



DEPARTMENT OF TRADE AND COMMERCE
STANDARDS BRANCH

T-13

OTTAWA July 15, 1966.

NOTICE OF APPROVAL

FOR

FERRANTI-PACKARD TYPES "VU5", "VE5", "VC5", "DC5", "VU8.7", "VE8.7", "VC8.7", "DC8.7", "FH-8.7", "MS-8.7", "MC-8.7", "FH-15", "MS-15", "MP-15", "MC-15", "VC15", "DC-15", "CX-15", "CFX15", "VU15", "MP25", "MC-25", "M25", "MG25", "M35", "MC35", "N35", "NC35", "MG35", "NG35", "M46", "MG46", "MC46", "M69", "MC69", AND "MG69" VOLTAGE TRANSFORMERS, AND TYPES "CSS5", "EM5", "CSS8.7", "EM8.7", "CSS15", "EM15", "KM25", "WN25", "KM35", "WN35", "KM46", "KM69" AND "KMD69" METERING OUTFITS.

Apparatus

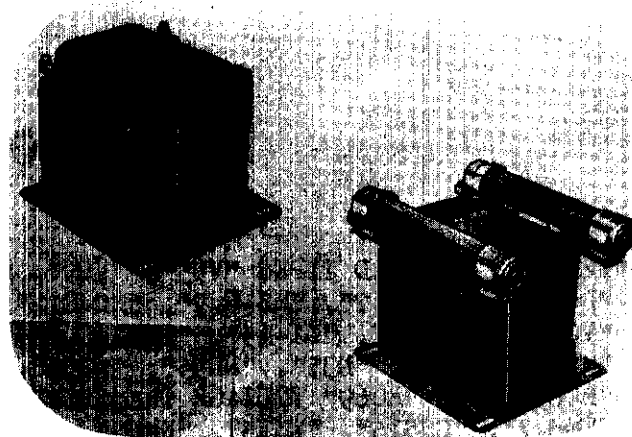
Type	Voltages	Insulation Kv	Accuracy
VU5, VC5 DC5	2400/4160Y, 4800/8320Y, 4200Δ, 4800 Δ Secondary 120V	5.0	0.3Y, 0.6Z 0.3Y, 1.2Z on units prior to serial 2-64200
VE5	same as above	5.0	0.3WXY, 0.6Z NP 0.3Y, 0.6Z
VU8.7, VE8.7 VC8.7, DC8.7	4200/7280Y, 4800/8320Y 7200, Δ 8400Δ Secondary 120V	8.7	0.3WXY, 0.6Z NP 0.3Y, 0.6Z
FH-8.7, MS-8.7 MC-8.7	2400/4160Y, 4800/8320Y secondary 120V	8.7	0.3WXYZ, ZZ NP 0.3ZZ
FH-15, MS-15 MP-15, MC-15 DC-15, VC15 CX-15, CFX15 (fuses) VU15 (compound filled outdoor)	7200/12470Y, 8400/14550Y, 7700/13337Y 7620/13200Y, 12000Δ, 14400 Δ secondary 120V indoor indoor	15.0	0.3WXY, ZZ NP 0.3ZZ or 0.3Z
MP25	14400/24940Y, 24000 Δ secondary 120V	25.0	0.3WXY, ZZ NP 0.3ZZ
MC25	8320/14400Y secondary 69.3V	25.0	0.3WXY, 0.6ZZ NP 0.3Z, 0.6ZZ

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VU 5

VU 8.7



VE 5

VE 8.7



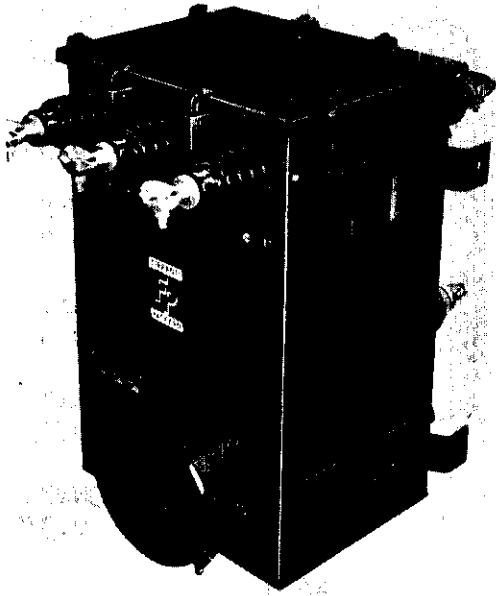
FH 8.7



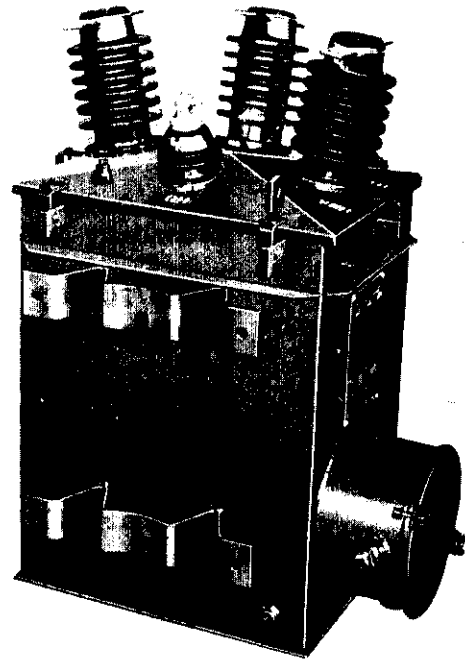
CFX

Type	Voltages	Insulation Kv	Accuracy
M25	23000Δ, 24000Δ, 25000Δ secondary 115, 120 or 125V	25.0	0.3WXYZ, 0.6ZZ NF 0.3Z, 0.6ZZ
MG25	14400/24940Y secondary 120V	25.0	0.3WXYZ, 0.6ZZ NF 0.3Z, 0.6ZZ
M35, MC35 N35, NC35	24000, Δ 27600Δ, 34500Δ secondary 120V or 115V	34.5	0.3WXYZ, ZZ NF 0.3ZZ
MC35, NC35	14400/24940Y secondary 120 V	34.5	0.3WXYZ, 0.6ZZ NF 0.3Z, 0.6ZZ
MG35, NG35	20125/34500Y secondary 115V	34.5	0.3WXYZ, 0.6ZZ NF 0.3Z, 0.6ZZ
M46, MC46	46000Δ, 48000Δ secondary 115V or 120V	46.0	0.3WXYZ, ZZ NF 0.3ZZ
MG46, MC46	24000/41570Y, 27600/48000Y secondary 120 or 115V	46.0	0.3WXYZ, 0.6ZZ NF 0.3Z, 0.6ZZ
M69)) MC69)	69000Δ, 72000Δ secondary 115 or 120V 60000Δ, 66000Δ secondary 120V	69.0 69.0	0.3WXYZ, ZZ NF 0.3ZZ 0.3WXYZ, ZZ NF 0.3ZZ
MG69	39800/69000Y secondary 115V	69.0	0.3WXYZ, 0.6ZZ NF 0.3Z, 0.6ZZ
MG69	40250/69000Y double secondary 115-67.08	69.0	0.3WXYZ, 0.6ZZ NF 0.3Z, 0.6ZZ
Frequency	60Hz all ratings		

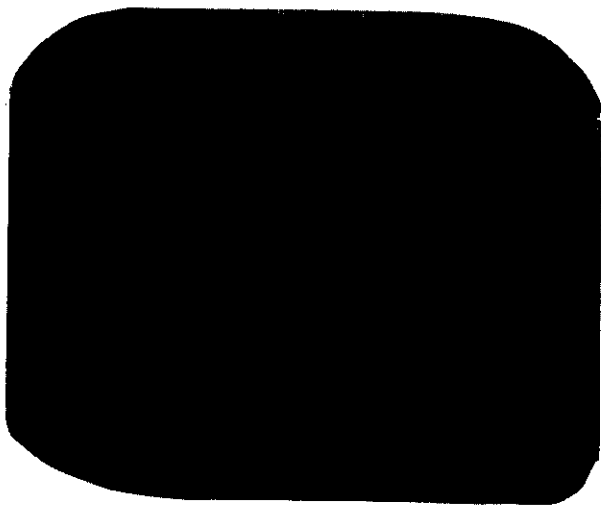
Note: Any of the transformers listed may be supplied with a double secondary. With the secondaries connected in parallel, the accuracies as shown will apply. With two single secondaries the characteristics of each are identical so that the accuracies as shown will apply with the burden equally divided. For example, the type MG69 with a single secondary has an accuracy of 0.3WXYZ, 0.6ZZ; as a double secondary the accuracy would be 0.3WXY, 0.6Z for each secondary and the nameplate would be marked 0.3Y, 0.6Z/0.3Y, 0.6Z.



CSS 5 CSS 8·7
CSS 15



EVP 5 EVP 8·7
EVP 15



EM 5 EM 8·7
EM 15



KM 25 KM 35
KM 46 KM 69

Description of Type Designation

VU5	Outdoor, compound-filled separate unit
VC5	Core and coil assembly for use in oil-insulated type "CSS5" and "EVP5" polyphase metering outfits.
VE5	Encapsulated for indoor service
DC5	Core and coil assembly used in compound-filled type "EM5" polyphase metering outfit
FH8.7	Outdoor oil-insulated separate unit
VC8.7	Core and coil assembly for use in oil-insulated type "CSS8.7" and "EVP8.7" polyphase metering outfits
VE8.7	Encapsulated for indoor service
VU8.7	Outdoor, compound-filled separate unit
MS8.7	Type FH15 with LV bushings replaced by conduit box
FH15	Outdoor oil-insulated separate unit, LV bushings
MC15	Type FH15 used in type CSS15 oil-insulated metering outfit
VC15	Type FH15 used in type EVP15 oil-insulated metering outfit
MP15	Type MC15 oil-insulated in cylindrical tank with two primary bushings (cover-mounted)
MS15	Type FH15 with side wall bushings for H.V. and LV bushings replaced by conduit box
CX	Type FH15 compound-filled separate unit without fuses
CFX	Type CX with fuses mounted on top
DC15	Type FH15 used in type EM15 compound-filled metering outfit
VU15	Type FH15 in compound-filled outdoor unit
MC25	Type MC25 used in type KM25 3-phase 3-wire metering outfit
NC25	Type MC25 askarel-filled used in type WN25 outdoor askarel-filled metering outfit
MP25	Outdoor, oil-insulated, cover mounted bushings
MG35	Outdoor, oil-insulated, single bushing - Grd Y service
NG35	Outdoor, askarel-filled, single bushing - Grd Y service
M35	Outdoor, oil-insulated - two bushing - line-to-line service
N35	Outdoor, askarel-filled, two bushing - line-to-line service
NC35	Used in type WN35 askarel-filled outdoor 3-phase 3-wire or 3-phase 4-wire metering outfits
MC35	Used in type KM35 oil-filled outdoor 3-phase 3-wire or 3-phase 4-wire metering outfits
MG46	Outdoor oil-insulated, single bushing, Grd Y service
M46	Outdoor oil-insulated - two bushing, line-to-line service
MC46	Used in KM46 oil-filled outdoor 3-phase 3-wire or 3-phase 4-wire metering outfits
MC69	Used in KM69 or KMD69 outdoor 3-phase 3-wire or 3-phase 4-wire metering outfits
MG69	Outdoor oil-insulated, single bushing, Grd Y service
M69	Outdoor oil-insulated, two bushing, line-to-line service

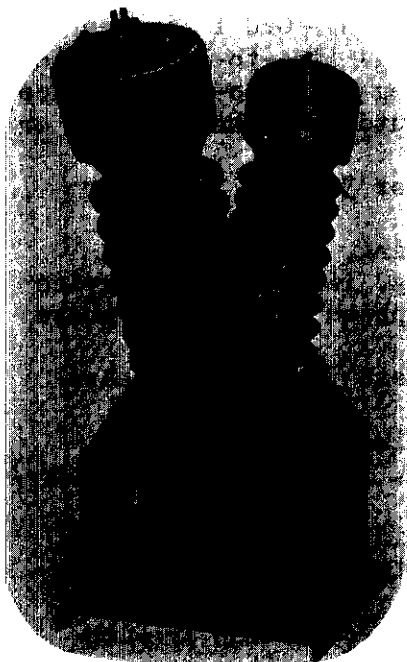
Type "M" covers transformers for line-to-line operation.
Type "MC" covers core and coil units for use in metering outfits.

These may be either for line-to-line operation or with graded insulation for line-to-ground operation.

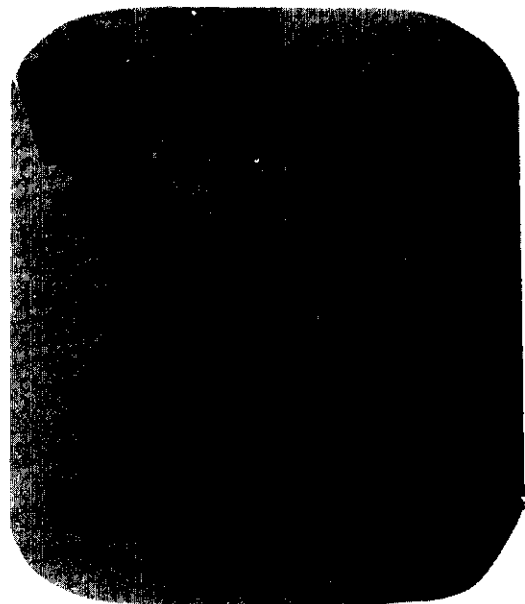
Type "MG" indicates a transformer with a single high voltage bushing for line-to-ground operation.



MG 25 MG 35
MG 46 MG 69



M 25 M 35
M 46 M 69



M 25 M 35
M 46 M 69

4.

A similar distinction also applies as far as transformers designated as type "N" used for askarel-filled voltage transformers or metering outfits.

Metering Outfit Type	Contains Voltage transformer type	Current Transformer Type
CSS5	VC5	Ry or E5 special
EVP5	VC5	KC5
EM5	DC5	EC5
CSS8.7	MC8.7	E5 special or RY
EVP8.7	VC8.7	KC8.7
EM8.7	DC8.7	RY or EC8.7
CSS15	MC15	E8.7 special or RY
EVP15	VC15	KC15
EM15	DC15	EC15
KM25	MC25	KC25
WN25	NC25	WC25
KM35	MC35	KC35
WN35	NC35	WC35
KM46	MC46	KC46
KM69	MC69	KC69
KMD69	MC69	KC69

This is a consolidation of previous circulars SD-EA.301, SD-EA.302, SD-EA.358, SD-EA.367, SD-EA.376 (amended), S-EA.434 (amended), S-EA.435, S-EA.441, S-EA.471, S-EA.485, S-EA.506 (amended), S-EA.533, S-EA.579, S-EA.586, T5 and T9 together with additional higher voltage ratings. The circular also covers metering outfits when they contain voltage transformers that are listed above.

Any voltage transformer included in the above may have a single secondary winding, a double secondary winding or a tapped secondary winding.

To denote this, the nameplate will be marked on as follows, e.g.

Single secondary 69000-115

Double secondary 69000-115-115

Tapped secondary 40250/69000Y - 115/67.08

This approval covers metering units containing voltage transformers of any approved ratio along with current transformers of any ratio covered by circular T14 provided that the insulation and voltage ratings are compatible.

Approval granted to: Ferranti-Packard Electric Limited,
St. Catharines,
Ontario.

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