

ECM PASSIVE HARMONIC FILTER



Don't let harmonics disrupt your HVAC system.

The latest addition to TCI's passive harmonic filter line, the HSE offers a compact, cost-effective solution for mitigating harmonics associated with Electronically Commutated Motors (ECMs).

While ECMs help reduce typical HVAC fan size and increase efficiency, they also produce high levels of harmonics that inevitably lead to system instability.

Unlike standard 6-pulse VFD harmonic signatures, ECMs create much broader and higher order harmonics which are unstable when paired with traditional harmonic mitigation techniques. Using a standard harmonic filter causes harmonics and instability to amplify, leading to overheating, high DC bus voltage levels and early component failure. The HSE allows the use of ECMs in HVAC applications while meeting industry standards for harmonics.

A complete power quality solution designed for ECM applications.

Harmonics lead to disruptions. The HSE makes things simple:

- Ensures IEEE 519-2022 compliance
- Available for 480 V systems
- Communications and data analytics available via Modbus RTU
- Open panel, Type 1 and Type 3R enclosures
- Open panel option allows for integration where it is convenient for you
- 5% iTDD performance across entire load range

Typical ECM Applications:

- Cooling Towers
- Chiller Systems
- Fan Walls and Fan Arrays
- Air Handling Units



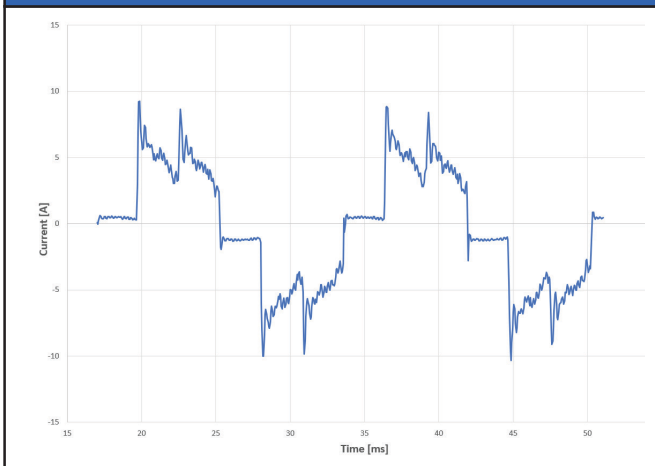
Technical Specifications

Voltage	480 VAC
Frequency	60 Hz
Current Ratings	5-125 Amps (ECM Fan Load Amps)
HP Ratings	5-100 HP
Load Types	3-phase diode bridge rectifier loads found in ECMs.
Short Term Overload Rating	Tolerate 200% rated I for a max of 3 minutes/hour
iTDD Performance	<5%
Environmental Conditions	
Maximum Ambient Temperature	Open: 50°C (122°F), Enclosed: 40°C (104°F)
Maximum Ambient Storage Temperature	60°C (140°F)
Maximum Humidity, Operating, or Storage	95%, non-condensing
Maximum Elevation	Up to 3,300 ft (1,000 m) without derating
Reference Technical Standards	
Enclosure Options	Open Type, UL Type 1, UL Type 3R
Agency Approvals or Certifications	cULus Listed to UL 508 RoHS II Compliant REACH Compliant

Part Numbering System

	HS	E	0100	A	W	3	1	0	0	0
Series										
Model										
D = Standard										
E = EC Motor Version										
Horse Power										
Voltage Rating										
A = 480 V										
C = 600 V (HSD only)										
Frequency										
W = 60 Hz										
Enclosure										
0 = Open Type (HSE only)										
1 = UL Type 1										
3 = UL Type 3R										
Option										
0 = No contactor										
1 = With contactor										
Option										
0 = Standard, no lugs										
1 = Lugs										
Option										
0 = Standard										
1 = PQconnect w/ Modbus RTU over RS485										
2 = PQconnect w/ EtherNet/IP (HSD only)										
Option										
0 = Standard										

Typical Performance Without HSE



Typical Performance With HSE

