

Kollmorgen PMDC Motors Selection Guide



Permanent Magnet DC Motors

KOLLMORGEN

Because Motion Matters™

Welcome to Kollmorgen...

helping you build a better machine, faster

Permanent Magnet DC Motors

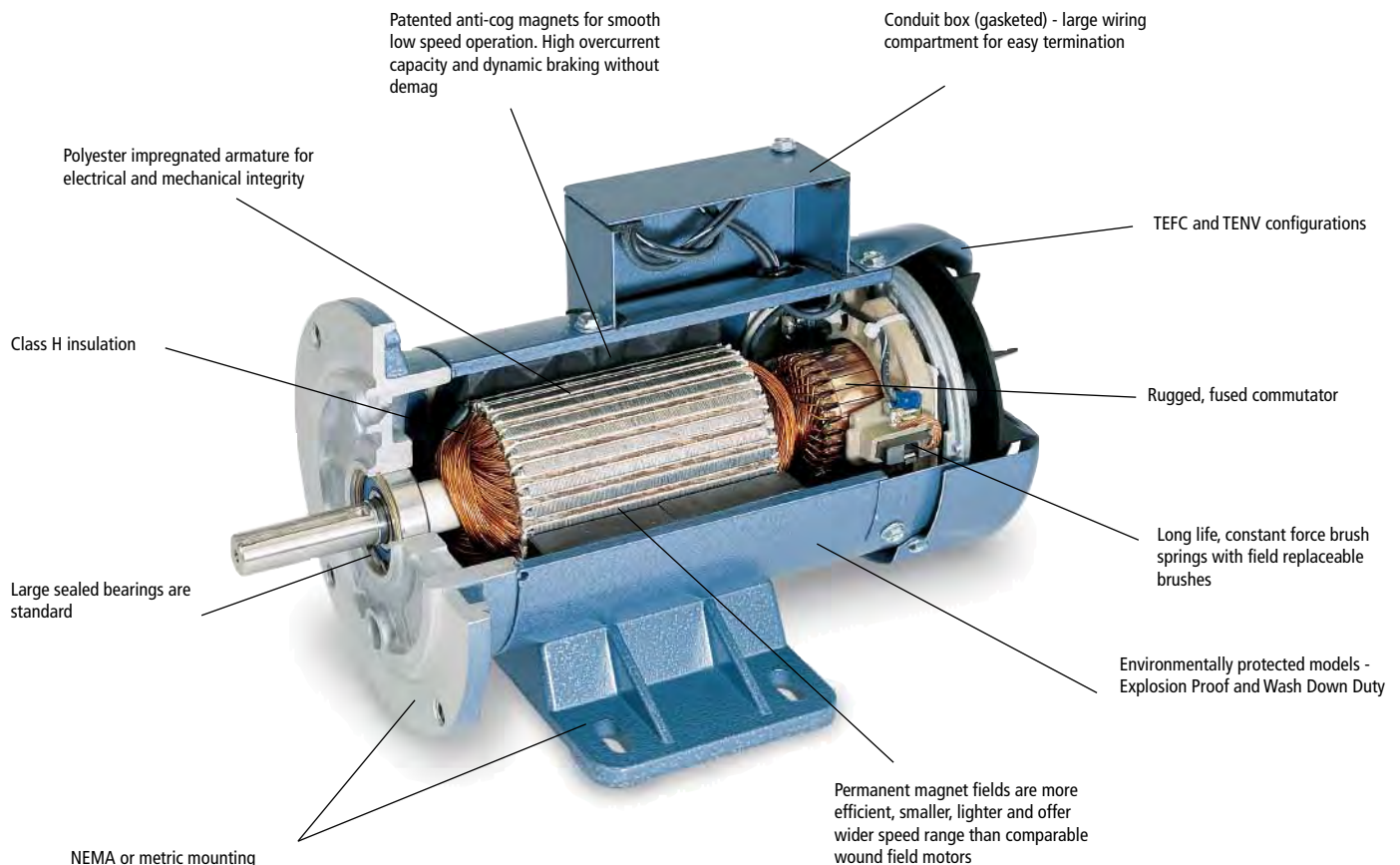
Why have numerous industries depended on Kollmorgen's Permanent Magnet (PMDC) motors for years?

Value and performance. Rugged, quality construction, backed by a 2 year warranty. More than 40 standard models from 1/4 to 3 HP.

Look under the nameplate and discover the Kollmorgen differences. These differences account for a diverse base of satisfied customers who have very successfully applied these motors in thousands of different applications.

Kollmorgen

With over 80 years of motion control experience in component manufacturing and system design, Kollmorgen has a world of standard and custom solutions for your motion control problems. We deliver high performance motor and drive technology and engineering expertise. In addition to Permanent Magnet DC (PMDC) motors, Kollmorgen's major product lines include hybrid stepper motors and drives, brushless servomotors and drives, low inertia servomotors and DC-powered generators. Kollmorgen is committed to providing its customers with high performance, quality products that can be tailored to match their exact needs, with the highest level of support.



Permanent Magnet DC Motors

Selection Guide

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Modification Capabilities – Custom Motors

This catalog includes the industrial standard PMDC motors that we offer. We also offer a wide variety of custom features to meet your specific requirements. Need a special foot, shaft, or winding? These are very common specials. We also offer much more detailed customizations. Our applications engineers routinely make electrical and/or mechanical modifications to optimize motors to meet your specific requirements. Contact your nearest authorized distributor.



SCR Rated NEMA Standards

1/8 - 1 HP, 90 VOLT - 1750 RPM

NEMA C face with removable base. Class H insulation. UL Recognized (UL 1004, File E61960) and CSA Certified (CSA Standard C22.2 No. 100, Class 421101, File LR43477). All TEFC motors accept tachometer adapter kits. See facing page and page 11. User supplied GE, Servo-Tek, and Baldor tachometers are easily mounted to the adapter.

| HP | Model Number | Product Code | NEMA Frame | Enclosure | Continuous Ratings | | Parameters | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|----------------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|-----------------------------|--------------|--------------|---------------------------------------|
| | | | | | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | |
| 1/8 | SR3616-8290-7-56BC-CU | FGS2430 | 56C | TENV | 1.5 | 4.5 | 34.0 | 4.0 | 5.3 | 2.9 | 19.4 | 1 | 8.13 | 14 | YP00565 |
| 1/4 | SR3624-8291-7-56BC-CU | FGS2431 | 56C | TENV | 2.7 | 9.0 | 54.0 | 3.9 | 2.5 | 4.0 | 9.6 | 1 | 9.13 | 18 | YP00565 |
| 1/3 | SR3632-8292-7-56BC-CU | FGS2432 | 56C | TENV | 3.5 | 12.0 | 71.0 | 3.9 | 1.8 | 5.0 | 6.6 | 1 | 10.13 | 21 | YP00565 |
| 1/2 | SR3642-4822-7-56BC-CU | FGS2434 | 56C | TENV | 4.7 | 18.0 | 74.0 | 4.2 | 0.9 | 6.5 | 3.8 | 1 | 12.10 | 27 | YP00565 |
| 1/2 | SRF3632-5227-84-5-56BC-CU* | FGS2748 | 56C | TEFC | 5.1 | 18.0 | 54.0 | 4.0 | 1.3 | 5.2 | 5.8 | 2 | 10.10 | 22 | YP00565 |
| 3/4 | SRF3650-4823-84-5-56BC-CU* | FGS2749 | 56C | TEFC | 6.9 | 27.0 | 81.0 | 4.2 | 0.7 | 7.8 | 3.7 | 2 | 13.25 | 30 | YP00565 |
| 1.0 | SRF3756-4996-84-5-56BC-CU* | FGS2751 | 56C | TEFC | 9.5 | 36.0 | 81.0 | 4.4 | 0.5 | 12.8 | 3.4 | 2 | 13.25 | 30 | YP00565 |

*CE marked. Conforms to EN60034-1 and EN60034-5

1/4 - 3 HP, 180 VOLT - 1750 RPM

NEMA C face with removable base (except 1.5 HP—welded base**). Class H insulation. UL Recognized (UL 1004, File E61960) and CSA Certified (CSA Standard C22.2 No. 100, Class 421101, File LR43477). All TEFC motors accept tachometer adapter kits. See facing page and page 11. User supplied GE, Servo-Tek, and Baldor tachometers are easily mounted to the adapter.

| HP | Model Number | Product Code | NEMA Frame | Enclosure | Continuous Ratings | | Parameters | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|----------------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|-----------------------------|--------------|--------------|---------------------------------------|
| | | | | | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | |
| 1/4 | SR3624-1032-7-56BC-CU | FGS2658 | 56C | TENV | 1.4 | 9.0 | 28.0 | 7.4 | 9.6 | 4.0 | 42.8 | 1 | 9.13 | 18 | YP00566 |
| 1/2 | SR3642-4982-7-56BC-CU | FGS2438 | 56C | TENV | 2.6 | 18.0 | 40.0 | 7.6 | 3.3 | 6.3 | 16.2 | 1 | 12.13 | 27 | YP00566 |
| 1/2 | SRF3632-5265-84-5-56BC-CU* | FGS2735 | 56C | TEFC | 2.4 | 18.0 | 27.0 | 8.1 | 5.3 | 5.2 | 29.5 | 2 | 10.10 | 21 | YP00566 |
| 3/4 | SRF3736-4983-84-5-56BC-CU* | FGS2750 | 56C | TEFC | 3.2 | 27.0 | 26.0 | 8.8 | 3.6 | 8.9 | 28.8 | 2 | 11.25 | 23 | YP00566 |
| 1.0 | SRF3752-4984-84-5-56BC-CU* | FGS2752 | 56C | TEFC | 4.6 | 36.0 | 41.0 | 8.2 | 1.8 | 12.0 | 15.6 | 2 | 13.25 | 29 | YP00566 |
| 1.5 | SRF5348-4485-84-5-45BC-CU* | FGS2753 | 145TC** | TEFC | 7.8 | 54.0 | 62.0 | 7.9 | 1.2 | 26.2 | 13.5 | 3 | 16.00 | 64 | YP00574 |
| 2.0 | SRF5360-4985-84-5-82BC-CU* | FGS2754 | 145TC/182 | TEFC | 9.5 | 72.0 | 78.0 | 8.2 | 0.6 | 35.9 | 7.0 | 4 | 16.50 | 75 | YP00559 |
| 3.0 | SRF5570-4986-84-5-82BC-CU* | FGS2755 | 145TC/182 | TEFC | 14.0 | 108.0 | 78.0 | 9.3 | 0.6 | 40.1 | 7.2 | 5 | 19.75 | 87 | YP00585 |

*CE marked. Conforms to EN60034-1 and EN60034-5

**Stamped steel, welded base, not removable

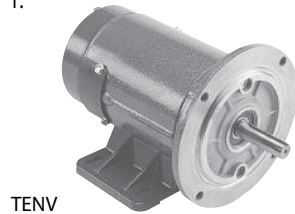
SCR Rated NEMA Standards

Configurations

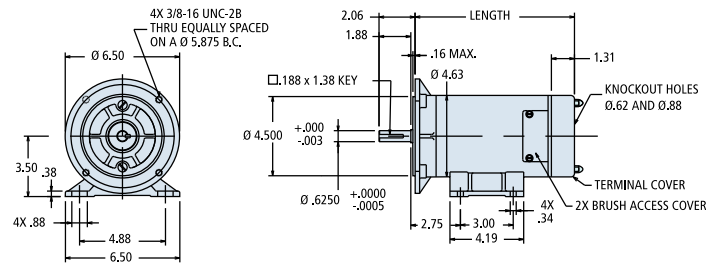
Dimensions (inches)

Tachometer Adapter Kits (see pg. 10)

1.

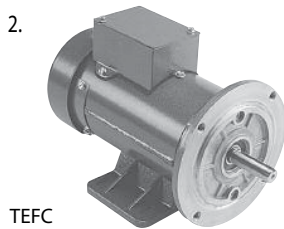


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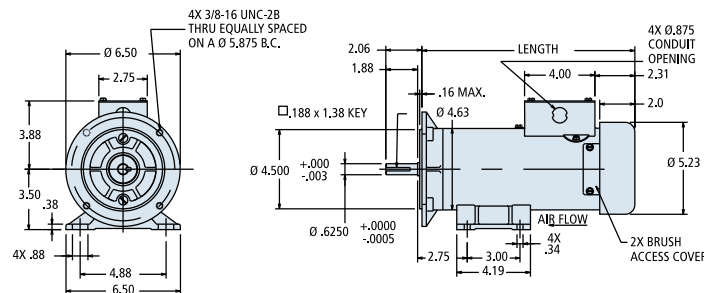


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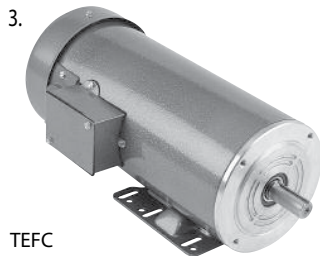
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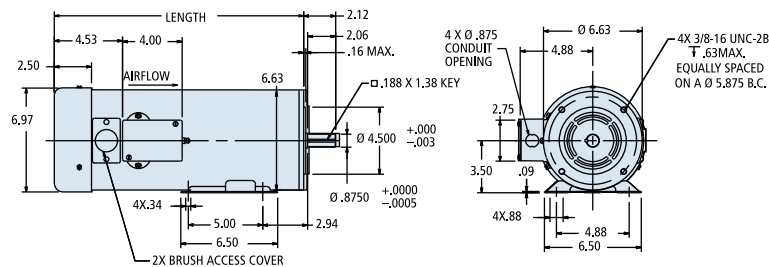
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FGZ9060

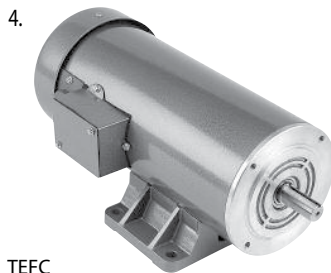
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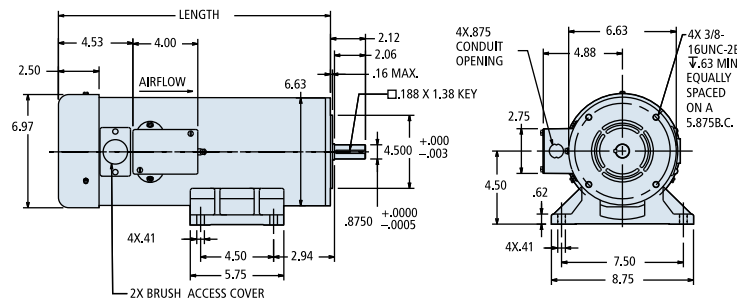
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FGZ9055 or
FGZ9058

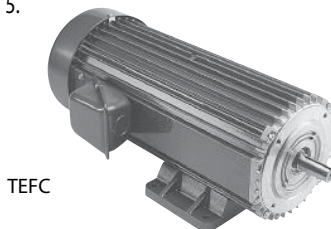
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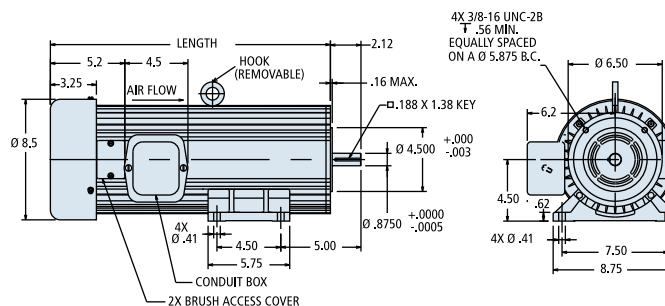
TEFC

FGZ9055 or
FGZ9058

5.



TEFC

FGZ9056 or
FGZ9059

SCR Rated NEMA Standards WASH DOWN DUTY



1/4 - 1 HP, 90 VOLT - 1750 RPM

NEMA C face with removable base (except 1 HP— welded base*). Class H insulation. UL Recognized (UL 1004, File E61960). Comply with NEMA MG1-1.26.5 Waterproof designation and IP65. Bakery Industry Sanitation Standards Committee (BISSC) certified per BISSC Standard 29 (Authorization No. 301).

| | | | | | Continuous Ratings | | Parameters | | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|----------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|---|--------------------------------|--------------|--------------|--|
| HP | Model Number | Product Code | NEMA Frame | Enclosure | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | | |
| 1/4 | STF3624-4976-61-56BC | FGS2419 | 56C | TENV | 2.9 | 9.0 | 54.0 | 3.89 | 2.51 | 4.0 | 9.61 | 1 | 11.20 | 22 | YP00572 | |
| 1/2 | STF3640-4977-61-56BC | FGS2420 | 56C | TENV | 5.1 | 18.0 | 67.0 | 4.05 | 0.95 | 6.3 | 4.38 | 1 | 12.20 | 26 | YP00572 | |
| 3/4 | STF3758-5150-61-56BC | FGS2757 | 56C | TENV | 7.3 | 27.0 | 126.0 | 4.05 | 0.72 | 8.7 | 3.50 | 2 | 15.20 | 41 | YP00572 | |
| 1 | STF5332-3747-61-56BC | FGS1751 | 56C* | TENV | 9.2 | 36.0 | 67.0 | 3.98 | 0.61 | 22.4 | 8.00 | 3 | 13.30 | 41 | YP00574 | |

*Stamped steel, welded base, not removable

1/2 - 2 HP, 180 VOLT - 1750 RPM

NEMA C face with removable base (except 1.0 & 1.5 HP— welded base*). Class H insulation. UL Recognized (UL 1004, File E61960). Comply with NEMA MG1-1.26.5 Waterproof designation and IP65. Bakery Industry Sanitation Standards Committee (BISSC) certified per BISSC Standard 29 (Authorization No. 301).

| | | | | | Continuous Ratings | | Parameters | | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|----------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|---|--------------------------------|--------------|--------------|--|
| HP | Model Number | Product Code | NEMA Frame | Enclosure | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | | |
| 1/2 | STF3648-5268-61-56BC | FGS2738 | 56C | TENV | 2.4 | 18.0 | 37.0 | 8.30 | 3.59 | 6.4 | 19.60 | 1 | 11.80 | 27 | YP00571 | |
| 1 | STF5332-3748-61-56BC | FGS2389 | 56C* | TENV | 4.6 | 36.0 | 36.0 | 8.00 | 2.40 | 22.4 | 32.00 | 3 | 13.30 | 41 | YP00574 | |
| 1.5 | STF5356-3749-61-45BC | FGS2390 | 145TC* | TENV | 7.1 | 54.0 | 70.0 | 7.90 | 1.11 | 29.8 | 11.20 | 4 | 16.30 | 65 | YP00574 | |
| 2.0 | STF5372-3750-61-82BC | FGS2342 | 145TC/182 | TENV | 9.3 | 72.0 | 93.0 | 7.90 | 0.77 | 39.3 | 6.80 | 5 | 18.30 | 84 | YP00574 | |

*Stamped steel, welded base, not removable

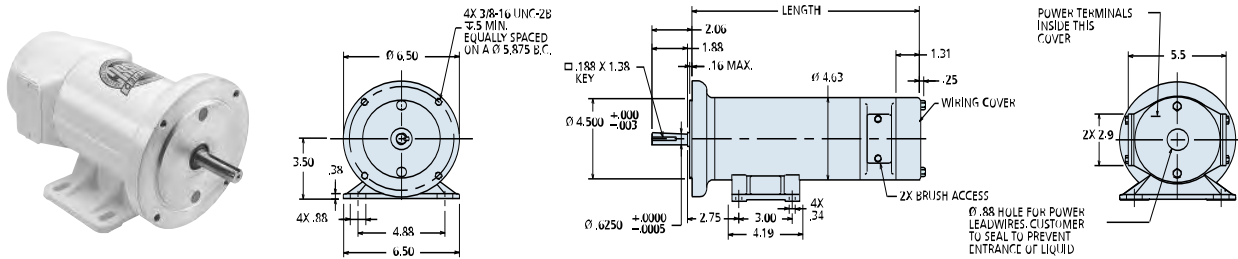
SCR Rated NEMA Standards WASH DOWN DUTY

Configurations

Dimensions (inches)

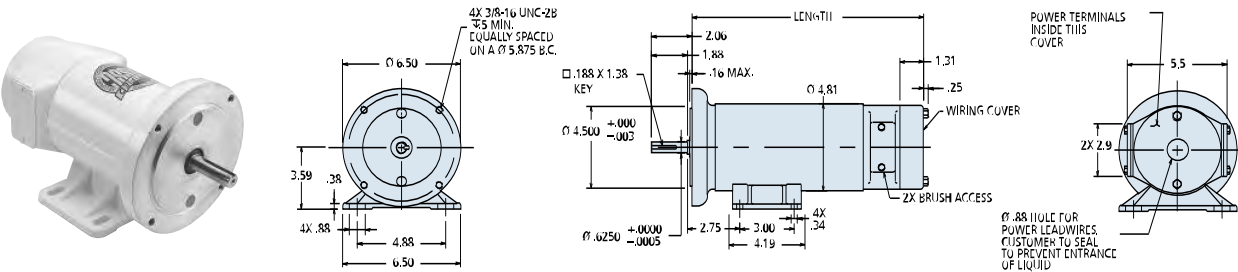
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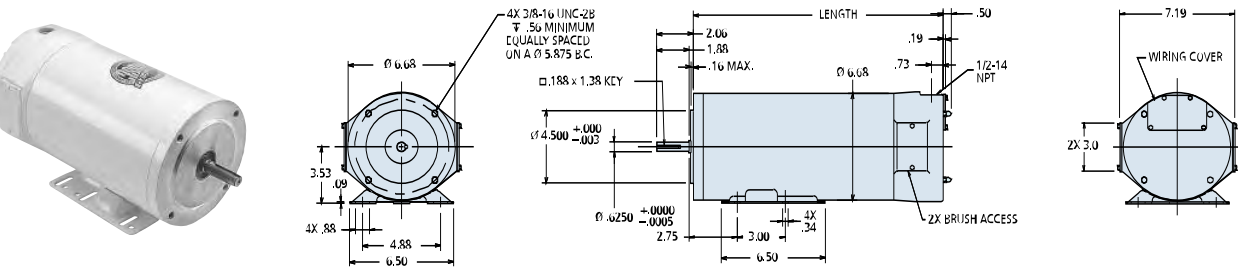
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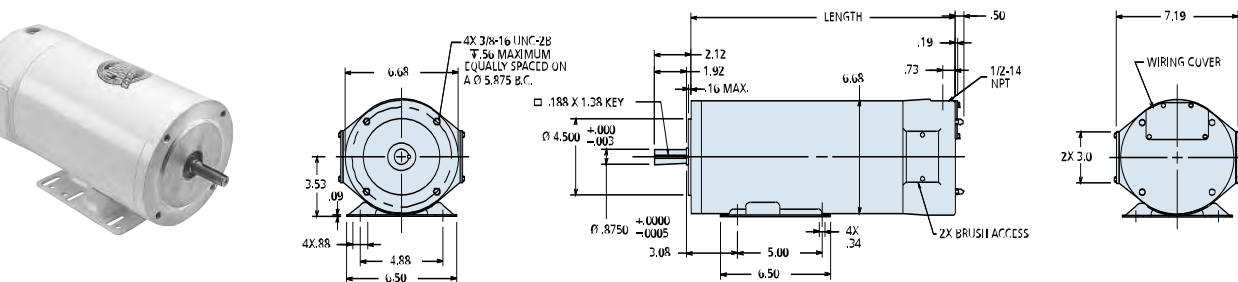
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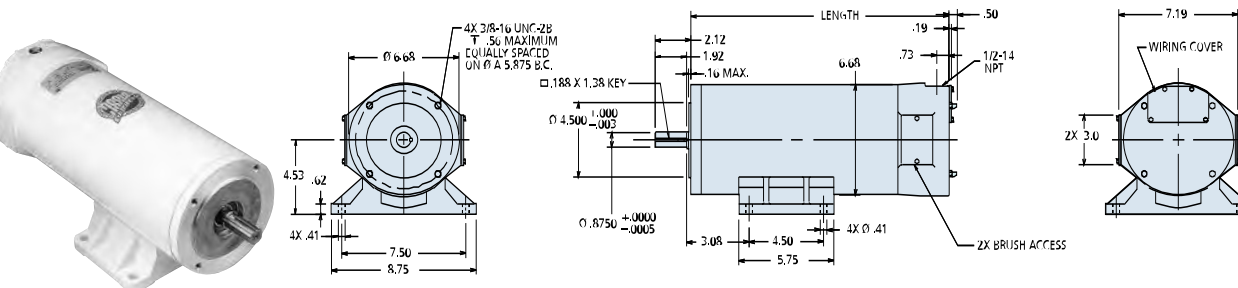
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TENV



5.

TENV



SCR Rated NEMA Standards EXPLOSION PROOF



1/4 - 3/4 HP, 90 VOLT - 1750 RPM

NEMA C face with removable base. Class H insulation. UL Listed (UL674, File E56538), meet Division 1 and 2, Class 1 (Groups C and D), Class II (Groups F and G) and Class III. CSA Listed Components per CSA Standard C22.2 No. 145, Class 428801 (File LR43478).

| HP | Model Number | Product Code | NEMA Frame | Enclosure | Continuous Ratings | | Parameters | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|-----------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|-----------------------------|--------------|--------------|---------------------------------------|
| | | | | | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | |
| 1/4 | EP3624-1434-7-56BC-CU | FGE0212 | 56C | TENV | 2.6 | 9.0 | 52.0 | 4.07 | 2.63 | 4.0 | 10.5 | 1 | 10.38 | 23 | YP00565 |
| 1/3 | EP3632-1435-7-56BC-CU | FGE0242 | 56C | TENV | 3.5 | 12.0 | 71.0 | 3.94 | 1.76 | 5.0 | 6.6 | 1 | 11.38 | 27 | YP00565 |
| 1/2 | EP3640-1436-7-56BC-CU | FGE0213 | 56C | TENV | 4.7 | 18.0 | 87.0 | 4.24 | 1.03 | 6.4 | 5.1 | 1 | 12.38 | 30 | YP00565 |
| 3/4 | EP3758-5151-7-56BC-CU | FGE0248 | 56C | TENV | 7.0 | 27.0 | 113.0 | 4.15 | 0.74 | 8.0 | 3.8 | 1 | 14.0 | 36 | YP00565 |

1/4 - 3/4 HP, 180 VOLT - 1750 RPM

| HP | Model Number | Product Code | NEMA Frame | Enclosure | Continuous Ratings | | Parameters | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|-----------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|-----------------------------|--------------|--------------|---------------------------------------|
| | | | | | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | |
| 1/4 | EP3624-5269-7-56BC-CU | FGE0261 | 56C | TENV | 1.3 | 9.0 | 26.0 | 8.10 | 10.50 | 4.0 | 51.80 | 1 | 10.38 | 23 | YP00566 |
| 1/2 | EP3644-5214-7-56BC-CU | FGE0262 | 56C | TENV | 2.3 | 18.0 | 34.0 | 8.10 | 4.00 | 6.7 | 24.20 | 1 | 12.38 | 30 | YP00566 |
| 3/4 | EP3752-5215-7-56BC-CU | FGE0263 | 56C | TENV | 3.3 | 27.0 | 38.0 | 8.10 | 3.10 | 11.4 | 17.40 | 1 | 14.38 | 34 | YP00566 |

1/3 HP, 12 VOLT - 1750 RPM

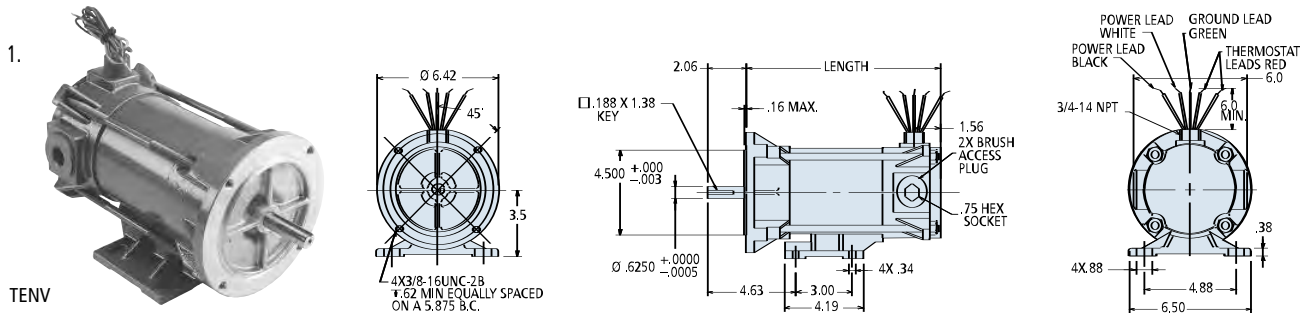
| HP | Model Number | Product Code | NEMA Frame | Enclosure | Continuous Ratings | | Parameters | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|-----------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|-----------------------------|--------------|--------------|---------------------------------------|
| | | | | | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | |
| 1/3 | EP3620-1954-7-56BC-CU | FGE0243 | 56C | TENV | 28.0 | 12.0 | n/a | .52 | .04 | 3.5 | .18 | 1 | 10.38 | 19 | YP00583 |

1/3 - 3/4 HP, 24 VOLT - 1750 RPM

| HP | Model Number | Product Code | NEMA Frame | Enclosure | Continuous Ratings | | Parameters | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|-----------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|-----------------------------|--------------|--------------|---------------------------------------|
| | | | | | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | |
| 1/3 | EP3624-2757-7-56BC-CU | FGE0245 | 56C | TENV | 13.4 | 12.0 | n/a | 1.02 | .16 | 4.0 | .66 | 1 | 10.38 | 24 | YP00593 |
| 3/4 | EP3648-4952-7-56BC-CU | FGE0244 | 56C | TENV | 28.2 | 27.0 | n/a | 1.02 | .06 | 7.1 | .22 | 1 | 13.38 | 33 | YP00583 |

Configurations

Dimensions (inches)



LOW VOLTAGE Rated NEMA STANDARDS



1/4 - 1/2 HP, 12 VOLT - 1750 RPM

NEMA C face with removable base. Class H insulation. UL Recognized (UL 1004, File E61960). Designed for use with low voltage supplies (batteries). Highly efficient. For constant speed, motors are operated directly from a battery with no motor control interface. For adjustable speed, low voltage motor controls are readily available.

| | | | | | Continuous Ratings | | Parameters | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|--------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|--------------------------------|--------------|--------------|--|
| HP | Model Number | Product Code | NEMA Frame | Enclosure | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | |
| 1/4 | BA3614-4648-9-56BC | FGB2010 | 56C | TENV | 21.1 | 9.0 | n/a | 0.51 | 0.07 | 2.9 | 0.27 | 1 | 8.13 | 15 | YP00593 |
| 1/3 | BA3624-7005-9-56BC | FGB2002 | 56C | TENV | 27.0 | 12.0 | n/a | 0.51 | 0.04 | 4.0 | 0.14 | 1 | 9.13 | 19 | YP00582 |
| 1/2 | BA3638-4588-9-56BC | FGB2005 | 56C | TENV | 39.8 | 18.0 | n/a | 0.49 | 0.02 | 5.5 | 0.07 | 1 | 11.13 | 25 | YP00592 |

1/4 - 1.0 HP, 24 VOLT - 1750 RPM

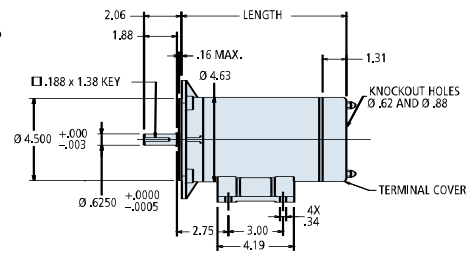
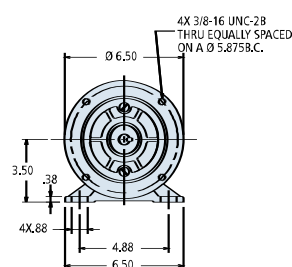
| | | | | | Continuous Ratings | | Parameters | | | | | | Configuration (facing page) | Length (in.) | Weight (lbs) | Brush Replacement (order 2 per motor) |
|-----|--------------------|--------------|------------|-----------|--------------------|-----------------|----------------|----------------------------|-------------------|------------------|---------------------------|---|--------------------------------|--------------|--------------|--|
| HP | Model Number | Product Code | NEMA Frame | Enclosure | Current (Amps) | Torque (lb-in.) | Current (Peak) | Torque Constant (lb-in./A) | Resistance (Ohms) | Inertia (lb-in.) | Inductance (Millihenries) | | | | | |
| 1/4 | BA3618-7009-9-56BC | FGB1592 | 56C | TENV | 10.3 | 9.0 | n/a | 1.04 | 0.14 | 3.2 | 0.57 | 1 | 9.13 | 18 | YP00593 | |
| 1/3 | BA3624-7024-9-56BC | FGB2285 | 56C | TENV | 13.4 | 12.0 | n/a | 1.02 | 0.16 | 4.0 | 0.66 | 1 | 9.13 | 19 | YP00593 | |
| 1/2 | BA3628-7012-9-56BC | FGB1441 | 56C | TENV | 19.5 | 18.0 | n/a | 1.01 | 0.10 | 4.4 | 0.38 | 1 | 10.13 | 21 | YP00593 | |
| 3/4 | BA3648-4650-9-56BC | FGB2006 | 56C | TENV | 28.2 | 27.0 | n/a | 1.02 | 0.06 | 7.1 | 0.22 | 1 | 12.10 | 29 | YP00592 | |
| 1.0 | BAF3644-5081-56BC | FGB2335 | 56C | TEFC | 38.4 | 36.0 | n/a | 1.00 | 0.05 | 6.6 | 0.21 | 2 | 12.25 | 28 | YP00583 | |

Configurations

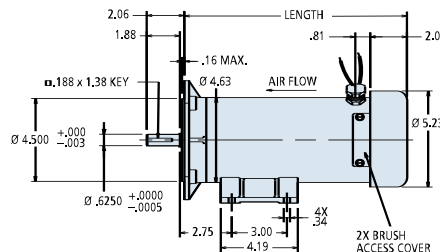
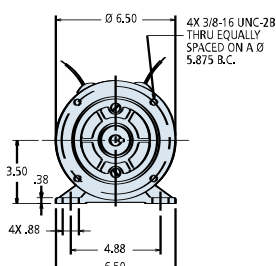
Dimensions (inches)



TENV



TEFC



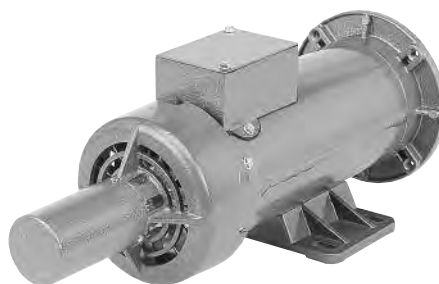
Tachometer Adapter Kits

Use to simply monitor motor speed with a readout or through control electronics to very accurately maintain the motor's set speed throughout a wide speed range. Kits include parts and instructions for easy mounting. User supplied GE, Servo-Tek, and Baldor tachometers are easily mounted to the adapter. Tachometer adaptor kits can only be applied to motors that have a "-84" in the motor P/N. The "-84" designates that the motor includes features to accept the adaptor. Contact the factory for applicability to other motors.

| Motor Type | Motor Enclosure | *Small Tach Adaptor Kits | **Large Tach Adaptor Kits |
|--------------|-----------------|--------------------------|---------------------------|
| SR36 | TENV | 40PA57-36/37-TENV-S | — |
| SRF36, SRF37 | TEFC | 40PA54-36/37-TEFC-S | 40PA60-36/37-TEFC-G |
| SRF53 | TEFC | 40PA58-53-TEFC-S | — |
| SRF55 | TEFC | 40PA59-55-TEFC-S | 40PA56-55-TEFC-G |

* For Servo-Tek models SA-757A, SA-7103A and SA-7360-F-1 (7V/KRPM). Models with .120" dia. Shafts (rather than .187" dia.) can also be mounted using Servo-Tek coupling ST-9502-1

** For GE model 5PY or Baldor model BTG. See their specifications for voltage gradients.



3/4 HP TEFC motor with Servo-Tek tachometer installed.



1.5 HP TEFC motor with GE tachometer installed.

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