Commercial Netting and Buy-All Meter Drawings up to 2MW

United Illuminating

Overview

- Wiring diagrams are classified based on the existing service that the distributed generation will be connecting to
- Chart to the right from the UI Guidebook of Requirements for Interconnection outlines the type of metering required for new and existing services
- “DG” in all drawings stands for Distributed Generation

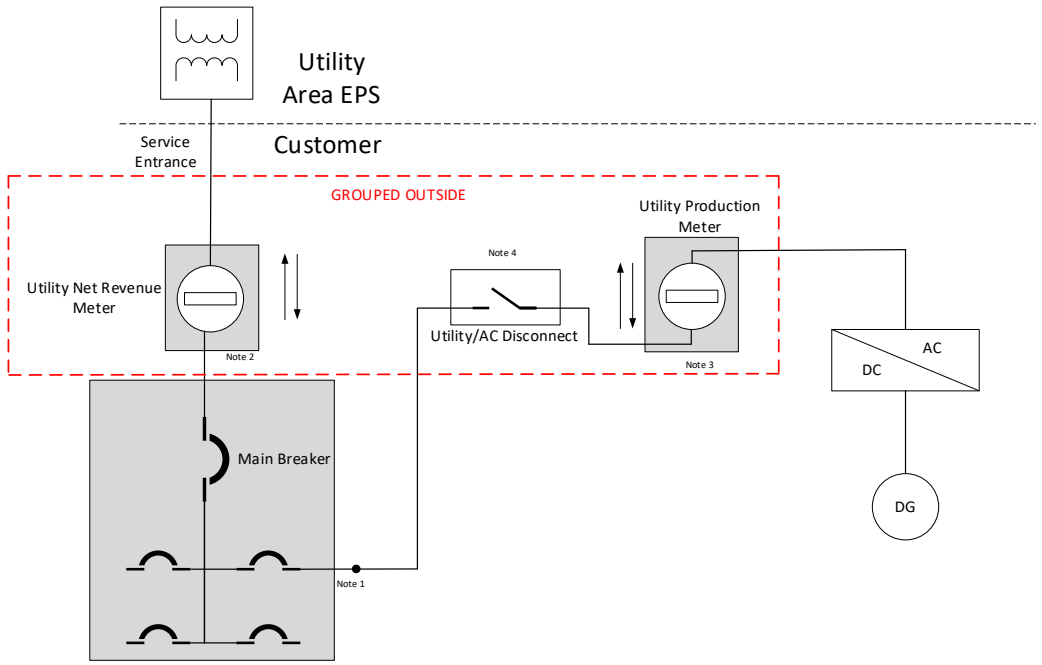
10.3 Metering Equipment

Table of available metering equipment:

Service Type	Service Voltage	# Phases	# Wires	Service Amperes	# Meter Terminals	Hot/Cold Sequence
Self-Contained Metering (320 A continuous and below)						
Residential/ Commercial	120/240	1	3	100/200/ 400	4	Hot *
Residential/ Commercial	120/208	1	3	100 / 200	5	Hot
Commercial Network	120/208	1	3	100 / 200	5	Cold
Commercial	277/480	1	3	100 / 400	5	Cold
Commercial	120/208	3	4	200 / 400	7	Hot *
Commercial Network	120/208	3	4	200 / 400	7	Cold
Commercial	277/480	3	4	200 / 400	7	Cold
Transformer-Rated Metering						
Residential	120/240	1	3	Above 400	6	Cold
Commercial	120/208	1	3	Above 400	8	Cold
Commercial Network	277/480	3	4	Above 400	13	Cold
Commercial	120/208 277/480	3	4	Above 400	13	Cold
Fire Pump	120/208 277/480	3	4	Any	13	Cold

HOT SEQUENCE: METER-SWITCH-FUSE
COLD SEQUENCE: SWITCH-FUSE-METER
* CLASS 320 METERS USED IN MULTI-METER BANKS MUST BE COLD SEQUENCE

Netting Tariff: Self Contained Hot Sequence



Actual installation may vary based NEC and town inspector requirements.
United Illuminating will install the production meter and revenue meter
with an Advanced Meter Infrastructure (AMI) meter.

- **Note 1**
- All interconnection points for the netting tariff are required to be placed behind the utility meter
- >>> No connections are to be made within the revenue meter socket or in utility instrument transformer compartment. <<<

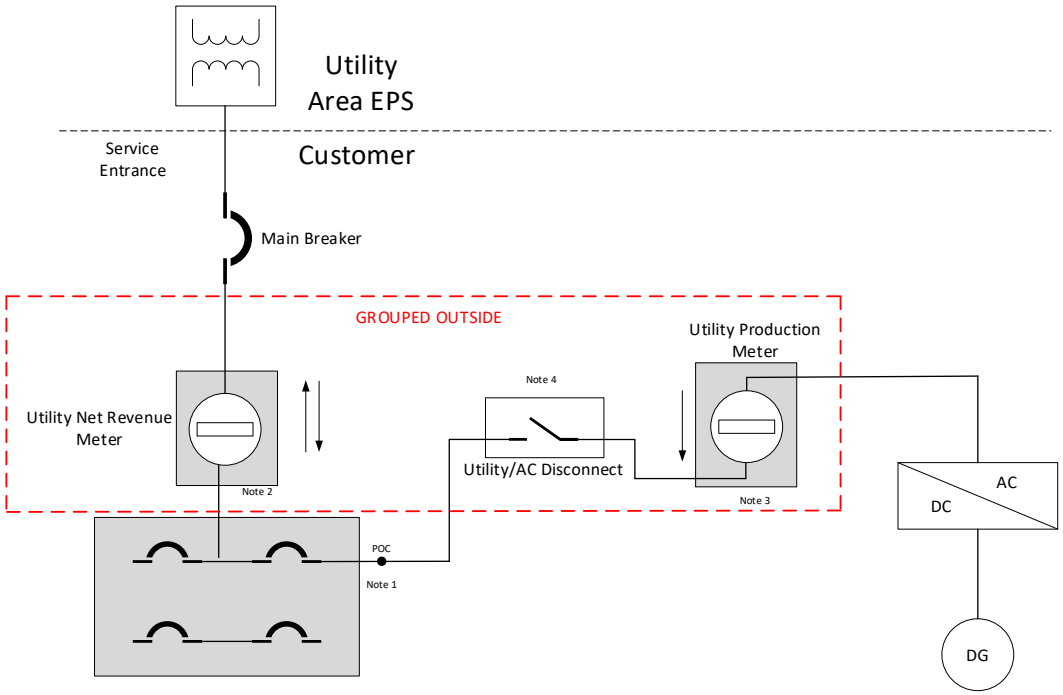
- **Note 2**
- For utility meters located inside customers facility, the interconnecting customer will be required to upgrade and have the meter relocated outside the customers facility near both the production meter and the utility disconnect switch.

- **Note 3**
- **Production meter socket is required to be wired top (line) side inverter, bottom (load) side utility.**
- The utility AC emergency disconnect switch is required to be located on the ground level within vicinity of the utility revenue meter where our utility personal will have 24 / 7 access to it.
- Socket for production meter follows the same guidelines as revenue meter per the UI Guidebook of Requirements for Interconnection. Socket must have a lever bypass. Line and load conductors for the production meter cannot be in the same raceway (i.e. trough). If neutral isolation is required by the local inspector, then a neutral isolation kit from the same manufacturer of the socket must be used. Splices are not allowed.

- **Note 4**
- The utility AC emergency disconnect switch is required to be located ahead of the Production Meter where utility personal will be able to isolate the metering circuit.

- **Special Notes**:
- All meters and switches are required to be grouped unless interconnection contractor request is granted a written variance

Netting Tariff: Self-Contained Cold Sequence



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- **Note 4**
- The utility AC emergency disconnect switch is required to be located ahead of the Production Meter where utility personal will be able to isolate the metering circuit.

- **Special Notes**:
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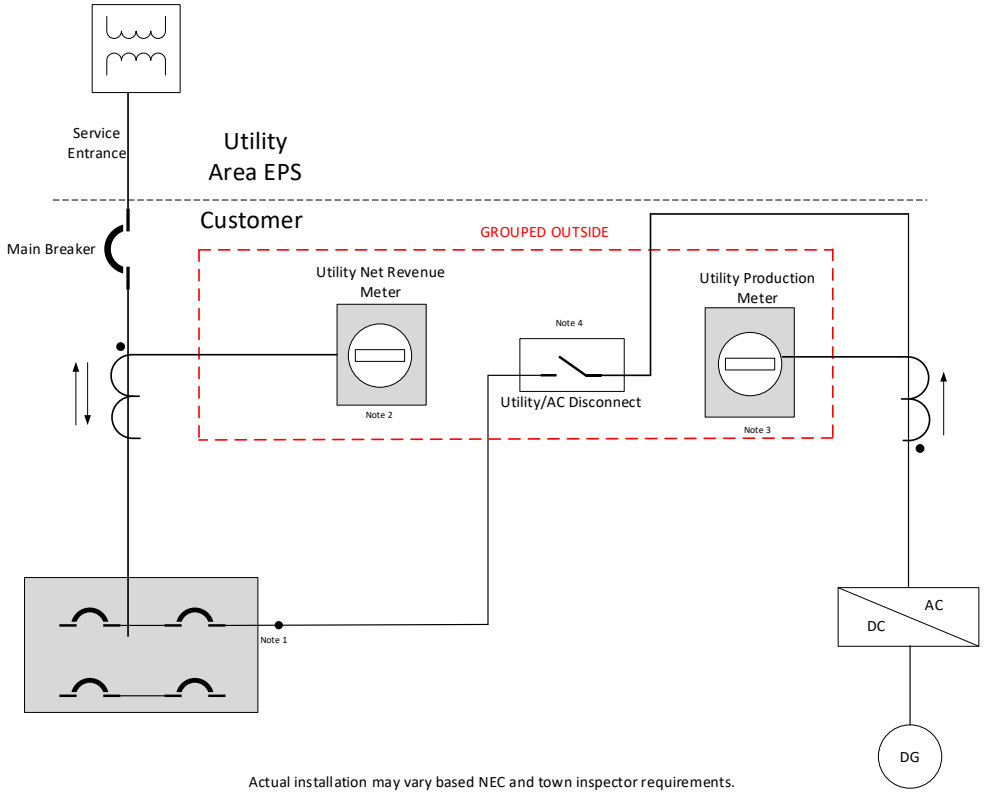
Netting Tariff: Transformer rated



Actual installation may vary based NEC and town inspector requirements. United Illuminating will install the production meter and revenue meter with an Advanced Meter Infrastructure (AMI) meter.

Note 1

- All interconnection points for the netting tariff are required to be placed behind the utility meter
- >>> No connections are to be made within the revenue meter socket or in utility instrument transformer compartment. <<<

Note 2

- For utility meters located inside customers facility, the interconnecting customer will be required to upgrade and have the meter relocated outside the customers facility near both the production meter and the utility disconnect switch.

Note 3

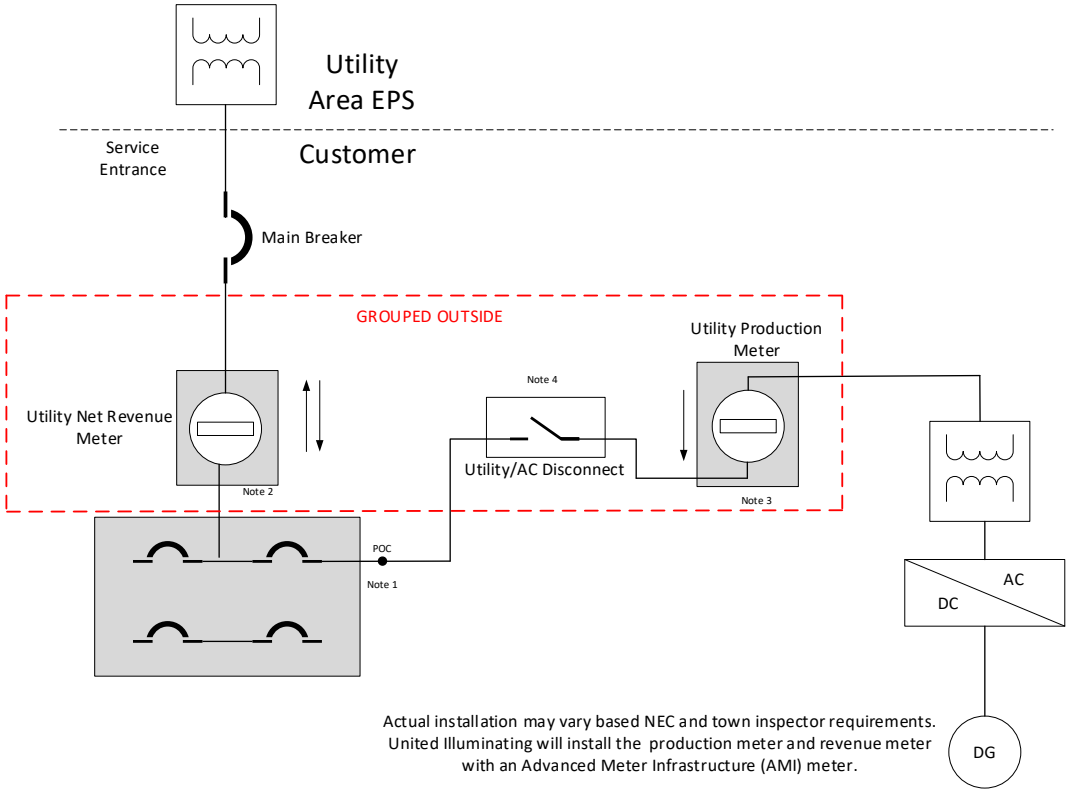
- **Production meter CT cabinet must be labelled with LINE facing the generation.**
- The utility AC emergency disconnect switch is required to be located on the ground level within vicinity of the utility revenue meter where our utility personal will have 24 / 7 access to it.
- Socket for production meter follows the same guidelines as revenue meter per the UI Guidebook of Requirements for Interconnection. Socket must have a lever bypass. Line and load conductors for the production meter cannot be in the same raceway (i.e. trough). If neutral isolation is required by the local inspector, then a neutral isolation kit from the same manufacturer of the socket must be used. Splices are not allowed.

Note 4

- The utility AC emergency disconnect switch is required to be located ahead of the Production Meter where utility personal will be able to isolate the metering circuit.

- **Special Notes**:
- All meters and switches are required to be grouped unless interconnection contractor request is granted a written variance

Netting Tariff with DG Transformer



Note 1

- All interconnection points for the netting tariff are required to be placed behind the utility meter
- >>> No connections are to be made within the revenue meter socket or in utility instrument transformer compartment. <<<

Note 2

- For utility meters located inside customers facility, the interconnecting customer will be required to upgrade and have the meter relocated outside the customers facility near both the production meter and the utility disconnect switch.

Note 3

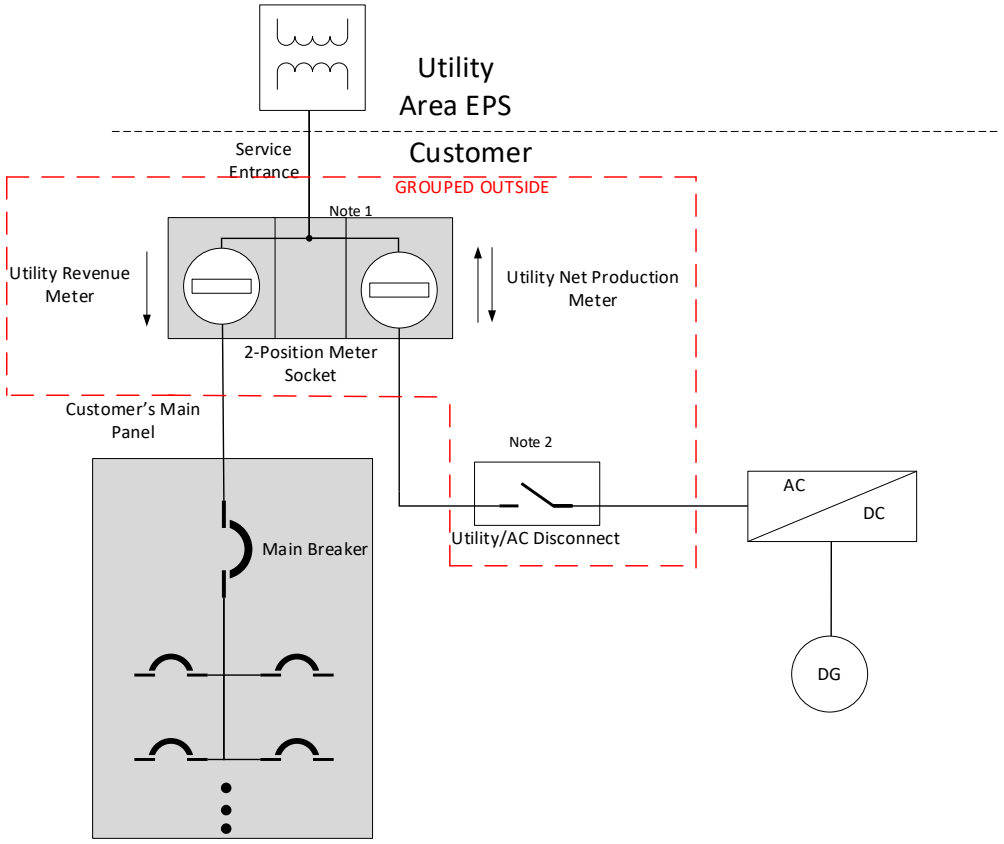
- **Production meter socket is required to be wired top (line) side inverter, bottom (load) side utility.**
- The utility AC emergency disconnect switch is required to be located on the ground level within vicinity of the utility revenue meter where our utility personal will have 24 / 7 access to it.
- Socket for production meter follows the same guidelines as revenue meter per the UI Guidebook of Requirements for Interconnection. Socket must have a lever bypass. Line and load conductors for the production meter cannot be in the same raceway (i.e. trough). If neutral isolation is required by the local inspector, then a neutral isolation kit from the same manufacturer of the socket must be used. Splices are not allowed.
- Production meter should be installed at the same voltage as the service

Note 4

- The utility AC emergency disconnect switch is required to be located ahead of the Production Meter where utility personal will be able to isolate the metering circuit.

- **Special Notes**:
- All meters and switches are required to be grouped unless interconnection contractor request is granted a written variance

Buy-All: Self-Contained Hot-Sequence



Actual installation may vary based NEC and town inspector requirements. United Illuminating will install the production meter and revenue meter with an Advanced Meter Infrastructure (AMI) meter.

Note 1

- For Utility meters located inside customers facility, the interconnecting customer will be required to upgrade and have the meter(s) relocated outside the customers facility near both the net production meter and the utility disconnect switch.
- Utility net production meter socket must follow the same guidelines as a typical revenue meter outline in the UI Guidebook of Requirements
- Additional meter must be on the same building as the utility revenue meter
- Service increase may be required to accommodate for the addition of an extra meter. (i.e. 100A service may need to increase to 200A)

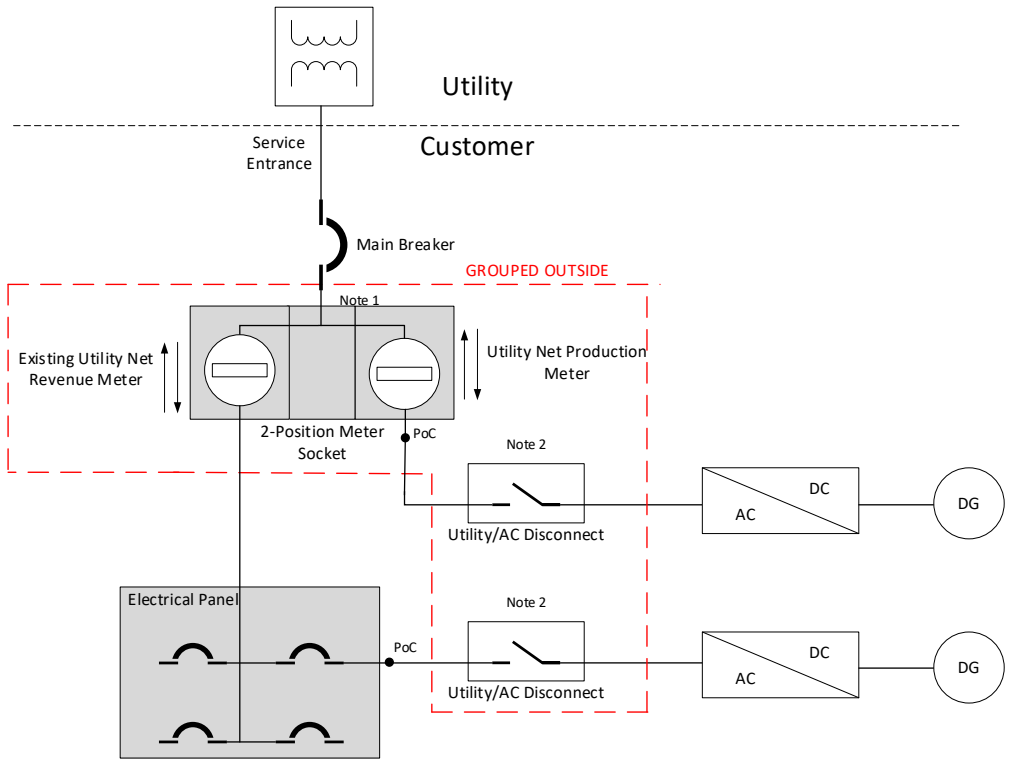
Note 2

- The utility AC emergency disconnect switch is required to be located on the ground level within vicinity of the utility revenue meter where our utility personal will have 24 / 7 access to it.
- AC Disconnect must have over-current protection capability (i.e., fuse or breaker) if no other protection is installed.

Special Notes:

- All meters and switches are required to be grouped unless interconnection contractor request and is granted a written variance

Buy-All: Self-contained Cold-Sequence



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Note 1

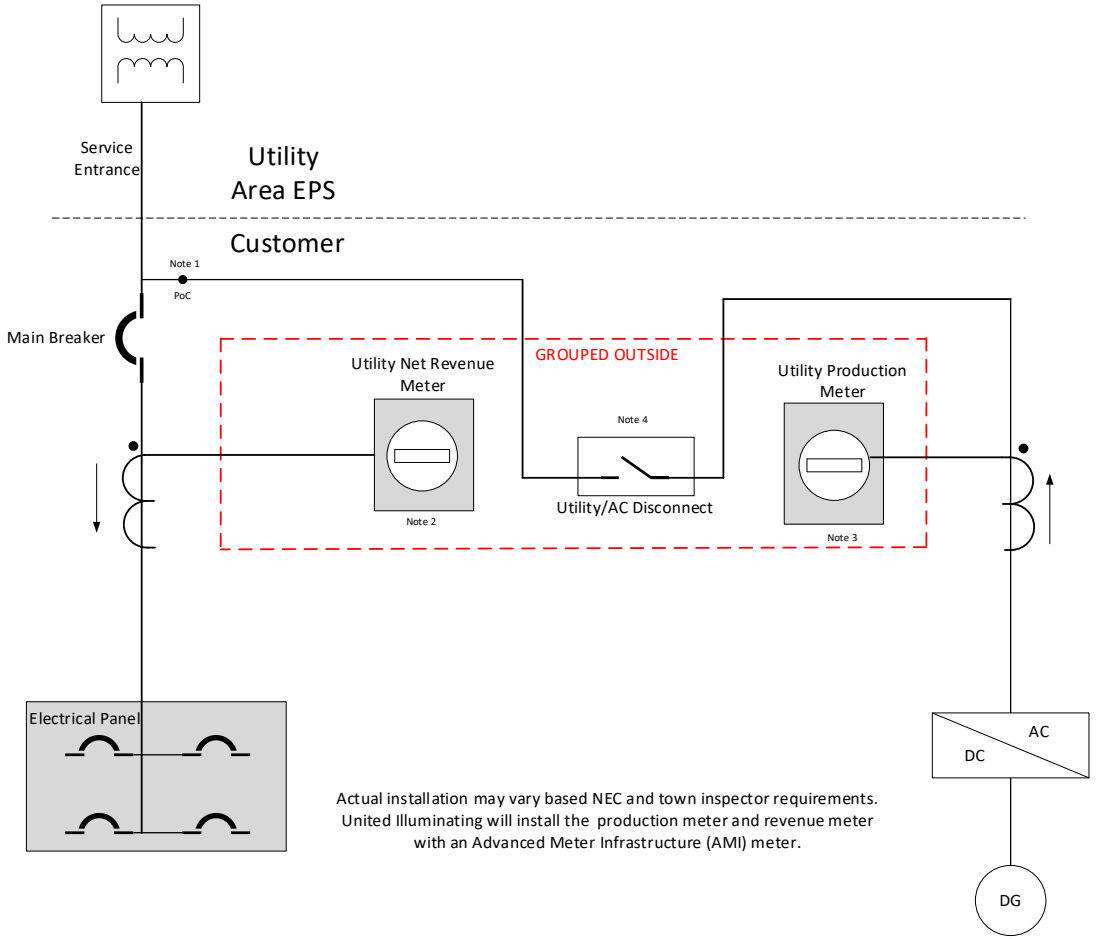
- For Utility meters located inside customers facility, the interconnecting customer will be required to upgrade and have the meter(s) relocated outside the customers facility near both the net production meter and the utility disconnect switch.
- Utility net production meter socket must follow the same guidelines as a typical revenue meter outline in the UI Guidebook of Requirements
- Additional meter must be on the same building as the utility revenue meter
- Service increase may be required to accommodate for the addition of an extra meter. (i.e. 100A service may need to increase to 200A)
- Class 320 meter sockets used in multi-meter banks must be cold sequence

Note 2

- The utility AC emergency disconnect switch is required to be located on the ground level within vicinity of the utility revenue meter where our utility personal will have 24 / 7 access to it.

- **Special Notes**:
- All meters and switches are required to be grouped unless interconnection contractor request and is granted a written variance

Buy-All: Transformer rated



Actual installation may vary based NEC and town inspector requirements. United Illuminating will install the production meter and revenue meter with an Advanced Meter Infrastructure (AMI) meter.

Note 1

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Note 2

- For utility meters located inside customers facility, the interconnecting customer will be required to upgrade and have the meter relocated outside the customers facility near both the production meter and the utility disconnect switch.

Note 3

- **Production meter CT cabinet must be labelled with LINE facing the Utility.**
- The utility AC emergency disconnect switch is required to be located on the ground level within vicinity of the utility revenue meter where our utility personal will have 24 / 7 access to it.
- CT cabinet for production meter follows the same guidelines as revenue meter per the UI Guidebook of Requirements for Interconnection.

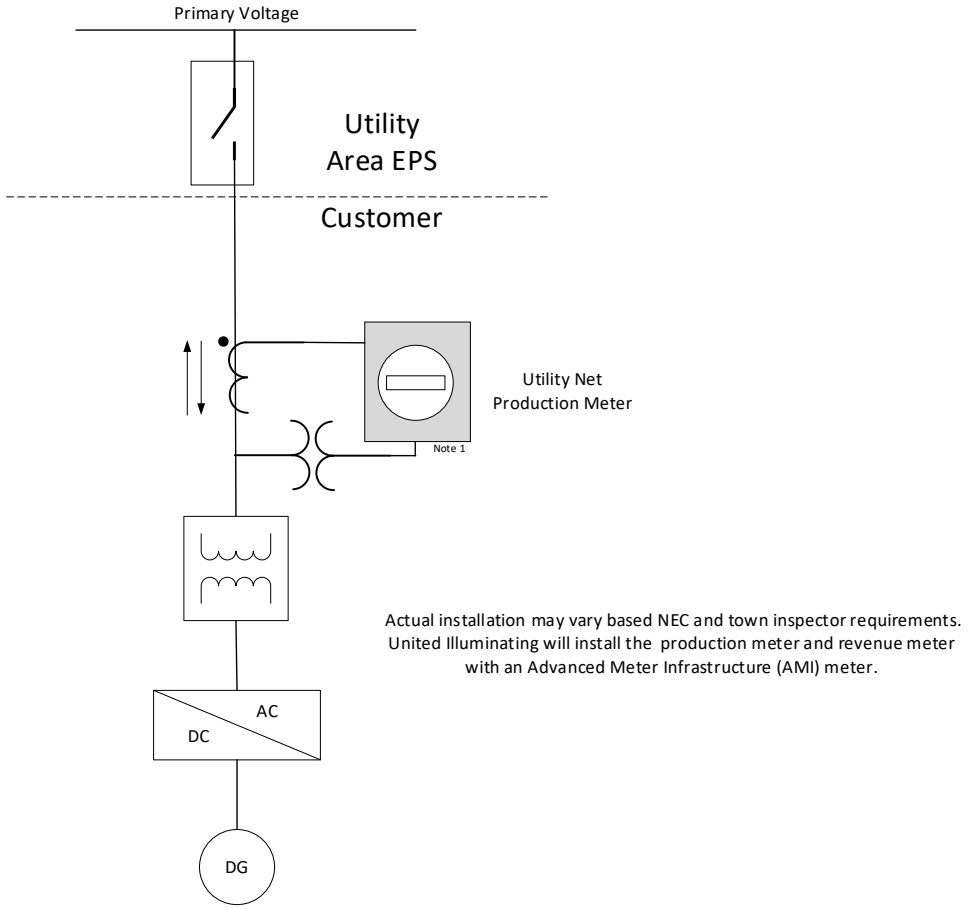
Note 4

- The utility AC emergency disconnect switch is required to be located ahead of the Production Meter where utility personal will be able to isolate the metering circuit.
- Customer's main breaker cannot be used in lieu of a utility disconnect for distributed generation
- Utility/AC disconnect must have overcurrent protection (i.e., fuse or breaker) if no other protection exists

Special Notes:

- All meters and switches are required to be grouped unless interconnection contractor request is granted a written variance

Buy-All: Stand-Alone Installation



Note 1

- Equipment specifications for metering will be given upon engineering review

UI Meter Requirements

Meter Form	Note	Voltage	No. Phases	No. Wires	Amperage
2S	Self-Contained	120/240	1	3	200A and below
2S CL 320	Self-Contained CL 320	120/240	1	3	400A and below
25S	Self-Contained	120/208	1	3	200A and below
12S	Self-Contained	240V or 480V	3	3	200A and below
12S	Self-Contained CL 320	240V or 480V	3	3	400A and below
16S	Self-Cont (3 ph)	120/208 or 277/480 or High-leg Delta	3	4	200A and below
16S CL320	Self-Cont (3 ph) CL 320	120/208 or 277/480 or High-leg Delta	3	4	400A and below
4S	Transformer Rated (1 ph)	120/240	1	3	Up to 1200A
5S	Transformer Rated	240V or 480V	3	3	Up to 1200A
5S	Transformer Rated	240V or 480V	3	3	Greater than 1200A
9S	Transformer Rated	120/208 or 277/480 or High-leg Delta	3	4	Up to 1200A
9S	Transformer Rated	120/208 or 277/480 or High-leg Delta	3	4	Greater than 1200A