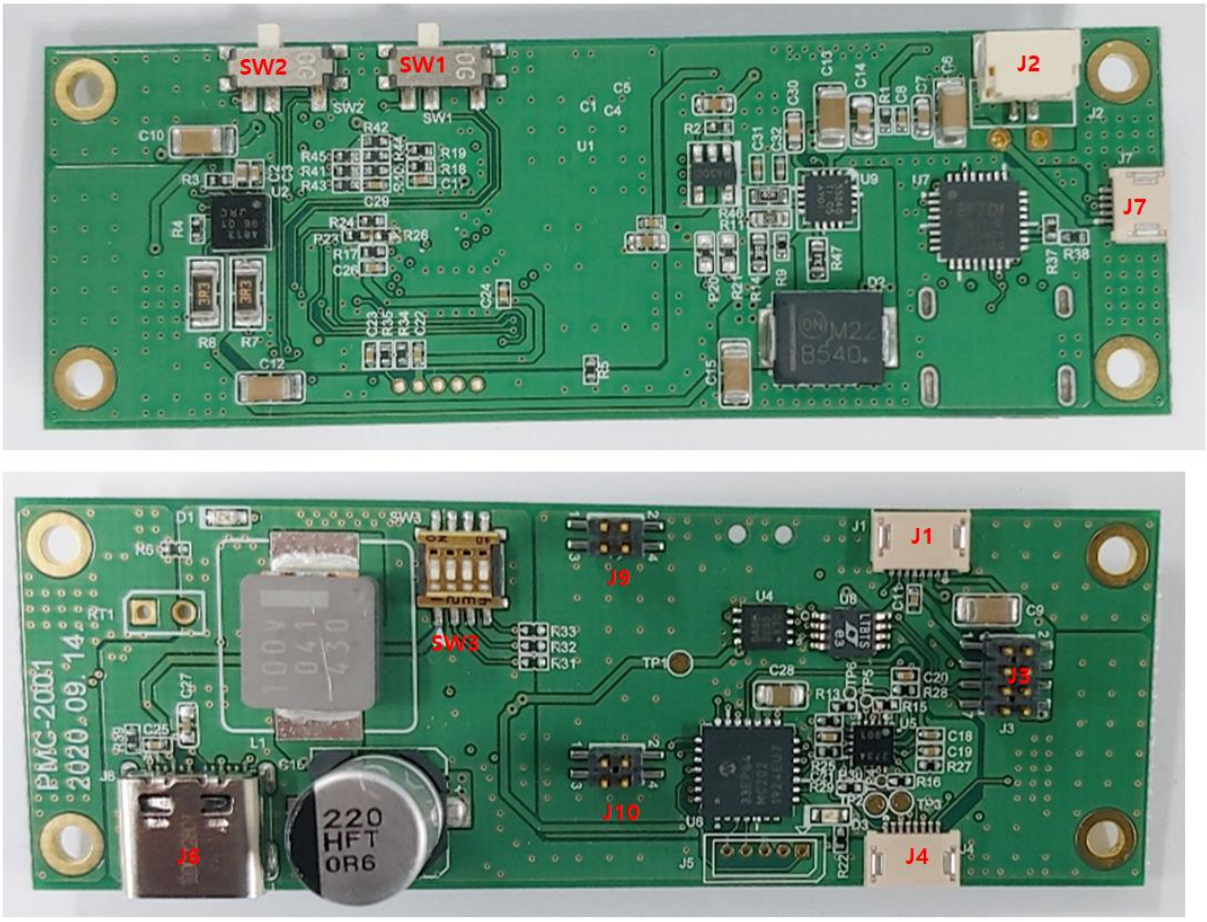


Figure 5. description of PMC-2001 Connector and Switch

8-1. Power

Connector J2: JST, SM02B-GHS-TB

Pin#	Pin Name	Pin Type	Description
1	VCC5MAIN	P	Positive supply for PMC-2001
2	GND	-	Ground reference for PMC-2001

Table 2: PMC-2001 Main Power Connector Pin out

8-2. Motor & Encoder

Connector J4: Molex, 51281-0894 (optical sensor Mode)

Pin#	Pin Name	Pin Type	Description
1	GND	I	Encoder output C
2	3.3V	-	Common Voltage
3	OPT_B	I	Encoder output B
4	OPT_A	I	Encoder output A
5	LED_IN	-	Anode of Sensor
6	LED_OUT	-	Cathode of Sensor
7	MOT A	O	High voltage output A
8	MOT B	O	High voltage output B

(I2C encoder Mode)

Pin#	Pin Name	Pin Type	Description
1	OPT_C	I	Encoder output C
2	3.3V	-	Common Voltage
3	I2C_data	I	I2C Data
4	I2C_clock	I	I2C Clock
5,6	-	-	-
7	MOT A	O	High voltage output A
8	MOT B	O	High voltage output B

Table 3: PMC-2001 Stage Connector Pin out

8-3. FFC Connection to Slave (PMC-2002)

Connector J1: Molex, 51281-0894

Pin#	Pin Name	Pin Type	Description
1,2	Vout	-	Positive supply for TULA Driver
3,4	DC 5V	-	Positive supply for PMC-2001
5	DC 3.3	-	Positive supply for Logic
6	GND	-	Ground reference for PMC-2001
7	I2C_Clock	O	I2C Clock
8	I2C_DATA	I,O	I2C Data

Table 4: PMC-2001 to PMC-2002 Connection Connector Pin out

8-4. Stack Connection to Slave (PMC-2002)

Connector J3: Samtec, FTSH-104-02-L-D

Pin#	Pin Name	Pin Type	Description
1	DC 3.3	-	Positive supply for Logic
2,4	Vout	-	Positive supply for TULA Driver
3	GND	-	Ground reference for PMC-2001
6,8	DC 5V	-	Positive supply for PMC-2001
5	I2C_Clock	O	I2C Clock
7	I2C_DATA	I,O	I2C Data

Table 4: PMC-2001 to PMC-2002 Connection Connector Pin out

Connector J9,J10: Samtec, FTSH-102-02-L-D

Not function

8-5. USB C type (Serial over USB)

Connector J8: Molex, 105450-0101

Pin#	Pin Name	Pin Type	Description
A4,B4 A9,B9	VCC5USB	I	Positive supply for FT232R
A7,B7	D-	I/O	Differential line D-
A6,B6	D+	I/O	Differential line D+
A2,B2 A3,B3 A5,B5, A8,B8	N.C.	-	Not connected
A1,B1 A12,B12	GND	-	Ground reference for PMC-2001

Table 6: PMC-2001 USB Connector Pin out

8-6. UART(TTL level) or I2C

Connector J7: Molex, 51281-0594

Pin#	Pin Name	Pin Type	Description
1	VCC5MAIN	O	Positive supply for PMC-2001
2,5	GND	-	Ground reference for PMC-2001
3	I2C_Clock or TX	O	I2C_clock from Host TX of UART from Host
4	I2C_Data or RX	I,O	I2C_data from Host RX of UART from Host

Table 7: PMC-2001 Direct Connector from Host

9. Contact Information

Contact your local distributor or Piezoelectric Technology Co., Ltd.

9-1. Head Office

Room 501, 503 Sinnae Technotown, 485 Sangbong1dong, Jungrang-gu, Seoul, Korea. 131-863
Tel: +82-2-3421-0370~3
Fax: +82-2-3421-0374
Web site: www.piezo-tech.com
Email: piezo-tech@piezo-tech.com