

Mclennan Servo Supplies Ltd.



Stepper motor wire colours

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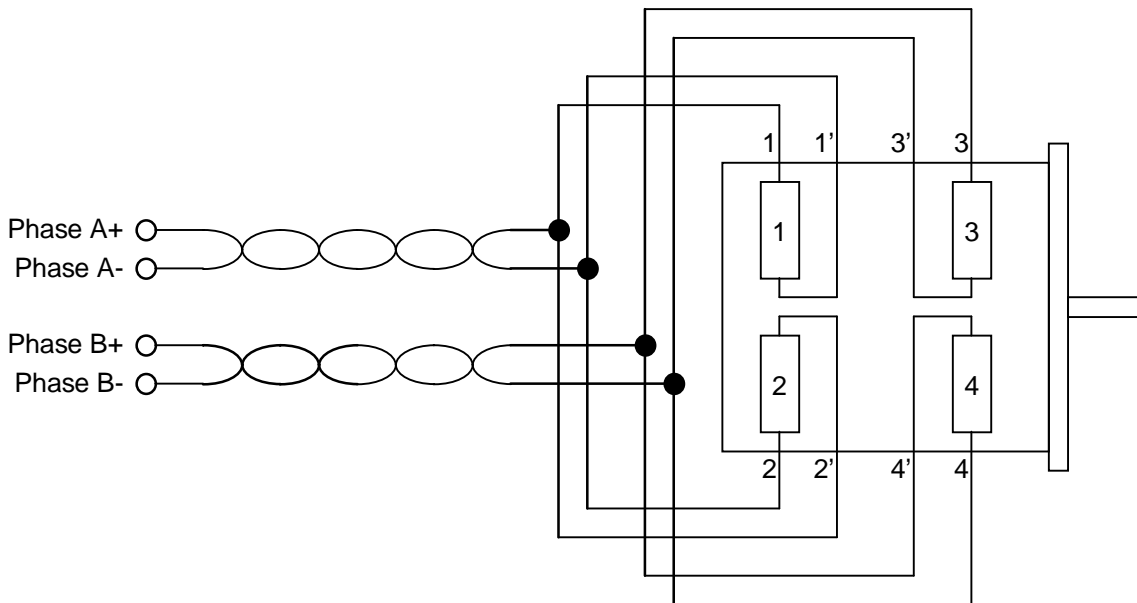
Website: www.mclennan.co.uk

Stepper motor connections.

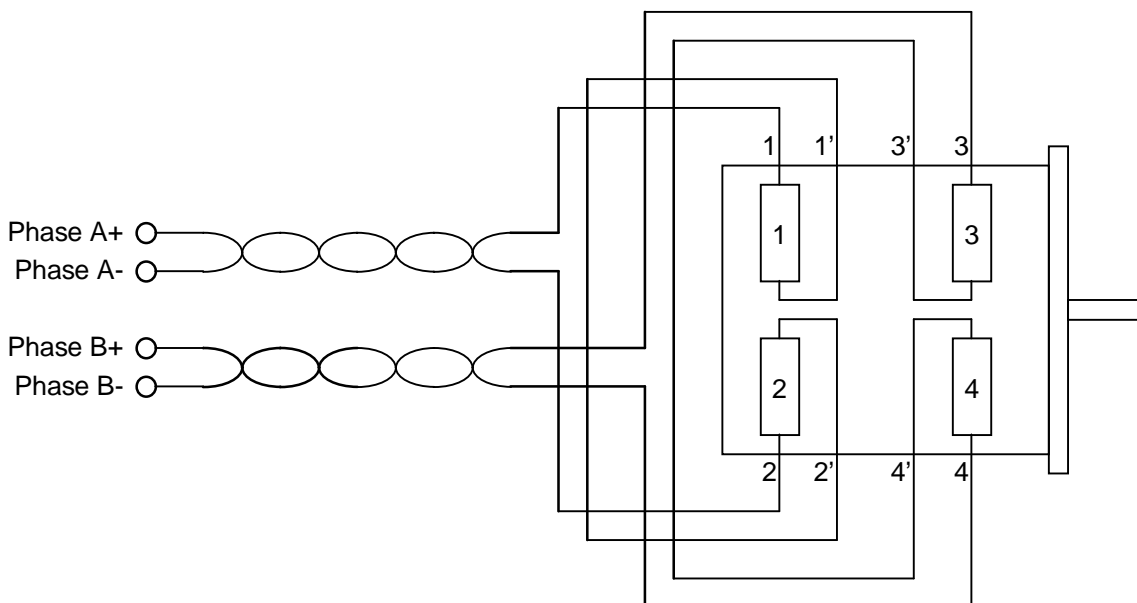
To produce the minimum amount of radiated noise, the motor leads should be of a twisted construction as shown below.

The cable should be screened, with the screen connected to earth at the drive end and to the motor body at the motor end. In some hazardous environments, it is not permissible to earth both ends, because of the risk of high 50Hz circulating currents if the earth loop is cut by strong magnetic fields (in close proximity to very powerful electrical machinery). In this case the earth connection may be made with a 1.0 μ F capacitor rated at 250VAC. The motor body must be earthed.

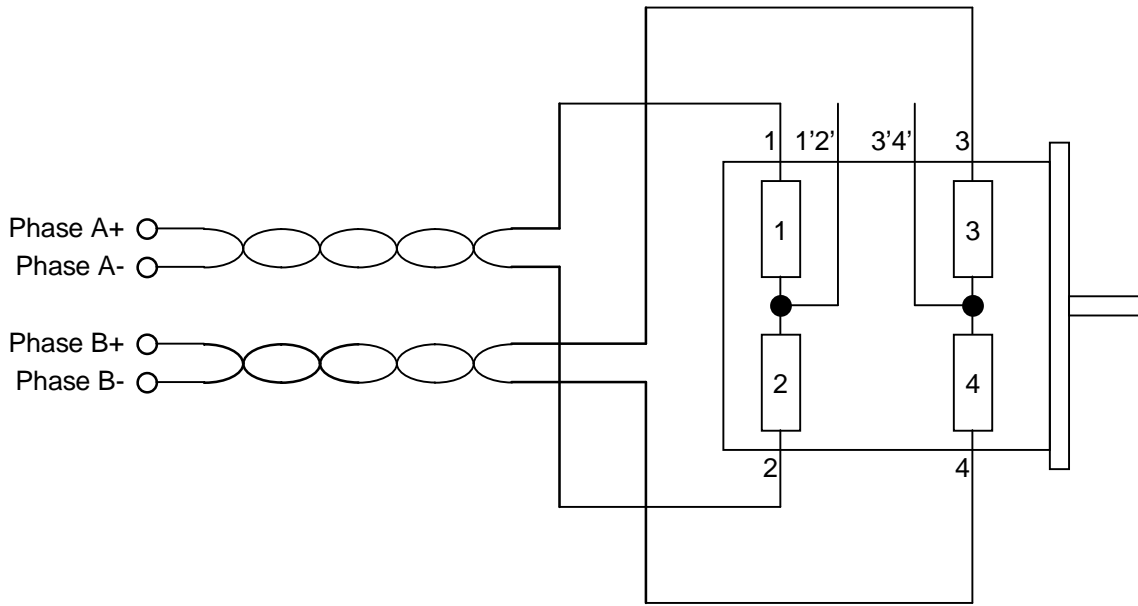
Motors with eight leads, coils in parallel, bipolar drive.



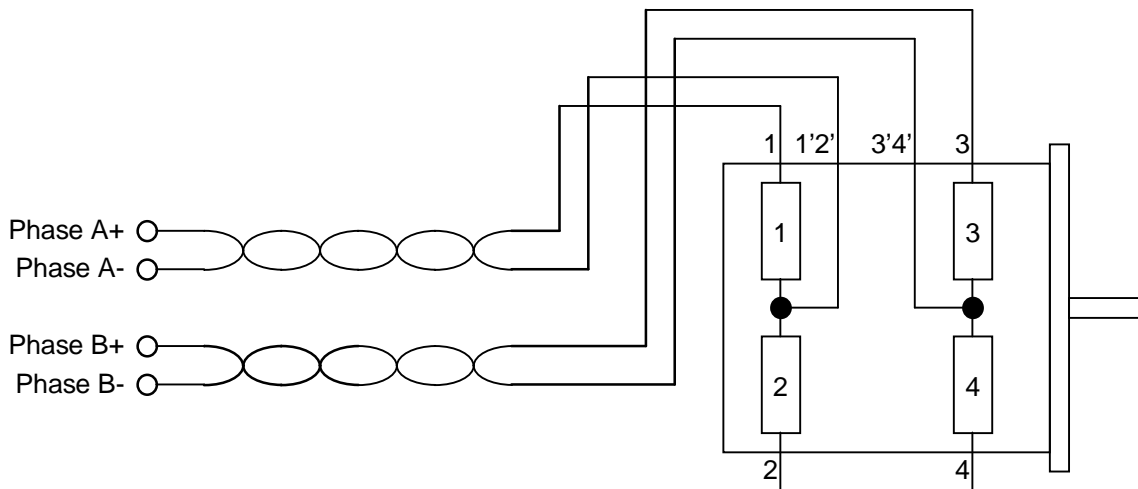
Motors with eight leads, coils in series, bipolar drive.



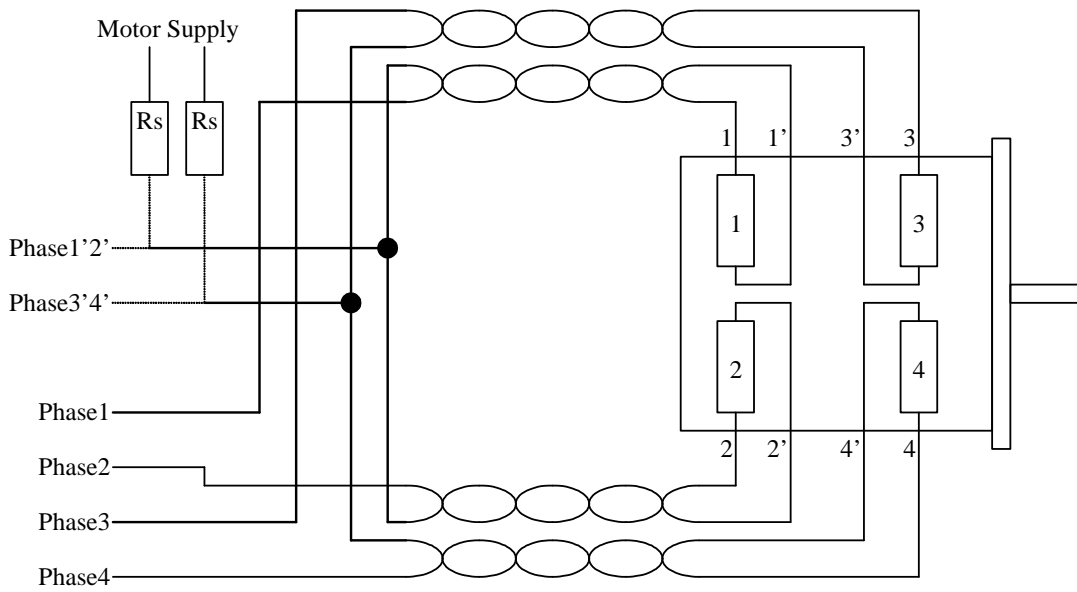
Motors with six leads, coils in series, bipolar drive.



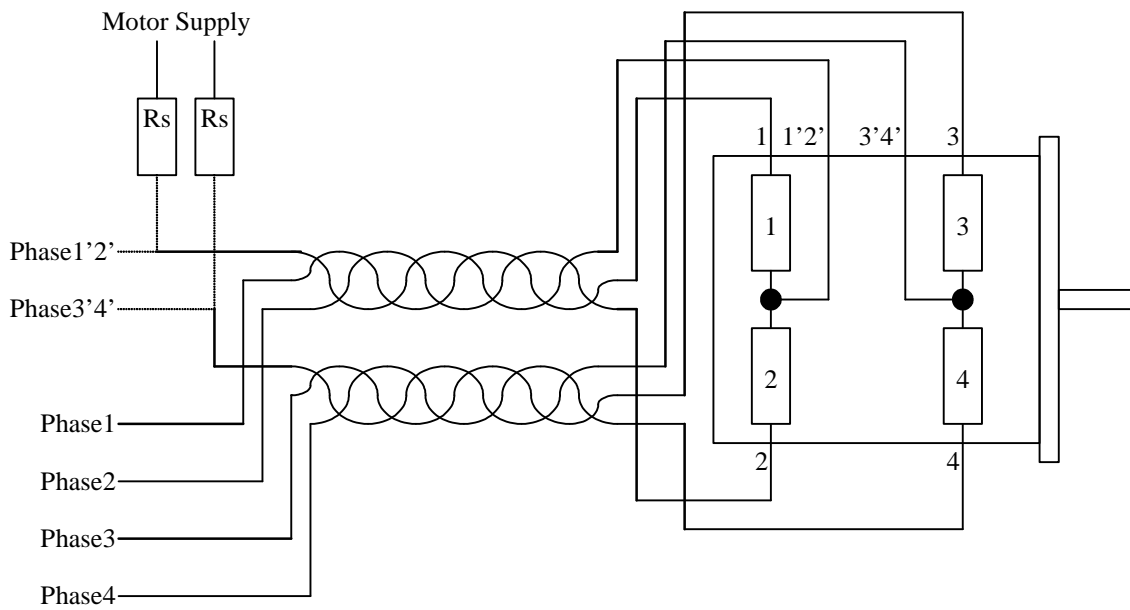
Motors with six leads, one coil only, bipolar drive.



Motors with eight leads, unipolar drive.

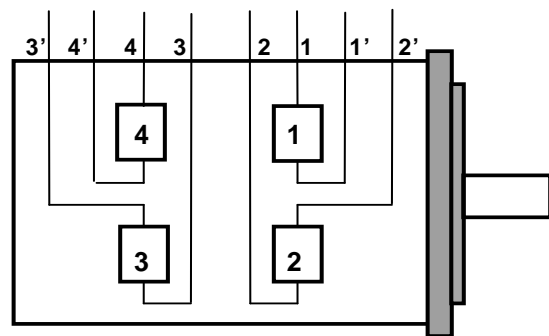
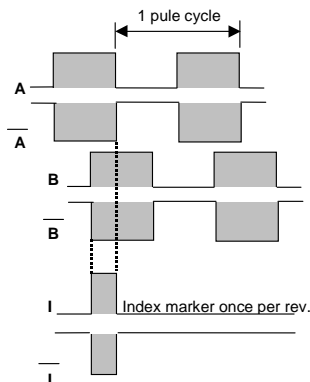
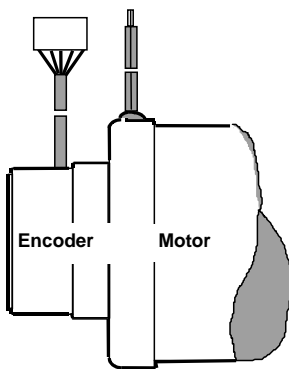


Motors with six leads, unipolar drive.



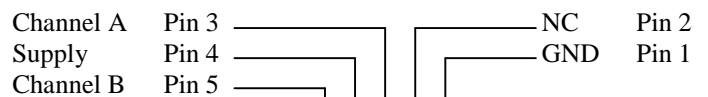
Motor Types	Lead or terminal identification							
Permanent Motor type	1	1'	2'	2	3	3'	4'	4
N82101-- M82101--	Orange	----Red----		Yellow	Brown	----Green----		Black
M82201----	Yellow	----Red----		Orange	Brown	----Green----		Black
ID 32 Series	Grey	Red		Yellow	Yellow	Red		Grey
ID 31--1	Grey	Red	Black	Yellow	Yellow	Black	Red	Grey
ID 31--4	1	----1'2'----		2	3	----3'4'----		4
ID 31--6*	1	----1'2'----		2	3	----3'4'----		4
*Except 9904 112 31206 which is a bi-polar motor and is listed separately below								
ID 35 Series	1	----1'2'----		2	3	----3'4'----		4
L 82401-- 42M100	Yellow	----Red----		Orange	Brown	----Green----		Black
MV 82801--	Grey	----Red----		Yellow	Yellow	----Red----		Grey
1415 Series	1	Internal		2	3	Internal		4
Bi-Polar								
ID 31206	1	Internal		2	3	Internal		4
Linear Actuator								
921--Series	Yellow	----Red----		Orange	Black	----Green----		Brown
922--Series 924--Series	Yellow	----Red----		Black	Orange	----Red----		Brown
Hybrid Types								
17HS Series								
17HS ---	Red	----Black----		Red / white	Green / White	----White----		Green
17HS 006 mk3	Red	----Black----		Red / white	Green	----White----		Green / white
17HS 012	Blue	----White----		Orange	Yellow	----Black----		Red
17HS 240E	White			Yellow	Red			Blue
23HS & 34HS Series								
23HS-030	Red	----Black----		Red / White	Green	----White----		Green / white
23HS 1-- 23HS 2-- 23HS 3-- 34HS 1-- 34HS 2-- 34HS 3--	Red Or Red	Black Red / white	White Yellow / white	Red / white Yellow	Green / white Black	Black / white Black / white	Orange Orange / white	Green Orange

Rare Earth Magnet Stepper Motors								
23HS 102X	Red	Black	White	Red / white	Green / white	Black / white	Orange	Green
23HSX 1-- 23HSX 2-- 23HSX 3--	Red	Red / white	Yellow / white	Yellow	Orange	Orange / white	Brown / white	Brown
34HSX 1-- 34HSX 2-- 34HSX 3--	Red	Red / white	Yellow / white	Yellow	Black	Black / white	Orange / white	Orange



Lead Colours		Mclennan System SM9000 Series Connector & Pin Configurations			
		15 Way D	8 Way Ringlock	12 Way Ringlock	12 Way Heidenhain
Red	5v Supply Voltage	9	A	A	12
Black	0v	2	B	B	10
White	Channel A+	11	C	C	5
Green	Channel B+	12	D	D	8
Yellow	Channel A-	3	E	E	6
Blue	Channel B-	4	F	F	1
Orange	Channel I+	13	G No connect	G	3
Brown	Channel I-	5	H No connect	H	4

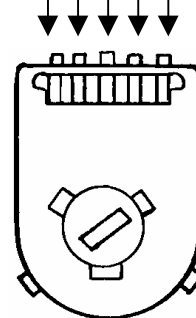
CI...T Series Incremental Encoder



Suitable Connectors

- Manufacturer type
- AMP 103686-4
- 640442-5
- BERG 65801-034

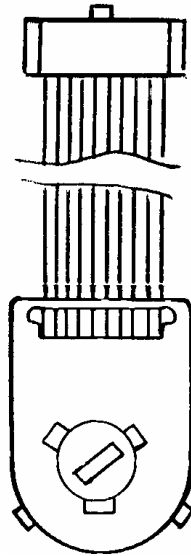
Molex 2695 with 2759 terminals



**Suitable mating
Connectors**

RS 471 - 109
471 - 020
482 - 115
482 - 193

CI...L Series Incremental Encoder



No	Parameter
1	NC
2	Vcc(+5v)
3	GND
4	NC
5	A-
6	A+
7	B-
8	B+
9	I- (Index)
10	I+ (Index)

