

CO₂ AND
CONSUMPTION
REDUCTION (TEP)



EFFICIENCY
INCREASE



COST
CUTTING



ANNUAL SAVINGS (MAXIMUM) COMPARED TO TRANSFORMERS WITH LOSSES ECO1 (2015)

RATED OUTPUT KVA	100	160	250	400	630	800	1.000	1.250	1.600	2.000	2.500	3.150
LOW CONSUMPTION (MWH) (COMPARED TO EU ECO 548/2014)	1,51	1,96	2,65	4,8	4,81	4,2	4,88	5,8	6,1	8,4	10	11



CAST RESIN

GENERAL INFORMATION

Today the improvement of energy efficiency cannot be considered a slogan anymore, but a need of our time. The **new high efficiency transformers TR-ECO³** series are designed on the basis of experience gained by the Regulation EU 548/2014. Thanks to a limited and **AMORTIZABLE INVESTMENT IN ONLY 3 YEARS**, has allowed us to guarantee the following advantages:

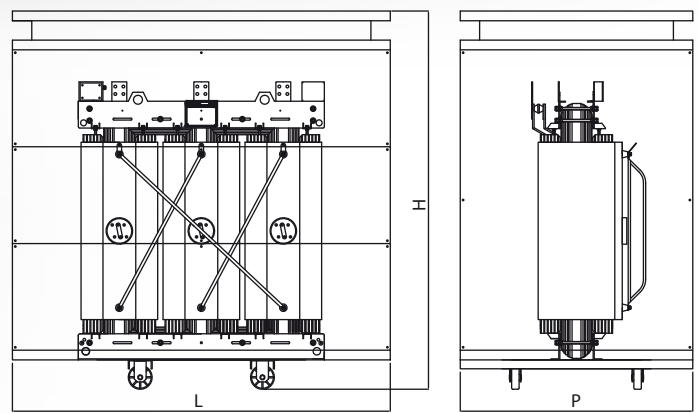
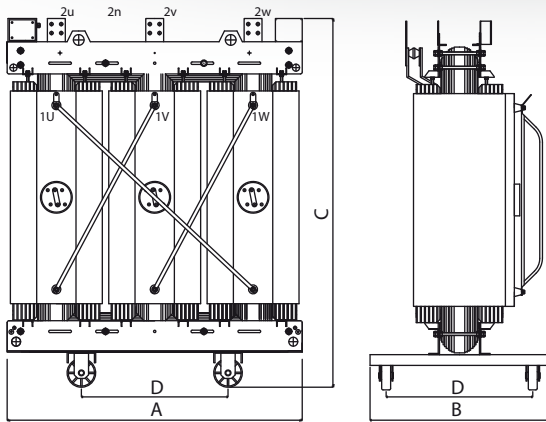
- **Improvement of all features** related to EU 548/2014 Regulation – Tier 2 (2021).
- Savings on management costs of the plant, due to **low values of losses**.
- **Reduction in the consumption** of energy resources (TEP).
- **Reduction** of CO₂ emissions.

RATED OUTPUT kVA		100	160	250	400	630	800	1.000	1.250	1.600	2.000	2.500	3.150
NO-LOAD LOSSES	W	225	280	420	600	880	1.040	1.240	1.440	1.860	2.080	2.480	3.040
LOAD LOSSES AT 120 °C	W	1.620	2.340	3.060	4.050	6.400	7.200	8.100	9.900	11.700	14.400	17.100	19.800
NO-LOAD CURRENT	%	1	0,9	0,8	0,8	0,8	0,6	0,6	0,6	0,6	0,6	0,4	0,4
IMPEDANCE VOLTAGE	%	6	6	6	6	6	6	6	6	6	6	6	6,5
INRUSH CURRENT I_E / I_N		11,5	10,5	10,00	9,5	9,5	9	9	8,5	8,5	8	8	7,5
EFFICIENCY AT 120°C													
COSφ 1 100% LOAD	%	98,19	98,39	98,63	98,85	98,86	98,98	99,07	99,10	99,16	99,18	99,22	99,28
COSφ 1 75% LOAD	%	98,51	98,69	98,87	99,05	99,06	99,16	99,23	99,26	99,30	99,33	99,36	99,40
COSφ 0,9 100% LOAD	%	98,76	98,93	99,06	99,20	99,22	99,30	99,35	99,38	99,41	99,44	99,46	99,50
COSφ 0,9 75% LOAD	%	98,71	98,95	99,03	99,15	99,19	99,26	99,31	99,35	99,36	99,41	99,44	99,46
VOLTAGE DROP AT 120° C													
COSφ 1 100% LOAD	%	1,79	1,63	1,40	1,19	1,19	1,08	0,99	0,97	0,91	0,90	0,86	0,81
COSφ 0,9 100% LOAD	%	4,08	3,96	3,77	3,61	3,61	3,52	3,45	3,43	3,38	3,37	3,34	3,30
NOISE													
SOUND POWER LEVEL (LWA)	dB(A)	51	54	57	60	62	64	65	67	68	70	71	74

SIZES AND WEIGHTS (INDICATIVE)

Without enclosure IP00

With IP21 Protective enclosure



INSULATION VOLTAGE 17,5-24 KV		100	160	250	400	630	800	1000	1250	1600	2000	2500	3150
LENGTH (A)	mm	1.150	1.250	1.300	1.500	1.460	1.650	1.650	1.670	1.900	1.900	1.940	2.200
DEPTH (B)	mm	650	650	650	800	800	1.000	1.000	1.100	1.190	1.190	1.190	1.200
HEIGHT (C)	mm	1.330	1.500	1.500	1.685	1.850	2.060	2.190	2.235	2.300	2.400	2.500	2.500
WEIGHT	kg	820	1.050	1.340	1.850	2.130	2.440	3.190	3.630	4.310	4.860	5.870	7.350

PROTECTIVE ENCLOSURE IP21		TYPE 0A	TYPE 0	TYPE 1	TYPE 2	TYPE 3	TYPE 4
LENGTH (L)	mm	1.600	1.700	1.700	1.950	1.950	2.700
DEPTH (P)	mm	900	1.000	1.000	1.200	1.200	1.500
HEIGHT (H)	mm	1.750	1.850	1.850	2.200	2.300	2.900
ENCLOSURE WEIGHT	kg	200	210	230	280	290	450

PARTICULARITY

Reference norms :

- Reg. UE N548/2014
- CEI EN 60067-1,2,3,4,5 -11
- CEI EN 50541-1

The phases of design and building, in addition to their compliance with IEC EN norms, take into account the following regulations:

- ISO 9001 : 2008 regarding the quality standards and procedures .
- ISO 14001 : 2004 regarding the environmental issues .

Easy and fast to install are suitable for use in:

- MV/LV prefabricated substation and substation with reduced dimensions.
- fire and pollution hazard areas.
- buildings with public access.

Moreover, their disposal is simple and with low environmental impact.

DESCRIPTION

The three-phase cast resin transformers have the following features:

- MV windings encapsulated in cast resin.
- LV windings impregnated with resin.
- Magnetic core made using magnetic grain-oriented steel sheets with low loss, and the joints are Step-Lap inserted sheets.
- Level of partial discharges < 10 pC.
- Thermal class F – Temperature rise 100 K.
- Ambient temperature ≤ 40°C, altitude ≤ 1000 m.
- Self-extinguishing with low emission of gas, classification F1.
- Resistant to thermal shock, classification C2.
- Resistant to condensation and humidity, classification E2.

COMPLETION ACCESSORIES ALWAYS PROVIDED

- LV terminal connector plates
- MV voltage variation by off circuit tapping connections
- Rating plate
- Lifting lugs
- 2 earthing points
- 4 bi-directional flat rollers



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