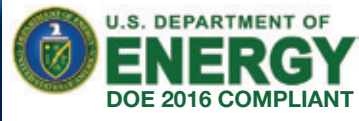


MGM



TRANSFORMER COMPANY



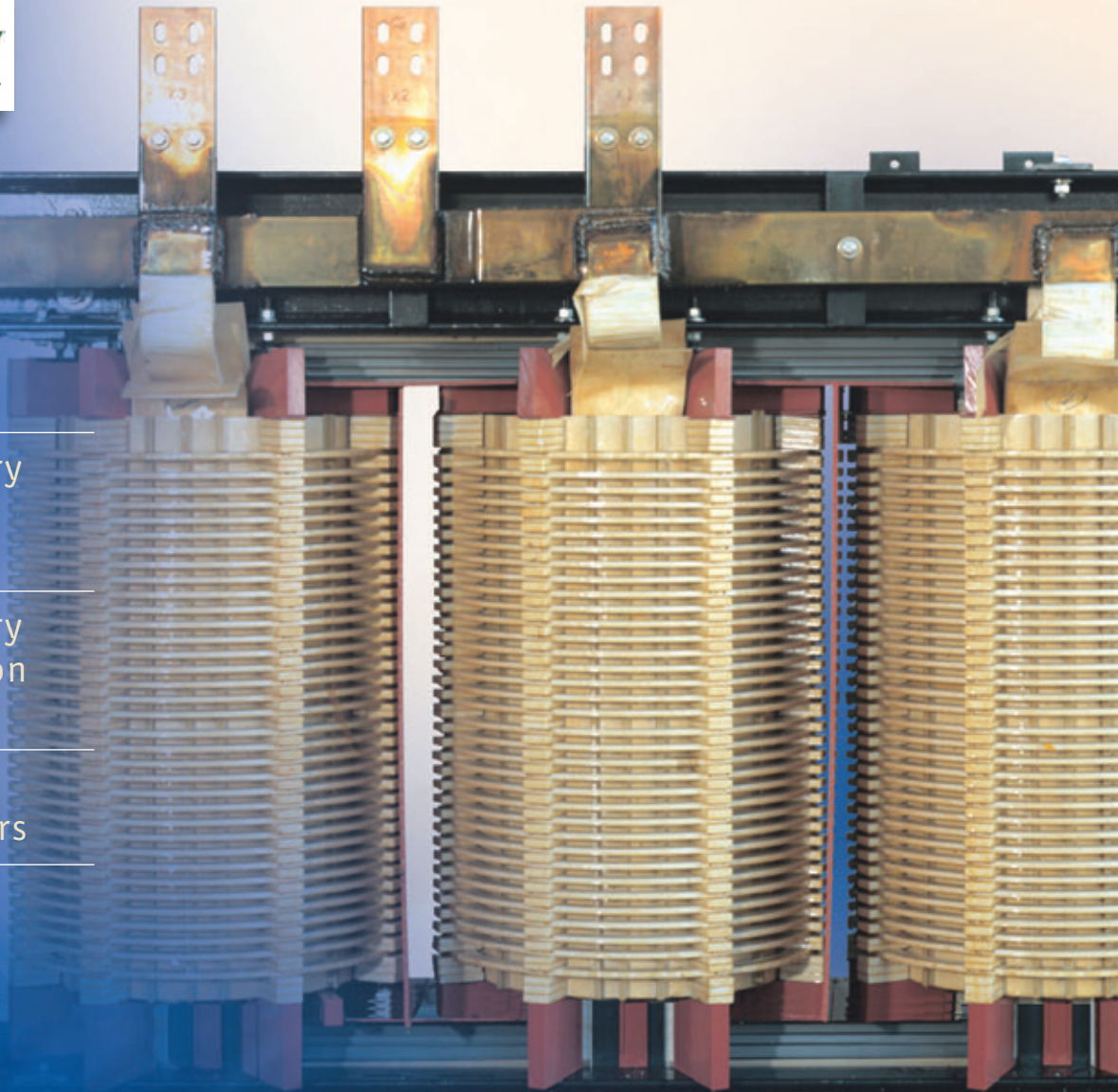
Special Design Dry
Type Transformers

Liquid Filled and Dry
Type Substation
Transformers

Liquid Filled and Dry
Type Drives Isolation
Transformers

600V Class General
Purpose Transformers

Low Voltage Custom
Transformers



MGM Transformer Company



Company Profile

MGM Transformer Company was established in 1975 as a dry transformer manufacturer. After the acquisition of *Sierra Transformer Company* in 1982, MGM introduced liquid units to its product line. By 1990, MGM Transformer had grown to become the largest independent transformer manufacturer west of the Mississippi.

To continue the growth of products within the transformer world, MGM Transformer Company opened a 125,000 square foot satellite manufacturing plant in 1991 for the production of 600V class general purpose lighting transformers. Presently, there are warehouse operations in major cities throughout the continental United States.

The last two decades saw a significant growth in the SCR/VFD drives industry, as users have looked for ways to improve efficiencies to reduce power costs. MGM Transformer Company has responded to this new demand with an engineering staff that specializes in the application and design of these sophisticated systems. Consequently, the company has become an established leader of drives isolation transformers.

Located on a five-acre site just southeast of metropolitan Los Angeles, the manufacturing plant encompasses 120,000 square feet. Adjacent to the manufacturing plant is a separate 20,000 square foot facility, housing offices for administration, engineering and sales.

MGM Transformer Company manufactures transformers in eight major categories:

Special Design Dry Type Transformers:

- 9kVA to 10MVA
- 1- and 3-Phase
- 600V to 34.5kV
- K-Factor Ratings
- Retrofit Applications
- Zig-Zag Grounding

Dry Type Substation Transformers:

- 75kVA to 10MVA
- 5kV to 34.5kV
- Indoor and Outdoor
- Primary Load Interrupter Switch (optional)

Liquid Filled Substation Transformers:

- 500kVA to 10MVA
- 5kV to 34.5kV
- Indoor and Outdoor
- Primary Load Interrupter Switch (optional)

Dry Type Drives Isolation Transformers:

- 6, 12, 18, 24 and 36-Pulse
- 15kVA to 10MVA
- 600V to 34.5kV
- Indoor and Outdoor

Liquid Filled Drives Isolation Transformers:

- 6, 12, 18, 24 and 36-Pulse
- 200kVA to 10MVA
- 5kV to 34.5kV
- Indoor and Outdoor

600V Class General Purpose Transformers:

- 9kVA to 1,500kVA, 3-Phase
- 10kVA to 500kVA, 1-Phase

Special Design Dry Type Transformers

Barrel wound

The barrel wound style is the most common method in the industry for 600V and 5kV applications. MGM only uses the barrel wound method for 600V class and 5kV class, 45kV BIL maximum.



Section wound

The section wound style is rarely used in industry due to higher cost vs. barrel or random wound.



Disk wound

Continuous disk or pancake wound style is very costly and not widely used. Due to its superior design criteria, MGM uses this method on 15kV class, above 1,000kVA and 60 to 125 kV BIL



RANGE

9kVA-10MVA, 2.4kV/5kV, 3 phase
 30kVA-10MVA, 15kV, 3 phase
 500kVA-10MVA, 34.5kV, 3 phase
 9kVA-2,500kVA, 600V, 3 phase
 10kVA-1,667kVA, 2.4kV/5kV, 1 phase
 15kVA-3,333kVA, 15kV/34.5kV, 1 phase
 10kVA-500kVA, 600V, 1 phase

DESIGN SPECIFICATIONS

Aluminum/Copper
 150°C / 115°C / 80°C or Special Request
 220°C insulation
 NEMA standard/special sound levels
 ANSI standard/special BIL levels
 Dip/bake or VPI (upon request)
 UL K-factor ratings
 UL/CUL/CE/CSA listings (check with factory)
 Multi-voltage input/output
 50/60/400 Hz
 OEM core and coil
 Multiple electrostatic shields
 Design to meet customer impedance and loss criteria
 Zig-Zag Grounding

MGM Transformer Company has established itself as a custom manufacturer of dry type transformers. With the exceptionally large and experienced engineering staff, the ability to design to the varying criteria of differing industries, while maintaining short lead times, has positioned the company as a leader in the transformer industry. Core and coil application for regulators and UPS systems, low loss/high efficiency drives isolation transformers, and K-factor rated substation transformers for retrofit are but a few of the special transformers MGM has designed and manufactured.

Within the Special Design Dry Type transformers, MGM employs three winding styles based on kVA, voltage and BIL requirements. The ability to select a specific winding style assures the highest degree of mechanical strength under short circuit stress conditions and suitability for different voltage classes.

Most transformer companies offer standard engineered products only, and ask the users to make it fit their applications. MGM however, can engineer the product both electrically and mechanically to fit any given and unique application.



Substation Transformers



Dry Type Substation 1800kVA
*Primary 6.3kV, Secondary 400Y/231V 50Hz;
 150°C Rise; Copper Wound; Digital Temperature
 Monitor; NEMA 3R Louvers; Low Voltage
 Transition Section with Flex Leads*

Dry Type

For over four decades, MGM Transformer Company has been a reliable source for quality unit substation transformers. Our standard designs cover the full range of requirements from 600V to 34.5kV, 500kVA to 10,000kVA, in both liquid and dry type.

As an engineering oriented transformer company, we maintain a large engineering staff. Our experience in working with various switchgear manufacturers enables us to design the high voltage/low voltage switchgear interface, assuring the proper match in the field. Flex connectors can be supplied.

Non-standard substation designs are also available for special situations such as failed unit retrofitting or PCB replacement.

All manufacturing processes are done on the premises. This advantage, along with a large inventory of electrical steel and wire, assures our customers of the industry's shortest lead times, regardless of the interface requirements.

* R A N G E	3 - P H A S E
	500kVA-10MVA, 2.4/5kV
	500kVA-10MVA, 15kV
	500kVA-10MVA, 34.5kV
D E S I G N S P E C I F I C A T I O N S	
	Aluminum/Copper
	150°C / 115°C / 80°C
	220°C insulation
	Indoor/outdoor
	ANSI standard/special BIL levels
	Dip/bake or VPI (upon request)
	UL K-factor ratings
	UL/CUL/CSA listings (check with factory)
	*DOE 2016 Compliant



Substation Transformers

Liquid Filled



Liquid Filled Substation 7.5MVA

Primary 22.9kV, Secondary 7,200Y/4,160V 60Hz;
65°C Rise; Aluminum Wound; Mineral Oil; HV/LV Throats

* RANGE	3 - PHASE
	500kVA-10MVA, 2.4/5kV, 3 phase only
	500kVA-10MVA, 15kV, 3 phase only
	500kVA-10MVA, 34.5kV, 3 phase only

DESIGN SPECIFICATIONS	
	Aluminum/Copper
	55°C, 65°C and 55°C / 65°C
	OA, OA/FFA, OA/FA
	ANSI standard/special BIL levels
	Indoor/Outdoor
	Silicone/FR3/Mineral
	Designed per ANSI/IEEE and NEMA

*3,750kVA and above have a minimum low voltage of 2400 Volts

MGM Transformer Company has built a reputation for providing rugged, conservatively designed substation transformers.

Our experienced manufacturing team, backed by a rigorous QA/QC system requirement, results in a superior transformer in quality and performance. With an extensive inventory of raw materials on site, industry's shortest lead times are maintained.

As a benefit to our customers, fused and non-fused 600A 15kV load interrupter switches are maintained in inventory. These can be mated to our transformers and shipped in the same short cycle lead time as transformers without switches.



Drives Isolation Transformers



Dry Type Drives Isolation 750kVA 12-Pulse

Primary 3.3kV, Secondary 1,700/1,700Y 50Hz;
125°C Rise; Copper Wound; Electro-Static Shield;
Thermoswitches in Coils

Dry Type

MGM Transformer Company has earned the respect of the major drives manufacturers as a supplier of reliable, high quality drives isolation transformers. All transformers are custom-designed to meet the customer's exact specifications, using the latest ANSI/IEEE criteria for harmonic loads. Derated standard distribution transformer designs are never used.

As a design-and-build transformer company, we pride ourselves on our large and experienced engineering staff whose extensive experience in the drives industry has resulted in our success as a supplier of these special transformers. Applications ranging from pumps and fans, to heavy duty-cycle steel rolling mills, have been designed and manufactured.

We manufacture both liquid filled and dry type, from 15kVA to 10MVA. Our customers benefit because we are able to provide the best solution for any specific application.

RANGE

15kVA-1,500kVA, 600V
15kVA-10MVA, 5kV to 34.5kV

DESIGN SPECIFICATIONS

ANSI C57 (applicable section(s))
IEEE (applicable section(s))
Indoor/outdoor
6, 12, 18, 24 and 36-Pulse applications
220°C insulation
150°C / 115°C / 80°C / special design rise
Aluminum/copper
Electro-static shield(s)
Thermal switches



Drives Isolation Transformers

Liquid Filled

Liquid Filled Drives Isolation 1,000kVA 12-Pulse

Primary 4.3kV, Secondary 2,100/2,100V;
65°C Rise; Copper Wound; Electro-Static Shield;
Mineral Oil



RANGE	3 - PHASE
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200kVA-10MVA, 5kV to 34.5kV

DESIGN SPECIFICATIONS

ANSI C57 (applicable section(s))
IEEE (applicable section(s))
Indoor (FR-3/silicone)
Outdoor (Mineral Oil)
6, 12, 18, 24 and 36-Pulse applications
55°C, 65°C and 55°C / 65°C
OA, OA/FFA, OA/FA
Aluminum/copper
Electro-static shield(s)

To meet the demands of drives applications, special design and manufacturing processes are utilized. Engineering's approach is to account for worst case scenarios, assuring conservative designs leading to long transformer life, even under severe applications. Manufacturing utilizes special winding techniques and equipment along with precision assembly and blocking methods, to maintain electrical and mechanical integrity while under stress.

MGM Transformer Company specializes in working with drives manufacturers to design and supply transformers to meet their exact equipment requirements. Once specifications are determined, a matrix of designs and pricing can be established for the manufacturer, streamlining the ordering process.

With a product range to 10MVA in both liquid-filled and dry type, and an engineering staff capable of designing to most any application, MGM Transformer Company is positioned as a leader in drives isolation transformer manufacturing.



General Purpose Transformers



600V Class General Purpose
150°C Rise; Aluminum and Copper Wound

MGM Transformer Company has established a national distribution network with locations in major cities in the continental U.S. Because of immediate availability from warehouse inventories and competitive pricing, MGM has become one of the leaders in this industry.

In addition to the standard warehouse products shown on this page, each warehouse location can supply, by special order, virtually any 600V class transformer to meet customer specifications. For a sampling of the requirements that can be supplied, please refer to the "Special Design Dry Type Transformers" page.

RANGE	3 - PHASE
	9kVA-1000kVA, 480D-208Y/120V, 3 phase
	9kVA-1000kVA, 480D-240D/120V, 3 phase
	10kVA-500kVA, 240x480-120/240V, 1 phase

DESIGN SPECIFICATIONS

Aluminum & Copper
150/115/80°C temperature rise
6 primary taps: 2-2¹/₂% FCAN;
4-2¹/₂% FCBN
220°C UL insulation
NEMA 1/NEMA 3R (with kit)
UL listed





The US Department of Energy (DOE) has regulated the energy efficiency level of low-voltage (LV) dry-type distribution transformers in US since 2007, and liquid-immersed and medium-voltage (MV) dry-type distribution transformers since 2010.

The US Department of Energy has mandated new higher efficiency levels for Low and Medium Voltage distribution transformers effective January 1st 2016.

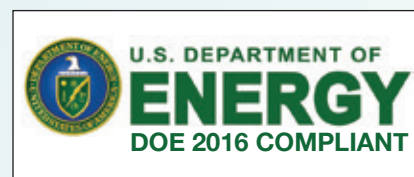
DOE's CFR (Code of Federal Regulation) title 10, part 431 defines the current energy efficiency standards for distribution transformers sold in US also known as TP1 energy efficiency levels as adopted by NEMA. Effective Jan. 1st 2016 DOE's CFR 10 p.431 will require new higher levels of Energy Efficiency for transformers installed in any US territory as published in the Federal Register Vol. 78, No. 75 on April 18, 2013.

Any Distribution transformer manufactured on or after Jan. 1st 2016 and sold in any US state will have to comply with the new energy efficiency levels defined by this document.

According to DOE, the new energy efficiency levels will reduce energy losses by an average of 18% in low voltage dry-type distribution transformers and by 13% in medium voltage dry-type transformers.

Single-Phase Efficiency	
Rated Capacity (kVA)	Minimum Efficiency (%)
15	97.7
25	98.0
37.5	98.2
50	98.3
75	98.5
100	98.6
167	98.7
250	98.8
333	98.9

Three-Phase Efficiency	
Rated Capacity (kVA)	Minimum Efficiency (%)
15	97.89
30	98.23
45	98.40
75	98.60
112.5	98.74
150	98.83
225	98.94
300	99.02
500	99.14
750	99.23
1000	99.28





The resulting environmental benefits and savings for customers are both significant. Over the next 30 years, DOE projects savings of up to \$12.9 billion in total costs for consumers, saving families and businesses money while reducing energy consumption. The new energy efficiency standard's positive environmental impact includes 3.63 quadrillion BTU's of energy saved during the above mentioned period, that translates in avoiding 265 million metric tons of CO2 emissions equivalent to the annual emissions of about 52 million automobiles.



MGM proudly supports these changes and the environmental benefits that will result from them. As a result of an exceptional team effort involving all MGM departments, manufacturing plants and warehouses, today we are ready to provide our customers with a completely redesigned DOE 2016 compliant product line which utilizes leading edge technologies and very high quality materials providing a technically advanced cost efficient solution for the most demanding customer applications.



MGM Transformer Company is pleased to list a sample of our satisfied customers. For more information, please contact the factory.

Liquid-Filled

kVA	Single Phase Efficiency	kVA	Three Phase Efficiency
10	98.70	10	98.65
15	98.82	30	98.83
25	98.95	45	98.92
37.5	99.05	75	99.03
50	99.11	112.5	99.11
75	99.19	150	99.16
100	99.25	225	99.23
167	99.33	300	99.27
250	99.39	500	99.35
333	99.43	750	99.40
500	99.49	1000	99.43
667	99.52	1500	99.48
833	99.55	2000	99.51
		2500	99.53

Dry-Type

kVA	Three Phase		
	BIL		
	20-45 kV Efficiency(%)	46-95 kV Efficiency(%)	>=96 kV Efficiency(%)
15	97.50	97.18	NA
30	97.90	97.63	NA
45	98.10	97.86	NA
75	98.33	98.13	NA
112.5	98.52	98.36	NA
150	98.65	98.51	NA
225	98.82	98.69	98.57
300	98.93	98.81	98.69
500	99.09	98.99	98.89
750	99.21	99.12	99.02
1000	99.28	99.20	99.11
1500	99.37	99.30	99.21
2000	99.43	99.36	99.28
2500	99.47	99.41	99.33

Drives Industry

Rockwell Automation	Cegelec
Rockwell Reliance	Lloyd Controls
ABB	Ansaldo-Ross Hill
Toshiba	Control Techniques

Industrial & Commercial

General Electric	Motorola
Siemens	LTV Steel
Westinghouse	Toyota
Proctor & Gamble	Hewlett-Packard
EATON	

Petrochemical

Amoco Oil	Shell Oil
Arco	Exxon
Chevron	Unocal
Mobil Oil	

Pulp & Paper

Weyerhaeuser	Georgia-Pacific
Eddy Paper	

Municipalities & Utilities

AT&T	Pacific Bell
Commonwealth Edison	Iowa Power & Light
L.A. Department of Water & Power	Wisconsin Power & Light Pacific Gas & Electric
Metropolitan Water District	Edison International
Florida Power & Light	

Architects & Contractors

ARAMCO	Fluor Daniel
Bechtel	Ralph M. Parsons Co.
Brown & Root	Black & Veatch

Universities / Labs

UCLA	University of Michigan
UC Berkeley	University of Minnesota
UC San Diego	Lawrence Livermore Labs
Fermilab	Argon National Lab

Wind-Turbine Power Generation

Palm Springs, California	Tehachapi Pass, California
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