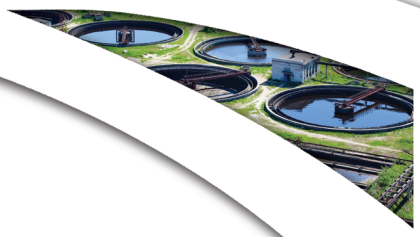


HPS Centurion™ P

Passive Harmonic Filter

Hammond Power Solutions

HPS Centurion P
Passive Harmonic Filter

HPS Centurion P 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 Centurion P 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.

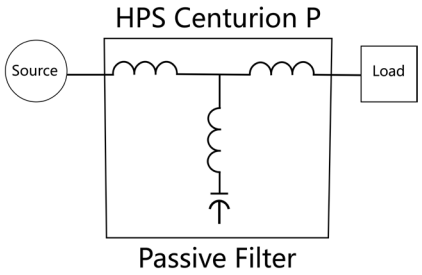
POWER QUALITY & HARMONIC DISTORTION

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

Typical One-Line Diagram:



ONE POWER QUALITY SOLUTION

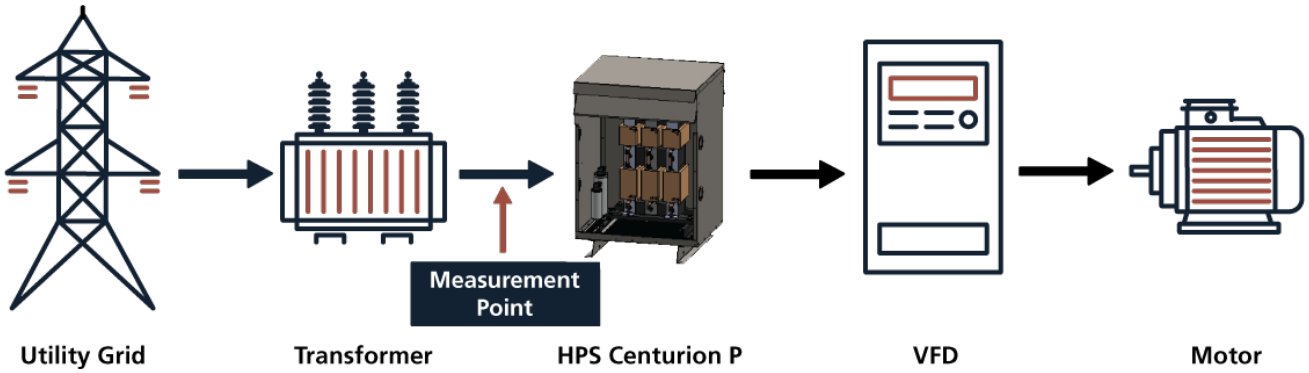
To maximize the harmonic mitigation and true power factor correction, each HPS Centurion P passive harmonic filter unit is specifically engineered to mitigate harmonic currents created by non-linear loads such as variable frequency drives and is available from 5 to 500 horsepower.

- 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 Centurion P 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 Centurion P achieves compliance with IEEE 519-2014 (when operated within designed parameters) for both current and voltage distortion at the input to the filter.

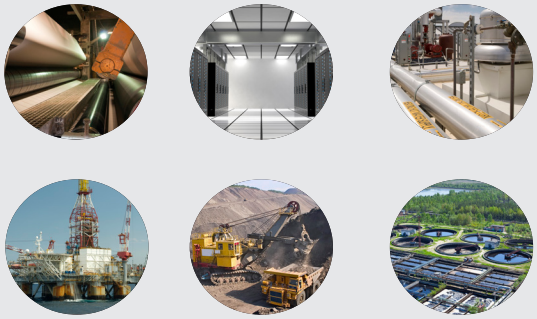
Example Installation



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



WHAT YOU GAIN

Compared to other power quality technologies HPS Centurion P provides the most efficient and reliable solution.

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

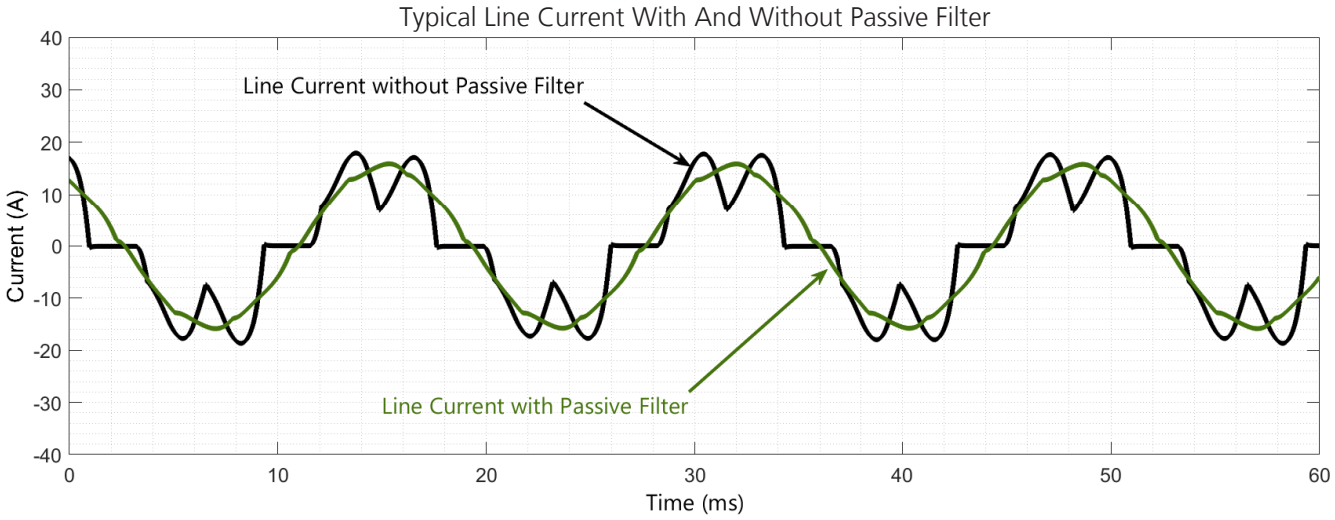
Improved Reliability
Increased electrical power quality results in increased uptime and reduces nuisance tripping events.

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

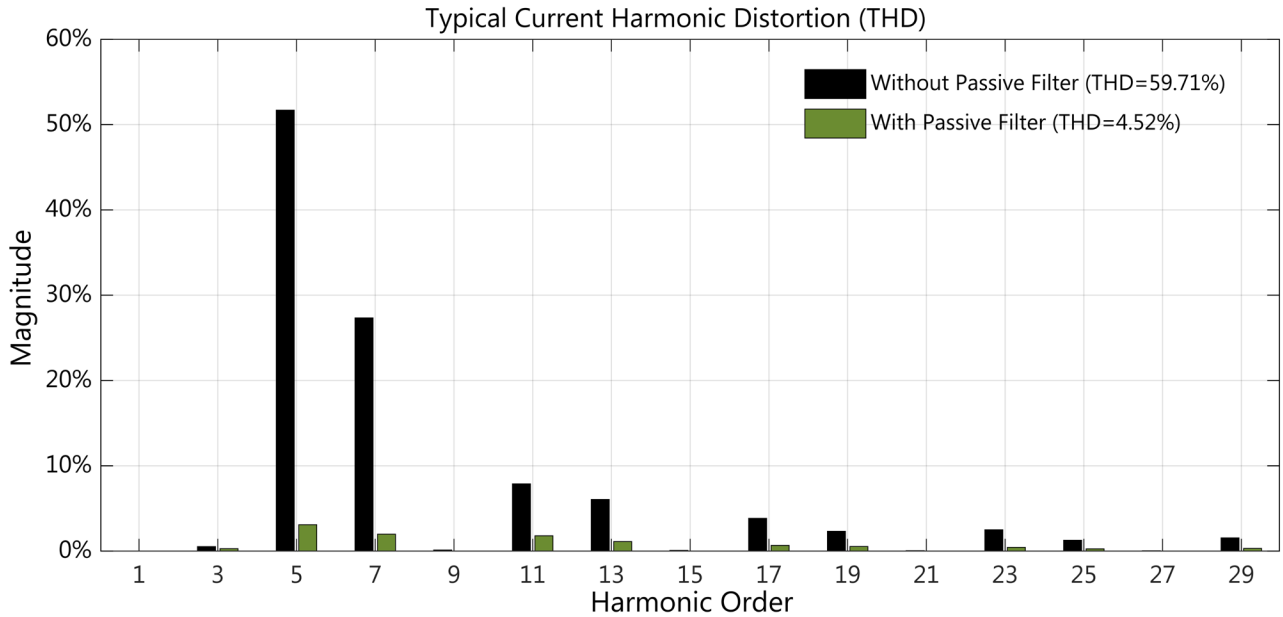
HPS Centurion P
Passive Harmonic Filter

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.



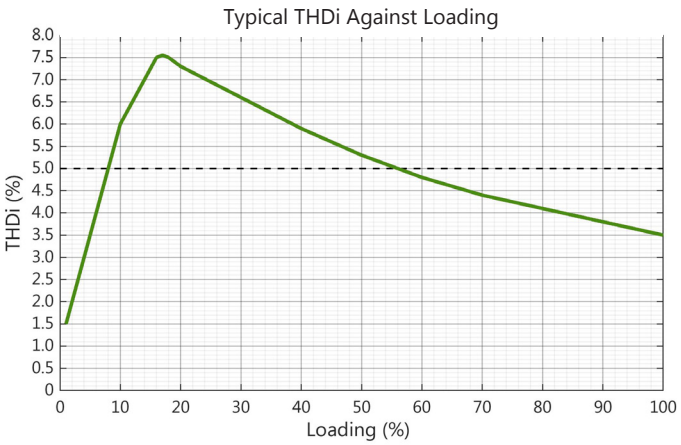
The HPS Centurion P is engineered to reduce the 5th, 7th, 11th, and 13th harmonics and higher orders in three phase power systems. The HPS Centurion P improves the power quality by mitigating harmonics caused by non-linear loads.

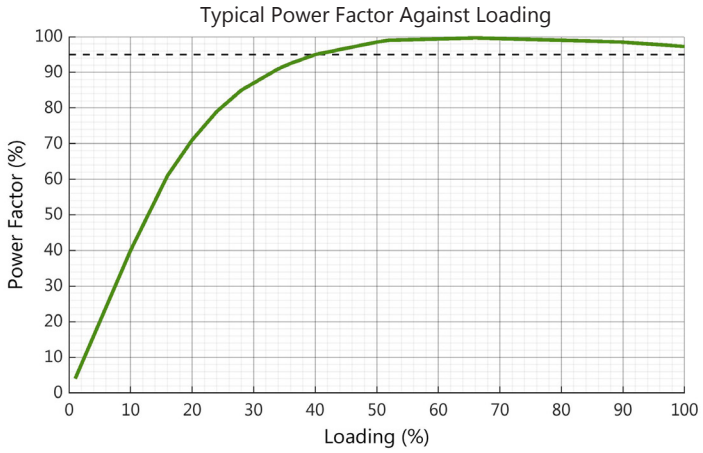


Results are typical and actual results may vary with unit specifications and design parameters.

Energy Savings - Lower kW & kVA

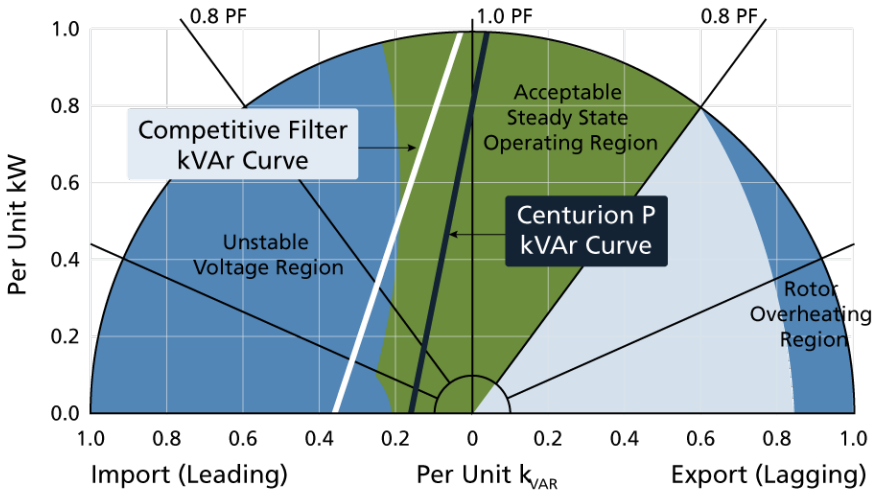
The mitigation of harmonics (THDi) and correction of power factor produces efficiencies in the electrical system, which lowers kW and kVA. This is an important benefit and one of the compelling reasons for installing the HPS Centurion P.
A 6-pulse VFD (without a harmonic filter) will typically create 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 Centurion P 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.



Generator Reactive Power Capability Curve

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:	0°C to 40°C (suitable for 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)
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

Part Number Guide

	Family	Type	Generation	Voltage	Frequency	Thermal Characteristics	Rating				Enclosure
Example	C	P	1	K	6	G	0	0	2	5	F
	Family = C - Centurion Type = P - Passive Harmonic Filter	1 = Gen. 1	K = 480V P = 600V	6 = 60Hz	Temperature Rise at 180°C/220°C Insulation Class G = 130°C	Current: 5A to 632A 5A = 0005 55A = 0050 500A = 0500					F = Open Frame C = Type 3R

*Please contact HPS for other available options

Selection Tables

480 V — 60 Hz

Motor Rating (HP)	Part Number	Input Current (A)	Output Current (A)	Open Style Mtg. Type W - Wall F - Floor	Encl. Style	Capacitor Dimensions in Inches [Millimeter][1]		Capacitor Qty[2]	Weight Lbs. [kg]	Watts Loss
						H	D			
5	**CP1K6G0008F**	7	8	F or W	-	4.4 [112]	2.6 [66]	1	45 [20]	175
	CP1K6G0008C			-	DH1				110 [50]	
7.5	**CP1K6G0011F**	9	11	F or W	-	5.5 [140]	2.6 [66]	1	50 [23]	190
	CP1K6G0011C			-	DH1				120 [54]	
10	**CP1K6G0014F**	12	14	F or W	-	5.5 [140]	2.6 [66]	1	70 [32]	210
	CP1K6G0014C			-	DH1				130 [59]	
15	**CP1K6G0019F**	17	19	F or W	-	7.5 [191]	2.6 [66]	1	70 [32]	230
	CP1K6G0019C			-	DH1				150 [68]	
20	**CP1K6G0025F**	23	25	F or W	-	7.4 [188]	2.6 [66]	1	95 [43]	300
	CP1K6G0025C			-	DH1				155 [70]	
25	**CP1K6G0032F**	29	32	F or W	-	8.5 [216]	3.5 [66]	1	100 [45]	320
	CP1K6G0032C			-	DH1				160 [73]	
30	**CP1K6G0037F**	34	37	F or W	-	8.5 [216]	3.5 [89]	1	135 [61]	480
	CP1K6G0037C			-	DH2				180 [82]	
40	**CP1K6G0050F**	46	50	F or W	-	9.1 [231]	3.5 [89]	1	150 [68]	525
	CP1K6G0050C			-	DH2				220 [100]	
50	**CP1K6G0061F**	57	61	F or W	-	9.1 [231]	3.5 [89]	1	175 [79]	600
	CP1K6G0061C			-	DH2				260 [118]	
60	**CP1K6G0074F**	69	74	F or W	-	9.1 [231]	3.5 [89]	1	275 [125]	675
	CP1K6G0074C			-	DH3				400 [180]	
75	**CP1K6G0091F**	85	91	F or W	-	10.3 [262]	3.5 [89]	1	350 [159]	725
	CP1K6G0091C			-	DH3				530 [240]	
100	**CP1K6G0121F**	113	121	F or W	-	12.1 [307]	3.5 [89]	1	375 [170]	1000
	CP1K6G0121C			-	DH3				600 [272]	
125	**CP1K6G0151F**	141	151	F or W	-	10.3 [262]	3.5 [89]	1	390 [177]	1025
	CP1K6G0151C			-	DH3	9.1 [231]	3.5 [89]	1	700 [318]	
150	**CP1K6G0180F**	169	180	F	-	11.5 [292]	4.6 [117]	1	430 [195]	1300
	CP1K6G0180C			-	DH3				800 [363]	
200	**CP1K6G0241F**	226	241	F	-	12.1 [307]	3.5 [89]	1	625 [283]	1400
	CP1K6G0241C			-	DH4	11.5 [292]	4.6 [117]	1	1000 [454]	
250	**CP1K6G0299F**	281	299	F	-	12.1 [307]	3.5 [89]	1	755 [352]	1700
	CP1K6G0299C			-	DH4	10.3 [262]	3.5 [89]	2	1200 [544]	
300	**CP1K6G0358F**	337	358	F	-	11.5 [292]	4.6 [117]	2	1200 [544]	2150
	CP1K6G0358C			-	DH5				1400 [635]	
350	**CP1K6G0420F**	395	420	F	-	11.5 [292]	4.6 [117]	3	1300 [590]	2300
	CP1K6G0420C			-	DH5				1650 [748]	
400	**CP1K6G0499F**	470	499	F	-	11.5 [292]	4.6 [117]	3	1750 [794]	2700
	CP1K6G0499C			-	DH5				1850 [839]	
500	**CP1K6G0632F**	595	632	F	-	11.5 [292]	4.6 [117]	4	1900 [862]	2900
	CP1K6G0632C			-	DH5				2300 [1043]	

*Weight & dimensions are approximate
[1]Capacitors are pre-installed in enclosed style parts
[2]Please refer to figure G for capacitor drawing

Selection Table - 600 V

600 V 60 Hz

Motor Rating (HP)	Part Number	Input Current (A)	Output Current (A)	Open Style Mtg. Type W - Wall F - Floor	Encl. Style	Capacitors Dimensions in Inches [Millimeter][1] H	Capacitors Dimensions in Inches [Millimeter][1] D	Capacitor Qty[2]	Weight Lbs. [kg]	Watts Loss
5	**CP1P6G0006F**	5	6	F or W	-	4.4 [112]	2.6 [66]	1	-	-
	CP1P6G0006C			-	DH1				120 [54]	
7.5	**CP1P6G0008F**	7	8	F or W	-	4.4 [112]	2.6 [66]	1	-	-
	CP1P6G0008C			-	DH1				130 [59]	
10	**CP1P6G0012F**	10	12	F or W	-	4.4 [112]	2.6 [66]	1	-	-
	CP1P6G0012C			-	DH1				140 [64]	
15	**CP1P6G0016F**	14	16	F or W	-	5.5 [140]	2.6 [66]	1	-	-
	CP1P6G0016C			-	DH1				160 [73]	
20	**CP1P6G0020F**	18	20	F or W	-	7.5 [191]	2.6 [66]	1	-	-
	CP1P6G0020C			-	DH1				165 [75]	
25	**CP1P6G0025F**	23	25	F or W	-	7.4 [188]	3.5 [89]	1	-	-
	CP1P6G0025C			-	DH1				170 [77]	
30	**CP1P6G0031F**	28	31	F or W	-	7.4 [188]	3.5 [89]	1	-	-
	CP1P6G0031C			-	DH2				190 [86]	
40	**CP1P6G0040F**	37	40	F or W	-	8.7 [221]	3.5 [89]	1	-	-
	CP1P6G0040C			-	DH2				240 [109]	
50	**CP1P6G0049F**	45	49	F or W	-	8.5 [216]	3.5 [89]	1	-	-
	CP1P6G0049C			-	DH2				290 [132]	
60	**CP1P6G0059F**	55	59	F or W	-	9.1 [231]	3.5 [89]	1	-	-
	CP1P6G0059C			-	DH3				420 [191]	
75	**CP1P6G0073F**	68	73	F or W	-	9.1 [231]	3.5 [89]	1	-	-
	CP1P6G0073C			-	DH3				540 [245]	
100	**CP1P6G0096F**	90	96	F or W	-	12.1 [307]	3.5 [89]	1	-	-
	CP1P6G0096C			-	DH3				590 [268]	
125	**CP1P6G0120F**	112	120	F or W	-	8.5 [216]	3.5 [89]	1	-	-
	CP1P6G0120C			-	DH3	9.1 [231]	3.5 [89]	1	730 [331]	
150	**CP1P6G0144F**	135	144	F	-	9.1 [231]	3.5 [89]	1	-	-
	CP1P6G0144C			-	DH4	11.5 [292]	3.5 [89]	1	850 [386]	
200	**CP1P6G0192F**	180	192	F	-	11.5 [292]	3.5 [89]	1	-	-
	CP1P6G0240C			-	DH4	14.4 [366]	3.5 [89]	1	1050 [476]	
250	**CP1P6G0240F**	225	240	F	-	14.4 [366]	3.5 [89]	1	-	-
	CP1P6G0240C			-	DH4	14.4 [366]	4.6 [117]	1	1250 [567]	
300	**CP1P6G0287F**	270	287	F	-	12.1 [307]	3.5 [89]	3	-	-
	CP1P6G0287C			-	DH4				1450 [658]	-
350	**CP1P6G0335F**	315	335	F	-	12.1 [307]	3.5 [89]	1	-	-
						14.4 [366]	3.5 [89]	1		
	CP1P6G0335C			-	DH5	14.4 [366]	4.6 [117]	1	1700 [771]	
400	**CP1P6G0399F**	375	399	F	-	14.4 [366]	4.6 [117]	3	-	-
	CP1P6G0399C			-	DH5				1900 [862]	
500	**CP1P6G0505F**	475	505	F	-	14.4 [366]	3.5 [89]	2	-	-
	CP1P6G0505C			-	DH5	14.4 [366]	4.6 [117]	2	2400 [1089]	

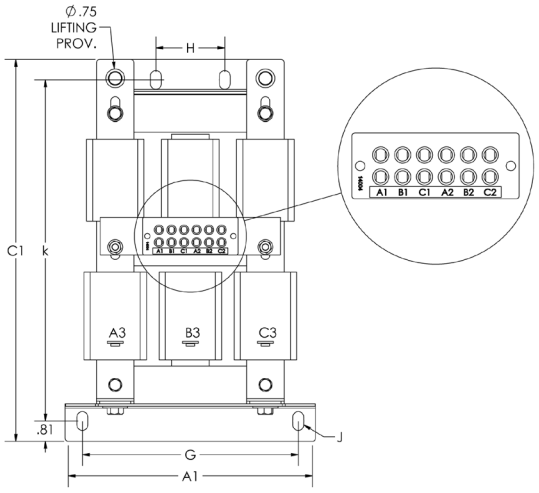
*Weight & dimensions are approximate
[1]Capacitors are pre-installed in enclosure style parts
[2]Please refer to figure G for capacitor drawing

Consult HPS for open style dimensions

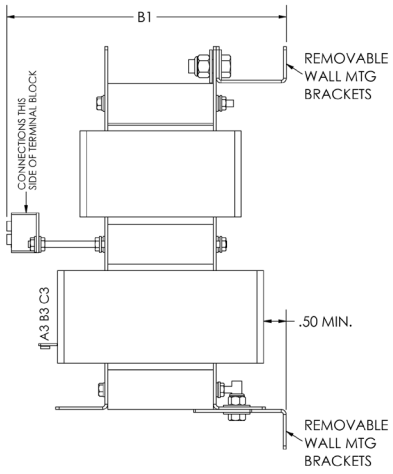
Wall Mount Reactor Assembly Dimensions & Figures - 480V

Dimensions in Inches [Millimeter]								
Part Number	Dim. Fig. #	A1	B1	C1	Mtg Width (G)	Mtg With Top (H)	Mtg Height (K)	Mtg Slot (J)
CP1K6G0008F	A	7.5 [191]	7.7 [196]	12.5 [318]	6.6 [168]	2.8 [71]	12.5 [318]	.28 x .56 [7 x 14]
CP1K6G0011F	A	7.5 [191]	7.7 [196]	12.5 [318]	6.6 [168]	2.8 [71]	12.5 [318]	.28 x.56 [7 x 14]
CP1K6G0014F	A	9.8 [249]	8.9 [226]	15.2 [386]	8.6 [218]	2.8 [71]	15.2 [386]	.44 x .75 [11 x 19]
CP1K6G0019F	A	9.8 [249]	8.8 [224]	15.2 [386]	8.6 [218]	2.8 [71]	15.2 [386]	.44 x .75 [11 x 19]
CP1K6G0025F	A	9.8 [249]	9.7 [246]	15.2 [386]	8.6 [218]	2.8 [71]	15.2 [386]	.44 x .75 [11 x 19]
CP1K6G0032F	A	9.8 [249]	10.7 [272]	15.2 [386]	8.6 [218]	2.8 [71]	15.2 [386]	.44 x .75 [11 x 19]
CP1K6G0037F	A	11.5 [292]	10.1 [257]	17.6 [447]	10.2 [259]	4.5 [114]	17.6 [447]	.44 x .75 [11 x 19]
CP1K6G0050F	A	11.5 [292]	10.3 [262]	17.6 [447]	10.2 [259]	4.5 [114]	17.6 [447]	.44 x .75 [11 x 19]
CP1K6G0061F	A	11.5 [292]	11.8 [300]	17.6 [447]	10.2 [259]	4.5 [114]	17.6 [447]	.44 x .75 [11 x 19]
CP1K6G0074F	B	14.8 [376]	11.3 [287]	25.5 [648]	13.4 [340]	4.5 [114]	25.5 [648]	.44 x .75 [11 x 19]
CP1K6G0091F	B	14.8 [376]	12.5 [318]	25.5 [648]	13.4 [340]	4.5 [114]	25.5 [648]	.44 x .75 [11 x 19]
CP1K6G0121F	B	14.8 [376]	12.9 [328]	25.5 [648]	13.4 [340]	4.5 [114]	25.5 [648]	.44 x .75 [11 x 19]
CP1K6G0151F	B	14.8 [376]	12.3 [312]	25.5 [648]	13.4 [340]	4.5 [114]	25.5 [648]	.44 x .75 [11 x 19]

Figure A

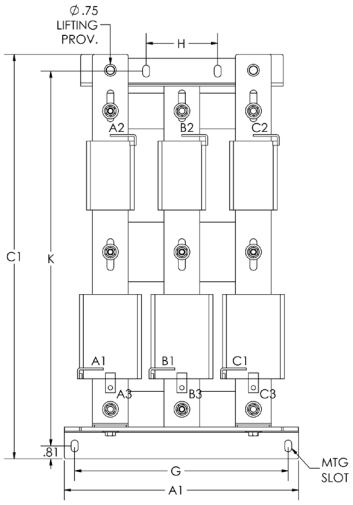


FRONT VIEW

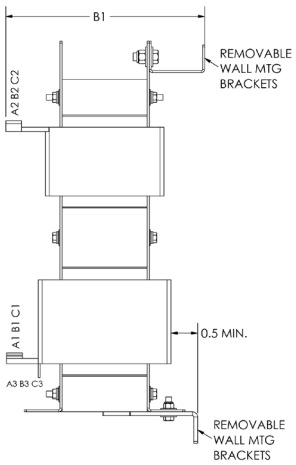


SIDE VIEW

Figure B



FRONT VIEW



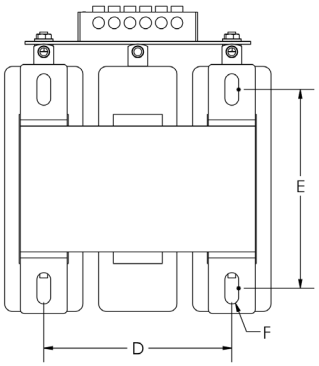
SIDE VIEW

Floor Mount Reactor Assembly

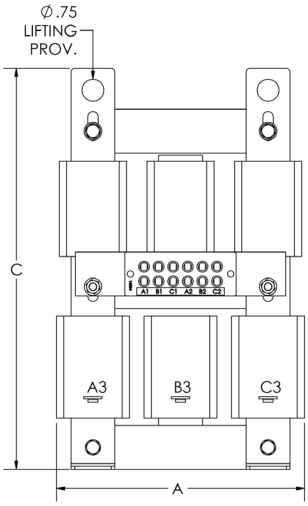
Floor Mount Reactor Assembly Dimensions & Figures - 480V

Dimensions in Inches [Millimeter]							
Part Number	Dim. Fig. #	A	B	C	Mtg Width (D)	Mtg Depth (E)	Mtg Slot (F)
CP1K6G0008F	C	7.2 [183]	7.6 [193]	11.3 [287]	4.8 [122]	3.6 [91]	.38 x .50 [10 x 13]
CP1K6G0011F	C	7.2 [183]	7.7 [196]	11.3 [287]	4.8 [122]	3.6 [91]	.38 x .50 [10 x 13]
CP1K6G0014F	C	9 [229]	7.9 [201]	13.8 [351]	6 [152]	4.6 [117]	.44 x 1.0 [11 x 25]
CP1K6G0019F	C	9 [229]	8 [203]	13.8 [351]	6 [152]	4.5 [114]	.44 x 1.0 [11 x 25]
CP1K6G0025F	C	9 [229]	8.8 [224]	13.8 [351]	6 [152]	5.3 [135]	.44 x 1.0 [11 x 25]
CP1K6G0032F	C	9 [229]	10.5 [267]	13.8 [351]	6 [152]	6.3 [160]	.44 x 1.0 [11 x 25]
CP1K6G0037F	C	10.8 [274]	9.8 [249]	16.3 [414]	7.2 [183]	5.5 [140]	.44 x 1.0 [11 x 25]
CP1K6G0050F	C	10.8 [274]	9.8 [249]	16.3 [414]	7.2 [183]	5.6 [142]	.44 x 1.0 [11 x 25]
CP1K6G0061F	D	10.8 [274]	12.6 [320]	16.3 [414]	7.2 [183]	7.1 [180]	.44 x 1.0 [11 x 25]
CP1K6G0074F	D	14.3 [363]	9.8 [249]	23.5 [597]	9.5 [241]	6.9 [175]	.44 x 1.0 [11 x 25]
CP1K6G0091F	D	14.3 [363]	9.7 [246]	23.5 [597]	9.5 [241]	8.2 [208]	.44 x 1.0 [11 x 25]
CP1K6G0121F	D	13.5 [343]	11.7 [297]	23.5 [597]	9 [229]	8.6 [218]	.44 x 1.0 [11 x 25]
CP1K6G0151F	D	15.8 [401]	13.3 [338]	23.5 [597]	10.5 [267]	7.9 [201]	.44 x 1.0 [11 x 25]
CP1K6G0180F	D	15.8 [401]	14.9 [378]	23.5 [597]	10.5 [267]	8.7 [221]	.44 x 1.0 [11 x 25]
CP1K6G0241F	D	18 [457]	15.8 [401]	23.5 [597]	12 [305]	9.3 [236]	.44 x 1.0 [11 x 25]
CP1K6G0299F	E	19 [483]	17 [432]	32 [813]	17 [432]	12.5 [318]	.56 x 1.0 [14 x 25]
CP1K6G0358F	E	21 [533]	17 [432]	34 [864]	19 [483]	15 [381]	.56 x 1.0 [14 x 25]
CP1K6G0420F	E	21 [533]	17 [432]	35 [889]	19 [483]	14.8 [376]	.56 x 1.0 [14 x 25]
CP1K6G0499F	F	30 [762]	20 [508]	37 [940]	24 [610]	15 [381]	.56 x 1.0 [14 x 25]
CP1K6G0632F	F	32 [813]	21 [533]	39 [991]	24 [610]	15 [381]	.56 x 1.0 [14 x 25]

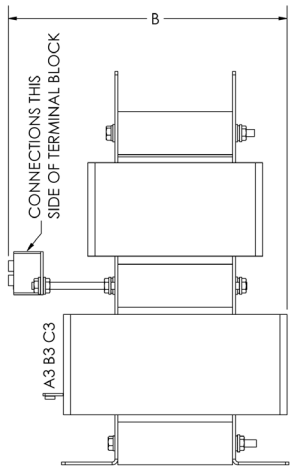
Figure C



BOTTOM VIEW

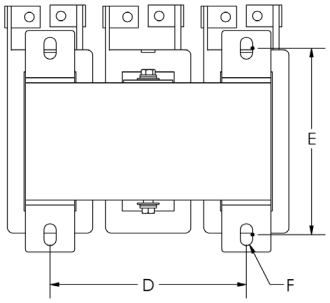


FRONT VIEW

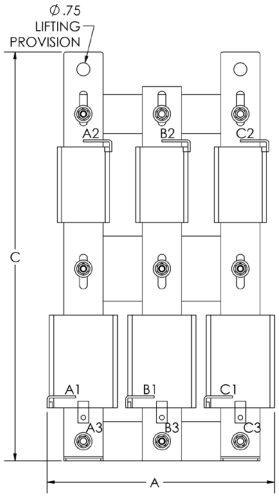


SIDE VIEW

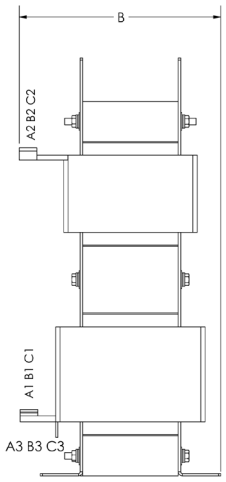
Figure D



BOTTOM VIEW

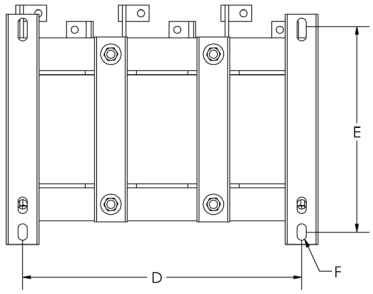


FRONT VIEW

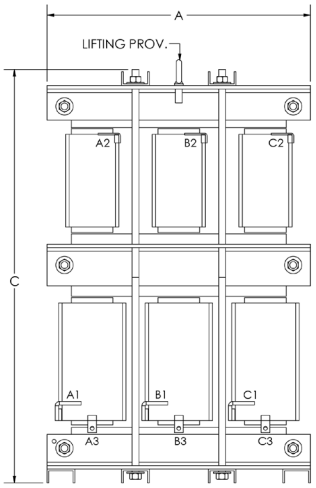


SIDE VIEW

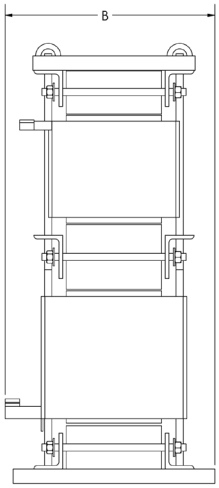
Figure E



BOTTOM VIEW

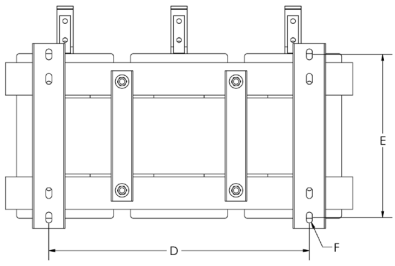


FRONT VIEW

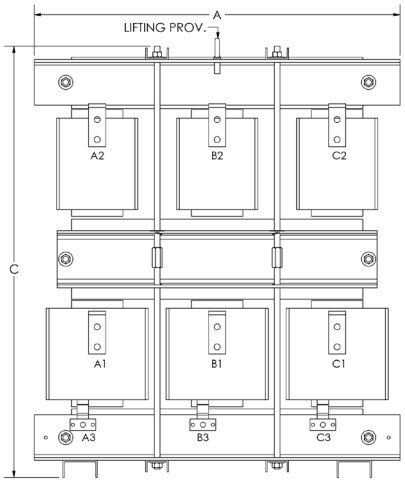


SIDE VIEW

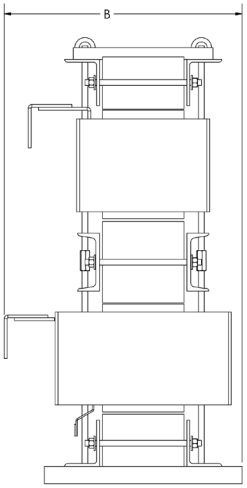
Figure F



BOTTOM VIEW



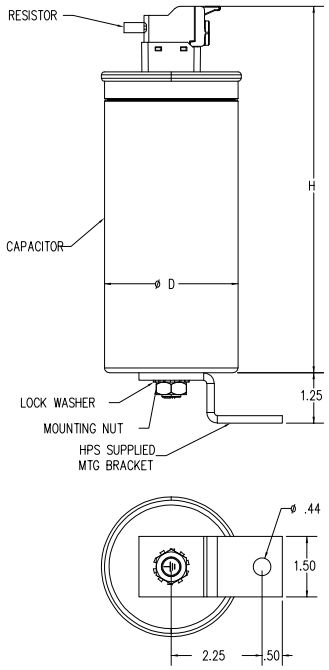
FRONT VIEW

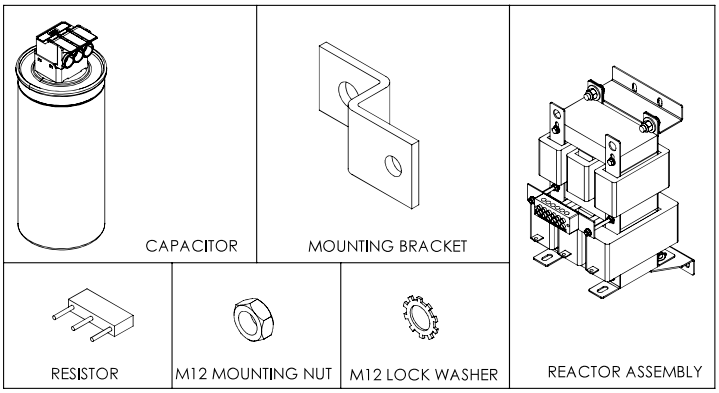


SIDE VIEW

Capacitor & Enclosure Drawings

Capacitor Drawing Figure G

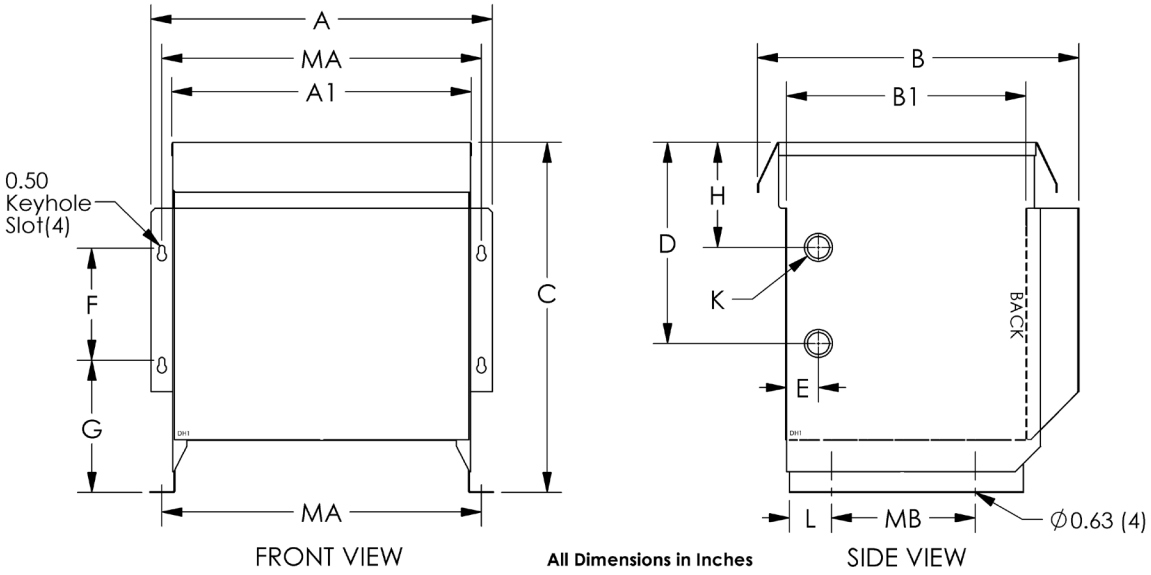




1. If the resistor is not installed in capacitor terminal block, install it.
2. Mount the capacitor using the nut and lock washer provided.

Please refer to installation manual for further details.

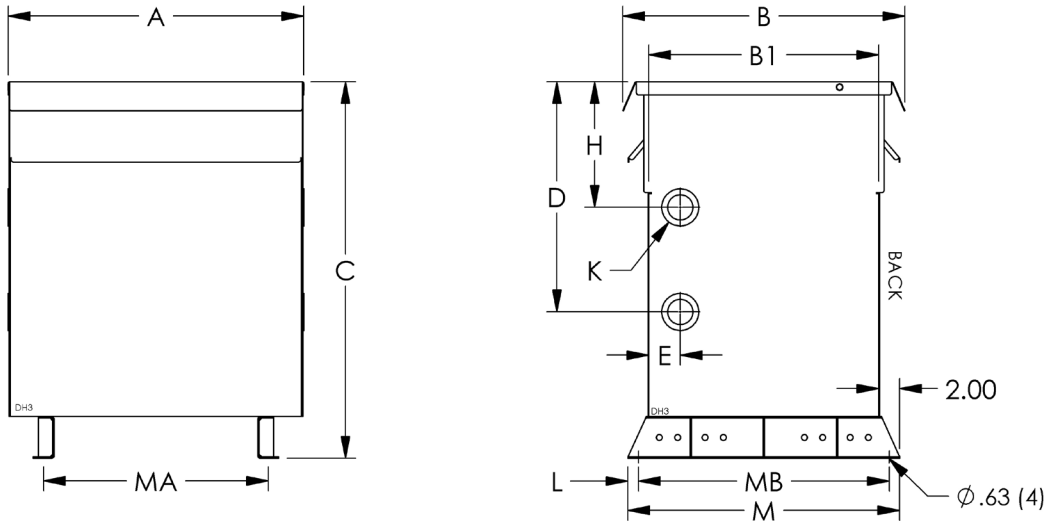
Enclosure Drawings



All Dimensions in Inches

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]

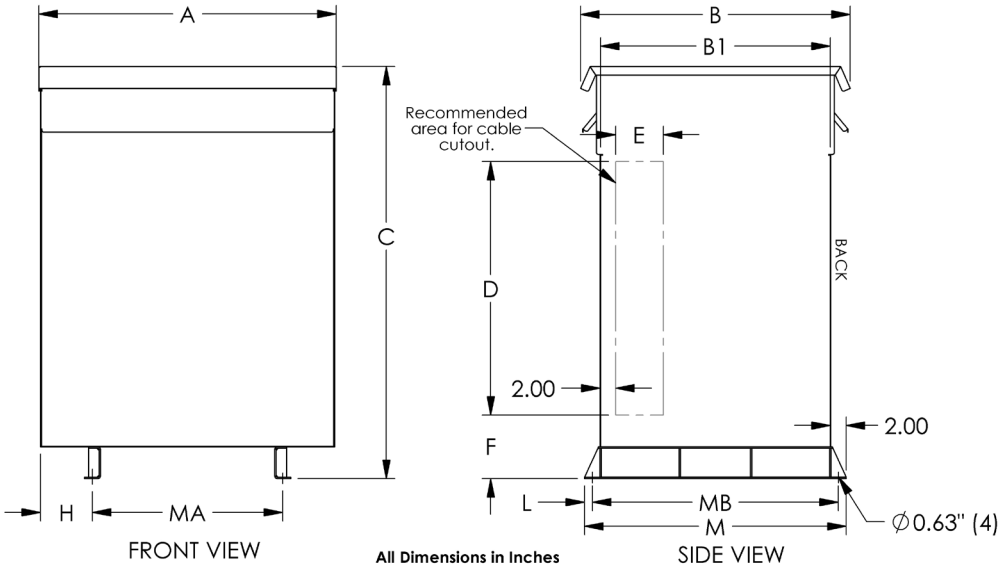
[1] Knockout (K) sizes are actual diameters of knockout, not conduit sizes.



All Dimensions in Inches

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.



All Dimensions in Inches

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]

[1] Knockout (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

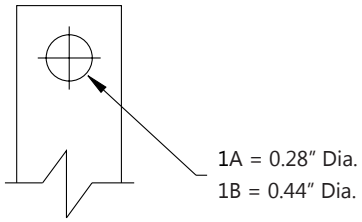


DIAGRAM 1

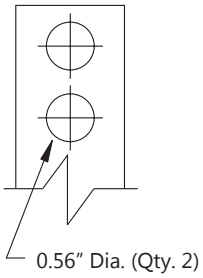


DIAGRAM 2

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.

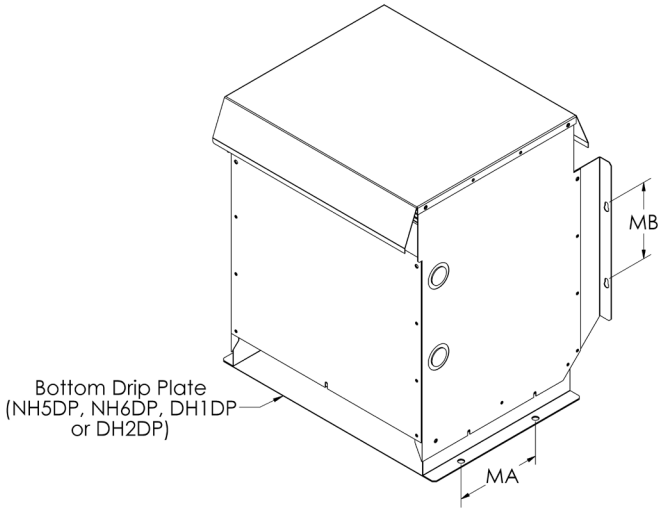
Enclosure Case Style	Wall Mount Available	Ceiling Mount Available	HPS Mounting Kit P/N
DH1	Yes	Yes	DH1DP
DH2	Yes	Yes	DH2DP
DH3	Yes	Yes	DW3
DH4	No	No	N/A
DH5	No	No	N/A

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.

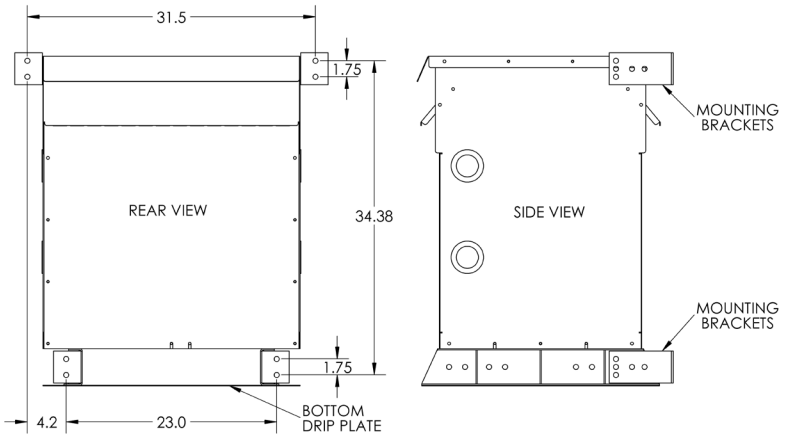
Note: Do not ceiling mount either the DH1, DH1-1 and DH2 enclosures without installing the bottom drip plate. All mounting hardware should be rated Grade 8 or higher.



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.



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