

# Harmonics & Power Quality

## HARMONICGUARD® **PASSIVE**

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

Our HGP 5% harmonic filter is a performance product with the versatility to tackle tough application challenges. This field-proven passive filter has factory options available to meet your specific requirements, such as:

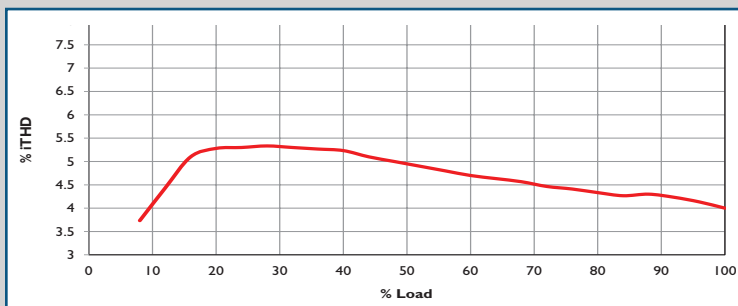
- Contactor - Can be used to disconnect capacitors to prevent leading power factor.
- Fuse Monitor - The fuse monitor will detect a fuse failure.
- Heater - Protects internal filter electronics from corrosion and condensation.
- Vibration Pads - Reduces audible noise.
- Floor Stand - 12" steel feet for 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
- Industry leading performance under high background voltage distortion
- True 100kA SCCR
- IEEE 519-2014 compliant
- Generator compatible
- Increases drive uptime
- Eliminates nuisance tripping

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. TCI is focused on developing solutions that offer the lowest total cost of ownership for the end user.

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 as 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



Reliable **||** Advanced Power Quality



# Technical Specifications

Voltage / Frequency Rating	208, 240, 480 & 600 VAC- 60 Hz	400 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

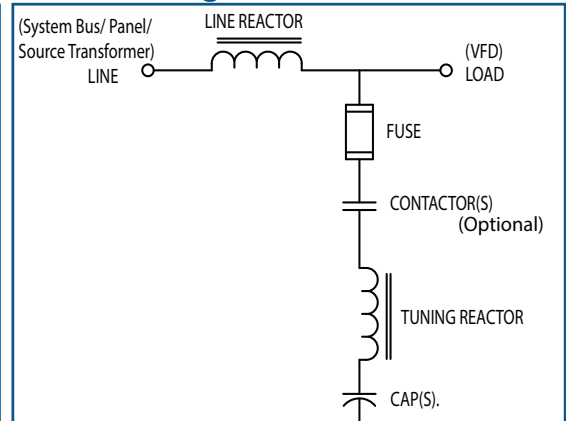
Option: \_\_\_\_\_  
 0 - Standard

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

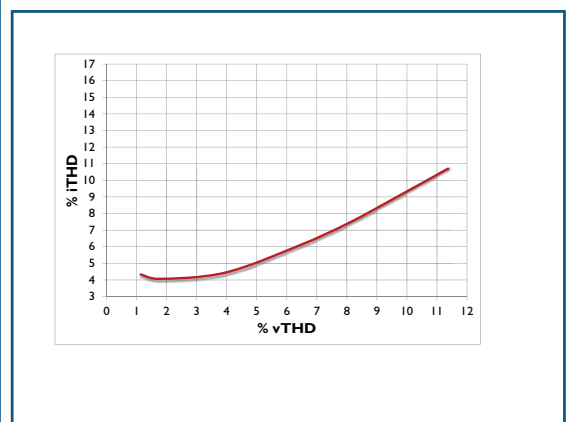
Option: \_\_\_\_\_  
 0 - Typical Voltage Distortion  
 1 - High Voltage Distortion

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%.