
**MARCUS
GENERAL
CATALOG**



TRANSFORMERS

MARCUS ADVANCED WATT+PLUS™ TECHNOLOGY

**Maximum efficiency,
lowest losses,
trouble-free
performance,
longer life**

COPPER WINDINGS MAKE THE DIFFERENCE.

Our coils are wound with 100% pure electrolytic high conductivity copper for long, trouble-free transformer life

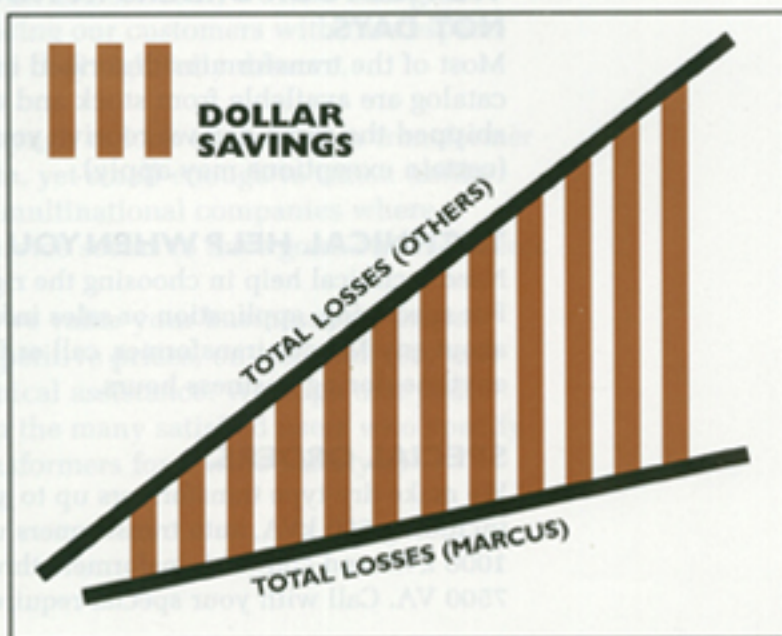
MORE POWER AT LESS COST.

Marcus transformers reduce electricity bills, means a faster payback period



COST

\$13,000
12,000
11,000
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000



Graph data based on popular 45 kVA size

Costs based on .07¢ per KW/h

Comparison is between Marcus WATT+PLUS copper-wound transformer and conventional unit made of copper (if available)

1 2 3 4 5 6 7 8 9 10 YEARS

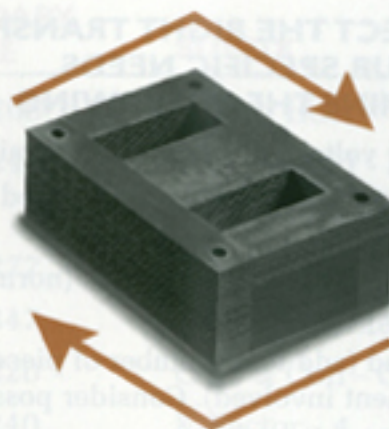


Our unique wound core construction vs. conventional core.



The unique oval shape of Marcus wound core construction ensures that flow of magnetic flux is carried in direction of cold-rolled grain-oriented steel for minimal core loss.

A conventional transformer uses stacked lamination core assembly. 90° square corners contribute to high core losses.



Easily accessible terminal board.



Voltages are clearly shown to facilitate trouble-free connecting of line and load cables. All coil leads are directly brazed to terminal board studs to prevent heating, loosening.

Designed for cooler running.

Marcus distribution transformers are manufactured with heatproof Class 220°C materials only and designed to operate well below the maximum allowable temperature rise of 150°C.

More effective heat transfer.

To provide effective heat transfer, all our core and coil assemblies are double dipped in solventless, non-hygroscopic resin and baked thoroughly.

Quieter operation.

Anti-vibration isolators between the element and enclosure reduce vibration transfer to the surrounding structure, ensuring quieter operation.

CHOOSING THE RIGHT TRANSFORMER

A transformer is a static piece of electrical equipment which transfers power from one voltage system to another by means of electromagnetic induction. The reason for using a transformer is to match the voltage of the load to line voltage supplied by the utility.

TO SELECT THE RIGHT TRANSFORMER FOR YOUR SPECIFIC NEEDS, DETERMINE THE FOLLOWING

- Primary voltage of transformer (available voltage)
- Secondary voltage (voltage required for load equipment)
- Frequency (in Hz) and phases (normally single or three phase)
- kVA load (add total number of pieces of equipment involved). Consider possible future additions
- Is secondary voltage 2 wire or 3 wire (single phase) or 3 wire or 4 wire (three phase)?
- Is double-wound or auto transformer required?
- Is transformer to be floor or wall-mounted?
- Is transformer for use indoors or outdoors?

USE THESE CHARTS TO DETERMINE TRANSFORMER SIZE REQUIRED

SINGLE PHASE

TRANSFORMER FULL LOAD CURRENT IN AMPS

KVA	RATED LINE VOLTAGE			
	120	240	480	600
1	8.3	4.2	2.1	1.6
2	16.7	8.4	4.2	3.2
3	25.0	12.5	6.3	5.0
5	41.7	20.8	10.4	8.3
7.5	62.5	31.2	15.6	12.5
10	83.4	41.6	20.8	16.7
15	125	62.5	31.2	25.0
25	208	104	52.1	41.6
37.5	312	156	78.2	62.5
50	416	208	104	83.3
75	625	312	156	125
100	833	416	208	167
150	1250	625	312	250
167	1391	696	348	278
250	2083	1041	521	417
333	2775	1387	694	555
500	4166	2083	1042	833

SINGLE PHASE CALCULATION

$$kVA = \frac{\text{Volts} \times \text{Amps}}{1000}$$

$$\text{Amps} = \frac{kVA \times 1000}{\text{Volts}}$$

THREE PHASE

TRANSFORMER LOAD CURRENT PER LINE IN AMPS

KVA	RATED LINE VOLTAGE			
	208	240	480	600
6	16.6	14.4	7.2	5.8
9	25.0	21.6	10.8	8.7
10	28.0	24.0	12.0	9.6
15	41.6	36.1	18.1	14.4
30	83.3	72.3	36.1	28.9
45	125	108	54.0	43.2
75	208	181	90.5	72.1
112.5	312	272	136	108
150	416	360	180	144
225	624	541	270	216
300	832	722	361	288
450	1250	1080	542	433
500	1388	1203	601	481
600	1666	1445	722	578

THREE PHASE CALCULATION

$$kVA = \frac{1.73 \times \text{Volts} \times \text{Amps}}{1000}$$

$$\text{Amps} = \frac{kVA \times 1000}{1.73 \times \text{Volts}}$$



KVA	SOUND LEVEL (AVERAGE)
0-9	40 db
10-50	45
51-150	50
151-300	55
301-500	60
501-600	62

OPTIONS

- Double electrostatic shielding is standard on all Marcus drive isolation and K-Factor transformers and is also available on all our distribution transformers
- Sprinkler shields are available on request
- All Marcus transformers operate quietly; if lower sound levels are required, we can accommodate your needs
- Space limitations do not permit us to show every possible voltage. Ask about special regional and custom voltages
- Special tap arrangements
- Anti-vibration pad kits (model AVP4)

TRANSFORMER SELECTION GUIDE

Select the type of transformer you need, its kVA rating, primary voltage, secondary voltage and suffix from the chart below.

TYPE	KVA RATING	PRIMARY VOLTAGE	SECONDARY VOLTAGE	SUFFIX
600V PRIMARY, 208Y/120V SE				
MT 30A1 S designates a three phase transformer, 30 kVA, 600V, 120/208 60Hz with an electro-static shield	KVA	CATALOG NUMBER		
	30	MT 30A1 S		23
	45	MT 45A1 S		24
	50	MT 50A1 S		25
	75	MT 75A1 S		26
	112.5	MT 112.5A1 S		36

TYPE	KVA	PRIMARY VOLTAGE	SECONDARY VOLTAGE	SUFFIX
MS - Single Phase		A - 600	1 - 120/208	50Hz - EUR
MT - Three Phase		B - 480	2 - 120/240	Elec. Shield - S
MSWP - Outdoor Single Phase		C - 416	3 - 240	115° C Rise - F
MTWP - Outdoor Three Phase		D - 380	4 - 480/277	80° C Rise - B
RES - Epoxy Single Phase		E - 347	5 - 600/347	Sprinkler Shield - P
RET - Epoxy Three Phase		F - 277	6 - 380/220	Core & Coil - CC
MK - K-Factor Rating		G - 240	7 - 416/240	K-Factor - 4
MDI - Drive Isolation		H - 208	8 - 120	K-Factor - 9
MAT - Auto Three Phase		I - 240/480	9 - 220	K-Factor - 13
MATS - Auto Single Phase		J - 2400	10 - 220/127	K-Factor - 20
		K - 4160	11 - 240/139	Stainless Steel Enclosure- SS
		L - 120	12 - 230	
		M - 440	13 - 230/133	
		N - 460	14 - 120/208/240	
		O - 575	15 - 440	
		P - 230	16 - 440/254	
		Q - 600/480	17 - 460	
		R - 2300	18 - 460/266	
		S - 220	19 - 480	
		T - 120/240	20 - 400/231	
		U - 550	21 - 208	
			22 - 380	
			23 - 600	
			24 - 110	
			25 - 347	
			26 - 575/332	

GENERAL PURPOSE DRY-TYPE TRANSFORMERS

SINGLE PHASE



SELECTION CHARTS

600V PRIMARY, 120/240V SECONDARY

Class 220° C, 150° C Rise, 60 Hz

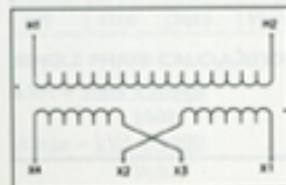
KVA	CATALOG NUMBER	DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG STYLE	KNOCKOUTS		STD TAPS
		HEIGHT	WIDTH		DEPTH		LIB		KG	INCHES		MM		
3	MS 3A2	11	279	12	305	11	279	1	50	23	WALL	1-1/8	25-28	A
5	MS 5A2	11	279	12	305	11	279	1	60	27	WALL	1-1/8	25-28	A
7.5	MS 7.5A2	11	279	12	305	11	279	1	78	35	WALL	1-1/8	25-28	A
10	MS 10A2	11	279	12	305	11	279	1	90	41	WALL	1-1/8	25-28	A
15	MS 15A2	21	533	13.5	343	13	330	2	130	59	WALL	1-1/8	25-28	B
25	MS 25A2	29	736	14	355	17	432	3	200	90	WALL/FLR	1-1/8	25-28	B
37.5	MS 37.5A2	29	736	14	355	17	432	3	250	112	WALL/FLR	1-1/8	25-28	B
50	MS 50A2	29	736	14	355	17	432	3	300	135	FLOOR	1-1/8	25-28	B
75	MS 75A2	37	940	16.5	419	19	482	3	525	238	FLOOR	N.A.		B
100	MS 100A2	37	940	16.5	419	19	482	3	620	281	FLOOR	N.A.		B
150	MS 150A2	43	1092	18	457	21	533	3	905	410	FLOOR	N.A.		B
200	MS 200A2	50	1270	19	483	29	737	3	1050	476	FLOOR	N.A.		B
250	MS 250A2	50	1270	19	483	29	737	3	1145	519	FLOOR	N.A.		B
333	MS 333A2	52	1320	20	508	34	864	3	1645	746	FLOOR	N.A.		B

480V PRIMARY, 120/240V SECONDARY

Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER	DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG STYLE	KNOCKOUTS		STD TAPS
		HEIGHT	WIDTH		DEPTH		LIB		KG	INCHES		MM		
3	MS 3B2	11	279	12	305	11	279	1	50	23	WALL	1-1/8	25-28	A
5	MS 5B2	11	279	12	305	11	279	1	60	27	WALL	1-1/8	25-28	A
7.5	MS 7.5B2	11	279	12	305	11	279	1	78	35	WALL	1-1/8	25-28	A
10	MS 10B2	11	279	12	305	11	279	1	90	41	WALL	1-1/8	25-28	A
15	MS 15B2	21	533	13.5	343	13	330	2	130	59	WALL	1-1/8	25-28	D
25	MS 25B2	29	736	14	355	17	432	3	200	90	WALL/FLR	1-1/8	25-28	D
37.5	MS 37.5B2	29	736	14	355	17	432	3	250	112	WALL/FLR	1-1/8	25-28	D
50	MS 50B2	29	736	14	355	17	432	3	300	135	FLOOR	1-1/8	25-28	D
75	MS 75B2	37	940	16.5	419	19	482	3	525	238	FLOOR	N.A.		D
100	MS 100B2	37	940	16.5	419	19	482	3	620	281	FLOOR	N.A.		D
150	MS 150B2	43	1092	18	457	21	533	3	905	410	FLOOR	N.A.		D
200	MS 200B2	50	1270	19	483	29	737	3	1050	476	FLOOR	N.A.		D
250	MS 250B2	50	1270	19	483	29	737	3	1145	519	FLOOR	N.A.		D
333	MS 333B2	52	1320	20	508	34	864	3	1645	746	FLOOR	N.A.		D

SINGLE PHASE TYPICAL WIRING DIAGRAM



- A. No taps
- B. 575/600/625
- C. 570/585/600/615/630 (Available)
- D. 440/460/480
- E. 440/460/480/500 (Available)
- F. 456/468/480/492/504 (Available)

FIG. 1 WM

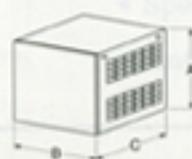
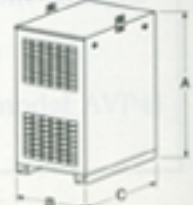


FIG. 2 TW



FIG. 3 WF



*As an ENERGY STAR Partner, Marcus Transformers has determined that this product meets ENERGY STAR guidelines for energy efficiency.

GENERAL PURPOSE DRY-TYPE TRANSFORMERS

THREE PHASE



SELECTION CHARTS

600V PRIMARY, 208Y/120V SECONDARY

Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER	DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG STYLE	KNOCKOUTS		STD TAPS
		HEIGHT	WIDTH		DEPTH		LB		KG	INCHES		MM		
3	MT 3A1	11	279	12	305	11	279	4	55	25	WALL	1-1/8	25-28	A
6	MT 6A1	21	533	13.5	343	13	330	5	85	39	WALL*	1-1/8	25-28	A
10	MT 10A1	21	533	13.5	343	13	330	5	110	50	WALL*	1-1/8	25-28	A
15	MT 15A1	21	533	13.5	343	13	330	5	170	78	WALL*	1-1/8	25-28	B
30	MT 30A1	23	584	21	533	15	381	6	250	114	WALL/FLR	1-1/8	25-28	B
45	MT 45A1	29	737	25.5	647	16.5	419	6	370	169	WALL/FLR	1-1/8	25-28	B
50	MT 50A1	29	737	25.5	647	16.5	419	6	425	193	WALL/FLR	1-1/8	25-28	B
75	MT 75A1	29	737	25.5	647	16.5	419	6	520	237	FLOOR	1-1/8	25-28	B
112.5	MT 112.5A1	36	914	30.5	775	20	508	6	820	375	FLOOR	N.A.		B
150	MT 150A1	36	914	30.5	775	20	508	6	995	451	FLOOR	N.A.		B
225	MT 225A1	47	1194	35	889	24.5	622	6	1450	658	FLOOR	N.A.		B
300	MT 300A1	47	1194	35	889	24.5	622	6	1810	821	FLOOR	N.A.		B
450	MT 450A1	51.5	1308	36.5	927	31	787	6	2550	1157	FLOOR	N.A.		B
500	MT 500A1	51.5	1308	36.5	927	31	787	6	2760	1252	FLOOR	N.A.		B
600	MT 600A1	51.5	1308	36.5	927	31	787	6	3150	1429	FLOOR	N.A.		B

* Available with floor channel on request

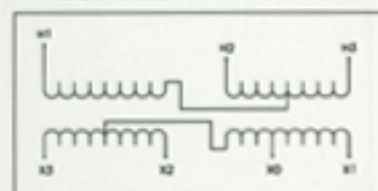
480V PRIMARY, 208Y/120V SECONDARY

Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER	DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG STYLE	KNOCKOUTS		STD TAPS
		HEIGHT	WIDTH		DEPTH		LB		KG	INCHES		MM		
3	MT 3B1	11	279	12	305	11	279	4	55	25	WALL	1-1/8	25-28	A
6	MT 6B1	21	533	13.5	343	13	330	5	85	39	WALL*	1-1/8	25-28	A
10	MT 10B1	21	533	13.5	343	13	330	5	110	50	WALL*	1-1/8	25-28	A
15	MT 15B1	21	533	13.5	343	13	330	5	170	78	WALL*	1-1/8	25-28	D
30	MT 30B1	23	584	21	533	15	381	6	250	114	WALL/FLR	1-1/8	25-28	D
45	MT 45B1	29	737	25.5	647	16.5	419	6	370	169	WALL/FLR	1-1/8	25-28	D
50	MT 50B1	29	737	25.5	647	16.5	419	6	425	193	WALL/FLR	1-1/8	25-28	D
75	MT 75B1	29	737	25.5	647	16.5	419	6	520	237	FLOOR	1-1/8	25-28	D
112.5	MT 112.5B1	36	914	30.5	775	20	508	6	820	372	FLOOR	N.A.		D
150	MT 150B1	36	914	30.5	775	20	508	6	995	451	FLOOR	N.A.		D
225	MT 225B1	47	1194	35	889	24.5	622	6	1450	658	FLOOR	N.A.		D
300	MT 300B1	47	1194	35	889	24.5	622	6	1810	821	FLOOR	N.A.		D
450	MT 450B1	51.5	1308	36.5	927	31	787	6	2550	1157	FLOOR	N.A.		D
500	MT 500B1	51.5	1308	36.5	927	31	787	6	2760	1252	FLOOR	N.A.		D
600	MT 600B1	51.5	1308	36.5	927	31	787	6	3150	1429	FLOOR	N.A.		D

* Available with floor channel on request

THREE PHASE TYPICAL WIRING DIAGRAM



- A. No taps
- B. 575/600/625
- C. 570/585/600/615/630 (Available)
- D. 440/460/480
- E. 440/460/480/500 (Available)
- F. 456/468/480/492/504 (Available)

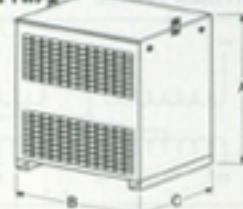
FIG. 4 WM



FIG. 5 TW



FIG. 6 TW



* As an ENERGY STAR® Partner, Marcus Transformers has determined that this product meets ENERGY STAR® guidelines for energy efficiency.

TYPE MK K-FACTOR TRANSFORMERS

FOR NON-LINEAR LOADS

THREE PHASE

APPLICATIONS

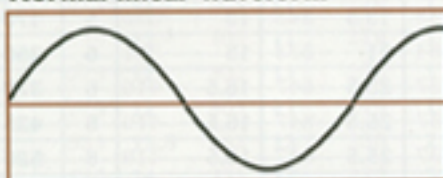
Specifically designed and engineered for safe, efficient handling of non-linear loads created by computers, video display terminals, electronic ballasts, fax and copy machines and programmable controllers



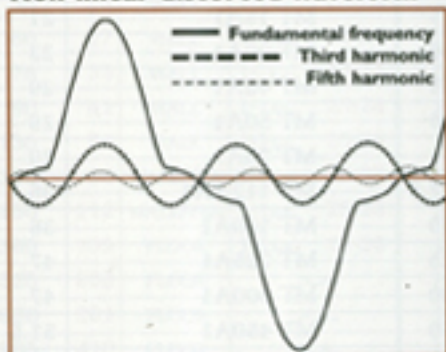
FEATURES

- Specifically designed copper windings with multiple conductors reduce harmonic high frequency "skin effect" and increase efficiency
- Low flux density wound cores reduce saturation
- Oversized neutral conductors eliminate overheating
- Double grounded electrostatic shielding minimizes electrical noise

Normal linear waveform



Non-linear distorted waveform



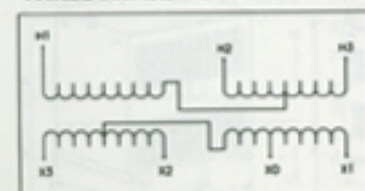
SELECTION CHART

K-FACTOR 4

Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER		DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG STYLE	KNOCKOUTS	
	600-300Y/120	480-300Y/120	HEIGHT	WIDTH	DEPTH		LBS	KG		INCHES	MM			
15	MK 15A1-4	MK 15B1-4	21	533	13.5	343	13	330	7	187	85	WALL	1-1 in	25-28
30	MK 30A1-4	MK 30B1-4	23	584	21	533	15	381	8	275	126	WALL/FLR	1-1 in	25-28
45	MK 45A1-4	MK 45B1-4	29	737	25.5	647	16.5	419	8	400	183	WALL/FLR	1-1 in	25-28
50	MK 50A1-4	MK 50B1-4	29	737	25.5	647	16.5	419	8	439	200	WALL/FLR	1-1 in	25-28
75	MK 75A1-4	MK 75B1-4	29	737	25.5	647	16.5	419	8	570	260	FLOOR	1-1 in	25-28
112.5	MK 112.5A1-4	MK 112.5B1-4	36	914	30.5	775	20	508	8	900	411	FLOOR		N.A.
150	MK 150A1-4	MK 150B1-4	36	914	30.5	775	20	508	8	1085	495	FLOOR		N.A.
225	MK 225A1-4	MK 225B1-4	47	1194	35	889	24.5	622	8	1650	754	FLOOR		N.A.
300	MK 300A1-4	MK 300B1-4	47	1194	35	889	24.5	622	8	2125	971	FLOOR		N.A.
450	MK 450A1-4	MK 450B1-4	51.5	1308	36.5	927	31	787	8	2740	1252	FLOOR		N.A.
500	MK 500A1-4	MK 500B1-4	51.5	1308	36.5	927	31	787	8	3140	1435	FLOOR		N.A.

THREE PHASE TYPICAL WIRING DIAGRAM



All with 4-2 1/2 % (2PCAN & 2PCBN) taps

TYPE MK K-FACTOR TRANSFORMERS

FOR NON-LINEAR LOADS

THREE PHASE

SELECTION CHARTS

K-FACTOR 13

Class 220° C, 150° C Rise, 60 Hz

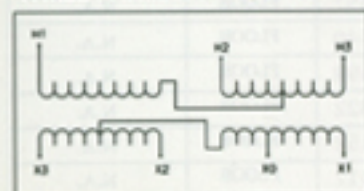
KVA	CATALOG NUMBER		DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG STYLE	KNOCKOUTS	
	600-208Y/120	480-208Y/120	HEIGHT	WIDTH		DEPTH		LIB		KG	INCHES		MM	
15	MK 15A1-13	MK 15B1-13	23	584	21	533	15	381	8	245	112	WALL/FLR	1-1 1/8	25-28
30	MK 30A1-13	MK 30B1-13	29	737	25.5	647	16.5	419	8	360	164	WALL/FLR	1-1 1/8	25-28
45	MK 45A1-13	MK 45B1-13	29	737	25.5	647	16.5	419	8	510	233	FLOOR	1-1 1/8	25-28
50	MK 50A1-13	MK 50B1-13	29	737	25.5	647	16.5	419	8	580	265	FLOOR	1-1 1/8	25-28
75	MK 75A1-13	MK 75B1-13	36	914	30.5	775	20	508	8	815	372	FLOOR	N.A.	
112.5	MK 112.5A1-13	MK 112.5B1-13	36	914	30.5	775	20	508	8	1150	525	FLOOR	N.A.	
150	MK 150A1-13	MK 150B1-13	47	1194	35	889	24.5	508	8	1615	738	FLOOR	N.A.	
225	MK 225A1-13	MK 225B1-13	47	1194	35	889	24.5	508	8	1965	898	FLOOR	N.A.	
300	MK 300A1-13	MK 300B1-13	51.5	1308	36.5	927	31	787	8	2515	1149	FLOOR	N.A.	
450	MK 450A1-13	MK 450B1-13	51.5	1308	36.5	927	31	787	8	3100	1417	FLOOR	N.A.	
500	MK 500A1-13	MK 500B1-13	51.5	1308	36.5	927	31	787	8	4000	1828	FLOOR	N.A.	

K-FACTOR 20

Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER		DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG STYLE	KNOCKOUTS	
	600-208Y/120	480-208Y/120	HEIGHT	WIDTH		DEPTH		LIB		KG	INCHES		MM	
15	MK 15A1-20	MK 15B1-20	23	584	21	533	13	330	8	360	164	WALL/FLR	1-1 1/8	25-28
30	MK 30A1-20	MK 30B1-20	29	737	25.5	647	16.5	419	8	520	237	FLOOR	1-1 1/8	25-28
45	MK 45A1-20	MK 45B1-20	36	914	30.5	775	20	508	8	800	365	FLOOR	N.A.	
50	MK 50A1-20	MK 50B1-20	36	914	30.5	775	20	508	8	860	393	FLOOR	N.A.	
75	MK 75A1-20	MK 75B1-20	36	914	30.5	775	20	508	8	980	448	FLOOR	N.A.	
112.5	MK 112.5A1-20	MK 112.5B1-20	47	1194	35	889	24.5	508	8	1250	571	FLOOR	N.A.	
150	MK 150A1-20	MK 150B1-20	47	1194	35	889	24.5	622	8	1690	772	FLOOR	N.A.	
225	MK 225A1-20	MK 225B1-20	51.5	1308	36.5	927	31	787	8	2260	1033	FLOOR	N.A.	
300	MK 300A1-20	MK 300B1-20	51.5	1308	36.5	927	31	787	8	2750	1257	FLOOR	N.A.	
450	MK 450A1-20	MK 450B1-20	51.5	1308	36.5	927	31	787	8	4200	1920	FLOOR	N.A.	

THREE PHASE TYPICAL WIRING DIAGRAM



All with 4-2 1/2 % (2FCAN & 2FCBN) taps

FIG. 7 TWM

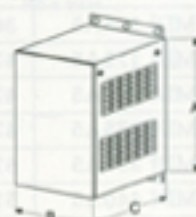


FIG. 8 TWY



DRIVE ISOLATION TRANSFORMERS

THREE PHASE

APPLICATIONS

For use with AC and DC adjustable speed drives which generate mechanical stresses and harmonic currents beyond the design criteria of normal general purpose transformers.

FEATURES

- Heavy duty copper windings are firmly braced to withstand mechanical stresses of drive operation
- Provide electrical isolation between primary line and drive wiring
- Standard double electrostatic shielding between input and output windings reduce problems caused by line voltage transients

- In standard and special primary temperature rise units for special applications
- Internal anti-vibration pads reduce transmission of noise and vibration
- All terminals clearly labeled for easy wiring
- Interleaved windings and wound core technology ensure excellent voltage regulation

SIZING SELECTION

Know the motor horsepower? Just follow the drive system manufacturer's recommendations or select the corresponding kVA from the chart at right.



H.P.	KVA
5.0	7.5
7.5	11.0
10.0	14.0
15.0	20.0
20.0	27.0
25.0	34.0
30.0	40.0
40.0	51.0
50.0	63.0
60.0	75.0
75.0	93.0
100.0	118.0
125.0	145.0
150.0	175.0
200.0	220.0
250.0	275.0
300.0	330.0
400.0	440.0
500.0	550.0
600.0	660.0

SELECTION CHARTS

Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER		DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG STYLE	KNOCKOUTS	
	600-480Y/377	600-600Y/347	HEIGHT	WIDTH		DEPTH		LB		KG	INCHES		MM	
3	MDI 3A4	MDI 3A5	21	533	13.5	343	13	330	9	80	36	WALL	1-1/8	25-28
6	MDI 6A4	MDI 6A5	21	533	13.5	343	13	330	9	105	48	WALL	1-1/8	25-28
7.5	MDI 7.5A4	MDI 7.5A5	21	533	13.5	343	13	330	9	115	52	WALL	1-1/8	25-28
11	MDI 11A4	MDI 11A5	21	533	13.5	343	13	330	9	135	62	WALL	1-1/8	25-28
14	MDI 14A4	MDI 14A5	21	533	13.5	343	13	330	9	180	82	WALL	1-1/8	25-28
20	MDI 20A4	MDI 20A5	23	584	21	533	15	381	10	225	103	WALL/FLR	1-1/8	25-28
27	MDI 27A4	MDI 27A5	23	584	21	533	15	381	10	265	121	WALL/FLR	1-1/8	25-28
34	MDI 34A4	MDI 34A5	23	584	21	533	15	381	10	280	128	WALL/FLR	1-1/8	25-28
40	MDI 40A4	MDI 40A5	29	737	25.5	647	16.5	419	10	370	169	WALL/FLR	1-1/8	25-28
51	MDI 51A4	MDI 51A5	29	737	25.5	647	16.5	419	10	425	194	WALL/FLR	1-1/8	25-28
63	MDI 63A4	MDI 63A5	29	737	25.5	647	16.5	419	10	500	228	FLOOR	1-1/8	25-28
75	MDI 75A4	MDI 75A5	29	737	25.5	647	16.5	419	10	560	256	FLOOR	1-1/8	25-28
93	MDI 93A4	MDI 93A5	36	914	30.5	775	20	508	10	750	343	FLOOR	N.A.	
118	MDI 118A4	MDI 118A5	36	914	30.5	775	20	508	10	800	356	FLOOR	N.A.	
145	MDI 145A4	MDI 145A5	36	914	30.5	775	20	508	10	1000	457	FLOOR	N.A.	
175	MDI 175A4	MDI 175A5	47	1194	35	889	24.5	622	10	1400	640	FLOOR	N.A.	
220	MDI 220A4	MDI 220A5	47	1194	35	889	24.5	622	10	1520	694	FLOOR	N.A.	
275	MDI 275A4	MDI 275A5	47	1194	35	889	24.5	622	10	1800	822	FLOOR	N.A.	
330	MDI 330A4	MDI 330A5	51.5	1308	36.5	927	31	787	10	2520	1152	FLOOR	N.A.	
440	MDI 440A4	MDI 440A5	51.5	1308	36.5	927	31	787	10	3100	1417	FLOOR	N.A.	

DRIVE ISOLATION TRANSFORMERS

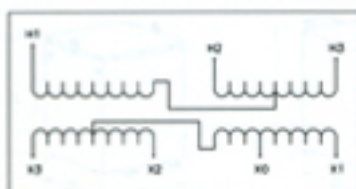
Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER		DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG. STYLE	KNOCKOUTS	
	400-240V/139	480-480V/377	HEIGHT	WIDTH		DEPTH		LIB		KG	INCHES		MM	
3	MDI 3A11	MDI 3B4	21	533	13.5	343	13	330	9	80	36	WALL	1-1/8	25-28
6	MDI 6A11	MDI 6B4	21	533	13.5	343	13	330	9	105	48	WALL	1-1/8	25-28
7.5	MDI 7.5A11	MDI 7.5B4	21	533	13.5	343	13	330	9	115	52	WALL	1-1/8	25-28
11	MDI 11A11	MDI 11B4	21	533	13.5	343	13	330	9	135	62	WALL	1-1/8	25-28
14	MDI 14A11	MDI 14B4	21	533	13.5	343	13	330	9	180	82	WALL	1-1/8	25-28
20	MDI 20A11	MDI 20B4	23	584	21	533	15	381	10	225	103	WALL/FLR	1-1/8	25-28
27	MDI 27A11	MDI 27B4	23	584	21	533	15	381	10	265	121	WALL/FLR	1-1/8	25-28
34	MDI 34A11	MDI 34B4	23	584	21	533	15	381	10	280	128	WALL/FLR	1-1/8	25-28
40	MDI 40A11	MDI 40B4	29	737	25.5	647	16.5	419	10	370	169	WALL/FLR	1-1/8	25-28
51	MDI 51A11	MDI 51B4	29	737	25.5	647	16.5	419	10	425	194	WALL/FLR	1-1/8	25-28
63	MDI 63A11	MDI 63B4	29	737	25.5	647	16.5	419	10	500	228	FLOOR	1-1/8	25-28
75	MDI 75A11	MDI 75B4	29	737	25.5	647	16.5	419	10	560	256	FLOOR	1-1/8	25-28
93	MDI 93A11	MDI 93B4	36	914	30.5	775	20	508	10	750	343	FLOOR	N.A.	
118	MDI 118A11	MDI 118B4	36	914	30.5	775	20	508	10	800	356	FLOOR	N.A.	
145	MDI 145A11	MDI 145B4	36	914	30.5	775	20	508	10	1000	457	FLOOR	N.A.	
175	MDI 175A11	MDI 175B4	47	1194	35	889	24.5	622	10	1400	640	FLOOR	N.A.	
220	MDI 220A11	MDI 220B4	47	1194	35	889	24.5	622	10	1520	694	FLOOR	N.A.	
275	MDI 275A11	MDI 275B4	47	1194	35	889	24.5	622	10	1800	822	FLOOR	N.A.	
330	MDI 330A11	MDI 330B4	51.5	1308	36.5	927	31	787	10	2520	1152	FLOOR	N.A.	
440	MDI 440A11	MDI 440B4	51.5	1308	36.5	927	31	787	10	3100	1417	FLOOR	N.A.	

Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER		DIMENSIONS (INCHES/MM)						FIG.	WEIGHT		MTG. STYLE	KNOCKOUTS	
	480-240V/139	340-240V/139	HEIGHT	WIDTH		DEPTH		LIB		KG	INCHES		MM	
3	MDI 3B11	MDI 3G11	21	533	13.5	343	13	330	9	80	36	WALL	1-1/8	25-28
6	MDI 6B11	MDI 6G11	21	533	13.5	343	13	330	9	105	48	WALL	1-1/8	25-28
7.5	MDI 7.5B11	MDI 7.5G11	21	533	13.5	343	13	330	9	115	52	WALL	1-1/8	25-28
11	MDI 11B11	MDI 11G11	21	533	13.5	343	13	330	9	135	62	WALL	1-1/8	25-28
14	MDI 14B11	MDI 14G11	21	533	13.5	343	13	330	9	180	82	WALL	1-1/8	25-28
20	MDI 20B11	MDI 20G11	23	584	21	533	15	381	10	225	103	WALL/FLR	1-1/8	25-28
27	MDI 27B11	MDI 27G11	23	584	21	533	15	381	10	265	121	WALL/FLR	1-1/8	25-28
34	MDI 34B11	MDI 34G11	23	584	21	533	15	381	10	280	128	WALL/FLR	1-1/8	25-28
40	MDI 40B11	MDI 40G11	29	737	25.5	647	16.5	419	10	370	169	WALL/FLR	1-1/8	25-28
51	MDI 51B11	MDI 51G11	29	737	25.5	647	16.5	419	10	425	194	WALL/FLR	1-1/8	25-28
63	MDI 63B11	MDI 63G11	29	737	25.5	647	16.5	419	10	500	228	FLOOR	1-1/8	25-28
75	MDI 75B11	MDI 75G11	29	737	25.5	647	16.5	419	10	560	256	FLOOR	1-1/8	25-28
93	MDI 93B11	MDI 93G11	36	914	30.5	775	20	508	10	750	343	FLOOR	N.A.	
118	MDI 118B11	MDI 118G11	36	914	30.5	775	20	508	10	800	356	FLOOR	N.A.	
145	MDI 145B11	MDI 145G11	36	914	30.5	775	20	508	10	1000	457	FLOOR	N.A.	
175	MDI 175B11	MDI 175G11	47	1194	35	889	24.5	622	10	1400	640	FLOOR	N.A.	
220	MDI 220B11	MDI 220G11	47	1194	35	889	24.5	622	10	1520	694	FLOOR	N.A.	
275	MDI 275B11	MDI 275G11	47	1194	35	889	24.5	622	10	1800	822	FLOOR	N.A.	
330	MDI 330B11	MDI 330G11	51.5	1308	36.5	927	31	787	10	2520	1152	FLOOR	N.A.	
440	MDI 440B11	MDI 440G11	51.5	1308	36.5	927	31	787	10	3100	1417	FLOOR	N.A.	

THREE PHASE TYPICAL WIRING DIAGRAM



All models are with 4 - 2 1/2" (2 FCAN and 2FCBN) taps



FIG. 1 TWF

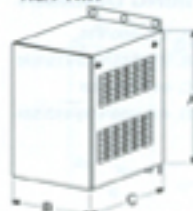
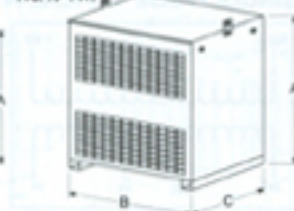


FIG. 10 TWF



EPOXY ENCAPSULATED TRANSFORMERS

SINGLE PHASE

APPLICATIONS

Designed to withstand the harshest indoor and outdoor applications, our epoxy encapsulated transformers are completely enclosed in Type 3R enclosures and provide safe, reliable protection from corrosive atmospheres, hazardous gases, dust and moisture. For use in pulp and paper plants, steel mills, petrochemical plants, food processing facilities, breweries, mines, marine and shipboard installations. Suitable for Class 1, Division 2 locations.

FEATURES

- Insulation-rated for 220° C; copper windings have maximum temperature rise of 115° C
- Wound-type cores made with cold-rolled coated grain-oriented silicon steel for superior magnetic performance, highest efficiency
- Special electrical grade epoxy and silica in heavy gauge steel enclosures facilitates rapid heat transfer



- Excellent voltage regulation limits voltage drop under load to ensure proper voltage for even most critical industrial and/or office equipment
- Steel cases are treated with conversion coating before priming and painting to withstand elements
- Provided with KO's and lifting lugs
- Available in special voltages

SELECTION CHARTS

600V PRIMARY, 120/240V SECONDARY

Class 220° C, 115° C Rise, 60 Hz

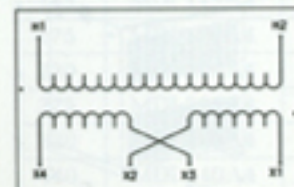
KVA	CATALOG NUMBER	DIMENSIONS (INCHES/M.M.)					FIG.	WEIGHT		MTG. STYLE	KNOCKOUTS		STD. TAPS	
		HEIGHT	WIDTH			DEPTH		lbs	kg		INCHES	MM		
3	RES 3A2	12	305	15	381	14	355	11	115	52	WALL	1/2-1/8	38-44	A
5	RES 5A2	12	305	15	381	14	355	11	140	64	WALL	1/2-1/8	38-44	A
7.5	RES 7.5A2	12	305	15	381	14	355	11	160	73	WALL	1/2-1/8	38-44	A
10	RES 10A2	23	584	12	305	15.75	400	12	205	93	WALL	1/2-1/8	38-44	B
15	RES 15A2	26	660	17.25	438	16	406	13	350	159	FLOOR	1/2-1/8	38-44	B
25	RES 25A2	26	660	17.25	438	16	406	13	410	186	FLOOR	1/2-1/8	38-44	B
37.5	RES 37.5A2	26	660	17.25	438	16	406	13	450	205	FLOOR	1/2-1/8	38-44	B
50	RES 50A2	26	660	17.25	438	16	406	13	560	256	FLOOR	N.A.		B

480V PRIMARY, 120/240V SECONDARY

Class 220° C, 115° C Rise, 60 Hz

KVA	CATALOG NUMBER	DIMENSIONS (INCHES/M.M.)					FIG.	WEIGHT		MTG. STYLE	KNOCKOUTS		STD. TAPS	
		HEIGHT	WIDTH			DEPTH		lbs	kg		INCHES	MM		
3	RES 3B2	12	305	15	381	14	355	11	115	52	WALL	1/2-1/8	38-44	C
5	RES 5B2	12	305	15	381	14	355	11	140	64	WALL	1/2-1/8	38-44	C
7.5	RES 7.5B2	12	305	15	381	14	355	11	160	73	WALL	1/2-1/8	38-44	C
10	RES 10B2	23	584	12	305	15.75	400	12	205	93	WALL	1/2-1/8	38-44	D
15	RES 15B2	26	660	17.25	438	16	406	13	350	159	FLOOR	1/2-1/8	38-44	D
25	RES 25B2	26	660	17.25	438	16	406	13	410	186	FLOOR	1/2-1/8	38-44	D
37.5	RES 37.5B2	26	660	17.25	438	16	406	13	450	205	FLOOR	1/2-1/8	38-44	D
50	RES 50B2	26	660	17.25	438	16	406	13	560	256	FLOOR	N.A.		D

SINGLE PHASE TYPICAL WIRING DIAGRAM



- A. 575/600/625
- B. 570/585/600/615/630
- C. 440/460/480
- D. 456/468/480/492/504

FIG. 11

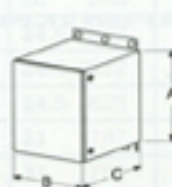


FIG. 12



FIG. 13



EPOXY ENCAPSULATED TRANSFORMERS

THREE PHASE

SELECTION CHARTS

600V PRIMARY, 208Y/120V SECONDARY

Class 220° C, 115° C Rise, 60 Hz

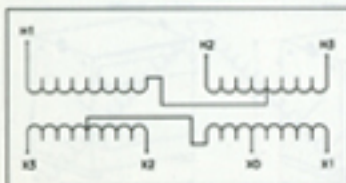
KVA	CATALOG NUMBER	DIMENSIONS (INCHES/MM)			FIG.	WEIGHT		MTG STYLE	KNOCKOUTS		STD TAPS
		HEIGHT	WIDTH	DEPTH		LB	KG		INCHES	MM	
6	RET 6A1	25	637	12 305	15.75 400	14	175 80	WALL	1/2-1/4	38-44	E
10	RET 10A1	25	637	12 305	15.75 400	14	225 102	WALL	1/2-1/4	38-44	E
15	RET 15A1	25	637	12 305	15.75 400	14	298 136	WALL	1/2-1/4	38-44	F
30	RET 30A1	26.25	667	25 637	14 356	15	600 273	WALL/FLR	1/2-1/4	38-44	F
45	RET 45A1	26.25	667	25 637	14 356	15	700 318	WALL/FLR	1/2-1/4	38-44	F
50	RET 50A1	26.25	667	25 637	14 356	15	780 351	WALL/FLR	1/2-1/4	38-44	F
75	RET 75A1	32	812	34 864	18.5 470	15	1410 640	FLOOR	N.A.		F
112.5	RET 112.5A1	37	940	36 914	18.5 470	16	1830 830	FLOOR	N.A.		F
150	RET 150A1	37	940	36 914	18.5 470	16	2500 1143	FLOOR	N.A.		F

480V PRIMARY, 208Y/120V SECONDARY

Class 220° C, 115° C Rise, 60 Hz

KVA	CATALOG NUMBER	DIMENSIONS (INCHES/MM)			FIG.	WEIGHT		MTG STYLE	KNOCKOUTS		STD TAPS
		HEIGHT	WIDTH	DEPTH		LB	KG		INCHES	MM	
6	RET 6B1	25	637	12 305	15.75 400	14	175 80	WALL	1/2-1/4	38-44	G
10	RET 10B1	25	637	12 305	15.75 400	14	225 102	WALL	1/2-1/4	38-44	G
15	RET 15B1	25	637	12 305	15.75 400	14	298 136	WALL	1/2-1/4	38-44	H
30	RET 30B1	26.25	667	25 637	14 356	15	600 273	WALL/FLR	1/2-1/4	38-44	H
45	RET 45B1	26.25	667	25 637	14 356	15	700 318	WALL/FLR	1/2-1/4	38-44	H
50	RET 50B1	26.25	667	25 637	14 356	15	780 351	WALL/FLR	1/2-1/4	38-44	H
75	RET 75B1	32	812	34 864	18.5 470	15	1410 640	FLOOR	N.A.		H
112.5	RET 112.5B1	37	940	36 914	18.5 470	16	1830 830	FLOOR	N.A.		H
150	RET 150B1	37	940	36 914	18.5 470	16	2500 1143	FLOOR	N.A.		H

THREE PHASE TYPICAL WIRING DIAGRAM



E. 575/600/625
F. 570/585/600/615/630
G. 440/460/480
H. 455/468/480/492/504

FIG. 14



FIG. 15



FIG. 16



WEATHERPROOF TRANSFORMERS

APPLICATIONS

Provides superior protection from rain, sleet or snow. Also suitable for indoor use in tunnels, mines and pumping stations where dripping and splashing water is a problem.

FEATURES

- Lightweight
- Economical
- Easy to install
- Class H (220) insulation system
- Available in auto wound, drive isolation, K-Factor, shielded and special voltages
- Available in 50 Hz for foreign installations



SINGLE PHASE

SELECTION CHART

Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER		DIMENSIONS (INCHES/MM)				FIG.	WEIGHT		MTG STYLE	KNOCKOUTS		STD TAPS	
	600/120/240	480/120/240	HEIGHT	WIDTH		DEPTH		LIB	KG		INCHES	MM		
3	MSWP 3A2	MSWP 3B2	11	279	14	356	11	279	17	60	27	WALL	1-1/8" 25-28	A
5	MSWP 5A2	MSWP 5B2	11	279	14	356	11	279	17	75	34	WALL	1-1/8" 25-28	A
7.5	MSWP 7.5A2	MSWP 7.5B2	11	279	14	356	11	279	17	86	39	WALL	1-1/8" 25-28	A
10	MSWP 10A2	MSWP 10B2	21	533	18.5	470	13	330	18	110	50	WALL	1-1/8" 25-28	A
15	MSWP 15A2	MSWP 15B2	21	533	18.5	470	13	330	18	150	68	WALL	1-1/8" 25-28	B
25	MSWP 25A2	MSWP 25B2	29	736	20	508	17	432	19	250	112	FLOOR	1-1/8" 25-28	B
37.5	MSWP 37.5A2	MSWP 37.5B2	29	736	20	508	17	432	19	350	160	FLOOR	1-1/8" 25-28	B
50	MSWP 50A2	MSWP 50B2	37	940	16.5	419	23	584	19	520	238	FLOOR	N.A.	B
75	MSWP 75A2	MSWP 75B2	37	940	16.5	419	23	584	19	895	409	FLOOR	N.A.	B
100	MSWP 100A2	MSWP 100B2	43	1092	18	457	25	635	19	900	411	FLOOR	N.A.	B
150	MSWP 150A2	MSWP 150B2	50	1270	19	483	26	660	19	1085	496	FLOOR	N.A.	B
200	MSWP 200A2	MSWP 200B2	50	1270	19	483	26	660	19	1165	532	FLOOR	N.A.	B
250	MSWP 250A2	MSWP 250B2	52	1320	20	508	26	660	19	1640	750	FLOOR	N.A.	B

THREE PHASE

SELECTION CHART

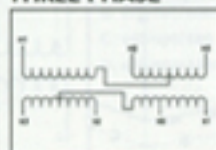
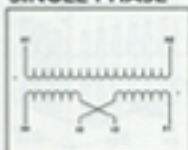
Class 220° C, 150° C Rise, 60 Hz

KVA	CATALOG NUMBER		DIMENSIONS (INCHES/MM)				FIG.	WEIGHT		MTG STYLE	KNOCKOUTS		STD TAPS	
	600/208Y/120	480/208Y/120	HEIGHT	WIDTH		DEPTH		LIB	KG		INCHES	MM		
6	MTWP 6A1	MTWP 6B1	21	533	18.5	470	13	330	18	80	36	WALL	1-1/8" 25-28	A
10	MTWP 10A1	MTWP 10B1	21	533	18.5	470	13	330	18	140	64	WALL	1-1/8" 25-28	A
15	MTWP 15A1	MTWP 15B1	21	533	18.5	470	13	330	18	188	86	WALL	1-1/8" 25-28	B
30	MTWP 30A1	MTWP 30B1	23	584	21	533	17.5	444	21	275	126	FLOOR	1-1/8" 25-28	B
45	MTWP 45A1	MTWP 45B1	29	737	25.5	647	20	508	21	410	187	FLOOR	1-1/8" 25-28	B
50	MTWP 50A1	MTWP 50B1	29	737	25.5	647	20	508	21	508	232	FLOOR	1-1/8" 25-28	B
75	MTWP 75A1	MTWP 75B1	36	914	30.5	775	22	559	21	600	274	FLOOR	N.A.	B
112.5	MTWP 112.5A1	MTWP 112.5B1	36	914	30.5	775	22	559	21	1000	457	FLOOR	N.A.	B
150	MTWP 150A1	MTWP 150B1	47	1194	35	889	28.5	724	21	1250	480	FLOOR	N.A.	B
225	MTWP 225A1	MTWP 225B1	47	1194	35	889	28.5	724	21	1750	800	FLOOR	N.A.	B
300	MTWP 300A1	MTWP 300B1	51.5	1308	36.5	927	34	864	21	2400	1097	FLOOR	N.A.	B
450	MTWP 450A1	MTWP 450B1	51.5	1308	36.5	927	34	864	21	2900	1325	FLOOR	N.A.	B

TYPICAL WIRING DIAGRAMS

SINGLE PHASE

THREE PHASE



- A. No taps
- B. 2-5% taps
- C. 4-2 1/2% taps (Available)

FIG. 17 WWP



FIG. 18 TWPP



FIG. 19 WPP



FIG. 21 TWPP



THE ADVANTAGES OF MARCUS WATT+PLUS™ TECHNOLOGY

WATT+PLUS™ PERFORMANCE DATA*

KVA	LOSSES (WATTS)	% EFFICIENCY (FULL LOAD)
15	372	97.5
30	1300	97.5
45	1700	97.8
75	2200	97.9
112.5	3300	97.9

*Most common three phase ratings

Marcus WATT+PLUS technology means superior performance, maximum efficiency and lowest losses with all types of load – under all conditions.

We use the T-T connection for our three phase distribution transformers to derive the inherent benefits of single phase construction: high short-circuit strength, rugged physical integrity and superior reliability. These characteristics are normally available only on pole-mounted utility-grade, oil-filled transformers where every watt lost and every hour of downtime is critical.

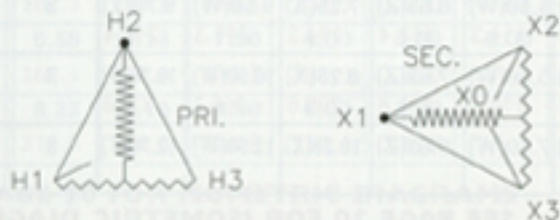
ENERGY EFFICIENCY

Through the use of 100% copper windings, liberal designs and wound cores, all Marcus general purpose transformers have full load efficiencies above 97.5% Low magnetizing currents averaging 1% of rated amperage mean that more power is available to handle useful customer load. Because of their efficient design, our transformers are certified for meeting the CSA-802-99 standard for maximum losses.

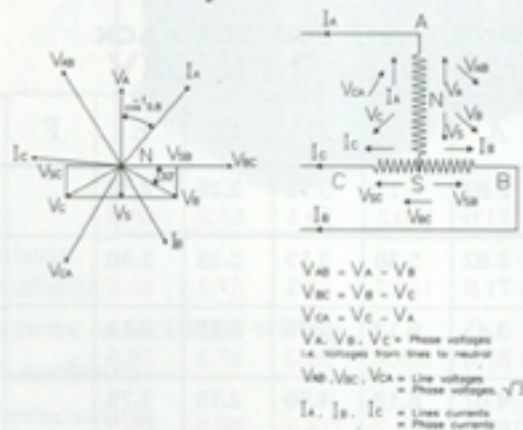
ANGULAR RELATIONSHIPS

Characteristics of Marcus transformers with the T-T connection include

- 30° phase displacement between primary and secondary. This can be seen in the following diagram:



- 120° phase angular relationship between the line voltages and between the line currents. The vectorial analysis illustrates this:



VOLTAGE REGULATION

Interlacing of windings on both coils for better coupling results in superior regulation with a maximum of 2.5% voltage drop at 1.0 power factor. This means higher peak loads are possible before minimum low voltage limitations are reached, allowing required voltages to be applied to critical equipment at greater distances.

BALANCED VOLTAGES

Even under the most severely unbalanced load conditions, a Marcus transformer with its "stiff" internal neutral will not shift, ensuring that phase voltages are the same to within .2%.

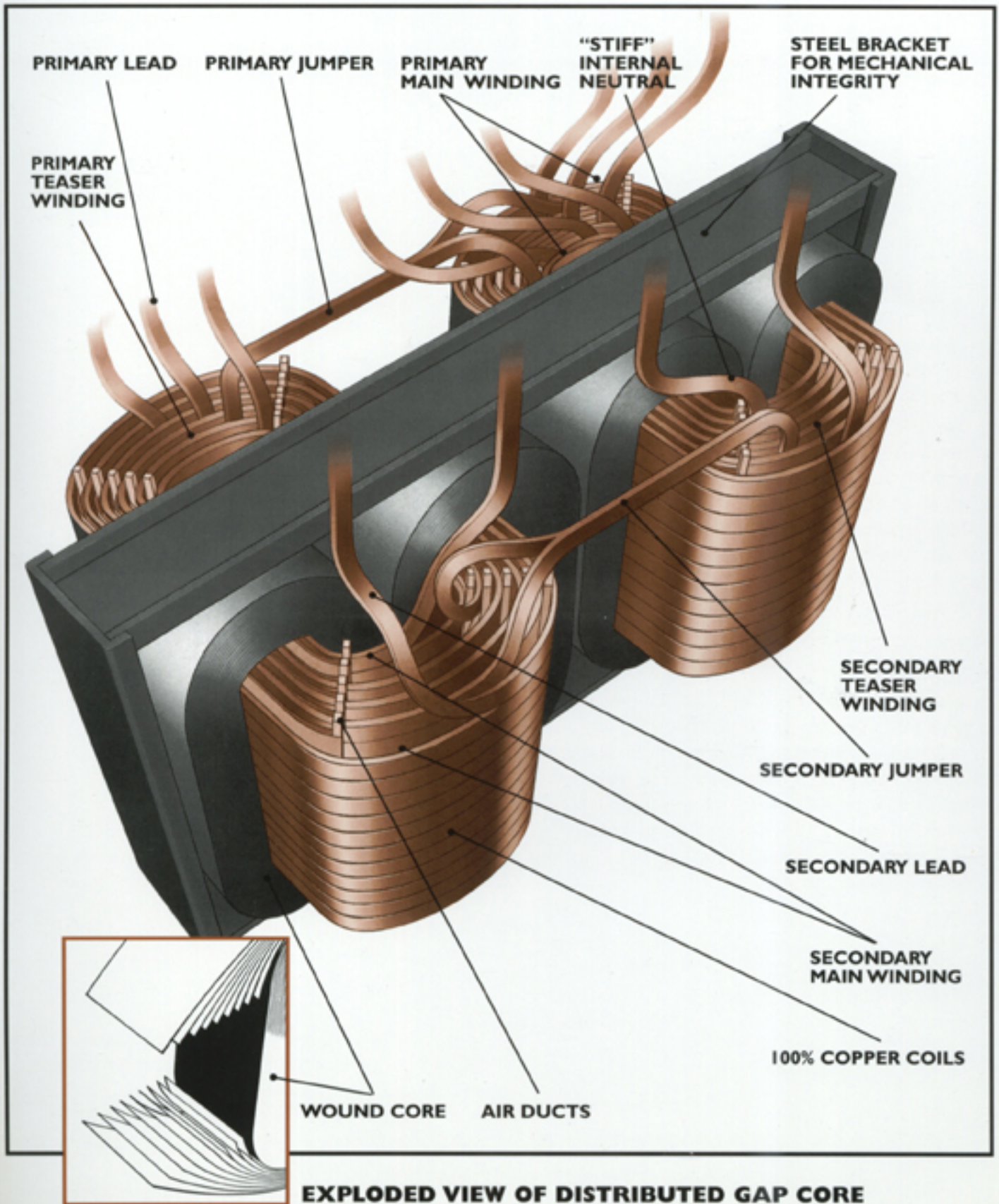
HARMONIC CANCELLATION

In this catalog, we show K-Factor rated transformers for various non-linear loads.

Thanks to our unique design configuration, even Marcus standard distribution transformers offer significant advantages over other standard designs. This will be especially evident where there are changes and additions to existing installations affecting the percentage of non-linear component.

In the T-T connected transformer by Marcus, the triplen harmonics are cancelled in the magnetic circuit and do not flow in the primary winding as in competitive designs. This results in a 14% reduction in copper losses, less heat and extended transformer life.

INSIDE THE T-T CONNECTION



**NO OTHER TRANSFORMER OUTPERFORMS
A MARCUS TRANSFORMER.**

WE GUARANTEE IT.

QUALITY CONTROL FROM START TO FINISH.

**Every component in Marcus transformers is tested
over and over during assembly and upon
completion. Each unit must meet our rigid
inspection and test requirements before delivery.**



**MARCUS TRANSFORMER
OF CANADA LTD.**

MANUFACTURING PLANTS
Cornwall, ON, Montréal, QC

STOCKING WAREHOUSES
Toronto, Winnipeg, Vancouver, Boston, Syracuse, St-Louis

Every product shown in this catalog is available through your local electrical distributor.

For further information, contact the Marcus representative in your area, or call
(514) 935-3543 or fax (514) 935-6592

E-mail: info@marcustransformer.com

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