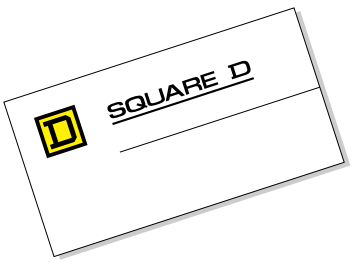
# CLASS 5810
# REACTIVAR™ Power Factor Capacitors
# Fixed Fused and Unfused

**Square D's new ReactiVar Fixed Power Factor Correction Capacitors are now constructed with an entirely dry dielectric system.**

- New dry design provides no risk of fluid leakage, no environmental pollution and no need for drip pans.
- Available up to 300kVAR, 600V.
- Low loss self-healing Metalized Polypropylene Cell design has less than 0.5W/kVAR losses.
- Patented Multiple Protection Feature incorporates an internal protection device which negates the need for external fuses. Capacitor elements are encased in a non-flammable vermiculite filler as an added safety feature.
- For specifications which call for fusing, 3 phase current-limiting fusing is standard.
- Blown fuse indicators are standard on fused units.
- Large terminals for easy cable connection.
- Available in Type 1/12 indoor and 3R outdoor enclosure types.
- Convenient ground lug included as standard.
- Common footprint on all units up to 100 kVAR.
- Attractive finish: Indoor units are constructed of welded mild steel finished in a medium-blue textured polyester paint finish. Outdoor units are finished in ASA 61 light-grey outdoor paint.
- Mounting feet for easy installation. Wall mounting brackets available.
- UL Listed.
- CSA Certified.
- Complies with IEC standards.

Many Utilities effectively charge a penalty for low power factor. Power factor correction capacitors supply the reactive power (kVAR) required by inductive loads. By correcting poor power factor, capacitors reduce kVA demand thus off-loading transformers, switchgear and other equipment. The reduced kVA demand results in lower utility power bills, cooler equipment operation and longer equipment life.

ReactiVar dry fixed capacitors are ideally suited for power factor correction in applications where the load does not change or where the capacitor is switched with the load, such as the load side of a motor starter. ReactiVar capacitors are available up to 100 kVAR as individual units, and up to 300 kVAR in banks. Assemblies are available unfused, or fused with 3 fuses and 3 blown fuse indicators. Enclosures are available as indoor Type 1/12 or optional outdoor Type 3R and are suitable for floor or wall mounting with an optional wall mounting bracket.



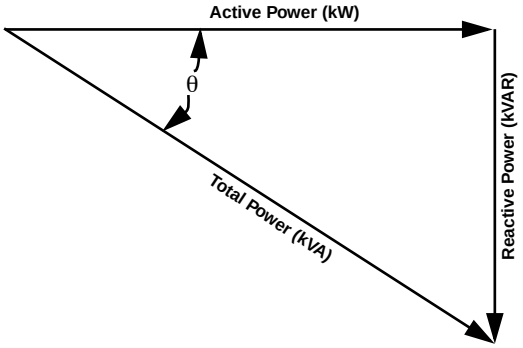



**FIGURE 1**

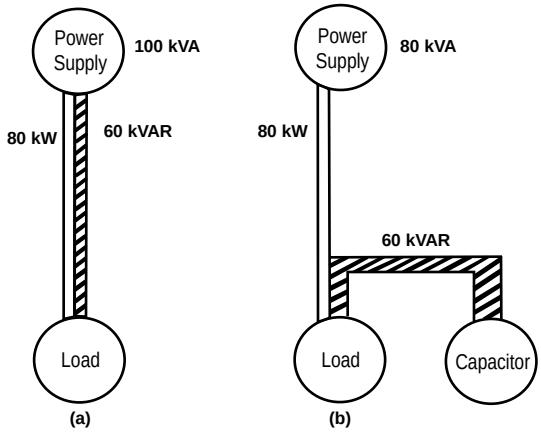



**FIGURE 2**

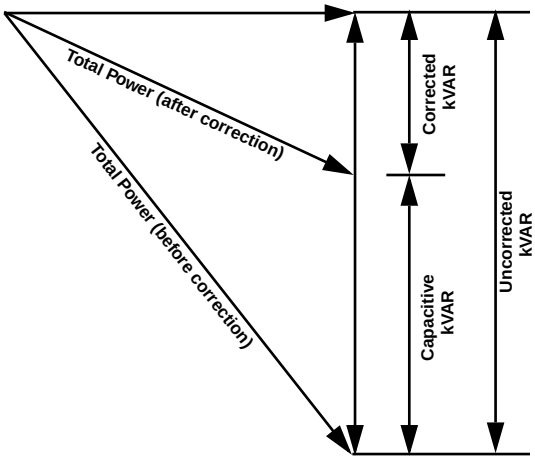



**FIGURE 3**

The total current required by inductive loads such as motors, transformers, and fluorescent lighting may be considered to be made up of two separate types of current.

*Active current* (or power producing current) is the current which is converted into useful work such as turning a lathe, providing light or pumping water. The power produced by this component is the *kilowatt* (kW).

*Reactive current* (also known as wattless, magnetizing or nonworking current) is the current which provides the magnetic flux necessary for the operation of these loads but is not converted into useful work. The power produced by this component is the *kilovar* (kVAR).

The *total current* is the current which is measured on an ammeter. It is the sum of both the active and the reactive components. The power produced by the total current is measured in *kilovolt amperes* (kVA).

## Power Triangle

The relations between the various power components and the system voltage are illustrated in the power triangle shown in Figure 1. From Figure 1, it is apparent that the active power component is *in phase* with the applied voltage while the reactive component occurs 90 degrees out of phase with the voltage.

The equation that defines this relationship is:

$$(kW)^2 + (kVAR)^2 = (kVA^2)$$

Power Factor is the ratio of Real Power Consumed to Total Power Consumed (kW/kVA) and is in fact, a measure of efficiency. When the power factor reaches unity (as measured at the utility power meter), it can be said that the plant is operating at maximum efficiency. Depending on the local utility rate structure, a power factor below unity may result in higher utility power bills than are necessary.

## Power Factor Correction

Power factor can be improved by either increasing the active power component or reducing the reactive component. Of course, increasing the active power component for the sole purpose of power factor correction would not be economically feasible. Thus, the only practical means for improving a systems power factor is to reduce the reactive power component.

One method of reducing this component is to provide reactive power locally at the load. This method will improve the power factor from the point where the reactive power source is connected back to the source. As an example, consider the load in Figure 2a. The total power required is 100 kVA of which 80 kW is active power and 60 kVAR is reactive power. If the reactive power is furnished locally (Figure 2b), the power system only has to carry 80 kVA (80 kW). Thus, the power factor (from the point where the reactive power is locally supplied back to the source) is improved to unity.

## Capacitors for Power Factor Correction

Properly selected, capacitors offer an ideal means for improving the power factor of an inductive load. When a capacitor is connected to an inductive load, it acts as a reactive power generator locally furnishing the necessary reactive current required by the inductive load. In fact, power factor capacitors are rated in kVAR to indicate their reactive power generating capability.

Capacitors are able to perform this function since they draw a leading current which will effectively cancel lagging inductive current, complete cancellation of the two current components occur and the reactive power component will be reduced to zero. This is illustrated in Figure 3.

The result of improved power factor is reduced utility demand resulting in lower utility demand bills, released system capacity and lower system losses.

## PFC Selection for Individual Motors

1. Select a capacitor kVAR size from Table 1 to match motor HP and speed. Select a capacitor catalog number to match the kVAR selection and motor voltage. If an exact size is not available, select the next ***lower*** size. Capacitors selected from Table 1 correct ***full load*** motor PF to approximately 95%.
2. Consult Square D for application of capacitors on motor frame types other than shown by Table 1.
3. When capacitors are applied on the load side of the motor over loads (as shown in diagram on page 5), reduce the overload or trip relay setting by the percent (%AR) in Table 1.
4. When the motor is controlled by other than full voltage non-reversing across the line starters, locate the capacitor upstream from the controller. ***Do not*** apply capacitors on the load side of motor starters subject to reversing, inching, jogging or plugging, or that are multi-speed, open transition, solid state, or when the load may drive the motor such as with cranes or elevators. ***Never*** apply capacitors in the presence of variable frequency drives, welders, soft starters or other non-linear loads. See application note on page 5.

## Suggested Capacitor Ratings (kVAR)

### TABLE 1 – Indoor Low Voltage T-Frame NEMA Class B Induction Motors

| Motor Rating (HP) | Nominal Motor Speed | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3600 RPM | | 1800 RPM | | 1200 RPM | | 900 RPM | | 720 RPM | | 600 RPM | |
| | Capacitor Rating | % AR | Capacitor Rating | % AR | Capacitor Rating | % AR | Capacitor Rating | % AR | Capacitor Rating | % AR | Capacitor Rating | % AR |
| 3 | 1.5 | 14 | 1.5 | 23 | 2.5 | 28 | 3 | 38 | 3 | 40 | 4 | 40 |
| 5 | 2 | 14 | 2.5 | 22 | 3 | 26 | 4 | 31 | 4 | 40 | 5 | 40 |
| 7.5 | 2.5 | 14 | 3 | 20 | 4 | 21 | 5 | 28 | 5 | 38 | 6 | 45 |
| 10 | 4 | 14 | 4 | 18 | 5 | 21 | 6 | 27 | 7.5 | 36 | 8 | 38 |
| 15 | 5 | 12 | 5 | 18 | 6 | 20 | 7.5 | 24 | 8 | 32 | 10 | 34 |
| 20 | 6 | 12 | 6 | 17 | 7.5 | 19 | 9 | 23 | 10 | 29 | 12 | 30 |
| 25 | 7.5 | 12 | 7.5 | 17 | 8 | 19 | 10 | 23 | 12 | 25 | 18 | 30 |
| 30 | 8 | 11 | 8 | 16 | 10 | 19 | 14 | 22 | 15 | 24 | 22.5 | 30 |
| 40 | 2 | 12 | 13 | 15 | 16 | 19 | 18 | 21 | 22.5 | 24 | 25 | 30 |
| 50 | 15 | 12 | 18 | 15 | 20 | 19 | 22.5 | 21 | 24 | 24 | 30 | 30 |
| 60 | 18 | 12 | 21 | 14 | 22.5 | 17 | 26 | 20 | 30 | 22 | 35 | 28 |
| 75 | 20 | 12 | 23 | 14 | 25 | 15 | 28 | 17 | 33 | 14 | 40 | 19 |
| 100 | 22.5 | 11 | 30 | 14 | 30 | 12 | 35 | 16 | 40 | 15 | 45 | 17 |
| 125 | 25 | 10 | 36 | 12 | 35 | 12 | 42 | 14 | 45 | 15 | 50 | 17 |
| 150 | 30 | 10 | 42 | 12 | 40 | 12 | 52.5 | 14 | 52.5 | 14 | 60 | 17 |
| 200 | 35 | 10 | 50 | 11 | 50 | 10 | 65 | 13 | 68 | 13 | 90 | 17 |
| 250 | 40 | 11 | 60 | 10 | 62.5 | 10 | 82 | 13 | 87.5 | 13 | 100 | 17 |
| 300 | 45 | 11 | 68 | 10 | 75 | 12 | 100 | 14 | 100 | 13 | 120 | 17 |
| 350 | 50 | 12 | 75 | 8 | 90 | 12 | 120 | 13 | 120 | 13 | 135 | 15 |
| 400 | 75 | 10 | 80 | 8 | 100 | 12 | 130 | 13 | 140 | 13 | 150 | 15 |
| 450 | 80 | 8 | 90 | 8 | 120 | 10 | 140 | 12 | 160 | 14 | 160 | 15 |
| 500 | 100 | 8 | 120 | 9 | 150 | 12 | 160 | 12 | 180 | 13 | 180 | 15 |

***Please note: These tables are to be used for T-Frame NEMA class B induction motors only – please contact the Groupe Schneider Power Quality Correction Group for any other applications, or motor types.***

**208 & 240 Volt 3 Phase/60Hz**

| kVAR Rating | | Indoor Type 1/12 | | | Outdoor Type 3R | | | Rated Current (Amperes) | | Recommended Wire Size ▲ | Recommended Minimum Size Protection Rating (Amperes) ▲ | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Fuse | | Breaker Trip | |
| @ 240V | @208V | Unfused | Fused | Enclosure ✗ | Unfused | Fused | Enclosure ✗ | @240V | @208V | (AWG) | @240V | @208V | @240V | @208V |
| 2.5 | 1.88 | PFCD2002 | PFCD2002F | 1 | PFCD2002R | PFCD2002RF | 1R | 6.0 | 5.2 | 14 | 10 | 10 | 15 | 15 |
| 3.5 | 2.63 | PFCD2003 | PFCD2003F | 1 | PFCD2003R | PFCD2003RF | 1R | 8.4 | 7.3 | 14 | 15 | 15 | 15 | 15 |
| 4 | 3.00 | PFCD2004 | PFCD2004F | 1 | PFCD2004R | PFCD2004RF | 1R | 9.6 | 8.3 | 14 | 20 | 15 | 15 | 15 |
| 5 | 3.75 | PFCD2005 | PFCD2005F | 1 | PFCD2005R | PFCD2005RF | 1R | 12.1 | 10.4 | 12 | 20 | 20 | 20 | 20 |
| 6 | 4.50 | PFCD2006 | PFCD2006F | 1 | PFCD2006R | PFCD2006RF | 1R | 14.5 | 12.5 | 12 | 25 | 25 | 25 | 20 |
| 7.5 | 5.63 | PFCD2007 | PFCD2007F | 1 | PFCD2007R | PFCD2007RF | 1R | 18.1 | 15.6 | 10 | 30 | 30 | 30 | 25 |
| 10 | 7.50 | PFCD2010 | PFCD2010F | 1 | PFCD2010R | PFCD2010RF | 1R | 24.1 | 20.9 | 8 | 40 | 35 | 40 | 35 |
| 12.5 | 9.38 | PFCD2012 | PFCD2012F | 1 | PFCD2012R | PFCD2012RF | 1R | 30.1 | 26.1 | 8 | 50 | 45 | 45 | 40 |
| 15 | 11.25 | PFCD2015 | PFCD2015F | 1 | PFCD2015R | PFCD2015RF | 1R | 36.2 | 31.3 | 8 | 60 | 60 | 60 | 50 |
| 17.5 | 13.13 | PFCD2017 | PFCD2017F | 2 | PFCD2017R | PFCD2017RF | 2R | 42.2 | 36.5 | 6 | 70 | 60 | 70 | 60 |
| 20 | 15.00 | PFCD2020 | PFCD2020F | 2 | PFCD2020R | PFCD2020RF | 2R | 48.2 | 41.7 | 6 | 80 | 70 | 80 | 70 |
| 22.5 | 16.88 | PFCD2022 | PFCD2022F | 2 | PFCD2022R | PFCD2022RF | 2R | 54.2 | 46.9 | 4 | 90 | 80 | 90 | 70 |
| 25 | 18.75 | PFCD2025 | PFCD2025F | 3 | PFCD2025R | PFCD2025RF | 3R | 60.3 | 52.1 | 4 | 100 | 90 | 90 | 80 |
| 27.5 | 20.63 | PFCD2027 | PFCD2027F | 3 | PFCD2027R | PFCD2027RF | 3R | 66.3 | 57.3 | 3 | 125 | 100 | 100 | 90 |
| 30 | 22.50 | PFCD2030 | PFCD2030F | 3 | PFCD2030R | PFCD2030RF | 3R | 72.3 | 62.6 | 3 | 125 | 125 | 125 | 100 |
| 35 | 26.25 | PFCD2035 | PFCD2035F | 4 | PFCD2035R | PFCD2035RF | 4R | 84.4 | 73.0 | 2 | 150 | 125 | 150 | 125 |
| 40 | 30.00 | PFCD2040 | PFCD2040F | 5 | PFCD2040R | PFCD2040RF | 5R | 96.4 | 83.4 | 1/0 | 175 | 150 | 150 | 125 |
| 45 | 33.75 | PFCD2045 | PFCD2045F | 7 | PFCD2045R | PFCD2045RF | 7R | 108.5 | 93.8 | 1/0 | 200 | 175 | 175 | 150 |
| 50 | 37.50 | PFCD2050 | PFCD2050F | 7 | PFCD2050R | PFCD2050RF | 7R | 120.5 | 104.3 | 2/0 | 200 | 175 | 200 | 175 |
| 60 | 45.00 | PFCD2060 | PFCD2060F | 7 | PFCD2060R | PFCD2060RF | 7R | 144.6 | 125.1 | 3/0 | 250 | 200 | 225 | 200 |
| 70 | 52.50 | PFCD2070 | PFCD2070F | 8 | PFCD2070R | PFCD2070RF | 8R | 168.7 | 146.0 | 4/0 | 300 | 250 | 300 | 225 |
| 75 | 56.25 | PFCD2075 | PFCD2075F | 10 | PFCD2075R | PFCD2075RF | 10R | 180.8 | 156.4 | 250 MCM | 300 | 300 | 300 | 250 |

◆ Wall mounting brackets available for units up to 40 kVAR. Order catalogue number PFCDBR1 (sold in pairs). Wall mounting brackets not available for units above 40 kVAR.
▲ Consult local Electrical Codes for proper sizing of moulded case circuit breaker frame, disconnect switch rating, and wire size.
✗ For dimensions, see page 5.
■ For additional sizes, ratings or options, please consult your nearest Square D/Groupe Schneider sales office.

**480 Volt 3 Phase/60Hz**

| kVAR Rating | Indoor Type 1/12 | | | Outdoor Type 3R | | | Rated Current (Amperes) | Recommended Wire Size ▲ | Recommended Minimum Size Protection Rating (Amperes) ▲ | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Fuse | Breaker Trip |
| @ 480V | Unfused | Fused | Enclosure ✗ | Unfused | Fused | Enclosure ✗ | @ 480V | (AWG) | @ 480V | @ 480V |
| 2.5 | PFCD4002 | PFCD4002F | 1 | PFCD4002R | PFCD4002RF | 1R | 3.0 | 14 | 5 | 15 |
| 4 | PFCD4004 | PFCD4004F | 1 | PFCD4004R | PFCD4004RF | 1R | 4.8 | 14 | 10 | 15 |
| 5 | PFCD4005 | PFCD4005F | 1 | PFCD4005R | PFCD4005RF | 1R | 6.0 | 14 | 10 | 15 |
| 6 | PFCD4006 | PFCD4006F | 1 | PFCD4006R | PFCD4006RF | 1R | 7.2 | 14 | 15 | 15 |
| 7.5 | PFCD4007 | PFCD4007F | 1 | PFCD4007R | PFCD4007RF | 1R | 9.0 | 14 | 15 | 15 |
| 10 | PFCD4010 | PFCD4010F | 1 | PFCD4010R | PFCD4010RF | 1R | 12.0 | 12 | 20 | 20 |
| 12.5 | PFCD4012 | PFCD4012F | 1 | PFCD4012R | PFCD4012RF | 1R | 15.0 | 10 | 25 | 25 |
| 15 | PFCD4015 | PFCD4015F | 1 | PFCD4015R | PFCD4015RF | 1R | 18.0 | 10 | 30 | 30 |
| 17.5 | PFCD4017 | PFCD4017F | 1 | PFCD4017R | PFCD4017RF | 1R | 21.0 | 10 | 35 | 35 |
| 20 | PFCD4020 | PFCD4020F | 1 | PFCD4020R | PFCD4020RF | 1R | 24.0 | 8 | 40 | 40 |
| 22.5 | PFCD4022 | PFCD4022F | 1 | PFCD4022R | PFCD4022RF | 1R | 27.0 | 8 | 45 | 45 |
| 25 | PFCD4025 | PFCD4025F | 2 | PFCD4025R | PFCD4025RF | 2R | 30.0 | 8 | 50 | 45 |
| 27.5 | PFCD4027 | PFCD4027F | 2 | PFCD4027R | PFCD4027RF | 2R | 33.0 | 8 | 60 | 50 |
| 30 | PFCD4030 | PFCD4030F | 2 | PFCD4030R | PFCD4030RF | 2R | 36.0 | 8 | 60 | 55 |
| 35 | PFCD4035 | PFCD4035F | 3 | PFCD4035R | PFCD4035RF | 3R | 42.0 | 6 | 70 | 65 |
| 40 | PFCD4040 | PFCD4040F | 3 | PFCD4040R | PFCD4040RF | 3R | 48.0 | 6 | 80 | 75 |
| 45 | PFCD4045 | PFCD4045F | 4 | PFCD4045R | PFCD4045RF | 4R | 54.0 | 4 | 90 | 85 |
| 50 | PFCD4050 | PFCD4050F | 4 | PFCD4050R | PFCD4050RF | 4R | 60.0 | 4 | 100 | 90 |
| 60 | PFCD4060 | PFCD4060F | 5 | PFCD4060R | PFCD4060RF | 5R | 72.0 | 3 | 125 | 125 |
| 70 | PFCD4070 | PFCD4070F | 5 | PFCD4070R | PFCD4070RF | 5R | 84.0 | 2 | 150 | 150 |
| 75 | PFCD4075 | PFCD4075F | 5 | PFCD4075R | PFCD4075RF | 5R | 90.0 | 1 | 150 | 150 |
| 80 | PFCD4080 | PFCD4080F | 6 | PFCD4080R | PFCD4080RF | 6R | 96.0 | 1/0 | 175 | 150 |
| 90 | PFCD4090 | PFCD4090F | 6 | PFCD4090R | PFCD4090RF | 6R | 108.0 | 1/0 | 200 | 175 |
| 100 | PFCD4100 | PFCD4100F | 6 | PFCD4100R | PFCD4100RF | 6R | 120.0 | 2/0 | 200 | 200 |
| 125 | PFCD4125 | PFCD4125F | 9 | PFCD4125R | PFCD4125RF | 9R | 150.0 | 4/0 | 250 | 225 |
| 150 | PFCD4150 | PFCD4150F | 9 | PFCD4150R | PFCD4150RF | 9R | 180.0 | 250MCM | 300 | 300 |
| 175 | PFCD4175 | PFCD4175F | 11 | PFCD4175R | PFCD4175RF | 11R | 210.0 | 300MCM | 350 | 350 |
| 200 | PFCD4200 | PFCD4200F | 11 | PFCD4200R | PFCD4200RF | 11R | 240.0 | (2) 2/0 | 400 | 400 |
| 225 | PFCD4225 | PFCD4225F | 12 | PFCD4225R | PFCD4225RF | 12R | 270.0 | (3) 3/0 | 500 | 450 |
| 250 | PFCD4250 | PFCD4250F | 13 | PFCD4250R | PFCD4250RF | 13R | 300.0 | (2) 4/0 | 500 | 450 |
| 275 | PFCD4275 | PFCD4275F | 13 | PFCD4275R | PFCD4275RF | 13R | 330.0 | (2) 4/0 | 550 | 500 |
| 300 | PFCD4300 | PFCD4300F | 13 | PFCD4300R | PFCD4300RF | 13R | 360.0 | (2) 250MCM | 600 | 550 |

**600 Volt 3 Phase/60Hz**

| kVAR Rating | Indoor Type 1/12 | | | Outdoor Type 3R | | | Rated Current (Amperes) | Recommended Wire Size ▲ | Recommended Minimum Size Protection Rating (Amperes) ▲ | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Fuse | Breaker Trip |
| @ 600V | Unfused | Fused | Enclosure ✗ | Unfused | Fused | Enclosure ✗ | @ 600V | (AWG) | @ 600V | @ 600V |
| 3 | PFCD6003 | PFCD6003F | 1 | PFCD6003R | PFCD6003RF | 1R | 2.9 | 14 | 5 | 15 |
| 4 | PFCD6004 | PFCD6004F | 1 | PFCD6004R | PFCD6004RF | 1R | 3.8 | 14 | 10 | 15 |
| 5 | PFCD6005 | PFCD6005F | 1 | PFCD6005R | PFCD6005RF | 1R | 4.8 | 14 | 10 | 15 |
| 6 | PFCD6006 | PFCD6006F | 1 | PFCD6006R | PFCD6006RF | 1R | 5.8 | 14 | 10 | 15 |
| 7.5 | PFCD6007 | PFCD6007F | 1 | PFCD6007R | PFCD6007RF | 1R | 7.2 | 14 | 15 | 15 |
| 10 | PFCD6010 | PFCD6010F | 1 | PFCD6010R | PFCD6010RF | 1R | 9.6 | 14 | 20 | 15 |
| 12.5 | PFCD6012 | PFCD6012F | 1 | PFCD6012R | PFCD6012RF | 1R | 12.0 | 12 | 20 | 20 |
| 15 | PFCD6015 | PFCD6015F | 1 | PFCD6015R | PFCD6015RF | 1R | 14.4 | 12 | 25 | 25 |
| 17.5 | PFCD6017 | PFCD6017F | 1 | PFCD6017R | PFCD6017RF | 1R | 16.8 | 10 | 30 | 25 |
| 20 | PFCD6020 | PFCD6020F | 1 | PFCD6020R | PFCD6020RF | 1R | 19.2 | 10 | 35 | 30 |
| 22.5 | PFCD6022 | PFCD6022F | 1 | PFCD6022R | PFCD6022RF | 1R | 21.6 | 10 | 40 | 35 |
| 25 | PFCD6025 | PFCD6025F | 2 | PFCD6025R | PFCD6025RF | 2R | 24.1 | 8 | 40 | 40 |
| 27.5 | PFCD6027 | PFCD6027F | 2 | PFCD6027R | PFCD6027RF | 2R | 26.5 | 8 | 45 | 40 |
| 30 | PFCD6030 | PFCD6030F | 2 | PFCD6030R | PFCD6030RF | 2R | 28.9 | 8 | 50 | 50 |
| 35 | PFCD6035 | PFCD6035F | 3 | PFCD6035R | PFCD6035RF | 3R | 33.7 | 8 | 60 | 60 |
| 40 | PFCD6040 | PFCD6040F | 3 | PFCD6040R | PFCD6040RF | 3R | 38.5 | 6 | 70 | 60 |
| 45 | PFCD6045 | PFCD6045F | 4 | PFCD6045R | PFCD6045RF | 4R | 43.3 | 6 | 80 | 70 |
| 50 | PFCD6050 | PFCD6050F | 4 | PFCD6050R | PFCD6050RF | 4R | 48.1 | 6 | 80 | 80 |
| 60 | PFCD6060 | PFCD6060F | 5 | PFCD6060R | PFCD6060RF | 5R | 57.7 | 4 | 100 | 90 |
| 70 | PFCD6070 | PFCD6070F | 5 | PFCD6070R | PFCD6070RF | 5R | 67.3 | 3 | 125 | 110 |
| 75 | PFCD6075 | PFCD6075F | 5 | PFCD6075R | PFCD6075RF | 5R | 72.2 | 3 | 125 | 110 |
| 80 | PFCD6080 | PFCD6080F | 6 | PFCD6080R | PFCD6080RF | 6R | 77.0 | 2 | 150 | 125 |
| 90 | PFCD6090 | PFCD6090F | 6 | PFCD6090R | PFCD6090RF | 6R | 86.6 | 1 | 150 | 150 |
| 100 | PFCD6100 | PFCD6100F | 6 | PFCD6100R | PFCD6100RF | 6R | 96.2 | 1/0 | 175 | 150 |
| 125 | PFCD6125 | PFCD6125F | 9 | PFCD6125R | PFCD6125RF | 9R | 120.3 | 2/0 | 200 | 200 |
| 150 | PFCD6150 | PFCD6150F | 9 | PFCD6150R | PFCD6150RF | 9R | 144.3 | 3/0 | 250 | 225 |
| 175 | PFCD6175 | PFCD6175F | 11 | PFCD6175R | PFCD6175RF | 11R | 168.4 | 4/0 | 300 | 275 |
| 200 | PFCD6200 | PFCD6200F | 11 | PFCD6200R | PFCD6200RF | 11R | 192.4 | 300MCM | 350 | 300 |
| 225 | PFCD6225 | PFCD6225F | 12 | PFCD6225R | PFCD6225RF | 12R | 216.5 | 350MCM | 400 | 350 |
| 250 | PFCD6250 | PFCD6250F | 13 | PFCD6250R | PFCD6250RF | 13R | 240.5 | 400MCM | 400 | 400 |
| 275 | PFCD6275 | PFCD6275F | 13 | PFCD6275R | PFCD6275RF | 13R | 264.6 | 500MCM | 450 | 400 |
| 300 | PFCD6300 | PFCD6300F | 13 | PFCD6300R | PFCD6300RF | 13R | 288.6 | (2) 3/0 | 500 | 450 |

◆ Wall mounting brackets available for units up to 100 kVAR. Order catalogue number PFCDBR1 (sold in pairs). Wall mounting brackets not available for units above 100 kVAR.
▲ Consult local Electrical Codes for proper sizing of moulded case circuit breaker frame, disconnect switch rating, and wire size.
✗ For dimensions, see next page.
■ For additional sizes, ratings or options, please consult your nearest Square D/Groupe Schneider sales office.

## Type 1 Enclosure Dimensions ■

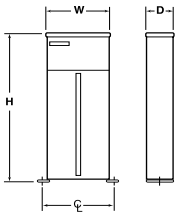
| Encl. | Height (H) | | Width (W) | | Depth (D) | | Mounting ℄ | |
|---|---|---|---|---|---|---|---|---|
| | IN | (mm) | IN | (mm) | IN | (mm) | IN | (mm) |
| 1 | 16.12 | 409.45 | 11.75 | 298.45 | 4.81 | 122.17 | 13.25 | 336.55 |
| 2 | 18.87 | 479.30 | 11.75 | 298.45 | 4.81 | 122.17 | 13.25 | 336.55 |
| 3 | 20.06 | 509.52 | 11.75 | 298.45 | 4.81 | 122.17 | 13.25 | 336.55 |
| 4 | 22.81 | 579.37 | 11.75 | 298.45 | 4.81 | 122.17 | 13.25 | 336.55 |
| 5 | 26.75 | 679.45 | 11.75 | 298.45 | 4.81 | 122.17 | 13.25 | 336.55 |
| 6 | 34.00 | 863.60 | 19.08 | 484.63 | 6.20 | 157.48 | 13.25 | 336.55 |
| 7 | 22.75 | 577.85 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 8 | 25.50 | 647.70 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 9 | 28.88 | 733.55 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 10 | 29.50 | 749.30 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 11 | 34.00 | 863.60 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 12 | 28.88 | 733.55 | 21.78 | 553.21 | 14.78 | 375.41 | 14.68 | 372.87 |
| 13 | 34.00 | 863.60 | 21.78 | 553.21 | 14.78 | 375.41 | 14.68 | 372.87 |

## Type 3R Enclosure Dimensions ■

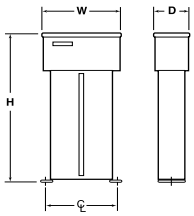
| Encl. | Height (H) | | Width (W) | | Depth (D) | | Mounting ℄ | |
|---|---|---|---|---|---|---|---|---|
| | IN | (mm) | IN | (mm) | IN | (mm) | IN | (mm) |
| 1R | 16.12 | 409.45 | 19.08 | 484.63 | 6.20 | 157.48 | 13.25 | 336.55 |
| 2R | 18.87 | 479.30 | 19.08 | 484.63 | 6.20 | 157.48 | 13.25 | 336.55 |
| 3R | 20.06 | 509.52 | 19.08 | 484.63 | 6.20 | 157.48 | 13.25 | 336.55 |
| 4R | 22.81 | 579.37 | 19.08 | 484.63 | 6.20 | 157.48 | 13.25 | 336.55 |
| 5R | 26.75 | 679.45 | 19.08 | 484.63 | 6.20 | 157.48 | 13.25 | 336.55 |
| 6R | 34.00 | 863.60 | 19.08 | 484.63 | 6.20 | 157.48 | 13.25 | 336.55 |
| 7R | 22.75 | 577.85 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 8R | 25.50 | 647.70 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 9R | 28.88 | 733.55 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 10R | 29.50 | 749.30 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 11R | 34.00 | 863.60 | 14.85 | 377.19 | 14.78 | 375.41 | 7.75 | 196.85 |
| 12R | 28.88 | 733.55 | 21.78 | 553.21 | 14.78 | 375.41 | 14.68 | 372.87 |
| 13R | 34.00 | 863.60 | 21.78 | 553.21 | 14.78 | 375.41 | 14.68 | 372.87 |

■ Dimensions are approximate only. Do not use for construction. For actual dimensions, contact your local Square D/Groupe Schneider sales office.

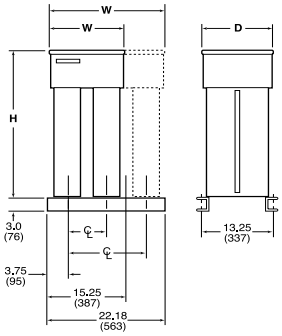
**Fixed Capacitors Enclosures 1 to 5**



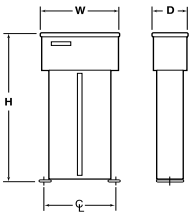

**Fixed Capacitors Enclosure 6**



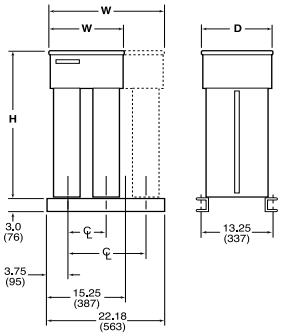

**Fixed Capacitors Banks Enclosures 7 to 13**




**Fixed Capacitors Enclosures 1R to 6R**



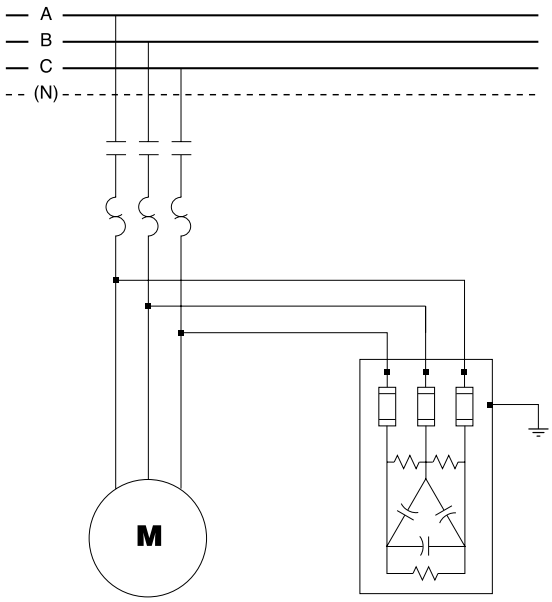

**Fixed Capacitors Banks Enclosures 7R to 13R**




## Application Note:

*All capacitors are a low impedance path for harmonic currents produced by non-linear loads such as variable frequency drives, motor soft-starters, welders, computers, PLC's, robotics and other electronic equipment. These harmonic currents can be drawn into the capacitor causing it to overheat, shortening it's life and possibly preventing proper operation. Furthermore, the resonant circuit formed by the capacitor in parallel with the system inductance's (transformers and motors) can magnify harmonic currents and voltages which can cause nuisance fuse operation and/or damage electrical equipment. Should your electrical system contain any non-linear loads, please contact Square D/Groupe Schneider for application assistance. For applications which require power factor correction in harmonic-rich environments, substitute the AV6000 Anti-resonant automatic capacitor bank. Consult Square D/Groupe Schneider for more information.*

## Typical Wiring Diagram (FVNR Starter):



| | | |
|---|---|---|
| Type: | | Self-healing, internally protected capacitor elements, dry design |
| Dielectric: | | Metalized polypropylene film, no liquid dielectrics |
| Internal connection: | | 3 Phase, Delta |
| Tolerance on capacitance: | | 0% / +15% |
| Discharge mechanism: | | Polycarbonate resistor, 1 per phase |
| Discharge time: | | < 50 V in 1 minute |
| Losses: | | < 0.5W/ kVAR, including discharge resistors |
| Expected life: | | 95% rated kVAR: 150,000 hrs (nominal voltage & current, 0% THD) |
| Rated voltage ($U_n$): | | 208 V....600 V. |
| Rated frequency: | | 60 Hz |
| Insulation level: | | 3 kV rms/ 15 kV crest |
| Interrupting rating | Unfused: | 10 kA I.C. Symmetrical |
| | Fused: | 200 kA I.C. Symmetrical |
| Continuous overvoltage: | | 1.1 x $U_n$ |
| Continuous overcurrent: | | 1.35 x $I_n$ |
| Maximum recommended harmonic current ($I_h$): | | 1.05 x $I_n$ |
| Maximum recommended harmonic voltage ($V_h$): | | 1.03 x $V_n$ |
| Temperature range: | | -40°C to +50°C (-40°F to +122°F) |
| Highest mean over: | 24 hours: | +40°C (+104°F) |
| | 1 year: | +30°C (+86°F) |
| | Other Conditions: | Consult Square D/Groupe Schneider |
| Altitude: | | 1800 meters (6000 feet) without de-rating |
| Approvals: | | UL Listed under file #LR-23506-57<br>CSA Certified under file #E173372 |
| Standards: | | Built to IEC 831-1-2 (1988); Complies with: IEC, NEC, NEMA CP-1, ANSI and IEEE std. 18. |
| Paint finish: | Indoor: | Medium blue textured polyester powder ASA 49 & 61 available upon request. Consult Square D/Groupe Schneider. |
| | Outdoor: | Light grey ASA 61. |
| Enclosure: | | 16 Gauge steel |

## Other Products and Services:

- AV4000 and AV5000 standard automatic capacitor banks for power factor correction in electrical networks which have less than 15% non-linear loads.
- AV6000 Anti-resonant bank for power factor correction in harmonic-rich environments
- AV7000 Harmonic filters for removal of harmonics
- Active (electronic) filters
- AV9000 Real Time Reactive Compensation banks and filters for highly transient loads.
- Medium voltage fixed and automatic switched banks up to 37 kV
- Medium voltage Real Time Compensation Banks up to 15 kV
- Engineering services such as:

- Size and rating assistance
- Harmonic analysis
- Computer simulations
- Commissioning
- Service contracts

***Consult your nearest Square D/Groupe Schneider sales office for pricing.***

***Specifications subject to change without notice.***

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