CESI Group

KEMA

CAST RESIN DRY TRANSFORMERS

ELSEWEDY
TRANSFORMERS

Why Elsewedy Dry Type Transformer?

Now Elsewedy Transformers made your dreams come true;
Providing:

Health & Safety

- Hardly inflammable, self extinguishing.
- Highly moisture-proof.
- No pollution to the environment.
- Extremely low content of burnable Material.
- No content of any halogen, silicones, nitrogen in the insulation.
- Free from all restrictions that apply oil type transformers.

Flexibility & Cost Saving

- Minimum Maintenance is required.
- No liquids used; no risk for leakage.
- Repair possibilities (at site).
- Installation close to the center of major consumers.
- Reduce cable costs, transmission losses and installation costs.

Durability

- Cooling is the most efficient (up to 40%).
- Low Partial discharge, therefore, high life expectancy.
- Excellent insulation level, short circuit and lighting strength.
- Ability to handle greater short time overloads rather than oil type.

Testing & Quality Control

- **Routine Test**
  - Measurements of Winding Resistance.
  - Measurements of Ratio and Vector group.
  - Measurements of Impedance and Voltage.
  - Measurements of Load (copper) loss.
  - Measurements of No-load (iron) loss.
  - Measurements of Partial Discharge.
  - Applied Voltage Test.
  - Induced Voltage Test.
- **Type Tests**
  - Lightning Impulse Test.
  - Temperature rise Test.
- **Special Tests**
  - Noise level Test.
  - Short-circuit Test.
  - Environmental Test.
  - Fire behavior Test.
  - Thermal shock Test.

Applications

Proudly serving you in the following three sectors…

Energy & Infrastructure

- Transportation infrastructure
- Airports
- Utilities' infrastructure

Industry

- Industrial factories
- Wind farms
- Oil and Gas Sectors

Buildings

- Office buildings
- Shopping Centers
- Industrial buildings
- Hotels, Hospitals
- New Compounds and Resorts

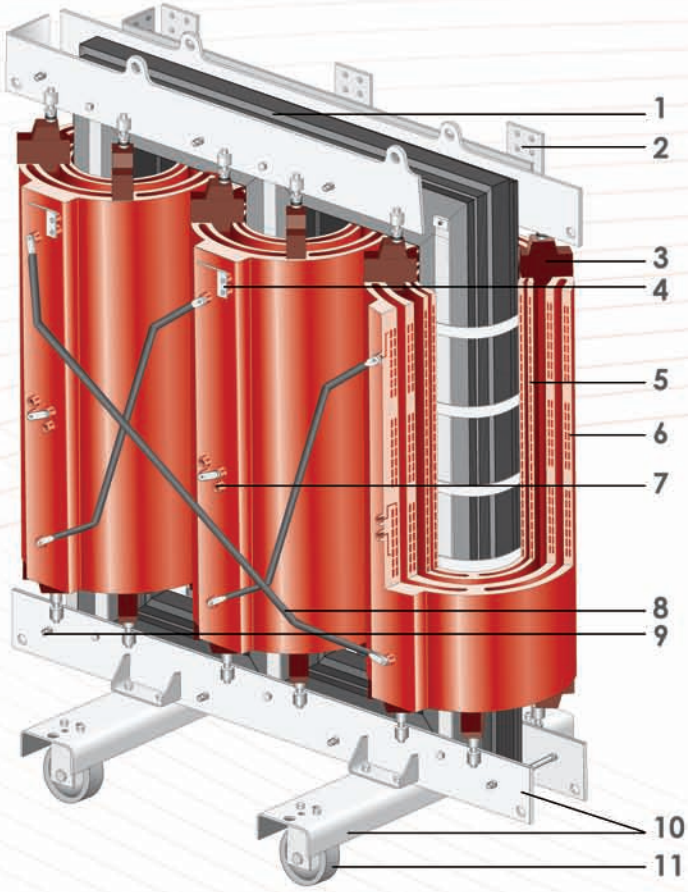
Cast Resin Dry Transformers

Technical Specification

- Ratings from 100 KVA up to 10 MVA with voltage up to 36 KV
- Manufactured according to IEC 60076 & Tested at KEMA & CESI
- Highly moisture-proof (operates under 100% humidity)
- Excellent insulation level (F / H Class)
- Low partial discharge (<10 PC)
- Classified E2, C2, F1 (according to HD 464 S1)
- Optional Enclosure (IP20 up to IP33)
- Optional forced cooling (40% more rating)

Dry Transformers' Construction

1. Core
2. LV Terminal
3. Resilient Spacer
4. HV Terminal
5. LV Coil
   - LV Aluminum Foil winding insulated with prepregs and hot-polymerised resin.
   - Reduction of the axial and radial short- circuit forces to a minimum.
   - High resistance to short-circuits.
   - Inclusion of cooling channels if required.
6. HV Coil
   - HV winding copper or aluminum conductors cast under vaccum into moulds reinforced ion materials.
7. Tapping Link
8. Delta Connection Rods
9. Earthing
10. Yoke Clamping and Wheelbase
11. Roller



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Technical Data Sheets

Table 1 Aluminum Winding

Rating (kVA)	Highest Voltage (kV)	Impedance (%)	No Load Losses (kW)	Load Losses at 75 °C (kW)	Load Losses at 120 °C (kW)	Length (L) (mm)	Width (B) (mm)	Height (H) (mm)	Length (X) (mm)	Width (Y) (mm)	Height (Z) (mm)	Distance between wheels E (mm)	Weight without Enclosure (kg)	Weight with Enclosure (kg)	Noise Level dB
160	12	4	0.61	2.3	2.7	1110	720	1300	1560	1170	1750	520	950	1180	50
	24	4	0.65	2.3	2.7	1290	720	1330	1940	1470	1780	520	1140	1450	
250	12	4	0.82	3.1	3.5	1215	720	1350	1665	1170	1800	520	1160	1405	53
	24	4	0.88	3.3	3.8	1410	720	1410	2060	1470	1860	520	1450	1785	
315	12	4	0.95	3.6	4.1	1275	870	1410	1725	1320	1860	670	1350	1625	54
	24	4	1.03	4	4.6	1500	870	1440	2150	1620	1890	670	1750	2115	
400	12	4	1.15	4.3	4.9	1440	870	1410	1890	1320	1860	670	1650	1945	55
	24	4	1.2	4.8	5.5	1650	870	1500	2300	1620	1950	670	2200	2595	
500	12	4	1.3	5.2	6.0	1470	870	1670	1920	1320	2120	670	1865	2190	56
	24	4	1.4	5.7	6.5	1620	870	1700	2270	1620	2150	670	2350	2765	
630	12	4	1.5	6.4	7.3	1545	870	1710	1995	1320	2160	670	2480	2820	57
	24	4	1.65	6.8	7.8	1680	1020	1730	2330	1770	2180	670	2700	3150	
800	12	5	1.7	7.7	8.8	1605	1020	1700	2055	1470	2150	820	2600	2965	58
	24	5	2	8.2	9.4	1785	1020	1730	2435	1770	2180	820	2800	3265	
1000	12	5	2	8.8	10.0	1695	1020	1770	2145	1470	2220	820	2900	3285	59
	24	5	2.3	9.6	11.0	1815	1020	2010	2465	1770	2460	820	3300	3810	
1250	12	6	2.5	10.5	12.0	1830	1020	1970	2280	1470	2420	820	3400	3830	61
	24	6	2.8	11.5	13.1	1995	1020	2000	2645	1770	2450	820	3900	4430	
1600	12	6	2.8	12.3	14.0	1935	1020	2000	2385	1470	2450	820	3800	4245	61
	24	6	3.1	14	16.0	2130	1020	2060	2780	1770	2510	820	5200	5760	
2000	12	6	3.5	14.9	17.0	1995	1270	2230	2445	1720	2680	1070	4800	5325	62
	24	6	4	17.5	20.0	2130	1270	2260	2780	2020	2710	1070	5200	5835	
2500	12	6	4.3	18.3	21.0	2220	1270	2250	2670	1720	2700	1070	6200	6765	65
	24	6	5	20	23.0	2370	1270	2290	3020	2020	2740	1070	6600	7280	
3150	12	7	5.5	22	25.0	2430	1270	2290	2880	1720	2740	1070	7300	7900	65
	24	7	6.3	23	26.0	2655	1270	2370	3305	2020	2820	1070	8200	8940	

The right To alter technical data such as dimensions, weightiest is reserved. The exact values are shown in the dimensional drawing after order
Note: Tolerance in dimensions and weight + 10%

Table 2 Copper Winding

Rating (kVA)	Highest Voltage (kV)	Impedance (%)	No Load Losses (kW)	Load Losses at 75 °C (kW)	Load Losses at 120 °C (kW)	Length (L) (mm)	Width (B) (mm)	Height (H) (mm)	Length (X) (mm)	Width (Y) (mm)	Height (Z) (mm)	Distance between wheels E (mm)	Weight without Enclosure (kg)	Weight with Enclosure (kg)	Noise Level dB
160	12	4	0.61	2.3	2.7	1080	720	1300	1530	1170	1750	520	1000	1230	50
	24	4	0.65	2.3	2.7	1335	720	1330	1985	1470	1780	520	1200	1515	
250	12	4	0.82	3.1	3.5	1200	720	1350	1650	1170	1800	520	1300	1545	53
	24	4	0.88	3.3	3.8	1425	720	1410	2075	1470	1860	520	1550	1885	
315	12	4	0.95	3.6	4.1	1200	870	1380	1650	1320	1830	670	1450	1715	54
	24	4	1.03	4	4.6	1470	870	1440	2120	1620	1890	670	1800	2165	
400	12	4	1.15	4.3	4.9	1350	870	1410	1800	1320	1860	670	1700	1985	55
	24	4	1.2	4.8	5.5	1620	870	1470	2270	1620	1920	670	2200	2585	
500	12	4	1.3	5.2	6.0	1365	870	1640	1815	1320	2090	670	2050	2360	56
	24	4	1.4	5.7	6.5	1635	870	1730	2285	1620	2180	670	2650	3070	
630	12	4	1.5	6.4	7.3	1395	870	1670	1845	1320	2120	670	2250	2570	57
	24	4	1.65	6.8	7.8	1770	1020	1700	2420	1770	2150	670	3050	3505	
800	12	5	1.7	7.7	8.8	1470	1020	1670	1920	1470	2120	820	2650	2995	58
	24	5	2	8.2	9.4	1665	1020	1720	2315	1770	2170	820	2900	3345	
1000	12	5	2	8.8	10.0	1620	1020	1740	2070	1470	2190	820	3100	3475	59
	24	5	2.3	9.6	11.0	1860	1020	1800	2510	1770	2250	820	3700	4185	
1250	12	6	2.5	10.5	12.0	1755	1020	1770	2205	1470	2220	820	3600	3995	61
	24	6	2.8	11.5	13.1	1920	1020	2000	2570	1770	2450	820	4100	4620	
1600	12	6	2.8	12.3	14.0	1800	1020	2000	2250	1470	2450	820	4500	4930	61
	24	6	3.1	14	16.0	1980	1020	2010	2630	1770	2460	820	4800	5330	
2000	12	6	3.5	14.9	17.0	1950	1270	2230	2400	1720	2680	1070	5650	6170	62
	24	6	4	17.5	20.0	2175	1270	2250	2825	2020	2700	1070	6100	6740	
2500	12	6	4.3	18.3	21.0	2010	1270	2260	2460	1720	2710	1070	6400	6935	65
	24	6	5	20	23.0	2295	1270	2290	2945	2020	2740	1070	6900	7570	
3150	12	7	5.5	22	25.0	2205	1270	2290	2655	1720	2740	1070	7700	8265	65
	24	7	6.3	23	26.0	2415	1270	2330	3065	2020	2780	1070	8400	9095	

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Note: Tolerance in dimensions and weight + 10%

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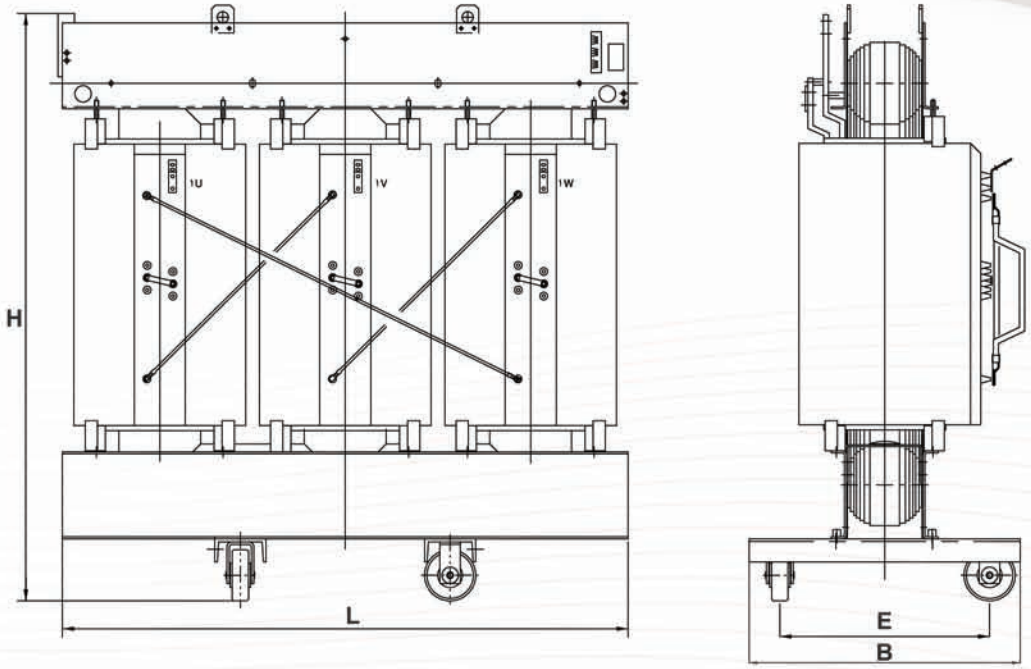
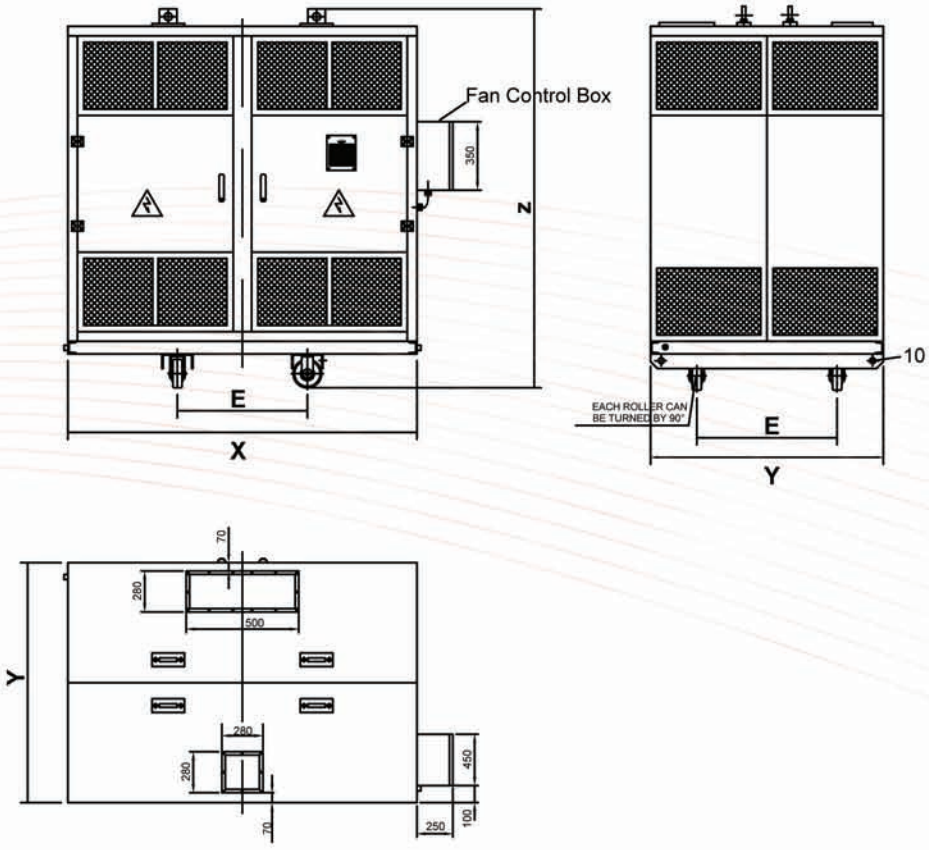
Transformer's Outline Drawing



Enclosure Outline Drawing



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Accessories

Transformer with Enclosure

- The transformers can be equipped with enclosures of different protection level according to IEC 60529 for different service condition.
- The enclosures are specially designed that the heat is dissipated properly
- Elsewedy Transformers can offer enclosures with IP10/ IP20 to IP33 indoor and outdoor

Temperature Control System

PT 100 linear resistance are used as sensors for monitoring and controlling temperature of the transformers.

Air-Forced System

Cooling fans can be installed on both sides of transformer. The fans are automatically switched on and off by means of sensors. This can increase capacity of transformers up to 40%

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Certificates

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