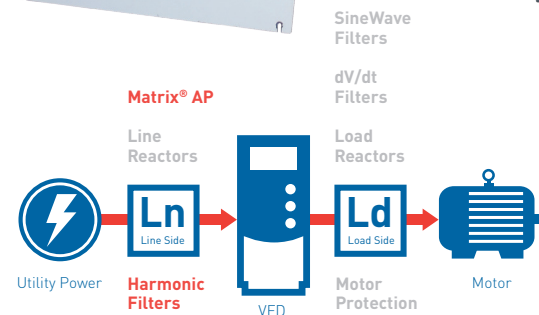


Harmonic Filters Matrix® AP Product Selector

The key to success: adapt.

Simply put, our Matrix® AP is the most advanced passive filter on the market today. Most traditional filters work fine at 100% power load, but severely underperform at lower loads. Matrix AP is different, because we know almost no one runs at full load all the time. Its patented Adaptive Passive Technology virtually eliminates harmonic distortion by adapting to varying power loads. It delivers better THID performance, increases energy efficiency, and allows you to meet IEEE-519 requirements. Its unique design generates less heat, and is easy to install and maintain. Plus it is generator compatible. With Matrix AP Harmonic Filters, power quality, energy efficiency and reduced downtime are easy to achieve.



Matrix® AP harmonic Filters can help ensure that your system meets the IEEE-519 requirements for harmonic current.

Improve power quality and reduce downtime with our patented Adaptive Passive Technology.

The best-in-class Matrix® AP Harmonic Filters can be specified for use on the input of your VFD or other 6-pulse rectifier power supply to enable your system to meet the IEEE-519 requirements for harmonic distortion, regardless of power load.

Features our patented Adaptive Passive Technology for superior harmonic mitigation and better THID performance over a wider load range.

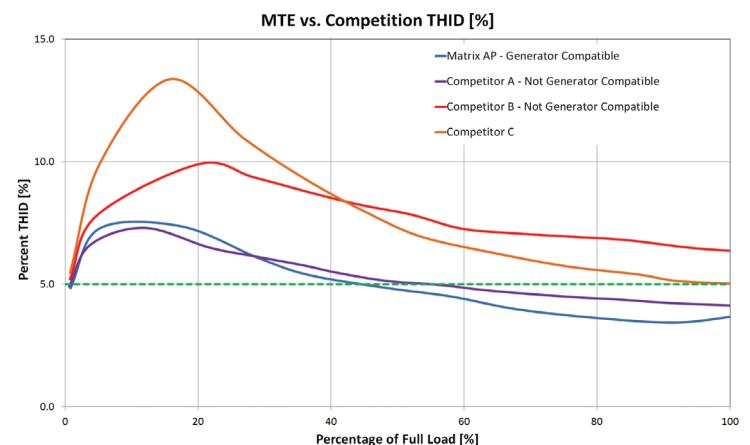
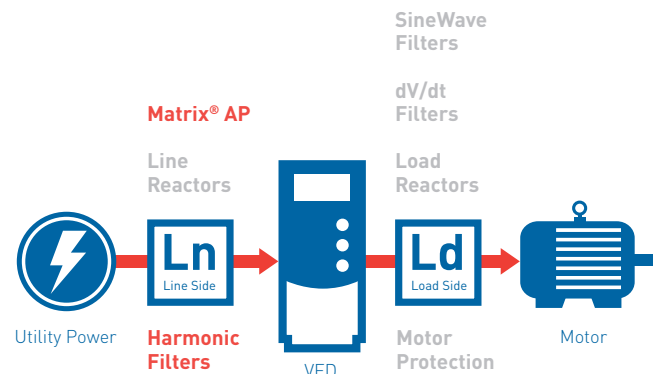
Reduces energy costs by improving system efficiency and reliability.

Extends service life of electrical equipment, especially transformers and motors, due to the virtual elimination of CEMF and the skin effect.

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

Performance Specifications:

Input Voltages	480V 60Hz 380V/400V/415V 50Hz 600V 60Hz 690V 50Hz
Total Harmonic Current Distortion	8% Max at 30% Load 5% Max at Full Load
Load	6 pulse rectifier
Input Voltage	Nominal voltage VAC +/- 10%, 3 Phase
Frequency	Nominal Frequency +0.75 Hz
Insertion loss at full load	<4%
Efficiency	97% - 99%
Operating Temperature	-40C to +50C Open Panel Filters -40C to +40C-45C Enclosed Filters -40C to +90C Storage
Altitude Without Derating	3,300 feet





CAPACITOR PANEL

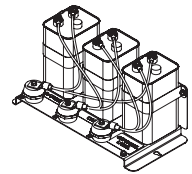
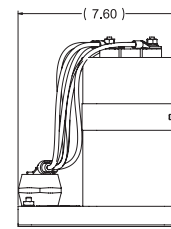
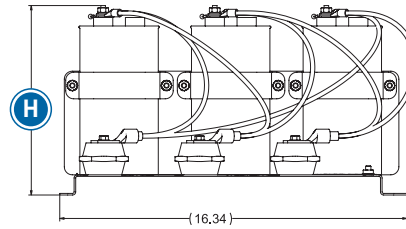
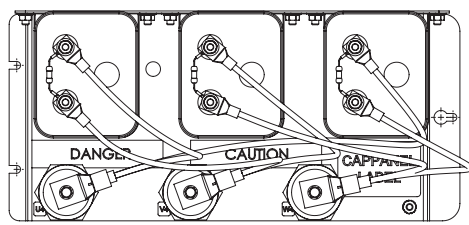


FIGURE 1

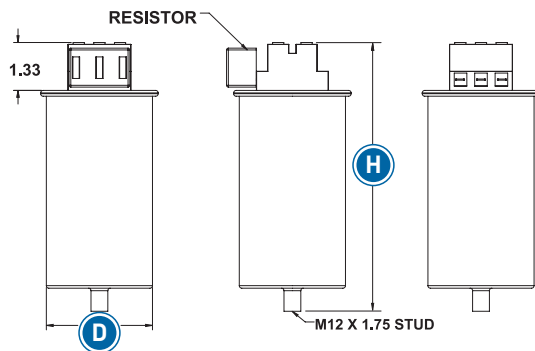
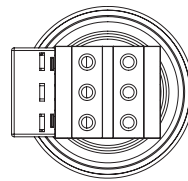


FIGURE 2



OPEN MAGNETICS

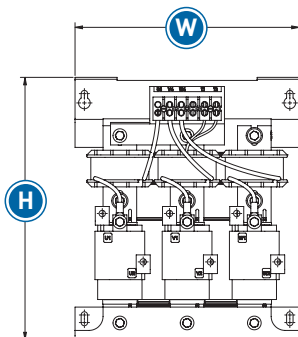


FIGURE 3

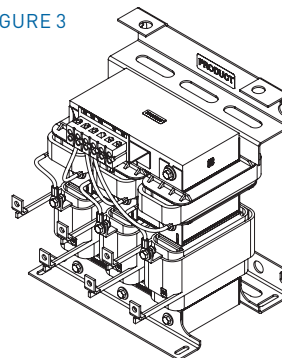
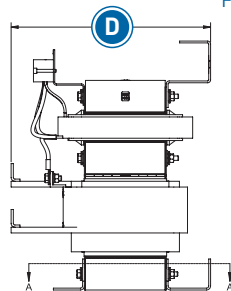


FIGURE 4

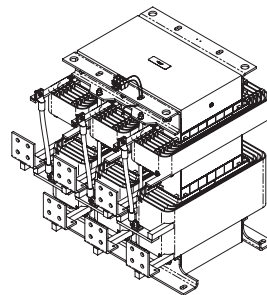
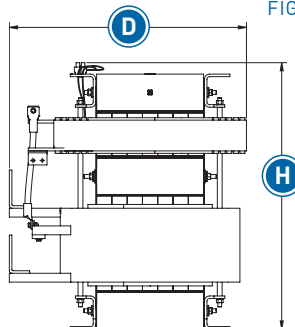
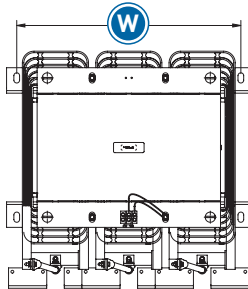
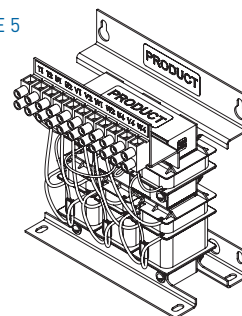
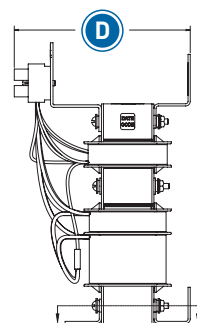
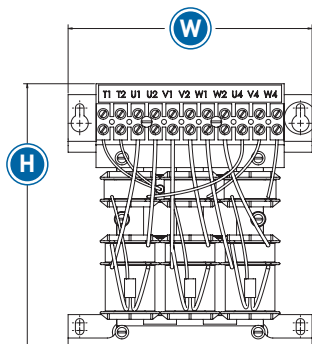


FIGURE 5



ENCLOSURES

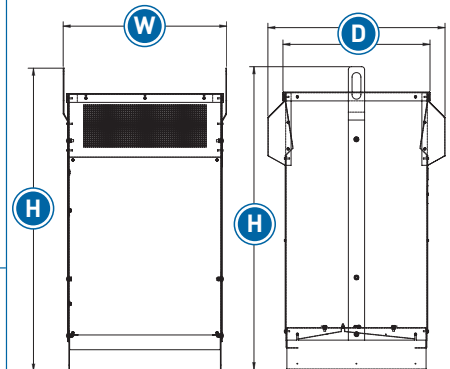
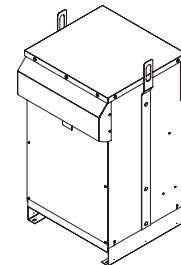


FIGURE 6



NOTE: HOODS
ONLY ON NEMA
3R ENCLOSURES

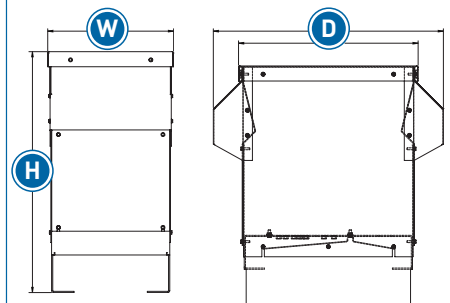
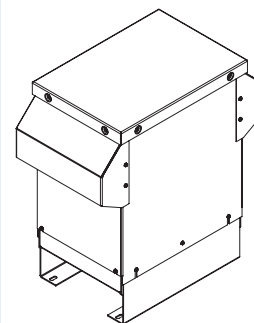


FIGURE 7



NOTE: HOODS
ONLY ON NEMA
3R ENCLOSURES

Selection Tables:

The Matrix AP is available in Open Panel, NEMA 1/2 and NEMA 3R

Note: MAPxxxxxC is 400V, 50Hz and MAPxxxxxD is 480V, 60Hz.



Amps Rating	Open Panel						Capacitor/Capacitor Assemblies Size (included) (in.) (H X W X D)	Capacitor Ref. Figure
	Catalog PN.		Weight (lbs.)	Open Magnetics (in.) (H X W X D)	Ref. Fig.	Watts Loss		
6	MAPP0006C	MAPP0006D	16	8.7 X 8 X 5.5	5	122	7.5 X 2.9	2
8	MAPP0008C	MAPP0008D	17	8.7 X 8 X 5.5	5	158	7.5 X 2.9	2
11	MAPP0011C	MAPP0011D	26	9.9 X 9 X 4.8	5	192	7.5 X 2.9	2
14	MAPP0014C	MAPP0014D	30	9.8 X 9 X 5.25	5	220	7.5 X 2.9	2
21	MAPP0021C	MAPP0021D	47	11.7 X 10.5 X 6.6	5	251	7.5 X 3.9	2
27	MAPP0027C	MAPP0027D	52	11.7 X 10.5 X 7	5	283	7.5 X 3.9	2
34	MAPP0034C	MAPP0034D	62	11.7 X 10.5 X 7.6	5	318	7.5 X 3.9	2
44	MAPP0044C	MAPP0044D	74	11.7 X 10.5 X 8	5	379	7.5 X 4.6	2
52	MAPP0052C	MAPP0052D	94	14 X 12 X 9	3	413	9.2 X 4.6	2
66	MAPP0066C	MAPP0066D	107	14 X 12 X 9	3	488	9.2 X 4.6	2
83	MAPP0083C	MAPP0083D	135	14 X 12 X 10.9	3	600	9.2 X 4.6	2
103	MAPP0103C	MAPP0103D	145	14 X 12 X 10.82	3	702	9.2 X 4.6	2
128	MAPP0128C	MAPP0128D	165	20 X 15.25 X 10.7	3	1,035	6.9 X 16.3 X 7.6	1
165	MAPP0165C	MAPP0165D	223	20 X 15.25 X 11.75	3	1,096	6.9 X 16.3 X 7.6	1
208	MAPP0208C	MAPP0208D	237	20 X 15.25 X 11.85	3	1,343	7.9 X 16.3 X 7.6	1
240	MAPP0240C	MAPP0240D	327	20 X 15.25 X 12.75	3	1,514	7.9 X 16.3 X 7.6	1
320	MAPP0320C	MAPP0320D	390	20 X 15.25 X 14.8	3	1,543	8.9 X 16.3 X 7.6	1
403	MAPP0403C	MAPP0403D	433	23.25 X 15.25 X 13.86	3	1,932	10.7 X 16.3 X 7.6	1
482	MAPP0482C	MAPP0482D	483	23.25 X 15.25 X 14.77	3	2,137	7.9 X 16.3 X 7.6 (2)	1
636	MAPP0636C	MAPP0636D	736	26 X 24 X 16.5	4	2,509	8.9 X 16.3 X 7.6 (2)	1
786	MAPP0786C	MAPP0786D	911	26 X 24 X 17.8	4	2,771	10.7 X 16.3 X 7.6 (2)	1
850	MAPP0850C	MAPP0850D	983	26 X 24 X 20.3	4	3,163	8.9 X 16.3 X 7.6 (2) 7.9 X 16.3 X 7.6	1
1000	MAPP1000C	MAPP1000 D	1137	26 X 24 X 21.7	4	4,206	8.9 X 16.3 X 7.6 (2) 10.7 X 16.3 X 7.6	1
1200	MAPP1200C	MAPP1200D	1297	26 X 24 X 22.2	4	4,400	10.7 X 16.3 X 7.6 (3)	1
1600	-	MAPP1600D	1970	34.7 X 36 X 29.2	4	4,500	10.7 X 16.3 X 7.6 (4)	1
2000	-	MAPP2000D	2347	35 X 36 X 30.95	4	5,050	10.7 X 16.3 X 7.6 (5)	1
2300	-	MAPP2300D	2541	34.5 X 36 X 32.25	4	6,100	10.7 X 16.3 X 7.6 (6)	1



Amps Rating	NEMA 1/2					NEMA 3R				
	Catalog PN.	Wt. (lbs.)	Enclosure	Ref. Fig.	Size (in.) (H X W X D)	Catalog PN.	Wt. (lbs.)	Enclosure	Ref. Fig.	Size (in.) (H X W X D)
6	MAPG0006C MAPG0006D	64	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0006C MAPW0006D	72	CAB-12AP3	7	24 X 12.5 X 22.9
8	MAPG0008C MAPG0008D	65	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0008C MAPW0008D	73	CAB-12AP3	7	24 X 12.5 X 22.9
11	MAPG0011C MAPG0011D	74	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0011C MAPW0011D	82	CAB-12AP3	7	24 X 12.5 X 22.9
14	MAPG0014C MAPG0014D	79	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0014C MAPW0014D	87	CAB-12AP3	7	24 X 12.5 X 22.9
21	MAPG0021C MAPG0021D	97	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0021C MAPW0021D	105	CAB-12AP3	7	24 X 12.5 X 22.9
27	MAPG0027C MAPG0027D	101	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0027C MAPW0027D	109	CAB-12AP3	7	24 X 12.5 X 22.9
34	MAPG0034C MAPG0034D	112	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0034C MAPW0034D	120	CAB-12AP3	7	24 X 12.5 X 22.9
44	MAPG0044C MAPG0044D	125	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0044C MAPW0044D	133	CAB-12AP3	7	24 X 12.5 X 22.9
52	MAPG0052C MAPG0052D	172	CAB-17AP2	6	34 X 17.8 X 21	MAPW0052C MAPW0052D	179	CAB-17AP3	6	34 X 17.8 X 26
66	MAPG0066C MAPG0066D	185	CAB-17AP2	6	34 X 17.8 X 21	MAPW0066C MAPW0066D	192	CAB-17AP3	6	34 X 17.8 X 26
83	MAPG0083C MAPG0083D	209	CAB-17AP2	6	34 X 17.8 X 21	MAPW0083C MAPW0083D	217	CAB-17AP2	6	34 X 17.8 X 26
103	MAPG0103C MAPG0130D	313	CAB-17AP2	6	34 X 17.8 X 21	MAPW0103C MAPW0103D	321	CAB-17AP3	6	34 X 17.8 X 26
128	MAPG0128C MAPG0128D	333	CAB-26AP2	6	51.3 X 27.7 X 24.9	MAPW0128C MAPW0128D	347	CAB-26AP3	6	51.3 X 27.7 X 30
165	MAPG0165C MAPG0165D	392	CAB-26AP2	6	51.3 X 27.7 X 24.9	MAPW0135C MAPW0135D	406	CAB-26AP3	6	51.3 X 27.7 X 30
208	MAPG0208C MAPG0208D	405	CAB-26AP2	6	51.3 X 27.7 X 24.9	MAPW0208C MAPW0208D	419	CAB-26AP3	6	51.3 X 27.7 X 30
240	MAPG0240C MAPG0240D	489	CAB-26AP2	6	51.3 X 27.7 X 24.9	MAPW0240C MAPW0240D	503	CAB-26AP3	6	51.3 X 27.7 X 30
320	MAPG0320C MAPG0320D	630	CAB-26APD2	6	76 X 27.7 X 22	MAPW0320C MAPW0320D	656	CAB-26APD3	6	76 X 27.7 X 34
403	MAPG0403C MAPG0403D	673	CAB-26APD2	6	76 X 27.7 X 22	MAPW0403C MAPW0403D	700	CAB-26APD3	6	76 X 27.7 X 34
482	MAPG0482C MAPG0482D	702	CAB-42AP2	6	87.6 X 43.7 X 31	MAPW0482C MAPW0482D	710	CAB-42AP3	6	87.6 X 43.7 X 40.1
636	MAPG0636C MAPG0636D	1077	CAB-42AP2	6	87.6 X 43.7 X 31	MAPW0636C MAPW0636D	1084	CAB-42AP3	6	87.6 X 43.7 X 40.1
786	MAPG0786C MAPG0786D	1252	CAB-42AP2	6	87.6 X 43.7 X 31	MAPW0786C MAPW0786D	1260	CAB-42AP3	6	87.6 X 43.7 X 40.1
850	MAPG0850C MAPG0850D	1386	CAB-48AP2	6	84 X 49.2 X 36.5	MAPW0850C MAPW0850D	1393	CAB-48AP3	6	84 X 49.2 X 45.5
1000	MAPG1000C MAPG1000D	1640	CAB-48AP2	6	84 X 49.2 X 36.5	MAPW1000C MAPW1000D	1647	CAB-48AP3	6	84 X 49.2 X 45.5
1200	MAPG1200C MAPG1200D	1700	CAB-48AP2	6	84 X 49.2 X 36.5	MAPW1200C MAPW1200D	1707	CAB-48AP3	6	84 X 49.2 X 45.5

Note: Information is for reference only. Consult www.mtecorp.com for detailed information.

Selection Tables:

The Matrix AP is available in Open Panel, NEMA 1/2 and NEMA 3R

Note: MAPxxxxxE is 600V, 60Hz.



Amps Rating	Open Panel					Capacitor/Capacitor Assemblies Size (included) (in.) (H X W X D)	Capacitor Ref. Figure
	Catalog PN.	Weight (lbs.)	Open Magnetics (in.) (H X W X D)	Ref. Fig.	Watts Loss		
6	MAPP0006E	17	8.7 X 8 X 5.5	5	150	7.5 X 2.9	2
8	MAPP0008E	26	9.8 X 9 X 4.8	5	183	7.5 X 2.9	2
11	MAPP0011E	30	9.8 X 9 X 5.3	5	205	7.5 X 2.9	2
14	MAPP0014E	47	11.7 X 10.5 X 6.6	5	250	7.5 X 2.9	2
21	MAPP0021E	52	11.7 X 10.5 X 7.1	5	285	7.5 X 3.9	2
27	MAPP0027E	62	11.7 X 10.5 X 7.6	5	304	7.5 X 3.9	2
34	MAPP0034E	74	11.7 X 10.5 X 8.1	5	366	7.5 X 4.6	2
44	MAPP0044E	94	14 X 12 X 9.89	3	395	9.14 X 4.6	2
52	MAPP0052E	107	14 X 12 X 10.3	3	494	9.2 X 4.6	2
66	MAPP0066E	135	14 X 12 X 11	3	655	10.6 X 4.6	2
83	MAPP0083E	140	14.1 X 12 X 11	3	718	10.6 X 4.6	2
103	MAPP0103E	165	20 X 15.3 X 10.7	3	1085	6.9 X 16.3 X 7.6	1
128	MAPP0128E	223	20 X 15.3 X 11.7	3	1090	6.9 X 16.3 X 7.6	1
165	MAPP0165E	237	20.1 X 15.3 X 11.9	3	1285	6.9 X 16.3 X 7.6	1
208	MAPP0208E	327	20.1 X 15.3 X 13.4	3	1431	7.9 X 16.3 X 7.6	1
240	MAPP0240E	433	20 X 15.3 X 16.1	3	1624	8.9 X 16.3 X 7.6	1
320	MAPP0320E	477	23.3 X 15.3 X 15.7	3	2021	10.7 X 16.3 X 7.6	1
403	MAPP0403E	483	23.3 X 15.3 X 16.1	3	2208	11.5 X 16.3 X 7.6	1
482	MAPP0482E	736	25.8 X 24 X 16.7	4	2481	(2) 8.9 X 16.3 X 7.6	1
636	MAPP0636E	911	25.9 X 24 X 18.2	4	2884	(2) 10.7 X 16.3 X 7.6	1
786	MAPP0786E	1137	25 X 24 X 19.5	4	3368	(2) 11.5 X 16.3 X 7.6	1

The Matrix AP is also available in 690V, 50Hz (part number MAPxxxxxF).

Please consult MTE's website, www.mtecorp.com, for details.



Amps Rating	NEMA 1/2					NEMA 3R				
	Catalog PN.	Wt. (lbs.)	Enclosure	Ref. Fig.	Size (in.) (H X W X D)	Catalog PN.	Wt. (lbs.)	Enclosure	Ref. Fig.	Size (in.) (H X W X D)
6	MAPG0006E	65	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0006E	73	CAB-12AP3	7	24 X 12.5 X 22.9
8	MAPG0008E	74	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0008E	82	CAB-12AP3	7	24 X 12.5 X 22.9
11	MAPG0011E	79	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0011E	87	CAB-12AP3	7	24 X 12.5 X 22.9
14	MAPG0014E	97	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0014E	105	CAB-12AP3	7	24 X 12.5 X 22.9
21	MAPG0021E	101	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0021E	109	CAB-12AP3	7	24 X 12.5 X 22.9
27	MAPG0027E	112	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0027E	120	CAB-12AP3	7	24 X 12.5 X 22.9
34	MAPG0034E	125	CAB-12AP2	7	24 X 12.5 X 17.9	MAPW0034E	133	CAB-12AP3	7	24 X 12.5 X 22.9
44	MAPG0044E	172	CAB-17AP2	6	34 X 17.8 X 21	MAPW0044E	179	CAB-17AP3	6	34 X 17.8 X 26
52	MAPG0052E	185	CAB-17AP2	6	34 X 17.8 X 21	MAPW0052E	192	CAB-17AP3	6	34 X 17.8 X 26
66	MAPG0066E	209	CAB-17AP2	6	34 X 17.8 X 21	MAPW0066E	217	CAB-17AP3	6	34 X 17.8 X 26
83	MAPG0083E	313	CAB-17AP2	6	34 X 17.8 X 21	MAPW0083E	338	CAB-17AP3	6	34 X 17.8 X 26
103	MAPG0103E	333	CAB-26AP2	6	51.3 X 27.7 X 24.9	MAPW0103E	358	CAB-26AP3	6	51.3 X 27.7 X 30
128	MAPG0128E	392	CAB-26AP2	6	51.3 X 27.7 X 24.9	MAPW0128E	417	CAB-26AP3	6	51.3 X 27.7 X 30
165	MAPG0165E	405	CAB-26AP2	6	51.3 X 27.7 X 24.9	MAPW0165E	430	CAB-26AP3	6	51.3 X 27.7 X 30
208	MAPG0208E	489	CAB-26AP2	6	51.3 X 27.7 X 24.9	MAPW0208E	514	CAB-26AP3	6	51.3 X 27.7 X 30
240	MAPG0240E	630	CAB-26APD2	6	76 X 27.7 X 22	MAPW0240E	656	CAB-26APD3	6	76 X 27.7 X 34
320	MAPG0320E	673	CAB-26APD2	6	76 X 27.7 X 22	MAPW0320E	700	CAB-26APD3	6	76 X 27.7 X 34
403	MAPG0403E	702	CAB-42AP2	6	87.6 X 43.7 X 31	MAPW0403E	710	CAB-42AP3	6	87.6 X 43.7 X 40.1
482	MAPG0482E	1077	CAB-42AP2	6	87.6 X 43.7 X 31	MAPW0482E	1085	CAB-42AP3	6	87.6 X 43.7 X 40.1
636	MAPG0636E	1252	CAB-42AP2	6	87.6 X 43.7 X 31	MAPW0636E	1260	CAB-42AP3	6	87.6 X 43.7 X 40.1
786	MAPG0786E	1640	CAB-48AP2	6	84 X 49.2 X 36.5	MAPW0786E	1647	CAB-48AP3	6	84 X 49.2 X 45.5

PERFORMANCE GUARANTY

Select and install the appropriate Matrix Harmonic Filter in a variable torque AC variable frequency drive application, within our published system limits and we guarantee that the input current distortion will be less than or equal to 5% THID for Matrix AP filters at full load, and less than 8% at 30% load. If a properly sized and installed filter fails to meet its specified THID level, MTE will provide the necessary modifications or replacement filter at no charge. TDD will typically be even lower than THID.

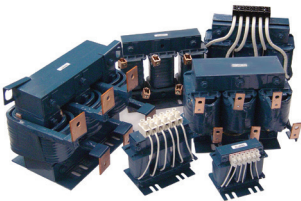
Matrix filters can also provide similar performance in other drive applications such as constant torque, DC drives and other phase controlled rectifiers, but actual THID levels can vary by load and/or speed and therefore cannot be guaranteed. Consult factory for assistance when applying Matrix filters on these types of equipment.

MINIMUM SYSTEM REQUIREMENTS

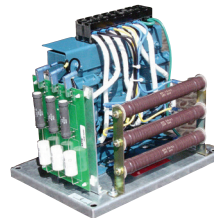
The guaranteed performance levels of this filter will be achieved when the following system conditions are met:

Frequency:	Nominal Frequency $\pm 0.75\text{Hz}$
System Voltage:	Nominal System Voltage (line to line) $\pm 10\%$
Balanced Line Voltage:	Within 1%
Background Voltage Distortion:	0% THVD

NOTE: The presence of background voltage distortion will cause motors and other linear loads to draw harmonic currents. Additional harmonic currents may flow into the Matrix filter if there is harmonic voltage distortion already on the system.



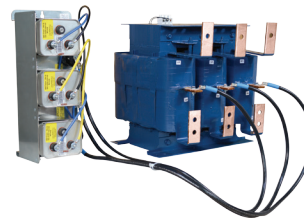
RL and RLW line/load Reactors help keep your equipment running longer by absorbing many of the power line disturbances which otherwise damage or shut down your inverters, variable speed controllers, or other sensitive equipment.



dV/dt Filters reduce peak voltages and high frequency content of your VFD output to provide a better level of motor protection.



Matrix® AP harmonic Filters can help ensure that your system meets the IEEE-519 requirements for harmonic current.



SineWave Filters transform the output of your VFD to a near perfect sinusoidal waveform for the best level of motor protection.



Power quality.
Solved.

MTE Corporation

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