

SECTION 262200
LOW-VOLTAGE TRANSFORMERS

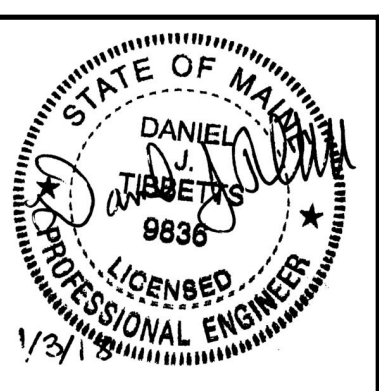
- PART 1 - GENERAL
- 1.1 RELATED DOCUMENTS
- A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT APPLY TO THIS SECTION.
- 1.2 SUMMARY
- A. THIS SECTION INCLUDES THE FOLLOWING TYPES OF DRY-TYPE TRANSFORMERS RATED 600 V AND LESS, WITH CAPACITIES UP TO 1000 KVA:
- DISTRIBUTION TRANSFORMERS.
- 1.3 ACTION SUBMITTALS
- A. PRODUCT DATA: INCLUDE RATED NAMEPLATE DATA, CAPACITIES, WEIGHTS, DIMENSIONS, MINIMUM CLEARANCES, INSTALLED DEVICES AND FEATURES, AND PERFORMANCE FOR EACH TYPE AND SIZE OF TRANSFORMER INDICATED.
- B. SHOP DRAWINGS: DETAIL EQUIPMENT ASSEMBLIES AND INDICATE DIMENSIONS, WEIGHTS, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATION AND SIZE OF EACH FIELD CONNECTION.
- WIRING DIAGRAMS: POWER, SIGNAL, AND CONTROL WIRING.
- 1.4 CLOSEOUT SUBMITTALS
- A. OPERATION AND MAINTENANCE DATA: FOR TRANSFORMERS TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.
- 1.5 QUALITY ASSURANCE
- A. SOURCE LIMITATIONS: OBTAIN EACH TRANSFORMER TYPE THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.
- B. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.
- C. COMPLY WITH IEEE C57.12.91, "TEST CODE FOR DRY-TYPE DISTRIBUTION AND POWER TRANSFORMERS."
- PART 2 - PRODUCTS
- 2.1 MANUFACTURERS
- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- ACME ELECTRIC CORPORATION; POWER DISTRIBUTION PRODUCTS DIVISION.
 - SQUARE D, SCHNEIDER ELECTRIC.
- 2.2 GENERAL TRANSFORMER REQUIREMENTS
- A. DESCRIPTION: FACTORY-ASSEMBLED AND -TESTED, AIR-COOLED UNITS FOR 60-HZ SERVICE.
- B. CORES: GRAIN-ORIENTED, NON-AGING SILICON STEEL.
- C. COILS: CONTINUOUS WINDINGS WITHOUT SPLICES EXCEPT FOR TAPS.
- INTERNAL COIL CONNECTIONS: BRAZED OR PRESSURE TYPE.
 - COIL MATERIAL: ALUMINUM.
- 2.3 DISTRIBUTION TRANSFORMERS
- A. COMPLY WITH NEMA ST 20, AND LIST AND LABEL AS COMPLYING WITH UL 1561.
- B. CORES: ONE LEG PER PHASE.
- C. ENCLOSURE: VENTILATED, NEMA 250, TYPE 2.
- CORE AND COIL SHALL BE ENCAPSULATED WITHIN RESIN COMPOUND, SEALING OUT MOISTURE AND AIR.
- D. TRANSFORMER ENCLOSURE FINISH: COMPLY WITH NEMA 250.
- FINISH COLOR: ANSI 49 GRAY.
- E. TAPS FOR TRANSFORMERS SMALLER THAN 3 KVA: NONE.
- F. TAPS FOR TRANSFORMERS 7.5 TO 24 KVA: TWO 5 PERCENT TAPS BELOW RATED VOLTAGE.
- G. TAPS FOR TRANSFORMERS 25 KVA AND LARGER: TWO 2.5 PERCENT TAPS ABOVE AND FOUR 2.5 PERCENT TAPS BELOW NORMAL FULL CAPACITY.
- H. INSULATION CLASS: 220 DEG C, UL-COMPONENT-RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 150 DEG C RISE ABOVE 40 DEG C AMBIENT TEMPERATURE.
- I. ENERGY EFFICIENCY FOR TRANSFORMERS RATED 15 KVA AND LARGER:
- COMPLYING WITH 2016 DEPARTMENT OF ENERGY STANDARDS.
 - TESTED ACCORDING TO NEMA TP 2.
- J. LOW-SOUND-LEVEL REQUIREMENTS: MINIMUM OF 3 DBA LESS THAN NEMA ST 20 STANDARD SOUND LEVELS WHEN FACTORY TESTED ACCORDING TO IEEE C57.12.91.
- 2.4 IDENTIFICATION DEVICES
- A. NAMEPLATES: ENGRAVED, LAMINATED-PLASTIC OR METAL NAMEPLATE FOR EACH DISTRIBUTION TRANSFORMER, MOUNTED WITH CORROSION-RESISTANT SCREWS. NAMEPLATES AND LABEL PRODUCTS ARE SPECIFIED IN SECTION 260553 "IDENTIFICATION FOR ELECTRICAL SYSTEMS."
- 2.5 SOURCE QUALITY CONTROL
- A. TEST AND INSPECT TRANSFORMERS ACCORDING TO IEEE C57.12.91.
- B. FACTORY SOUND-LEVEL TESTS: CONDUCT SOUND-LEVEL TESTS ON EQUIPMENT FOR THIS PROJECT.

END OF SECTION 262200

SECTION 262416
PANELBOARDS

- PART 1 - GENERAL
- 1.1 GENERAL
- A. THE PROVISIONS OF SECTION 260500, GENERAL REQUIREMENTS FOR ELECTRICAL WORK, APPLY TO THE WORK OF THIS SECTION.
- 1.2 CODES AND STANDARDS
- A. PRODUCTS SHALL COMPLY WITH THE FOLLOWING CODES AND STANDARDS AND SHALL BE UL LISTED AND LABELED:
- NEMA AB-1 MOLDED CASE CIRCUIT BREAKERS
NEMA PB-1 PANELBOARDS
UL 50 ENCLOSURES FOR ELECTRICAL EQUIPMENT
UL 67 PANELBOARDS
UL 489 MOLDED CASE CIRCUIT BREAKERS AND CIRCUIT BREAKER ENCLOSURES
- 1.3 SUBMITTALS
- A. MANUFACTURER'S PRODUCT DATA SHEETS.
- B. CIRCUIT BREAKER SCHEDULES.
- C. DIMENSIONED PLANS, ELEVATIONS, SECTIONS AND DETAILS.
- 1.4 MANUFACTURERS
- A. SUBJECT TO COMPLIANCE WITH THE REQUIREMENTS OF THIS SECTION:
- SQUARE D
GE
SIEMENS
CUTLER HAMMER
- PART 2 - PRODUCTS
- 2.1 GENERAL
- A. PANELBOARDS SHALL BE OF THE SIZES, RATING AND ARRANGEMENT SHOWN ON THE DRAWINGS.
- B. PANELBOARDS SHALL BE PROVIDED COMPLETE WITH ALL OVERCURRENT DEVICES, ACCESSORIES AND TRIM.
- C. ALL PANELBOARDS SHALL BE PROVIDED WITH SAFETY BARRIERS FOR DEAD FRONT CONSTRUCTION.
- D. THE REQUIRED SHORT CIRCUIT RATINGS OF ASSEMBLED PANELBOARDS ARE SHOWN ON THE DRAWINGS. THE SHORT CIRCUIT RATING OF EVERY OVERCURRENT DEVICE IN THE PANEL SHALL MEET OR EXCEED THE PANEL RATING. UNLESS OTHERWISE NOTED ON THE DRAWINGS, SERIES RATED COMBINATIONS WILL NOT BE PERMITTED.
- E. PROVIDE THROUGH-FEED OR SUB-FEED LUGS AS INDICATED ON PANEL SCHEDULES.
- 2.2 CABINETS
- A. BOXES SHALL BE CODE GAUGE GALVANIZED SHEET STEEL.
- B. TRIM SHALL BE CODE GAUGE STEEL, ANSI-61 GRAY FINISH WITH STAINLESS STEEL FLUSH TYPE LOCK/LATCH HANDLE. ALL LOCKS SHALL BE KEYED ALIKE.
- C. TRIM FOR SURFACE MOUNTED PANELS SHALL BE DOOR-IN-DOOR CONSTRUCTION SUCH THAT THE GUTTER SPACE MAY BE EXPOSED BY A HINGED DOOR.
- D. DIRECTORY FRAMES SHALL BE METAL FRAME WITH PLASTIC COVERS.
- 2.3 BUS
- A. ALL BUS WORK SHALL BE COPPER.
- B. NEUTRAL BUSSES SHALL BE 100% RATED WITH ADEQUATE CONNECTIONS FOR ALL OUTGOING NEUTRAL CONDUCTORS.
- C. PANELBOARDS SHALL BE PROVIDED WITH COPPER GROUND BUSSES.
- D. BUS SHALL BE DESIGNED FOR SEQUENCE PHASE CONNECTION TO ALLOW THE INSTALLATION OF ONE, TWO OR THREE POLE BRANCH CIRCUIT BREAKERS IN ANY POSITION.
- 2.4 OVERCURRENT DEVICES
- A. OVERCURRENT DEVICES SHALL BE TRIP-FREE MOLDED CASE, BOLT-ON, THERMAL-MAGNETIC CIRCUIT BREAKERS.
- B. MAIN CIRCUIT BREAKERS SHALL BE INDIVIDUALLY MOUNTED AND BOLTED TO BUS ASSEMBLY. BACK-FED BRANCH MOUNTED CIRCUIT BREAKERS ARE PROHIBITED.
- C. FRONT FACES OF ALL CIRCUIT BREAKERS SHALL BE FLUSH. TRIP INDICATION SHALL BE CLEARLY SHOWN BY THE HANDLE POSITION BETWEEN THE ON AND OFF POSITIONS.
- D. GROUND FAULT AND ARC FAULT CIRCUIT BREAKERS SHALL REQUIRE NO MORE PANEL SPACE THAN STANDARD BREAKERS.
- E. ALL CONNECTIONS SHALL BE RATED FOR 75° C COPPER CONDUCTORS.
- PART 3 - EXECUTION
- 3.1 PANELBOARDS
- A. PANELBOARDS SHALL BE PROVIDED WITH A LABEL THAT INDICATES PANELBOARD NAME, VOLTAGE, AMPERAGE AND ELECTRICAL DISTRIBUTION EQUIPMENT THAT THE PANELBOARD IS FED FROM.
- B. PANELBOARD COVERS ARE REQUIRED TO HAVE 2 LABELS. THE FIRST, AN ARC FLASH WARNING LABEL AND THE SECOND, AN OSHA LABEL REQUIRING 3 FEET, (3 FEET 6 INCHES OR 4 FEET AS APPLICABLE), CLEARANCE IN FRONT OF THE PANEL.

END OF SECTION 262416



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REV.	DATE	ISSUED FOR CONSTRUCTION
0	12/21/17	STATUS:

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SPECIFICATIONS
OF:
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VERTICAL CIRCULATION IMPROVEMENTS
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DATE	SCALE
10-27-17	NONE

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