Advanced User Guide

Programmable CLOSED-LOOP single axis stepper motor controller

Type

MPE 01

Absolute / incremental mode of operation in motion control

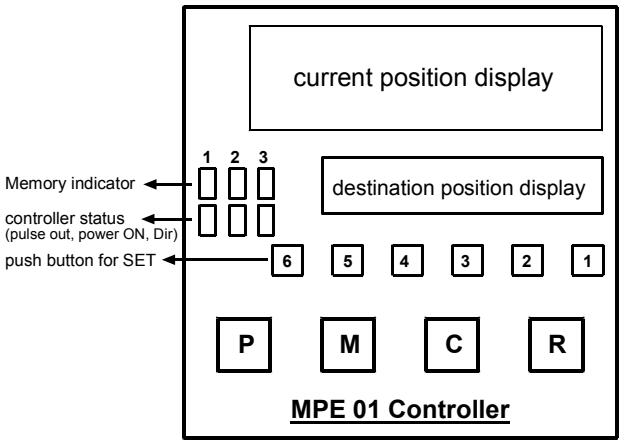
For stepper motors,

Up to 50 kHz output frequency (Pulse + Dir),
With 2 channels ENCODER FEEDBACK ability,
Backlash compensation ,
External / internal RUN-STOP command,
+5V , +12V Aux. Output for encoder supply,
220 VAC input supply

General description ;

1) 3 methods of control :
   1-1) open loop
   1-2) close loop with incremental rotary encoder feedback
   1-3) close loop with incremental linear encoder feedback
2) 2 **MODES** of operation (**RUN** mode and **PROGRAM** mode)
3) control of **start / stop** from keypad or external contacts (Terminal)
3) 3 memory for saving the destination of movement (0.01 mm resolution)
4) easy to change the destination point by keypad while running or stop
5) linear ramp for acceleration & deceleration of movement
6) start speed , maximum speed and scale easily set for each memory
7) **absolute** or **incremental** mode selection
8) backlash compensation capability
9) 1x or 4x multiplier for feedback pulses from encoder
10) keypad **"lock / unlock"** for safety of parameters
11) **50 kHz** maximum pulse output frequency
12) **50 kHz** maximum feedback frequency from encoder accepted
13) 6 digit LED 7-segment display for each memory (target position) and current position
14) auxiliary output **(+5V , +12V @ 300mA each)** for external use
15) 220 VAC , single phase input supply voltage

Front view :



Parameters of operation :

Parameter no.	Definition	Display	How to access	Unit
0	Current position display	Current position	At power **ON** , or by press **C** if in another modes	0.01 mm
1	Pushes the target position(green 7-seg) to current position by pressing **R** key	SET	Press **M** key 1 time	0.01 mm
2	Starting frequency	SPEEd 1	Press **M** key 2 times	Hz
3	Running frequency	SPEEd 2	Press **M** key 3 times	Hz
4	Acceleration rate	UP	Press **M** key 4 times	kHz / sec
5	Length of travel for 1 revolution of output shaft	LEN	Press **M** key 5 times	0.01 mm
6	Number of pulses to be applied to drive for 1 revolution of output shaft	PULSE	Press **M** key 6 times	Pulse
7	Backlash compensation value	blash	Press **M** key 7 times	0.01 mm
8	System mode	Sys	Press **M** key 8 times	--

Terminal I/O specification :

Terminal No.	Descriptions
1	Feedback input (Encoder phase **A** input , NPN , open collector , 7V Max.)
2	Feedback input (Encoder phase **B** input , NPN , open collector , 7V Max.)
3	**+12VDC** , 300mA auxiliary output
4	Gnd
5	**+5VDC** , 300mA auxiliary output
6	**START** input (in external mode) / **CW** Limit Switch input (in keypad mode)
7	**STOP** input (in external mode) / **CCW** Limit Switch input (in keypad mode)
13,14	**220 VAC input supply**
18	**PULSE** output (CP) , TTL compatible
22	**DIRECTION** output (Dir) , TTL compatible
Other points	Not used