

# Power Factor Correction

## PF Guard™

### The Power of PF Guard

Avoid penalty fees and high utility bills with TCI's PF Guard™. By providing reactive power to your system the PF Guard will improve your facility's power factor to near unity. This reduces the amount of costly apparent power the utility must provide.

The PF Guard will reduce the demand on your electrical equipment, resulting in improved electrical system capacity and a more effective power supply.

### Powerful Features

The PF Guard offers an automatic switching design, providing an optimized solution for your application. A detuned, anti-resonance reactor is built into the unit for an extra layer of protection from harmonics and to prevent equipment failure, reduce costs and increase the life of the system.

### What is Power Factor?

All inductive loads require two types of power to function properly:

- **Active power (kW)** performs real work in loads such as motors
- **Reactive power (kVAR)** is consumed by inductive loads such as AC motors and performs no productive work

Power Factor is the ratio between the active power and the total power consumed (apparent power or kVA) and is the standard measure of how effectively electrical power is being used by a system.

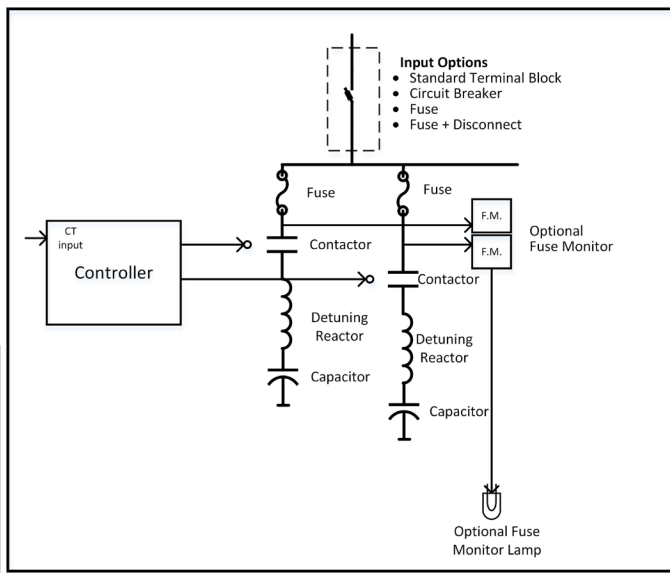
### Why Improve Power Factor?

When the power factor is below 1.0 or unity, the electrical capacity of the system decreases, forcing the utility to supply more apparent power than necessary.

Utilities can pass on the resulting costs to the industrial users as power factor penalties and high utility bills.

Issues caused by low power factor may include:

- Poor system performance
- High energy costs
- Electric surcharges
- Harmful environmental impacts



Reliable  Advanced Power Quality



# Power Factor Correction

## Technical Characteristics

Voltage Rating	480 VAC
Phase	3-Phase
Operating Frequency	60 Hz
Fuse Interrupt Rating	200kA
SCCR Rating	100kA: Terminal block, disconnect switch or fuse block option 5kA: Circuit breaker only, 65kA: With customer supplied fusing
KVAR Rating(s)	150, 200, 250, 300, 400, 500, 600
Voltage Unbalance	1% maximum
Continuous Overvoltage	110%
Capacitor Tolerance	±5%
Expected Life	Over 130,000 operating hours
Maximum Harmonic Voltage	5%
Discharge Time	Less than 1 minute

## Environmental Conditions

Operating Temperature	Enclosed: -10°C (14°F) to 40°C (104°F)
Storage Temperature	-30°C (-22°F) to 60°C (140°F)
Relative Humidity	95% non-condensing
Operating Altitude	Up to 1,000m without derating
Cooling Method	Forced Air Convection

## Reference Technical Standards

Protection (Enclosure)	UL Type I
Agency Approvals	UL 508A

## Part Numbering System

	P	F	C	A	0	1	5	0	A	W	1	A	0	2	1
Series: _____															
Auto: _____															
kVAR Rating: _____															
Voltage Rating: _____															
A - 480 V															
Frequency: _____															
W - 60 Hz															
Enclosure: _____															
1 - Type 1															
Options: _____															
A - None (Standard)															
B - Fuse Monitor															
C - Fuse Monitor with Indicating Light															
Input Protection Options: _____															
0 - Standard, Terminal Block															
1 - Circuit Breaker															
2 - Terminal Block with Fuses															
3 - Disconnect Switch with Fuses															
Steps: _____															
20 - 50 kVAR [FULL STEPS] 150 kVAR - 300 kVAR Rating Only															
21 - 50 kVAR (2 - 25 kVAR) [HALF STEPS] 150 kVAR - 300 kVAR Rating Only															
30 - 80 kVAR [FULL STEPS] 400 kVAR Rating Only															
31 - 80 kVAR (2 - 40 kVAR) [HALF STEPS] 400 kVAR Rating Only															
40 - 100 kVAR [FULL STEPS] 500 kVAR and 600 kVAR Rating Only															
41 - 100 kVAR (2 - 50 kVAR) [HALF STEPS] 500 kVAR and 600 kVAR Rating Only															

## Typical Applications

- Large Industrial
- Heavy Manufacturing
- Wood Processing
- Steel / Paper Mills
- Tire / Rubber
- Refineries
- Mining

TCL, LLC  
www.transcoil.com

WI32 NI0611 Grant Drive  
Germantown, WI 53022  
USA

Toll Free: 800-824-8282  
P: 414-357-4480  
F: 414-357-4484  
Part #29745  
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