

*Introducing our  
Pre-Designed  
Harmonic Filter.  
Meeting IEEE-519  
with Off the Shelf  
Convenience.*

**The EDF**  
**Electrotek Drive Filters for**  
**480V & 600V Applications**

Designers  
and  
Manufacturers  
of  
Power  
Factor  
Correction  
Equipment  
and  
Harmonic  
Filters

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## Harmonic Filters For Drive Applications - 480V and 600V

Electrotek Drive Filters (EDF series) are designed to meet IEEE-519 harmonic guidelines under all operating conditions. The EDF series are pre-designed, eliminating the need for harmonic analyses and studies prior to quotation or production.

No harmonic analysis.

The drive HP and voltage is all you need to select the appropriate EDF.

Easy to select, easy to connect.

Works with any type of 6 pulse drive.

Can be installed at any time.

Option to install in drive cabinet.

No magic.

There are two series available:

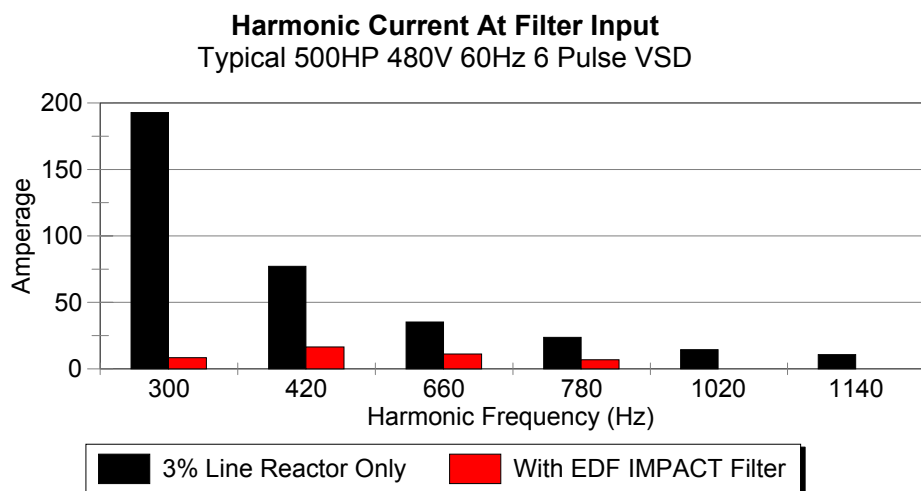
The EDF meets IEEE-519 at the primary side of the main transformer on single drive applications.

The EDF IMPACT meets IEEE-519 at the filter input terminals on single and multi drive applications.

### How does the EDF work?

The EDF is energized via a control signal from the run contact on the drive. When the drive runs, so does the filter. This eliminates an excessive leading power factor and excessive voltage rise under no load. The switching device employs soft switching technology for virtually *transient free switching*.

The EDF will reduce the 5<sup>th</sup>, 7<sup>th</sup>, 11<sup>th</sup>, 13<sup>th</sup>, etc. harmonics to within IEEE-519 guidelines, as well as reduce the I\*T product (telephone interference) and RFI (radio frequency interference) to acceptable limits.



The EDF series is a combination parallel and series connected unit. This combination delivers two distinct advantages:

**Maximum harmonic reduction** is a result of strategically sized line reactors. Minimum 5% line reactors are used to protect the VSD and motor from utility spikes and surges. This eliminates a line reactor or DC bus choke requirement on the drive itself. It also eliminates the need for isolation transformers.

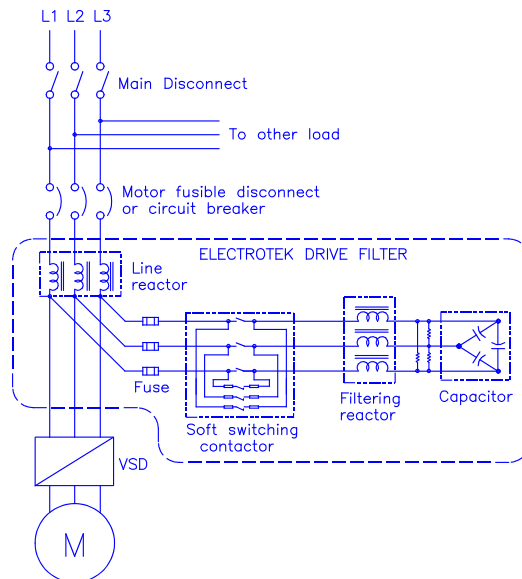
**Ability to operate only drive and line reactor** without the entire filter on line due to the use of separate cores for the line reactor and harmonic filter windings. Therefore, the EDF can be isolated from the drive circuit by removing the HRC fusing provided in the EDF, allowing the drive / line reactor to continue operating without the filter.

Using separate cores also means the failure of a winding does not mean replacement of both the filter reactor and line reactor.

### How is the EDF Connected?

The EDF is connected to the load side of the Electrotek-supplied line reactor. This improves the reduction of harmonics and eliminates system interaction avoiding harmful resonance conditions. Connecting to the load side of the line reactor avoids any significant import of harmonics from the utility source or from other drive loads on the same distribution.

A dedicated disconnect switch is not required with the EDF when connected to the load side of the drive disconnect.



### No Risk of Damage to Drive or System Components

**The EDF will not damage drive or system components when the drive is operating at any speed or load condition.**

Fundamental amperages will be reduced since the EDF will improve the VSD power factor under all load conditions. This results in demand and consumption charge reductions on hydro bills due to improved system power factor and line loss reductions.

Switching the harmonic filter off via the drive run contact eliminates a leading power factor under no load conditions.

<b>Features of the EDF and EDF IMPACT</b>	
meets IEEE-519 guidelines for both current and voltage distortion	✓
dedicated disconnect not required	✓
published balanced I*T product results	✓
reduction of RF interference	✓
separate cores for line reactor and harmonic filter windings	✓
able to operate drive without filter on line	✓
performance guarantee	✓
no system resonance conditions	✓
no significant import harmonics	✓
no excessive leading power factor under no load conditions	✓
no damage to drive components under low speed / low load operation	✓
no excessive voltage rise with drive operation at low speed / low load	✓

### What happens to the EDF if there are system changes?

Nothing. The EDF can be considered part of the drive package. It can be moved with the drive, it can continue to operate with the drive, despite changes to the rest of the system.

### Warranty Period

36 months from the date of shipping.

### Performance Guarantee

The **EDF** will meet individual and total harmonic distortion values on the primary side of the main transformer for both current and voltage, as per IEEE-519 guidelines.

The **EDF IMPACT** will meet individual and total harmonic distortion values at the filter input terminals for both current and voltage, as per IEEE-519 guidelines.

### What you Need to Know to Select your EDF...

- the HP of your drive
- the voltage of your drive

An Electrotek Ltd. solution. Your solution.

### 350 HP Panel Mount Design



### 125 HP Standalone Design



Drive HP	480V - STANDARD DIMENSIONS (custom enclosures available on request)		600V - STANDARD DIMENSIONS (custom enclosures available on request)	
	EDF mm (inches) d * w * h	EDF IMPACT mm (inches) d * w * h	EDF mm (inches) d * w * h	EDF IMPACT mm (inches) d * w * h
15	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)
20	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)
25	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)
30	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)
40	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)
50	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)
60	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)
75	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)
100	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)	330 (13) * 617 (24¼) * 717 (28)
125	406 (16) * 940 (37) * 739 (29)	406 (16) * 940 (37) * 739 (29)	406 (16) * 940 (37) * 739 (29)	406 (16) * 940 (37) * 739 (29)
150	406 (16) * 940 (37) * 739 (29)	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 739 (29)	406 (16) * 940 (37) * 739 (29)
200	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 739 (29)	406 (16) * 940 (37) * 1334 (52½)
250	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 739 (29)	406 (16) * 940 (37) * 1334 (52½)
300	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 1334 (52½)
350	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 1334 (52½)
400	406 (16) * 940 (37) * 1334 (52½)	762 (30) * 762 (30) * 1829 (72)	406 (16) * 940 (37) * 1334 (52½)	406 (16) * 940 (37) * 1334 (52½)
500	762 (30) * 762 (30) * 1829 (72)	762 (30) * 762 (30) * 2286 (90)	406 (16) * 940 (37) * 1334 (52½)	762 (30) * 762 (30) * 1829 (72)
600	---	762 (30) * 762 (30) * 2286 (90)	---	762 (30) * 762 (30) * 1829 (72)
700	---	762 (30) * 762 (30) * 2286 (90)	---	762 (30) * 762 (30) * 2286 (90)
800	---	762 (30) * 1524 (60) * 1829 (72)	---	762 (30) * 762 (30) * 2286 (90)
900	---	762 (30) * 1524 (60) * 1829 (72)	---	762 (30) * 762 (30) * 2286 (90)
1000	---	762 (30) * 1524 (60) * 1829 (72)	---	762 (30) * 762 (30) * 2286 (90)