

hammond
POWER SOLUTIONS



PASSIVE HARMONIC FILTER



Passive Harmonic Filter

HPS passive harmonic filter improves power quality by simultaneously reducing harmonics and improving true power factor.

The advanced HPS design delivers superior performance compared to traditional harmonic filters by reducing harmonic current distortion by 80% (typically to 5% or less at full load), corrects true power factor to over 95%, and meets IEEE 519 harmonic requirements when operated within designed parameters.

The passive harmonic filter consists of reactors and capacitors in an LCL arrangement designed to reduce a broad range of harmonics associated with VFD's and other three phase rectifiers.



Power Quality & Harmonic Distortion

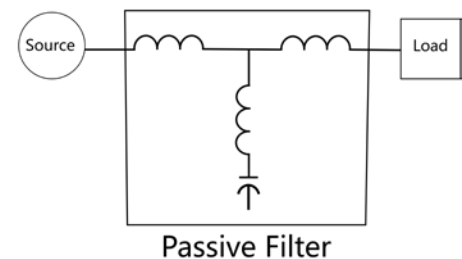
Causes

Harmonic current and voltage distortion are major causes of unscheduled down time, equipment malfunction and damage.

Current and voltage harmonics are caused by non-linear loads such as variable frequency drives (VFD's), DC drives, chargers, rectifiers, and induction heating systems.

Consequences

- Overheating of electrical equipment
- Loss of efficiency
- Nuisance tripping
- Premature equipment failure
- Interference with communication systems



One Power Solution

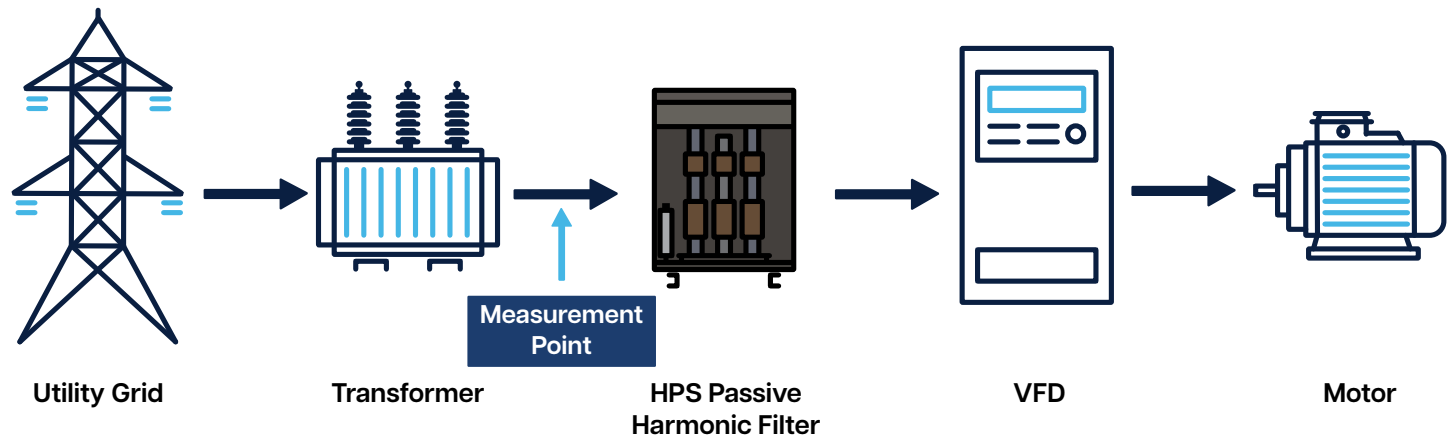
To maximize the harmonic mitigation and true power factor correction, each HPS passive harmonic filter unit is specifically engineered to mitigate harmonic currents created by non-linear loads such as variable frequency drives and is available from 5 to 500 horsepower.

- Proven mitigation technology
- Patented design
- Suitable with varying power loads
- Meets IEEE 519 standard when operated within designed parameters
- Generator compatible without capacitor contactor

HPS Passive Harmonic Filter Operation Principle

By using an unique series/parallel arrangement of inductance and capacitance, harmonic currents produced by non-linear loads including VFD's are reduced. The HPS passive harmonic filter achieves compliance with IEEE 519-2014 (when operated within designed parameters) for both current and voltage distortion at the input to the filter.

Example Installation



Industries

Critical applications require IEEE-519 compliant power systems. Below are some examples of industries with critical applications:

- Chemical Processing
- Data Centers
- HVAC Systems
- Material Handling
- Mining
- Oil & Gas
- Pulp & Paper
- Hospitals
- Wastewater Treatment Plants
- EV Charging



What You Gain

Compared to other power quality technologies HPS passive harmonic filter provides the most efficient and reliable solution.



Profitability

Passive harmonic filters are a cost effective solution for power quality issues.



Improved Reliability

Increased electrical power quality results in increased uptime and reduces nuisance tripping events.



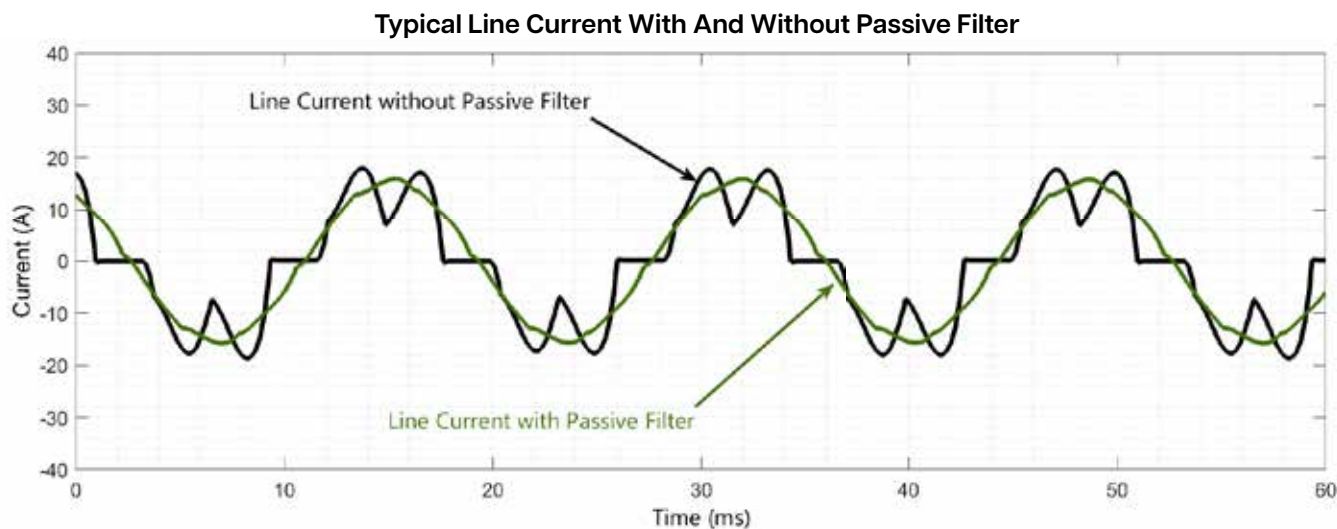
Energy Savings

Combine the most efficient passive harmonic filters with proven system efficiency gains.

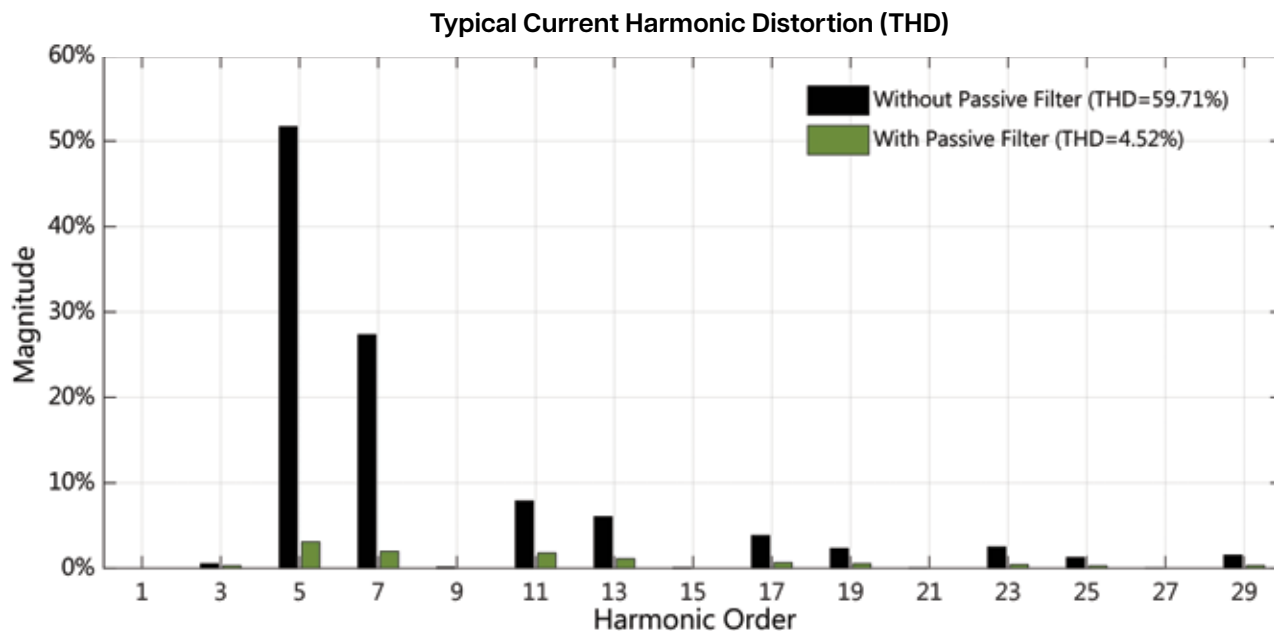
Passive Harmonic Filter

How Passive Filters Mitigate Harmonics

Variable frequency drives (VFD's) are power electronic devices designed to control the speed of motors by changing the frequency of the power supplied to the motor. VFD's, among other non-linear devices, create harmonics when converting AC to DC voltage. The current drawn by the 6-pulse rectifiers on the input of the VFD is non-linear, which distorts the utility's sine wave. This non-linear current is the source of harmonics. These harmonic currents flowing upstream from the VFD can cause inefficiency and overheating of transformers and motors, misoperation of equipment, and interference with telephone and other communication equipment.



The HPS passive harmonic filter is engineered to reduce the 5th, 7th, 11th, and 13th harmonics and higher orders in three phase power systems. The HPS passive harmonic filter improves the power quality by mitigating harmonics caused by non-linear loads.



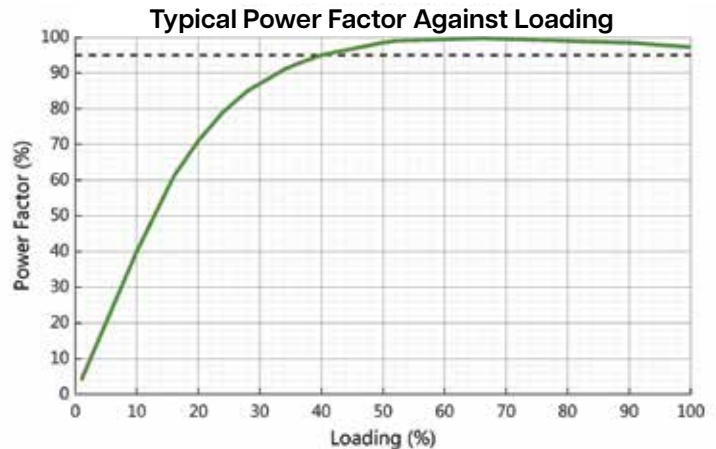
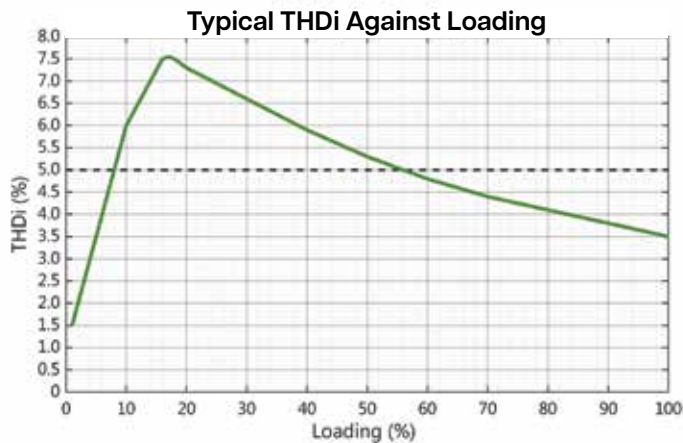
Results are typical and actual results may vary with unit specifications and design parameters.

Energy Savings - Lower kW & kVA

The mitigation of harmonics (THDi) and correction of power factor produces efficiencies in the electrical system, which lowers kW and kVA. This is an important benefit and one of the compelling reasons for installing HPS passive harmonic filters.

A 6-pulse VFD (without a harmonic filter) will typically create 30% to 60% total harmonic distortion and will result in a true power factor of less than 90%.

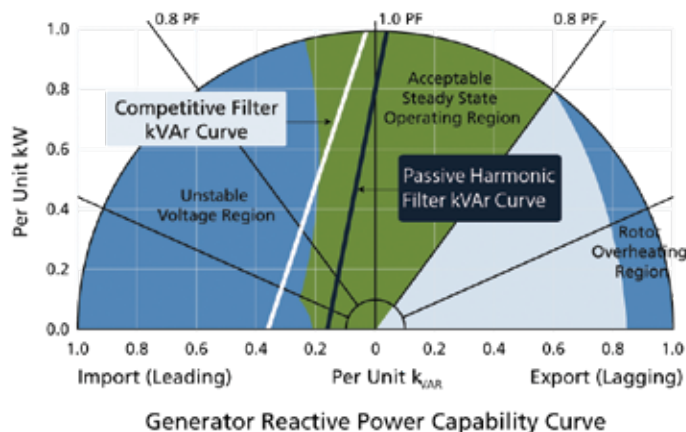
The real data measurements below demonstrate a reduction of THDi and power factor improvement against VFD loading.



Generator Capability

HPS passive harmonic filter's kVAR ratings are limited to no more than 20% of the filter's kVA, which ensures compatibility with a generator fed system as well as utility grid fed systems. This low kVAR rating helps to avoid a leading power factor from occurring when the VFD or other harmonic producing loads are operating lightly loaded.

The low kVAR ratings also negates the need for load monitoring and a contactor to disconnect the filter's capacitors during low loads.



Capacitor Contactor Option

The capacitor contactor option allows the user to open and close a contact that will remove the capacitors from the circuit. The user can control the contactor by providing configurable contact output from the VFD which opens at light load.

The capacitor contactor option includes a contactor and an auxiliary contact. Switching out the capacitor mitigates the possibility of a leading power factor.

The low kVAR ratings also negates the need for load monitoring and a contactor to disconnect the filter's capacitors during low loads.

Passive Harmonic Filter

Specifications



Electrical Product Characteristics

Voltage Rating:	480VAC or 600VAC +/-10%
Input Power Rating:	480VAC: 8 – 632A (5 – 500HP) 600VAC: 6 – 505A (5 – 500HP)

Environmental Conditions

Ambient Operating Temperature:	Up to 50°C
Humidity:	95% maximum non-condensating
Altitude:	≤ 1000m, (de-rated at higher altitudes)
Storage Temperature:	-20°C to +60°C
Cooling Method:	Natural Convection
Enclosure Type:	Open or Type 3R

Technical Product Characteristics

Harmonic Attenuation:	Total harmonic current distortion is reduced by 80% (typically to 5% or less at full load) and meets IEEE 519-2014 harmonic requirements when operated within designed parameters
Harmonic Mitigation:	5th, 7th, 11th, 13th, etc.
(major 6-pulse rectifier harmonics)	130°C (2A - 54A), 180°C (>55A)
Typical Power Factor:	>95%
Efficiency:	No less than 99% at full load
Overload Capability:	150% of rated current for 1 minute
Resonance:	Engineered not to cause resonance
Capacitance:	Low kVAr design
Approval:	cUL Listed (E61431)
Warranty:	3 years
Contactor:	Optional

Part Number Guide

	Family Type	Generation	Voltage	Frequency	Thermal Characteristics	Rating	Enclosure	Contactor
Example	CP	1	K	6	G	0 0 2 5	F	C
	Family Type CP = Passive Harmonic Filter	1 = current designs	K = 480 V P = 600 V	6 = 60Hz	Temperature Rise at 220°C Insulation Class G = 130°C	Current 6A to 632A 6A = 0006 69A = 0069 632A = 0632	Enclosure F = Open Frame C = Type 3R	C = Contactor S = No contactor* (Default)

*Please contact HPS for other available options

** Default options - ignore if all following characteristics are default values

PASSIVE HARMONIC FILTER

480 V

60 HZ

Motor Rating (HP)	Part Number	Current (A)		Encl. Style	Filter Dimensions in Inches [Millimeter]				Capacitor Dimensions in Inches [Millimeter] ¹		Cap. Qty ²	Weight Lbs. [kg]	Watts Loss
		Input	Output		Dimens. Fig.	A	B	C	H	D			
5	CP1K6G0008F	7	8	Open (Wall)	A	7.5 [191]	7.7 [196]	12.5 [318]	4.4 [112]	2.6 [66]	1	45 [20]	175
				Open (Floor)	C	7.2 [183]	7.6 [193]	11.3 [87]					
	CP1K6G0008C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]					
7.5	CP1K6G0011F	9	11	Open (Wall)	A	7.5 [191]	7.7 [196]	12.5 [318]	5.5 [140]	2.6 [66]	1	50 [23]	190
				Open (Floor)	C	7.2 [183]	7.7 [196]	11.3 [287]					
	CP1K6G0011C			Type 3R	DH1	21.5 [546]	20.1 [510]	22 [559]					
10	CP1K6G0014F	12	14	Open (Wall)	A	9.8 [249]	8.9 [226]	15.2 [386]	5.5 [140]	2.6 [66]	1	70 [32]	210
				Open (Floor)	C	9.0 [229]	7.9 [201]	13.8 [351]					
	CP1K6G0014C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]					
15	CP1K6G0019F	17	19	Open (Wall)	A	9.8 [249]	8.8 [224]	15.2 [386]	7.5 [191]	2.6 [66]	1	70 [32]	230
				Open (Floor)	C	9.0 [229]	8.0 [203]	13.8 [351]					
	CP1K6G0019C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]					
20	CP1K6G0025F	23	25	Open (Wall)	A	9.8 [249]	9.7 [246]	15.2 [386]	7.4 [188]	2.6 [66]	1	95 [43]	300
				Open (Floor)	C	9.0 [229]	8.8 [224]	13.8 [351]					
	CP1K6G0025C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]					
25	CP1K6G0032F	29	32	Open (Wall)	A	9.8 [249]	10.7 [272]	15.2 [386]	8.5 [216]	3.5 [66]	1	100 [45]	320
				Open (Floor)	C	9.0 [229]	10.5 [267]	13.8 [351]					
	CP1K6G0032C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]					
30	CP1K6G0037F	34	37	Open (Wall)	A	11.5 [292]	10.1 [257]	17.6 [447]	8.5 [216]	3.5 [89]	1	135 [61]	480
				Open (Floor)	C	10.8 [274]	9.8 [249]	16.3 [414]					
	CP1K6G0037C			Type 3R	DH2	25.8 [655]	23.8 [604]	28.8 [731]					
40	CP1K6G0050F	46	50	Open (Wall)	A	11.5 [292]	10.3 [262]	17.6 [447]	9.1 [231]	3.5 [89]	1	150 [68]	525
				Open (Floor)	C	10.8 [274]	9.8 [249]	16.3 [414]					
	CP1K6G0050C			Type 3R	DH2	25.8 [655]	23.8 [604]	28.8 [731]					
50	CP1K6G0061F	57	61	Open (Wall)	A	11.5 [292]	11.8 [300]	17.6 [447]	9.1 [231]	3.5 [89]	1	175 [79]	600
				Open (Floor)	D	10.8 [274]	12.6 [320]	16.3 [414]					
	CP1K6G0061C			Type 3R	DH2	25.8 [655]	23.8 [604]	28.8 [731]					
60	CP1K6G0074F	69	74	Open (Wall)	B	14.8 [376]	11.3 [287]	25.5 [648]	9.1 [231]	3.5 [89]	1	275 [125]	675
				Open (Floor)	D	14.3 [363]	9.8 [249]	23.5 [597]					
	CP1K6G0074C			Type 3R	DH3	28.3 [719]	27.0 [687]	36.0 [914]					
75	CP1K6G0091F	85	91	Open (Wall)	B	14.8 [376]	12.5 [318]	25.5 [648]	10.3 [262]	3.5 [89]	1	350 [159]	725
				Open (Floor)	D	14.3 [363]	9.7 [246]	23.5 [597]					
	CP1K6G0091C			Type 3R	DH3	28.3 [719]	27.0 [687]	36.0 [914]					
100	CP1K6G0121F	113	121	Open (Wall)	B	14.8 [376]	12.9 [328]	25.5 [648]	12.1 [307]	3.5 [89]	1	375 [170]	1000
				Open (Floor)	D	13.5 [343]	11.7 [297]	23.5 [597]					
	CP1K6G0121C			Type 3R	DH3	28.3 [719]	27.0 [687]	36.0 [914]					
125	CP1K6G0151F	141	151	Open (Wall)	B	14.8 [376]	12.3 [312]	25.5 [648]	10.3 [262]	3.5 [89]	1	390 [177]	1025
				Open (Floor)	D	15.8 [401]	13.3 [338]	23.5 [597]					
	CP1K6G0151C			Type 3R	DH3	28.3 [719]	27.0 [687]	36.0 [914]					
150	CP1K6G0180F	169	180	Open (F)	D	15.8 [401]	14.9 [378]	23.5 [597]	11.5 [292]	4.6 [117]	1	430 [195]	1300
				DH3	DH3	28.3 [719]	27.0 [687]	36.0 [914]					
	CP1K6G0180C			Type 3R	DH3	28.3 [719]	27.0 [687]	36.0 [914]					
200	CP1K6G0241F	226	241	Open (F)	D	18 [457]	15.8 [401]	23.5 [597]	12.1 [307]	3.5 [89]	1	625 [283]	1400
				Type 3R	DH4	31.5 [800]	29.5 [749]	44.5 [1130]					
	CP1K6G0241C			Type 3R	DH4	31.5 [800]	29.5 [749]	44.5 [1130]					
250	CP1K6G0299F	281	299	Open (F)	E	19.0 [483]	17.0 [432]	32.0 [813]	12.1 [307]	3.5 [89]	1	755 [352]	1700
				Type 3R	DH4	31.5 [800]	29.5 [749]	44.5 [1130]					
	CP1K6G0299C			Type 3R	DH4	31.5 [800]	29.5 [749]	44.5 [1130]					

*Weight & dimensions are approximate

¹Capacitors are pre-installed in enclosed style parts²Please refer to figure G for capacitor drawing

SELECTION TABLES

PASSIVE HARMONIC FILTER

480 V

60 HZ

Motor Rating (HP)	Part Number	Current (A)		Encl. Style	Filter Dimensions in Inches [Millimeter]				Capacitor Dimensions in Inches [Millimeter] ¹		Cap. Qty ²	Weight Lbs. [kg]	Watts Loss
		Input	Output		Dimens. Fig.	A	B	C	H	D			
300	CP1K6G0358F	337	358	Open (F)	E	21 [533]	17 [432]	34 [864]	11.5 [292]	4.6 [117]	2	1200 [544]	2150
	CP1K6G0358C			Type 3R	DH5	38 [965]	34 [864]	52 [1321]	Pre-Installed in Enclosure			1400 [635]	
350	CP1K6G0420F	395	420	Open (F)	E	21 [533]	17 [432]	35 [889]	11.5 [292]	4.6 [117]	3	1300 [590]	2300
	CP1K6G0420C			Type 3R	DH5	38 [965]	34 [864]	52 [1321]	Pre-Installed in Enclosure			1650 [748]	
400	CP1K6G0499F	470	499	Open (F)	F	30 [762]	20 [508]	37 [940]	11.5 [292]	4.6 [117]	3	1750 [794]	2700
	CP1K6G0499C			Type 3R	DH5	38 [965]	34 [864]	52 [1321]	Pre-Installed in Enclosure			1850 [839]	
500	CP1K6G0632F	595	632	Open (F)	F	32 [813]	21 [533]	39 [991]	11.5 [292]	4.6 [117]	4	1900 [862]	2900
	CP1K6G0632C			Type 3R	DH5	38 [965]	34 [864]	52 [1321]	Pre-Installed in Enclosure			2300 [1043]	

*Weight & dimensions are approximate

¹Capacitors are pre-installed in enclosed style parts

²Please refer to figure G for capacitor drawing

600 V

60 HZ

Motor Rating (HP)	Part Number	Current (A)		Encl. Style	Filter Dimensions in Inches [Millimeter]				Capacitor Dimensions in Inches [Millimeter] ¹		Cap. Qty ²	Weight Lbs. [kg]	Watts Loss
		Input	Output		Dimens. Fig.	A	B	C	H	D			
5	CP1P6G0006F	5	6	Open (Wall)	A	7.5 [191]	6.0 [152]	12.5 [318]	4.4 [112]	2.6 [66]	1	-	-
	Open (Floor)			C	7.2 [183]	5.7 [145]	11.3 [287]						
	CP1P6G0006C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]	Pre-installed in Enclosure		120 [54]		
7.5	CP1P6G0008F	7	8	Open (Wall)	A	7.5 [191]	6.0 [152]	12.5 [318]	4.4 [112]	2.6 [66]	1	-	-
	Open (Floor)			C	7.2 [183]	5.8 [147]	11.3 [287]						
	CP1P6G0008C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]	Pre-installed in Enclosure		130 [59]		
10	CP1P6G0012F	10	12	Open (Wall)	A	10.0 [254]	8.5 [216]	15.2 [386]	4.4 [112]	2.6 [66]	1	-	-
	Open (Floor)			C	9.0 [229]	7.5 [191]	13.8 [351]						
	CP1P6G0012C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]	Pre-installed in Enclosure		140 [64]		
15	CP1P6G0016F	14	16	Open (Wall)	A	10.0 [254]	8.5 [216]	15.2 [386]	5.5 [140]	2.6 [66]	1	-	-
	Open (Floor)			C	9.0 [229]	7.5 [191]	13.8 [351]						
	CP1P6G0016C			Type 3R	DH1	21.5 [546]	20.1 [510]	22 [559]	Pre-installed in Enclosure		160 [73]		
20	CP1P6G0020F	18	20	Open (Wall)	A	10.0 [254]	9.5 [229]	15.2 [386]	7.5 [191]	2.6 [66]	1	-	-
	Open (Floor)			C	9.0 [229]	8.3 [211]	13.8 [351]						
	CP1P6G0020C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]	Pre-installed in Enclosure		165 [75]		
25	CP1P6G0025F	23	25	Open (Wall)	A	10.0 [254]	10.8 [274]	15.2 [386]	7.4 [188]	3.5 [89]	1	-	-
	Open (Floor)			C	9.0 [229]	10.0 [254]	13.8 [351]						
	CP1P6G0025C			Type 3R	DH1	21.5 [546]	20.1 [510]	22.0 [559]	Pre-installed in Enclosure		170 [77]		
30	CP1P6G0031F	28	31	Open (Wall)	A	11.5 [292]	10.5 [267]	17.6 [447]	7.4 [188]	3.5 [89]	1	-	-
	Open (Floor)			C	10.8 [274]	9.5 [229]	16.3 [414]						
	CP1P6G0031C			Type 3R	DH2	25.8 [655]	23.8 [604]	28.8 [731]	Pre-installed in Enclosure		190 [86]		
40	CP1P6G0040F	37	40	Open (Wall)	A	11.5 [292]	10.5 [267]	17.6 [447]	8.7 [221]	2.6 [66]	1	-	-
	Open (Floor)			C	10.8 [274]	9.5 [229]	16.3 [414]						
	CP1P6G0040C			Type 3R	DH2	25.8 [655]	23.8 [604]	28.8 [731]	Pre-installed in Enclosure		240 [109]		
50	CP1P6G0049F	45	49	Open (Wall)	B	11.5 [292]	11.8 [300]	17.6 [447]	8.5 [216]	3.5 [89]	1	-	-
	Open (Floor)			D	10.8 [274]	11.5 [292]	16.3 [414]						
	CP1P6G0049C			Type 3R	DH2	25.8 [655]	23.8 [604]	28.8 [731]	Pre-installed in Enclosure		290 [132]		
60	CP1P6G0059F	55	59	Open (Wall)	B	14.8 [376]	11.8 [300]	25.5 [648]	9.1 [231]	3.5 [89]	1	-	-
	Open (Floor)			D	14.3 [363]	11.0 [279]	23.5 [597]						
	CP1P6G0059C			Type 3R	DH3	28.3 [719]	27.0 [687]	36.0 [914]	Pre-installed in Enclosure		420 [191]		

*Weight & dimensions are approximate

¹Capacitors are provided loose with Open Style and pre-installed in enclosure for enclosed parts

²Please refer to figure G for capacitor drawing

SELECTION TABLES

PASSIVE HARMONIC FILTER

600 V

60 HZ

Motor Rating (HP)	Part Number	Current (A)		Encl. Style	Filter Dimensions in Inches [Millimeter]				Capacitor Dimensions in Inches [Millimeter] ¹		Cap. Qty ²	Weight Lbs. [kg]	Watts Loss
		Input	Output		Dimens. Fig.	A	B	C	H	D			
75	CP1P6G0073F	68	73	Open (Wall)	B	14.8 [376]	12.5 [318]	25.5 [648]	9.1 [231]	3.5 [89]	1	-	-
	CP1P6G0073C			Open (Floor)	D	14.3 [363]	11.5 [292]	23.5 [597]					
				Type 3R	DH3	28.3 [719]	27.0 [687]	36.0 [914]					
100	CP1P6G0096F	90	96	Open (Wall)	B	14.8 [376]	12.5 [318]	25.5 [648]	12.1 [307]	3.5 [89]	1	-	-
	CP1P6G0096C			Open (Floor)	D	16.5 [419]	11.0 [279]	23.5 [597]					
				Type 3R	DH3		27.0 [687]	36.0 [914]					
125	CP1P6G0120F	112	120	Open (Wall)	B	14.8 [376]	13.5 [343]	25.5 [648]	8.5 [216]	3.5 [89]	1	-	-
	CP1P6G0120C			Open (Floor)	D	16.5 [419]	12.0 [305]	23.5 [597]					
				Type 3R	DH3	28.3 [719]	27.0 [687]	36.0 [914]					
150	CP1P6G0144F	135	144	Open (F)	D	19.0 [483]	12.0 [305]	23.5 [597]	9.1 [231]	3.5 [89]	1	-	-
	CP1P6G0144C				DH3	31.5 [800]	29.5 [749]	44.5 [1130]					
					DH4								
200	CP1P6G0192F	180	192	Open (F)	D	19.5 [495]	14.0 [356]	23.5 [597]	14.4 [366]	3.5 [89]	1	-	-
	CP1P6G0192C				DH4	31.5 [800]	29.5 [749]	44.5 [1130]					
				Type 3R									
250	CP1P6G0240F	225	240	Open (F)	D	19.5 [495]	15.5 [394]	23.5 [597]	14.4 [366]	3.5 [89]	1	-	-
	CP1P6G0240C				DH4	31.5 [800]	29.5 [749]	44.5 [1130]					
				Type 3R									
300	CP1P6G0287F	270	278	Open (F)	E	21.0 [633]	17.0 [432]	34.0 [864]	12.1 [307]	3.5 [89]	3	-	-
	CP1P6G0287C				DH4	31.5 [800]	29.5 [749]	44.5 [1130]					
				Type 3R									
350	CP1P6G0335F	315	335	Open (F)	E	21.0 [633]	19.0 [483]	35.0 [889]	12.1 [307]	3.5 [89]	1	-	-
	CP1P6G0335C				DH5	38.0 [965]	34.0 [864]	52.0 [1321]					
				Type 3R									
400	CP1P6G0399F	375	399	Open (F)	F	26.0 [660]	19.0 [483]	39.0 [991]	14.4 [366]	4.6 [117]	3	-	-
	CP1P6G0399C				DH5	-	34.0 [864]	52.0 [1321]					
				Type 3R									
500	CP1P6G0505F	475	505	Open (F)	F	27.0 [686]	21.0 [533]	41.0 [1041]	14.4 [366]	3.5 [89]	2	-	-
	CP1P6G0505C				DH5	38.0 [965]	34.0 [864]	52.0 [1321]					

*Weight & dimensions are approximate

¹Capacitors are pre-installed in enclosed style parts

²Please refer to figure G for capacitor drawing

Wall Mount Mounting Dimensions & Figures

Figure A

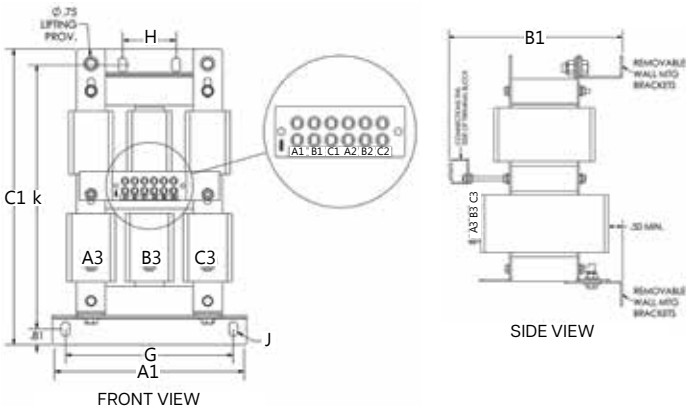
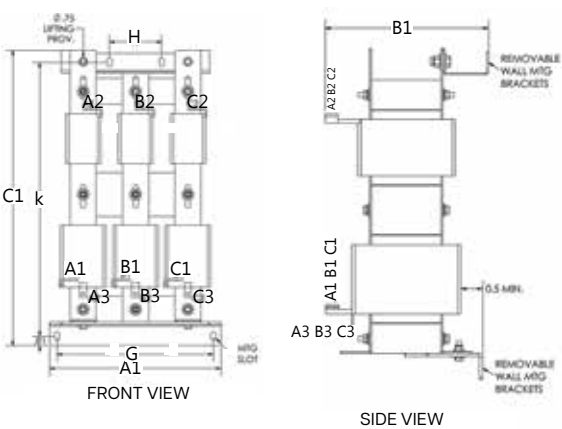


Figure B



480V

Wall Mount Reactor Mounting Information					
Dimensions in Inches [Milimeter]					
Dim. Fig. #	Amps at 480V	Mtg Width BOT [G]	Mtg Width TOP [H]	Mtg H (K)	Mtg Slot (J)
A	8 - 11	6.6 [168]	2.8 [71]	12.5 [318]	.28 x .56 [7 x 14]
	14 - 32	8.6 [218]	2.8 [71]	15.2 [386]	.44 x .75 [11 x 19]
	37-61	10.2 [259]	4.5 [114]	17.6 [447]	.44 x .75 [11 x 19]
B	74-151	13.4 [340]	4.5 [114]	25.5 [648]	.44 x .75 [11 x 19]

600V

Wall Mount Reactor Mounting Information					
Dimensions in Inches [Milimeter]					
Dim. Fig. #	Amps at 600V	Mtg Width BOT [G]	Mtg Width TOP [H]	Mtg H (K)	Mtg Slot (J)
A	6 - 8	6.6 [168]	2.8 [71]	11.2 [284]	.28 x .56 [7 x 14]
	12 - 25	8.6 [218]	2.8 [71]	13.6 [345]	.44 x .75 [11 x 19]
	31 - 49	10.2 [259]	4.5 [114]	16 [406]	.44 x .75 [11 x 19]
B	59 - 120	13.4 [340]	4.5 [114]	23.6[599]	.44 x .75 [11 x 19]

Floor Mount Mounting Dimensions & Figures

Figure C

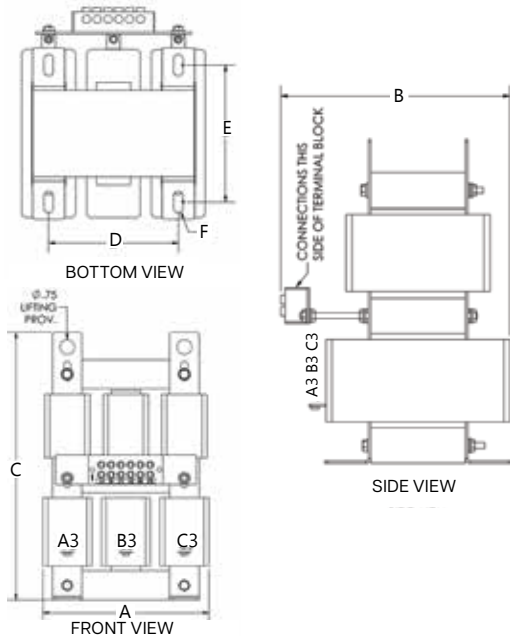


Figure D

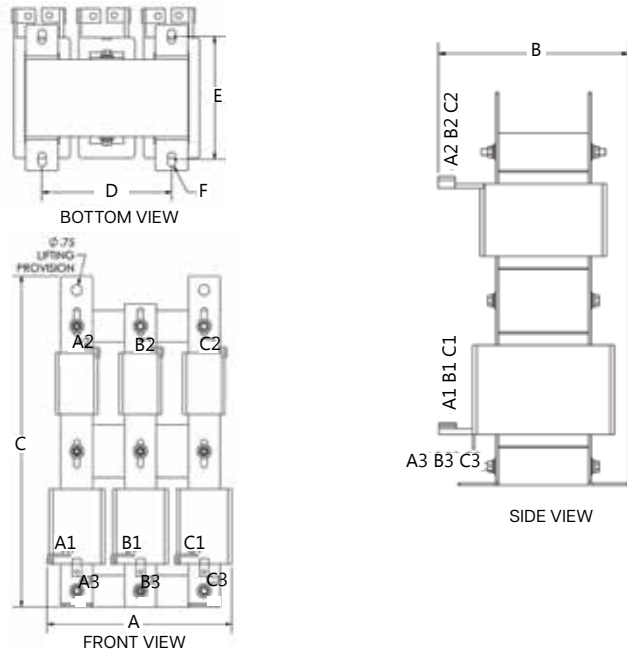


Figure E

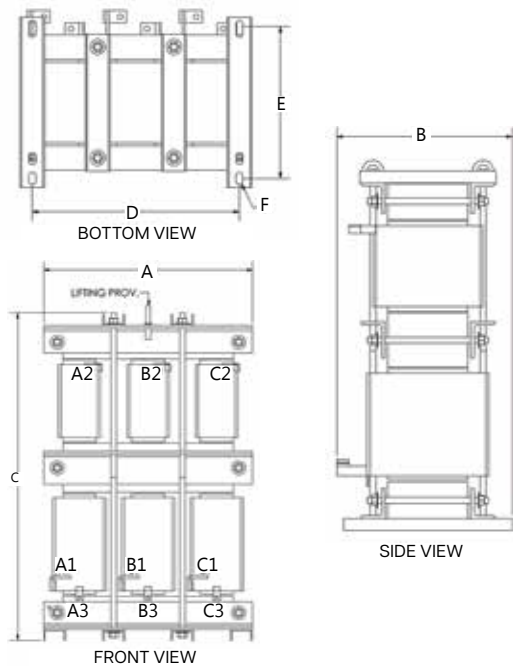
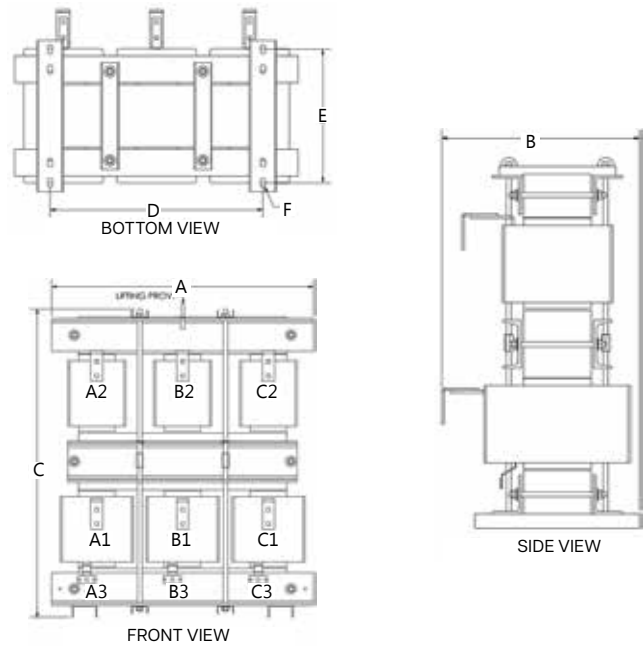


Figure F



Passive Harmonic Filter

480V

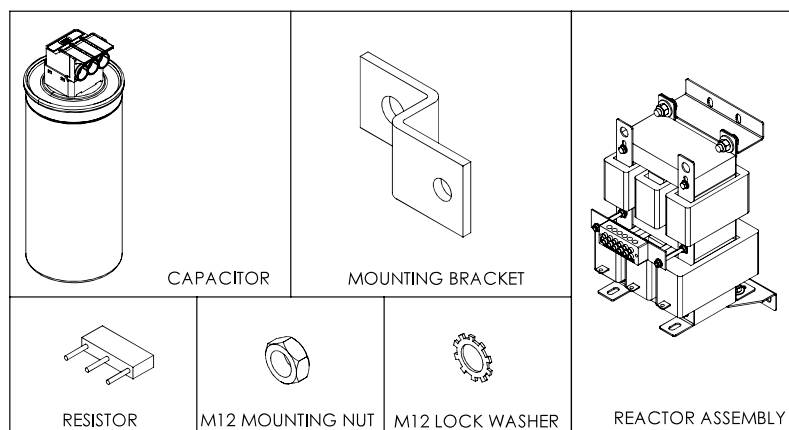
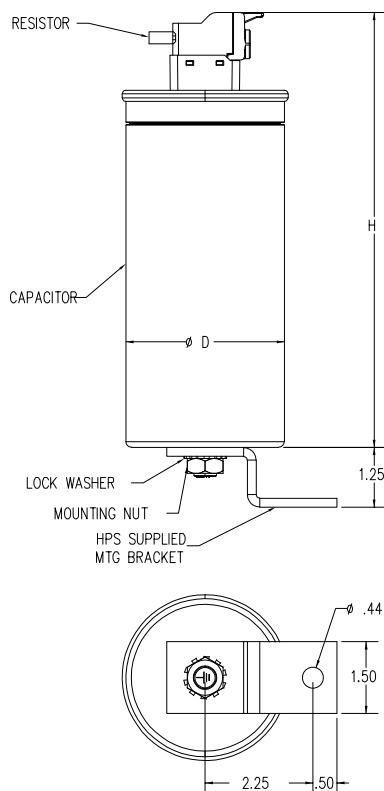
Floor Mount Reactor Mounting Information				
Dimensions in Inches [Millimeter]				
Dim. Fig. #	Amps at 480V	Mtg Width [D]	Mtg Width [E]	Mtg Slot (J)
C	8 - 11	4.8 [122]	3.6 [91]	.38 x .50 [10 x 13]
	14 - 19	6 [152]	4.5 [114]	.44 x 1.0 [11 x 25]
	25	6 [152]	5.3 [135]	.44 x 1.0 [11 x 25]
	32	6 [152]	6.3 [160]	.44 x 1.0 [11 x 25]
	37 - 50	7.2 [183]	5.5 [140]	.44 x 1.0 [11 x 25]
D	61	7.2 [183]	7.0 [178]	.44 x 1.0 [11 x 25]
	74	9.5 [241]	6.9 [175]	.44 x 1.0 [11 x 25]
	91	9.5 [241]	8.2 [208]	.44 x 1.0 [11 x 25]
	121	9 [229]	8.6 [218]	.44 x 1.0 [11 x 25]
	151	10.5 [267]	7.9 [201]	.44 x 1.0 [11 x 25]
	180	10.5 [267]	8.7 [221]	.44 x 1.0 [11 x 25]
	241	12 [305]	9.3 [236]	.44 x 1.0 [11 x 25]
E	299	17 [432]	12.5 [318]	.56 x 1.0 [14 x 25]
	358	19 [483]	15 [381]	.56 x 1.0 [14 x 25]
	420	19 [483]	14.8 [376]	.56 x 1.0 [14 x 25]
F	499 - 632	24 [610]	15 [381]	.56 x 1.0 [14 x 25]

600V

Floor Mount Reactor Mounting Information				
Dimensions in Inches [Millimeter]				
Dim. Fig. #	Amps at 600V	Mtg Width [D]	Mtg Width [E]	Mtg Slot (J)
C	6 - 8	4.8 [122]	3.5 [89]	.38 x .50 [10 x 13]
	12 - 16	6 [152]	4.5 [114]	.44 x 1.0 [11 x 25]
	20	6 [152]	5.2 [132]	.44 x 1.0 [11 x 25]
	25	6 [152]	6.3 [160]	.44 x 1.0 [11 x 25]
	31 - 40	7.2 [183]	5.5 [140]	.44 x 1.0 [11 x 25]
D	49	7.2 [183]	7.1 [180]	.44 x 1.0 [11 x 25]
	59	9.5 [241]	6.8 [173]	.44 x 1.0 [11 x 25]
	73	9 [229]	8.6 [218]	.44 x 1.0 [11 x 25]
	96	10.5 [267]	7.7 [196]	.44 x 1.0 [11 x 25]
	120	10.5 [267]	8.7 [221]	.44 x 1.0 [11 x 25]
	144	12.5 [318]	9 [229]	.44 x 1.0 [11 x 25]
	192	13 [330]	9.3 [236]	.44 x 1.0 [11 x 25]
E	240	13 [330]	10.2 [259]	.44 x 1.0 [11 x 25]
	287	19 [483]	15 [381]	.56 x 1.0 [14 x 25]
	335	19 [483]	14.8 [376]	.56 x 1.0 [14 x 25]
F	399	24 [610]	17 [432]	.56 x 1.0 [14 x 25]
	505	24 [610]	16.5 [419]	.56 x 1.0 [14 x 25]

Capacitors & Contactor Information

Capacitor Drawing - Figure G



1. If the resistor is not installed in capacitor terminal block, install it.
2. Mount the capacitor using the nut and lock washer provided. Please refer to installation manual for further details.

Optional Contactors

A contactor(s) can be provided as an option to disconnect the filter capacitor(s) as such load ratings if the capacitors is not required. These specific load ratings are determined by customer requirements. The contactor(s) are supplied with No?NC auxiliary contacts.

Open Style Filter

Customer is responsible for mounting and wiring of capacitors(s) as well as contactor(s).

Enclosed

Both capacitors(s) and contactor(s) are pre-installed and wired in the enclosure.

Capacitors & Contactor Information - Continued

480V

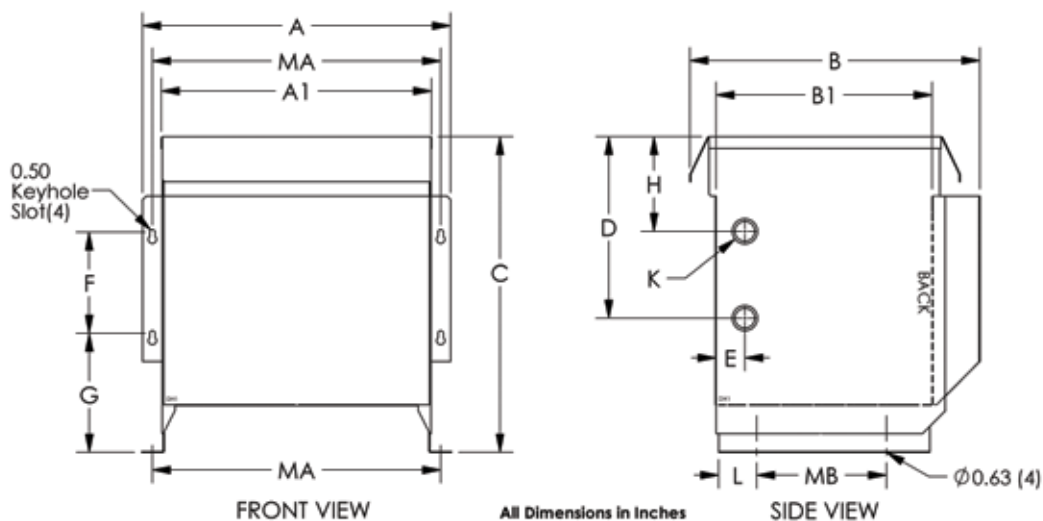
Dimensions in Inches [Milimeter]						
HP at 480V	Cap	Replacement Cap Part Number	H	D	Qty	"Optional Contactor Current Rating"
5	Cap #1	CP1K-0621	4.4 [112]	2.6 [66]	1	15
7.5	Cap #1	CP1K-0622	5.5 [140]	2.6 [66]	1	15
10	Cap #1	CP1K-0600	5.5 [140]	2.6 [66]	1	15
15	Cap #1	CP1K-0624	7.5 [191]	2.6 [66]	1	15
20	Cap #1	CP1K-0625	7.4 [188]	2.6 [66]	1	15
25	Cap #1	CP1K-0601	8.5 [216]	3.5 [89]	1	15
30	Cap #1	CP1K-0601	8.5 [216]	3.5 [89]	1	30
40	Cap #1	CP1K-0607	9.1 [231]	3.5 [89]	1	30
50	Cap #1	CP1K-0614	9.1 [231]	3.5 [89]	1	30
60	Cap #1	CP1K-0613	9.1 [231]	3.5 [89]	1	50
75	Cap #1	CP1K-0610	10.3 [262]	3.5 [89]	1	50
100	Cap #1	CP1K-0602	12.1 [307]	3.5 [89]	1	90
125	Cap #1	CP1K-0610	10.3 [262]	3.5 [89]	1	2 x 50
	Cap #2	CP1K-0614	9.1 [231]	3.5 [89]	1	
150	Cap #1	CP1K-0606	11.5 [292]	4.6 [117]	1	90
200	Cap #1	CP1K-0602	12.1 [307]	3.5 [89]	1	2 x 90
	Cap #2	CP1K-0605	11.5 [292]	4.6 [117]	1	
250	Cap #1	CP1K-0602	12.1 [307]	3.5 [89]	1	3 x 50
	Cap #2	CP1K-0611	10.3 [262]	3.5 [89]	2	
300	Cap #1	CP1K-0606	11.5 [292]	4.6 [117]	2	2 x 90
350	Cap #1	CP1K-0605	11.5 [292]	4.6 [117]	3	3 x 90
400	Cap #1	CP1K-0605	11.5 [292]	4.6 [117]	2	3 x 90
	Cap #2	CP1K-0606	11.5 [292]	4.6 [117]	1	
500	Cap #1	CP1K-0605	11.5 [292]	4.6 [117]	2	4 x 90
	Cap #2	CP1K-0606	11.5 [292]	4.6 [117]	2	

Capacitors & Contactor Information - Continued

600V

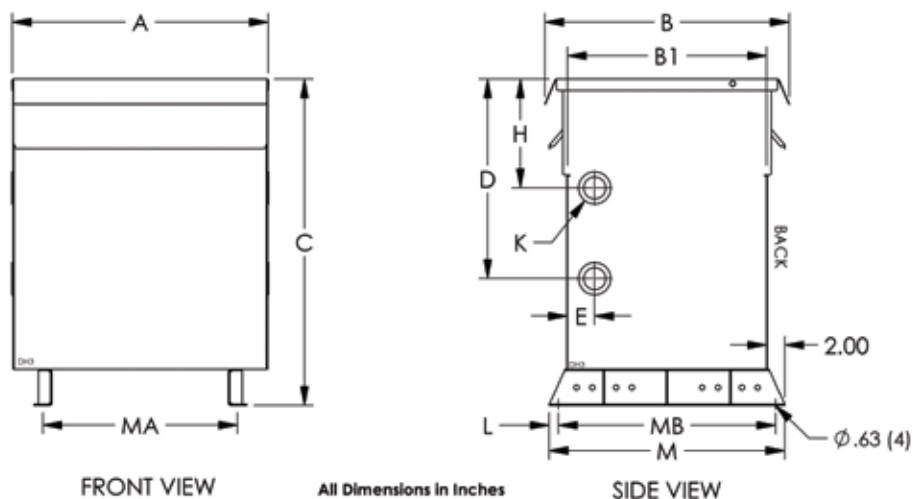
Dimensions in Inches [Milimeter]						
HP at 600V	Cap	Replacement Cap Part Number	H	D	Qty	"Optional Contactor Current Rating"
5	Cap #1	CP1P-6015	4.4 [112]	2.6 [66]	1	15
7.5	Cap #1	CP1P-6026	4.4 [112]	2.6 [66]	1	15
10	Cap #1	CP1P-6026	4.4 [112]	2.6 [66]	1	15
15	Cap #1		5.5 [140]	2.6 [66]	1	15
20	Cap #1	CP1P-6027	7.5 [191]	2.6 [66]	1	15
25	Cap #1	CP1P-6030	7.4 [188]	3.5 [89]	1	15
30	Cap #1	CP1P-6030	7.4 [188]	3.5 [89]	1	15
40	Cap #1	CP1P-6008	8.7 [221]	2.6 [66]	1	30
50	Cap #1	CP1P-6020	8.5 [216]	3.5 [89]	1	30
60	Cap #1	CP1P-6016	9.1 [231]	3.5 [89]	1	30
75	Cap #1	CP1P-6017	9.1 [231]	3.5 [89]	1	50
100	Cap #1	CP1P-6018	12.1 [307]	3.5 [89]	1	50
125	Cap #1	CP1P-6020	8.5 [216]	3.5 [89]	1	2 x 30
	Cap #2	CP1P-6017	9.1 [231]	3.5 [89]	1	
150	Cap #1	CP1P-6016	9.1 [231]	3.5 [89]	1	2 x 50
	Cap #2	CP1P-6003	11.5 [292]	3.5 [89]	1	
200	Cap #1	CP1P-6004	14.4 [366]	3.5 [89]	1	2 x 50
	Cap #2	CP1P-6003	11.5 [292]	3.5 [89]	1	
250	Cap #1	CP1P-6004	14.4 [366]	3.5 [89]	1	2 x 90
	Cap #2	CP1P-6019	14.4 [366]	4.6 [117]	1	
300	Cap #1	CP1P-6018	12.1 [307]	3.5 [89]	3	3 x 50
350	Cap #1	CP1P-6018	12.1 [307]	3.5 [89]	1	3 x 90
	Cap #2	CP1P-6004	14.4 [366]	3.5 [89]	1	
	Cap #3	CP1P-6019	14.4 [366]	4.6 [117]	1	
400	Cap #1	CP1P-6019	14.4 [366]	4.6 [117]	3	3 x 90
500	Cap #1	CP1P-6004	14.4 [366]	3.5 [89]	2	4 x 90
	Cap #2		14.4 [366]	4.6 [117]	2	

Enclosure Drawings



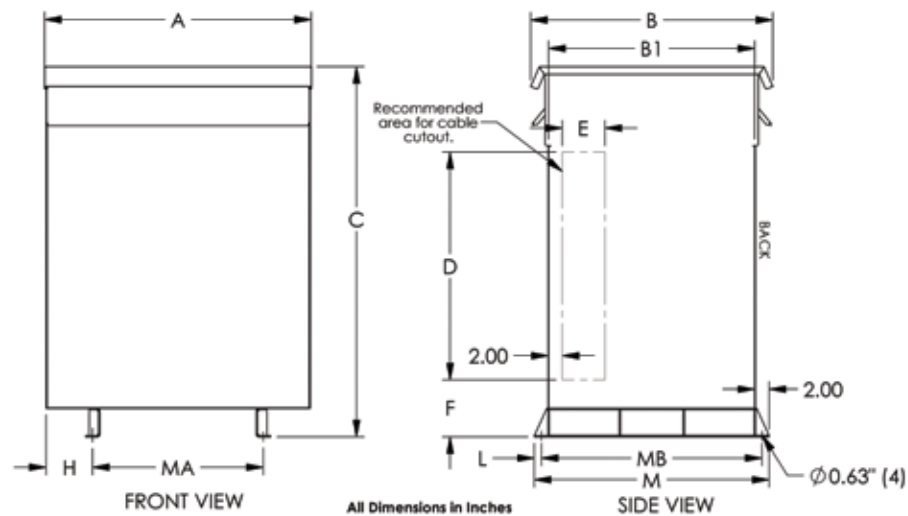
Case Style	Dimensions in Inches [Millimeter]													
	A	A1	B	B1	C	D	E	F	G	H	K	L	MA	MB
DH1	21.5 [546]	18.8 [477]	20.1 [510]	15 [381]	22 [559]	12.6 [320]	2 [51]	7 [178]	8.3 [211]	6.6 [168]	1.38 X 1.75 K.O. [35 x 44 K.O.]	2.6 [66]	20 [508]	9 [229]
DH2	25.8 [655]	23.3 [592]	23.8 [604]	18 [457]	28.8 [731]	17 [432]	2 [51]	8 [203]	10.3 [262]	8.6 [218]	1.75 X 2.50 K.O. [44 X 63 K.O.]	3.8 [96]	24.6 [625]	9 [229]

¹ Knockout (K) sizes are actual diameters of knockout, not conduit sizes.



Case Style	Dimensions in Inches [Millimeter]											
	A	B	B1	C	D	E	H	K	L	M	MA	MB
DH3	28.3 [719]	27 [687]	22 [559]	36 [914]	22 [559]	3 [76]	12 [305]	2.00 X 3.00 K.O. [50 X 76 K.O.]	1 [25]	26 [660]	21.5 [546]	24 [610]
DH4	31.5 [800]	29.5 [749]	24.5 [622]	44.5 [1130]	27.5 [698]	3 [76]	14.5 [368]	2.00 X 3.00 K.O. [50 X 76 K.O.]	1 [25]	28.5 [724]	23.5 [597]	26.5 [673]

¹ Knockout (K) sizes are actual diameters of knockout, not conduit sizes.



Case Style	Dimensions in Inches [Millimeter]											
	A	B	B1	C	D	E	F	H	L	M	MA	MB
DH5	38 [965]	34 [864]	29 [737]	52 [1321]	32 [813]	6 [152]	8 [203]	6.6 [168]	1 [25]	33 [838]	24 [610]	31 [787]

¹Knockout (K) sizes are actual diameters of knockout, not conduit sizes.

Termination Details & Enclosure Mounting Kits

Termination Details

HP	480 V Current (A)	600 V Current (A)
5	18-14 AWG	18-14 AWG
7.5	18-14 AWG	18-14 AWG
10	13-10 AWG	13-10 AWG
15	8-14 AWG	13-10 AWG
20	8-14 AWG	8-14 AWG
25	8-14 AWG	8-14 AWG
30	Dia. 1A	Dia. 1A
40	Dia. 1A	Dia. 1A
50	Dia. 1A	Dia. 1A
60	Dia. 1A	Dia. 1A
75	Dia. 1A	Dia. 1A
100	Dia. 1b	Dia. 1A
125	Dia. 1b	Dia. 1b
150	Dia. 1b	Dia. 1b
200	Dia. 1b	Dia. 1b
250	Dia. 1b	Dia. 1b
300	Dia. 1b	Dia. 1b
350	Dia. 1b	Dia. 1b
400	Dia. 1b	Dia. 1b
500	Dia. 2	Dia. 2

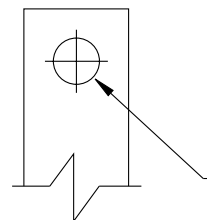


DIAGRAM 1

1A = 0.28" Dia.
1B = 0.44" Dia.

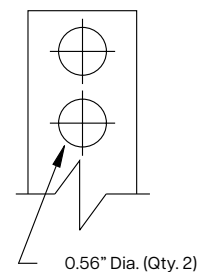


DIAGRAM 2

ENCLOSURE MOUNTING KITS

If wall and/or ceiling mounting is desired for a filter, optional mounting kits can be ordered separately. These mounting kits are NOT available for all enclosure case styles. Therefore, it is important that you confirm your enclosure case style, then use the selection table to the right to determine if A) a mounting kit is available and B) determine the correct HPS “Mounting Kit” part number that you must order. One kit is required for each filter.

Note: Some of the mounting kits can be used for both wall and ceiling mount, while others are for wall mounting only. The table indicates which mounting methods are available for each kit. The DW3 wall/ceiling mounting kit also includes a drip plate.

The DW3 wall/ceiling mounting kit is only designed for units up to 1000 pounds (453 kg) maximum.

If it is intended to wall and/or ceiling mount an enclosure that does not have a wall/ceiling mount kit available, considerations must be made to mechanically support the transformer safely and to install per the local building code. A drip plate must be provided beneath the enclosure per UL 1561 and CSA C22.2 No. 47.

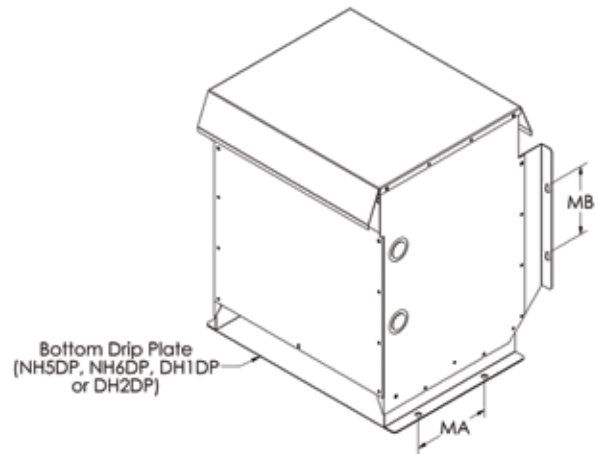
Enclosure Case Style	Wall Mount Available	Ceiling Mount Available	HPS Mounting Kit P/N
DH1	Yes	Yes	DH1DP
DH2	Yes	Yes	DH2DP
DH3	Yes	Yes	DW3
DH4	No	No	N/A
DH5	No	No	N/A

DH1DP and DH2DP Wall/Ceiling Mounting Kits

The DH1, DH1-1 and DH2 enclosures are designed with integral wall mounting capabilities. However, when you wall mount them, you must also install the bottom drip plate as shown below. The “MB” dimensions listed in the table below indicate the location for the wall mounting hardware.

For ceiling mounting of the DH1, DH1-1 and DH2, refer to the “MA” dimensions listed in the table below and hang the enclosure using appropriate sized ceiling hanger rods. However, you must be sure to install the bottom drip plate to the bottom of the enclosure, then bring the hanger rod down through both the enclosure bottom mounting holes, through the drip plate mounting holes, and install mounting hardware.

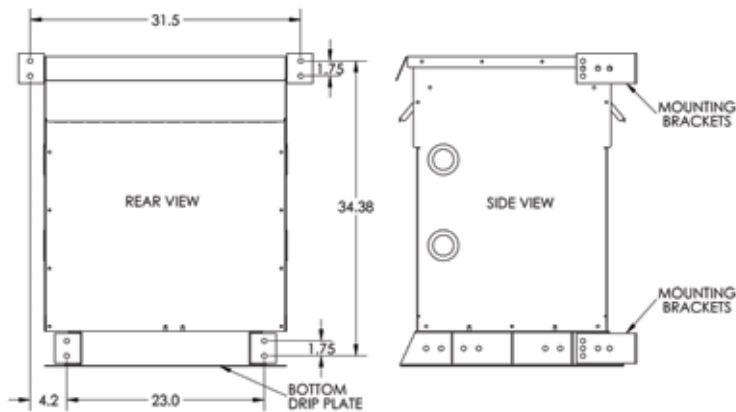
Note: Do not ceiling mount either the DH1, DH1-1 and DH2 enclosures without installing the bottom drip plate. All mounting hardware should be rated Grade 8 or higher.



Mounting Kit P/N	Enclosure Style	MA Dimension Inches [mm]	MB Dimension Inches [mm]
DH1DP	DH1	9.00 [228.6]	7.00 [177.8]
DH2DP	DH2	9.00 [228.6]	8.00 [203.2]

DW3 Wall Mounting Kit Dimensions

The following drawing details the wall mounting dimensions required and method by which the DW3 kit are installed on their respective DH3 enclosures. The DW3 wall mounting kit also includes a drip plate.



Other HPS Power Quality Products



Reactors



dV/dT Filters



Harmonic Mitigating Transformers



Active Harmonic Filters



Drive Isolation Transformers



Energy Efficient Drive Isolation Transformers



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