Single Phase

Matrix® ONE

Product Selector

- **Extends the service life of electrical equipment**
- **Reduces system downtime**
- **Easy to install and maintain**
- **Increases energy efficiency**
- **Three-year warranty**

Power quality you can count on.

The Single Phase Matrix® ONE Filter provides reliable harmonic protection in environments where utility power may not be optimal. MTE has built the Single Phase Matrix ONE Filter with time-tested components to work in rural, remote areas where three phase power is often not available. Its patented technology reduces harmonic distortion allowing your equipment to run with increased energy efficiency and better overall THID performance.

The Matrix ONE is designed to generate less heat and reduce system downtime. Easy to install and maintain, the Single Phase Matrix ONE produces the protection you need to extend the service life of your equipment.

MTE

POWER QUALITY. SOLVED.

Improve power quality and reduce downtime with our optimized single phase harmonic filters.

The Single Phase Matrix® ONE Filter is proven to produce harmonic mitigation for your VFD or other single phase power applications.

Patented design with reliable components provides harmonic mitigation and reduced THID (Total Harmonic Distortion) where you need it most.

Low cost solution that is easy to install and maintain.

Performance that is able to withstand harsh and remote conditions.

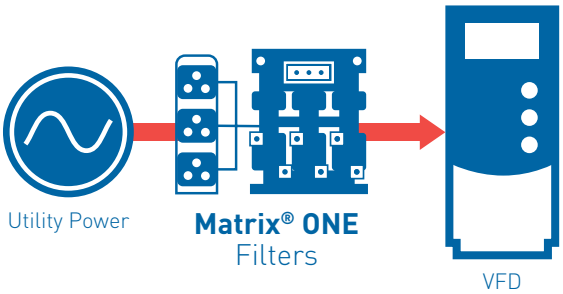
Extends service life of equipment by reducing heat, and improving system efficiency.

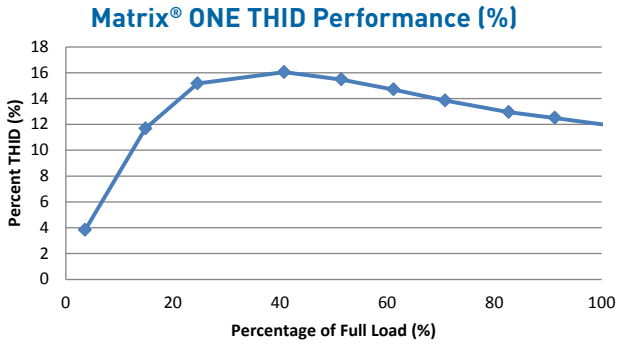
Alleviates system downtime by preventing blown fuses and tripped circuit breakers.

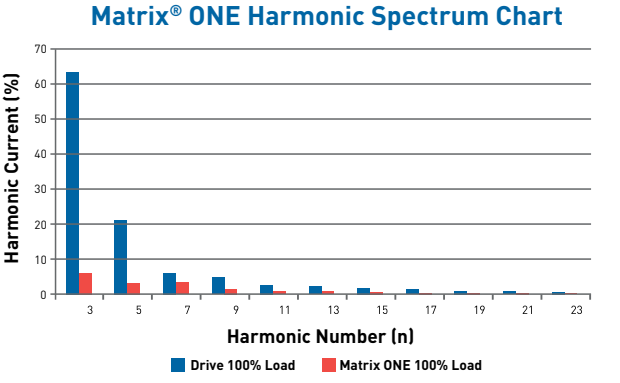
Performance Specifications

Service Load Condition	**Load: typically a 4-pulse rectifier**
Input Voltage	**240V +/- 10%; 60 + 0.75Hz; 1-phase** **480V +/- 10%; 60 + 0.75Hz; 1-phase**
Maximum THID	**12% @ Full Load**
Maximum Ambient Temperature	**-40C to +50C open panel filters;** **-40C to +40C enclosed filters;** **-40C to +90C storage**
Insertion Load	**+10% no load; -10% full load**
Efficiency	**97% - 99%**
Altitude Without Derating	**3,300 feet above sea level**
Relative Humidity	**0% to 95% non-condensing**
Overload	**150% for 1 minute duration**

Final product specifications subject to change at anytime.







How to properly size your filter

- **Determine voltage, frequency, and number of phases required**
- **Reference motor nameplate to determine motor HP or KW and Full Load Amps**
- **Select filter based on Motor Full Load Amps**
  Do not exceed filter's maximum current rating (amps)
- **Specify enclosure style**
  Open (No enclosure)
  NEMA 1/2 (General Purpose Enclosure)
  NEMA 3R (Outdoor Enclosure)
- **Determine derating requirements**
  Reference Performance Specifications table on previous page as well as derating tables listed below:
  Table 1: Drive Output Frequency Derating
  Table 2: Altitude Derating Curve

Understanding the Matrix ONE Part Number:

MS X _ _ _ _ X

Matrix ONE

Enclosure Type
P = Open Magnetics (No Enclosure)
G = General Purpose (NEMA 1/2)
W = Weather (NEMA 3R)

Current Rating
0008 is 8 Amps
0090 is 90 Amps
0620 is 620 Amps

Voltage Frequency Code
A 240 Volts 60 Hz
D 480 Volts 60 Hz

Derating Curves:

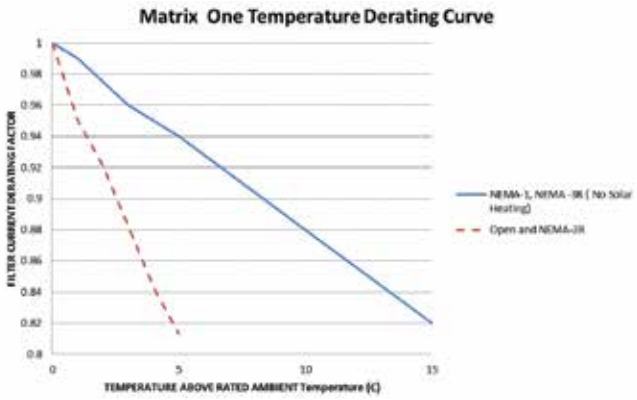


Table 1: Drive Output Frequency Derating

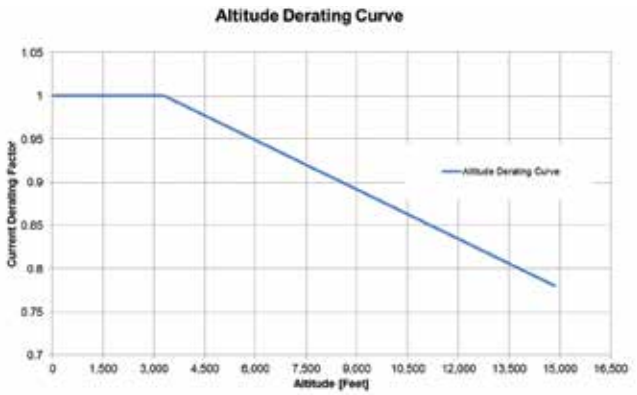


Table 2: Altitude Derating Curve

MATRIX® ONE SELECTION TABLES

240V 60 Hz

Motor (Ref Only) HP	Filter Amps Rating	MTE Part Number	Enclosure Type	Filter Dimensions (H x W x D) Inches	Filter Dimensions (H x W x D) Millimeters	Approx Weight Lbs	Approx Weight Kgs	Ref Fig	Watts Loss	Capacitor/Capacitor Panel Assembly Dimensions (H x W x D) Inches	Capacitor/Capacitor Panel Assembly Dimensions (H x W x D) Millimeters	Qty Req'd	Ref Fig
3	17	MSP0017A	OPEN	8.7 x 10.5 x 7.2	221 x 267 x 183	42	19	7	181	6.4 x 3.5	163 x 89	1	2
		MSG0017A	NEMA 1/2	24.0 x 12.5 x 17.9	610 x 318 x 455	90	41	5		Preinstalled in cabinet			
		MSW0017A	NEMA 3R	24.0 x 12.5 x 23.0	610 x 318 x 584	98	44						
5	26	MSP0026A	OPEN	8.7 x 10.5 x 7.7	221 x 267 x 196	47	21	7	228	6.4 x 4.0	163 x 102	1	2
		MSG0026A	NEMA 1/2	24.0 x 12.5 x 17.9	610 x 318 x 455	96	44	5		Preinstalled in cabinet			
		MSW0026A	NEMA 3R	24.0 x 12.5 x 23.0	610 x 318 x 584	103	47						
7.5	38	MSP0038A	OPEN	10.5 x 12.0 x 9.6	267 x 305 x 244	69	31	9	258	6.9 x 18.4 x 7.0	175 x 467 x 178	1	3
		MSG0038A	NEMA 1/2	33.9 x 17.8 x 20.9	861 x 452 x 531	145	66	6		Preinstalled in cabinet			
		MSW0038A	NEMA 3R	33.9 x 17.8 x 26.0	861 x 452 x 660	152	69						
10	49	MSP0049A	OPEN	10.5 x 12.0 x 10.2	267 x 305 x 259	79	36	9	430	6.9 x 18.4 x 7.0	175 x 467 x 178	1	3
		MSG0049A	NEMA 1/2	33.9 x 17.8 x 20.9	861 x 452 x 531	155	70	6		Preinstalled in cabinet			
		MSW0049A	NEMA 3R	33.9 x 17.8 x 26.0	861 x 452 x 660	162	73						
15	73	MSP0073A	OPEN	10.6 x 12.0 x 12.0	269 x 305 x 305	114	52	9	473	10.7 x 18.4 x 7.0	272 x 467 x 178	1	3
		MSG0073A	NEMA 1/2	33.9 x 17.8 x 20.9	861 x 452 x 531	190	86	6		Preinstalled in cabinet			
		MSW0073A	NEMA 3R	33.9 x 17.8 x 26.0	861 x 452 x 660	198	90						
20	94	MSP0094A	OPEN	15.2 x 15.3 x 10.9	386 x 389 x 277	150	68	11	636	10.7 x 16.3 x 7.6	272 x 414 x 193	1	3
		MSG0094A	NEMA 1/2	51.3 x 27.7 x 24.9	1303 x 704 x 632	320	145	6		Preinstalled in cabinet			
		MSW0094A	NEMA 3R	51.3 x 27.7 x 30.0	1303 x 704 x 762	333	151						
25	115	MSP0115A	OPEN	15.2 x 15.3 x 11.6	386 x 389 x 295	167	76	11	631	6.9 x 16.3 x 7.6	175 x 414 x 193	1	3
		MSG0115A	NEMA 1/2	51.3 x 27.7 x 24.9	1303 x 704 x 632	338	153	6		Preinstalled in cabinet			
		MSW0115A	NEMA 3R	51.3 x 27.7 x 30.0	1303 x 704 x 762	351	159						
30	140	MSP0140A	OPEN	15.2 x 15.3 x 12.3	386 x 389 x 312	202	92	11	805	10.7 x 16.3 x 7.6	272 x 414 x 193	1	3
		MSG0140A	NEMA 1/2	51.3 x 27.7 x 24.9	1303 x 704 x 632	372	169	6		Preinstalled in cabinet			
		MSW0140A	NEMA 3R	51.3 x 27.7 x 30.0	1303 x 704 x 762	385	175						
40	180	MSP0180A	OPEN	15.3 x 15.3 x 15.0	389 x 389 x 381	249	113	11	1,055	9.9 x 16.4 x 7.6	251 x 417 x 193	1	4
		MSG0180A	NEMA 1/2	51.3 x 27.7 x 24.9	1303 x 704 x 632	420	191	6		Preinstalled in cabinet			
		MSW0180A	NEMA 3R	51.3 x 27.7 x 30.0	1303 x 704 x 762	433	196						
50	225	MSP0225A	OPEN	18.3 x 15.3 x 13.8	465 x 389 x 351	296	134	11	967	9.9 x 16.4 x 7.6	251 x 417 x 193	1	4
		MSG0225A	NEMA 1/2	51.3 x 27.7 x 24.9	1303 x 704 x 632	466	211	6		Preinstalled in cabinet			
		MSW0225A	NEMA 3R	51.3 x 27.7 x 30.0	1303 x 704 x 762	479	217						
60	265	MSP0265A	OPEN	18.4 x 15.3 x 14.9	467 x 389 x 378	318	144	11	1,115	9.9 x 16.4 x 7.6	251 x 417 x 193	2	4
		MSG0265A	NEMA 1/2	87.6 x 43.7 x 31.1	2225 x 1110 x 790	741	336	6		Preinstalled in cabinet			
		MSW0265A	NEMA 3R	87.6 x 43.7 x 40.1	2225 x 1110 x 1019	786	357						
75	330	MSP0330A	OPEN	18.4 x 15.3 x 16.7	467 x 389 x 424	375	170	11	1,359	9.9 x 16.4 x 7.6	251 x 417 x 193	2	4
		MSG0330A	NEMA 1/2	87.6 x 43.7 x 31.1	2225 x 1110 x 790	801	363	6		Preinstalled in cabinet			
		MSW0330A	NEMA 3R	87.6 x 43.7 x 40.1	2225 x 1110 x 1019	837	380						
60	430	MSP0430A	OPEN	20.5 x 24.0 x 17.4	521 x 610 x 442	612	278	12	1,647	9.6 x 16.4 x 7.6	244 x 417 x 193	1	3
										8.0 x 16.4 x 7.6	203 x 417 x 193	1	
		MSG0430A	NEMA 1/2	87.6 x 43.7 x 31.1	2225 x 1110 x 790	1,040	472	6		Preinstalled in cabinet			
		MSW0430A	NEMA 3R	87.6 x 43.7 x 40.1	2225 x 1110 x 1019	1,076	488						
75	540	MSP0540A	OPEN	20.6 x 24.0 x 18.4	523 x 610 x 467	718	326	12	1,872	11.5 x 16.3 x 7.6	292 x 414 x 193	1	3
										10.7 x 16.3 x 7.6	272 x 414 x 193	1	
		MSG0540A	NEMA 1/2	87.6 x 43.7 x 31.1	2225 x 1110 x 790	1,146	520	6		Preinstalled in cabinet			
		MSW0540A	NEMA 3R	87.6 x 43.7 x 40.1	2225 x 1110 x 1019	1,186	538						
60	620	MSP0620A	OPEN	20.6 x 24.0 x 19.7	523 x 610 x 500	827	375	12	2,094	11.5 x 16.3 x 7.6	292 x 414 x 193	2	3
		MSG0620A	NEMA 1/2	84.0 x 52.0 x 36.5	2134 x 1321 x 927	1,455	660	6		Preinstalled in cabinet			
		MSW0620A	NEMA 3R	84.0 x 52.0 x 45.5	2134 x 1321 x 1156	1,495	678						

Note: Weights and dimensions are for reference only. Please visit for detail information.

480V 60 Hz

Motor (Ref Only) HP	Filter Amps Rating	MTE Part Number	Enclosure Type	Filter Dimensions (H x W x D) Inches	Filter Dimensions (H x W x D) Millimeters	Approx Weight Lbs	Approx Weight Kgs	Ref Fig	Watts Loss	Capacitor/Capacitor Panel Assembly Dimensions (H x W x D) Inches	Capacitor/Capacitor Panel Assembly Dimensions (H x W x D) Millimeters	Qty Req'd	Ref Fig
3	8	MSP0008D	OPEN	8.6 x 10.5 x 7.2	221 x 267 x 183	41	19	7	184	7.8 x 3.9	198 x 99	1	1
		MSG0008D	NEMA 1/2	24.0 x 12.5 x 17.9	610 x 318 x 455	89	40	5		Preinstalled in cabinet			
		MSW0008D	NEMA 3R	24.0 x 12.5 x 23.0	610 x 318 x 584	97	44						
5	13	MSP0013D	OPEN	8.7 x 10.5 x 7.7	221 x 267 x 196	51	23	7	219	8.3 x 4.6	211 x 117	1	1
		MSG0013D	NEMA 1/2	24.0 x 12.5 x 17.9	610 x 318 x 455	98	44	5		Preinstalled in cabinet			
		MSW0013D	NEMA 3R	24.0 x 12.5 x 23.0	610 x 318 x 584	106	48						
7.5	19	MSP0019D	OPEN	10.5 x 12.0 x 8.0	267 x 305 x 203	67	30	8	292	8.3 x 4.6	211 x 117	1	1
		MSG0019D	NEMA 1/2	33.9 x 17.9 x 20.9	861 x 455 x 531	142	64	6		Preinstalled in cabinet			
		MSW0019D	NEMA 3R	33.9 x 17.9 x 26.0	861 x 455 x 660	149	68						
10	24	MSP0024D	OPEN	10.5 x 12.0 x 8.5	267 x 305 x 216	75	34	8	350	9.1 x 4.6	233 x 117	1	1
		MSG0024D	NEMA 1/2	33.9 x 17.9 x 20.9	861 x 455 x 531	149	68	6		Preinstalled in cabinet			
		MSW0024D	NEMA 3R	33.9 x 17.9 x 26.0	861 x 455 x 660	157	71						
15	37	MSP0037D	OPEN	10.6 x 12.0 x 11.8	269 x 305 x 300	106	48	9	509	6.4 x 3.5	163 x 89	1	2
		MSG0037D	NEMA 1/2	33.9 x 17.9 x 20.9	861 x 455 x 531	181	82	6		Preinstalled in cabinet			
		MSW0037D	NEMA 3R	33.9 x 17.9 x 26.0	861 x 455 x 660	192	87						
20	47	MSP0047D	OPEN	15.2 x 15.3 x 10.9	386 x 389 x 277	145	66	10	667	10.9 x 16.4 x 7.6	277 x 417 x 193	1	4
		MSG0047D	NEMA 1/2	51.3 x 27.7 x 24.9	1303 x 704 x 632	311	141	6		Preinstalled in cabinet			
		MSW0047D	NEMA 3R	51.3 x 27.7 x 30.0	1303 x 704 x 762	324	147						
25	59	MSP0059D	OPEN	10.2 x 15.3 x 11.7	259 x 389 x 297	159	72	10	648	7.9 x 16.3 x 7.6	201 x 414 x 193	1	3
		MSG0059D	NEMA 1/2	51.3 x 27.7 x 24.9	1303 x 704 x 632	325	147	6		Preinstalled in cabinet			
		MSW0059D	NEMA 3R	51.3 x 27.7 x 30.0	1303 x 704 x 762	338	153						
30	69	MSP0069D	OPEN	15.1 x 15.3 x 11.8	384 x 389 x 300	164	74	10	629	6.7 x 16.4 x 7.6	170 x 417 x 193	1	4
		MSG0069D	NEMA 1/2	51.3 x 27.7 x 24.9	1303 x 704 x 632	330	150	6		Preinstalled in cabinet			
		MSW0069D	NEMA 3R	51.3 x 27.7 x 30.0	1303 x 704 x 762	343	156						
40	90	MSP0090D	OPEN	15.2 x 15.3 x 13.2	386 x 389 x 335	217	98	11	818	6.9 x 16.3 x 7.6	175 x 414 x 193	1	3
		MSG0090D	NEMA 1/2	51.3 x 27.7 x 24.9	1303 x 704 x 632	387	176	6		Preinstalled in cabinet			
		MSW0090D	NEMA 3R	51.3 x 27.7 x 30.0	1303 x 704 x 762	400	181						
50	110	MSP0110D	OPEN	18.3 x 15.3 x 12.9	465 x 389 x 328	254	115	11	1,010	7.7 x 16.3 x 7.6	196 x 414 x 193	1	4
		MSG0110D	NEMA 1/2	76.0 x 27.7 x 24.9	1930 x 704 x 632	497	225	6		Preinstalled in cabinet			
		MSW0110D	NEMA 3R	76.0 x 27.7 x 34.0	1930 x 704 x 864	523	237						
60	135	MSP0135D	OPEN	18.3 x 15.3 x 14.3	465 x 389 x 363	303	137	11	1,287	7.7 x 16.4 x 7.6	196 x 417 x 193	2	4
		MSG0135D	NEMA 1/2	76.0 x 27.7 x 24.9	1930 x 704 x 632	546	248	6		Preinstalled in cabinet			
		MSW0135D	NEMA 3R	76.0 x 27.7 x 34.0	1930 x 704 x 864	571	259						
75	165	MSP0165D	OPEN	18.3 x 15.3 x 15.4	465 x 389 x 391	349	158	11	1,503	9.2 x 16.4 x 7.6	234 x 417 x 193	1	4
		MSG0165D	NEMA 1/2	76.0 x 27.7 x 24.9	1930 x 704 x 632	593	269	6		Preinstalled in cabinet			
		MSW0165D	NEMA 3R	76.0 x 27.7 x 34.0	1930 x 704 x 864	618	280						
60	215	MSP0215D	OPEN	20.4 x 24.0 x 15.7	518 x 610 x 399	582	264	12	1,409	6.7 x 16.4 x 7.6	170 x 417 x 193	1	4
		MSG0215D	NEMA 1/2	87.6 x 43.7 x 31.1	2225 x 1110 x 790	1,005	456	6		Preinstalled in cabinet			
		MSW0215D	NEMA 3R	87.6 x 43.7 x 40.1	2225 x 1110 x 1019	1,050	476						
75	270	MSP0270D	OPEN	20.3 x 24.0 x 18.7	516 x 610 x 475	690	313	12	1,641	6.9 x 16.3 x 7.6	175 x 414 x 193	1	3
										7.9 x 16.3 x 7.6	201 x 414 x 193	1	
		MSG0270D	NEMA 1/2	87.6 x 43.7 x 31.1	2225 x 1110 x 790	1,113	505	6		Preinstalled in cabinet			
		MSW0270D	NEMA 3R	87.6 x 43.7 x 40.1	2225 x 1110 x 1019	1,147	520						
60	310	MSP0310D	OPEN	20.3 x 24.0 x 20.2	516 x 610 x 513	787	357	12	1,797	7.9 x 16.3 x 7.6	201 x 414 x 193	2	3
		MSG0310D	NEMA 1/2	84.0 x 52.0 x 36.5	2134 x 1321 x 927	1,408	639	6		Preinstalled in cabinet			
		MSW0310D	NEMA 3R	84.0 x 52.0 x 45.5	2134 x 1321 x 1156	1,449	657						

Note: Weights and dimensions are for reference only. Please visit for detail information.

MATRIX® ONE SELECTION TABLES

CAPACITOR

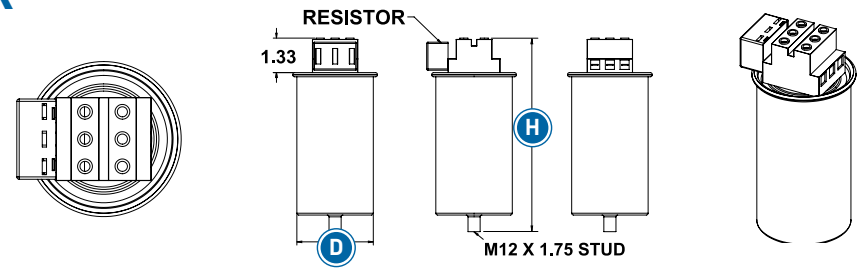


FIGURE 1

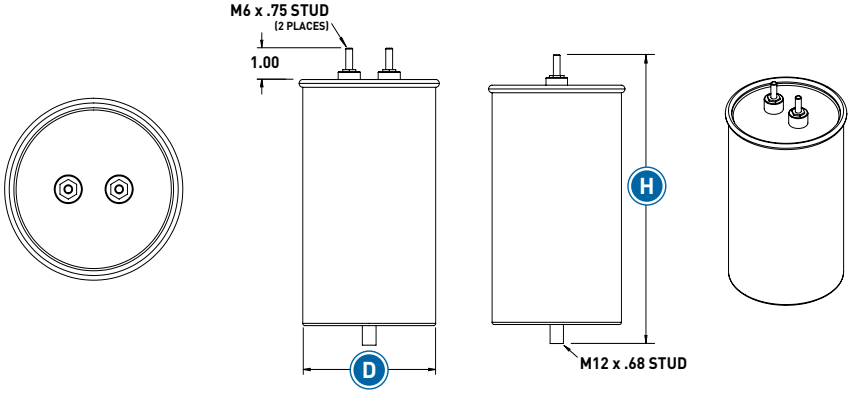


FIGURE 2

CAPACITOR PANEL

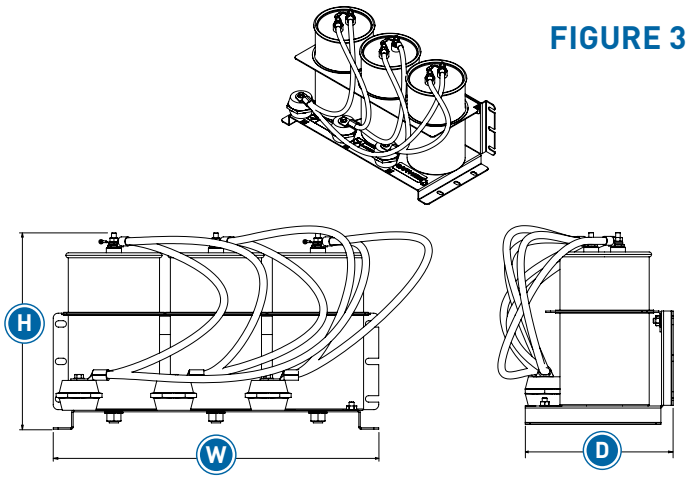


FIGURE 3

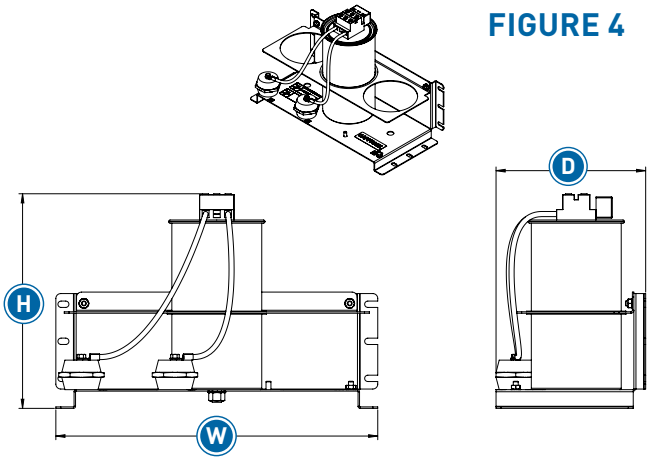


FIGURE 4

ENCLOSURES

(NOTE: HOODS ONLY ON NEMA 3R ENCLOSURES)

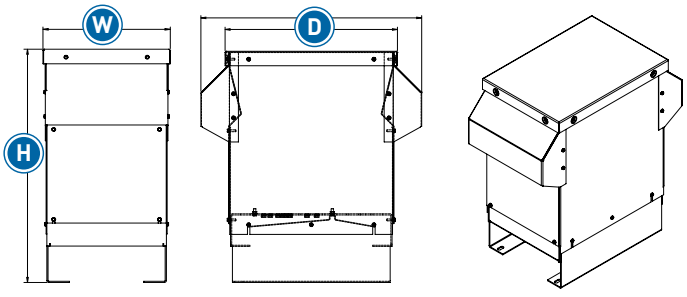


FIGURE 5

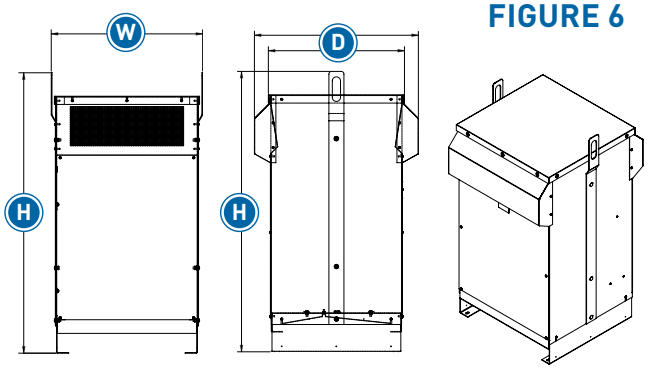


FIGURE 6

Note: Figure illustrations are for reference only. Actual hardware may differ. Please visit for detailed information.

OPEN MAGNETICS

FIGURE 7

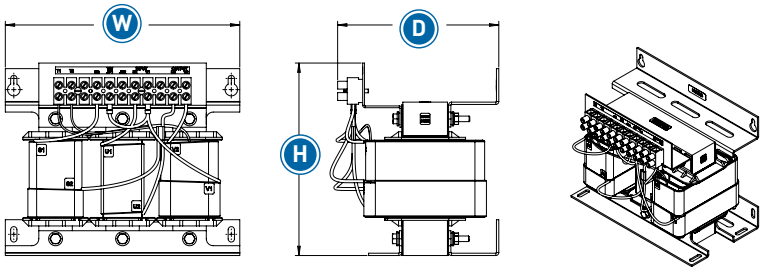


FIGURE 8

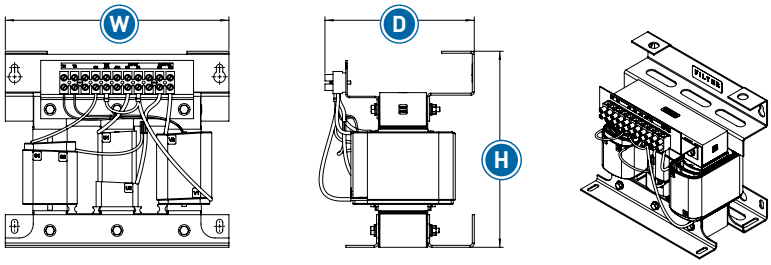


FIGURE 9

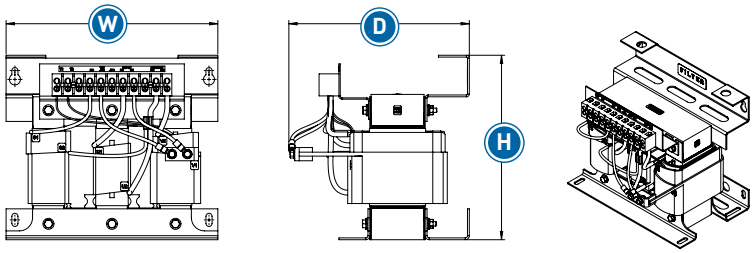


FIGURE 10

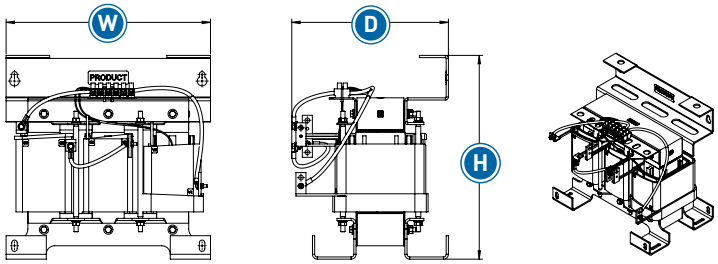


FIGURE 11

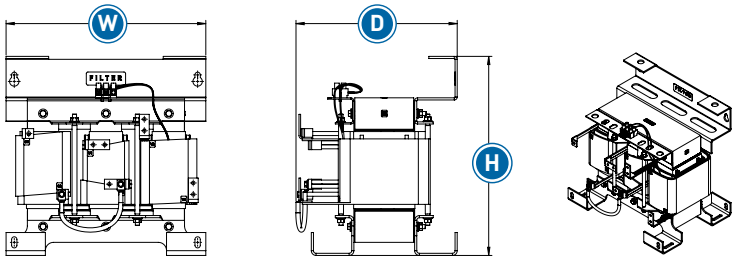
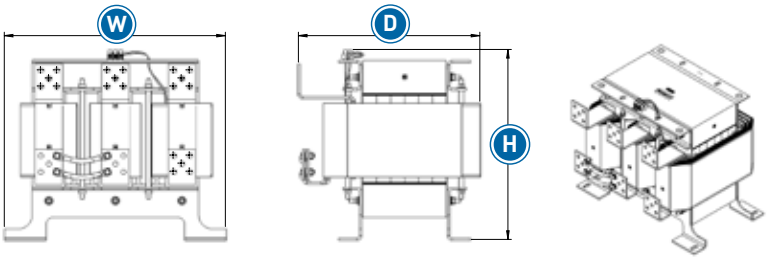


FIGURE 12



Note: Figure illustrations are for reference only. Actual hardware may differ. Please visit for detailed information.

The power quality experts.

MTE Corporation was formed in 1982 by bringing together Milwaukee Transformer Co., Transformer Design Inc., and Milwaukee Electronics Corp. – companies that specialized in different fields of magnetics and transformer designs and were long established in their respective fields. MTE vaulted into a leadership role in power quality with its unique AC reactor design and passive filter expertise. We continued to grow as a global leader with innovative Harmonic Filters, Motor Protection Filters and Sinewave Filters.

Now with the addition of TEAL Electronics in 2016, MTE brings a continuum of power quality solutions unmatched in the industry. Building on TEAL's reputation of high-efficiency transformers and durable power conditioning and distribution units for demanding applications, MTE is building the best power quality company by capitalizing on the individual strength of each while bringing a new dimension in management, marketing, and quality.

Our team of professional design engineers has well over 100 years of collective experience in the industry and is complemented by as much experience in operations. Our engineers utilize state-of-the-art platforms and best-in-class simulation/modeling tools so that new designs meet your needs and the latest compliance standards while improving your bottom line.

At MTE, we know power quality because power quality is all we do.

A Handy & Harman company. Better together.

Handy & Harman Ltd. (NASDAQ:HNH) is a diversified manufacturer of engineered niche industrial products with leading market positions in many of the markets it serves. Through its wholly-owned operating subsidiaries, HNH focuses on high margin products and innovative technology and serves customers across a wide range of end markets. HNH's diverse product offerings are marketed throughout the United States and internationally.

MTE POWER QUALITY. SOLVED.

MTE Corporation
N83 W13330 Leon Road
Menomonee Falls WI 53051
(800) 455-4MTE • (262) 253-8200

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