

# Harmonics & Power Quality

## HARMONICGUARD® **PASSIVE**

### TCI's HarmonicGuard® Passive gives you options.

Our HGP 5% harmonic filter has factory options available to meet your specific requirements, such as:

- Contactor - Can be used to disconnect capacitors to prevent leading power factor.
- Fuse Monitor - Will detect a fuse failure.
- Heater - Protects internal filter electronics from corrosion and condensation.
- Vibration Pads - Reduces audible noise.
- Floor Stand - 12" steel feet for Type 3R enclosures 125hp and below. Units 150 hp and above include provisions for floor mounting

Custom designs are available upon request.

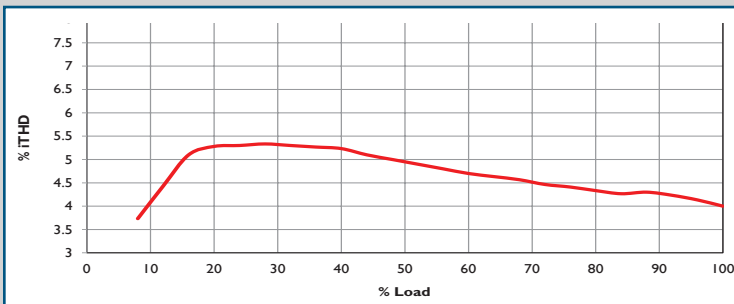
### HarmonicGuard® Passive Filter

- Limits current harmonic distortion to less than 5% over a wide load range
- True 100kA SCCR
- IEEE 519-2014 compliant
- Increases drive uptime
- Eliminates nuisance tripping

### Generator Compatible Option

TCI also offers a generator compatible filter - HarmonicGuard® - Low Capacitance (HGL). The introduction of the HGL addresses concerns of excess capacitance when used with a generator. Contact TCI for more information.

iTHD% vs. % Load



### HGP Filters vs. Other Harmonic Solutions

Today's marketplace has provided numerous products intended to address harmonics and power quality issues in industrial applications.

Compared to 18-pulse drives, the HGP:

- Is a more efficient and reliable solution at reduced loads
- Has a better iTHD at reduced loads
- Saves money by reducing operation costs and energy loss
- Has a smaller footprint

Compared to Active Front End, the HGP:

- Does not require input (LCL and EMI/RFI) filters a AFE does.
- Is a more cost effective solution.
- Produces no ground leakage current.

### Application

The HGP filter is a drive applied 5% passive harmonic filter. High quality components and a robust design allow this passive filter to deliver best in class performance under the harshest conditions and in the most challenging applications.

### Typical Applications

- Oil & Gas
- Steel Industry
- Water/Wastewater
- HVAC Systems
- Machining
- Airports
- Commercial Buildings
- Hospitals
- Irrigation Fields, Farms
- Extruders
- Pulp & Paper



# Technical Specifications

Voltage / Frequency Rating	208, 240, 480 & 600 VAC- 60 Hz	380 - 415 VAC- 50 Hz
Phase	3Ø	
Motor drive input power rating range	208, 240 VAC: 5 - 100 Hp 480, 600 VAC: 5 - 1250 Hp	400 VAC: 4 - 1000 KW
SCCR (Short Circuit Current Rating)	100 kA	
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	Open: 50°C (122°F), Enclosed: 40°C (104°F)	
Storage Temperature	60°C (140°F)	
Elevation	Up to 2,000 m without derating. Consult factory for higher elevations.	
Humidity	95% non-condensing	
Protection Category	Open Chassis, UL Type 1, UL Type 3R, and UL Type 12 enclosure	
Cooling Method	Natural or Forced Air Convection	
<b>Reference Technical Standards</b>		
Agency Approvals	cULus	

## Part Numbering System

**H G P 0 1 5 0 L X 1 S 0 0 0 P**

Series: \_\_\_\_\_

Rating (HP - 60 Hz) (kW - 50 Hz): \_\_\_\_\_

Voltage Rating: \_\_\_\_\_

A - 480 V      B - 240 V  
C - 600 V      D - 208 V  
L - 380 - 415 V

Frequency: \_\_\_\_\_

W - 60 Hz (HP Rated)  
X - 50 Hz (kW Rated)

Enclosure: \_\_\_\_\_

0 - Open      3 - Type 3R  
1 - Type 1  
2 - Type 12

Option: \_\_\_\_\_

S - Standard  
C - Contactor  
F - Contactor and Fuse Monitor  
G - Standard & Fuse Monitor

Option: \_\_\_\_\_

0 - Standard

Option: \_\_\_\_\_

0 - Standard  
F - Floor Stand (for 150 HP and below Type 3R)

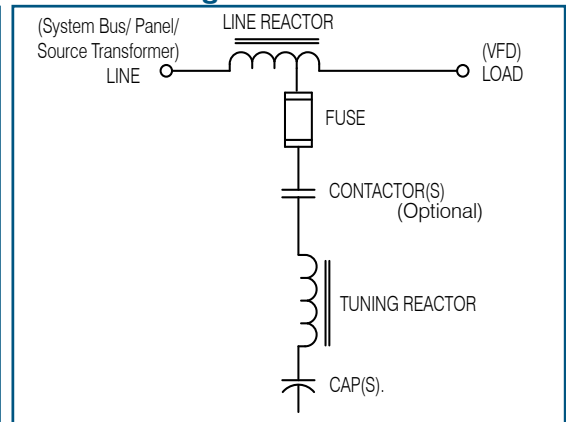
Option: \_\_\_\_\_

0 - Typical Voltage Distortion  
1 - High Voltage Distortion

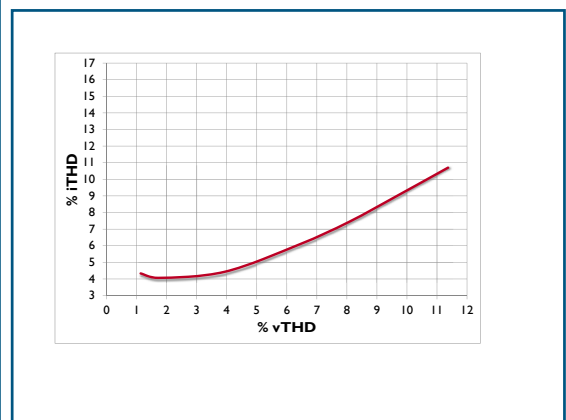
Option: \_\_\_\_\_

0 - Standard  
H - Heater (only available on Type 3R Enclosures)  
P - Oilfield Version  
V - Vibration Pads

## One-Line Diagram



## Current Distortion (iTHD) vs. Background Voltage Distortion (vTHD)



\*When configured for High Background Voltage Distortion. See IOM for guidelines for distortion above 5%.



2315 rue de la Metropole  
Longueuil, Qc J4G 1E5  
Tel: 866-540-0412

Part #28559  
Version 1.10  
© Copyright 2017

