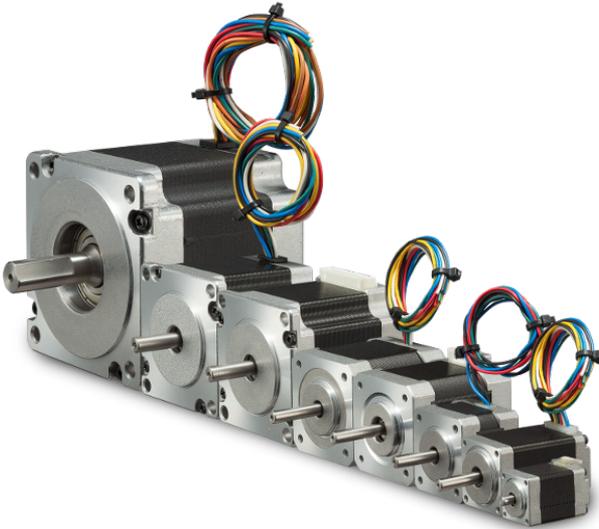


Kollmorgen PMX™ Stepper Motors

NEMA 08, 11, 14, 17, 23, 34

Installation Brief



Edition: June 2016, Revision A
Original Document



Keep all manuals as a product component during the life span of the product. Pass all manuals to future users / owners of the product.

KOLLMORGEN

Because Motion Matters™

Record of Document Revisions:

Revision	Remarks
A, 6/2016	First edition.

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General

- Mechanical installation is only to be performed by mechanically qualified personnel.

Trademarks

- PMX is a registered mark of Kollmorgen Corporation

Technical changes which improve the performance of the device may be made without prior notice!

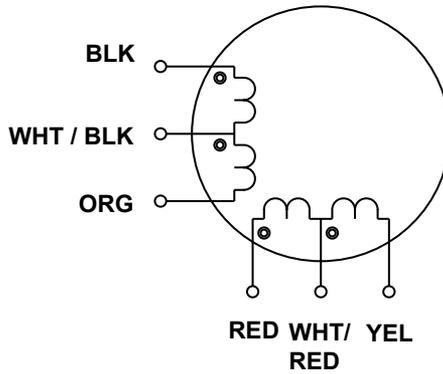
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6-Lead Unipolar Power Connections (NEMA 17 and 23 Only)

The 6-lead motor is normally used with unipolar drives. In some cases, the 6-lead motor can be used in a 4-lead series configuration for use with bipolar drives. For 4-lead configuration, see the 4-lead wiring diagram and corresponding bipolar winding specifications.

Connection	Driver Connection	Lead Color	Terminal #
6-LEAD UNIPOLAR	A	BLACK (BLK)	1
	B	ORANGE (ORG)	2
	C	RED	3
	D	YELLOW (YEL)	4
	+V	WHT/BLK	5
	+V	WHT/RED	6

6-Lead Wiring Configuration

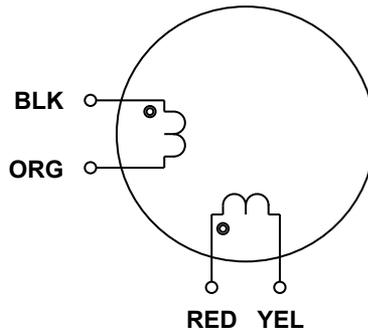


4-Lead Bipolar Power Connections with Integral Connector & Cable (All Frame Sizes)

The 4-lead motor is for use with bipolar drives. Includes four flying leads and integral connector with 4-lead mating cable for all frames.

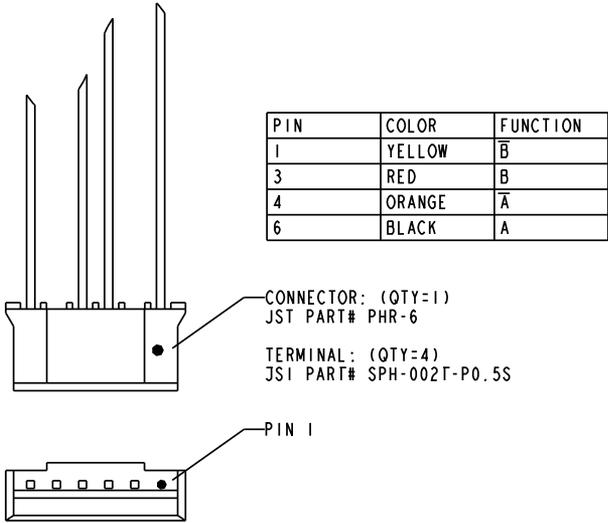
Connection	Driver Connection	Lead Color	Terminal #
4-LEAD BIPOLAR SERIES	A	BLACK (BLK)	1
	\bar{A}	ORANGE (ORG)	2
	B	RED	3
	\bar{B}	YELLOW (YEL)	4

4-Lead Wiring Configuration

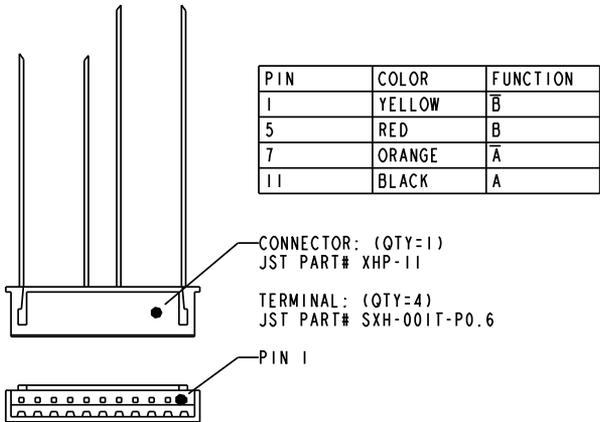


Note: Because PMX series does not include any 8-lead configurations, Kollmorgen does not differentiate between bipolar parallel or series within PMX series nomenclature. All 4-lead are simply stated as bipolar. All bipolar winding specifications in this guide represent simple 4-lead connection shown above.

4-Lead Cable Reference Drawings (NEMA 17)



4-Lead Cable Reference Drawings (NEMA 23)



Notes:

1. A 4-lead bipolar, 12 inch (300 mm) mating cable assembly is included for all motors ordered with integral connector option. The leadwires exiting this cable assembly should be connected the same as the 4-lead bipolar demonstrated above.
2. Upon special request, 6-lead unipolar mating cables are available for unipolar windings only. Please contact Kollmorgen customer support for more information.

Phase Sequencing Tables

The following tables provide unipolar and bipolar phase sequencing for the PMX series stepper motors.

Unipolar Full Step Phase Sequencing

Driver Connection*

STEP	A	B	C	D
1	GND	0	GND	0
2	0	GND	GND	0
3	0	GND	0	GND
4	GND	0	0	GND
1	GND	0	GND	0

CCW ↓

↑ CW

Note:

* Indicated direction when viewed from the motor drive shaft.

0 = Off or open

GND = Ground

Bipolar Full Step Phase Sequencing

Driver Connection*

STEP	A	\bar{A}	B	\bar{B}
1	+	-	-	+
2	-	+	-	+
3	-	+	+	-
4	+	-	+	-
1	+	-	-	+

CCW ↓

↑ CW

Note:

* Indicated direction when viewed from the motor drive shaft.

+ = Positive current flow

- = Negative current flow

Installing the Motor

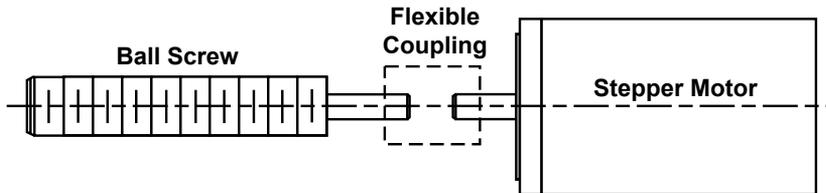
This section provides mounting and load alignment instructions for the PMX series stepper motors.

Mounting

1. Mount the motor tightly against a metal surface with good thermal conductivity, such as aluminum or steel.
Note: PMX motor ratings assume motor is mounted to square aluminum plate heatsink, 2.5x motor diameter, 5mm thick.
2. Secure the motor firmly using hexagonal socket screws and nuts or an equivalent method.

Load Alignment

1. When connecting the load to the shaft, assure that the longitudinal axes of both load and shaft are aligned. Use of a flexible coupling or similar device is recommended.



2. When connecting a pulley or other device to the motor shaft, do not subject shaft to a thrust load, overhanging load or shock.



1. **Do not disassemble the motor, drop it or subject it to shock!**
 - **Disassembly results in a considerable reduction in motor performance. Dropping it or subjecting it to shock may cause internal damage. Any of the above conditions may void the warranty.**



2. **Do not subject the motor to any of the following conditions:**
 - **Locations where strong vibrations or shock occur**
 - **Dusty locations**
 - **Locations where water, oil or other liquids are likely to come in contact with the motor (unless IP65)**
 - **Locations where the ambient temperature is outside the permissible temperature range of -20°C (-4°F) to +40°C (+104°F).**
 - **Excessive shaft loading, where MAX rated Radial and Axial loads are exceeded.**



3. **Temperature rise!**
 - **The temperature of the motor's outer surface should not exceed +130°C (+266°F).**

Warranty and Return Authorization

Kollmorgen warrants motor to be free from defects in material and workmanship for two years from the date of manufacture as determined by the date code on the product label. The warranty does not include damage resulting from misapplication, or damage resulting from abuse, overload or overheat conditions, or from failure to provide adequate maintenance.

Prior to returning any products for repair, authorization must first be received from the Kollmorgen Customer Support (KCS), Phone: 1-540-633-3545. KCS will issue a Return Material Authorization number which must be referenced on the packing slip and on the outside of the shipping container of the returned product(s). Returns without a valid Return Material Authorization number will not be accepted.

About Kollmorgen

Kollmorgen is a leading provider of motion systems and components for machine builders. Through world-class knowledge in motion, industry-leading quality, and deep expertise in linking and intergerating standards and custom products, Kollmorgen delivers breakthrough solutions that are unmatched in performance, reliability, and ease-of-use, giving machine builders an irrefutable marketplace advantage.

For assistance with your application needs visit www.kollmorgen.com or contact us at:



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