

# Harmonics & Power Quality



TCI's HarmonicShield passive harmonic filter offers the best-in-class performance that you expect from TCI at a price that you don't. TCI's new HarmonicShield is a 5% passive harmonic filter designed for a wide variety of standard duty indoor and outdoor environments, wherever a VFD is used.



## General Application and Maintenance Free

The HarmonicShield (HSD) filter is built using the highest quality components and is suitable for general power quality applications and normal environmental conditions. The HSD filter is designed with simplicity in mind. This convection cooled, maintenance-free filter requires no adjustments once installed.

## Typical Applications

- Oil & Gas Equipment
- Metal Processing Equipment
- Water/Wastewater Pump Systems
- HVAC Compressors and Blowers
- Irrigation Pumps
- Extruders
- Pulp & Paper Mills

Reliable  Advanced Power Quality

## Harmonics

Power system harmonics are not new. However industrial equipment generate more harmonics than ever while simultaneously sensitive electronic equipment is becoming increasingly susceptible. Couple this with the transformer heating and nuisance breaker trips caused by harmonics as well as the utilities' IEEE-519 mandate and managing harmonics is no longer optional.

And while the problem is well known, the solution can at times be confusing. Multi-pulse drives, harmonic mitigating transformers, active front end drives, standard VFD with harmonic mitigating equipment; which one is right for you?

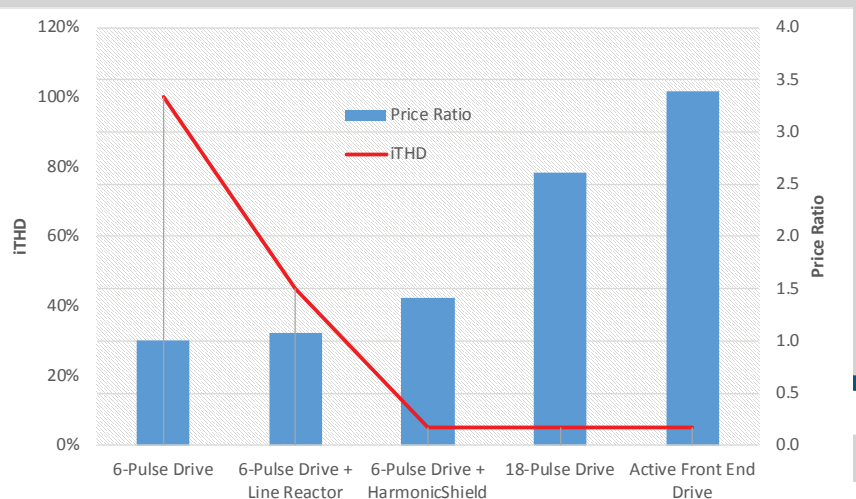
## HarmonicShield

TCI's new HarmonicShield can make the decision easy. The HarmonicShield offers industry leading 5% iTHD performance even at light loads and under the harshest of conditions. The optional contactor allows the tuning circuit to be disconnected at light loads to avoid leading power factor problems. Natural convection cooling means no moving parts. A lug kit option accommodates oversized cabling if needed. All this is backed up by TCI's 3 year warranty, which means you will have many years of hassle free operation.

## The Economics of Harmonics

If you're like most, spending the least possible amount of your budget on harmonic mitigation is a goal. A 6-pulse drive with TCI's new HarmonicShield passive harmonic filter is the most cost effective method of meeting IEEE-519: 2014's tightest standards. When compared to an 18-pulse drive solution the HarmonicShield and 6-pulse drive combination can save you up to 46%. And when compared to an active front end drive that number shoots up to 59%.

The HarmonicShield offers TCI's industry best performance in an economical package.



HSD vs. Other Harmonics Solutions

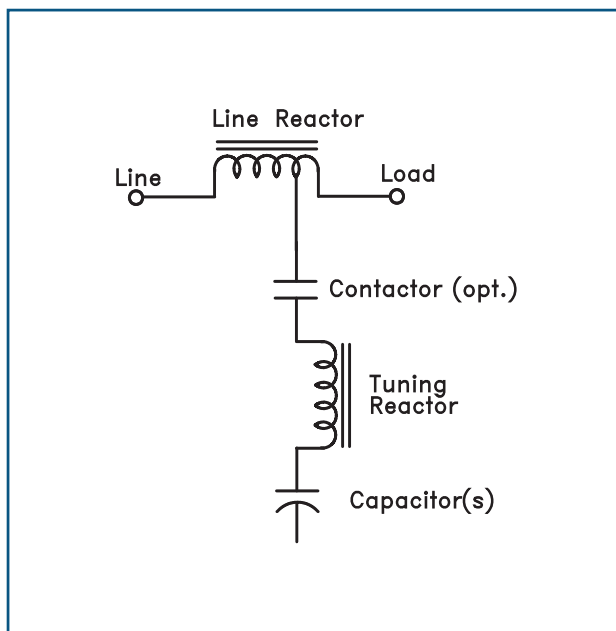
# Technical Specifications

Voltage / Frequency Rating	480 & 600 VAC- 60 Hz
Phase	3Ø
Immunity from Voltage Distortion	Less than 5% iTHD at full load with vTHD as high as 5%*
THID	Less than 5% at full load
Efficiency	Greater than 99%
Overload Capability	200% of current rating for 3 minutes
<b>Environmental Conditions</b>	
Operating Temperature	40°C (104°F)
Storage Temperature	60°C (140°F)
Elevation	Up to 1,000 m without derating. Consult factory for higher elevations.
Humidity	95% non-condensing
Protection Category	UL Type I and UL Type I 3R
Cooling Method	Natural Convection
<b>Reference Technical Standards</b>	
Agency Approvals	UL & cUL Listed (up to 600 Amps)

## Part Numbering

	<b>H</b>	<b>S</b>	<b>D</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>A</b>	<b>W</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Series:														
Horse Power:														
Voltage Rating:														
A - 480 V														
C - 600 V														
Frequency:														
W - 60 Hz														
Enclosure:														
1 - UL Type 1														
3 - UL Type 1 / 3R														
Option:														
0 - Standard, no contactor														
1 - With contactor														
Option:														
0 - Standard, no lugs														
1 - Lugs														
Option:														
0 - Standard														
Option:														
0 - Standard														

## One-Line Diagram



## Application Matrix

	Open Panel	Type 1 Enclosure	Type 3R Enclosure	Type 12 Enclosure	Floor Mount	Wall Mount	Fuses	Fuse Monitor	True 100kA SCCR	Generator Compatible	High Background Voltage Distortion	Heater	Contactor	Lugs
HarmonicShield		X	X		X					X			X	X
HarmonicGuard Passive	X	X	X	X	X	X	X	X	X	X	X	X	X	X