NIPSCO

# SERVICE ENTRANCE - OVERHEAD
## Single & Three Phase
## 100, 200, & 320/400 Amp

11-01-21
**ER 19-240-N**


**USE:** Arrangement of service equipment to supply electric energy to an overhead, outdoor, self contained meter installation.

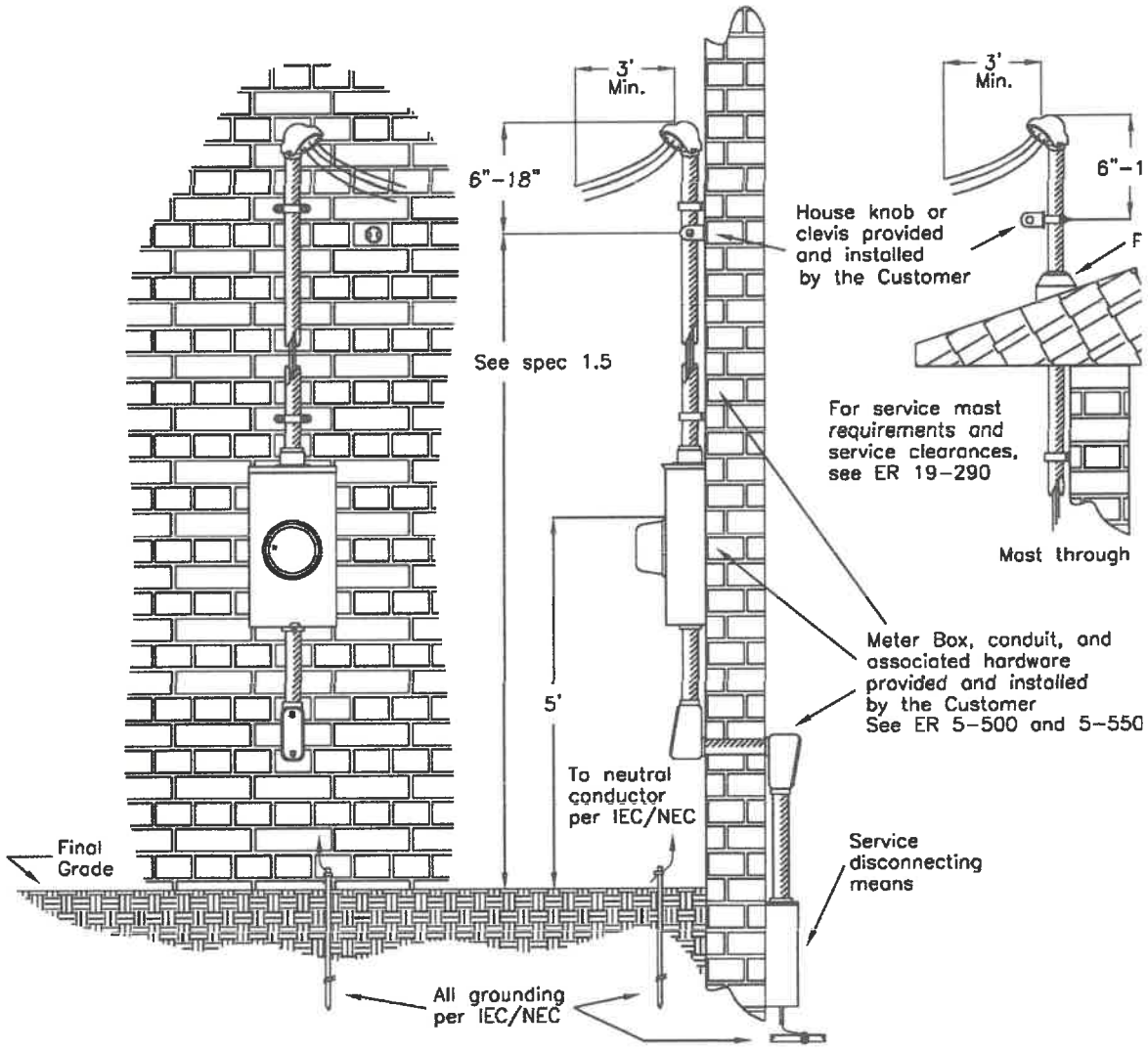
| PREVIOUS REVISION | ORIGINATED | PREVIOUS NUMBER |
|---|---|---|
| 10-01-18 | 03-94 | ER 1-160-A(08-01-89) ER 19-730-A (11-15-94) ER 19-740 (03-21-94) ER 19-745 (03-21-94) |

**LATEST REVISION:** Revised drawing to indicate "House knob or clevis provided and installed by the Customer". Added specification for allowed wires and connectors in the meter socket. Updated tables of *approved manufacturers with Landis & Gyr / Siemens whom merged.*

**REFERENCE:** Indiana Electrical Code / National Electrical Code (IEC/NEC), latest revision
ER 5-500, 5-550, 7-500, 13-230, 19-290, latest revision
UL 414, latest revision
ANSI C12.7, latest revision

**SPECIFICATION:**

**TYPICAL OVERHEAD INSTALLATION**



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## 1. GENERAL:

1.1 Residential electric and gas meters should both be located on the same side of the home within the front 1/3 to aid meter reading, testing and service, and to aid emergency response in the event of a fire or some other hazardous condition.

1.2 This installation is to conform with the Rules and Regulations of any recognized legal inspection service in effect in the community and satisfactory to the Company.

1.3 All wiring and equipment for the overhead service entrance shall be owned, installed and maintained by the Customer.

1.4 Only the Customer's line and load wires connected to the manufacturer's connection points are allowed in the meter socket. If an additional load tap is required, only manufacturer's tap connector kits are allowed; or, for stud connections, only bolted lug connectors are allowed. No parallel connectors, split-bolt connectors, or insulation piercing connectors are allowed in the meter socket.

1.5 The meter installation shall be level and securely mounted to a substantial building, pole or other type mounting structure satisfactory to the Company.

1.6 The placement of the house knob or clevis shall be such that it provides proper clearances for the service drop. (see ER 19-290)

1.7 Bonding bushings and jumpers shall be used to maintain electrical continuity to service equipment enclosures when the entire concentric knockout is not removed.

1.8 The service disconnecting means shall be installed at a readily accessible location nearest the point of entrance of the service entrance conductors.

1.9 For grounding refer to ER 7-500 and the latest revision of IEC/NEC.

1.10 Conduit & Conductor Recommendations:

| Service Size | Service Entrance | | | |
|---|---|---|---|---|
| | Conduit (per IEC/NEC) | Service Entrance Conductors (See Notes below) | | Grounding (Cu Only) |
| | | Residential 1φ 3W 120/240V | All Other Services | |
| 100 Amps | 1 ½ or 2 Inch | #4 Cu | #3 Cu | #8 |
| | | #2 Al | #1 Al | |
| 200 Amps | 2 Inch | 2/0 Cu | 3/0 Cu | #4 |
| | 2 ½ Inch | 4/0 Al | 250 KCM Al | |
| 320/400 Amps | 3 Inch | 400 KCM Cu | 500 KCM Cu | 1/0 |
| | 3 ½ Inch | 600 KCM Al | 700 KCM Al | |

Note: Approved service entrance cable, with weather-proof fittings, may be used between socket and the general service disconnect, where permitted by local authority.

All recommendations for conductor sizes assume a 75°C temperature rating. Larger conductor sizes may be necessary if lower temperature ratings exist. Refer to IEC/NEC 310-16 for proper conductor sizes, in this case.

The following are the recommended insulation types, based on 75°C minimum temperature rating: RH, RHH, RHW, THHW, THW, THWN, THHN, XHHW, USE.

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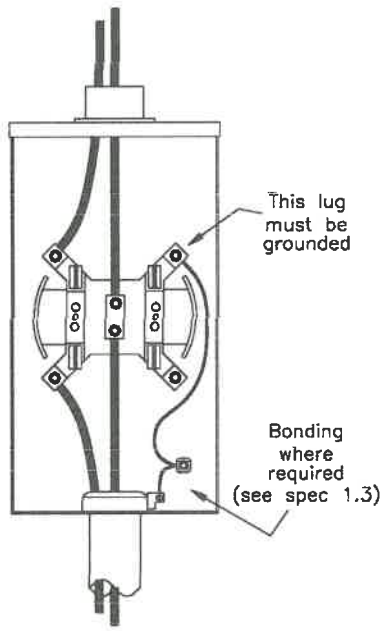
1.11 All meter sockets shall meet the following specifications, unless otherwise stated below.
- 1.11.1 Meter sockets shall be designed for use with standard detachable type watthour meters.
- 1.11.2 Sockets shall meet the requirements in AEIC, EEI, NEMA Standards for watthour meter sockets.
- 1.11.3 Meter sockets shall have a swing style latch, which will accept padlock or wire style seal.
- 1.11.4 Meter sockets shall be made of aluminum alloy or galvanized steel.
- 1.11.5 Meter sockets shall be of the ringless type.
- 1.11.6 Meter sockets shall be UL listed.
- 1.11.7 Meter sockets shall be provided with concentric knockouts in the back, sides and bottom.
- 1.11.8 All by-passes shall be of the manual, horn or lever type, so arranged that the meter socket cannot be sealed with the by-pass on.
- 1.11.9 Meter sockets shall be provided with a grounding connector for a #6 conductor.
- 1.11.10 Meter sockets shall be plainly marked with the manufacturer's name, catalog number and electrical ratings.

**2. <u>4 JAW - 100 & 200 AMP:</u>**

2.1 Used for the following services:
- 2.1.1 120 volt, 1 phase, 2 wire
- 2.1.2 120/240 volt, 1 phase, 3 wire

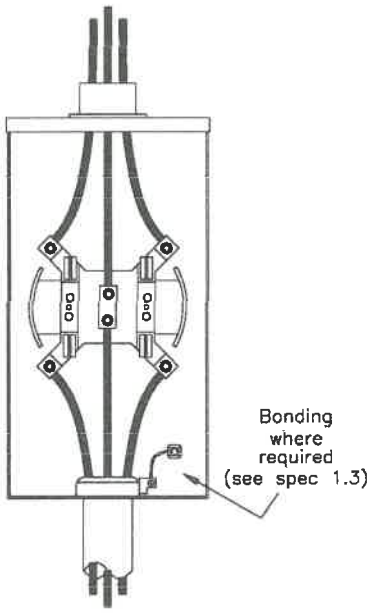
2.2 **<u>Approved Sockets:</u>**
- 2.2.1 Any socket which meets the specifications in 1.11 above, and rated for 100 or 200 amps.

Typical wiring for 2 wire installation




**100a, 120v, 1ph, 2w**

Typical wiring for 3 wire installation



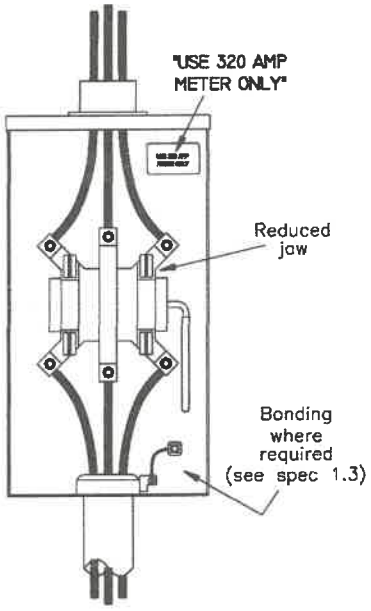

**100/200a, 120/240v, 1ph, 3w**

**ONLY APPROVED METER SOCKETS AS NOTED IN THE SECTIONS BELOW WILL BE ALLOWED IN NIPSCO SERVICE TERRITORY.**

3. **Optional 4 JAW - 100 & 200 AMP Meter Socket:**
   - 3.1.1 Optional Milbank Universal All-In-One Meter Main which has a disconnect and breaker positions built in.
   - 3.1.2 Approved for use:

| Milbank | Catalog Number |
|---|---|
| 100 Amp | U5168-XTL-100-KK |
| 200 Amp | U5168-XTL-200-KK |

4. **4 JAW - 320/400 AMP:**
   - 4.1 Used for the following services:
     120/240 volt, 1 phase, 3 wire
   - 4.2 Approved Sockets:
     - 4.2.1 Sockets shall meet all specifications in 1.11 above.
     - 4.2.2 The right line side location of the 320 amp socket box shall be provided with a reduced jaw.
     - 4.2.3 Meter sockets shall be supplied with a label designating "Use 320 Amp Meter Only".
     - 4.2.4 Bypass shall be of the manual, jaw release, lever type.
     - 4.2.5 Approved for use:




**320/400a, 120/240v, 1ph, 3w**

| Manufacturer | Catalog Number |
|---|---|
| Landis & Gyr / Siemens | 47604-01NI Type HQ-4SUT |
| Milbank | U1779-RRL |
| | U5890-X-2/200-BL (See Note 8.1) |
| | U5059-X-2/200-K3L (See Note 8.1) |
| Durham | UT-H4309 |

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**5. 5 JAW - 200 AMP:**

5.1 Used for the following services:

5.1.1 240 volt, 3 phase, 3 wire (B phase grounded)

5.1.2 120/208 volt, 1 phase, 3 wire (contact Local Operating Office for information)

5.2 Approved Sockets

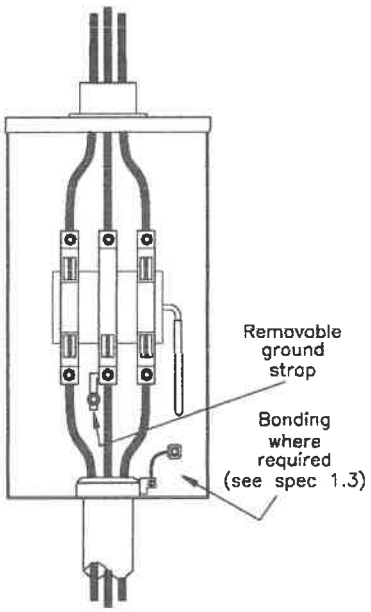
5.2.1 Sockets shall meet all specifications in 1.11 above.

5.2.2 Sockets shall be provided with a removable ground strap on the fifth jaw.

5.2.3 Bypass shall be of the manual, jaw release, lever type.

5.2.4 Approved for use:

| Manufacturer | Catalog Number |
|---|---|
| Landis & Gyr / Siemens | 40005-01QG |
| Milbank | U9550-RL |
| | U5168-XTL-200-KK-5T (See Note 8.2) |
| Durham | UT-H5203... |




**200a, 240v, 3ph, 3w**

**6. 7 JAW - 200 AMP:**

6.1 Used for the following services:

120/208 volt, 3 phase, 4 wire

6.2 Approved Sockets:

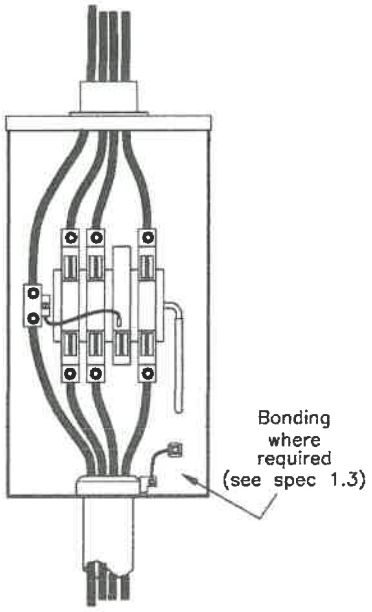
6.2.1 Sockets shall meet all specifications in 1.11 above.

6.2.2 Sockets shall be provided with a strap to connect the neutral to the socket ground jaw.

6.2.3 Bypass shall be of the manual, jaw release, lever type.

6.2.4 Approved for use:

| Manufacturer | Catalog Number |
|---|---|
| Landis & Gyr / Siemens | 40007-01QG |
| Milbank | U9700-RRL |
| Durham | UT-H7203... |




**200a, 120/208v, 3ph, 4w**

## 7. 7 JAW - 320/400 AMP:

7.1 Used for the following services:
120/208 volt, 3 phase, 4 wire

7.2 Approved Sockets:

7.2.1 Sockets shall meet all specifications in 1.11 above.

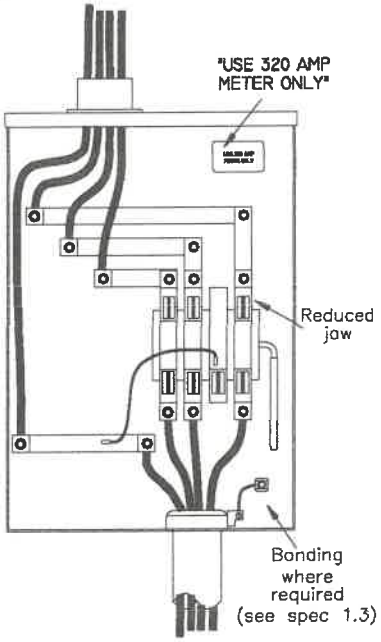
7.2.2 The right line side location of the 320 amp socket box shall be provided with a reduced jaw.

7.2.3 Meter sockets shall be supplied with a label designating "Use 320 Amp Meter Only".

7.2.4 Bypass shall be of the manual, jaw release, lever type.

7.2.5 Approved for use:

| Manufacturer | Catalog Number |
|---|---|
| Landis & Gyr / Siemens | 44707-02 |
| Milbank | U2594-X-K7 |




**320/400a, 120/208v, 3ph, 4w**

## 8. NOTES:

8.1 Optional socket for 120/240 volt, 1 phase, 3 wire, 320 Amp. Has 2-200 Amp main disconnects built in enclosure. Hubs ordered separately.

8.2 Optional socket for 120/208 volt, 1 phase, 3 wire 200 Amp. Has main disconnect and breaker positions built in enclosure. Hubs ordered separately.