

CAST RESIN TRANSFORMERS

ECO READY30



**CESI / KEMA LABS
CERTIFIED E4-C4-F1**

EU548 - ISO9001 - ISO14001 - ISO45001



HEADQUARTER

This site represents the origin and core of the company. It houses the offices, logistics operations, and part of the production process, as well as the final assembly and testing phases. Sinalunga is where the company's know-how was built and where its identity continues to take shape, combining operational excellence with strategic coordination.

Location: Sinalunga - Siena (Tuscany region)

Facility: 2200 sqm indoor area

Outdoor: 2500 sqm

PRODUCTION FACTORY

This newly established facility is designed to support Ottavi Trafo's future growth. The state-of-the-art site features newly developed production lines that will more than double the overall manufacturing capacity, including a dedicated coil production line, advanced cast resin system, and next-generation winding machines. The Torrita di Siena plant reflects the company's commitment to technological innovation, operational efficiency, and high-quality manufacturing.

Location: Torrita di Siena - Siena (Tuscany region)

Production Facility: 1800 sqm indoor area

Warehouse: 2500 sqm indoor area

Offices and services: 1300 sqm

Outdoor: 6000 sqm



ECO READY30 CAST RESIN TRANSFORMERS

Starting from July 2021, Regulation (EU) 548/2014, updated by Regulation 2019/1783, introduces stricter requirements regarding no-load losses, imposing the production of high energy efficiency transformers. Our transformers are designed in full compliance with the new European ecodesign directives and ensure a significant reduction in energy consumption, with consequent economic savings and lower environmental impact thanks to the reduction of CO₂ emissions.



EN 50708-1-1: is indeed the common/general part providing baseline rules, definitions, service conditions, PEI-based efficiency assessment, and testing methods for the whole EN 50708 series (which supplements EN 60076-1 for European-specific ecodesign/energy performance aspects).

EN 50708-2-1 covers Medium Power Transformers (typically up to 3150 kVA and ≤ 36 kV), defining specific performance, Tier 1/Tier 2 losses, etc., in conjunction with Part 1-1.

EN 50708-3-1 covers Large Power Transformers (> 3150 kVA or > 36 kV), with tailored minimum PEI/efficiency levels.

Regulation (EU) 2019/1783 updates the mandatory ecodesign design requirements for electrical transformers with power greater than 1 kVA intended for electricity transmission and distribution networks in the countries of the European Union.

ECODESIGN REQUIREMENTS

ECO READY30 transformers are engineered to fully satisfy the strict EU Ecodesign mandates under Commission Regulation (EU) 2019/1783, amending the original Regulation (EU) No 548/2014. Since 1 July 2021, Tier 2 efficiency levels have become mandatory for all power transformers ≥ 1 kVA placed on the EU market or put into service in electricity transmission, distribution, or industrial networks. This includes strict limits on:

No-load losses (P_0) – constant core losses independent of load, dramatically reduced through our optimized high-grade grain-oriented electrical steel core.
Load losses (P_k) – quadratic-dependent winding and stray losses, minimized via advanced conductor design and geometry.

Key compliance highlights:

- Alignment with the EN 50708 series (EN 50708-1-1 common rules, EN 50708-2-1 for medium power ≤ 3150 kVA / ≤ 36 kV, and related standards for dry-type units)
- Achievement of Peak Efficiency Index (PEI) targets for superior overall energy performance
- Significant cuts in total lifecycle energy dissipation compared to pre-2021 models

Benefits for users and the environment:

- Substantial energy savings across the transformer's operational life, translating into lower electricity bills
- Reduced CO₂ emissions thanks to minimized wasteful heat generation
- Enhanced sustainability without compromising reliability, safety, or footprint

Rated Power (kVA)	Maximum Load Losses P_k (W)	Maximum No-Load Losses P_0 (W)
≤ 50	$A_k(1500)$	$A_0-10\%(180)$
100	$A_k(1800)$	$A_0-10\%(252)$
160	$A_k(2600)$	$A_0-10\%(360)$
250	$A_k(3400)$	$A_0-10\%(468)$
400	$A_k(4500)$	$A_0-10\%(675)$
630	$A_k(7100)$	$A_0-10\%(990)$
800	$A_k(8000)$	$A_0-10\%(1170)$
1000	$A_k(9000)$	$A_0-10\%(1395)$
1250	$A_k(11000)$	$A_0-10\%(1620)$
1600	$A_k(13000)$	$A_0-10\%(1980)$
2000	$A_k(16000)$	$A_0-10\%(2340)$
2500	$A_k(19000)$	$A_0-10\%(2790)$
3150	$A_k(22000)$	$A_0-10\%(3420)$

No-Load Losses (P_0)	Load Losses (P_k)
AA_0	A_k



At the end of its service life, the **ECO READY30** cast resin transformer can be fully recycled, and all its components can be easily disposed of.

LOW PARTIAL DISCHARGE

Partial discharges are microscopic phenomena that occur inside cavities present in the insulating resin and contribute to accelerating its aging process.

For this reason, it is essential that the values of these currents remain extremely low.

In accordance with the product standard governing the design of cast resin transformers (IEC 60076-11), all windings with a rated voltage equal to or greater than 3.6 kV must undergo partial discharge measurement testing, and the measured value must not exceed 10 pC.

ECO READY30 transformers are recording partial discharge values consistently below 5 pC, significantly better than the limits prescribed by the current standard.

A low level of partial discharges represents a clear indicator of multiple qualitative factors such as adequate and well-established design criteria, high quality of the raw materials used, precision in the conductor tape winding phases, expertise in the process of casting the epoxy resin around the high-voltage winding, high impregnation coefficient of the low-voltage coil and rigorous control in the final assembly phases of the semi-finished products.

Lower partial discharge values guarantee greater resistance to operating stresses, higher reliability and a longer expected service life of the transformer.

SUPERIOR INSULATION INTEGRITY

Partial discharges are classified according to the insulating medium and the electric field configuration:

- **Corona effect:** localized ionization in a gaseous medium due to high field concentration.
- **Surface discharges:** propagation along the solid/fluid insulating interface due to high tangential stress.
- **Internal discharges:** initiation in cavities or gaseous inclusions within the solid insulator; main mechanism of dielectric degradation.
- **Electrical treeing:** branched growth of conductive microchannels in the polymeric insulator, evolving toward breakdown.



EXTREME ENVIRONMENTAL CONDITIONS

The IEC 60076-11 standard defines the environmental, climatic and fire behaviour classes applicable to dry-type transformers.

Ottavi uses high-quality epoxy resins that ensure a reduced environmental impact and enable the transformers to comply with the main reference classifications regarding safety, efficiency and sustainability.

Climatic Class C4:

Guarantees that the transformer is suitable for transport and storage down to -50°C and for operational functioning down to -40°C . This allows installation in extremely cold climates without risks of resin cracking due to thermal shocks.

Environmental Class E4:

Indicates suitability for environments with heavy pollution and frequent condensation (relative humidity $> 95\%$). It is specific for installations in coastal areas (salt fog), desert (sand and conductive dust) or industrial sites with heavy fumes and detritus.

Fire Behaviour Class F1:

Certifies that the transformer presents a reduced fire risk. In the event of an external fire, flammability is limited, self-extinguishing is rapid and the emission of toxic substances or opaque smoke is reduced to a minimum.



In standard configuration, the **ECO READY30** transformers also ensure seismic resistance up to 0.2 g (low-intensity seismic events) and are equipped with dedicated holes for floor anchoring, in order to prevent the risk of overturning.

Ottavi can manufacture transformers suitable for installation in areas with higher seismic hazard like AG3k1 and resistance up to 0.5 g AG5 (IEC 60068-3-3, with AG5 refers to high-level seismic class representing "Strong to Very Strong Earthquakes").

INNOVATION SPOTLIGHT

Every unit meets or exceeds the strict Ecodesign requirements of Regulation (EU) No 548/2014 as amended by Regulation (EU) 2019/1783, ensuring full compliance for the European market and beyond.

These next-generation transformers deliver superior performance through the strategic use of advanced-grade materials and innovative engineering.

Key advancements include:

- **Re-engineered termination systems and connection interfaces on both MV and LV sides**, designed for significantly faster, safer, and more intuitive winding connections and external cabling
- **MV windings built to high insulation class**, achieved through reinforced dielectric barriers in critical zones
- **Substantially higher overall efficiency and sharply reduced total losses** compared to previous generations, all without increasing weight or overall dimensions

A major breakthrough comes from the completely **rethought magnetic core**, which employs the latest high-grade grain-oriented electrical steel with an further optimized crystallographic structure and ultra precise laser cutting.

This advanced core delivers multiple benefits:

- Reduced core weight
- More compact overall dimensions
- Significantly lower no-load losses for markedly higher energy efficiency
- Noticeably quieter operation thanks to optimized magnetic domain structure
- Improved dielectric withstand properties

At the same external dimensions, transformers equipped with this new magnetic core achieve substantially lower no-load losses than traditional models, resulting in clearly superior efficiency and performance.

This combination of innovations positions these transformers as the ideal choice for modern, sustainable power distribution and feeding applications.



COMMITMENT TO QUALITY & COMPLIANCE

The **ECO READY30** transformers are tested in our advanced in-house laboratory, where routine verification activities are performed in accordance with IEC 60076-11 prior to delivery.

Our company operates under certified management systems, including ISO 9001:2015 for quality management, ISO 14001 for environmental management, and ISO 45001:2018 for occupational health and safety, reflecting our structured and responsible operational approach.

Special type tests have been successfully performed at world-renowned accredited laboratories, including KEMA Labs, in full compliance with the relevant international standards.

This comprehensive certification and testing framework demonstrates our proven ability to design and manufacture high-quality, highly reliable transformers that meet the most stringent global requirements.



ACCEPTANCE TESTS (Routine tests per IEC 60076-11:2018)

- Measurement of winding resistance – Clause 14.2.1
- Measurement of voltage ratio and check of phase displacement – Clause 14.2.2
- Measurement of short-circuit impedance and load losses – Clause 14.2.3
- Measurement of no-load losses and no-load current – Clause 14.2.4
- Applied voltage withstand test (a.c.) – Clause 14.2.5
- Induced voltage withstand test (a.c.) – Clause 14.2.6
- Partial discharge measurement – Clause 14.2.7

TYPE TESTS (on request):

- Lightning impulse test – IEC 60076-11 (clause 14.3.1)
- Temperature-rise test – IEC 60076-11 (clause 14.3.2)

SPECIAL TESTS (on request):

- Measurement of sound level – IEC 60076-11 (clause 14.4.2)
- Short-circuit test – IEC 60076-11 (clause 14.4.3) to be performed at an external laboratory.

INSULATION CLASS 12kV

Technical Data Charts for 10/0.4 kV Dyn11 Transformers

Rated Power [kVA]	Primary Voltage [kV]	Secondary Voltage [v]	U _k [%]	P _o [W]	P _k [W]	LwA-Acoustic Power [dB(A)]	Length	Width	Height	Weight	Base Roller Centres [mm]	Wheels diameter [mm]
25	10	400	6	110	1000	40	920	500	1106	320	420	125
50	10	400	6	180	1500	44	955	500	1126	400	420	125
100	10	400	6	252	1800	51	1185	500	1286	730	520	125
160	10	400	6	360	2600	54	1245	600	1306	870	520	125
250	10	400	6	468	3400	57	1395	750	1346	1250	520	125
315	10	400	6	557	3875	58	1410	750	1506	1450	670	125
400	10	400	6	675	4500	60	1375	750	1510	1470	670	125
500	10	400	6	811	5630	60	1435	750	1660	1750	670	125
630	10	400	6	990	7100	62	1390	850	1630	1720	670	125
800	10	400	6	1170	8000	64	1515	850	1726	2200	820	160
1000	10	400	6	1395	9000	65	1585	1000	1798	2520	820	160
1250	10	400	6	1620	11000	67	1690	1000	1985	3170	820	160
1600	10	400	6	1980	13000	68	1730	1000	2205	3690	820	160
2000	10	400	6	2340	16000	70	1835	1310	2337	4360	820	160
2500	10	400	6	2970	19000	71	1910	1310	2477	5240	1070	200
3150	10	400	6	3420	22000	71	2065	1310	2537	6410	1070	200

INSULATION CLASS 17,5kV

Technical Data Charts for 15/0.4 kV Dyn11 Transformers

Rated Power [kVA]	Primary Voltage [kV]	Secondary Voltage [v]	U _k [%]	P _o [W]	P _k [W]	LwA-Acoustic Power [dB(A)]	Length	Width	Height	Weight	Base Roller Centres [mm]	Wheels diameter [mm]
25	15	400	6	110	1000	40	920	500	1106	320	420	125
50	15	400	6	180	1500	44	955	500	1126	400	420	125
100	15	400	6	252	1800	51	1185	500	1286	730	520	125
160	15	400	6	360	2600	54	1245	600	1306	870	520	125
250	15	400	6	468	3400	57	1395	750	1346	1250	520	125
315	15	400	6	557	3875	58	1410	750	1506	1450	670	125
400	15	400	6	675	4500	60	1375	750	1510	1470	670	125
500	15	400	6	811	5630	60	1435	750	1660	1750	670	125
630	15	400	6	990	7100	62	1390	850	1630	1720	670	125
800	15	400	6	1170	8000	64	1515	850	1726	2200	820	160
1000	15	400	6	1395	9000	65	1585	1000	1798	2520	820	160
1250	15	400	6	1620	11000	67	1690	1000	1985	3170	820	160
1600	15	400	6	1980	13000	68	1730	1000	2205	3690	820	160
2000	15	400	6	2340	16000	70	1835	1310	2337	4360	820	160
2500	15	400	6	2970	19000	71	1910	1310	2477	5240	1070	200
3150	15	400	6	3420	22000	71	2065	1310	2537	6410	1070	200

INSULATION CLASS 24kV

Technical Data Charts for 20/0.4 kV Dyn11 Transformers

Rated Power [kVA]	Primary Voltage [kV]	Secondary Voltage [v]	U _k [%]	P _o [W]	P _k [W]	LwA-Acoustic Power [dB(A)]	Length	Width	Height	Weight	Base Roller Centres [mm]	Wheels diameter [mm]
25	20	400	6	110	1000	40	920	500	1106	320	420	125
50	20	400	6	180	1500	44	955	500	1126	400	420	125
100	20	400	6	252	1800	51	1185	500	1286	730	520	125
160	20	400	6	360	2600	54	1245	600	1306	870	520	125
250	20	400	6	468	3400	57	1395	750	1346	1250	520	125
315	20	400	6	557	3875	58	1425	750	1540	1450	670	125
400	20	400	6	675	4500	60	1375	750	1510	1560	670	125
500	20	400	6	811	5630	60	1445	750	1660	1790	670	125
630	20	400	6	990	7100	62	1430	850	1666	1840	670	125
800	20	400	6	1170	8000	64	1535	850	1730	2260	820	160
1000	20	400	6	1395	9000	65	1610	1000	1838	2660	820	160
1250	20	400	6	1620	11000	67	1725	1000	2030	3370	820	160
1600	20	400	6	1980	13000	68	1770	1000	2167	3920	820	160
2000	20	400	6	2340	16000	70	1845	1310	2372	4610	820	160
2500	20	400	6	2970	19000	71	1955	1310	2502	5410	1070	200
3150	20	400	6	3420	22000	71	2090	1310	2562	6480	1070	200

INSULATION CLASS 36kV

Technical Data Charts for 33/0.4 kV Dyn11 Transformers

Rated Power [kVA]	Primary Voltage [kV]	Secondary Voltage [v]	U _k [%]	P _o [W]	P _k [W]	LwA-Acoustic Power [dB(A)]	Length	Width	Height	Weight	Base Roller Centres [mm]	Wheels diameter [mm]
25	33	400	6	≈ 216	≈ 1725	50	≈ 1355	≈ 500	≈ 1406	≈ 860	≈ 670	≈ 125
50	33	400	6	216	1725	50	1355	500	1406	860	670	125
100	33	400	6	289	1980	51	1445	500	1596	1230	670	125
160	33	400	6	414	2860	54	1505	600	1616	1420	670	125
250	33	400	6	538	3740	57	1505	750	1766	1640	670	125
315	33	400	6	641	4264	58	1595	750	1806	1990	670	125
400	33	400	6	776	4950	60	1655	750	1836	2260	670	125
500	33	400	6	933	6193	60	1745	750	1876	2630	670	125
630	33	400	6	1138	7810	62	1775	850	1900	2750	820	160
800	33	400	6	1345	8800	64	1775	850	1996	2980	820	160
1000	33	400	6	1604	9900	65	1805	1000	2208	3480	820	160
1250	33	400	6	1963	12100	67	1860	1000	2235	4000	820	160
1600	33	400	6	2277	14300	68	2015	1000	2455	5010	1070	200
2000	33	400	6	2691	17600	70	2075	1310	2592	5500	1070	200
2500	33	400	6	3208	20900	71	2170	1310	2657	6640	1300	200
3150	33	400	6	3933	24200	71	2435	1310	2747	7680	1300	200

*Losses, dimensions, and mass are indicative and will be confirmed following completion of the engineering stage.
Indicative tolerance: ±5%.

INSTALLATION ACCESSORIES & COMPONENTS

TEMPERATURE MEASURING PROBES

Type	
PT100S	RTD PT100 Sensor, EN60751 Compliant Cylindrical shape with silicone cap, Ø 6 × 30 mm Silicone cable with 3 or 4 CuSn conductors, 0.22 mm ² cross-section, insulated with silicone (2 red and 1 or 2 white wires) Aluminum-foiled shielding with drain wire Standard cable length: 2.5 m Dielectric strength: 5.0 kV AC - 60s Max. operating temp.: 200°C
PTFE100	PTFE 30 KV RTD Pt100 Pt100 ohm at 0°C Calibration: IEC 60751 Round Ø 10 x 120 mm Cable CuAg 3 x 0,38 mm ² insulated Standard cable length: 2,5 mt (different lengths on request) Dielectric strength: 30 kV AC – 60s Max. operating temp.: 220°C
PTC	In accordance with DIN 44081 and 44082 rules Response temperature: from 80°C to 180°C Fast response type Cable in PTFE (std 3 m) further lengths on request Ø of the sensor: 3 mm Lead cross-section: 0,14 mm ² Dielectric test Ueff 2500V



CONTROL UNITS

	Type	Description
1CN0023	NT154	Universal Power Supply: 24 to 240 V AC/DC
1CN0135	NT935 AD	Universal Power Supply: 24 to 240 V AC/DC
1CN0155	T154	Universal Power Supply: 24 to 240 V AC/DC

Supplying the world’s best brands and most advanced models, tailored to every client’s request.

SURGER ARRESTER KITS

	Continuous Voltage [kV]	Rated Voltage Ur [kV]
DMI 15 10 1 H	12	15
DMI 18 10 1 H	14,4	18
DMI 21 10 1 H	16,8	21
DMI 24 10 1 H	19,2	24
DMI 27 10 1 H	21,6	27

RUBBER ANTI-VIBRATION MOUNTS

	Height min	Height max	Diameter
FB-0005050 (50)	50 mm	70 mm	50 mm
FB-0006550 (65)	50 mm	70 mm	65 mm
FB-0008560 (85)	60 mm	85 mm	85 mm

ENCLOSURE FOR TRASFORMER IN SENDZIMIR SHEET METAL IP31

The standard product range begins with the following dimensions:

(WxDxH)
1200x1150x1950
1400x1150x1950
1600x1150x1950
1800x1150x1950
2000x1150x1950
2100x1150x1950
2200x1150x1950

Tailored to your needs, customizable solutions with any level of IP protection and accessories.

VENTILATION BARS

	Range [kVA]
FAN 400	100-315
FAN 900	400-1250
FAN 1200	1250-1600
FAN 1800	1650-2000
FAN 3300	≥ 2500



- Designed with a commitment to ongoing innovation and performance optimization.
- Accessories are continuously refined to meet evolving safety standards and grid requirements.
- Modular options support future upgrades and seamless integration of new technologies.
- Materials and components are selected to enhance durability, efficiency, and environmental compatibility.
- Engineering improvements focus on reducing losses, improving thermal performance, and extending transformer lifespan.





ECO READY30 FOR INDUSTRIAL DISTRIBUTION

Cast resin transformers (CRTs) for industrial power distribution are maintenance-free, dry-type units encapsulated in epoxy-resin, engineered for enhanced safety, fire resistance, and environmental robustness.

With ratings up to 36 kV and 7.5 MVA, they perform reliably in harsh, indoor, or space-constrained settings, offering strong resistance to moisture, dust, and vibration.

Epoxy resin endows these transformers with exceptional corrosion resistance, making them especially well suited for demanding environments subject to severe weather and atmospheric conditions, such as industrial sites, coastal areas, and high-humidity locations.

Dry Type Cast Resin power transformers are also designed to operate without continuous maintenance, offering a practical and cost-efficient solution for urban, marine, railway, and industrial applications.

Their high protection rating and compact construction make them ideal for installations in confined spaces where efficient use of available volume is critical.

In addition, their capacity to withstand temperature fluctuations, dust, and vibration ensures dependable long-term performance.

Whether used in urban distribution networks, marine and industrial facilities, or transportation infrastructures such as railway systems, resin power transformers

deliver high energy quality, enhancing the overall efficiency and stability of the electrical network.

KEY FEATURES:

- **COMPACT DESIGN**
- **HIGH AFFIDABILITY**
- **VERYLOW DEFAULT RATE**
- **ANTI CORROSION TREATMENT**
- **FIRE BEAHVIOUR**



ECO READY30 FOR SOLAR PHOTOVOLTAIC SYSTEMS

Cast Resin transformers in Solar Plants are used to transform the direct voltage produced by solar panels into alternating voltage that can be used to power the electricity networks.

They are a vital element in the infrastructure of solar PV plants.

Transformers used in photovoltaic applications must meet design requirements that differ significantly from those of conventional cast resin or liquid-filled distribution transformers.

OTTAVI has a comprehensive understanding of the unique cyclic loading patterns imposed by solar generation, as well as the internal stresses transformers must withstand as critical components of a grid-connected PV system.

Our proven designs mitigate adverse effects on performance, reliability, and service life.

OTTAVI provides renewable energy operators with complete confidence by designing and manufacturing purpose-built, high-quality transformers that enhance network resilience and reliability, maximizing daily energy production while preventing unproductive downtime.

Extended warranty terms may also be provided to reassure the Client.

KEY FEATURES:

- **SPECIAL DESIGN**
- **LOW TEMPERATURE RISE**
- **HIGHER AMBIENT TEMPERATURE**
- **OVERLOAD CAPACITY**



ECO READY30 FOR WIND POWER GENERATION

Cast Resin transformers in Wind Farms are used to transform the direct voltage produced by wind turbines into alternating voltage that can be used to power the electricity networks.

They are a vital element in the infrastructure of wind farms.

Transformers used in wind applications must meet design requirements that differ significantly from those of conventional cast resin or liquid-filled distribution transformers.

OTTAVI has a comprehensive understanding of the unique cyclic loading patterns imposed by wind energy generation, as well as the internal stresses transformers must withstand as critical components of a grid-connected wind turbine system.

Our proven designs mitigate adverse effects on performance, reliability, and service life.

Overload capacity, as well as energization issues not to mention vibrations and harmonic wave stress are at the base of wind farm cast resin transformer design.

OTTAVI provides renewable energy operators with complete confidence by designing and manufacturing purpose-built, high-quality transformers that enhance network resilience and reliability, maximizing daily energy production while preventing unproductive downtime.

Extended warranty terms may also be provided to reassure the Client.

KEY FEATURES:

- **SPECIAL DESIGN**
- **HIGH WITHSTAND**
- **LOW VIBRATIONS**
- **OVERLOAD CAPACITY**



ECO READY30 FOR DATA CENTERS

Cast resin transformers play a vital role in modern data center infrastructure. They are selected for their excellent fire safety, high reliability, and minimal maintenance needs, making them especially suitable for indoor installations and edge computing environments.

Engineered to manage non-linear loads and the high harmonic levels common in IT equipment, these transformers also comply with stringent environmental and safety standards.

Flame Retardancy & Safety (F1 Class):

Cast resin transformers are naturally flame-retardant and self-extinguishing, meeting F1 fire hazard classification.

This enables installation directly within data center facilities without the need for costly fireproof enclosures or complex suppression systems.

High Efficiency & EcoDesign:

To reduce energy losses and operating costs, modern units comply with or surpass strict efficiency requirements (such as IEC 60076-11, EU 548/2014, and EN 50708-1).

High-efficiency, low-loss performance, often exceeding 98%, is a standard design objective.

Harmonic Handling (K-Factor):

Data center loads are highly non-linear, producing significant harmonic distortion that can lead to overheating.

Cast resin transformers are engineered to handle these conditions, frequently incorporating high K-factor ratings to tolerate the extra thermal stress.

Compact & Modular Design:

Well suited for space-limited environments, these transformers feature a compact footprint and offer customizable connections and busbar configurations for simplified installation and integration.

Robustness & Reliability:

Reliability is essential. Built for high short-circuit strength and reduced maintenance requirements (no oil monitoring needed), they are ideal for critical power applications where Environmental Protection (E4/C4/F1):

These transformers are certified to operate in demanding conditions, including high humidity and dusty environments (E4) as well as low-temperature settings (C4).

KEY FEATURES:

- **SPECIAL DESIGN**
- **HIGH HARMONIC WITHSTAND**
- **K-RATED FACTOR**
- **OVERLOAD CAPACITY**



ECO READY³⁰ FOR BESS SYSTEMS

Cast resin transformers are increasingly favored in Battery Energy Storage Systems (BESS) for data centers because of their enhanced safety, maintenance-free operation, and compact footprint. They are purpose-built to manage the high, non-linear, and rapidly fluctuating loads typical of AI and high-performance computing (HPC) environments.

Key Design Features for Data Center BESS

High Safety Standards:

These transformers are flame-retardant and self-extinguishing, minimizing fire risks and enabling installation closer to critical loads.

Optimized for BESS Integration:

They often feature dual low-voltage split configurations that align with solar PV and BESS inverter architectures, allowing continued operation if a fault occurs on one side.

Efficiency & Power Quality:

quality power delivery.

Engineered to handle significant harmonic distortion, they incorporate high K-factor ratings (e.g., K-13 - K21) and electrostatic screens to support efficient, high-quality power delivery.

Advanced Cooling & Durability:

Class F or Class H insulation systems provide strong thermal and mechanical performance, while enclosures rated IP31 or higher support reliable indoor installation.

Compactness & Customization:

Flexible, space-saving designs enable plug-and-play or modular configurations, often with customized cabling solutions that reduce installation space and costs.

Common Applications BESS Isolation:

Used as isolation transformers to protect inverters and battery systems from grid disturbances and surges.

Voltage Adaptation: Step down utility voltage to BESS operating levels (e.g., 690 V to 480 V).

Containerized Solutions: Frequently deployed in E-houses or skid-mounted units to enable rapid, scalable deployment.

KEY FEATURES:

- **SPECIAL DESIGN**
- **HIGH DV/DT VALUES**
- **K-RATED FACTOR**
- **OVERLOAD CAPACITY**



SPECIAL TRANSFORMERS

At OTTAVI Transformers, we are a trusted manufacturer of special transformers with extensive expertise in designing and producing cast resin units for the most demanding technical applications.

Engineered to meet unique project requirements, up to 7.5 MVA and system voltages reaching 36 kV, our custom dry-type transformers deliver outstanding performance, reliability, and efficiency across a wide range of sectors, including energy, infrastructure, transportation, renewables, and heavy industry.

By utilizing epoxy resin technology, our transformers achieve superior performance and enhanced short-circuit strength. We also provide maximum flexibility in winding materials to suit specific project needs.

Additionally, insulation systems available in Class F or Class H ensure long-term durability and operational safety under challenging conditions.

Engineered for Reliable Operation in Harsh Outdoor Environments.

Beyond advanced engineering and customization, a key advantage of choosing ECOREADY30 cast resin transformers is our ability to adapt dry-type transformers for outdoor use in even the most severe environments.

Over the years, we have developed expertise to ensure dependable operation in areas exposed to strong winds, saline air, industrial pollution, or urban smog

We are E4-C4-F1 CESI/KEMA Lab certified. Our strong commitment to research and development, supported by comprehensive in-house testing capabilities, further guarantees consistent quality and performance.

- **KEY FEATURES:**
- **CUSTOM DESIGN**
- **HIGH DV/DT VALUES**
- **K-RATED FACTOR**
- **OVERLOAD CAPACITY**
- **MULTIPLE PRIMARY TENSIONS**
- **MULTIPLE SECONDARY TENSIONS**
- **SPECIALE FEATURES**
- **TAYLOR MADE DESIGN**



OIL TRANSFORMERS



OTTAVI design and assemble oil transformers for special projects.

We also perform oil transformers service and repair.

Oil distribution transformers are essential components for reliable and efficient power delivery across urban, industrial, and utility networks.

Designed for durability and high performance, they provide stable voltage regulation and excellent overload capacity, ensuring continuous operation under varying load conditions.

Advanced insulation systems and high-quality mineral or biodegradable oils enhance thermal performance and extend service life while meeting environmental and safety standards.

Engineered for low losses and reduced noise, these transformers support energy efficiency goals and grid reliability.

With flexible configurations and robust construction, oil distribution transformers are ideal for substations, renewable integration, infrastructure projects, and demanding industrial applications.

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