

# ARCO ELECTRIC PRODUCTS

2325 E. MICHIGAN ROAD

SHELBYVILLE, IN 46176

## AUTOMATIC SERIES SWITCHED PFC CAPACITORS



### DESCRIPTION

#### General

- The Automatic power factor correction capacitor systems are designed to automatically switch capacitors in and out of the three phase electrical system in order to maintain a predetermined level of power factor. Commercial and industrial customers with large loads are able to maintain a desired power factor level driven by utility tariffs as well as reduce system losses. The benefit in using an automatic bank of capacitors allows for fewer installations than when using smaller fixed capacitor banks, and the installation costs can be reduced drastically when using the automatic systems. Automatic banks are virtually maintenance free after installation. The fully automated controller in the automatic power factor bank provides utility grade metering that offers real time power and energy monitoring with hundreds of parameters captured, logged, and available for taking action and/ or passing to other systems displayed locally and/ or remotely.

#### Construction

- All standard components which include the three phase capacitor cells, controller, contactors, fuses & fuse blown indicator lights, ventilation system, power ON/OFF indicator lights, and the Push-to-Test push buttons are housed in a 12 Gauge NEMA 1 steel cabinet enclosure with ANSI #70 light grey paint. The enclosure panel comes complete with removable lifting eyes and lockable door handle. All units include the split-core current transformer which will be used in conjunction with the controller – PLEASE SPECIFY THE CURRENT RATING OF THE THREE PHASE SWITCHGEAR SERVICE IN ORDER TO CORRECTLY SIZE THE SPLIT-CORE TRANSFORMER.

#### Capacitor Cell Design

- The high quality three phase cells which are used in the construction of the power factor banks are vacuum-impregnated metallized polypropylene filled with a dielectric fluid and hermetically sealed in a

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rugged steel welded case to give added insulation, excellent corona protection, and a moisture barrier.

- The dielectric fluid used in the capacitor cells is a green Non-PCB, non-toxic, biodegradable, and Class III combustible fluid.
- Self-healing technology in case of overload, the self-healing properties of the low loss metallized polypropylene will prevent permanent dielectric breakdown.
- Internal Pressure-Sensitive Interrupter which safely removes the capacitor from service at the end-of-life or under heavy fault conditions while still maintaining the integrity of the steel casing.
- Internal resistors discharge voltage is less than 50 volts in less than 1 minute after the cell has electrically been removed from circuit.
- The capacitor design has a total loss which is less than .5 Watts per kVAR at 60 HZ 25 degrees C.

### Electrical Characteristics

- 240 VAC, 480 VAC, 600 VAC rated Voltage at 60 HZ
- 50 – 1000 KVAR sizes available – FOR SIZES ABOVE 1000 KVAR CONSULT FACTORY.
- Capacitance Tolerance is + or – 15%.
- Overcurrent Tolerance is 135% of rated current continuously.
- Overvoltage Tolerance is 110% of rated voltage
- Standard Operating Temperature is -40 F to +115 F. Operation above 115 F will shorten the capacitor life.

### Wiring Cable Insulation

- All internal conductors are insulated stranded copper wire rated at 90 C.

### Fuse Protection & Indicator Lights

- The internal control fuses are time-delay and rated at 600 VAC in accordance with the National Electric Code requirements. Breaker tripped lights shall be included to indicate when the capacitor breaker has tripped. Blown fuse indicator lights shall be included on each control circuit fuse. Lights shall be mounted on enclosure door for easy viewing

### Switched Capacitor Breakers

- ARCO Electric Products uses 3 Pole molded case circuit breakers to protect each of the switched capacitor stages in the automatic unit. They are rated 600 VAC and suitable for use in 208, 240, 480, and 600 VAC applications. The high interrupting capacity of the breaker carries a 65kA rating. The breaker has an adjustable thermal (.8 – 1.0), fixed magnetic type. Each breaker is equipped with an alarm switch indicator that triggers an indicator light when the breaker is tripped due to overload, short-circuit, operation of shunt trip, or under voltage trip conditions

### OPTIONAL EQUIPMENT FEATURES AVAILABLE

- **Tuning Filter Reactors**
- **Outdoor NEMA 3R Enclosure**
- **Molded-Case Circuit Breaker internally mounted with external operator**

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- Main Fused Disconnect Switch in smaller units – CONSULT FACTORY
- UL Listed Service Entrance
- Panel View for controller
- Ethernet Connection for remote data access
- Bottom Enclosure Panel Entry (Standard location is top right side of enclosure)
- Safety Door Interlock (Only required if door entry is on the left side of enclosure panel.)

### WARRANTY

- 5-YEAR WARRANTY on the capacitor cells
- For single phase applications change Prefix Number from 3 to 1 on the Catalog Number.
- For 208 VAC applications divide kVAR size by .75 to find equivalent in 240 VAC rated size.

### SIZES AVAILABLE

kVAR	240 VAC Catalog Number	480 VAC Catalog Number	600 VAC Catalog Number
50	324050AS2L	348050AS2L	360050AS2L
75	324075AS3L	348075AS3L	360075AS3L
100	3240100AS4L	3480100AS4L	3600100AS4L
125	3240125AS5L	3480125AS5L	3600125AS5L
150	3240150AS6L	3480150AS3L	3600150AS3L
175	3240175AS7L	3480175AS7L	3600175AS7L
200	3240200AS8L	3480200AS4L	3600200AS4L
250	3240250AS10L	3480250AS5L	3600250AS5L
300	3240300AS12L	3480300AS6L	3600300AS6L
350		3480350AS7L	3600350AS7L
400		3480400AS8L	3600400AS8L
450		3480450AS9L	3600450AS9L
500		3480500AS10L	3600500AS10L
550		3480550AS11L	3600550AS11L
600		3480600AS12L	3600600AS12L
650		3480650AS13L	3600650AS13L
700		3480700AS14L	3600700AS14L
750		3480750AS15L	3600750AS15L
800		3480800AS16L	3600800AS16L
850		3480850AS17L	3600850AS17L
900		3480900AS18L	3600900AS18L
1000		34801000AS20L	36001000AS20L

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