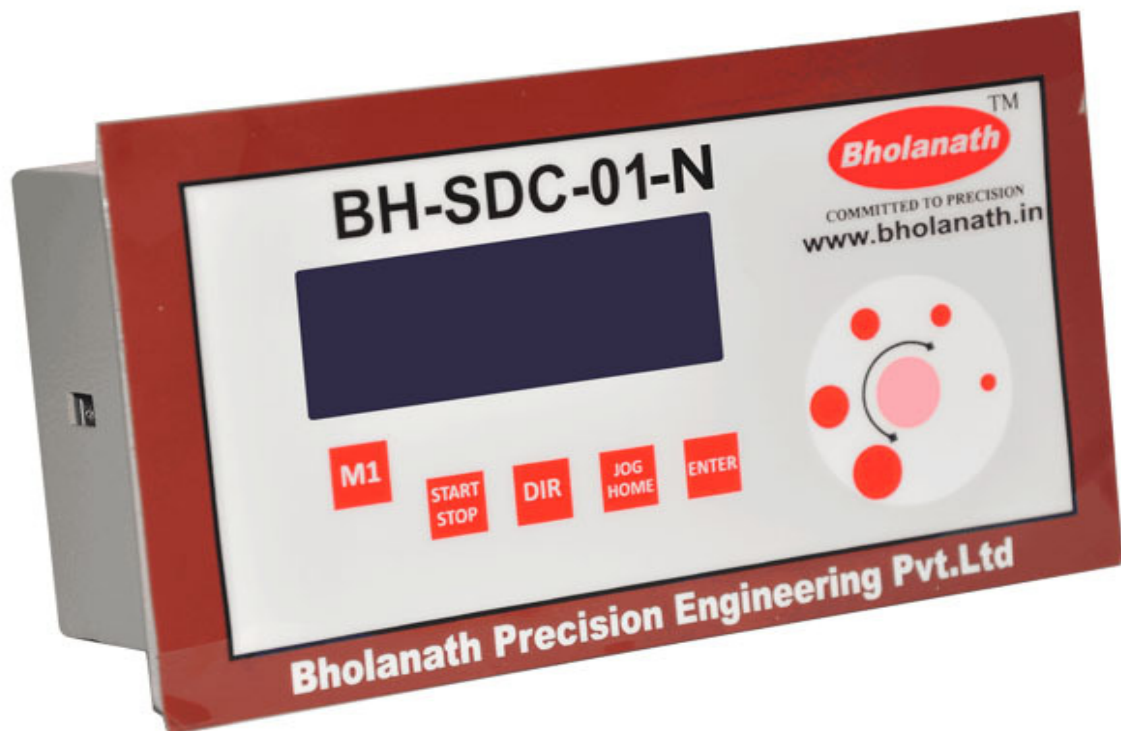# User's Manual

For

BH-SDC-01N

Attention :- Please Read This Manual Carefully Before Using Controller

Version – 1.01

BHOLANATH PRECISION ENGINEERING PVT.LTD.

Contents

Bholanath Stepper Drive Controller SDC 01

1. Features

Supply Voltage: 65 V to 285 V AC or DC.

No of Stepper Motor Control: One

Modes of Operation: a) Manual   b) Auto   c) JOG

No of Limit Switch use in Auto Mode: 0 to 8

Front Panel Touch Keys: Six touch keys with one ROTARY key.

No of Program Can be Stored: 10

No of cycle in each program: 10

Cycle Type can be: a) Delay b) Motor Run c) Go Home

2. Introduction

Bholanath Stepper Drive Controller SDC-01 designed to control one stepper motors.
Front panel of SDC01   has one LCD Display with six touch keys and one rotary touch.
It has seven connection sockets on back side. One 2 pin socket for 65 V to 285 V AC or DC
supply connection. Two, 6 pin socket for motor drive connections (Pulse+, Pulse-, DIR+, DIR-,
EN+, EN-) for each stepper motor. Four, 4 pin sockets for 8 limit switch connection.

Using front panel touch key and LCD display user will be able to program SDC01 in
Manual, Auto and JOG mode. In manual mode user have to press M1 for Motor1, in this
mode user can give Angle, Number of steps and Distance with speed in RPM, Steps/Sec
,mm/sec and m/sec according to the input configuration parameters set by the user.
In auto mode user is able to program 10 different programs according to the
requirement. Each program has 10 cycles.
Each cycle type can be:
1. Delay
2. MOTOR RUN
3. Go Home

 Cycle can be start and stop direct or on limit switch.

To enter into JOG mode user has to press JOG/HOME touch key. After that user have to
rotate finger on rotary touch and Motor will rotated according to the finger motion.

3. Front Panel Touch Keys Description:

M1 Key:

Pressing M1 key user can select M1Manaual, Auto or Configure mode using ROTARY key and Enter key. In configure mode user can do Input and system configuration for M1Manual and Auto Mode.

START/STOP Key:

Pressing START/STOP key user can START and STOP motor manually

DIR Key:

Pressing DIR key user can change direction of rotation of motor for manual mode only.

JOG/HOME Key:

If user selected JOG mode in input configuration then after pressing JOG/HOME key, motor will rotate according to the finger motion on rotary touch. To come out of JOG mode user has to press JOG key again.

If JOG mode is not selected in input configuration then this key is used for Go Home purpose. After Pressing JOG/HOME key motor come to the home position.

ENTER Key:

This key is use to select mode, set different parameters for manual and auto mode.

Abbreviations:

SW: SWITCH

S1H: Switch 1 High

S1L: Switch 1 Low

Note: User must set Input configuration first.

4. Input Configuration:

1. Press **M1**
2. Mode
   a)M1 Manual
   b)Auto
   c)Configure
3. Select Configure and Press **ENTER** key
4. Select Input using **ROTARY** and Press **ENTER** key.

> `SelConfig: Input`

5. Select M1 Movement type ROTARY or LINEAR using **ROTARY** and Press **ENTER** key.
   a) ROTARY
   b) LINEAR

> `M1Move: ROTARY`

6. Select M1 Microstep using **ROTARY** and Press **ENTER** key.

> `M1Move: ROTARY`
> `M1Micro_Step:004`

7. Select M1 Running parameters using **ROTARY** and Press **ENTER** key.
   a) Steps & Speed
   b) Angle & Speed
   c) Speed & Time

> `SelM1RunningParm`
> `Parm:Angle&Speed`

8. Select Speed unit using **ROTARY** and Press **ENTER** key.
   a) RPM
   b) Step/Sec
   c) KStep/Sec

> `SelectSpeedUnit`
> `Speed:RPM`

9. Select Step unit using **ROTARY** and Press **ENTER** key.
   a) KStep
   b) Step

> `Speed:RPM`
> `StepUnit : KStep`

10. Select Time unit using **ROTARY** and Press **ENTER** key.
    a) Second
    b) Minute

```
Time: Second
```

11. Select number of limit switch (0 to 8) using **ROTARY** and Press **ENTER** key.

```
No.OF_LIMIT_SW:8
```

12. Select JOG mode YES or NO using **ROTARY** and Press **ENTER** key.

```
JOG_Mode: Yes
```

5. M1Manual mode Configuration:

1. Press **M1**
2. Select System Configuration using **ROTARY** and Press **ENTER** key.

```
SelConfig:System
```

3. Select M1Manaul mode using **ROTARY** and Press **ENTER** key.

```
SET Parameters Mode:
M1Manual
```

4. Select angle of rotation using **ROTARY** and Press **ENTER** key.

```
M1Angle: 360.0⁰
```

5. Select Speed of rotation using **ROTARY** and Press **ENTER** key.

```
M1Angle: 360.0⁰
M1Speed:0601 RPM
```

6. Select Acceleration and Deceleration using **ROTARY** and Press **ENTER** key.

```
M1_Acc:0.1 sec
M1 Dec:0.1 sec
```

7. By using **START/STOP** key user can run motor according to the direction set by **DIR** key.

6. Auto mode Configuration:

(Example given below is configuring Motor1 for ROTARY motion and Motor2 for LINEAR actuator application. However user can select at his will)

1. Press **M1**
2. Select Configure using **ROTARY** and Press **ENTER** key.

```
Mode:Configure
```

3. Select System Configuration using **ROTARY** and Press **ENTER** key.

```
SelConfig:System
```

4. Select Auto mode using **ROTARY** and Press **ENTER** key.

```
SET Parameters
Mode:Auto
```

5. Select Program to config using **ROTARY** and Press **ENTER** key
   a)New
   b)Edit

```
Program:New
```

6. Select Program number to config using **ROTARY** and Press **ENTER** key.

```
SelProgram No:1
```

7. Select Cycle type using **ROTARY** and Press **ENTER** key.
   a) Delay
   b) Motor Run
   c) Go Home

```
C1 Type:Delay
```

8. Select Wait Time using **ROTARY** and Press **ENTER** key.

```
C1WaitTime:0001s
```

9. Select Output Configuration for Start High/Low

```
C001AtStart:OP1H
OP2L OP3H OP3L OP4L
```

10. Select output configuration for End High/Low

```
C001AtEnd:OP1H
OP2L OP3H OP3L OP4L
```

11. Select next cycle using **ROTARY** and Press **ENTER** key.

```
PresentCycle:C1
NextCycle:C2
```

12. Select Cycle type using **ROTARY** and Press **ENTER** key.

    a) Delay

    b) Motor Run

    c) Go Home

```
C2 Type:Run
```

13. Select M1 ON or OFF and M1 direction using **ROTARY** and Press **ENTER** key.

```
C2 M1ON
M1 DIR:CCW
```

14. Select M1 angle of rotation using **ROTARY** and Press **ENTER** key.

```
M1Angle: 360.0°
```

15. Select M1 Speed of rotation using **ROTARY** and Press **ENTER** key.

```
Set M1 Speed
M1Speed:0100 RPM
```

16. Select M1 Acceleration and Deceleration using **ROTARY** and Press **ENTER** key.

```
M1_Acc:0.1 sec
M1_Dec:0.1 sec
```

17. Select M1 start at Limit switch or Direct using **ROTARY** and Press **ENTER** key.

```
M1StartAt: SW
M1StartAt_SW:S1H
```

18. Select M1 stop at Limit switch or Direct using **ROTARY** and Press **ENTER** key.

```
M1StopAt:Direct
```

19. Select M2 direction using **ROTARY** and Press **ENTER** key.

```
M2 DIR: CCW
```

20. Select M2 distance to move and speed using **ROTARY** and Press **ENTER** key.

```
M2Distanc:0012mmSpee
M2speed:0010mm/sec
```

21. Select Acceleration and Deceleration using **ROTARY** and Press **ENTER** key.

```
M2_Acc:0.1 sec
M2_Dec:0.1 sec
```

22. Select next cycle using **ROTARY** and Press **ENTER** key.

```
PresentCycle:C2
NextCycle:C1
```

7. Continuous Mode Configuration

(Example given below is configuring Motor1 for ROTARY motion and Motor2 for ROTARY motion . However user can select at his will)

1. Press **M1**
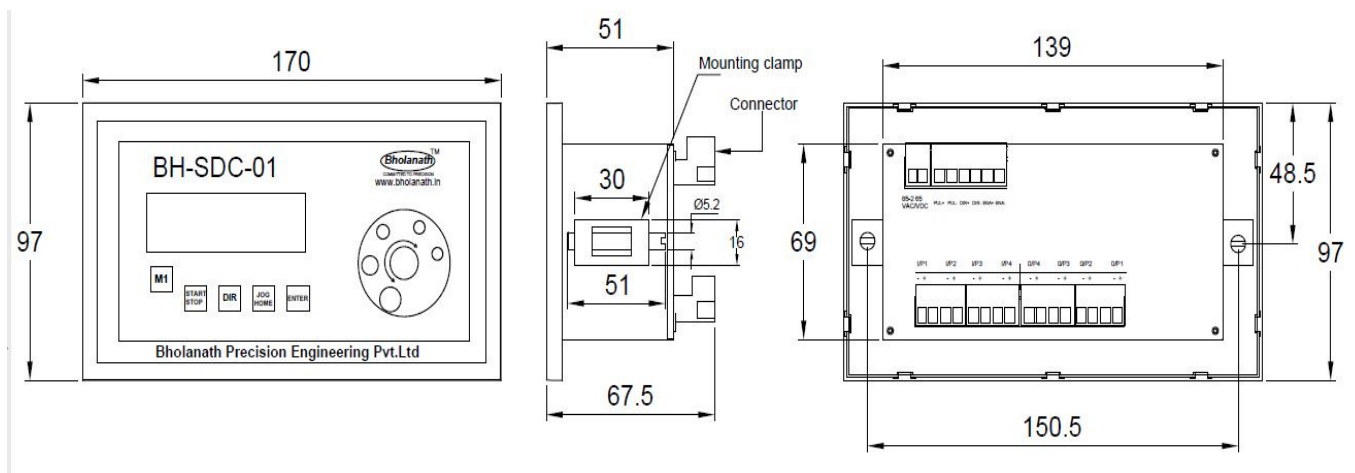2. Select Continuous using **ROTARY** and Press **ENTER** key.

```
Mode:Continuous
```

3. Select Rotary to Change RPM using **ROTARY** and Press **ENTER** key.
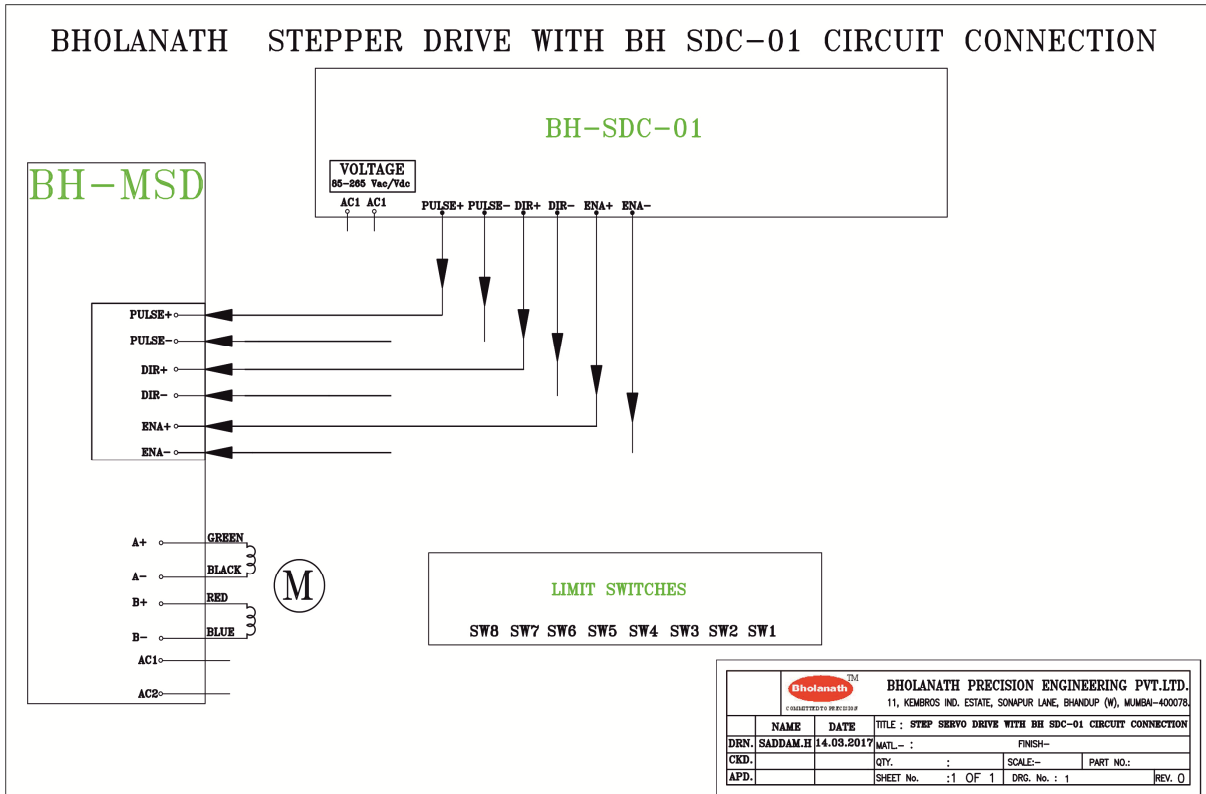
```
M1 CW -> 0027 RPM
M2 CCW:  0091 RPM
```

4. Select **JOG** key to Change the Motor Selection

```
M1  CW:   0027 RPM
M2 CCW-> 0091 RPM
```

8. Mechanical Dimension_

9.CIRCUIT CONNECTION

We manufacture 1.8⁰ **HYBRID STEPPER MOTORS of size NEMA17, NEMA23, NEMA24, and NEMA34 in square frame and Nema 23 in Round frame and available in our product range are Stepper Motors, Step Servo Motors, Linear Actuator Stepper Motors, Planetary Geared Stepper Motors, Stepper motors with Brakes and Customized Stepper Motors.**