

FOR INDUSTRY PROFESSIONALS

- Why are there so many new ratings?
- Is there a difference between capacitors specified by OEM's and capacitors sold in the aftermarket?

- Can 440 Volt capacitors be used to replace 370 Volt models?
- How can quality be determined?
- What does 85°C temperature rating mean?

### Why are there so many new ratings?

- AC motor run capacitors are energy storage devices. In recent years, energy saving and energy management have become more critical than ever as HVAC equipment designs have been focused on ever higher efficiency levels. SEER, Seasonal Energy Efficiency Ratio, is the common standard by which air conditioning systems can be judged. The higher the SEER rating, the lower the cost to run the system.
- Higher levels of energy efficiency require capacitors with greater energy storage capacity. The new run capacitor models with higher microfarad ratings have been developed to accommodate higher system efficiency requirements.

### Is there a difference between capacitors specified by OEM's and those sold in the aftermarket?

#### YES

- OEM run capacitors are generally manufactured with stronger dielectrics (polypropylene film, positioned between the capacitor's plates) than aftermarket run capacitors. Stronger dielectrics result from greater film thickness. By comparison, OEM specified dielectric is between 17.2% and 20.8% greater than general aftermarket ratings. All **TRADE PRO** USA run capacitors are designed and built to OEM specifications.
- In some cases, there are different terminal requirements for specific OEM applications. That is why all **TRADE PRO** USA run capacitors have 4 spade quick connect terminals for maximum flexibility in wiring.

### Can 440 Volt capacitors be used to replace 370 Volt models?

#### YES

- **TRADE PRO** USA now offers 440/370 volt dual voltage rated AC motor run capacitors.

### How can quality be determined?

Today's AC motor run capacitors must meet rigid requirements to qualify for the two most important HVAC/R Industry specifications, EIA 456A and Tecumseh H-115. All **TRADE PRO** USA motor run capacitors meet these demanding specifications. That means contractors can install **TRADE PRO** USA run capacitors with the utmost of confidence.

EIA 456A, a standard set by the Electronics Industries Association, calls for testing at 125% of a capacitor's rated voltage and 100 degrees C above its rated temperature for 2,000 hours. This simulates 60,000 hours of operation in the field. The 1st year failure rate must be less than 1/2 of 1% in order for **TRADE PRO** USA run capacitors to meet this spec.

EIA 456A is an extremely rigorous specification that amply defines the best and most needed characteristics of an AC motor run capacitor.

The Tecumseh H-115 test calls for 150% of rated voltage at 10°C above rated temp for 500 hours. The capacitance cannot change more than 5% during the test.

### What does 85°C temperature rating mean?

Recently, there have been claims regarding run capacitors manufactured to an 85°C specification. This sounds impressive, yet strange. Eighty-five degrees C performance is not a typical specification. **The temperature standard for rating capacitors is 70°C.** As a rule of thumb, for every 10 degrees C increase over a capacitor's rated temperature, there is a 50% reduction in life. A run capacitor built to an 85°C specification must have increased dielectric film thickness and then, consequently, a larger case in most ratings. All of this does not help a capacitor perform its primary function, storing energy. No major HVAC/R OEM specifies 85°C as a requirement for run capacitor application and use in their equipment.



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## SINGLE SECTION

TRADEPRO NO.	DESCRIPTION
TP-CAP-5/370USA	5 MFD 370V OVL
TP-CAP-5/440USA	5 MFD 440/370V OVL
TP-CAP-5/440USA-R	5 MFD 440/370V RND
TP-CAP-7.5/370USA	7.5 MFD 370V OVL
TP-CAP-7.5/440USA	7.5 MFD 440/370V OVL
TP-CAP-7.5/440USA-R	7.5 MFD 440/370V RND
TP-CAP-10/370USA	10 MFD 370V OVL
TP-CAP-10/440USA	10 MFD 440/370V OVL
TP-CAP-10/440USA-R	10 MFD 440/370V RND
TP-CAP-12.5/370USA	12.5 MFD 370V OVL
TP-CAP-12.5/440USA	12.5 MFD 440/370V OVL
TP-CAP-15/370USA	15 MFD 370V OVL
TP-CAP-15/440USA	15 MFD 440/370V OVL
TP-CAP-15/440USA-R	15 MFD 440/370V RND
TP-CAP-20/440USA-R	20 MFD 440/370V RND
TP-CAP-25/440USA-R	25 MFD 440/370V RND
TP-CAP-30/440USA-R	30 MFD 440/370V RND
TP-CAP-35/440USA-R	35 MFD 440/370V RND
TP-CAP-40/440USA-R	40 MFD 440/370V RND
TP-CAP-45/440USA-R	45 MFD 440/370V RND
TP-CAP-50/440USA-R	50 MFD 440/370V RND
TP-CAP-55/440USA-R	55 MFD 440/370V RND
TP-CAP-65/440USA-R	65 MFD 440/370V RND
TP-CAP-60/440USA-R	60 MFD 440/370V RND
TP-CAP-70/440USA-R	70 MFD 440/370V RND
TP-CAP-80/440USA-R	80 MFD 440/370V RND

## DUAL SECTION

TRADEPRO NO.	DESCRIPTION
TP-CAP-25/3/440USA-R	25/3 MFD 440/370V RND
TP-CAP-25/5/440USA-R	25/5 MFD 440/370V RND
TP-CAP-30/3/440USA-R	30/3 MFD 440/370V RND
TP-CAP-30/5/440USA-R	30/5 MFD 440/370V RND
TP-CAP-30/7.5/440USA-R	30/7.5MFD 440/370V RND
TP-CAP-35/3/440USA-R	35/3 MFD 440/370V RND
TP-CAP-35/5/440USA-R	35/5 MFD 440/370V RND
TP-CAP-35/7.5/440USA-R	35/7.5MFD 440/370V RND
TP-CAP-35/10/440USA-R	35/10 MFD 440V RND
TP-CAP-40/3/440USA-R	40/3 MFD 440/370V RND
TP-CAP-40/5/440USA-R	40/5 MFD 440/370V RND
TP-CAP-40/7.5/440USA-R	40/7.5MFD 440/370V RND
TP-CAP-40/10/440USA-R	40/10 MFD 440/370V RND
TP-CAP-45/5/440USA-R	45/5 MFD 440/370V RND
TP-CAP-45/7.5/440USA-R	45/7.5MFD 440/370V RND
TP-CAP-45/10/440USA-R	45/10 MFD 440/370V RND
TP-CAP-50/5/440USA-R	50/5 MFD 440/370V RND
TP-CAP-50/7.5/440USA-R	50/7.5MFD 440/370V RND
TP-CAP-55/10/440USA-R	55/10 MFD 440/370V RND
TP-CAP-55/5/440USA-R	55/5 MFD 440/370V RND
TP-CAP-55/7.5/440USA-R	55/7.5MFD 440/370V RND
TP-CAP-60/5/440USA-R	60/5 MFD 440/370V RND
TP-CAP-60/7.5/440USA-R	60/7.5MFD 440/370V RND
TP-CAP-60/10/440USA-R	60/10 MFD 440/370V RND
TP-CAP-65/10/440USA-R	65/10 MFD 440/370V RND
TP-CAP-70/5/440USA-R	70/5 MFD 440/370V RND
TP-CAP-70/7.5/440USA-R	70/7.5MFD 440/370V RND
TP-CAP-70/10/440USA-R	70/10 MFD 440/370V RND
TP-CAP-80/5/440USA-R	80/5 MFD 440/370V RND
TP-CAP-80/7.5/440USA-R	80/7.5MFD 440/370V RND
TP-CAP-80/10/440USA-R	80/10 MFD 440/370V RND

**5**  
Year  
Warranty!

