SLEMCO
Specifications for Residential Underground
Current Transformer Metering Requirements

Applicable to residential and small noncommercial services greater than 200 Amps receiving single-phase power at 120/240 volts. ***The maximum SLEMCO allowable service size of this type is 800 Amps.*** Applicable metering equipment will be attached to building requiring service. The service conductors run through underground conduit from either an underground or overhead source to current transformer (*CT*) enclosure. These requirements can also be applied to a standalone structure or rack accompanying an underground meter pole installation.

The *Point of Connection* is the point of demarcation between SLEMCO and the customer. It shall be the customer's responsibility for compliance with the National Electrical Code (*NEC*) and any Governing Authority for all equipment beyond the *Point of Connection*. The customer is advised to use the services of a qualified electrician to assure compliance with all codes and regulations.

It should be noted that electrical pipe is the gray pipe and white water pipe is not acceptable. Therefore, schedule 40 or 80 electrical pipe discussed in this section is approved electrical conduit.

Items marked with ❾❿⓫ are indicated on the following drawings:
❾Drawing No.9 – *Single-Phase Current Transformer Metering Requirements from an Existing Padmount Transformer*
❿Drawing No.10 – *Single-Phase Current Transformer Metering Requirements from a new Padmount Transformer*
⓫Drawing No.11 – *Single-Phase Current Transformer Metering Requirements from an Overhead Source*

A. **A1** Services up to 400A: Secondary conductors from transformer to disconnect switch furnished and installed by SLEMCO. Termination of conductors will be made to source side of disconnect switch (*Point of Connection*) by SLEMCO. ❾❿⓫

A2 Services greater than 400A: Termination of secondary conductors must be made in disconnect switch by customer. Wire trough is optional. Each pole of the disconnect switch will only be allowed one lug attachment. Therefore, multi-conductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed. ❾❿⓫ The secondary conductors shall be sized according to the load, as required by the NEC or Governing Authority.

A2.1 If the customer is getting power from an overhead source, then secondary conductors from weather head to disconnect switch furnished and installed by customer and an extension of at least fifty feet (*50'*) of secondary conductors is required to be left out of conduit at base of SLEMCO pole. Service cable from transformer to weather head (*Point of Connection*) are furnished and installed by SLEMCO. Termination of conductors at weather head (*Point of Connection*) performed by SLEMCO.

A2.2 If the customer is getting power from a new or existing padmount transformer, then secondary conductors from transformer to disconnect switch furnished and installed by customer and an extension of at least 48” of secondary conductor is required to be left out of conduit at padmount transformer location. Termination of conductors in padmount transformer (*Point of Connection*) performed by customer.

B. Secondary conduit furnished and installed by customer. After trenching, the trench may be backfilled and covered. Conduit must be a minimum of a 3” electrical conduit. Electrical schedule 40 pipe is acceptable for below ground use. ❾❿⓫

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C. Above ground riser conduit must be a minimum of a 3" electrical schedule 80 pipe. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used. ❾❿⓫

D. No standard steel 90º elbows are allowed since conduit will house conductors carrying greater than 200 Amps. Therefore, any underground service that requires three 90º turns or is further than 150', the customer must use PVC long radius 90º elbows with a 48" turn. A maximum of three 90º turns are allowed. Any underground service which is less than 150' with two or less 90º turns, the customer is allowed to use PVC long radius 90º elbows with a 36" turn. ❾❿⓫

E. Customer must maintain a depth of 36" when installing electrical conduit for secondary conductors. ❾❿⓫

F. **F1** If the customer is getting power from an overhead source, then the customer will stub up at the SLEMCO pole 36" above finished grade with electrical schedule 80 pipe (*3" minimum*). ⓫ The customer will also be required to leave three (*3*) joints of electrical schedule 40 pipe (*3" minimum*) near the pole to be used by SLEMCO to install the riser up the pole even with neutral or bottom of transformer. The customer will also provide a weather head (*3" minimum*) along with the electrical schedule 40 pipe. According to National Electric Safety Code (*NESC*) Table 232-1, Item 5., Note 8(d), the lowest point of the service conductor (*drip loop*) must be at least 10' above final grade.

F2 If the customer is getting power from an existing padmount transformer, then the customer must stop the electrical conduit 1' short of the transformer pad. The customer conduit must be installed perpendicular (*in direction of arrows*) to the area (*shown in gray*) marked as 1' from edge of transformer pad surrounding the bushing enclosure of the padmount transformer. ❾ Unacceptable installations include installing conduit from the rear of the transformer or installing conduit that in not perpendicular to the bushing enclosure of the padmount transformer. SLEMCO will install and provide the PVC long radius 90º elbow and electrical conduit into the transformer.

F3 If the customer is getting power from an existing pedestal, then the customer must stop the electrical conduit 1' short of the pedestal's edge.

F4 If the customer is getting power from a new padmount transformer, then the customer must stub up the secondary and primary electrical conduit next to each other at the location of new padmount transformer. ❿ See the section entitled, *Specifications for Residential Underground Primary Requirements*, for details on primary installation.

G. Standoff brackets furnished and installed by SLEMCO. ⓫

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H. Meter base furnished by SLEMCO and installed by customer. The meter base shall be mounted on the outside of the building such that the center of the meter socket window is between 5' and 6' above finished grade. ❾❿⓫ Meter base cannot be mounted to the siding of a metal building unless additional support is used behind the meter base. The top hole of meter base must be plugged with 1" plug.

I. CT furnished by SLEMCO. Must be mounted to back of CT enclosure by customer. ❾❿⓫

J. CT enclosure is to be supplied by customer and must be a minimum of 24" x 24" x 10". The CT enclosure must have a way to secure the door with a SLEMCO padlock. When installed by customer, the bottom of the CT enclosure should be at a height of 2' to 4' above finished grade. ❾❿⓫

K. The electrical conduit from CT enclosure to meter base shall be 1" electrical schedule 40 pipe. ❾❿⓫ This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.

L. A ground lug will be installed by customer in the CT enclosure and must be attached with a nut and bolt. ❾❿⓫ This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.

M. The customer will be responsible to furnish a metering ground wire (*minimum #6 soft drawn copper or #6 insulated copper*) and install this wire from the meter base through CT enclosure and disconnect switch to the optional wire trough. This metering ground wire must be continuous and installed in electrical conduit between the meter base, CT enclosure, disconnect switch, and optional wire trough. The metering ground wire must be connected to the ground lugs in the meter base, CT enclosure, disconnect switch, and the grounding buss bar inside of the optional wire trough. If optional wire trough is omitted, the metering ground wire would end in the disconnect switch. ❾❿⓫ This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.

N. The main ground wire must be continuous and installed in ½" electrical conduit between optional wire trough and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the optional wire trough and each of the ground rods. If the optional wire trough is omitted, then the main ground wire must be continuous and installed in ½" electrical conduit between disconnect switch and the first ground rod. The continuous main ground wire must be connected to the grounding buss bar inside of the disconnect switch and each of the ground rods, if the optional wire trough is omitted. ❾❿⓫ The main ground wire shall be sized according to the load, as required by the NEC or Governing Authority and may need to be increased to 1/0, 4/0 or larger if needed.

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O. Ground rods, minimum of two 5/8" x 8' copperweld or 1/2" x 8' copper, furnished and installed by customer. Must have one ground rod for every 200 Amps of service. Ground rods shall be installed 6' apart. Ground rods must be set 1" below finished grade. ❾❿⓫ This is the minimum required by SLEMCO. Additional grounding may be required by the NEC or Governing Authority.

P. Disconnect switch isolates power from services connected. Disconnect switch furnished and installed by customer between the CT Enclosure and services connected (*wire trough optional*). Disconnect switch is for SLEMCO use only and shall be locked and sealed open or closed by use of SLEMCO padlock. Disconnect switch shall be a double pole, be non-fused or fused with properly sized slugged (*dummy/neutral*) fuse, have a voltage rating of at least 120/240V, and have an ampacity rating no less than the total of the amp ratings of all connected services. Enclosure for disconnect switch shall be UL listed, be weather proof and rain tight (*NEMA 3R*), have a locking mechanism to secure it in the open or close position with a SLEMCO padlock. ❾❿⓫ The electrical conduit from CT enclosure to disconnect switch shall be a minimum of 3" electrical schedule 40 pipe. This conduit will be furnished and installed by customer. If elbows are required, then PVC elbows shall be used. LB elbows and flex conduit cannot be used.

Any multi-conductor connections to a single pole made within the disconnect switch must include a multi-conductor lug. More than one conductor connected within a single lug will not be allowed.

P1 Services up to 400A: SLEMCO will be responsible for terminations to the source side of the disconnect switch. Customer will be responsible for terminations to the load side of the disconnect switch.

P2 Services greater than 400A: Customer will be responsible for all terminations in the disconnect switch.

Q. Main disconnects (*service panels*) and optional wire trough shall be furnished and installed by customer as required by the NEC or Governing Authority. ❾❿⓫ All terminations will be made in optional wire trough or to main disconnects by customer.

R. Variations of this design may be considered equal as long as NEC requirements are met. To assure acceptability where variations arise, contact SLEMCO prior to installation.

S. If a Governing Authority requires inspection, inspection tag must be in place and marked approved before SLEMCO will connect service. ❾❿⓫

T. Prior to secondary service connection and meter installation, a SLEMCO serviceman must inspect the total job for readiness. When ready for this inspection, notify the Lafayette Service Department by calling (337) 896-5551.

U. SLEMCO does not allow any applicable metering equipment (*meter base and CT enclosure*) to be mounted on the side of an underground padmount transformer.