Position Register Mode

- Indexing Servo Drive
- Up to 8 Preset Positions
- Relative or Absolute Moves

Does your application require more than 8 positions?

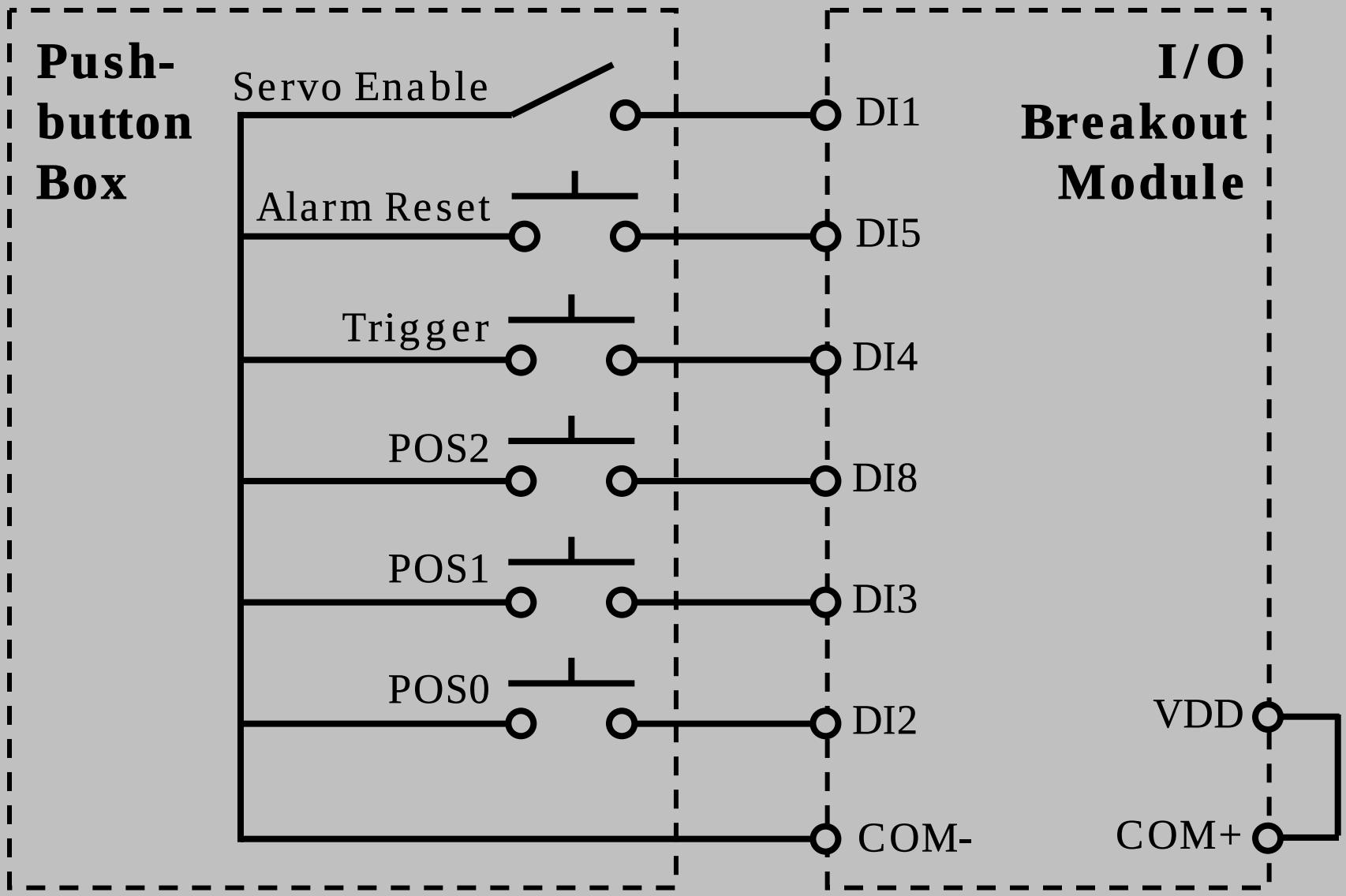
You might consider using MODBUS communications to send position data to the SureServo “on the fly”. See Chapter 7 of the SureServo Manual.

Prerequisites

- Power Wiring
- Fusing
- E-stop Circuitry
- Correct Motor Type Selected (P1-31)

These items are more fully explained in Part I of this video series.

Schematic


Push-
button
Box
I/O
Breakout
Module
Servo Enable
Alarm Reset
Trigger
POS2
POS1
POS0
DI1
DI5
DI4
DI8
DI3
DI2
COM-
VDD
COM+

P1-15 Through P1-30 Position Setpoints

	Parameter	Value	Description
Position 1 = 1 Rev.	P1-15	1	Index #1 - Motor Revolutions
	P1-16	0	Index #1 - Motor Counts
Position 2 = 3.5 Rev.	P1-17	3	Index #2 - Motor Revolutions
	P1-18	5000	Index #2 - Motor Counts
Position 3 = 1/4 Rev.	P1-19	0	Index #3 - Motor Revolutions
	P1-20	2500	Index #3 - Motor Counts
Position 4= 25.4 Rev.	P1-21	25	Index #4 - Motor Revolutions
	P1-22	4000	Index #4 - Motor Counts
Position 5 = 100 Rev.	P1-23	100	Index #5 - Motor Revolutions
	P1-24	0	Index #5 - Motor Counts

(10,000 counts = 1 revolution)

P2-10 Through P2-17 Digital Inputs

Parameter	Value	Description
P2-10	101	DI1 = Servo Enable (Default Setting)
P2-11	111	DI2 = POS0 (bit 1 of 3 position address lines)
P2-12	112	DI3 = POS1 (bit 2 of 3 position address lines)
P2-13	108	DI4 = Command Trigger
P2-14	102	DI5 = Alarm Reset (Default Setting)
P2-15	022	DI6 = Reverse Overtravel (set to 000 to disable)
P2-16	023	DI7 = Forward Overtravel (set to 000 to disable)
P2-17	113	DI8 = POS2 (bit 3 of 3 position address lines)

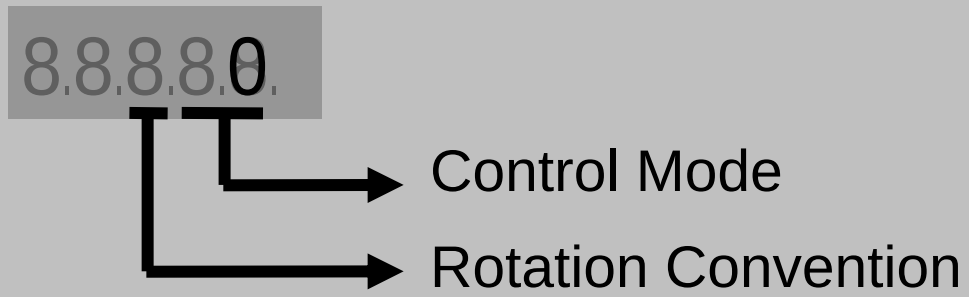
(3 address lines = 8 preset positions)

P1-01 Control Mode and Output Direction

Range: 0~1110 Units: n/a
Default: 0 Control Modes: P/V/T

- This parameter determines the control mode and output direction.

Settings:



8.8.8.8.1 - Position Register Mode with <u>CCW</u> as Forward

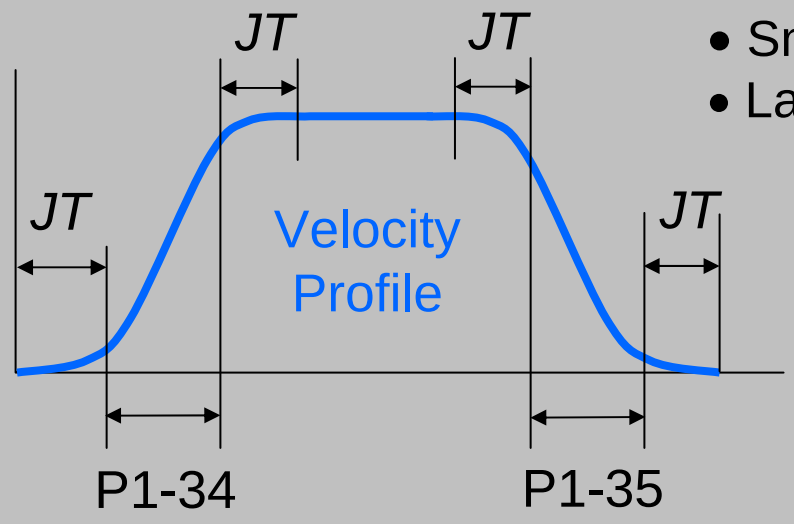
8.8.8.10.1 - Position Register Mode with <u>CW</u> as Forward

Position Selection Inputs

POS2	POS1	POS0	
0	0	0	Position 1
0	0	1	Position 2
0	1	0	Position 3
0	1	1	Position 4
1	0	0	Position 5
1	0	1	Position 6
1	1	0	Position 7
1	1	1	Position 8

Additional Position Mode Parameters

Parameter	Default Value	Description	
P2-52 thru P2-59	0 ms	Dwell Times, Positions 1-8 (Auto Mode only)	
P2-36 thru P2-43	1000 rpm	Velocities, Positions 1-8	
P1-34	200 ms	Acceleration Time	Shared for all Positions (see below)
P1-35	200 ms	Deceleration Time	
P1-36	20 ms	S-curve Time (must be > 0)	



- Small S-curve times allow nearly linear ramps
- Larger S-curve times yield smoother motion

S-curve Time (P1-36) = 2 × *JT*

∴ Total Accel Time = (P1-34) + (P1-36)

∴ Total Decel Time = (P1-35) + (P1-36)