



TESCO METERING

# Meter Socket Adapters

## Design, Testing, Implementation, and Best Practices for Utilities

NYSEMEC

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Meter Socket Adapters are a decades old technology in the utility space that has seen recent growth with technology improvements, support for DER applications, and regulatory driven policies. Progress has been driven from current OEMs with new OEMs emerging recently.





# What is a Meter Socket Adapter (MSA) ?

- *“A meter socket adapter is an enclosed construction with blades and jaws intended for installation between a meter socket and the utility meter...The typical meter socket adapter is a circular ‘collar’ type device...utilized in many different applications, such as meter conversions, transfer of meter position, distributed energy connections, surge protection, metering and communication...”*
- Physical / electrical aspects are covered by:
  - ANSI/NEMA C12.7, Requirement for watthour meter sockets
  - C12.10, Electromechanical watthour meters
  - UL 414, Meter Sockets (including SA, SB, SC)
- Various OEMs produce devices with different applications, such as meter form conversion, surge suppression, AMI communications, advanced analytics, generator backup, DER backup, and DER interconnection.





# Testing and Certification

## NRTL Testing to UL 414

- MSAs must undergo testing and review by a Nationally Recognized Testing Laboratory (NRTL) to achieve certification. This includes design review, construction review, performance testing, and production facility audits. OSHA currently recognizes 22 different NRTLs. The 3 most common in this space are UL, ETL, and CSA.
- A litany of tests are included to validate product compliance to UL 414. Some of these tests include flammability, crushing resistance, resistance to impact, mold stress relief distortion, rain test, moment test, and heating test.



<https://www.osha.gov/nationally-recognized-testing-laboratory-program/current-list-of-nrtls>



# Applicable UL Standards

## UL 414

- MSAs are listed to UL 414 which is an applicable standard for meter sockets and meter socket adapters. The standards of UL 414 refer to and incorporate other UL standards. UL 414 has recently undergone several revisions and has a newly added SC. MSAs are certified to meet all the associated standard sections referenced as a part of UL 414.

Revisions and Related Documents

Revisions Red Line Std. (17)	CSDS Proposals (18)	UL LLC CRD (2)	Other Updates (1)	Referenced Standards (0)	Reverse Referenced Standards (8)
<b>Date</b>					
March 01, 2024	<a href="#">Redline</a>	<a href="#">Revision</a>			
July 12, 2023	<a href="#">Redline</a>	<a href="#">Revision</a>			
June 22, 2022	<a href="#">Redline</a>	<a href="#">Revision</a>			
December 14, 2020	<a href="#">Redline</a>	<a href="#">Revision</a>			
October 26, 2020	<a href="#">Redline</a>	<a href="#">Revision</a>			
April 22, 2020	<a href="#">Redline</a>	<a href="#">Revision</a>			
July 24, 2018		<a href="#">Revision</a>			
July 03, 2018	<a href="#">Redline</a>	<a href="#">Revision</a>			
June 29, 2018	<a href="#">Redline</a>	<a href="#">Revision</a>			

Revisions and Related Documents

Revisions Red Line Std. (17)	CSDS Proposals (18)	UL LLC CRD (2)	Other Updates (1)	Referenced Standards (0)	Reverse Referenced Standards (8)
<b>UL 414 is referenced in the following list of UL Standards</b>					
<b>Standard</b>	<b>Edition</b>	<b>Title</b>			
489	14	<a href="#">Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures</a>			
489B	1	<a href="#">Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures for Use with Photovoltaic (PV) Systems</a>			
775	3	<a href="#">Standard for Graphic Arts Equipment</a>			
845	6	<a href="#">Motor Control Centers</a>			
857	14	<a href="#">Busways</a>			
1449	5	<a href="#">Surge Protective Devices</a>			
2735	2	<a href="#">Electric Utility Meters</a>			
2745	2	<a href="#">Outline of Investigation for Meter Socket Adapters for Communication</a>			



# Why a Meter Socket Adapter (MSA) ?

## Electrification and isolation for home backup can be costly.

For residential buildings and the end consumer, electrification may involve:

- ASHP – Air Source Heat Pump in place of gas / oil heat
- Electric hot water – on demand, tank, via heat pump
- EVSE – Electric Vehicle Supply Equipment – EV Chargers
- BESS - Battery Energy Storage Systems
- PV Solar – residential PV solar systems
  
- Many of these technologies have added cost for home wiring, require main / service panel upgrades (MPUs), and involve challenges with physical location of assets.
  - The global market in the US exceeds \$100 billion!
  
- MSAs can enable significant cost savings as we move to electrification by reducing labor costs and standardizing installations.
  
- In territories with a meter main combination panel, costs to add isolation can require a completely new panel, circuit relocation, and further equipment. Adding an MSA can negate all of this.

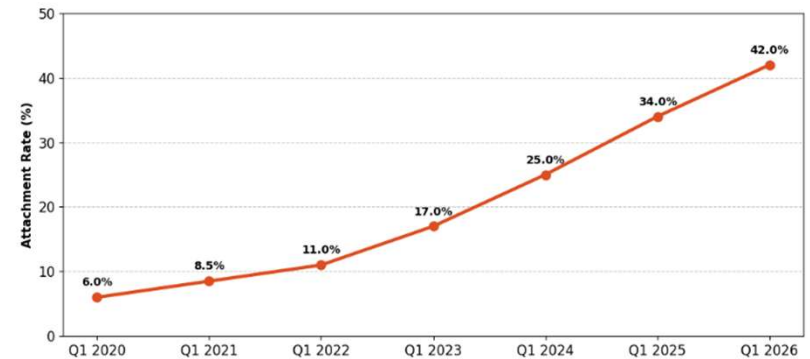


# Why a Meter Socket Adapter (MSA) ?

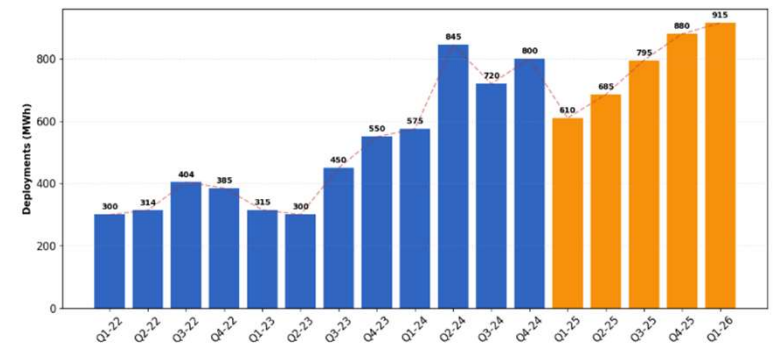
## Battery Attachment Rates are Rapidly Growing

- National residential solar plus storage attachment rates reached 42% in Q1 2026 up from 34% in Q1 2025. Most of this is attributed to the “net billing” transition in major markets and the emergence of more sophisticated Virtual Power Plant (VPP) incentives.
- Sunrun (one of the largest national DER installers) reported a record 71% attachment rate in their Q4 2025 earnings.
  - Hawaii is at 100% attachment, California at 92%, and the rest of the country is above 20% - doubling in the past year with more storage friendly rates in the Northeast and Midwest ISOs.

U.S. Residential Solar-plus-Storage Attachment Rate Trend (Q1 2020 - Q1 2026)



U.S. Residential Storage Deployments (MWh) - Quarterly Performance



<https://seia.org/research-resources/solar-market-insight-report-2025-year-in-review/>  
<https://seia.org/research-resources/energy-storage-market-outlook-q1-2026/>

<https://investors.sunrun.com/news-events/press-releases/detail/364/sunrun-reports-fourth-quarter-and-full-year-2025-financial>  
<https://pv-magazine-usa.com/2026/02/25/solar-and-storage-to-lead-record-breaking-86-gw-of-new-u-s-capacity-in-2026/>

## Commercial MSAs for Backup via BESS (Customer Owned MSAs)

- Tesla Backup Switch
  - <https://www.tesla.com/support/energy/powerwall/learn/tesla-backup-switch>
- Enphase IQ Collar
  - <https://enphase.com/store/storage/gen4/iq-meter-collar>
- ConnectDER IslandDER
  - <https://connectder.com/products/islandder>
- Sigen Backup Switch
  - <https://www.sigenergy.com/us/products/backup-switch>





# MSAs in the Market

## MSAs for Backup via Portable Generator (Mix of Customer and Utility Owned)

- TESCO BPTM

- <https://www.tescometering.com/wp-content/uploads/2025/07/BPTM-Brochure.pdf?srsId=AfmBOoqxiNjwkxoojtC2qWq9010mjDROn5VMwu69qRdaeB-NukS9tk2a>



- Generlink

- <https://shopgenerlink.com/>



- Marwell Quick-Set Generator Adapter

- <https://marwellcorp.com/wp-content/files/catalog/PAGE-53.pdf>



MARWELL QUICK-SET



GEN-SET with meter storage

## Commercial MSAs for DER Interconnection (Mix of Customer & Utility Owned)

- ConnectDER Solar MSA
  - <https://connectder.com/products/solar-meter-adapter/>
- ConnectDER EV MSA
  - <https://connectder.com/products/ev-meter-socket-adapter/>
- SPAN Edge (Coming soon)
  - <https://www.span.io/products/edge>
- *\*Devices that support an AC branch circuit connection generally require a separate Neutral attachment which can complicate the installation.\**





# Utility Approval

**A Utility must “approve” an MSA before it may be installed in the meter socket containing the billing meter.**

- There are two models for “approval here” – utility direct engagement and / or approval as a result of regulatory framework.
  - Some utilities may understand the value of the technology for MSAs and directly approve.
    - IE ComEd, Green Mountain Power, Hawaii Electric, AEP West Virginia
  - Others may wait for regulatory guidance or will act only after regulatory framework is in place.
    - IE Eversource, Delmarva Power, Southern California Edison
- Once approved, the MSA Manufacturer and model # is added to an Approved List / Utility Handbook.

PG&E

Account Outages & Safety Save Energy & Money Business Resources Clean Energy Sign In

Third-party meter socket adapters

Device Type	Approval Status
<a href="#">ConnectDER IslandDER</a>	Pilot in progress*
<a href="#">ConnectDER EV</a>	Pilot in progress*
<a href="#">Enphase IQ Collar</a>	Approved – Pilot completed
<a href="#">NeWorld Energy Quarterback</a>	Pilot in progress
<a href="#">Tesla Backup Switch</a>	Approved – Pilot completed

\*These MSAs are part of a 'select pilot'. Contractors should first contact the device manufacturer and request to join their pilot before submitting a MSA appointment request to PG&E.

PG&E's meter socket adapters

**Note:** These follow different installation and appointment request processes than third-party MSAs. Click on the device links below to learn more.

- [PG&E's Backup Power Transfer Meter](#)
- [PG&E's Green Meter Adapter](#)



## Lack of Utility Approval

**An installer may choose to bypass utility approval and install in a “second socket.”**

- Some installers choose to install a second meter socket in series with the “utility” socket.
- This can increase labor and material costs and negate or reduce the cost savings associated with the MSA.
- Some utilities have pushed installers to this model where there is not direct regulatory action to support utility approval.





# Utility Approval Process

## Test & Evaluate

- Test sample units
- Review NRTL / Standards Listing Reports
- Review Manufacturer Documentation
- Intracompany review
- Regulatory response (if applicable)

## Approve

- Add to utility handbook / approved list with model numbers
- Update training documentation for meter install / exchange / removal
- Add an option for MSA selection within DER interconnection applications
- Inform field crews of new customer owned device
- Initiate pilot (if applicable)

## Market is Opened

- Complete pilot (if applicable) and work with OEM
- Manufacturer begins sales in the approved service territory
- Interconnection applications are processed with an MSA
- Customer Installs begin
- Products are promoted to support clean energy goals, electrification, and LMI programs / initiatives



# Utility Installation Models

## Utility Model

- Utility personnel and authorized utility representatives (contractors) are the only parties allowed to remove the utility meter and install the MSA then re-install the utility meter.
- Some have a customer portal to request installation and have a varying SLA timeframe.
- The customer may be charged for the cost of the truck roll.
  - More common with CA IOUs

## Joint Meet

- Utility personnel and authorized utility representatives (contractors) are the only parties allowed to remove the utility meter and re-install the utility meter.
- The installers must meet the utility and install the MSA.
- Utility personnel then re-install the meter and seal the socket.
- Some have a customer portal to request installation and have a varying SLA timeframe.
- The customer may be charged for the cost of the truck roll.

## Installer Model

- Qualified personal (installers) are allowed to remove the utility meter, install the Meter Socket Adapter, and re-install the utility meter.
- Some utilities may audit none, some, or all installs after the installer completes work.
- No added costs to the consumer.
- No delays or schedule challenges.
- Preferred by the consumer and installer.
- Active discussion ongoing for installer certification and training programs for this model.



# Utility Installation Models

## Utility Model

- AZ – APS
- AZ – SRP
- CA – SCE PGE SDGE
- MD – BGE
- WV - APCo

## Joint Meet

- AZ - TEP
- HI - HECO
- IL – Ameren
- NV
- NJ - RECO
- PA - PPL

## Installer Model

- AZ Co-Ops
- CO Munis
- CT - Eversource
- ID
- IL – ComEd
- KS - Evergy
- MD - Delmarva
- NJ – ACE PSEG NJ FE
- PA - PECO
- NA
- VT



# Regulatory Landscape

- Legislation and Regulatory proceedings continue to be lead by DER industry associations, ConnectDER, Tesla, and now Enphase.
- Markets with higher BESS attachment rates to solar PV have strong demand drivers. Markets with rising utility rates, changing NEM rates, and more frequent outages are also driving demand for MSAs.
- Examples of current political environment with regards to regulatory efforts in support of MSAs:

## Existing Framework

- Arizona
- California
- Colorado
- Connecticut
- Illinois
- Maryland
- Massachusetts
- Nevada
- New jersey
- Vermont
- Washington DC

## Pending Framework

- Delaware
- New York
- New Hampshire
- Maine

## Lobbying for Framework

- Michigan
- Ohio
- Oregon
- Pennsylvania
- Texas
- Puerto Rico





# TESCO Solutions - BPTM

## Solution: The Backup Power Transfer Meter (BPTM)

### Key Features:

- **Utility-Owned & Approved:** Installed directly in utility's electric meter socket, eliminating third-party concerns.
- **Automatic Switchover:** Seamlessly switches to generator power when utility power is lost and back when restored.
- **Safety Protections:** Includes **overload protection, back feed prevention, and surge mitigation.**
- **No Extension Cords Required:** Powers the home safely through the main breaker panel.
- **Ease of Installation:** Typically installed in under **45 minutes** by utility certified personnel.
- **Versatility:** Compatible with **higher-amperage generators, solar panels, battery walls, and EV power sources.**

### Advantages Over Other Solutions:

- More **cost-effective** than manual transfer switches.
- Avoids the risks associated with **DIY setups and extension cords.**
- **Maintains compliance** with utility-grade safety standards.

**The utilities that plan for innovation today will control their destiny tomorrow.**





## Questions and Discussion



Dan Falcone

*Vice President Engineering, Product, & Support*

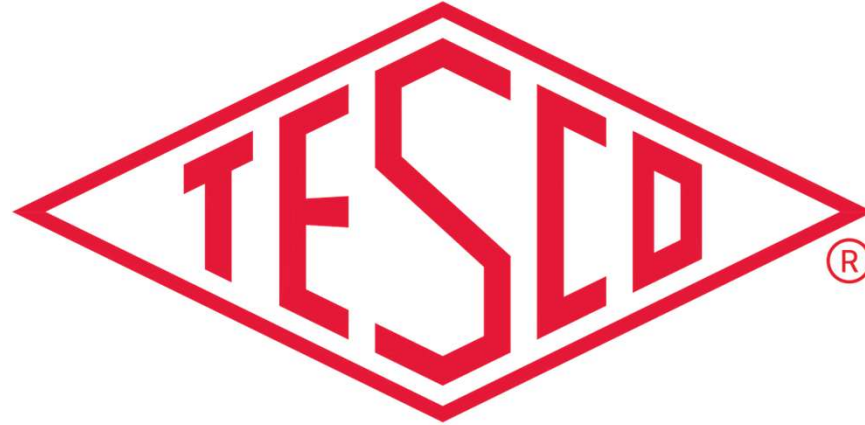
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**ISO 9001:2015 Certified Quality Company**  
**ISO 17025:2017 Accredited Laboratory**



**TESCO METERING**




# UL 414 Testing

Hazard	Purpose	Tests
Installation Safety	<ul style="list-style-type: none"> <li>• Safe installation for trained installer</li> <li>• Fit for purpose for installation in Meter Socket and with a Meter</li> <li>• Resistant to environmental factors</li> </ul>	<ul style="list-style-type: none"> <li>• Construction Review</li> <li>• Markings Review</li> <li>• Installation Manual Review,</li> <li>• Insertion and Withdrawal Force for Meter Jaws</li> <li>• Strength Test of Insulating Base and Support</li> <li>• Rain Test</li> <li>• Ball Impact</li> <li>• Crushing Resistance</li> </ul>
Thermal Safety	<ul style="list-style-type: none"> <li>• Resistance to fire</li> <li>• No risk of fire from internal sources</li> <li>• Controlled heat for adjacent structures and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Construction Review</li> <li>• Flammability</li> <li>• Heat Rise</li> <li>• Short Circuit</li> <li>• Dielectric Voltage Withstand</li> </ul>
Electrical Safety	<ul style="list-style-type: none"> <li>• No risk of electrocution from exposed live parts</li> <li>• Proper grounding</li> <li>• Internal insulation and clearances to prevent short circuits</li> </ul>	<ul style="list-style-type: none"> <li>• Construction Review</li> <li>• Mold Stress Relief Distortion</li> <li>• Dielectric Voltage Withstand</li> <li>• Bonding Continuity</li> <li>• Short Circuit</li> <li>• Ball Impact</li> <li>• Crushing Resistance</li> <li>• Rain Test</li> </ul>

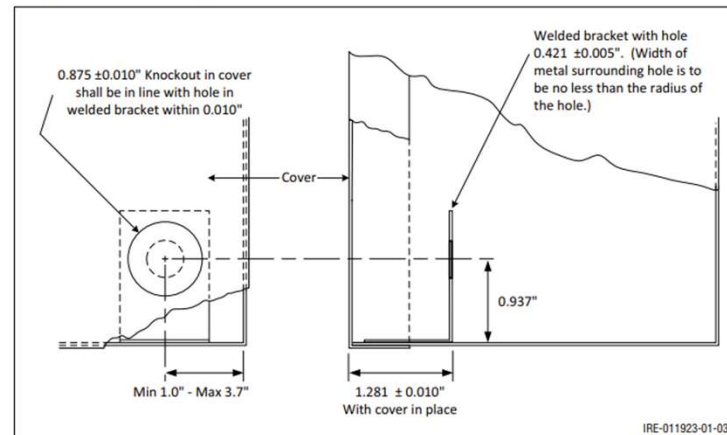


# UL 414 Testing

Test	Test Criteria	Applicable Standard (Clause)
Construction Review	<ul style="list-style-type: none"> <li>Ensure all components and materials are  and/or meet corresponding UL® standards.</li> <li>Measure that creepage and clearances for all electrical conductors meet or exceed minimum requirements.</li> <li>Confirm that insulation thickness and bend radius of all wire conductors meet or exceed the minimum requirement.</li> <li>Verify that dimensions are compatible with Meters and Meter Sockets.</li> </ul>	UL 414 (3-12) UL 414A (SA2) UL 414B (SB5-SB7)
Flammability	<ul style="list-style-type: none"> <li>Ensure material does not sustain flame or produce flaming debris.</li> <li>Ensure exposure to flame does not result in opening that could expose live parts.</li> </ul>	UL 746C (52)
Crushing Resistance	<ul style="list-style-type: none"> <li>Ensure exposed surface of the product resists to crushing force of at least 100 lbs.</li> </ul>	UL 746C (55)
Resistance to Impact	<ul style="list-style-type: none"> <li>Ensure exposed surface of the product resists to impact of at least 5 ft-lbs (3 different locations).</li> </ul>	UL 746C (56)
Mold Stress Relief Distortion	<ul style="list-style-type: none"> <li>Ensure that the product does not shrink or distort in a way that reduces clearances, expose live parts to contact, or cause interference with the operation of the product, following heating at 10C above maximum operating temperature.</li> </ul>	UL 746C (61)
Rain Test	<ul style="list-style-type: none"> <li>Ensure no water from simulated rain enters the enclosure above the lowest live part or terminal.</li> <li>Ensure no water comes in contact with live parts or insulating material.</li> </ul>	UL 414 (17)
Insertion and Withdrawal Force for Meter Jaws	<ul style="list-style-type: none"> <li>Ensure no operation (insertion or removal) requires force greater than 100lbs.</li> <li>Ensure no damage (e.g. cracking) occurs during insertion or removal.</li> </ul>	UL 414 (19)
Dielectric Voltage Withstand	<ul style="list-style-type: none"> <li>Ensure that product can withstand 1480V between live parts or opposite polarity, and live parts to enclosure.</li> </ul>	UL 414 (20.1)

Test	Test Criteria	Applicable Standard (Clause)
Bonding Continuity	<ul style="list-style-type: none"> <li>Ensure continuity between the grounding straps on the top of the MSA and the tabs on the base.</li> </ul>	UL 414 (22)
Strength Test of Insulating Base and Support	<ul style="list-style-type: none"> <li>Ensure the insulating base of the Junction Box is not damaged when applying 110% of the torque marked on the unit to the field wiring terminals.</li> </ul>	UL 414 (24)
Heat Rise	<ul style="list-style-type: none"> <li>Ensure that temperature rise observed in the product does not exceed 65C for jaws (*) and bus bars, 60C on factory wiring terminals, and 55C for field wiring terminals under the maximum rated current.</li> </ul> <p>(*) Meter Socket Jaw Heat Rise values are corrected based on measurements with a simulated meter only, as ConnectDER Solar MSAs are not intended for use in a specific meter socket (SB12.2).</p>	UL 414B (SB12)
Short Circuit	<ul style="list-style-type: none"> <li>Ensure the product can withstand a short circuit of 22kA on the DER branch circuit without:               <ul style="list-style-type: none"> <li>o damage to the enclose that would expose live parts</li> <li>o excess current to ground</li> <li>o Arcing between live parts of opposite polarity</li> <li>o Failure of a dielectric voltage-withstand test</li> </ul> </li> </ul>	UL 414B (SB13)
Markings	<ul style="list-style-type: none"> <li>Ensure all required marking, such as voltage, continuous current, and short circuit current ratings, are included.</li> </ul>	UL 414B (SB14)
Installation Manual	<ul style="list-style-type: none"> <li>Ensure the installation manual includes required instruction, such as proper installation of the field wiring, grounding conductors, safe installation into a meter socket.</li> </ul>	UL 414B (SB15)

Figure 5.1: Provision for Barrel Lock



5. Meter Collar Adapters shall be allowed in accordance with NJ Law and PSE&G requirements. The process for reviewing Meter Collar Adapter designs will require submissions from equipment suppliers to include:
  - a. Model of Meter Collar Adapter submitted for review,
  - b. Product descriptive information,
  - c. Installation Instruction documentation, to include any appropriate information for emergency responders,
  - d. Test Reports showing conformance with requirements of UL-414. Adapters are expected to interface with devices that are built to conform with requirements in ANSI C12.7, C12.1, C12.10 and UL 2735,
  - e. Product sample, and
  - f. Contact information for application questions.
6. Each device reviewed and approved by PSE&G shall be listed on the PSE&G web site covering new electric service installations and service upgrades. Additional requirements specific to each Meter Collar Adapter design will be included with the document listing acceptable devices posted on the web site. Note that manufacturers may offer multiple product families that are released for sale or reviewed for compatibility at different times. Review and approval of one product from a manufacturer does not assure that all products from a manufacturer have been reviewed and approved. Approval must be



# PSEG – NJ Approval



ConnectDER, Solar Meter Socket Adapter  
Usage Requirements, Connections to PSE&G, 11/13/24

#### Function of Device:

Enables Solar system to be connected after the meter and before an existing Electrical Panel Board at the premise. Includes a 2-pole circuit breaker to interrupt over current and support isolation of solar system for maintenance.

#### Required Adapter Features:

- Adapter shall connect solar system on the customer side of the PSE&G meter.
- PV/DER Circuit Breaker shall be able to interrupt fault currents up to 22,000 amps.
- PV/DER Circuit Breaker trip current rating may be between 35 and 80 amps.
- Adapters installed in 5 jaw sockets shall have a 5<sup>th</sup> terminal installed on rear of adapter.

#### Adapter Catalog numbers

Part Number	Features	Installation Comment
C-B-5-22-40	5 Jaw, 40 a breaker	Add 5 <sup>th</sup> terminal if socket has 5 Jaws
C-B-5-22-60	5 Jaw, 60 a breaker	Add 5 <sup>th</sup> terminal if socket has 5 Jaws
C-B-5-22-80	5 Jaw, 80 a breaker	Add 5 <sup>th</sup> terminal if socket has 5 Jaws

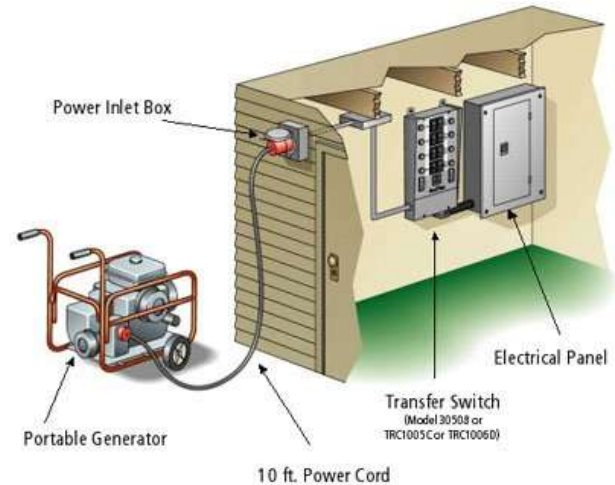
#### Installation Requirements unique to the ConnectDER, Solar adapter

- Note that installation of the Meter Socket Adapter is subject to review by both PSE&G and the Authority Having Jurisdiction. Municipal Electric Inspectors may be interested in circuit breaker ratings, neutral pig tail connections, or other requirements of the NEC.
- Adapter may only be used in meters socket blocks rated from 100 amps thru 200 amps continuous current and may not be used with sockets rated 60 amps or 320 amps. Socket enclosures shall be a minimum of 11.5" high. Socket cover shall be ringless type.
- Adapter may be used on services described as: 120/240 volt, 3 wire, single phase service; or 120/208 volt, 3 wire, network service.
- Adapter may not be used on Conventional Underground services (120/208 volt, network feed from multiple transformers with network protectors). Concern of available fault current > 22 kA.
- When meter sockets have 5 jaws, socket adapter shall also have 5 jaws on front / 5 terminals on back.
- Adapter relocates the mounting position of meter. A clear space of at least 44 inches between the property line – as defined by the municipality – and the front of all meter sockets.
- 1" liquid-tight flexible metal core conduit for power connection to Solar equipment, is attached

# Portable Generators: Standard Transfer Switch

## How a Standard Transfer Switch Works

- A **manual transfer switch** is installed **between the home's electrical panel and an external generator inlet**.
- When utility power fails, the **homeowner must manually switch** from utility power to generator power.
- The generator must be **manually started**, and only the circuits connected to the transfer switch can be powered.
- The transfer switch **prevents backfeeding** by ensuring that utility power and generator power **are never connected simultaneously**.
- Since portable generators are **lower capacity** than the grid, most **transfer switches include a sub-panel**, allowing users to **select only certain essential circuits** to power.





# Standard Transfer Switches: Challenges

## Challenges & Disadvantages of a Standard Transfer Switch

### Requires Professional Installation

- An electrician must install the switch, which can be **expensive (\$1,000–\$2,500+)**
- Installation is time-consuming and requires a **temporary power outage** during setup.

### Manual Operation & Inconvenience

- The homeowner must **physically operate the switch**, which can be difficult during a storm or at night.
- If the outage occurs unexpectedly, users must go outside to **start the generator and engage the switch manually**.

### High Cost & Maintenance

- The **cost of a standard transfer switch installation** (including an electrician) can be **more expensive than a generator itself**.
- Users need to maintain both the **generator** and the **transfer switch system**, adding complexity.



# A Utility Grade Solution

## Risk of Backfeeding into the Utility Grid

- Without a proper transfer switch, **generator power can flow back into the grid**, creating a serious **electrocution hazard** for utility workers and neighbors.
- Backfeeding is **illegal** in many areas and can lead to **severe liability issues** for homeowners.

## Fire & Electrical Risks from Extension Cords

- Many users rely on **extension cords** to connect appliances to a generator.
- Most household extension cords **are not rated for high wattage**, increasing the risk of **overheating and fire hazards**.
- Using multiple cords across the house **creates a tripping hazard** and exposes wiring to potential **wear and tear**.

## Overloading Circuits & Damaging Appliances

- Without **proper circuit protection**, users may accidentally **overload** their generator, damaging sensitive electronics and appliances.
- Hardwired systems like **well pumps, furnaces, and water heaters cannot** be powered through extension cords, leaving key household functions offline.



# How Does BPTM Solve These Problems?

- **Safely isolates generator** power from the utility grid, preventing backfeeding.
- **Eliminates the need for extension cords** by delivering power directly to the home's electrical panel.
- **Includes built-in circuit protection** to prevent overloads and surges.
- **Detects missing or unstable phases** and prevents the transfer from grid if power conditions are unsafe.
- **Automatically switches** between grid and generator power, reducing manual effort.
- **Fully compliant** with utility safety regulations, reducing liability risks.





# Introducing the BPTM

## Solution: The Backup Power Transfer Meter (BPTM)

### Key Features:

- **Utility-Owned & Approved:** Installed directly in utility's electric meter socket, eliminating third-party concerns.
- **Automatic Switchover:** Seamlessly switches to generator power when utility power is lost and back when restored.
- **Safety Protections:** Includes **overload protection, backfeed prevention, and surge mitigation.**
- **No Extension Cords Required:** Powers the home safely through the main breaker panel.
- **Ease of Installation:** Typically installed in under **45 minutes** by utility certified personnel.
- **Versatility:** Compatible with **higher-amperage generators, solar panels, battery walls, and EV power sources.**

### Advantages Over Other Solutions:

- More **cost-effective** than manual transfer switches.
- Avoids the risks associated with **DIY setups and extension cords.**
- **Maintains compliance** with utility-grade safety standards.

## First-of-its-Kind Technology Allows PG&E Customers to Safely and Easily Connect Backup Power to Their Homes

© Last Updated: Friday, 18 February 2022 05:56  
 © Published: Friday, 18 February 2022 05:56



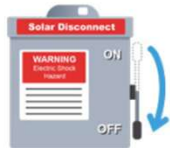
### Backup Power Transfer Meter

Safely connect a portable generator to your SmartMeter.

**1** First, turn off **ALL** breaker switches in your house fuse box.



**2** If you have solar panels, be sure to turn those off.



**3** Find SmartMeter connector and align thumb with guide.



**4** Plug the cord into the bottom of the SmartMeter, twist and click.



**5** Plug cord into gas or battery generator—20' minimum distance

**6** Start up generator and turn on limited essential switches.



Contact PG&E at 1-877-660-6789 or visit [pge.com/transfermeter](http://pge.com/transfermeter)



# BPTM Versus Others

## Utility-Integrated Design

- ✓ Meter-Mounted Solution – Installs directly into the utility meter socket, eliminating third-party devices.
- ✓ Utility-Owned & Approved – Designed to meet PG&E and other utility requirements, ensuring regulatory compliance.
- ✓ Fast & Professional Installation – Typically installed in 45 minutes by utility-certified personnel.

## Safe, Automatic Power Switching

- ✓ Seamless Transfer Between Grid & Generator – Automatically disconnects utility power and connects generator power within 14 seconds.
- ✓ Built-in Backfeed Protection – Prevents dangerous electricity from flowing back into the grid, protecting utility workers and neighbors.
- ✓ Overcurrent & Overload Protection – Integrated circuit breakers ensure that connected loads do not exceed generator capacity.

## Advanced Safety & Protection

- ✓ Voltage Surge Protection – Prevents high-voltage spikes when switching between power sources.
- ✓ Lost Phase Protection – Ensures stable power distribution when utility service is restored.
- ✓ Intermittent Reconnection Protection – Prevents damage from unstable power grid reactivations.





## Competitive Edge vs. Other Solutions

- ✓ No Additional Transfer Switch Needed – Eliminates the need for costly manual transfer switches (\$1,000+ installed).
- ✓ Better Than Interlock Kits – Provides automatic switching and full home power rather than requiring manual breaker toggling.
- ✓ More Secure Than GenerLink – No third-party device interfering with the meter-to-socket interface, reducing utility liability risks.



## Enhanced User Convenience & Reliability

- ✓ No Extension Cords Required – Powers the entire home through the main breaker panel, eliminating tangled, hazardous cords.
- ✓ Supports Portable Generators – Compatible with standard 30A, 240V NEMA L14-30P portable generators (5,000W–10,000W).
- ✓ Simple LED Status Indicator – Provides a clear visual cue for power source status (Utility vs. Generator).

	PG&E	Trifecta	GenerLink	GENERAC 200A Service Entrance Rated Transfer Switch
BPTM				
Automatic Transfer Switching	✓	✗	✗	✓
Intermittent Re-Connection Protection	✓	✗	✗	✓
Phase Loss Protection	✓	✗	✗	✓
Automatic Overload Protection	✓	✓	✗	✓
Voltage Surge Protection	✓	✓	✗	✓
Backfeed Protection	✓	✓	✓	✓
Meter Mounted	✓	✓	✓	✗