

MGM



TRANSFORMER COMPANY

ISO 9001 CERTIFIED



**MEETS TP-1
EFFICIENCY**

600 V Class, Dry Type, General Purpose Distribution Transformers

MGM TRANSFORMER COMPANY

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**Other
Products**



Dry
Substation
(Bulletin 30)



Liquid
Substation
(Bulletin 40)



Custom 600V
Dry Type
(Bulletin 15)

BULLETIN 10

GENERAL INFORMATION

MGM Dry type transformers are designed, manufactured and tested in accordance with all applicable NEMA, ANSI and IEEE standards.

MGM 600 Volt class transformers are UL, CUL, and CSA listed in accordance to standards UL506 and UL1561 and are classified as isolation transformers.

ENCLOSURES

MGM ventilated transformers utilize a NEMA 2 rated drip proof metal enclosure with natural draft ventilation. MGM dual rated enclosures are suitable for indoor or outdoor applications and are standard on all models except the 225, 300, and 500 kVA transformers (optional Weather-shield Kits are available for these units).

VOLTAGE TAPS

Taps will compensate for the high or low line voltages.

MGM 600 Volt class transformers are provided with 6 primary taps:
 2@ 2-1/2% FCAN
 4@ 2-1/2% FCBN

STANDARD FEATURES

- NEMA TPI Energy Efficient
- UL 506, UL 1561, CSA Listed
- Aluminum/Copper (YS, DS)
- 60 Hz
- Electrostatic Shield
- Min. 60 dB Common Mode Noise Attenuation (Single shield)
- 150°C Temperature Rise
- ANSI C57.12.01
- Seismic Zone IV Compliant
- 220°C Insulation System

COMMON OPTIONS

- Copper Windings (CS, SS)
- Outdoor NEMA-3R Kit
- 80° & 115°C Temperature Rise
- K-Factor; up to K-30
- Wall Mount Brackets (15 - 75 kVA)
- 50 Hz, 50/60 Hz, 400 Hz
- Totally Enclosed Non Ventilated
- Any Voltage Arrangement
- Stainless Steel Case
- Reduced Sound Level
- OSHPD Seismic Kit
- CSL-3 Efficiency
- ARRA/Buy American Statues

SOUND LEVELS

MGM 600 Volt class general purpose dry type transformers are designed to meet NEMA ST-20 sound levels.

NEMA standard sound levels

KVA	dB Level
0-9	40
10-50	45
51-150	50
151-300	55
301-500	60

TESTING AND QUALITY ASSURANCE

As part of our quality assurance process, all 600 Volt MGM Transformers go through a rigorous ANSI/IEEE test plan to ensure optimum performance. These tests include:

- Winding resistance test
- Turn ratio test
- Polarity and phase relation test
- No load losses and exciting current test
- Impedance and load loss test
- Applied potential test

Single Phase TP-I Stock Transformer		
KVA	Z%	TP-I Efficiency
10	4.80	N/A
15	4.58	97.70
25	4.68	98.00
37.5	4.70	98.20
50	4.93	98.30
75	5.88	98.50
100	6.19	98.60

Connection Legend
 YS = 480D - 208Y/120
 DS = 480D - 240D/120CT
 CS = 240D - 208Y/120
 SS = 240x480 - 120/240

Three Phase TP-I Stock Transformer				
KVA	Connection	Z% AL	Z% CU	TP-I Efficiency
15	YS	5.20	4.36	97.00
	DS	5.20	4.70	
	CS	5.20	-	
30	YS	6.60	5.50	97.50
	DS	6.40	5.20	
	CS	6.10	-	
45	YS	6.60	4.84	97.70
	DS	6.60	4.60	
	CS	6.40	-	
75	YS	6.80	6.22	98.00
	DS	6.50	5.90	
	CS	6.80	-	
112.5	YS	6.40	6.19	98.20
	DS	6.00	5.70	
	CS	6.50	-	
150	YS	7.10	5.80	98.30
	DS	6.90	5.65	
	CS	6.10	-	
225	YS	6.00	5.70	98.50
	DS	5.70	6.16	
300	YS	6.70	6.10	98.60
	DS	6.20	5.97	
500	YS	6.80	5.84	98.70
	DS	6.30	5.86	

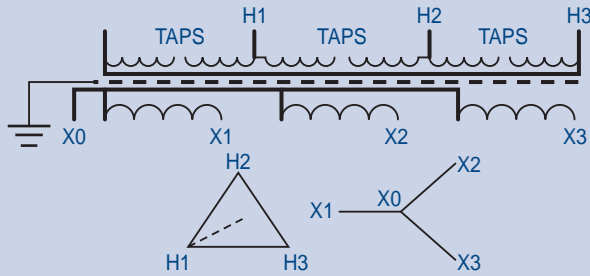
Note: Impedance values are typical NOT guaranteed.



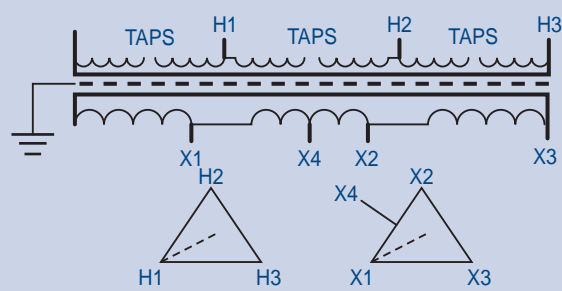
WIRING DIAGRAM / VOLTAGE TAPS

Three Phase, 15 kVA - 500 kVA

480D - 208Y/120



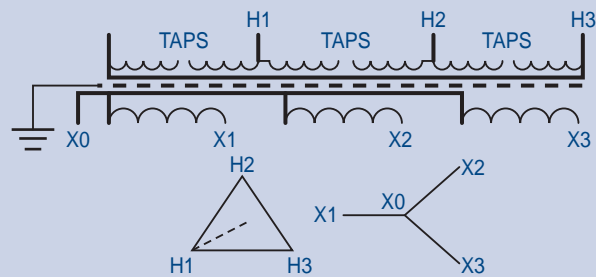
480D - 240D/120CT



CONNECT TAPS		PRIMARY VOLTAGE	
15 - 150 kVA	225 - 500 kVA	480	240
*H-7	4-5	504	252
H-6	4-6	492	246
H-5	3-5	480	240
H-4	3-6	468	234
H-3	2-6	456	228
H-2	3-7	444	222
H-1	2-7	432	216

* H represents H1, H2, and H3 on all the three coils.

Three Phase, 15 kVA - 150 kVA 240D - 208Y/120



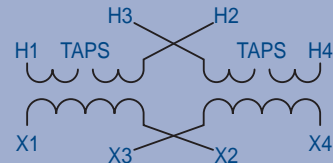
- 120 volt single phase output can be obtained between X1 and X4 (5% of capacity) & X2 and X4 (5% of capacity).
- If maximum of 10% single phase output is used, three phase capacity is reduced by 15%.
- X4 to be grounded for single phase neutral connection.
- If X4 is grounded - NO other phase (X1, X2, X3) or primary phases H1, H2, H3 should be grounded.
- Voltage between X4-X3 will be 208V - often referred as high leg.

Single Phase, 10 kVA - 100 kVA

240 X 480 - 120/240

HV LINKS ACROSS H2-H3		
VOLTAGE	CONNECT TAPS	
504	3-4	7-8
492	3-4	6-8
480	2-4	6-8
468	3-5	6-8
456	3-5	7-9
444	2-5	7-9
432	2-5	6-9

HV LINKS ACROSS H2-H3 & H2-H4		
VOLTAGE	CONNECT TAPS	
252	3-4	7-8
240	3-4	6-8
228	3-5	7-9
216	2-5	6-9



LV	CONNECT LINKS	CONNECT LINES
240	X2 - X3	X1 - X4
120/240	*X2 - X3	**X1 - X2/X3 - X4
120	X1 - X3, X2 - X4	X1 - X4

** Three (3) wire operation, X2-X3 to be grounded for neutral.

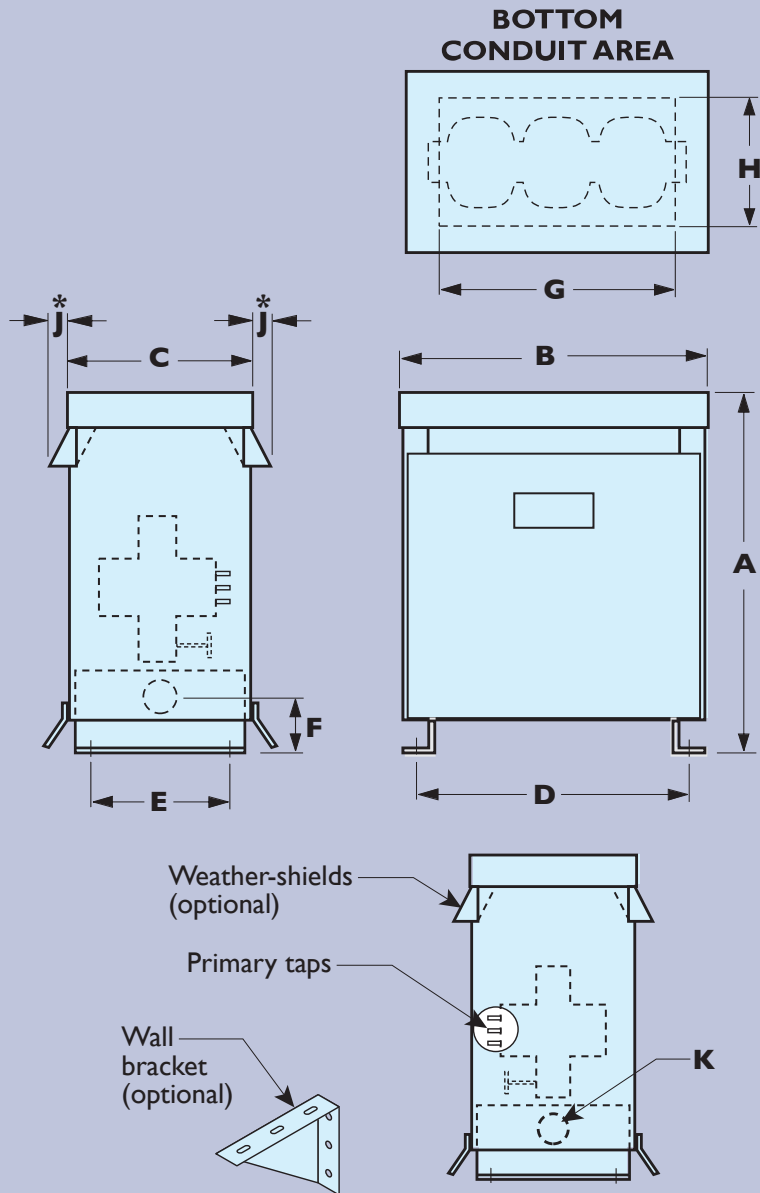
ALUMINUM WINDING			
3Ø, 480V D PRIMARY			
KVA	Secondary		Weight (Lbs)
	208Y/120 V	240D/120 CT	
15	HT15A3B2SH	HT15A3K2SH	235
30	HT30A3B2SH	HT30A3K2SH	335
45	HT45A3B2SH	HT45A3K2SH	395
75	HT75A3B2SH	HT75A3K2SH	585
112.5	HT112A3B2SH	HT112A3K2SH	755
150	HT150A3B2SH	HT150A3K2SH	880
225	HT225A3B2SH	HT225A3K2SH	1,405
300	HT300A3B2SH	HT300A3K2SH	1,655
500	HT500A3B2SH	HT500A3K2SH	2,915

COPPER WINDING			
3Ø, 480V D PRIMARY			
KVA	Secondary		Weight (Lbs)
	208Y/120 V	240D/120 CT	
15	HT15A3B1SH	HT15A3K1SH	240
30	HT30A3B1SH	HT30A3K1SH	345
45	HT45A3B1SH	HT45A3K1SH	420
75	HT75A3B1SH	HT75A3K1SH	600
112.5	HT112A3B1SH	HT112A3K1SH	805
150	HT150A3B1SH	HT150A3K1SH	940
225	HT225A3B1SH	HT225A3K1SH	1,750
300	HT300A3B1SH	HT300A3K1SH	2,055
500	HT500A3B1SH	HT500A3K1SH	3,285

ALUMINUM WINDING		
3Ø, 240V D PRIMARY		
KVA	Secondary	Weight (Lbs)
	208Y/120V	
15	HT15C3B2SH	230
30	HT30C3B2SH	330
45	HT45C3B2SH	370
75	HT75C3B2SH	600
112.5	HT112C3B2SH	765
150	HT150C3B2SH	930

ALUMINUM WINDING		
1Ø, 240 x 480 PRIMARY		
KVA	Secondary	Weight (Lbs)
	120/240V	
10	HS10C3B2SH	170
15	HS15C3B2SH	200
25	HS25C3B2SH	275
37.5	HS37C3B2SH	355
50	HS50C3B2SH	405
75	HS75C3B2SH	550
100	HS100C3B2SH	655

2-2.5% FCAN & 4-2.5% FCBN - An MGM Standard.



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www.mgmtransformer.com/drytakeoff.html

KVA	DIMENSIONS (Inches)										Wall Bracket	Weather Shield	Enclosure
	A	B	C	D	E	F	G	H	J	K			
9 - 15	28	21	14	18 ¹ / ₂	11 ¹ / ₂	-	16 ¹ / ₂	6	-	-	WB	-	GPA
25 - 50	32	26 ¹ / ₂	17	23	14	-	22 ¹ / ₄	12 ¹ / ₈	-	-	WB	-	GPB
75	38 ¹ / ₂	28 ¹ / ₂	20	26	17 ¹ / ₂	-	22 ¹ / ₄	12 ¹ / ₈	-	-	WB	-	GPB+
112.5	40 ¹ / ₂	31 ¹ / ₂	21 ³ / ₄	28 ¹ / ₂	19	-	24 ¹ / ₂	13 ¹ / ₂	-	-	-	-	GPC
150	40 ¹ / ₂	36 ¹ / ₂	21 ³ / ₄	33 ¹ / ₂	19	-	29	13 ¹ / ₂	-	-	-	-	GPC+
* 225 - 300	51 ¹ / ₂	40 ¹ / ₂	26 ¹ / ₂	37	21	10 ¹ / ₂	33 ¹ / ₂	22 ¹ / ₄	4 ⁵ / ₈	5"	-	RH5	GPD
* 500	66	50 ¹ / ₂	32	47 ¹ / ₂	24	11 ¹ / ₂	42 ³ / ₈	26 ³ / ₄	4 ⁵ / ₈	2-5"	-	RH6	GPE

GPA, GPB, GPB+, GPC, & GPC+ - Dual Rated Indoor/Outdoor design.

* Weather-shield kits are available for GPD and GPE enclosures only.