



FARPOINT ENERGY

PRODUCT CATALOG · SOLAR & STORAGE EDITION · 2026

Main power transformers for solar and storage projects.

Four configurations, 30–100 MVA at 115 and 138 kV. Designed and tested to IEEE C57. Delivered, commissioned, and warranted by Farpoint Energy for three years.

Main power transformers, built for the interconnection.

Farpoint Energy builds main power transformers for utility-scale solar and storage projects. The FP-MPT family covers 50–100 MW interconnection blocks at 115 and 138 kV in four configurations, each fully specified to IEEE C57 with the LTC, reduced-BIL, and low-sound options interconnecting utilities most often require.

We build one product family for one job: the 50 and 100 MW interconnection block. Every configuration is engineered ahead of time to the requirements interconnecting utilities actually issue (BIL, impedance windows, taps, sound, seismic), so a quote comes back as a clause-by-clause compliance matrix, and we're able to commit, when you sign the order, to an actual delivery date.

Every unit is factory-tested to IEEE C57.12.90, delivered to site, and commissioned by Farpoint and covered by a three-year warranty.

Applications

Utility-scale PV

Solar output builds through the morning and peaks mid-afternoon. The unit runs on natural cooling for most of the day and brings its fans on for the peak. We size it to the megawatts your grid connection allows, with the cooling stages split to follow that daily curve.

Hybrid PV + storage

Solar and a battery share one grid connection. The transformer carries the combined output and the charging case when the battery draws from the grid. Both cases go into the rating, and sites built in phases can energize the first block early.

100

UNITS / YEAR
CAPACITY

3 yr

WARRANTY · 5 YR
EXTENDED

30–100

MVA · 115 / 138
KV

C57

IEEE DESIGN &
TEST

Battery storage

A battery delivers full power for hours, then recharges at full power, on a daily cycle. The transformer warms and cools with every cycle, and inverter current carries harmonics. The thermal margin and conductor are designed for that duty, and monitoring can be added so you can follow the unit's condition from your control room.

Substations at the same voltages

The same unit serves grid-fed loads: factories, data centers, and utility substations at 115 and 138 kV. Taps, impedance, and low-side grounding are set for a load application. Other voltages and ratings are engineered on request.

Four configurations

Every unit: 60 Hz · ONAN/ONAF/ONAF three-stage cooling · 65 °C average winding rise · 34.5 kV delta low side (wye per project) · DETC $\pm 2 \times 2.5$ % on the high side · mineral oil · inverter-connected duty per IEEE C57.110 and C57.159 · designed and tested to IEEE C57.12.00 and C57.12.90.

CONFIGURATION	RATING (MVA)	HIGH SIDE	LOW SIDE	TYPICAL PROJECT FIT	DATASHEET
FP-MPT-138-50	30 / 40 / 50	138 kV · 650 kV BIL	34.5 kV · 200 kV BIL	Up to ~45 MW at the POI	p. 4
FP-MPT-115-50	30 / 40 / 50	115 kV · 550 kV BIL	34.5 kV · 200 kV BIL	Up to ~45 MW at the POI	p. 4
FP-MPT-138-100	60 / 80 / 100	138 kV · 650 kV BIL	34.5 kV · 200 kV BIL	Up to ~90 MW at the POI	p. 5
FP-MPT-115-100	60 / 80 / 100	115 kV · 550 kV BIL	34.5 kV · 200 kV BIL	Up to ~90 MW at the POI	p. 5
Two-unit yards	2 × 50 or 2 × 100 class	115 / 138 kV	34.5 kV	Larger sites; phased energization by block	on request
161 kV variant	per project	161 kV	34.5 kV	Engineered on request	on request

Sizing basis

Top rating $\geq$ point-of-interconnection MW $\div$ required power factor, plus margin for altitude, ambient, and duty. At 0.95, 45 MW calls for a 50 MVA unit and 90 MW for a 100 MVA unit; a 160 MW site is two 100-class units with phased energization. Storage and hybrid duty profiles are checked before the configuration is confirmed.

Already have a specification?

Send it. Every quotation answers it clause by clause — comply, comply with clarification, or exception — every clause answered. Your utility's standard specification works the same way. Design parameters and options: page 6.

FP-MPT-138-50 · FP-MPT-115-50

30 / 40 / 50 MVA main power transformer

2026

PARAMETER	FP-MPT-138-50	FP-MPT-115-50
RATINGS		
Rated power	30 / 40 / 50 MVA (ONAN / ONAF / ONAF)	
Frequency	60 Hz	
Temperature rise	65 °C average winding, 80 °C hottest spot	
Duty	Continuous · inverter duty per IEEE C57.110 / C57.159, harmonic profile per project	
Phases and connection	Three-phase · HV grounded wye · LV delta (wye per project)	
VOLTAGE & INSULATION		
High-voltage winding	138 kV, grounded wye	115 kV, grounded wye
HV basic impulse level	650 kV · reduced BIL with arresters per study	550 kV · reduced BIL with arresters per study
Low-voltage winding	34.5 kV, delta (wye per project)	
LV basic impulse level	200 kV	
Neutral	Reduced insulation, solidly grounded, per IEEE C57.12.00	
Impedance	To your system study, within the IEEE C57.12.10 range (self-cooled base)	
Taps	DETC on HV, ±2 × 2.5 %, no-load · LTC optional, page 6	
CONSTRUCTION		
Core / windings	Grain-oriented electrical steel core; copper windings	
Short-circuit strength	Per IEEE C57.12.00 · verified by finite-element force calculation on every design, with similar-design justification per IEEE C57.12.90 · short-circuit test available at order	
Insulating fluid	Mineral oil (ASTM D3487) · natural ester (IEEE C57.147) optional	
Oil preservation	Sealed tank with nitrogen blanket, or conservator with air bag	
Cooling	Detachable radiators, two fan banks, winding-temperature control	
STANDARDS & SITE		
Design and test	IEEE C57.12.00, C57.12.10, C57.12.90, C57.159 · loading C57.91 · sound NEMA TR-1 · seismic IEEE 693 (Appendix A)	
Site basis	Outdoor · altitude ≤ 1,000 m · 30 °C average / 40 °C maximum ambient · site conditions per project	

ANSI 70 light gray finish · standard accessories listed on page 6 · guaranteed losses (tolerances per IEEE C57.12.00), weights, outline drawing, and sound level are issued with the quotation.

FP-MPT-138-100 · FP-MPT-115-100

60 / 80 / 100 MVA main power transformer

2026

PARAMETER	FP-MPT-138-100	FP-MPT-115-100
RATINGS		
Rated power	60 / 80 / 100 MVA (ONAN / ONAF / ONAF)	
Frequency	60 Hz	
Temperature rise	65 °C average winding, 80 °C hottest spot	
Duty	Continuous · inverter duty per IEEE C57.110 / C57.159, harmonic profile per project	
Phases and connection	Three-phase · HV grounded wye · LV delta (wye per project)	
VOLTAGE & INSULATION		
High-voltage winding	138 kV, grounded wye	115 kV, grounded wye
HV basic impulse level	650 kV · reduced BIL with arresters per study	550 kV · reduced BIL with arresters per study
Low-voltage winding	34.5 kV, delta (wye per project)	
LV basic impulse level	200 kV	
Neutral	Reduced insulation, solidly grounded, per IEEE C57.12.00	
Impedance	To your system study, within the IEEE C57.12.10 range (self-cooled base)	
Taps	DETC on HV, ±2 × 2.5 %, no-load · LTC optional, p. 6	
CONSTRUCTION		
Core / windings	Grain-oriented electrical steel core; copper windings	
Short-circuit strength	Per IEEE C57.12.00 · verified by finite-element force calculation on every design, with similar-design justification per IEEE C57.12.90 · short-circuit test available at order	
Insulating fluid	Mineral oil (ASTM D3487) · natural ester (IEEE C57.147) optional	
Oil preservation	Sealed tank with nitrogen blanket, or conservator with air bag	
Cooling	Detachable radiators, two fan banks, winding-temperature control	
STANDARDS & SITE		
Design and test	IEEE C57.12.00, C57.12.10, C57.12.90, C57.159 · loading C57.91 · sound NEMA TR-1 · seismic IEEE 693 (Appendix A)	
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DESIGN PARAMETERS

Set by your project

Every order settles these. The standard value is what the catalog unit is built to; the range is how far it moves within the same design.

PARAMETER	STANDARD	RANGE WITHIN THE DESIGN
Impedance	To your system study	Within the IEEE C57.12.10 range on the self-cooled base; values outside it are engineered to order
HV BIL	650 kV at 138 kV · 550 kV at 115 kV	Reduced one level with surge arresters, where your insulation coordination study supports it
LV connection	34.5 kV delta	34.5 kV wye with grounding per study; other low-side voltages engineered to order
Taps	DETC on HV, $\pm 2 \times 2.5$ %, no-load	On-load tap changer added where the utility requires regulation under load (see options)
Sound	NEMA TR-1	Lower levels by low-sound design or enclosure, to your permit limit (see options)
Seismic	IEEE 693 Moderate	IEEE 693 High with analysis and anchorage qualification
Voltage class · rating	115 / 138 kV · 30–100 MVA	161 kV on request; other classes and ratings engineered to order

OPTIONS

Add to the standard unit

OPTION	WHAT IT IS	WHEN YOU'D SPECIFY IT
On-load tap changer	LTC on HV or LV per study, ± 10 % regulating range in 32 steps typical; DETC retained	Utility requires voltage regulation under load
Natural-ester fluid	Biodegradable, high fire-point fluid per IEEE C57.147 in place of mineral oil	Fire-safety setbacks, environmental permits
Composite bushings	Silicone-housed HV bushings in place of porcelain	Seismic zones, coastal or high-contamination sites
Low-sound design	Sound level below NEMA TR-1 by design or enclosure	Permit limits near residential areas
Monitoring package	Online dissolved-gas analysis, bushing monitoring, digital temperature and cooling control with SCADA points	Owners running condition-based maintenance
Spare-unit program	Reserved production capacity or a stocked spare held against your operating fleet	Fleets that need a replacement path shorter than a new-build lead time
Extended warranty	Coverage extended to five years from energization, same service terms	Lender or owner requirements

Standard accessories (all configurations)

ANSI outdoor bushings (resin-impregnated HV bushings) · Buchholz relay on conservator units · surge-arrester mounting provisions · control cabinet with cooling and alarm circuits · multi-ratio bushing current transformers (relay classes per project) · sudden-pressure relay · top-oil and winding temperature indicators with alarm/trip contacts · liquid-level gauge · pressure-relief device · dissolved-gas monitoring provision · drain and sampling valves · jacking pads and skid base with provision for rail or trailer transport · grounding pads · nameplate per IEEE C57.12.00.

DELIVERY

From order to energization

Production capacity for 100 FP-MPT units per year, with additional capacity coming online in 2027. Current lead time for the catalog configurations is 12–14 months; the delivery date, inclusive of engineering, test, and transport, is committed in the order.

STAGE	WHAT HAPPENS
Order	Purchase order; production slot reserved, delivery date committed
Engineering	Drawings for approval; long-lead materials committed. Monthly order status reports from here to delivery: engineering, materials, production, test, transit
Production	Core, windings, assembly, vacuum drying, oil processing
FAT	Full routine test program, witnessed; test report issued
Transport	Packing with impact recorders; transport to your site
Site	Offloading, assembly, vacuum oil filling, site tests, and commissioning

QUALITY ASSURANCE

Engineered, inspected, and tested to IEEE C57

Engineering

Every design is engineered to IEEE C57 and your utility's requirements, with finite-element short-circuit force, thermal, and insulation-coordination analysis. Drawings, nameplate, and test plan are issued for your engineer's and your utility's approval before production; the calculation package is available for owner's-engineer review.

Inspection

A stage-gated inspection and test plan with hold, witness, and review points is issued for your sign-off before production, from core build through winding, assembly, vacuum drying, and oil processing. Core steel, copper, and insulation are traceable by lot.

Full standards list, test program, inspection points, and documentation: [Appendix A, pages 9–10](#). Three ways to request a quotation: back cover.

WARRANTY & SERVICE

Three years, from energization

Every FP-MPT ships with a Farpoint warranty of 36 months from energization, with the unit stored to Farpoint's storage procedure before energization, covering materials, workmanship, and design. Repair or replacement is at Farpoint's cost, including transport and site labor. The warranty is assignable to your lender or a successor owner. Coverage extends to five years from energization as an option.

- Quotations optimized to your loss-evaluation factors; losses guaranteed within IEEE C57.12.00 tolerances
- Named service engineer assigned at order; 24/7 contact
- Technician on site within 72 hours, contiguous US
- Field oil handling, testing, diagnostics, and repair
- Spare bushings, gaskets, fans, and controls stocked against your fleet
- Parts support for the life of the unit

Testing

The full IEEE C57.12.90 routine program on every unit, including partial discharge, full and chopped-wave lightning impulse, and a sweep-frequency-response baseline, performed in an ISO/IEC 17025-accredited high-voltage laboratory. Witnessed FAT is standard; we schedule it with your engineer at order. Third-party inspection witness is available at any hold point.

Documentation

Test reports, oil certificates, SFRA and DGA baselines, impact-recorder log, as-built drawings, and the O&M manual are delivered as a serialized digital dossier and kept on file by serial number.



Appendix A

Standards, test program, inspection points, and documentation.

For your engineering team. The standards each FP-MPT is built to, the full factory and site test program, the inspection hold points, and what arrives with the unit.

Standards

The standards every FP-MPT is designed, built, and tested to, and what each one governs.

STANDARD	WHAT IT GOVERNS
DESIGN AND RATINGS	
IEEE C57.12.00	General requirements for liquid-immersed transformers: ratings, tolerances, insulation levels, and which tests are routine, design, or other.
IEEE C57.12.10	Requirements for power transformers 230 kV and below: standard impedances, tank pressures, bushings, accessories, and nameplate.
IEEE C57.12.90	Test code: how every factory test is performed, measured, and judged.
IEEE C57.91	Loading guide: how far the unit may be loaded beyond nameplate, and the hot-spot limits behind the rating.
IEEE C57.110	Harmonic duty: sizing and derating for the non-sinusoidal currents inverters produce.
IEEE C57.159	Transformers for distributed PV: duty, design, and application considerations for inverter-connected units.
IEEE C57.131	Load tap changers (option): performance and test requirements.
IEEE C57.19.00 / .01	Bushings: performance, dimensions, and test requirements for the HV and LV bushings.
IEEE C57.13	Instrument transformers: accuracy classes of the bushing current transformers your relays see.
IEEE 693	Seismic design of substation equipment. Moderate level is the design basis; High is available with analysis and anchorage qualification.
NEMA TR-1	Audible sound levels for liquid-filled transformers.
FLUIDS, DIAGNOSTICS, AND SITE	
ASTM D3487	Mineral insulating oil: what goes in the tank.
IEEE C57.106	Oil acceptance and maintenance: the limits new oil must meet and the limits it must hold in service.
IEEE C57.147	Natural-ester fluids (option): acceptance and maintenance.
IEEE C57.104	Dissolved-gas analysis: how gas-in-oil results are read to judge the condition of a unit.
IEEE C57.149	Sweep-frequency response analysis: the fingerprint that shows whether windings moved in transport or after a fault.
IEEE C57.152	Field diagnostics: the tests run at site before energization and during service.
IEEE C57.93	Installation of liquid-immersed power transformers: receiving, assembly, oil filling, and energization.
QUALITY SYSTEM	
ISO 9001	Quality management system under which every unit is engineered, built, and tested.
ISO/IEC 17025	Test-laboratory accreditation: calibrated, traceable measurement behind every test report. Certificates and accreditation scope are furnished with the quotation.

Site basis

Outdoor installation · altitude up to 1,000 m · 30 °C average and 40 °C maximum ambient · seismic qualification to IEEE 693 Moderate, High where the site requires it; the qualification report and bushing certificates are issued with the approval drawings · tank designed for full vacuum and the pressures of IEEE C57.12.10 · site conditions outside this basis are engineered per project.

Test program, inspection points, and documentation

Factory test program — IEEE C57.12.90

TEST	SCOPE
ROUTINE — EVERY UNIT	
Winding resistance	All windings, all taps
Ratio, polarity, and phase relation	All taps
No-load loss and excitation current	At rated voltage; 110 % excitation
Load loss and impedance	At rated current, each cooling stage
Zero-sequence impedance	For relay settings on grounded-wye systems
Applied-voltage test	Low-frequency dielectric
Induced-voltage test with partial discharge	PD measured throughout the enhancement and one-hour levels
Lightning impulse	Full and chopped wave, all line terminals
Insulation power factor and insulation resistance	Windings and bushings (C1 / C2)
Core ground insulation	Core-to-ground and core-to-frame
Leak and pressure test	Tank and radiators
Sweep-frequency response baseline	Reference fingerprint before shipment, compared at site
Oil tests	Dielectric strength, moisture, power factor, corrosive sulfur, furans; DGA before and after dielectric tests
Current transformers	Ratio, polarity, excitation
Functional checks	Cooling, controls, alarms, and LTC operation where fitted
DESIGN — PER DESIGN; REPORTS FURNISHED WITH THE QUOTATION	
Temperature rise	Each cooling stage; repeated on every unit when specified
Audible sound	Per NEMA TR-1; repeated on every unit when specified
Lifting, jacking, and transport fixtures	Mechanical verification
OTHER — WHEN SPECIFIED	
Short-circuit test	Per IEEE C57.12.90 at an independent laboratory; every design carries a finite-element force calculation and similar-design justification
Radio-influence voltage	Corona check on bushings and terminals
Extended temperature-rise or sound program	Per your specification

Inspection and test plan

Issued for your sign-off before production. Each point is marked hold (production stops until released), witness, or review.

- Material receipt: core steel, copper, insulation — lot traceability
- Core stacking complete
- Winding completion, each winding
- Core-and-coil assembly, before drying
- Vacuum drying end point: moisture and dew point
- Tanking and oil filling under vacuum
- Final assembly and pre-test checks
- Factory acceptance test — witnessed
- Packing, impact recorders, and release for shipment

Site program

- Impact-recorder review and receiving inspection
- Dew-point and oxygen check before oil filling
- SFRA compared with the factory baseline
- Pre-energization tests per IEEE C57.152
- DGA at energization and after the first month of service

Interfaces and submittals

Bushing current transformers: multi-ratio, relay accuracy class C800 typical, neutral CT on grounded-wye windings · control power 125 V DC and 120/240 V AC, 480 V for cooling · alarm and trip contacts for temperature, pressure, liquid level, and gas · DNP3 or IEC 61850 on the monitoring package · approval package: outline, nameplate, control schematics, CT curves, and bushing drawings, with your utility's review time built into the schedule.

Documentation dossier

Certified test report per IEEE C57.12.00 · nameplate data · SFRA and DGA baselines · oil certificates · calibration records · impact-recorder log · as-built drawings · O&M manual · commissioning report. Delivered digitally and kept on file by serial number.



FARPOINT ENERGY

Request a quotation.

Pick a configuration, send your specification, or send a single-line diagram and site data. We return a quotation and compliance matrix for your project.

Send your specification or single-line to **quotes@farpointenergy.com**

What to send: single-line diagram · MW and power factor at the point of interconnection · your or your utility's transformer specification · duty profile for storage · site data (altitude, ambient, seismic) and delivery window.

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