

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
  
SPECIAL PROVISION  
FOR  
**RACK MOUNTED TRANSFORMER**

MET:RDM

1 of 2

APPR:EG:MS:04-22-21

**a. Description.** This work consists of furnishing, installing, and testing a new rack-mounted step-down or step-up transformer, dry-type, encapsulated, single phase, rated between the range of 5 up to 15 kilovolt-ampere (kVA), 120/240 volt (V) to 480V, 60 hertz (Hz).

**b. Materials.** Provide a single-phase encapsulated step-down or step-up transformer meeting the following requirements:

1. Provide a *NEMA 3R* compliant enclosure.
2. Provide copper or aluminum winding.
3. Provide *UL* listed transformer.
4. Conform to the requirements of *ANSI/National Fire Protection Association 70*.
5. Provide transformers capable of carrying a continuous 15 percent overload without exceeding 239 °F rise in a 140 °F ambient.
6. Provide grounding in accordance with subsection 918.02 of the Standard Specifications for Construction and 20SP-826A - Grounding, Bonding, Lightning Protection and Surge Protection for Intelligent Transportation System Equipment.
7. Equipment/System Identification. Provide equipment/system identification nameplates in accordance with section 818 of the Standard Specification of Construction.
8. Provide product data of each type of product used (i.e. "Shop Drawings") per the Special Provision for Basic Materials and Methods for Intelligent Transportation Systems Work for approval by the Engineer before work commences.

**c. Construction.**

1. For rack-mounted step-down and step-up transformers, furnish and install a dry-type encapsulated transformer on the electrical rack with a fusible safety switch on the line side paid separately by 20SP-826E – Power Service as Electrical Rack and Safety Switch, Fusible.
2. Install transformer with all the material and hardware required to complete the installation.
3. Connect the transformer to the line and load conductors (paid for separately) as prescribed by the manufacturer's instructions and pertinent electrical codes.

4. Warranty. Provide *UL* listed transformer with a standard manufacturer's warranty, transferable to MDOT. The transformer must carry a warranty (parts, software, and labor) of 18 months from the date of shipment. Furnish warranty and other applicable documents from the manufacturer, and a copy of the invoice showing the date of shipment, to the Engineer prior to final written acceptance.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

**Pay Item****Pay Unit**

Rack-Mtd (type) Transformer, \_\_ kV AMP .....Each

**Rack-Mtd Step-Up Transformer, \_\_ kV AMP** includes installation, and testing a rack mounted step-up transformer at the locations shown on the plans. All rack mounted step-up transformers, connection to line and load power cables, mounting brackets, conduit, and any other items as needed for complete functionality are included.

**Rack-Mtd Step-Down Transformer, \_\_ kV AMP** includes installation, and testing a rack mounted step-down transformer at the locations shown on the plans. All rack mounted step-down transformers, connection to line and load power cables, mounting brackets, conduit, and any other items as needed for complete functionality are included.