Any Energy Transformer

◷ **Available Fall 2028**



The ANEW Any Energy Transformer — a dual-wound, galvanically isolated transfer point that syncs grid and load regardless of frequency, voltage or phase. Built into the Power Pole, or standalone at the grid interconnection point.

> **Two circuits, one magnetic field The conductors threaded around the ring are two complete, separate circuits — primary and secondary — from end to end. They never touch. What they share is the core between them, and the only thing that crosses it is a magnetic field. That's the whole safety story in one picture: there is no conductive path from the grid side to your side, so there is no back-feed path to a de-energized line and no route for a surge on one side to arrive on the other. It is also why the unit is designed to clear interconnection review on a principle inspectors already know rather than a novel safety case. The board that runs the crossing Mounted inside the ring is the onboard control board. It watches both sides continuously — voltage, frequency, phase, direction — and decides when to connect, how much to move, and which way it goes: onto the grid, into onboard storage, or out to an EV. It's the piece that makes any energy work: sync to whatever the grid is running, take AC or DC in, and hand out the AC or DC the load in front of it actually needs. Every crossing is logged through Connect, so a Grid Buy-Sell transaction has a record and the hardware has an identity. CAD view shown for illustration. Winding configuration, core construction and control-board implementation are held under NDA. The Spec Sheet Built for E2X. Design & Build**

Code name	**“Any-Energy Transformer”**
Topology	**Dual-wound, galvanically isolated**
Isolation	**Two independent windings, shared core**
Energy transfer	**Magnetic flux only — no shared copper**
Dimensions	**700mm diameter × 150mm**
Location	**Power Pole dish, or standalone at the grid interconnection point**
Role	**E2X transfer point — Energy to Everything**
Pairs with	**Up to 500 kWh onboard · 1 MWh paired poles**
Use case	**EV fast charging + grid buy/sell · standalone interconnection at a site or building**

Performance & Grid

Grid sync	Any frequency, voltage or phase
Input	AC or DC · single-phase, 2-phase or 3-phase — phase-agnostic front end
Frequency	50 Hz or 60 Hz, grid-synced
Output — AC / grid	120 / 220 / 480V · 50 or 60 Hz
Output — EV / battery	200–800V DC, CC-CV
Direction	Bidirectional — V2G / regen · buy, sell, or consume onboard
Peak efficiency	High-efficiency design — validated per power tier

Surge & Fault Protection

Surge protection	Dual graded TVS/MOV — on-mast + service-end
Overcurrent	Graded fuse pairs, accessible-end fails first
Fault handling	Reverse-polarity active-diode protection
Grid connect	Zero-cross dV/dt check with hiccup counter
Standby	No-load, zero-output until valid load detected

Safety & Service

Isolation for service	Lockable disconnects at every energy source, LOTO-ready
Grid-worker safety	Galvanic barrier — no back-feed path to de-energized lines
Connectors	Industry-standard MC4 / MC6 — never mate under load
Monitoring	Self & environment, real-time
Physical Unclonable Function identity	Designed with two (measuring side + communications board), both must authenticate — fixes the unit to its funding asset for credit trading

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