



SERVICE ENTRANCE - OVERHEAD

Single & Three Phase
100, 200, & 320/400 Amp

10-01-09
ER 19-240-H
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USE: Arrangement of service equipment to supply electric energy to an overhead, outdoor, self contained meter installation.

PREVIOUS REVISION
10-01-03

ORIGINATED
03-94

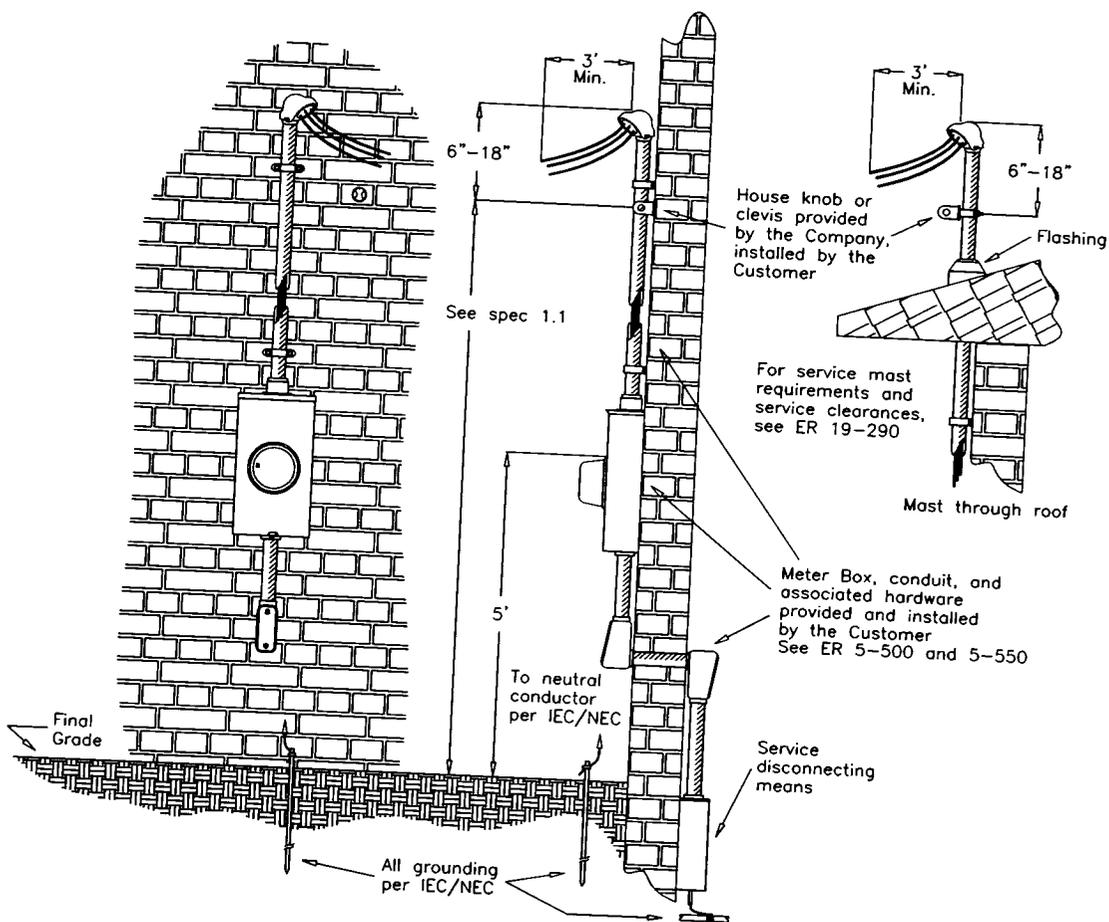
PREVIOUS NUMBER
ER 1-160-A(08-01-89) ER 19-730-A (11-15-94)
ER 19-740 (03-21-94) ER 19-745 (03-21-94)

LATEST REVISION: Removed Anchor from list of Manufacturers.

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



DENOTES REVISION

NORTHERN INDIANA PUBLIC SERVICE COMPANY

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1. GENERAL:

- 1.1 The placement of the house knob or clevis shall be such that it provides proper clearances for the service drop. (see ER 19-290)
- 1.2 The service disconnecting means shall be installed at a readily accessible location nearest the point of entrance of the service entrance conductors.
- 1.3 Bonding bushings and jumpers shall be used around concentric knockouts that are formed so as to impair the electrical connection to ground for service equipment enclosures.
- 1.4 For grounding refer to ER 7-500.
- 1.5 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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- 1.6 All meter sockets shall meet the following specifications, unless otherwise stated below.
- 1.6.1 Meter sockets shall be designed for use with standard detachable type watthour meters.
 - 1.6.2 Sockets shall meet the requirements in AEIC, EEI, NEMA Standards for watthour meter sockets.
 - 1.6.3 Meter sockets shall have a swing style latch, which will accept padlock or wire style seal.
 - 1.6.4 Meter sockets shall be made of aluminum alloy or galvanized steel.
 - 1.6.5 Meter sockets shall be of the ringless type.
 - 1.6.6 Meter sockets shall be UL listed.
 - 1.6.7 Meter sockets shall be provided with concentric knockouts in the back, sides and bottom.
 - 1.6.8 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.
 - 1.6.9 Meter sockets shall be provided with a grounding connector for a #6 conductor.
 - 1.6.10 Meter sockets shall be plainly marked with the manufacturer's name, catalog number and electrical ratings.

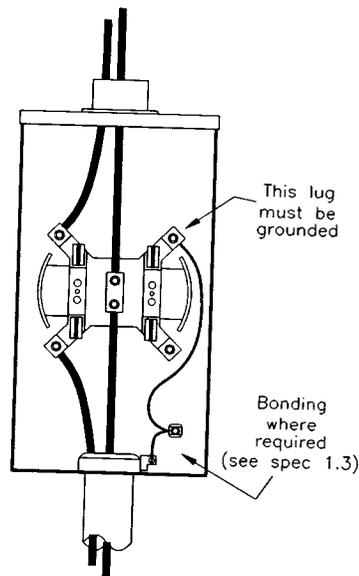
2. 4 JAW - 100 & 200 AMP:

2.1 Used for the following services:

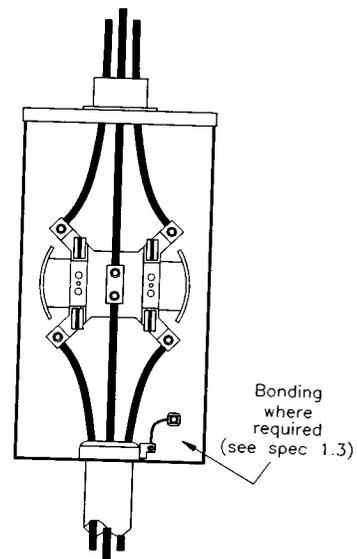
- 2.1.1 120 volt, 1 phase, 2 wire
- 2.1.2 120/240 volt, 1 phase, 3 wire

2.2 Approved Sockets:

Any socket which meets the specifications in 1.6 above, and rated for 100 or 200 amps.



100a, 120v, 1ph, 2w



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

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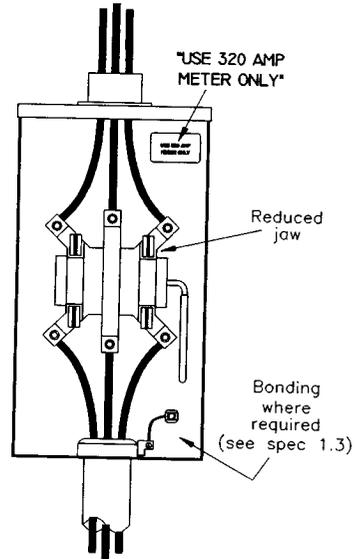
3. 4 JAW - 320/400 AMP:

3.1 Used for the following services:
120/240 volt, 1 phase, 3 wire

3.2 Approved Sockets:

- 3.2.1 Sockets shall meet all specifications in 1.6 above.
- 3.2.2 The right line side location of the 320 amp socket box shall be provided with a reduced jaw.
- 3.2.3 Meter sockets shall be supplied with a label designating "Use 320 Amp Meter Only".
- 3.2.4 Bypass shall be of the manual, jaw release, lever type.
- 3.2.5 Approved for use:

| Manufacturer | Catalog Number |
|--------------|-------------------------|
| Landis & Gyr | 47604-01NI Type HQ-4SUT |
| Milbank | U1779-RRL |
| Durham | 1008191... |



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

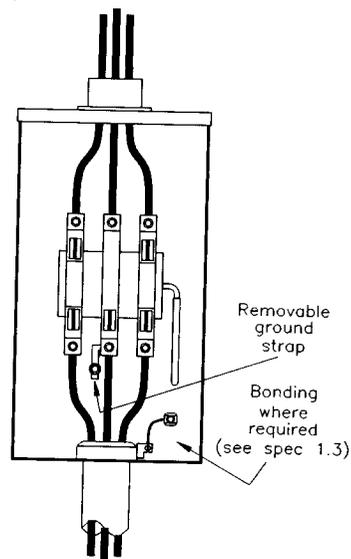
4. 5 JAW - 200 AMP:

4.1 Used for the following services:
4.1.1 240 volt, 3 phase, 3 wire (B phase grounded)
4.1.2 120/208 volt, 1 phase, 3 wire (contact Local Operating Office for information)

4.2 Approved Sockets

- 4.2.1 Sockets shall meet all specifications in 1.6 above.
- 4.2.2 Sockets shall be provided with a removable ground strap on the fifth jaw.
- 4.2.3 Bypass shall be of the manual, jaw release, lever type.
- 4.2.4 Approved for use:

| Manufacturer | Catalog Number |
|--------------|----------------|
| Landis & Gyr | 40005-01QG |
| Milbank | U9550-RL |
| Durham | UT-H5203... |



200a, 240v, 3ph, 3w



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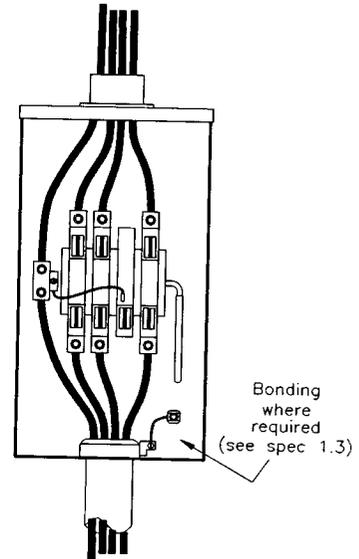
5. 7 JAW - 200 AMP:

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

5.2 Approved Sockets:

- 5.2.1 Sockets shall meet all specifications in 1.6 above.
- 5.2.2 Sockets shall be provided with a strap to connect the neutral to the socket ground 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 | 40007-01QG |
| Milbank | U9700-RRL |
| Durham | UT-H7203... |



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

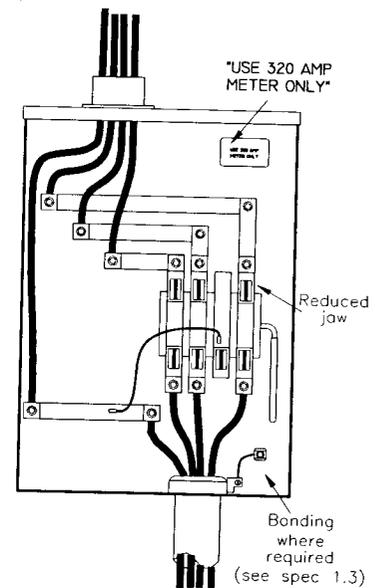
6. 7 JAW - 320/400 AMP:

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 1.6 above.
- 6.2.2 The right line side location of the 320 amp socket box shall be provided with a reduced jaw.
- 6.2.3 Meter sockets shall be supplied with a label designating "Use 320 Amp Meter Only".
- 6.2.4 Bypass shall be of the manual, jaw release, lever type.
- 6.2.5 Approved for use:

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



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