

A black and white photograph of an EC MAX motor, showing its cylindrical body and a vertical shaft protruding from the top. The motor is set against a dark background with green and white diagonal stripes on the left side.

# EC MAX<sup>®</sup>

ELECTRONICALLY  
COMMUTATED  
MOTOR

A SOLUTION  
FROM *Packard*

## EC MAX<sup>®</sup>

Packard has been working hard to develop the ideal direct drive blower motor that any HVACR contractor can keep in their van. This motor is specifically designed to replace over 100 different types of motors. With an easy wiring application, the EC Max<sup>®</sup> is the perfect motor!

## APPLICATIONS

- Indoor furnace
- Air handlers
- Heat pumps

## ACCESSORIES IN THE BOX

- Harness – *the same harness is used for all applications*
- Voltage Plugs
  - One for 115vac (white)
  - One for 230vac (yellow)
- Optional jumper wires and extra terminals
- Optional Y-adapter
- Installation manual



# ELECTRONICALLY COMMUTATED DIRECT DRIVE BLOWER MOTORS

## FEATURES

- High Efficiency ECM: Up to 80% efficient
- Replaces either PSC or X13 model of equivalent HP
- Dual Voltage Design: Replace 115 or 230V with one motor
- Replaces 100s of different motors
- Wiring harness and simple installation guide included
- Rotation Sensing Technology
  - Automatically selects rotation upon first start up
- 45" wiring harness



Item ID	H.P.	Volts	RPM	Amps	Hertz	Shaft Dimension	Length Less Shaft	Motor Type	Cord Length
46013	1/3	115/230	1075	5.0/3.0	60/50	1/2" x 5"	6 3/8"	ECM	45"
46012	1/2	115/230	1075	6.7/4.0	60/50	1/2" x 5"	6 3/8"	ECM	45"
46034	3/4	115/230	1075	8.2/4.9	60/50	1/2" x 5"	7 5/8"	ECM	45"
46001	1	115/230	1075	11.0/6.7	60/50	1/2" x 5"	7 5/8"	ECM	45"



# ENERGY EFFICIENCIES

MOTOR COMPARISON	PSC	X13	EC Max
Technology	Induction Motor	Brushless DC	Brushless DC
Available Horse Power	1/3, 1/2, 3/4, 1	1/3, 1/2, 3/4, 1	1/3, 1/2, 3/4, 1
Speeds	Select 1-5	Select 1-5	Select 1-5
Speed Range	800-1100 RPM	600-1100 RPM	600-1200 RPM
Peak Motor Efficiency	59%	80%	80%
Average Power (Cooling CFM)	515 W	413 W	413 W
Average Power (Continuous Fan CFM)	515 W	200 W	95 W
Application	Retrofit & OEM	OEM	Retrofit for indoor PSC & EC Motor

**84%**  
ENERGY REDUCTION

## CONTINUOUS FAN

**50%**  
ENERGY REDUCTION

## HEATING

**30%**  
ENERGY REDUCTION

## COOLING

### AIRFLOW TEST

75,000 BTU FURNACE  
W/ 3 TON AC COOLING

MODE	PSC	EC Max
Cooling On	667 W	<b>464 W</b>
Heating On	556 W	<b>363 W</b>
Fan On*	556 W	<b>90 W</b>

### AIRFLOW TEST

105,000 BTU FURNACE  
W/ 4.5 TON AC COOLING

MODE	PSC	EC Max
Cooling On	1007 W	<b>810 W</b>
Heating On	800 W	<b>541 W</b>
Fan On*	800 W	<b>200 W</b>

3/4 HP PSC vs. 1 HP EC Max

\*Assuming Furnace Originally Used Heat Speed for Constant Fan

# CROSS REFERENCES

## 46013



- Mars 06103
- Mars 06203
- Mars 10585
- Mars 10586
- Mars 10860
- US Motors 1864
- US Motors 1971
- US Motors 1972
- genteq 3585
- genteq 3586
- Packard 43585
- Packard 43586
- Century 6103E
- Century 6203E
- Century D1036
- Packard D1036AO
- Fasco D727
- Fasco D923
- Century DL1036
- Century EM3585
- Economaster EM3585
- Century EM3586
- Economaster EM3586
- Wagner WG840585
- Wagner WG840586

## 46012



- Mars 03587
- Mars 03588
- Mars 06105
- Mars 06205
- Mars 10587
- Mars 10588
- Mars 10800
- Mars 10860
- US Motors 1865
- US Motors 1973
- genteq 3587
- genteq 3588
- Evergreen 6005
- Century 6105E
- Century 6205E
- US Motors 6630TS
- US Motors 6631RS
- US Motors 6631TS
- Century EM3587
- Economaster EM3587
- Century EM3588
- Economaster EM3588
- Wagner WG840587
- Wagner WG840588

## 46034



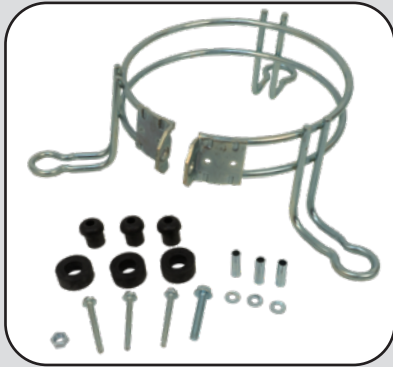
- Mars 06107
- Mars 06207
- Mars 10589
- Mars 10590
- Mars 10861
- genteq 3589
- genteq 3590
- Packard 43589
- Packard 43590
- Century 6107E
- Century 6207E
- US Motors 6640RS
- US Motors 6640TS
- US Motors 6641TS
- US Motors 8904
- US Motors 8905
- Century D1076
- Fasco D728
- Fasco D729
- Century DL1076
- Century EM3589
- Economaster EM3589
- Century EM3590
- Economaster EM3590
- Wagner WG840589
- Wagner WG840590

## 46001



- Mars 03595
- Mars 03596
- Mars 06110
- Mars 06210
- Mars 10591
- Mars 10592
- Mars 10801
- Mars 10861
- genteq 3595
- genteq 3596
- Packard 43595
- Packard 43596
- Evergreen 6010
- Century 6110E
- Century 6210E
- US Motors 6650RS
- US Motors 6650TS
- US Motors 6651TS
- US Motors 8906
- US Motors 8907
- Century BD1106
- Century BDL1106
- Wagner WG840595
- Wagner WG840596

# MOUNTING OPTIONS



## UNIVERSAL MOUNTING KIT A60048

- Diameter: 5 5/8"
- KIT INCLUDES**
- Steel bracket with 3 welded legs
- 3 steel sleeves
- 3 sets of rubber grommets



## FLEX MOUNT BRACKETS

FOR USE WITH THE **46013** AND **46012** MODELS ONLY



### TFM55

**Features**

- 3-Leg Torsion-Flex Brackets
- Diameter: 5 5/8"
- Designed to effectively isolate and prevent torsional vibrations from reaching blower housing and causing noise
- No preassembly; bracket clamps to motor shell. Includes 3 Grommets, 1 Bolt, 1 Nut, 3 Steel Washers



### TFM556

**Features**

- 3-Leg Torsion-Flex Brackets
- Plastic insert allows you to adjust for 5" or 5.5" diameter
- Designed to effectively isolate and prevent torsional vibrations from reaching blower housing and causing noise
- No preassembly; bracket clamps to motor shell. Plastic inserts supplied for adapting bracket to NEMA 42 frame.

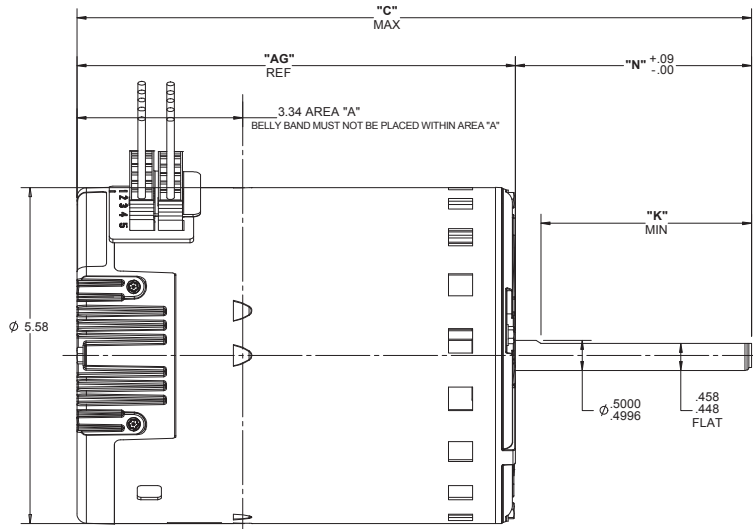
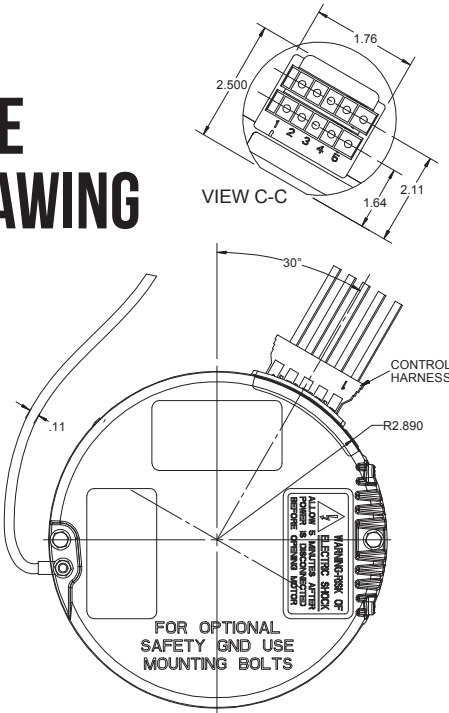


### TFM554

**Features**

- 4-Leg Torsion-Flex Mount
- Diameter: 5 5/8"
- Helps isolate and prevent torsional vibrations from reaching blower housing and causing noise

# LINE DRAWING

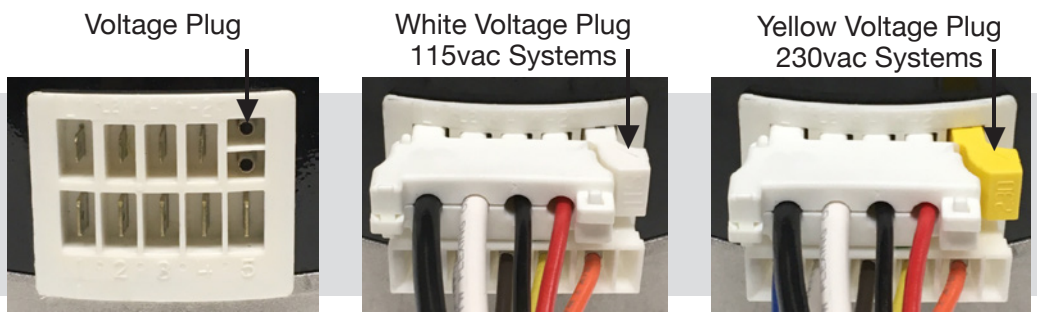


Item ID	C	N	K	AG	Weight
46012	11.26"	4.92"	4.50"	6.34"	12.40 lbs
46013	11.26"	4.92"	4.50"	6.34"	12.40 lbs
46034	12.76"	4.92"	4.50"	7.84"	18.85 lbs
46001	12.76"	4.92"	4.50"	7.84"	18.85 lbs



## VOLTAGE

115V OR 230V

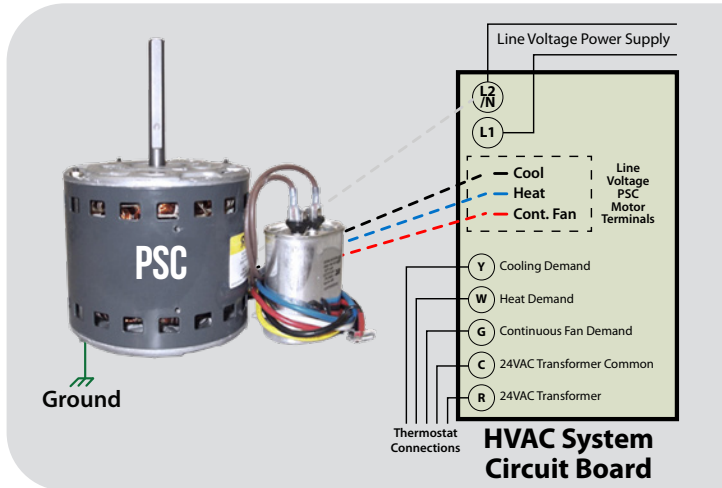


Voltage Plug

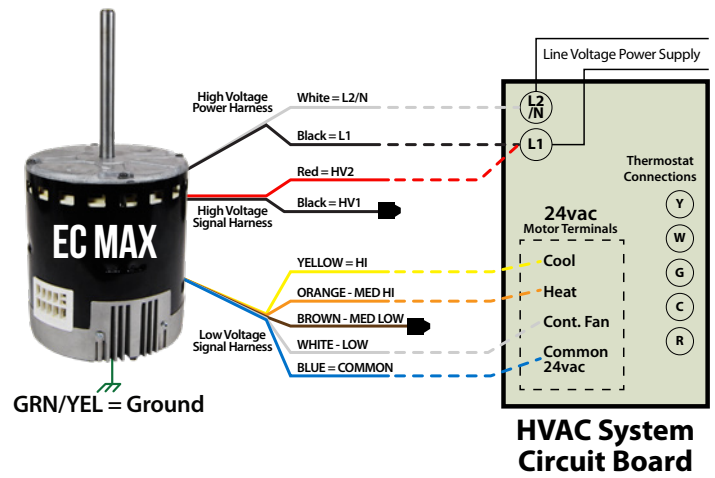
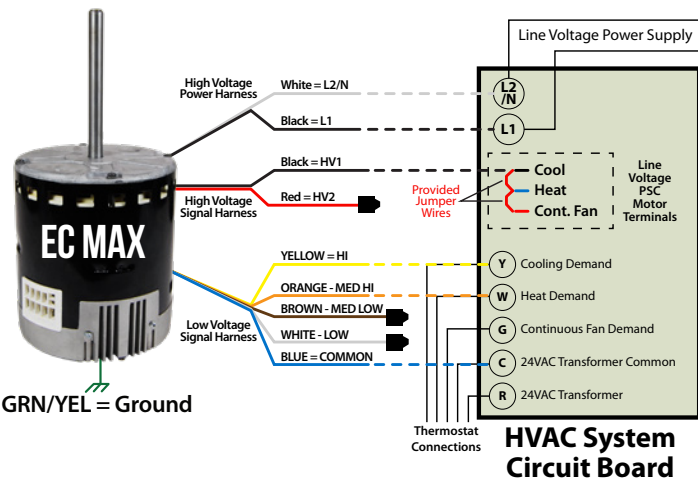
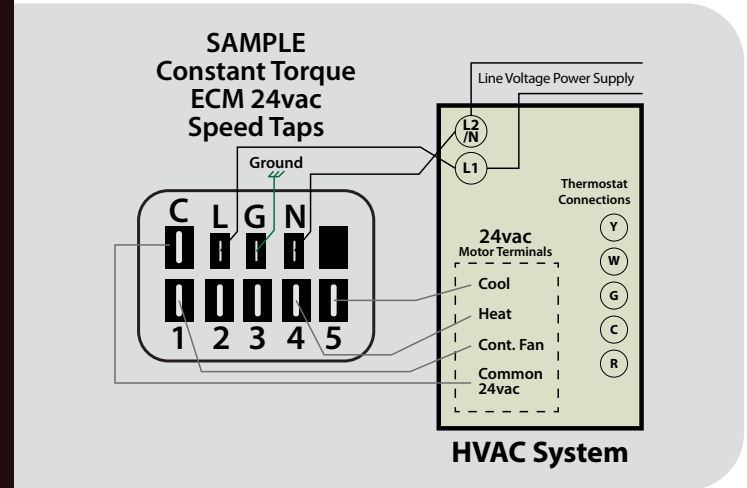
White Voltage Plug  
115vac Systems

Yellow Voltage Plug  
230vac Systems

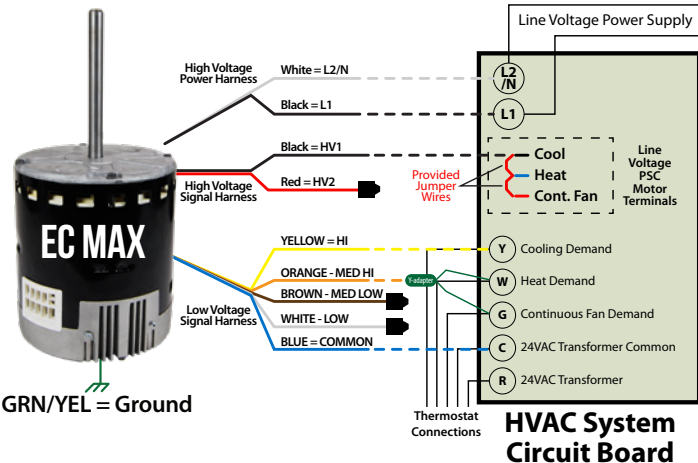
## USING EC MAX® TO REPLACE PSC (PERMANENT SPLIT CAPACITOR) INDUCTION MOTORS



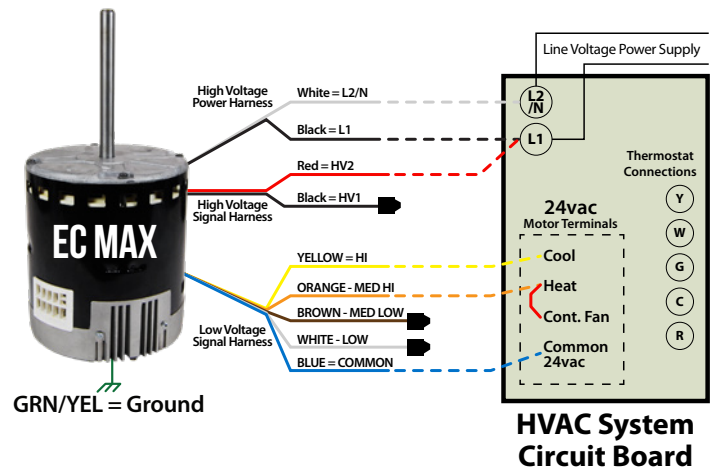
## USING EC MAX® TO REPLACE CONSTANT TORQUE EC MOTORS



Example connection using the optional Y-adapter.



Example connection of one speed to multiple fan relay outputs from the HVAC system control board or fan relay(s).





Scan for  
full product  
details



## SPECIFICATIONS

### Voltage Ratings

- 115VAC (*white voltage plug*) allowable range 90-132VAC
- 230VAC (*yellow voltage plug*) allowable range 180-264VAC

### Horsepower Ratings 1/3, 1/2, 3/4 & 1

### FLA Ratings

- 1/3 Hp = 5.0/3.0
- 1/2 Hp = 6.7/4.0
- 3/4 Hp = 8.2/4.9
- 1 Hp = 11.0/6.7

### RPM Rating 1075

### Speeds (see chart to the right for estimated RPM values)

- 4 speeds (*LOW, MED-LOW, MED-HI & HI*)

### Rotation CW or CCW (automatically configured)

### Bearing Ball

### Ambient Rating 40°C

### Enclosure Open Air Over (OAO)

### Frame size and dimensions NEMA 48 Frame (5.6" diameter)

#### DIM A & B

- 1/3 Hp (DIM C = 11.26"), (DIM AG = 6.34")
- 1/2 Hp (DIM C = 11.26"), (DIM AG = 6.34")
- 3/4 Hp (DIM C = 12.76"), (DIM AG = 7.84")
- 1 Hp (DIM C = 12.76"), (DIM AG = 7.84")

### Shaft .5" x 5" (4.5" single flat)

### Mounting Belly band (not supplied)

### Harness Lead length 48"

### UL Recognized Component

### 4kV surge protection

### SPEED (RPM) RATINGS.

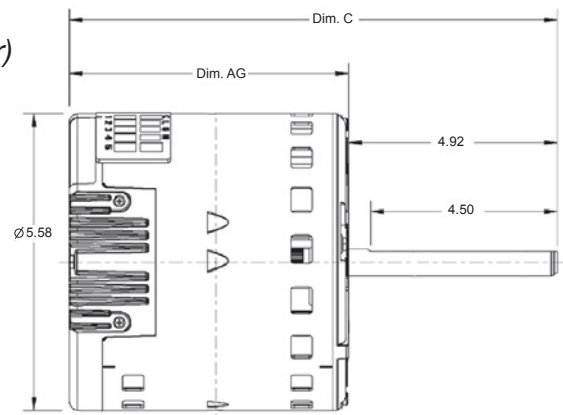
NOTE: ACTUAL RPM WILL VARY DEPENDING ON LOAD.

HI = 1075 RPM

MED-HI = 1000 RPM

MED LOW = 925 RPM

LOW = 850 RPM



**Corporate Headquarters and Distribution Center**  
2700 Barrett Lakes Blvd. NW, Suite 100  
Kennesaw, GA 30144

**Distribution Centers**  
2570 N. Shadeland Ave., Suite 103, Indianapolis, IN 46219  
7350 S. Kyrene Rd., Suite 104, Tempe, AZ 85283

**Customer Service**  
800.334.1769  
customerservice@packardonline.com

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