

IMEFY

GROUP



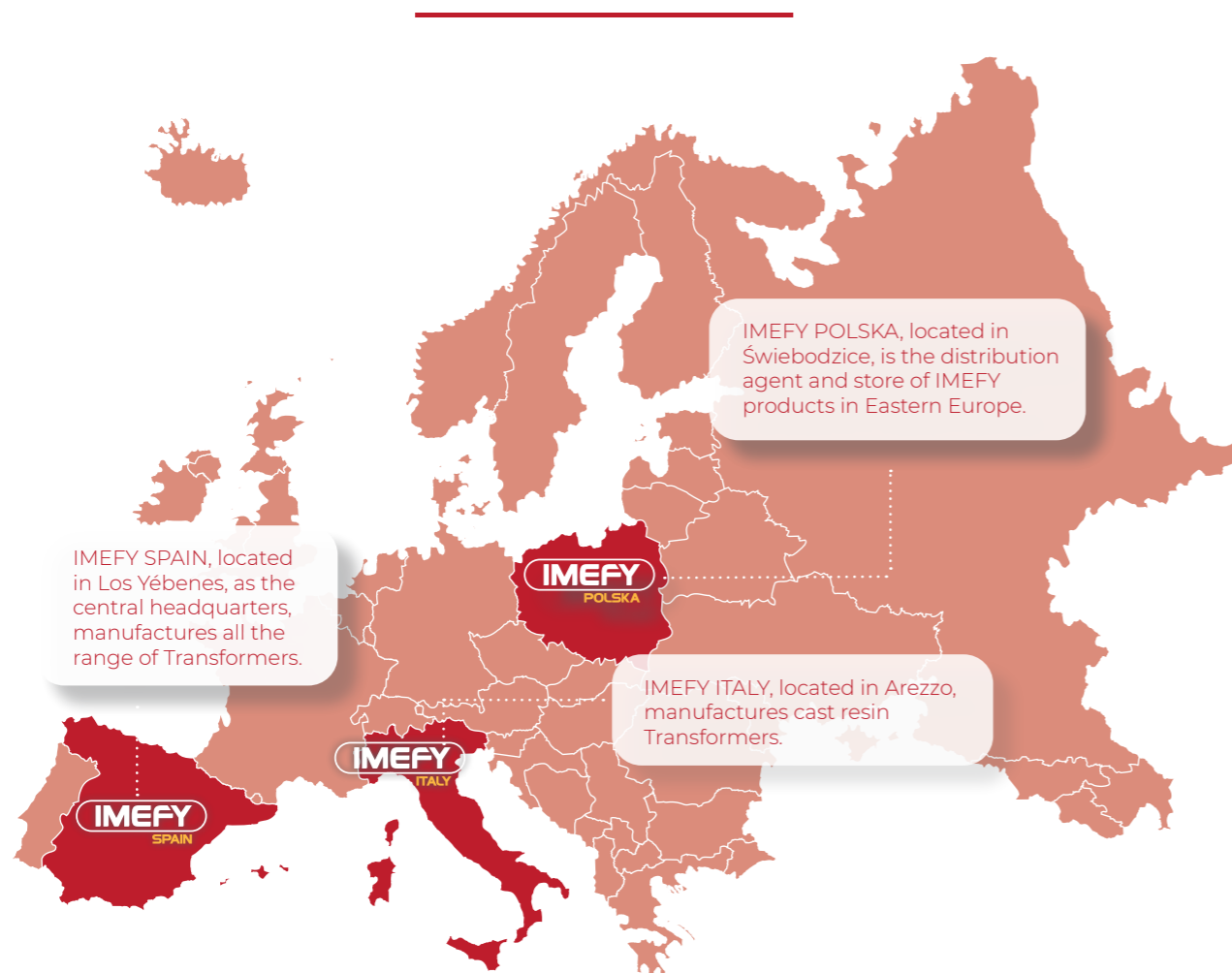
Cast resin distribution transformers

Up to 20 MVA | Up to 36 kV

We transform energy

Cast resin distribution transformers

Introduction	3
Constructive Features	4
Climatic, environmental and Fire Behaviour Requirements	5
Ecodesign Transformers	6
Losses levels	7
Table of dimensions, weights, and losses	8
General Drawings	10
Accessories	11
IP enclosures	13
Parts of transformer	14
Tests	15



Introduction

Since IMEFY was founded in 1973 as a company dedicated to the manufacture of liquid-immersed distribution transformers, it has followed a path of continuous development, in terms of technology as well as expansion, becoming one of the world's leading manufacturers of a wide range of transformers, including:

- Medium-sized liquid-immersed power transformers, with power ratings from 10kVA to 3150kVA and insulation levels from 1.1kV to 36kV.
- Large liquid-immersed power transformers, with power ratings from 3150kVA to 160 MVA and an insulation level of 245kV.
- Epoxy-resin encapsulated transformers (dry-type), with power ratings from 10kVA to 3150kVA and insulation levels from 1.1kV to 36kV.
- Large epoxy-resin encapsulated transformers (dry-type) with power ratings from 3150 KVA to 6 MVA and insulation levels up to 36 KV.

This range of products meets the legal requirements established by Regulation (EU) No. 548/2014 of the European Commission of May 21, 2014, as well as Regulation (EU) 2019/1783 of the European Commission of October 2019 that modifies the Regulation (EU) No. 548/2014.

These legal requirements are applicable when the transformers are marketed within the scope of the Regulation, that is, all the countries of the European Union that ratify it.

One of IMEFY's hallmarks is the high standard of quality and reliability of its entire product line, which is achieved thanks to the company's qualified staff, cutting-edge technology for the design, manufacture, and control of the processes and finished products in its test laboratories, and its post-sale service to track customer satisfaction.

Allofthis,incombinationwithaninternalEnvironmental and Sustainability policy, and the prioritization of the well-being and occupational health of our workers, has helped the IMEFY to gain the recognition and trust of its customers, allowing it to expand its operations around the world.

Lastly, IMEFY, in keeping with the Strategic Plan of its organization, maintains its quality and management system based on ongoing improvement, supported on the pillars of the customer's voice, analysis and improvement of processes, and development of new products (R&D&I).

In terms of the different types of power transformers, IMEFY has the capacity, resources, and experience to manufacture a wide variety of transformers and autotransformers, including single-phase to two and three columns, as well as three-phase to three and five columns, intended for applications such as:

- Distribution.
- Generation.
- Traction.
- Rectifiers.
- Furnaces.
- Voltage dips, etc.

All of these types of transformers or autotransformers can be equipped with:

- No-load tap changer (linear or rotating).
- On-load tap changer, using vacuum or oil switching technologies and positive configuration (fine regulation or coarse fine regulation) or inversion configuration.

Some of Our Customers:



Our Certificates:



Constructive features

This catalogue describes transformers encapsulated in epoxy resin up to 20MVA and 36kV. (Note: For higher power ratings and insulation series consult IMEFY).

Transformers encapsulated in epoxy resin are a special type of dry transformer (CEI EN 60076-11) with active parts not immersed in insulating liquid.

Where a transformer has one or more encapsulated windings it is commonly known as a transformer encapsulated in resin.

This type of transformer, thanks to advances in manufacturing techniques and the materials used (such as epoxy resin), are being increasingly used due to their high reliability and limited need for maintenance plans, as well as their added value of lesser environmental impact compared to other types of transformer (immersed in dielectric liquids).

Transformers encapsulated in epoxy resin have this name as the M.V. winding is encapsulated in resin, for which impregnation techniques are used, thermal and no-load treatment and a very specific and controlled jellification and polymerisation process which makes possible a fundamental dielectric and mechanical consistency.

An important way of ensuring the quality of M.V. windings is the partial discharge test (individual tests defined in national and international regulations) which concerns both the operational process referred to above and the design know-how.

L.V. windings are manufactured with a band of copper or aluminium. M.V. windings are also manufactured

in bands of copper or aluminium, but they can also be manufactured with thread. This design similarity makes it possible to minimise the axial force in the event of possible short-circuits.

All the insulators used, both in the M.V. as L.V. windings, have thermal characteristics which allow the transformer to work continuously at temperatures of at least 125°C, that is, class F. They also have dielectric and mechanical characteristics that give the transformer a useful life of 25-30 years..

The windings made in this way are highly resistant to condensation and contamination.

The materials used in manufacture exceed the quality controls planned before use in order to ensure the reliability and safety of the final product.

All of this is backed by Quality and Environmental Management Systems in accordance with ISO 9001:2008; ISO 14001:2004 respectively. As a Health and Safety at Work system we are certified by ISO 45001:2018.

In addition to these certificates IMEFY transformers are recognised by numerous electrical companies throughout the world, and backed by tests in official independent laboratories such as CESI, KEMA, TECNALIA, LCOE...

In the same way, and taking into account the change of standards (low noise level) IMEFY also has a SEMIANECOIC CHAMBER which, thanks to its technology and innovation, provides a reduction of the background noise of around 20-25 dB.

Semianechoic chamber



Climatic, environmental and fire behaviour requirements

The technical committee CENELEC for Transformers Encapsulated in Resin has laid down the minimum requirements for the use of transformers in particularly unfavourable environmental conditions, such as the presence of humidity, industrial and sea pollution and high risk of fire. These documents prepared by CENELEC are contained in the CEI EN 60076-11, including the classifications required and the test procedures for their verification.

In 1997 and later in 2001 IMEFY achieved certificate E2-C2-F1 in transformers with various power ratings. In February 2010 IMEFY obtained the same certificate in a transformer of 1000kVA at the CESI (Milan) test centre under the test procedure for rule CEI 60076-11.

And in the last test procedure IMEFY also completed the test for the new environmental class E3 (rule CEI 60076-16) in a transformer of 1000kVA, thus obtaining the classification E3-C2-F1.

The following table sets out the various classifications which underline the above:

ENVIRONMENTAL CLASSES	
E0	There is no condensation in the transformers and contamination is negligible. This is normally achieved in a clean and dry installation interior.
E1	Occasional condensation may occur in the transformer (for example, when the transformer is turned off). Contamination is possible.
E2	Frequent condensation, heavy contamination or a combination of both; with water conductivity in a range between 0,5 s/m and 1,5 s/m.
E3	Close to total condensation, heavy contamination or a combination of both; with water conductivity in a range between 3,6 s/m and 4,0 s/m.

CLIMATIC CLASSES	
C1	The transformer is suitable for operation at ambient temperature not below -5°C but may be exposed during transport and storage to ambient temperatures down to -25°C.
C2	The transformer is suitable for operation, transport and storage at ambient temperatures down to -25°C.
C3	The transformer is suitable for transport and storage at ambient temperatures of -40° C, and operation temperature of -25° C.

FIRE BEHAVIOUR CLASSES	
F0	There is no special fire risk to consider. Except for the characteristics inherent in the design of the transformer, no special measures are taken to limit flammability.
F1	<ul style="list-style-type: none"> • Restricted flammability. • Within a fixed time the fire should auto-extinguish • Minimized emission of toxic substances and opaque smokes. • Materials and combustion products a must be practically extent from halogen composite and give only a limited thermic energy input at an external fire.

All IMEFY transformers are certified: E2-C2-F1 (in accordance with rule CEI 60076-11, Certificate CESI B0005487)

Ecodesign transformers

Due to new trends regarding Legislation, focused on Energy Efficiency and Sustainable Development, IMEFY has created a research team to perform development studies, continuous improvement and energy efficiency of liquid immersed distribution transformers, from the beginning to the end of their useful life.

This R&D team researches and develops mechanism to achieve increasingly efficient products, from:

- Raw materials procurement (vegetable oils, high-quality magnetic steel, etc...)
- Processes Development to reduce potential CO₂ equivalent emissions and development of an Energy Plan.
- Greater Energy Efficiency throughout the useful life of transformers, which means an increase of this useful life.
- Recycling of materials at the end of life of transformer.

All these studies and investigations, some of them in collaboration with Spanish government, allow IMEFY to offer low-losses transformers according to the European Regulation n°548/2014 dated on 21th, May, 2014 and n°1783/2019 which is mandatory from 1st July 2015 for all states of the European Union.

These low losses, which can involve at first an increase in the cost of the transformer due to the special used materials, entail an increased energy efficiency, reduced operating costs and hence in a return on short term investment, according to existing evidence based on mathematical formulas, throughout the lifetime of the transformer.

According to the European Regulation (EU) 1783/2019 and the standard UNE-EN 50708-2-1, the ECODESIGN II losses levels are:

Power (kVA)	EcoDesign Losses Um <=24kV		EcoDesign Losses Um <=36kV		Short-circuit impedance %
	Load Losses Pk (W)	No Load Losses P0 (W)	Load Losses Pk (W)	No Load Losses P0 (W)	
100	1800	252	1980	290	6
160	2600	360	2860	414	
250	3400	468	3740	538	
400	4500	675	4950	776	
630	7100	990	7810	1139	
800	8000	1170	8800	1346	
1000	9000	1395	9900	1604	
1250	11000	1620	12100	1863	
1600	13000	1980	14300	2277	
2000	16000	2340	17600	2691	
2500	19000	2790	20900	3209	
3150	22000	3420	24200	3933	

Losses levels

IMEFY can also provide other levels of losses according to the following tables:

Power (kVA)	Load Losses and No Load Losses (W) Um ≤ 24 kV					Short-circuit impedance (%)
	Load Losses Pk (W)		No Load Losses P0 (W)			
	Ak	Bk	A0	B0	C0	
100	1800	2050	280	340	460	6 *
160	2600	2900	400	480	650	
250	3400	3800	520	650	880	
400	4500	5500	750	940	1200	
630	7100	7600	1100	1250	1650	
800	8000	9400	1300	1500	2000	
1000	9000	11000	1550	1800	2300	
1250	11000	13000	1800	2100	2800	
1600	13000	16000	2200	2400	3100	
2000	16000	18000	2600	3000	4000	
2500	19000	23000	3100	3600	5000	
3150	22000	28000	3800	4300	6000	

Power (kVA)	Load Losses and No Load Losses (W) Um = 36 kV						Short-circuit impedance (%)
	Load Losses Pk (W)			No Load Losses P0 (W)			
	Ak	Bk	Ck	A0	B0	C0	
100	-	2255	-	322	-	-	6 *
160	2500	3190	2900	460	900	960	
250	3500	4180	4000	598	1100	1280	
400	5000	6050	5700	863	1300	1650	
630	7000	8360	8000	1265	1600	2200	
800	8800	9000	9600	1495	1900	2700	
1000	9900	11000	11500	1783	2250	3100	
1250	12100	13000	14000	2070	2600	3600	
1600	14300	16000	17000	2530	3000	4200	
2000	17600	18500	21000	2990	3500	5000	
2500	20900	22500	25000	3565	4200	5800	
3150	24200	27500	30000	4370	5000	6700	

* For another short-circuit impedance, please consult the Technical Department.

Table fo dimensions, weights, and losses

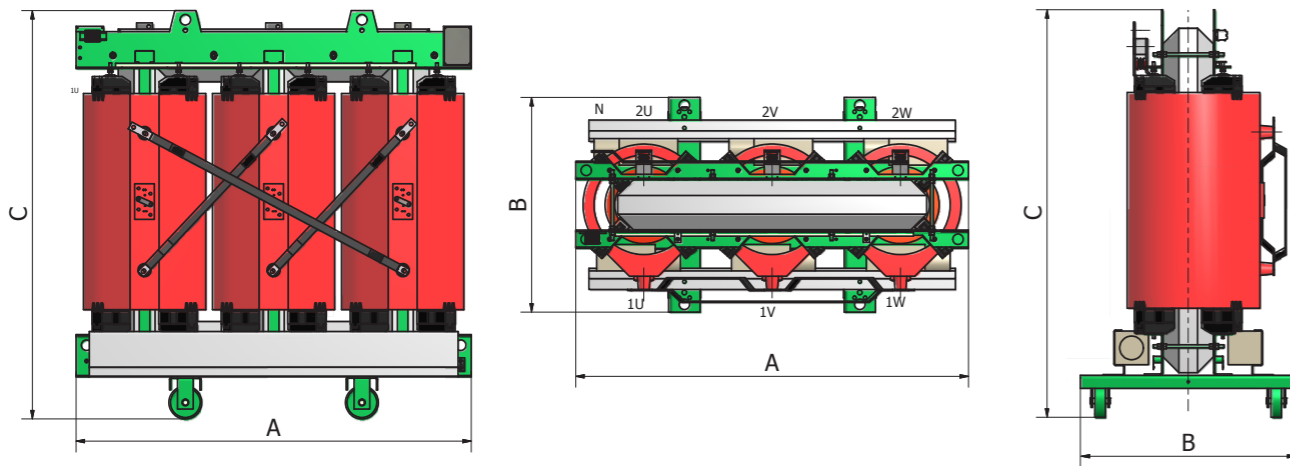
POWER (kVA)	HIGHEST VOLTAGE FOR MATERIAL (kV)	SHORT-CIRCUIT IMPEDANCE (%)	LOSSES (W)	APPROXIMATE DIMENSIONS (mm)			WEIGHTS (kg)	NOISE LEVEL dB (A) SOUND PRESSURE	
				ALUMINIUM				0,3m	1m
				Length (A)	Width (B)	Height (C)			
100	24	6*	BkCO	1450	700	1160	800	59	53
			AkBO	1500	760	1170	1000	51	45
			BkAO	1500	760	1230	1050	51	37
	Ak AA0**		1500	765	1350	1300	50	35	
	Bk(+10%)AO(+15%)		1600	830	1500	1250	51	37	
	Ak (+10%) AA0 (+15%)**		1600	820	1580	1400	50	35	
160	24	6*	BkCO	1300	740	1170	850	62	56
			AkBO	1400	760	1280	1100	54	48
			BkAO	1400	760	1300	1150	54	40
	Ak AA0**		1500	765	1350	1300	53	39	
	CkCO		1500	800	1450	1200	66	60	
	AkBO		1500	800	1500	1300	62	56	
250	24	6*	Bk(+10%)AO(+15%)	1700	860	1650	1580	57	40
			Ak (+10%) AA0 (+15%)**	1750	900	1620	2000	53	39
			BkCO	1350	820	1230	950	65	59
	AkBO		1400	820	1290	1150	57	51	
	BkAO		1400	820	1350	1200	57	43	
	Ak AA0**		1500	820	1400	1320	56	42	
315	24	6*	CkCO	1800	930	1550	1800	67	61
			AkBO	1800	940	1600	2000	64	58
			Bk(+10%)AO(+15%)	1700	940	1650	2050	59	43
	Ak (+10%) AA0 (+15%)**		1750	950	1750	2150	56	42	
	BkCO		1400	820	1350	1130	67	60	
	AkBO		1500	840	1360	1580	59	52	
400	24	6*	BkAO	1500	840	1460	1600	58	44
			Ak AA0**	1520	850	1500	1550	57	43
			CkCO	1800	930	1650	2100	69	62
	AkBO		1900	940	1750	2500	65	58	
	Bk(+10%)AO(+15%)		1800	960	1700	2600	61	46	
	Ak (+10%) AA0 (+15%)**		1800	1000	1900	2600	59	45	
500	24	6*	BkCO	1400	820	1360	1150	68	61
			AkBO	1500	840	1380	1600	60	53
			BkAO	1600	860	1560	1800	60	46
	Ak AA0**		1550	850	1600	1650	59	45	
	CkCO		1800	930	1650	2100	69	62	
	AkBO		1900	940	1750	2500	65	58	
630	24	6*	Bk(+10%)AO(+15%)	1800	960	1700	2600	61	46
			Ak (+10%) AA0 (+15%)**	1800	1000	1900	2600	59	45
			BkCO	1450	820	1530	1550	69	62
	AkBO		1600	850	1550	2010	61	54	
	BkAO		17100	870	1600	2100	61	47	
	Ak AA0**		1600	860	1650	1900	60	46	
800	24	6*	Bk(+10%)AO(+15%)	1900	980	1800	2900	61	47
			Ak (+10%) AA0 (+15%)**	1800	1000	1900	2750	60	46
			BkCO	1500	820	1550	1600	70	63
	AkBO		1700	870	1570	2200	62	55	
	BkAO		1700	870	1630	2300	62	48	
	Ak AA0**		1600	860	1750	2150	61	47	
1000	24	6*	CkCO	1800	940	1750	2400	71	64
			AkBO	1900	950	1850	3050	68	61
			Bk(+10%)AO(+15%)	1900	980	1850	3100	63	48
	Ak (+10%) AA0 (+15%)**		1800	1000	1900	2800	61	47	
	BkCO		1300	740	1170	850	62	56	
	AkBO		1400	760	1280	1100	54	48	

(*) For another short-circuit impedance, please consult the Technical Department.
 (**) Ecodesign II

POWER (kVA)	HIGHEST VOLTAGE FOR MATERIAL (kV)	SHORT-CIRCUIT IMPEDANCE (%)	LOSSES (W)	APPROXIMATE DIMENSIONS (mm)			WEIGHTS (kg)	NOISE LEVEL dB (A) SOUND PRESSURE	
				ALUMINIUM				0,3m	1m
				Length (A)	Width (B)	Height (C)			
800	24	6*	BkCO	1550	820	1650	1850	72	65
			AkBO	1700	870	1670	2400	64	57
			AkAA0	1700	890	1700	2600	64	50
	36		CkCO	1900	960	1900	2800	72	65
			AkBO	2000	970	1950	3450	69	62
			Ak(+10%)AO(+15%)	1900	990	2000	3500	64	50
1000	24	6*	Ak (+10%) AA0 (+15%)**	1800	1000	2100	3300	63	49
			BkCO	1600	820	1760	2200	73	66
			AkBO	1800	900	1800	3100	65	58
	36		AkAA0	1800	900	1950	3150	64	50
			CkCO	2000	960	2000	3200	73	66
			AkBO	2000	970	2100	3800	70	63
1250	24	6*	Ak(+10%)AO(+15%)	2000	1050	2150	4000	65	51
			Ak (+10%) AA0 (+15%)**	1900	1100	2250	3750	64	50
			BkCO	1700	1000	1980	2750	75	67
	36		AkBO	1900	1000	2000	3800	67	59
			AkAA0	1900	1020	2050	3900	67	53
			Ak AA0**	1900	1000	2220	3800	66	52
1600	24	6*	CkCO	2000	1050	2200	3800	75	67
			AkBO	2000	1050	2250	4350	72	64
			Ak(+10%)AO(+15%)	2100	1120	2400	4800	67	53
	36		Ak (+10%) AA0 (+15%)**	2000	1100	2400	4300	66	52
			BkCO	1800	1060	2080	3300	76	68
			AkBO	2000	1060	2100	4300	68	60
2000	24	6*	AkAA0	2000	1060	2150	4400	68	53
			Ak AA0**	1950	1020	2220	4200	67	52
			CkCO	2100	1150	2270	4500	76	68
	36		AkBO	2200	1150	23350	5500	73	65
			Ak(+10%)AO(+15%)	2200	1150	2450	5600	68	53
			Ak (+10%) AA0 (+15%)**	2250	1200	2500	5700	67	52
2500	24	6*	BkCO	1900	1060	2180	3900	78	70
			AkBO	2000	1060	2200	4800	70	62
			AkAA0	2100	1060	2350	5400	70	54
	36		Ak AA0**	2050	1070	2300	4900	69	53
			CkCO	2200	1200	2350	5100	78	70
			AkBO	2200	1200	2350	5700	74	66
3150	24	6*	Ak(+10%)AO(+15%)	2300	1200	2550	6900	72	54
			Ak (+10%) AA0 (+15%)**	2400	1420	2550	6600	69	53
			BkCO	2200	1420	2260	5100	81	73
	36		AkBO	2300	1420	2280	6350	71	63
			AkAA0	2300	1420	2400	7200	71	55
			Ak AA0**	2300	1420	2450	6750	70	54
3150	24	6*	CkCO	2300	1420	2400	6700	81	73
			AkBO	2400	1420	2450	7500	78	70
			Ak(+10%)AO(+15%)	2500	1430	2650	8700	73	55
	36		Ak (+10%) AA0 (+15%)**	2500	1420	2600	7450	70	54
			BkCO	2300	1420	2390	7200	83	75
			AkBO	2500	1420	2430	9060	74	65
3150	24	6*	AkAA0	2600	1420	2550	9500	74	58
			Ak AA0**	2600	1420	2500	9100	73	57
			Ak(+10%)AO(+15%)	2800	1490	2700	11000	76	58
	36		Ak (+10%) AA0 (+15%)**	2650	1420	2650	9800	73	57

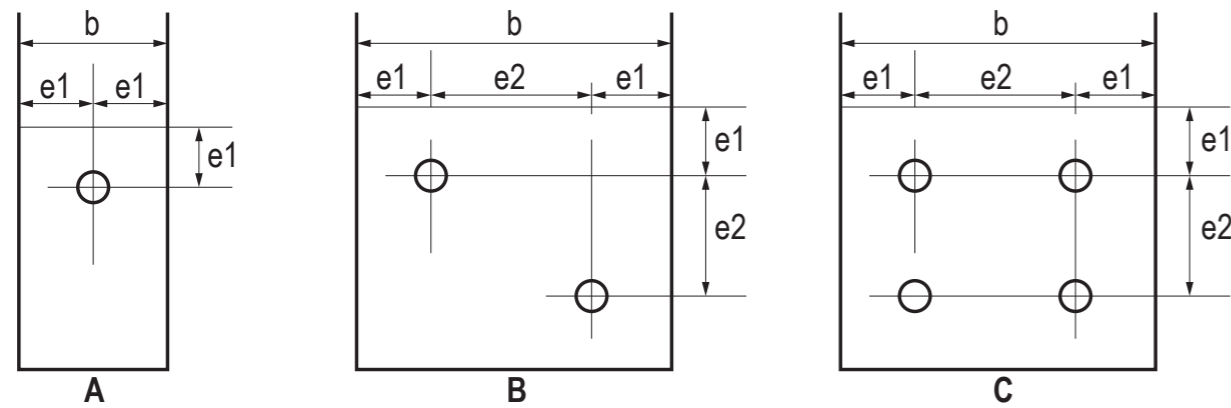
(*) For another short-circuit impedance, please consult the Technical Department.
 (**) Ecodesign II.

General drawings



See dimensions in page 8 and 9.

Plans of low tension terminals



Type	A	B	C	C	C	
Power	$I \leq 400A$	$400A < I \leq 1000A$	$1000A < I \leq 1600A$	$1600A < I \leq 2000A$	$2000A < I \leq 3600A$	
Width (b)	30	60	80	100	120	>120
e1	15	14	20	25	30	Subject to agreement between supplier and purchaser
e2	-	32	40	50	60	
N° holes	1	2	4	4	4	
Ø holes	14	14	14	14	18	



Accessories

On-Load Tap-Changers

Increasing power and voltage is beginning to set a trend for this type of transformer. This means that there is increasing demand for transformers with on-load regulation (normally in cases of transformers of high power rating and high primary voltage) due to the fact that they are being installed in transformation centres which do not allow frequent stops to adjust the fluctuating voltages of the grid. For this type of application the incorporation of an "On-Load Tap-Changer" is needed, which in turn means a specific design of transformer as regulation windings have to be incorporated.

The VACUTAP VT on-load tap-changer is one of the world's leading oil-free on-load tap-changers, for adjustment of uninterrupted voltage of on-load dry transformers. It is designed as a single-phase module directly assigned to the transformer limb. Having a motorised unit, a single-pole or three-pole 3 x VT 1 500 system for star or delta change-over may easily be built.

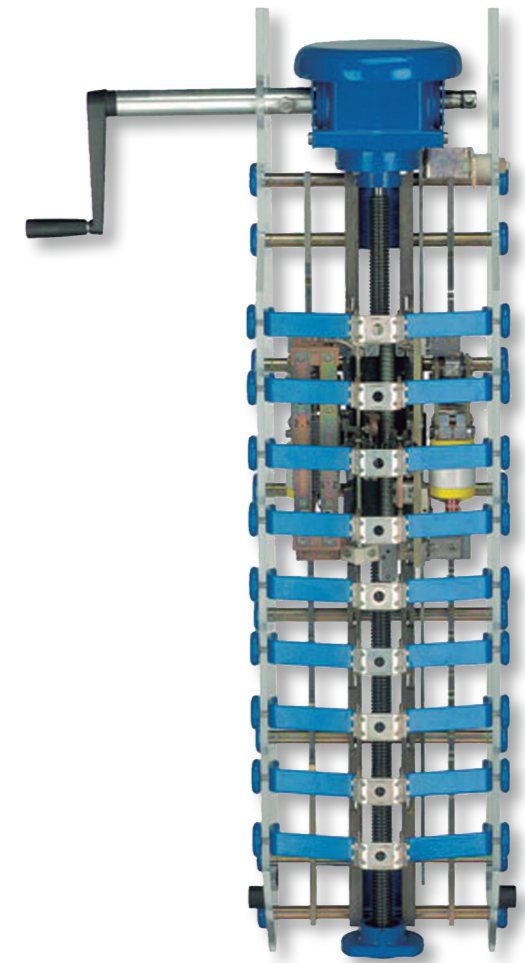
Vacuum interrupters function as load-switching contacts in the VT. The direct assignment of a tap-changer module to the limb of the transformer makes connection easy.

The VACUTAP VT has a maximum through current of 500 A and a maximum step voltage of 900 V for linear voltage adjustment in nine operating positions.

With its insulation against ground of $U_m = 40,5kV$ it can be used in dry transformers for interior installations up to high power levels.

Each VT module contains a tap selector and diverter switch for high-speed resistor-type tap change operation in a compact design. The movable tap selector contact system, the diverter switch and the spring-energy accumulator are incorporated in a switching element which is centrally driven by a screw spindle. Vacuum interrupters are used as load-switching contact elements. They guarantee excellent electrical and mechanical properties over an extremely long lifespan.

The motor drive unit is supplied as standard and functions in accordance with the step-by-step switching principle in order to mechanically operate the on-load tap-changer. It contains all devices for local and remote control, for remote display of operating positions and the electrical and mechanical end position limits. Its protective housing makes the motor drive unit suitable for outdoor installation, in dry transformers with encapsulated design.



On-Load Tap-Changers

We transform energy

Accessories

Thermal monitoring

Monitoring is the best tool available to you for increasing protection and reducing the risk of breakdown of your transformers.

A monitoring system should be safe, reliable, easy to use and profitable. Our range of control points has all of these characteristics, whether as part of a panel or separately.

Temperature and Ventilation Control Unit:

This is a control unit designed to control the temperatures of M.V. transformers, dry or encapsulated in resin, and the feeding of the ventilation system. Its use is recommended in combination with ventilation systems as it is equipped with two ventilation outlets with a maximum capacity of 16A.

4 PT 100 entrances allow reading the temperature of 3 windings, and possibly of the core or of the room temperature. There are 2 outlets for controlling the ventilators which provide energy directly to the motors.

In this way with a forced ventilation system the transformer can bear power greater than the power rating and maintain an optimal temperature, thus increasing power.

A digital RS485 Modbus outlet can also be fitted as an option.

Temperature Control Unit:

This is an electronic device with microprocessor for controlling the temperature of dry M.V. transformers and those encapsulated in resin. The unit provides high levels of protection against electromagnetic fluctuations and is very easy to use. Available for the control of 3 + 1 temperature (three channels for the phases plus an optional fourth for the core or room temperature).

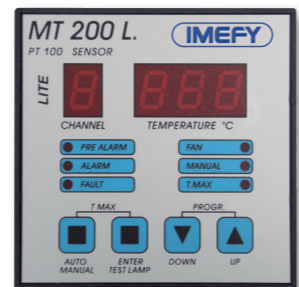
PT 100 probe:

It is used for the direct measurement of the winding temperature, and optionally of core and the room temperature. With a platinum braid gives linear and reliable precision in readings received. Using the best systems various parameters can be monitored: temperature, alarms and ventilation.

In this way with our control switchboards it is possible to monitor the state of the transformer at all times in a safe manner.



Temperature and Ventilation Control Unit



Temperature Control Units

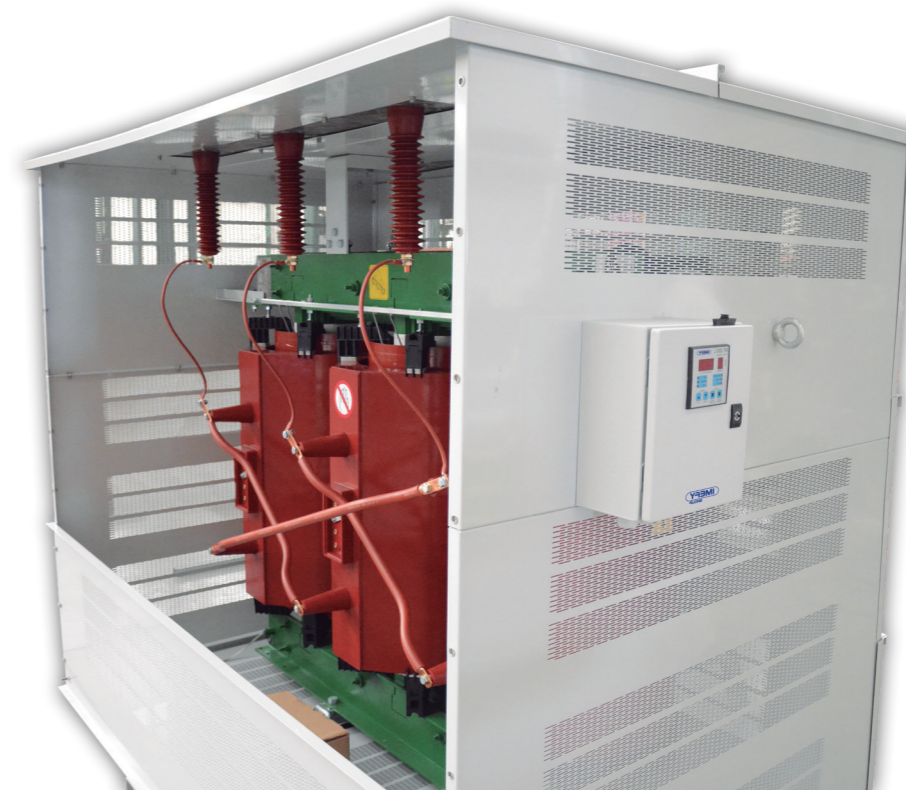
IP enclosures

All parts of resin transformers have voltage and it is common to use IP enclosures of different levels to protect against accidental contact. With these enclosures the transformer can be installed almost anywhere as the transformer is completely protected with a ground connection.

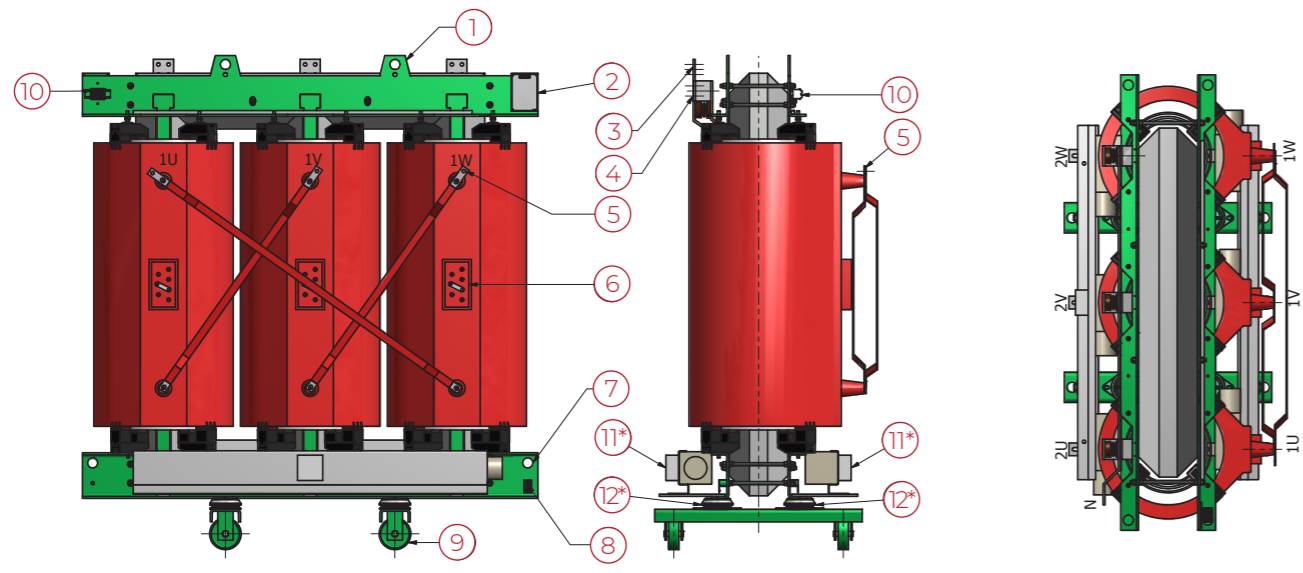
It should be stressed that there are different levels of protection. These levels affect the refrigeration of the transformer and therefore its size and price. The higher the level of protection, the greater the difficulty to evacuate the heat due to the losses, having to be careful with the design of the IP enclosures, because an incorrect design of the same, both in terms of cooling, and distances of air, can cause a serious problem in the transformer.

Table with Levels of Protection (IP)

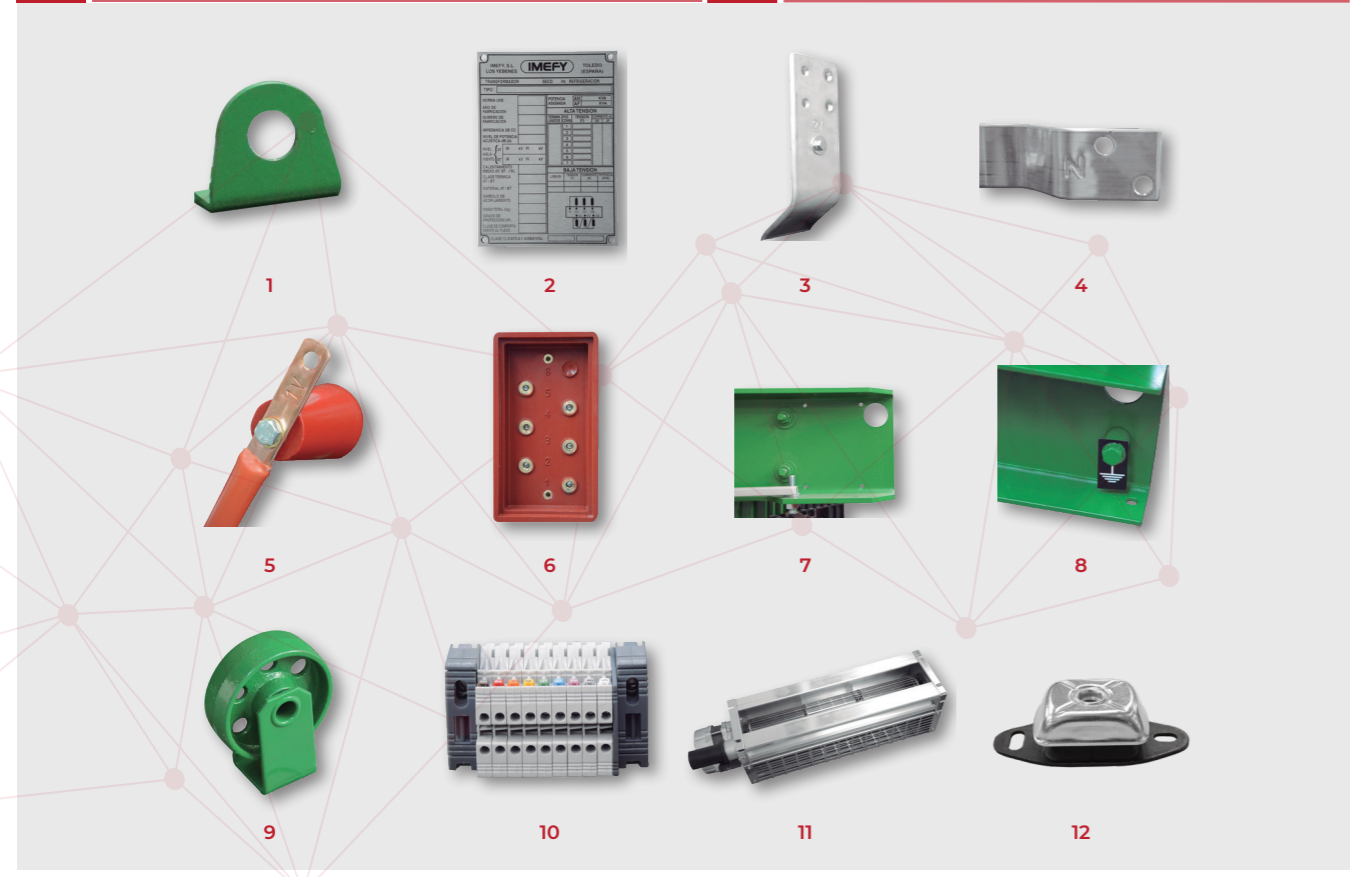
ELEMENT	NUMBER	PROTECTION OF MATERIAL	PROTECTION OF PERSONS
FIRST PROTECTION FIGURE	0	no protection.	no protection.
	1	against penetration by solid objects of $\varnothing \geq 50$ mm.	against ingress by back of hand (involuntary).
	2	against penetration by solid objects of $\varnothing \geq 12$ mm.	against ingress by one finger of the hand.
	3	against penetration by solid objects of $\varnothing \geq 2,5$ mm.	against ingress with a tool of $\varnothing 2,5$ mm.
	4	against penetration by solid objects of $\varnothing \geq 1,0$ mm.	against ingress with a wire of $\varnothing 1,0$ mm.
	5	against dust.	against ingress with a wire of $\varnothing 1,0$ mm.
	6	totally protected against dust (dust tight).	against ingress with a wire of $\varnothing 1,0$ mm.
SECOND PROTECTION FIGURE	0	no protection.	
	1	against the vertical falling of drops of water, condensation.	
	2	against the falling of drops of water of 15% inclination.	
	3	against rain water up to 60% inclination.	
	4	against splashing of water in any direction.	
	5	against jets of water from any direction.	
	6	against powerful splashing of water from a hose.	
	7	against the effects of temporary immersion.	
8	against the effects of prolonged immersion.		



Parts of Transformer



1	Eye bolt	7	Pulling device
2	Characteristics plate	8	Ground connection
3	B.T. terminal	9	Guidable wheels
4	Neutral terminal	10	Probes PT-100 connection
5	A.T. terminal	11	Forced ventilation (*optional)
6	Tension regulator	12	Silentblock (*optional)



Tests

We carry out tests of our transformers in independent laboratories for the Evaluation of the Conformity demonstrating in this way the fulfillment of national and international standards, regulations and specifications of Companies and Manufacturers.

Likewise, IMEFY makes an exhaustive Quality Control of raw materials and components, specific tests of components and assemblies, evaluation and diagnosis of Non-Conformities, Revision and design of specifications, analysis of faults, behavior in service and selection of Materials, etc.

IMEFY transformers are recognised by numerous electrical companies throughout the world, and backed by tests in official independent laboratories such as CESI, KEMA, TECNALIA, LCOE...

Achieving all of these recognitions and certificates over the course of IMEFY's history has meant important investments in laboratory equipment. Thus IMEFY has ELECTRICAL LABORATORIES with all the necessary equipment to carry out individual tests on each transformer as defined in standard IEC 60076 as well as all the type and / or special tests contained in that standard, made on demand and following agreement with the customer.

IMEFY also has a CHEMICAL LABORATORY which makes it possible to carry out the following tests: receiving of material, operational controls of final processes and tests, which without doubt support and demonstrate the quality of the product.

Individual tests

- Measurement of resistance of windings.
- Measurement of relation of transformation and verification of discrepancy.
- Measurement of impedance of short-circuit and losses due to the load.
- Measurement of losses and of no-load current.
- Individual dielectric tests (voltage induced at industrial frequency, voltage applied at industrial frequency).
- Tests of the on-load tap-changers, if necessary.
- Measurement of partial discharges.

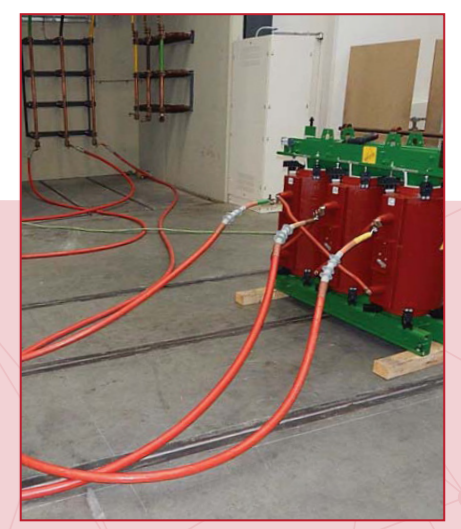
Special tests

- Determination of noise level.
- Short-circuit resistance test (in Official Laboratory).
- Climatic - C2 (en Laboratorio Oficial).
- Environmental - E3 / E2 (en Laboratorio Oficial).
- Fire behaviour - F1 (en Laboratorio Oficial).
- Seismic Test (in Official Laboratory).
- Verification check of the outer coating.
- Check of determination of the weight of the transformer ready for transport.

Type tests

- Type tests of heating.
- Dielectric type tests (lightning impulse).

“ We carry out tests on our transformers both in our laboratories and in independent laboratories ”





IMEFY follows a continuous improvement policy, and reserves the right to modify this catalogue without prior notice, not acquiring any responsibilities for it. The content of this catalogue is to provide information, it does not imply any commitment. Please, contact IMEFY for information.

Industrias Mecano Eléctricas Fontecha Yébenes, S.L.

Pol. Ind. La Cañada, Avda. Siglo XXI s/n
E-45470, Los Yébenes - Toledo (España)
T: +34 925 320 300

 imefy.com

