SyMAX-i®
56 Permanent Magnet AC Motors with Integrated Electronic Control

SB701
SyMAX-i®
56-Frame Permanent Magnet AC Motors
With Integrated Electronic Control

The Next Generation of Power

**PRIMARY APPLICATION**
Condenser fan

**OPTIONAL APPLICATIONS**
(Please contact your Regal sales rep. for suitability)
- Commercial HVAC
- Fan & Blower direct and belt drive
- Commercial Refrigeration direct and belt drive fans

**SPECIFICATIONS**
- Radial Flux Technology
- Interior Permanent Magnet Rotor
- Heavy duty rolled steel construction
- UL and CSA recognition
- Class F Insulation
- Integrated terminal box
- IP54 Enclosure
- Up to 60-degrees C ambient
- 56 Frame full round (no base)
- 3-Phase Input Power
  - > 230v and 460v product options
  - > 50Hz or 60Hz
  - 56, 140, 180 Frame NEMA rigid base mountings
  - > Custom mounting options available
  - > Custom shaft extension options
  - Shaft-End or Opposite Shaft-End control location
  - Operating speed feedback signal
  - IP55 Enclosure
  - Discrete speed options (up to 9 speeds)
  - Vertical Shaft-Down orientation
  - Multiple I/O speed control options
  - Program electronic control to run in constant torque mode

**STANDARD MODELS FEATURES**
- Multiple speed/HP operations
- Constant speed
- High efficiency over wide RPM range
- Vertical Shaft-up and Horizontal orientation
- Reliable ball bearings (6205 on both ends)
- Soft start with quiet operation
- Shaft-End control location
- Meets Class A EMI requirements
- Passive power factor correction (85-89% @ FL)
- 6000v transient capability
- Operating speed feedback signal
- Built-in intelligence and electronic protection
- ECM Toolbox™ compatible
- Drop-in for existing induction motors
- Accommodates smaller frame size, lighter weight
- 2 years warranty

**OPTIONS AVAILABLE FOR CUSTOM ORDERS (>24-pcs)**
- Program motor speeds to meet customer needs
- 56, 140, 180 Frame NEMA rigid base mountings
- > Custom mounting options available
- > Custom shaft extension options
- Shaft-End or Opposite Shaft-End control location
- Operating speed feedback signal
- IP55 Enclosure
- Discrete speed options (up to 9 speeds)
- Vertical Shaft-Down orientation
- Multiple I/O speed control options
- Program electronic control to run in constant torque mode

**BENEFITS**
- Suitable for indoor or outdoor environments, longer service life
- Noise reduction
- Controllability
- Application flexibility
- Easy installation
- Drop in replacement for 56-Frame induction motors
- Lower operation cost
### SyMAX-i® Stock Models

<table>
<thead>
<tr>
<th>HP</th>
<th>RPM</th>
<th>Voltage</th>
<th>Frame</th>
<th>CAT. NO.</th>
<th>MODEL NO.</th>
<th>List Price ($)</th>
<th>MULT. SYMB.</th>
<th>F.L. EFFIC (%)</th>
<th>F.L. AMPS</th>
<th>Power Factor (%)</th>
<th>Weight (lbs)</th>
<th>“C” Dim. (in)</th>
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<td>82.2 - 81.9</td>
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<td>200-230</td>
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<td>PM1</td>
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<td>16.52</td>
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<td>5.5 - 5.0</td>
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<td>17.77</td>
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<td>SI404</td>
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<td>1900.00</td>
<td>PM1</td>
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### SyMAX-i® Outline for Stock Models

![Diagram of Stock Model Dimensions](image-url)
## SyMAX-i® Model Number Nomenclature

<table>
<thead>
<tr>
<th>Position</th>
<th>Example</th>
<th>Characteristic</th>
<th>Defined Values</th>
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<tr>
<td>1</td>
<td>E</td>
<td>Agency Code</td>
<td>E = UL Recognized</td>
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<tr>
<td>2</td>
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<td>Frame Size</td>
<td>NEMA frame size designation</td>
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<td>Electrical Type</td>
<td>Y = Interior Permanent Magnet</td>
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<tr>
<td>4</td>
<td>2</td>
<td>Input Voltage</td>
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<td>4 = 460V</td>
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<td>3</td>
<td>Input Voltage Phase</td>
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<td>T</td>
<td>Enclosure Type</td>
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<td>Mount Style</td>
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<td>P</td>
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<td>M = Control SE, Horiz</td>
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<td></td>
<td>D = Control OSE, VSD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B = Control SE, VSD</td>
</tr>
</tbody>
</table>

## SyMAX-i® Performance Data

Typical motor performance
Efficiency vs Speed

2HP SyMAX-i vs Marathon X509 Induction motor with VFD