

DC STEPPING MOTORS Advantage of Stepper Motor in Motion Control System



Cost Effective Solution in designing of

Open Loop Motion Control System **Open Loop Control System is possible with greater Accuracy**

FEATURES

- ❁ Instantaneous starting, stopping and reversing characteristics.
- ❁ No burnouts due to locked Rotor.
- ❁ Rotor can be locked at particular position.
- ❁ Can be over driven without any damage.

HOW STEPPING MOTOR DIFFERS FROM SERVOMOTOR

- ❁ There is no control winding in stepper motors. Both windings are identical.
- ❁ The stepping rate (speed of rotation) is governed by frequency of switching and not by supply voltage.
- ❁ A single pulse input will move the shaft of Motor by one step. Thus controlling number of pulses can precisely control number of steps.
- ❁ When there is no pulse input, the rotor will remain locked in the position in which the last step was taken since at any time two winding are always energized which lock the rotor electro magnetically.
- ❁ Stepping Motor can be programmed in three parameters namely :
 - a) Direction b) Speed c) Number of steps.
- ❁ Stepping Motors is brush less so no wear & tear.
- ❁ Load & no load condition make no difference in running currents of the motor.

APPLICATIONS OF DC STEPPER MOTOR

- ✚ Printing Machinery
- ✚ x ray machine
- ✚ Traction Machine
- ✚ Automobile industries
- ✚ Peristaltic pumps
- ✚ Medicine Equipment
- ✚ Packing Machinery
- ✚ Grinding Feed Control
- ✚ Sociological Instrument
- ✚ Conveyor Belt System
- ✚ Bag Making Machinery
- ✚ Diamond Cutting Machines
- ✚ Advertisement Display Machinery
- ✚ Robotic x ray welding machine
- ✚ Automotive Valve Control

Technical Specification of Stepper Motors :

Type	Torque Kg cm	Voltage Volts	Current Ampere/Phase	Weight in Kg. (Appro.)	Ø mm	L mm
STM 601	2	6, 12, 24	1, 0.5, 0.25	0.6	56.50	59
STM 602	4	6, 12	1.5, 0.8	1.2	56.50	83.5
STM 980	3	6, 12, 24	1.4, 1, 0.4	1.3	86.20	65
STM 981	7	6, 12, 24	1.4, 1, 0.4	1.5	86.20	65
STM 982	14	6, 12	2.4, 1.75	2.0	86.20	78
STM 983	20	6, 12	2.4, 1.75	2.0	86.20	78
STM 985	35	6, 12	2, 1.25	3.0	86.20	106
STM 1100	10	6, 12	1.5, 0.8	3.2	108	77
STM 1101	20	6, 12	2, 1.5	3.5	108	92
STM1101(S)	28	6, 12	2, 1.5	4.5	108	110
STM 1102	40	6, 12	2, 1.25	5.4	108	140
STM 1103	60	6, 12	1.5, 2.5	7.3	108	165
STM 1701	125	5	5	11.5	150	140

PRICE LIST

Type	Torque Kg-Cm	Voltage Volts	Current Amp/Phase	Price Rs.
STM 601	2	6, 12, 24	1, 0.5, 0.25	980.00
STM 602	4	6, 12	1.5, 0.8	1,840.00
STM 980	3	6, 12, 24	1.4, 1, 0.4	1,040.00
STM 981	7	6, 12, 24	1.4, 1, 0.4	1,925.00
STM 982	14	6, 12	2.4, 1.75	3,255.00
STM 983	19	6, 12	2.4, 1.75	4,385.00
STM 985	35	6, 12	2, 1.25	6,300.00
STM 1100	10	6, 12	3.3, 1.5	1,630.00
STM 1101	20	6, 12	2, 1.5	3,235.00
STM 1101(S)	28	6, 12	2, 1.5	4,390.00
STM 1102	40	6, 12	2, 1.25	5,985.00
STM 1103	60	6, 12	1.5, 2.5	9,135.00
STM 1701	120	5	5	23,680.00

TERMS

✚ The above prices are Net Ex-our Works, Pune basis, exclusive of Forwarding,

Insurance and Freight.

- + Forwarding Transit Insurance and Freight at the actual applicable for Outstation supplies only.
- + Excise Duty, Sales Tax as and if applicable at the rate prevailing at the time of Delivery of the materials.
- + The above price list supersedes all previous price list and be subject to change with notice.
- + Standard length of wires will not be less than 800 mm.
- + Heat Sink and RC network will be available on request at Extra Cost.
- + Installation and commissioning charges will be Extra.
- + For Bulk quantity ie. more than 25 nos. Special Discount will offer.
- + Company reserves the right to change Design Data and Dimension without intimation.
- + Company reserves the right to change the price without intimation.

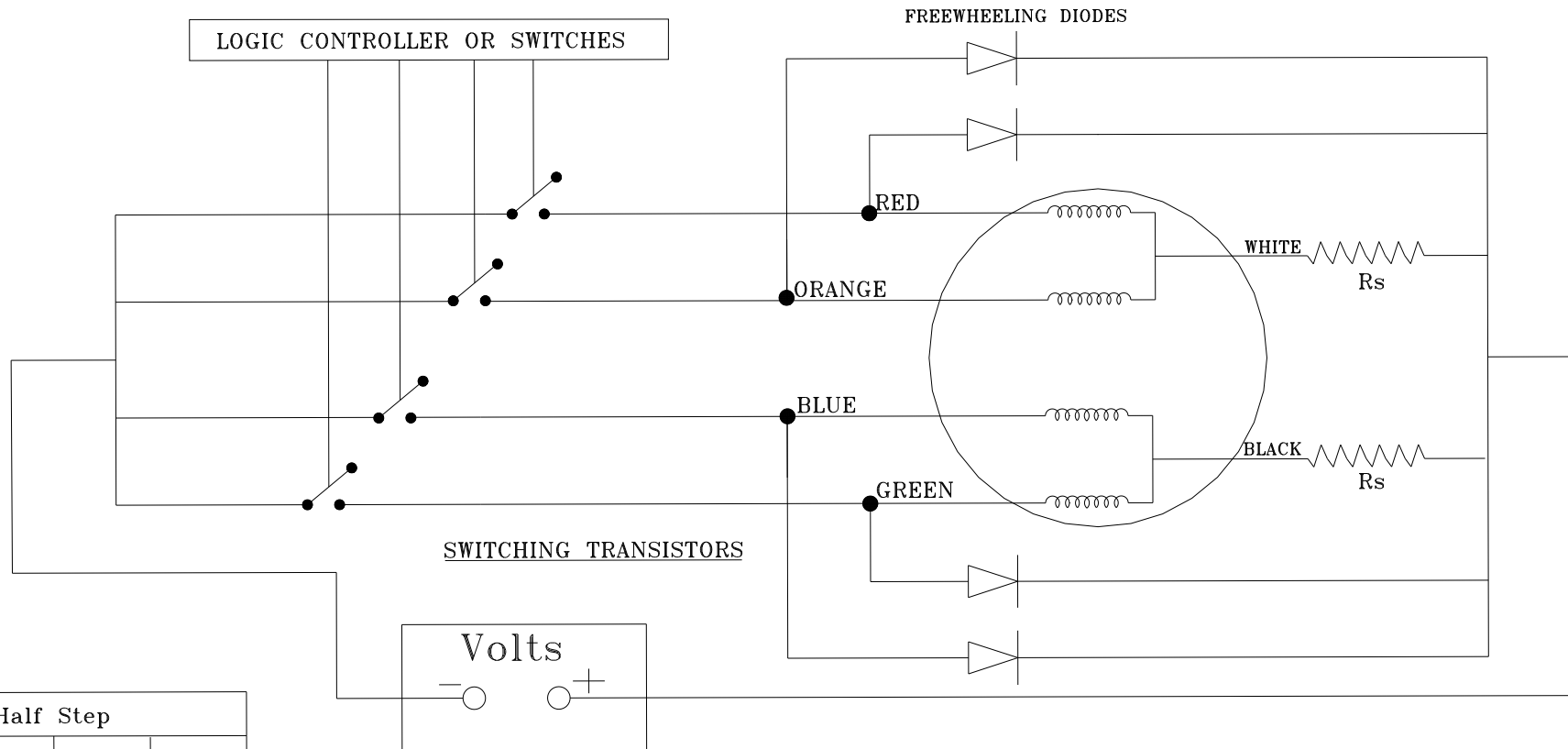
SPECIFICATION :

Permanent Magnet, Bifilar Wound, Two Phase Steps Per Revolution:200

Step Angle : $1.8^{\circ} \pm 0.1$ Non-cumulative No. of leads - 6
On request - 4,8

R/L DRIVE

SWITCHING LOGIC SEQUENCE



$V = 4 \times \text{Motor Voltage}$

$R_s = 3 \times R_m$ (Motor resistance/phase)

Suitable for slow RPM

To Change direction read sequence from bottom to top.

Half Step

RED	ORANGE	BLUE	GREEN
0	1	0	1
0	0	0	1
1	0	0	1
1	0	0	0
1	0	1	0
0	0	1	0
0	1	1	0
0	1	0	0

Full Step

RED	ORANGE	BLUE	GREEN
0	1	0	1
0	1	1	0
1	0	1	0
1	0	0	1

Itemref - Sales		Description: STEPPER MOTOR			Material - As Per BOM	
Designed by- SCDPL	Checked by- Sabale	Approved by- Director	File Path	Date 19-01-08	Scale	
SRIJAN CONTROL DRIVES PVT. LTD. MOTOR DIVISON PUNE 411028.			CONNECTION DIAGRAM		Sheet	
			103/01/08			