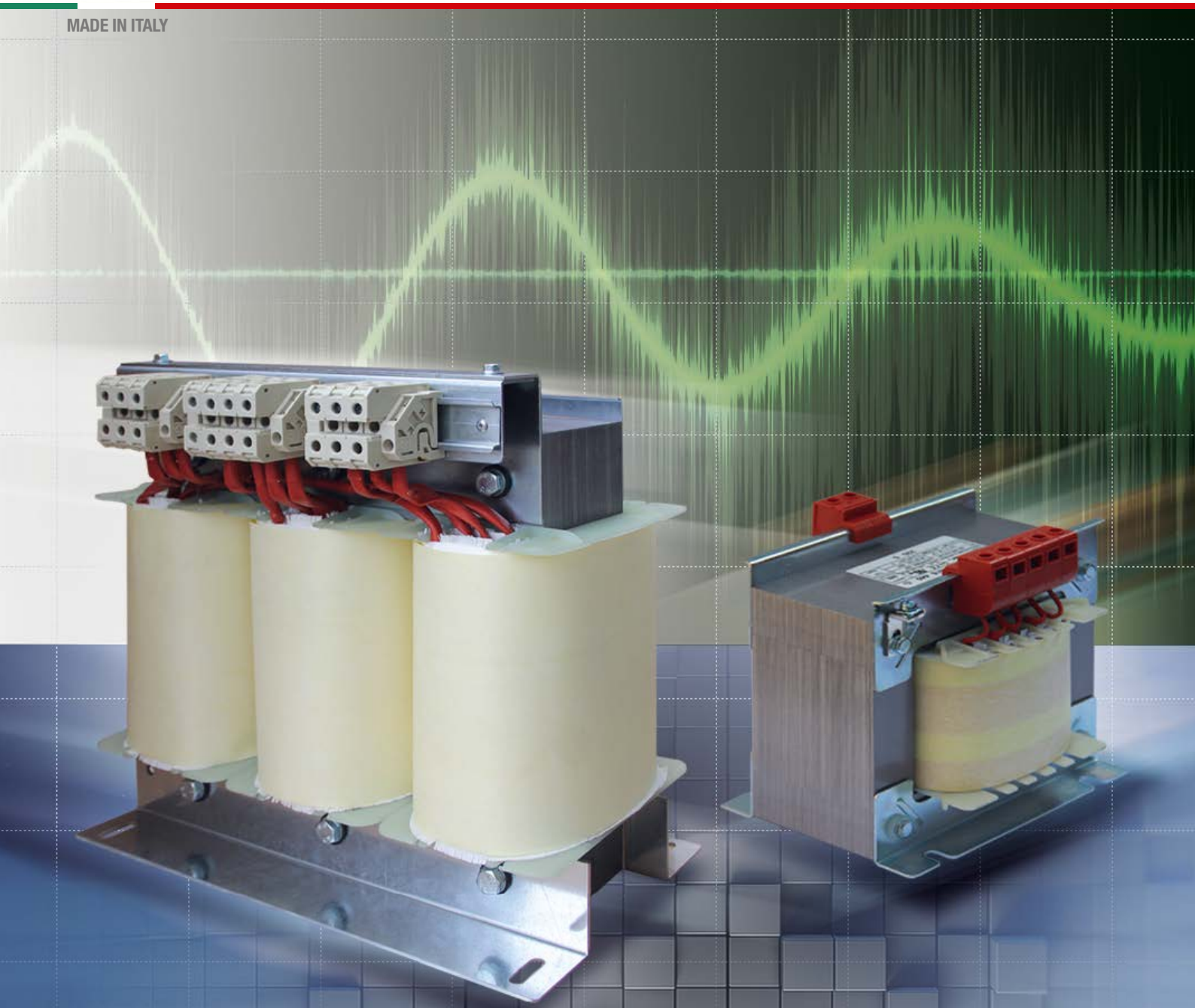
PRODUCTS CATALOGUE

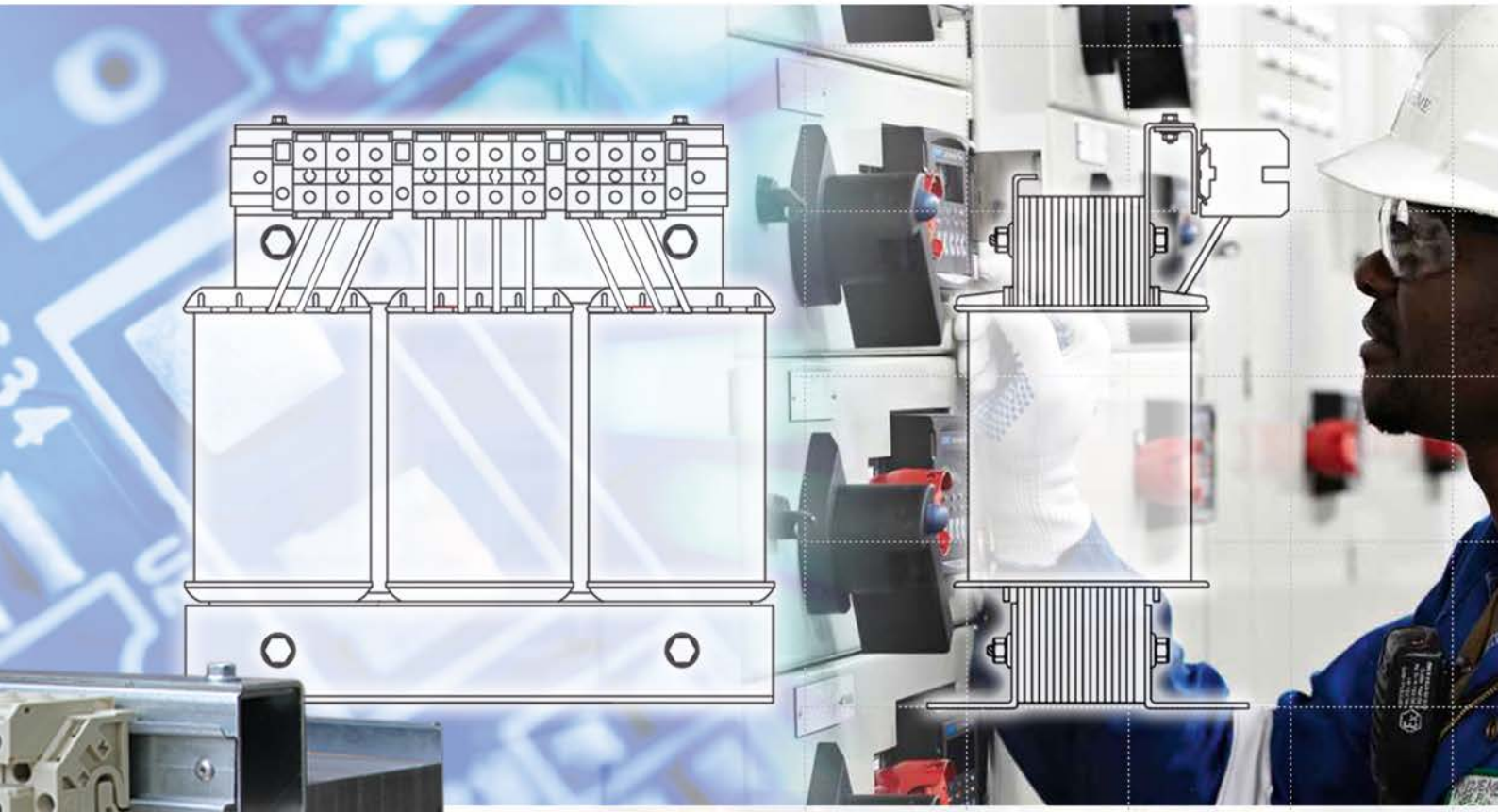
MADE IN ITALY



AB trasformatori

Via Piantada, 6 - 25036 Palazzolo Sull'Oglio (BS) - ITALY
ph. +39 030 7300444 - fax +39 030 7400902 - **info@abtrasformatori.it - www.abtrasformatori.it**

QUALITY AND RELIABILITY SINCE 1975

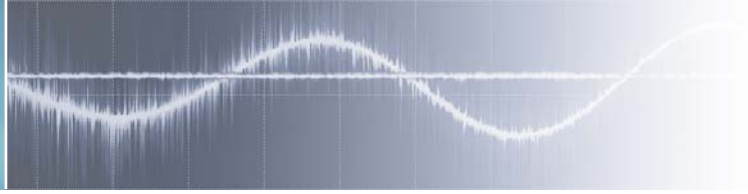


Incorporated in 1975 under the name Angelo Bertossi Trasformatori, the AB TRASFORMATORI srl of today is a mature and structured organisation.

Design and construction in compliance with the requirements of European norms and ENEC mark quality standards are now accompanied by the production of cURus marked single-phase and three-phase transformers in compliance with reference standard UL5085 CSA22.2 file E364320 and Insulation Systems AB155 file E3480840.

This catalogue, which heralds a paradigm shift in AB trasformatori srl's reputation as exclusively a company that builds bespoke products, aims to present the best of our production potential.

AB trasformatori srl is now pursuing a two-pronged approach: supplying single bespoke units of impeccable quality, and also offering a standard production range backed up by complete inventory management, always with the same stellar manufacturing quality and attention to detail that have characterised the company's production since its incorporation.

Technical notes

The following technical notes provide a reference for the selection and use of transformers in various application sectors. The construction differences between different transformer models are due to requirements established in standards concerning electrical installations and equipment. Below, we provide the fundamental definitions appearing in the applicable standards. The technical data given in this catalogue are not binding on AB trasformatori srl and can be amended without notice.

General characteristics and technical data of AB transformers

Windings
AB trasformatori srl products are wound with UL CSA insulation system-approved enamelled copper wire to insulation class F or H. Windings may also be composed of insulated copper foil or strip.

Nominal frequency
AB transformers are designed to operate at 50/60 Hz nominal frequency (dual-frequency).
A transformer is a static machine; it is therefore unable to change the frequency with respect to the input and can exclusively change the voltage value.

Primary voltage and taps
The transformer is fed with the power supply voltage. If the primary winding has multiple input sockets, AB transformers are sized to ensure full nominal power is available for all voltages.
Several of our transformer ranges are manufactured with ±15Vac or ±20Vac taps on the primary winding (other taps available on request).
Taps make it possible to compensate for significant mains fluctuations and voltage drops on the power feeding conductors or voltage rises on the secondary winding.

Rated secondary voltage
The transformer rated secondary voltage is the voltage value available on the output terminals when the transformer is connected to a load that absorbs its nominal power output. Technical standards allow a ±5% difference with respect to the rated value.
The transformer can also be constructed with an off-load secondary voltage available no load is connected; in this case the off-load secondary voltage is higher than the on-load secondary voltage.
The transformers in the DUO and DUOL range with dual voltage secondary winding are sized for use of the full power output at both voltage values.
The terminal block is equipped with terminals for both windings so either one or the other output voltage can be obtained by connecting the two windings in series or in parallel.

Magnetic core
Magnetic cores are made using low loss materials or grain-oriented electrical steel laminations to improve transformer efficiency.
Transformer protection
Transformer protections are regulated by standards that prescribe protection of either the primary winding, the secondary winding, or both windings. The transformer must be impervious to damage caused by external overloads.
AB transformers lacking short-circuit resistance must be protected with fuses or circuit breakers at the time of installation. The rating (time-current curve) of the fuse required to protect against secondary winding overloads is shown on the transformer rating plate, which also shows the maximum primary circuit current. Transformers can be supplied with fuse holders or built-in thermal fuses.

The protection must be implemented in compliance with the standards governing the equipment and systems in which the transformers are installed.

Electrostatic shield
The electrostatic or Faraday shield is composed of an insulated copper sheet wrapped in an open winding and interposed between the primary and secondary windings over the entire width of one of the two windings.
The shield, which is connected to a system safety ground, makes it possible to attenuate voltage surges and reduce disturbances (eddy currents) on the primary power feeding line by discharging them to ground and preventing them from reaching the secondary circuit. In addition to the basic insulation and compliance with the required clearances, the electrostatic shield strengthens the primary insulation.

Resin casting
AB transformers are protected by an insulating enamel coating to class H. The dip coating process, which is followed by an oven curing stage, ensures uniform deposition of the insulating film in all internal and external parts of the transformer.
This procedure improves the electrical, mechanical and thermal performance of the insulating materials employed for construction of the transformers.
The resin casting treatment allows transformers to be installed in tropical environments and imparts resistance to high humidity levels.

Approval and conformity

CE marking CE
CE marking attests to the conformity of the products in relation to the essential requirements of European Community directives.

Insulation Electrical Systems (OBJY 2/8 category) c UL us
Range of transformers manufactured and certified with the cURus Insulation Systems mark, in compliance with reference standard UL1446, CSAC 22.2 concerning low-voltage transformers.
The approval issued by UL certifies that AB trasformatori srl builds these products with a combination of materials that has been tested and checked by the product certification body.
The product type is not binding; it is therefore possible to mark products of different types, including transformers, autotransformers, and inductors, as class F operating temperature (155°C).
Acquisition of the approved insulation system is shown on the product rating plate with the specific UL cURus Insulation System AB155 mark and file number E340840.

Approval to UL 5085 (XPTQ 2/8 category) c UL us
The approval is issued by UL to AB trasformatori srl with file number E364320. UL is the most widely recognised and accepted safety mark in the US and Canada. In the eyes of North American consumers, supervisory authorities responsible for enforcing application of local and national codes and regulations, and manufacturers, UL is the most reliable and acceptable safety symbol throughout North America and worldwide.

Approval to European Norms Electrical Certification ENEC 05
European Electrical Norms Electrical Certification, or ENEC, is a joint European certification mark created by the European electrical certification bodies that signed the LUM agreement.
ENEC is a high technical quality conformity mark based on stringent certification criteria guaranteeing both electrical safety and electrical product performance. The mark is issued by any of the certification bodies adhering to the agreement and is automatically recognised by all the other signatories. The ENEC mark is followed by a number identifying the particular certification body that certified the product.

KEMA - KEUR KEMA KEUR
This is DEKRA's high prestige mark attesting to compliance with European safety regulations, validating the results of laboratory tests and production site audits.

Certificate of Comformity EAC EAC
Certificate of Comformity EAC: It is certified that our transformers meet the requirements, the technical regulations, the conformity applicable to the product; they can therefore freely circulate in the countries belonging to the Eurasian Customs Union, including the Russian Federation.

Transformer protection class

The protection class is a construction characteristic of a safety device providing protection against electric shock. Protection classes are as follows:

Protection class I
All accessible metal parts of the transformer are separated from live parts by means of the basic insulation. In addition, all accessible conductive metal parts of the transformer must be connected via the ground terminal to a protective conductor (forming part of the fixed wiring of the installation electrical system).
All accessible metal parts are separated from live parts by a primary insulation.
Moreover, the transformer is equipped with an earth terminal connected to the metal parts. This terminal can be connected to the protective conductor of the fixed wiring of the installation to guarantee safety of the primary insulation in the case of faults.

Protection class II
All accessible metal parts of the transformer are separated from live parts by means of double or reinforced insulation.
The insulation between the primary circuit and the core and between the secondary circuit and the core must be of the double or reinforced type to guarantee that all accessible parts of the transformer are separated from live parts. This transformer type is supplied without an earth terminal.

Protection class III
Protection against direct and indirect contact is based on a safety extra-low voltage power supply (SELV) in which the maximum voltages generated are 50VAC and 120VDC. In this case the transformer is classified as a safety transformer and it must be constructed without an earth terminal.

Thermal insulation classes

Thermal insulation classes rank insulation materials in relation to the maximum temperature they can withstand though time without affecting their mechanical and electrical characteristics.
Specific product standards define the maximum permissible temperatures in the maximum operating conditions for the various components in relation to the materials employed for construction of the transformer and the related insulation class. The classes are shown below (at 40°C ambient temperature):

Thermal insulation class	A	E	B	F	H
Temperature	100° C	115° C	120° C	140° C	165° C

The ambient temperature conditions in which a transformer is installed affect the maximum temperature that a transformer can reach at full power and hence the thermal insulation class must be uprated. The transformer's thermal insulation class is shown on the rating plate.

Transformer classification in accordance with short circuit resistance

Non short circuit proof transformer
Transformer designed to be protected against a temperature rise (overload or short circuit) by means of a protection device that is not supplied with the unit.

Short circuit proof transformer
Transformer whose temperature does not exceed the prescribed limits in the event of an overload or short circuit. Short circuit resistance can be obtained with (non-inherently short circuit proof) or without (inherently short circuit proof) built-in protection devices.

Fail-safe transformer
Transformer that is unable to operate following anomalous operating conditions but that anyway does not constitute a hazard for the user or adjacent parts.

Rated power

Transformer power ratings are expressed in VA. Specifications frequently give the power of the load to be supplied, expressed in watts or kilowatts. At this point the value must be converted into VA, taking account of the power factor of the user and, if necessary, its efficiency (if the value quoted is the effective power output); this means we need to calculate effective power delivery to the load:

Power (VA)= Power (W) / cosØ / n% x 100
cosØ= user power factor
n%= user percentage efficiency

Power (VA) can also be calculated by multiplying the voltage (V) by the current (I):

Single-phase power VA = V x I
Three-phase power VA =V x I x 1.73

If the transformer has several secondary windings that are used simultaneously, the total power is the sum of the power values (VA) of each winding.
If the secondary winding is equipped with intermediate taps, in the absence of contrary indications the taps cannot be used simultaneously, and the full power value (VA) will refer to the highest voltage of the winding.
The power (VA) shown on the rating plate of our transformers is referred to continuous duty cycle conditions.

Transformer permissible overloads

If the rated full power of the transformer is not used in a continuous duty cycle, the transformer can be overloaded with higher power values.
In this context, refer to the indications given in table 1.
In addition, the rated power shown on AB transformers is the maximum power that can be delivered by the secondary winding in continuous duty, without exceeding the prescribed overtemperature limits, with maximum ambient temperature of 40 °C and installation site at 1000 m a.s.l. If the application conditions result in operation beyond these limits, the deliverable power values must not exceed the values shown in tables 2 and 3.
When transformers are installed in sealed enclosures, the maximum deliverable power must not exceed 80% of the rated power.

Transformer load (% of rated power)	Permissible duration of transformer overload in minutes (% of rated power)				
	10%	20%	30%	40%	50%
50%	180	105	65	45	30
60%	170	95	60	40	25
70%	155	80	45	30	20
80%	140	75	40	25	15
90%	120	60	30	15	8

table 1

Ambient temperature °C	40	45	50	55	60	65
Available power in %	100	90	80	72	66	62

table 2

Altitude m	1000	1500	2000	3000	4000	5000
Available power in %	100	97,5	95	90	85	80

table 3

Short circuit and overload protection of transformers

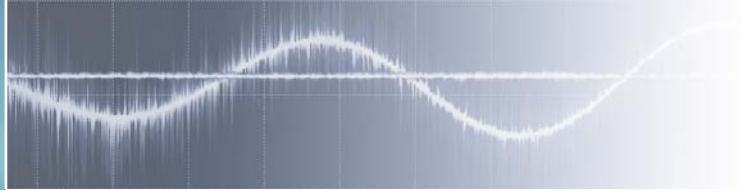
Non-short circuit proof transformers must be protected against short circuits and overloads.
The transformer windings can be protected with time delay fuses (T) or overload circuit breakers with delayed trip curve.
The fuse rating (time-current curve) required to protect the secondary winding from overloads is shown on the transformer rating plate.
The short circuit protection of the power supply line must be sized in relation to the inrush current generated at the time of connection of the transformer primary winding, the peak value of which is 25-30 times higher than the rated current for a period of approximately 10ms.
Correct selection of the short circuit protection is possible by considering the case wherein the short circuit occurs in the most distant point of the connection line between transformer and user. In this case the secondary short circuit current assumes its minimum value.

$$I_{2cc} = \frac{V_2}{\frac{V_2^2}{P_n} \times \frac{V_{cc}\,(\%)}{100} + \frac{0.036 \times L\,(m)}{S\,(mm^2)}}$$

Where:
V2 = transformer secondary voltage
Pn = transformer rated power
Vcc = transformer rated power %
L = line length in metres
S = conductor section in mm^2

Main reference standards applicable to transformers

Standard	Description	Notes
CEI EN 61558-1	Safety of power transformers, power supplies, reactors and similar products	Common general part
CEI EN 61558-2-1	Separating transformers for general use	Primary and secondary voltage no higher than 1000Vac. Double or reinforced insulation is not required. Power no higher than 1kVA for single-phase or 5kVA for three-phase transformers.
CEI EN 61558-2-2	Control transformers	Primary and secondary voltage no higher than 1000Vac. Double or reinforced insulation is not required. No power limit
CEI EN 61558-2-4	Isolating transformers	Primary and secondary voltage no higher than 1000Vac, secondary voltage no higher than 500Vac. Double or reinforced insulation is required. Power no higher than 25kVA for single-phase and 40kVA for three-phase transformers.
CEI EN 61558-2-6	Safety transformers	Primary and secondary voltage no higher than 1000Vac, secondary voltage no higher than 50Vac. Double or reinforced insulation is required. Power no higher than 10kVA for single-phase and 16kVA for three-phase transformers.
CEI EN 61558-2-13	Autotransformers for general use	Voltage no higher than 1000Va. Without isolation. Power no higher than 20kVA for single-phase and 100kVA for three-phase transformers.
CEI EN 61558-2-15	Isolating transformers for the supply of medical locations	Primary and secondary voltage no higher than 250Vac, secondary voltage no higher than 250Vac. Double or reinforced insulation and electrostatic shield between primary and secondary windings required. Power no higher than 10kVA.
CEI EN 61558-2-18	Transformers for medical appliances	
CEI EN 61558-2-20	Small reactors	Inductors, reactors and starting reactors.
CEI EN 60289	Current limiting, damping and filtering reactors - power reactors	
CEI 14-8 IEC 726	Dry-type power transformers	Distribution transformers and autotransformers.

Transformer
Static machine operating with alternating current having two or more windings which, through the principle of flux variation through time, transforms one voltage and current system into a system with different values although at the same frequency, in order to transmit electrical energy.

Separating transformer
Transformer with one or more primary windings separated from the secondary windings by means of at least a basic insulation.

Control transformer
A separating transformer designed to supply control circuits having internal isolating clearances and surface isolation distances multiplied by a factor of 1.4. Also the permissible instantaneous power must be specified for control transformers.

Isolating transformer
Transformer whose primary and secondary windings are electrically separated by a double or reinforced insulation to limit risks caused by accidental simultaneous contacts on the secondary circuit between ground and live parts or metal masses that may become live due to failure of the basic insulation.

Safety transformer
An isolating transformer designed to supply safety extra-low voltage circuits (50V no-load). Accidental contact on two phases of the secondary winding can be supported without personal danger. The insulation class of a transformer is defined in accordance with the protection against direct and indirect contact (the classification does not consider the insulation system between the primary and secondary windings).

Autotransformer
Transformer in which at least one secondary winding has a part in common with a primary winding.

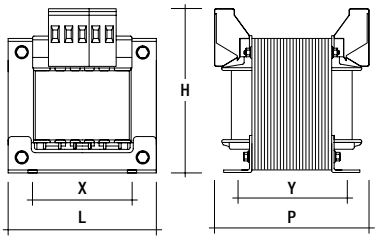
AB trasformatori

Single-phase transformers with direct safety output

Power: 30 ÷ 2000 VA
Input voltage: 0 230 400 VAC
Secondary circuit output voltage: 0 12 or 0 24 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C ENEC - F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-6
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)
ENEC05 - KEMA-KEUR

Approved transformers for safety circuits. The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system.
USE series units are designed for general use.



Pri. 230 400 Sec. 12 code	Pri. 230 400 Sec. 24 code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Losses FE W	Losses CU	Vcc %
USE30AA	USE30AB	30	76	70	85	53	49	1,3	7	10	10,5
USE50AA	USE50AB	50	76	75	85	53	53	1,5	8	8,6	9,5
USE63AA	USE63AB	63	85	85	90	60	60	1,9	11,8	8,6	9
USE80AA	USE80AB	80	85	90	90	60	65	2	13	8	8,3
USE10BA	USE10BB	100	85	95	90	60	70	2,2	14	7,8	8,5
USE15BA	USE15BB	150	97	90	98	68	72	2,8	17	6	6,5
USE20BA	USE20BB	200	97	100	98	68	87	4	23	5,8	5
*USE25BA	USE25BB	250	120	95	130	80	77	4,5	25	6	5,5
*USE30BA	USE30BB	300	120	100	130	80	83	5,5	30	6,3	5,2
*USE40BA	*USE40BB	400	120	110	130	80	93	6	35	4,8	5
*USE50BA	*USE50BB	500	120	120	130	80	103	7,5	37	4,7	5
*USE55BA	*USE55BB	550	135	117	140	90	88	8	40	5,5	4,4
*USE60BA	*USE60BB	600	150	110	155	105	80	8,5	45	5	4
*USE63BA	*USE63BB	630	150	110	155	105	80	8,5	45	5	4
*USE70BA	*USE70BB	700	150	120	155	105	90	10	48	4	3,8
*USE80BA	*USE80BB	800	150	130	155	105	100	11,5	50	3,8	3,5
*USE10CA	*USE10CB	1000	150	140	155	105	110	13	58	3	3,2
*USE13CA	*USE13CB	1300	180	145	180	128	110	16	85	3,1	3,8
*USE16CA	*USE16CB	1600	180	145	180	128	110	18	88	3,2	4
	*USE20CB	2000	193	160	190	135	125	23	92	2,5	3

* Transformers without ENEC05 – KEMA-KEUR approval

The data in this catalogue are not binding. We reserve the right to make changes without notice.

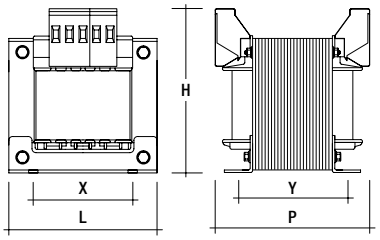
AB trasformatori

Single-phase transformers with direct safety output

Power: 30 ÷ 2000 VA
Input voltage: 0 230 400 ± 15V VAC
Secondary circuit output voltage: 0 12 or 0 24 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C ENEC - F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-6
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)
ENEC05 - KEMA-KEUR

Approved transformers for safety circuits. The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system. Primary with adjustment sockets.
USE-V series designed for general use.



Pri. 230 400 ±15V Sec. 12 code	Pri. 230 400 ±15V Sec. 24 code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Losses FE W	Losses CU	Vcc %
USEV30AA	USEV30AB	30	76	70	85	53	49	1,3	7	10	10,5
USEV50AA	USEV50AB	50	76	75	85	53	53	1,5	8	8,6	9,5
USEV63AA	USEV63AB	63	85	85	90	60	60	1,9	11,8	8,6	9
USEV80AA	USEV80AB	80	85	90	90	60	65	2	13	8	8,3
USEV10BA	USEV10BB	100	85	95	90	60	70	2,2	14	7,8	8,5
USEV15BA	USEV15BB	150	97	90	98	68	72	2,8	17	6	6,5
USEV20BA	USEV20BB	200	97	100	98	68	87	4	23	5,8	5
*USEV25BA	USEV25BB	250	120	95	130	80	77	4,5	25	6	5,5
*USEV30BA	USEV30BB	300	120	100	130	80	83	5,5	30	6,3	5,2
*USEV40BA	*USEV40BB	400	120	110	130	80	93	6	35	4,8	5
*USEV50BA	*USEV50BB	500	120	120	130	80	103	7,5	37	4,7	5
*USEV55BA	*USEV55BB	550	135	117	140	90	88	8	40	5,5	4,4
*USEV60BA	*USEV60BB	600	150	110	155	105	80	8,5	45	5	4
*USEV63BA	*USEV63BB	630	150	110	155	105	80	8,5	45	5	4
*USEV70BA	*USEV70BB	700	150	120	155	105	90	10	48	4	3,8
*USEV80BA	*USEV80BB	800	150	130	155	105	100	11,5	50	3,8	3,5
*USEV10CA	*USEV10CB	1000	150	140	155	105	110	13	58	3	3,2
*USEV13CA	*USEV13CB	1300	180	145	180	128	110	16	85	3,1	3,8
*USEV16CA	*USEV16CB	1600	180	145	180	128	110	18	88	3,2	4
	*USEV20CB	2000	193	160	190	135	125	23	92	2,5	3

* Transformers without ENEC05 – KEMA-KEUR approval

The data in this catalogue are not binding. We reserve the right to make changes without notice.

AB trasformatori

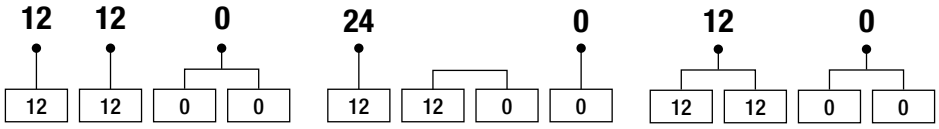
Single-phase dual voltage safety transformers

Power: 30 ÷ 3000 VA
Input voltage: 0 230 400 ± 15V VAC
Secondary circuit output voltage: 0 12 and/or 0 24 VAC

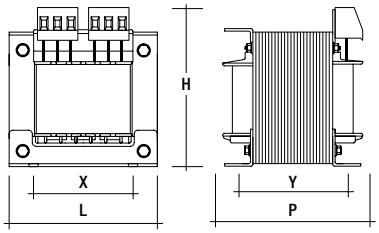
Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C ENEC - F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-6
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)
ENEC05 - KEMA-KEUR

Transformers approved for safety circuits. The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system.
DUO-S series with dual voltage secondary circuit for use of full power for both voltage values.
Suitable for the majority of electrical installations with a single transformer.

Secondary circuit terminal block connection diagram



12 0 12 VAC series connection | 24 VAC series connection | 12 VAC parallel connection



Pri. 230 400 ± 15V Sec. 12 and/or 24 code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Losses FE W	Losses CU	Vcc %
DUOS30AB	30	76	70	85	53	49	1,3	7	10	10,5
DUOS50AB	50	76	75	85	53	53	1,5	8	8,6	9,5
DUOS63AB	63	85	85	90	60	60	1,9	11,8	8,6	9
DUOS80AB	80	85	90	90	60	65	2	13	8	8,3
DUOS10BB	100	85	95	90	60	70	2,2	14	7,8	8,5
DUOS15BB	150	97	90	98	68	72	2,8	17	6	6,5
DUOS20BB	200	97	100	98	68	87	4	23	5,8	5
DUOS25BB	250	120	95	130	80	77	4,5	25	6	5,5
DUOS30BB	300	120	100	130	80	83	5,5	30	6,3	5,2
*DUOS40BB	400	120	120	130	80	103	7,5	35	4,8	5
*DUOS50BB	500	135	117	140	90	88	8	40	5,5	4,4
*DUOS60BB	600	150	110	155	105	80	8,5	45	5	4
*DUOS63BB	630	150	110	155	105	80	8,5	45	5	4
*DUOS70BB	700	150	120	155	105	90	10	48	4	3,8
*DUOS80BB	800	150	130	155	105	100	11,5	50	3,8	3,5
*DUOS10CB	1000	150	140	155	105	110	13	58	3	3,2
*DUOS13CB	1300	180	145	180	128	110	16	85	3,1	3,8
*DUOS16CB	1600	180	155	180	128	120	15	88	3,2	4

* Transformers without ENEC05 – KEMA-KEUR approval

The data in this catalogue are not binding. We reserve the right to make changes without notice.

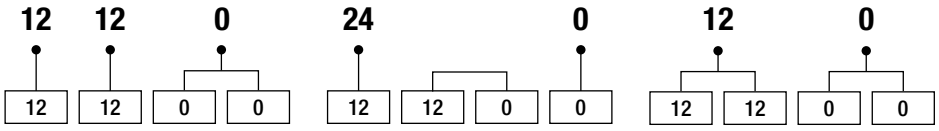
UL5085 approved single-phase transformers dual voltage safety output

Power: 30 ÷ 3000 VA
Input voltage: 220 - 480 ± 20V VAC
Secondary circuit output voltage: 0 12 and/or 0 24 VAC

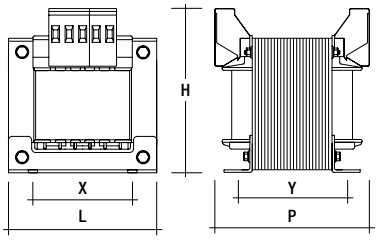
Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C ENEC - F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-6 CSA C22.2 N.66 UL5085
Approvals: cURus File E364320 - ENEC05 - KEMA-KEUR

Approved single-phase transformers for safety circuits.
The insulation between the primary and secondary windings is always double.
DUOL-S series with dual voltage secondary circuit for use of full power at both voltage values.
Suitable for the majority of electrical installations with a single transformer
for American and European markets.

Secondary circuit terminal block connection diagram



12 0 12 VAC series connection
24 VAC series connection
12 VAC parallel connection



Pri. 220 480 ±20V Sec. 12 and/or 24 code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Losses FE W	Losses CU	Vcc %
DUOLS30AB	30	76	75	85	53	53	1,5	8	8,6	9,5
DUOLS50AB	50	85	80	90	60	45	1,9	9	8,4	8
DUOLS80AB	80	85	90	90	60	65	2	13	8	8,3
DUOLS10BB	100	85	95	90	60	70	2,2	14	7,8	8,5
DUOLS15BB	150	97	90	98	68	72	2,8	17	6	6,5
DUOLS20BB	200	97	100	98	68	87	4	23	5,8	5
DUOLS25BB	250	120	95	130	80	77	4,5	25	6	5,5
DUOLS30BB	300	120	100	130	80	83	5,5	30	6,3	5,2
DUOLS40BB	400	120	110	130	80	93	7,5	35	4,8	5
DUOLS50BB	500	135	117	140	90	88	8	40	5,5	4,4
DUOLS60BB	600	150	120	155	105	90	10	48	4	3,8
DUOLS80BB	800	150	130	155	105	100	11,5	50	3,8	3,5
DUOLS10CB	1000	150	140	155	105	110	13	58	3	3,2
DUOLS16CB	1600	180	145	180	128	110	16	85	3,1	3,8
DUOLS20CB	2000	193	170	190	135	135	25	110	2	2,8
DUOLS25CB	2500	193	180	190	135	145	27	130	1,9	2,6
DUOLS30CB	3000	193	200	190	135	165	30	160	1,5	2,3

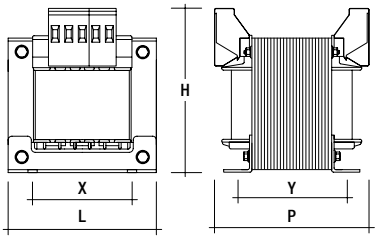
trasformatori

Single-phase transformers with direct isolation output

Power: 30 ÷ 3000 VA
Input voltage: 0 230 400 VAC
Secondary circuit output voltage: 0 115 or 0 230 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C ENEC - F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-4
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)
ENEC05 - KEMA-KEUR

Approved transformers for isolation circuits. The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system. UME series units are designed for general use.



Pri. 230 400 Sec. 115 code	Pri. 230 400 Sec. 230 code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Losses FE W	Losses CU	Vcc %
UME30AD	UME30AE	30	76	70	85	53	49	1,3	7	10	10,5
UME50AD	UME50AE	50	76	75	85	53	53	1,5	8	8,6	9,5
UME63AD	UME63AE	63	85	85	90	60	60	1,9	11,8	8,6	9
UME80AD	UME80AE	80	85	90	90	60	65	2	13	8	8,3
UME10BD	UME10BE	100	85	95	90	60	70	2,2	14	7,8	8,5
UME15BD	UME15BE	150	97	90	98	68	72	2,8	17	6	6,5
UME20BD	UME20BE	200	97	100	98	68	87	4	23	5,8	5
UME25BD	UME25BE	250	120	95	130	80	77	4,5	25	6	5,5
UME30BD	UME30BE	300	120	100	130	80	83	5,5	30	6,3	5,2
UME40BD	UME40BE	400	120	110	130	80	93	6	35	4,8	5
UME50BD	UME50BE	500	120	120	130	80	103	7,5	37	4,7	5
UME55BD	UME55BE	550	135	117	140	90	88	8	40	5,5	4,4
UME60BD	UME60BE	600	150	110	155	105	80	8,5	45	5	4
UME63BD	UME63BE	630	150	110	155	105	80	8,5	45	5	4
UME70BD	UME70BE	700	150	120	155	105	90	10	48	4	3,8
UME80BD	UME80BE	800	150	130	155	105	100	11,5	50	3,8	3,5
UME10CD	UME10CE	1000	150	140	155	105	110	13	58	3	3,2
*UME13CD	*UME13CE	1300	180	145	180	128	110	16	85	3,1	3,8
*UME16CD	*UME16CE	1600	180	145	180	128	110	18	88	3,2	4
*UME20CD	*UME20CE	2000	193	160	190	135	125	23	92	2,5	3
*UME25CD	*UME25CE	2500	193	170	190	135	135	25	110	2	2,8
*UME30CD	*UME30CE	3000	193	180	190	135	145	27	130	1,9	2,6

* Transformers without ENEC05 – KEMA-KEUR approval

The data in this catalogue are not binding. We reserve the right to make changes without notice.

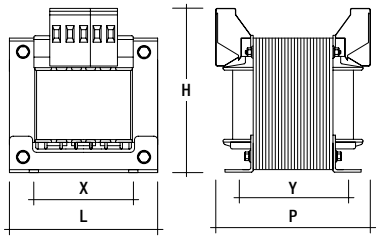
trasformatori

Single-phase transformers with direct isolation output

Power: 30 ÷ 3000 VA
Input voltage: 0 230 400 ± 15V VAC
Secondary circuit output voltage: 0 115 or 0 230 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C ENEC - F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-4
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)
ENEC05 - KEMA-KEUR

Approved transformers for isolation circuits. The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system.
Primary winding with adjustment sockets.
UME-V series units are designed for general use.



Pri. 230 400 ± 15V Sec. 115 code	Pri. 230 400 ± 15V Sec. 230 code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Losses FE W	Losses CU	Vcc %
UMEV30AD	UMEV30AE	30	76	70	85	53	49	1,3	7	10	10,5
UMEV50AD	UMEV50AE	50	76	75	85	53	53	1,5	8	8,6	9,5
UMEV63AD	UMEV63AE	63	85	85	90	60	60	1,9	11,8	8,6	9
UMEV80AD	UMEV80AE	80	85	90	90	60	65	2	13	8	8,3
UMEV10BD	UMEV10BE	100	85	95	90	60	70	2,2	14	7,8	8,5
UMEV15BD	UMEV15BE	150	97	90	98	68	72	2,8	17	6	6,5
UMEV20BD	UMEV20BE	200	97	100	98	68	87	4	23	5,8	5
UMEV25BD	UMEV25BE	250	120	95	130	80	77	4,5	25	6	5,5
UMEV30BD	UMEV30BE	300	120	100	130	80	83	5,5	30	6,3	5,2
UMEV40BD	UMEV40BE	400	120	110	130	80	93	6	35	4,8	5
UMEV50BD	UMEV50BE	500	120	120	130	80	103	7,5	37	4,7	5
UMEV55BD	UMEV55BE	550	135	117	140	90	88	8	40	5,5	4,4
UMEV60BD	UMEV60BE	600	150	110	155	105	80	8,5	45	5	4
UMEV63BD	UMEV63BE	630	150	110	155	105	80	8,5	45	5	4
UMEV70BD	UMEV70BE	700	150	120	155	105	90	10	48	4	3,8
UMEV80BD	UMEV80BE	800	150	130	155	105	100	11,5	50	3,8	3,5
UMEV10CD	UMEV10CE	1000	150	140	155	105	110	13	58	3	3,2
*UMEV13CD	*UMEV13CE	1300	180	145	180	128	110	16	85	3,1	3,8
*UMEV16CD	*UMEV16CE	1600	180	145	180	128	110	18	88	3,2	4
*UMEV20CD	*UMEV20CE	2000	193	160	190	135	125	23	92	2,5	3
*UMEV25CD	*UMEV25CE	2500	193	170	190	135	135	25	110	2	2,8
*UMEV30CD	*UMEV30CE	3000	193	180	190	135	145	27	130	1,9	2,6

* Transformers without ENEC05 – KEMA-KEUR approval

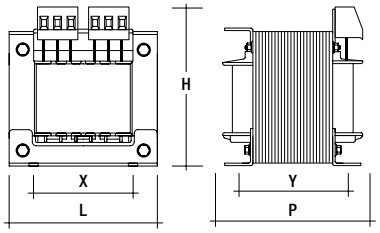
The data in this catalogue are not binding. We reserve the right to make changes without notice.

trasformatori

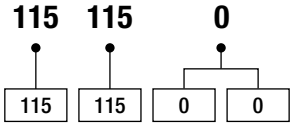
Single-phase dual voltage isolating transformers

Power: 30 ÷ 3000 VA
Input voltage: 0 230 400 ± 15V VAC
Secondary circuit output voltage: 0 115 and/or 0 230 VAC

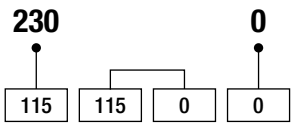
Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C ENEC - F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-4
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)
ENEC05 - KEMA-KEUR
Approved transformers for safety circuits. The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system.
DUO-I series units with dual voltage secondary circuit for use of full power for both voltage values.
Suitable for the majority of electrical installations with a single transformer.



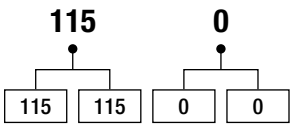
Secondary circuit terminal block connection diagram



115 0 115 VAC series connection



230 VAC series connection



115 VAC parallel connection

Pri. 230 400 ± 15V Sec. 115 and/or 230 code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Losses FE W	Losses CU	Vcc %
DUOI30AE	30	76	70	85	53	49	1,3	7	10	10,5
DUOI50AE	50	76	75	85	53	53	1,5	8	8,6	9,5
DUOI63AE	63	85	85	90	60	60	1,9	11,8	8,6	9
DUOI80AE	80	85	90	90	60	65	2	13	8	8,3
DUOI10BE	100	85	95	90	60	70	2,2	14	7,8	8,5
DUOI15BE	150	97	90	98	68	72	2,8	17	6	6,5
DUOI20BE	200	97	100	98	68	87	4	23	5,8	5
DUOI25BE	250	120	95	130	80	77	4,5	25	6	5,5
DUOI30BE	300	120	100	130	80	83	5,5	30	6,3	5,2
DUOI40BE	400	120	120	130	80	103	7,5	35	4,8	5
DUOI50BE	500	135	117	140	90	88	8	40	5,5	4,4
DUOI60BE	600	150	110	155	105	80	8,5	45	5	4
DUOI63BE	630	150	110	155	105	80	8,5	45	5	4
DUOI70BE	700	150	120	155	105	90	10	48	4	3,8
DUOI80BE	800	150	130	155	105	100	11,5	50	3,8	3,5
DUOI10CE	1000	150	140	155	105	110	13	58	3	3,2
*DUOI13CE	1300	180	145	180	128	110	16	85	3,1	3,8
*DUOI16CE	1600	180	155	180	128	120	15	88	3,2	4
*DUOI20CE	2000	193	160	190	135	125	23	92	2,5	3
*DUOI25CE	2500	193	170	190	135	135	24	110	2	2,8
*DUOI30CE	3000	193	180	190	135	145	27	130	1,9	2,6

* Transformers without ENEC05 – KEMA-KEUR approval

The data in this catalogue are not binding. We reserve the right to make changes without notice.

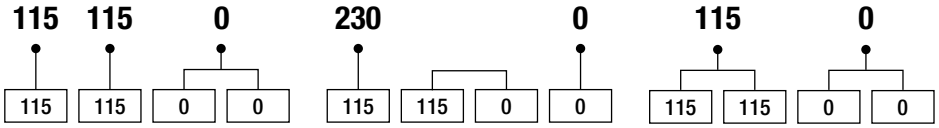
UL5085 approved single-phase transformers with dual voltage isolation output

Power: 30 ÷ 3000 VA
Input voltage: 220 - 480 ± 20V VAC
Secondary circuit output voltage: 0 115 and/or 0 230 VAC

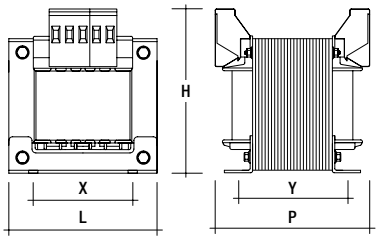
Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C ENEC - F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-4 CSA C22.2 N.66 UL5085
Approvals: cURus File E364320 - ENEC05 - KEMA-KEUR

Approved single-phase transformers for isolated circuits.
The insulation between the primary and secondary windings is always double.
DUOL-I series with dual voltage secondary circuit for use of full power for both voltage values.
Suitable for the majority of electrical installations with a single transformer for the American and European markets.

Secondary circuit terminal block connection diagram



115 0 115 VAC series connection
230 VAC series connection
115 VAC parallel connection

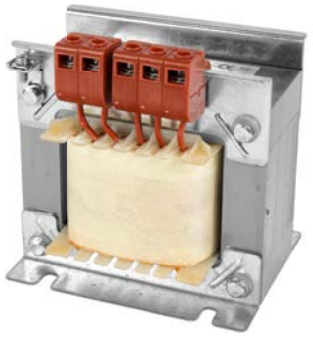


Pri. 220 480 ±20V Sec. 115 and/or 230 code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Losses FE W	Losses CU	Vcc %
DUOLI30AE	30	76	75	85	53	53	1,5	8	8,6	9,5
DUOLI50AE	50	85	80	90	60	45	1,9	9	8,4	8
DUOLI80AE	80	85	90	90	60	65	2	13	8	8,3
DUOLI10BE	100	85	95	90	60	70	2,2	14	7,8	8,5
DUOLI15BE	150	97	90	98	68	72	2,8	17	6	6,5
DUOLI20BE	200	97	100	98	68	87	4	23	5,8	5
DUOLI25BE	250	120	95	130	80	77	4,5	25	6	5,5
DUOLI30BE	300	120	100	130	80	83	5,5	30	6,3	5,2
DUOLI40BE	400	120	110	130	80	93	7,5	35	4,8	5
DUOLI50BE	500	135	117	140	90	88	8	40	5,5	4,4
DUOLI60BE	600	150	120	155	105	90	10	48	4	3,8
DUOLI80BE	800	150	130	155	105	100	11,5	50	3,8	3,5
DUOLI10CE	1000	150	140	155	105	110	13	58	3	3,2
DUOLI16CE	1600	180	145	180	128	110	16	85	3,1	3,8
DUOLI20CE	2000	193	170	190	135	135	25	110	2	2,8
DUOLI25CE	2500	193	180	190	135	145	27	130	1,9	2,6
DUOLI30CE	3000	193	200	190	135	165	30	160	1,5	2,3

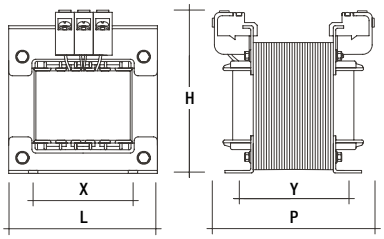
AB trasformatori

Single-phase transformers for general use safety - isolation - control

Power: 30 ÷ 3700 VA
Input voltage: 100 ÷ 600 VAC
Secondary circuit output voltage: 6 ÷ 600 VAC
Maximum current: 170A secondary



Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-2 EN61558-2-4 EN61558-2-6
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)
Transformers for control, safety and isolation circuits. The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system. MON series units are manufactured on demand for general uses.



Optional accessories:
Terminal blocks with fuse-holder
Protection thermal switches
Electrostatic shield

Safety code	Isolation code	Control code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)
MONS30AXX	MONI30AXX	MONC30AXX	30	76	70	85	53	47	1,3
MONS40AXX	MONI40AXX	MONC40AXX	40	76	75	85	53	53	1,5
MONS50AXX	MONI50AXX	MONC50AXX	50	76	80	85	53	59	1,6
MONS63AXX	MONI63AXX	MONC63AXX	63	85	85	90	60	60	1,9
MONS80AXX	MONI80AXX	MONC80AXX	80	85	90	90	60	65	2
MONS10BXX	MONI10BXX	MONC10BXX	100	85	95	90	60	70	2,2
MONS12BXX	MONI12BXX	MONC12BXX	120	97	85	98	68	68	2,5
MONS15BXX	MONI15BXX	MONC15BXX	150	97	90	98	68	72	2,8
MONS20BXX	MONI20BXX	MONC20BXX	200	97	100	98	68	87	4
MONS25BXX	MONI25BXX	MONC25BXX	250	120	95	130	80	77	4,5
MONS30BXX	MONI30BXX	MONC30BXX	300	120	100	130	80	83	5,5
MONS40BXX	MONI40BXX	MONC40BXX	400	120	110	130	80	93	7,5
MONS50BXX	MONI50BXX	MONC50BXX	500	135	117	140	90	88	8
MONS60BXX	MONI60BXX	MONC60BXX	600	150	110	155	105	80	8,5
MONS70BXX	MONI70BXX	MONC70BXX	700	150	120	155	105	90	10
MONS80BXX	MONI80BXX	MONC80BXX	800	150	130	155	105	100	11,5
MONS10CXX	MONI10CXX	MONC10CXX	1000	150	140	155	105	110	13
MONS12CXX	MONI12CXX	MONC12CXX	1200	180	145	180	128	110	16
MONS15CXX	MONI15CXX	MONC15CXX	1500	180	145	180	128	110	18
MONS20CXX	MONI20CXX	MONC20CXX	2000	193	160	190	135	125	23
MONS25CXX	MONI25CXX	MONC25CXX	2500	193	170	190	135	135	25
MONS30CXX	MONI30CXX	MONC30CXX	3000	193	180	190	135	145	27
MONS35CXX	MONI35CXX	MONC35CXX	3500	193	190	190	135	155	29
MONS37CXX	MONI37CXX	MONC37CXX	3700	193	200	190	135	165	32

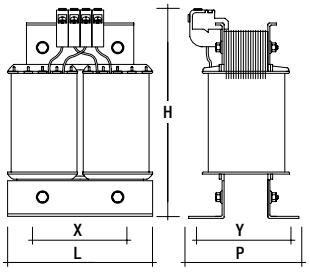
Single-phase transformers for general use safety - isolation - control

Power: 1000 ÷ 25000 VA
Input voltage: 100 ÷ 600 VAC
Secondary circuit output voltage: 6 ÷ 600 VAC
Maximum current: 200 A secondary

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-2 EN61558-2-4 EN61558-2-6
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)

Transformers for control, safety and isolation circuits. The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system.
COL series units for general use are manufactured on demand.

Optional accessories:
Terminal blocks with fuse-holder
Protection thermal switches
Electrostatic shield
Horizontal installation

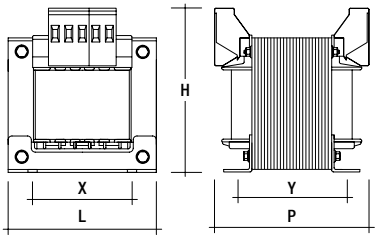


Safety code	Isolation code	Control code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)
COLS10CXX	COLI10CXX	COLC10CXX	1000	165	120	230	117	95	18
COLS20CXX	COLI20CXX	COLC20CXX	2000	165	130	230	117	105	20
COLS30CXX	COLI30CXX	COLC30CXX	3000	200	160	290	150	112	25
COLS40CXX	COLI40CXX	COLC40CXX	4000	200	180	290	150	132	34
COLS50CXX	COLI50CXX	COLC50CXX	5000	200	190	290	150	142	38
COLS60CXX	COLI60CXX	COLC60CXX	6000	240	170-210	340	204	134	44
COLS70CXX	COLI70CXX	COLC70CXX	7000	240	180-220	340	204	144	48
COLS80CXX	COLI80CXX	COLC80CXX	8000	240	190-230	340	204	154	55
COLS10DXX	COLI10DXX	COLC10DXX	10000	280	240	420	235	150	62
	COLI12DXX	COLC12DXX	12000	280	250	420	235	160	68
	COLI15DXX	COLC15DXX	15000	280	260	420	235	170	78
	COLI20DXX	COLC20DXX	20000	330	320	480	265	190	115
	COLI25DXX	COLC25DXX	25000	330	340	480	265	200	125

UL5085 approved single-phase transformers safety - isolation

Power: 30 ÷ 3000 VA
Input voltage: 100 ÷ 600 VAC
Secondary circuit output voltage: 12 ÷ 400 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C ENEC - F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-4 EN61558-2-6 CSA C22.2 N.66 UL5085
Approvals: cURus file E364320 - ENEC05 - KEMA-KEUR - EAC
Approved single-phase transformers for safety and isolation circuits.
The insulation between primary and secondary windings is always double and reinforced.
TMUL series units are manufactured on demand for general uses on the American and European markets.



Optional accessories:
Terminal blocks with fuse-holder
Protection thermal switches
Electrostatic shield

Code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)
TMUL03AXXX	30	76	75	85	53	53	1,5
TMUL04AXXX	40	76	75	85	53	53	1,5
TMUL045XXX	45	76	80	85	53	58	1,5
TMUL05AXXX	50	85	80	90	60	45	1,9
TMUL063XXX	63	85	85	90	60	50	1,9
TMUL08AXXX	80	85	90	90	60	65	2
TMUL10AXXX	100	85	95	90	60	70	2,2
TMUL15AXXX	150	97	90	98	68	72	2,8
TMUL16AXXX	160	97	90	98	68	77	3,5
TMUL20AXXX	200	97	100	98	68	87	4
TMUL25AXXX	250	120	95	130	80	77	4,5
TMUL30AXXX	300	120	100	130	80	83	5,5
TMUL40AXXX	400	120	110	130	80	93	7,5
TMUL45AXXX	450	120	110	130	80	93	7,5
TMUL50AXXX	500	135	117	140	90	88	8
TMUL55AXXX	550	135	117	140	90	88	8
TMUL60AXXX	600	150	120	155	105	90	10
TMUL63AXXX	630	150	120	155	105	90	10
TMUL70AXXX	700	150	120	155	105	90	10
TMUL80AXXX	800	150	130	155	105	100	11,5
TMUL10BXXX	1000	150	140	155	105	110	13
TMUL15BXXX	1500	180	145	180	128	110	16
TMUL16BXXX	1600	180	145	180	128	110	16
TMUL18BXXX	1800	193	160	190	135	125	23
TMUL20BXXX	2000	193	170	190	135	135	25
TMUL25BXXX	2500	193	180	190	135	145	27
TMUL30BXXX	3000	193	200	190	135	165	30
TMUL35BXXX	3500	193	210	190	135	175	33

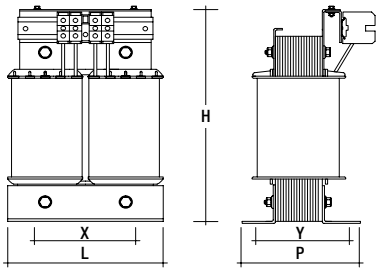
UL5085 approved single-phase transformers safety - isolation - control

Power: 4000 ÷ 16000 VA
Input voltage: 100 ÷ 600 VAC
Secondary circuit output voltage: 12 ÷ 400 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: F/155°C UL
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-4 EN61558-2-6 CSA C22.2 N.66 UL5085
Approvals: cURus file E364320 - EAC

Approved single-phase transformers for safety and isolation circuits.
The insulation between primary and secondary windings is always double and reinforced.
TMUL series units are manufactured on demand for general uses on the American and European markets.

Optional accessories:
Terminal blocks with fuse-holder
Protection thermal switches
Electrostatic shield
Horizontal installation

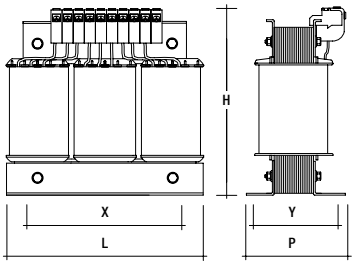


Code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)
TMUL40BXXX	4000	200	180	290	150	132	34
TMUL50BXXX	5000	200	190	290	150	142	38
TMUL63BXXX	6300	240	170-210	340	204	134	44
TMUL70BXXX	7000	240	180-220	340	204	144	48
TMUL80BXXX	8000	240	190-230	340	204	154	55
TMUL90BXXX	9000	280	240	420	235	150	62
TMUL10CXXX	10000	280	250	420	235	160	68
TMUL12CXXX	12000	280	260	420	235	170	78
TMUL14CXXX	14000	330	300	480	265	170	100
TMUL16CXXX	16000	330	310	480	265	180	110

AB trasformatori

Three-phase transformers for general use safety - isolation - control

Power: 200 ÷ 100000 VA
Input voltage: 100 ÷ 600 VAC
Secondary circuit output voltage: 12 ÷ 600 VAC
Maximum current: 200 A secondary



Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-2 EN61558-2-4 EN61558-2-6
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)

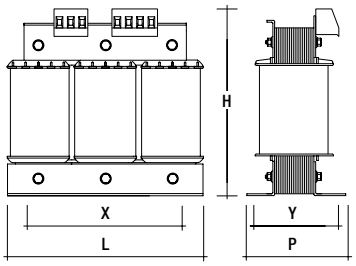
Transformers for control, safety and isolation circuits. The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system. TRI series units for general use are manufactured on demand.

Optional accessories: Terminal blocks with fuse-holder, protection thermal switches, electrostatic shield, horizontal installation

Safety code	Isolation code	Control code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)
TRIS25BXX	TRII25BXX	TRIC25BXX	200	150	80	155	125	56	5
TRIS30BXX	TRII30BXX	TRIC30BXX	300	150	90	155	125	66	6
TRIS50BXX	TRII50BXX	TRIC50BXX	500	180	90	180	150	60	7
TRIS63BXX	TRII63BXX	TRIC63BXX	630	180	100	180	150	70	8,5
TRIS80BXX	TRII80BXX	TRIC80BXX	800	180	110	180	150	80	10,5
TRIS90BXX	TRII90BXX	TRIC90BXX	900	180	120	180	150	90	12
TRIS10CXX	TRII10CXX	TRIC10CXX	1000	180	135	180	150	105	14,5
TRIS16CXX	TRII16CXX	TRIC16CXX	1600	240	120	230	200	95	20
TRIS20CXX	TRII20CXX	TRIC20CXX	2000	240	120	230	200	95	21
TRIS25CXX	TRII25CXX	TRIC25CXX	2500	240	130	230	200	105	25
TRIS30CXX	TRII30CXX	TRIC30CXX	3000	240	145	230	200	120	30
TRIS40CXX	TRII40CXX	TRIC40CXX	4000	300	160	290	250	112	36
TRIS50CXX	TRII50CXX	TRIC50CXX	5000	300	170	290	250	122	45
TRIS60CXX	TRII60CXX	TRIC60CXX	6000	300	180	290	250	132	53
TRIS70CXX	TRII70CXX	TRIC70CXX	7000	300	190	290	250	142	54
TRIS80CXX	TRII80CXX	TRIC80CXX	8000	300	190	290	250	142	56
TRIS90CXX	TRII90CXX	TRIC90CXX	9000	360	180-220	350	325	144	78
TRIS10DXX	TRII10DXX	TRIC10DXX	10000	360	190-230	350	325	154	83
TRIS12DXX	TRII12DXX	TRIC12DXX	12000	420	240	420	375	150	110
TRIS14DXX	TRII14DXX	TRIC14DXX	14000	420	250	420	375	160	120
TRIS16DXX	TRII16DXX	TRIC16DXX	16000	420	260	420	375	170	132
	TRII18DXX	TRIC18DXX	18000	420	260	420	375	170	140
	TRII20DXX	TRIC20DXX	20000	420	270	420	375	180	150
	TRII23DXX	TRIC23DXX	23000	480	310	480	423	185	170
	TRII25DXX	TRIC25DXX	25000	480	320	480	423	195	190
	TRII30DXX	TRIC30DXX	30000	480	330	480	423	205	210
	TRII35DXX	TRIC35DXX	35000	480	340	480	423	205	220
		TRIC40DXX	40000	480	350	480	423	215	235
		TRIC50DXX	50000	600	350	600	560	220	300
		TRIC60DXX	60000	600	360	600	560	230	340
		TRIC70DXX	70000	600	370	600	560	240	390
		TRIC80DXX	80000	600	380	600	560	250	420
		TRIC10KXX	100000	600	390	600	560	160	460

UL5085 approved three-phase transformers isolation - control

Power: 1000 ÷ 23000 VA
Input voltage: 100 ÷ 600 VAC
Secondary circuit output voltage: 100 ÷ 600 VAC



Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-2 EN61558-2-4 CSA C22.2 N.66 UL5085
Approvals: cURus file E364320 - EAC

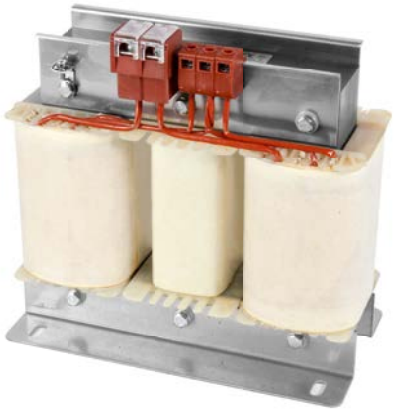
Three-phase transformers for control and isolation circuits.
The insulation between the primary and secondary windings is always double and reinforced.
TTUL series units for general use are manufactured on demand for the American market.

Optional accessories: Terminal boards with fuse-holder, protection thermal switches, electrostatic shield

Code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)
TTUL10BXX	1000	180	135	180	150	105	14,5
TTUL15BXX	1500	240	120	230	200	95	21
TTUL16BXX	1600	240	120	230	200	95	21
TTUL20BXX	2000	240	130	230	200	105	25
TTUL25BXX	2500	240	145	230	200	120	30
TTUL30BXX	3000	300	160	290	250	112	36
TTUL35BXX	3500	300	160	290	250	112	36
TTUL40BXX	4000	300	170	290	250	122	45
TTUL50BXX	5000	300	180	290	250	132	53
TTUL55BXX	5500	300	180	290	250	132	53
TTUL60BXX	6000	300	180	290	250	132	53
TTUL65BXX	6500	300	190	290	250	142	54
TTUL70BXX	7000	300	190	290	250	142	54
TTUL75BXX	7500	300	190	290	250	142	54
TTUL80BXX	8000	360	170	340	325	134	75
TTUL10CXX	10000	360	190	340	325	154	83
TTUL12CXX	12000	420	240	420	375	150	110
TTUL15CXX	15000	420	250	420	375	160	120
TTUL18CXX	18000	420	260	420	375	170	140
TTUL20CXX	20000	480	310	480	423	185	170
TTUL23CXX	23000	480	320	480	423	195	190
TTUL25CXX	25000	480	320	480	423	195	190
TTUL30CXX	30000	480	330	480	423	205	200
TTUL35CXX	35000	480	330	480	423	205	220
TTUL40CXX	40000	480	350	480	423	215	230
TTUL45CXX	45000	480	350	480	423	215	235
TTUL50CXX	50000	600	350	600	550	210	280
TTUL55CXX	55000	600	350	600	560	220	300
TTUL60CXX	60000	600	360	600	560	230	340
TTUL65CXX	65000	600	370	600	560	240	380
TTUL70CXX	70000	600	380	600	560	250	400

Three-phase/single-phase transformer isolation

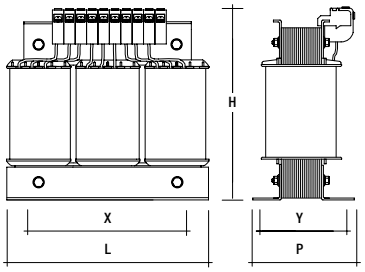
Power: 100 ÷ 25000 VA
Input voltage: 400 - 415 - 440 VAC
Output voltage: 230 VAC



Technical data
Duty cycle: continuous
Frequency: 50/60
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: 40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-4
Approvals: cURus (insulation systems UL CSA file number E340840)

Transformer series designed to distribute the load across the three power supply phases, also asymmetrically, when a single-phase output is required. Also, this model is equipped with double or reinforced insulation between the primary and secondary windings.
TTM series units are designed for general use.

Optional accessories: Terminal blocks with fuse-holder, protection thermal switches, electrostatic shield, horizontal installation



Pri. 400 Sec. 230 code	Pri. 415 Sec. 230 code	Pri. 440 Sec. 230 code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)
TTM50BA	TTM50BB	TTM50BC	500	180	110	180	150	80	11
TTM10CA	TTM10CB	TTM10CC	1000	240	110	230	200	85	17
TTM15CA	TTM15CB	TTM15CC	1500	240	120	230	200	95	20
TTM20CA	TTM20CB	TTM20CC	2000	240	130	230	200	105	25
TTM25CA	TTM25CB	TTM25CC	2500	240	145	230	200	120	30
TTM30CA	TTM30CB	TTM30CC	3000	300	160	290	250	112	40
TTM35CA	TTM35CB	TTM35CC	3500	300	160	290	250	112	40
TTM40CA	TTM40CB	TTM40CC	4000	300	170	290	250	122	45
TTM50CA	TTM50CB	TTM50CC	5000	300	180	290	250	132	53
TTM60CA	TTM60CB	TTM60CC	6000	300	190	290	250	142	54
TTM70CA	TTM70CB	TTM70CC	7000	360	170-210	350	325	134	75
TTM80CA	TTM80CB	TTM80CC	8000	360	180-220	350	325	144	78
TTM10DA	TTM10DB	TTM10DC	10000	360	190-230	350	325	154	83
TTM12DA	TTM12DB	TTM12DC	12000	420	250	420	375	160	100
TTM15DA	TTM15DB	TTM15DC	15000	420	260	420	375	170	110
TTM18DA	TTM18DB	TTM18DC	18000	480	300	480	423	175	155
TTM20DA	TTM20DB	TTM20DC	20000	480	320	480	423	195	170
TTM25DA	TTM25DB	TTM25DC	25000	480	330	480	423	205	190

Low loss three-phase transformers for photovoltaic systems

Power: 25 ÷ 400 kVA
Input voltage: 400 VAC
Secondary circuit output voltage: 400 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Cooling: air natural
Ambient temperature: +40°C MAX
Insulation class: F
Overtemperature class: F
Vector Group: YNyn0
Insulation levels: 3kV for 30 Sec.
Standards: EN61558
Winding material: aluminium

Three-phase isolating transformers, designed for low losses and high efficiency.
BFCT series units are designed and built for photovoltaic systems.

Optional accessories:
Electrostatic shield
Insertion of a PT100 probe

Transformer code	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Box code	Length L (mm)	Depth P (mm)	Height H (mm)
BFCT025C	25	420	270	400	130	97,1	240	CF16246	560	400	500
BFCT032C	32	470	330	430	140	97,1	275	CF14740	690	460	600
BFCT040C	40	530	340	500	180	97,5	285	CF14750	850	560	730
BFCT050C	50	530	380	500	220	97,7	295	CF14750	850	560	730
BFCT060C	60	530	400	570	270	97,7	330	CF14750	850	560	730
BFCT080C	80	620	400	590	320	98	430	CF14760	880	600	805
BFCT100C	100	620	400	590	340	98,06	530	CF14760	880	600	805
BFCT125C	125	700	420	650	450	98,08	560	CF14770	930	640	945
BFCT150C	150	700	450	710	540	98,08	660	CF14770	930	640	945
BFCT180C	180	700	480	710	600	98,22	760	CF14770	930	640	945
BFCT200C	200	900	420	920	720	98,4	850	CF14780	1050	700	1150
BFCT250C	250	900	440	920	760	98,55	1030	CF14780	1050	700	1150
BFCT300C	300	900	450	920	800	98,59	1150	CF14780	1050	700	1150
BFCT400C	400	1050	460	1120	1070	98,6	1230	CF14790	1300	940	1450

AB trasformatori

Single-phase autotransformers

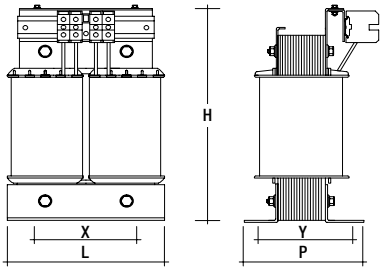
Power: 300 ÷ 25000 VA
Input voltage: 100 ÷ 600 VAC
Maximum current: 200A

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-13
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)

The autotransformer is made with a single winding from which the various output voltages are taken.
This type of transformer does not feature any form of galvanic separation from the primary circuit.
The size-power ratio of an autotransformer is a function of the maximum (Vmax) and minimum (Vmin) input/output voltage in accordance with the following formula:

$$\text{Core power handling} = \frac{(V_{max} - V_{min})}{V_{max}} \times \text{Rated output power (VA)}$$

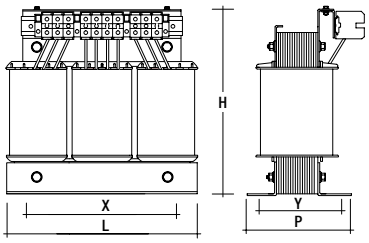
Use the result to find the autotransformer size needed in the following table.
AUTM series units for general use are manufactured on demand.



Code	Core power handling	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)
AUTM10BXX	100	85	95	90	60	70	2,2
AUTM20BXX	200	97	110	98	68	87	4
AUTM30BXX	300	120	100	130	80	83	5,5
AUTM50BXX	500	135	117	140	90	88	8
AUTM60BXX	600	150	110	155	105	80	8,5
AUTM80BXX	800	150	130	155	105	100	11,5
AUTM10CXX	1000	150	140	155	105	110	13
AUTM13CXX	1300	180	145	180	128	110	16
AUTM16CXX	1600	180	155	180	128	120	18
AUTM20CXX	2000	193	160	190	135	125	23
AUTM25CXX	2500	193	170	190	135	135	25
AUTM30CXX	3000	193	180	190	135	145	27
AUTM35CXX	3500	193	190	190	135	155	29
AUTM40CXX	4000	200	180	290	150	132	34
AUTM50CXX	5000	200	190	290	150	142	38
AUTM60CXX	6000	240	170-220	340	204	134	44
AUTM70CXX	7000	240	180-230	340	204	144	48
AUTM10CXX	8000	240	190-240	340	204	154	55
AUTM10DXX	10000	280	240	420	235	150	62
AUTM12DXX	12000	280	250	420	235	160	68
AUTM15DXX	15000	280	260	420	235	170	78
AUTM20DXX	20000	320	330	480	265	190	115
AUTM25DXX	25000	330	330	480	265	200	125

Three-phase autotransformers

Power: 200 ÷ 100000 VA
Input voltage: 100 ÷ 600 VAC
Maximum current: 200 A



Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-13
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)
The autotransformer is made with a single winding from which the various output voltages are taken. This type of transformer does not feature any form of galvanic separation from the primary circuit. The size-power ratio of an autotransformer is a function of the maximum (Vmax) and minimum (Vmin) input/output voltage in accordance with the following formula:

$$\text{Core power handling} = \frac{(V_{max} - V_{min})}{V_{max}} \times \text{Rated output power (VA)}$$

The result will make it possible to find the size of the required autotransformer in the following table. AUTT series for general uses are manufactured on demand.

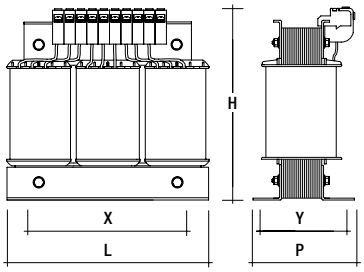
Code	Core power handling	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)
AUTT25BXX	200	150	80	155	125	56	5
AUTT30BXX	300	150	90	155	125	66	6
AUTT50BXX	500	180	90	180	150	60	7
AUTT63BXX	630	180	100	180	150	70	8,5
AUTT80BXX	800	180	110	180	150	80	10,5
AUTT90BXX	900	180	120	180	150	90	12
AUTT10CXX	1000	180	135	180	150	105	14,5
AUTT16CXX	1600	240	120	230	200	95	20
AUTT20CXX	2000	240	120	230	200	95	21
AUTT25CXX	2500	240	130	230	200	105	25
AUTT30CXX	3000	240	145	230	200	120	30
AUTT40CXX	4000	300	160	290	250	112	36
AUTT50CXX	5000	300	170	290	250	122	45
AUTT60CXX	6000	300	180	290	250	132	53
AUTT70CXX	7000	300	190	290	250	142	54
AUTT80CXX	8000	300	190	290	250	142	56
AUTT90CXX	9000	360	180-220	350	325	144	78
AUTT10DXX	10000	360	190-230	350	325	154	83
AUTT12DXX	12000	420	240	420	375	150	110
AUTT14DXX	14000	420	250	420	375	160	120
AUTT16DXX	16000	420	260	420	375	170	132
AUTT18DXX	18000	420	260	420	375	170	140
AUTT20DXX	20000	480	300	480	423	175	155
AUTT23DXX	23000	480	310	480	423	185	170
AUTT25DXX	25000	480	320	480	423	195	190
AUTT30DXX	30000	480	330	480	423	205	210
AUTT35DXX	35000	480	340	480	423	205	220
AUTT40DXX	40000	480	350	480	423	215	235
AUTT50DXX	50000	600	350	600	560	220	300
AUTT60DXX	60000	600	360	600	560	230	340
AUTT70DXX	70000	600	370	600	560	240	390
AUTT80DXX	80000	600	380	600	560	250	420
AUTT10KXX	100000	600	390	600	560	160	460

Autotransformers for three-phase motor starting

Motor power: 10 ÷ 300 HP
Working voltage: 380 ÷ 480 VAC
Taps: 70% - 75% - 80%

Technical data
Starts/hour: 5
Consecutive starts: 2
Motor starting time: 10 sec.
Motor inrush current: 5,5 In
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal board protection rating: IP00 - IP20
Ambient temperature: +40°C MAX
Thermal insulation class: F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-13 EN60726
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)

AVM series autotransformers for starting three-phase asynchronous motors with squirrel-cage rotor.
The use of these transformers limits motor inrush current.

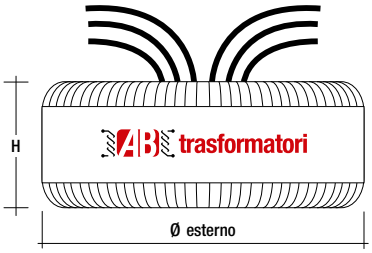


Code	Motor power HP	kW	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Y	Weight (Kg)
AVM005XX	5	3,7	180	120	180	150	90	12
AVM010XX	10	7,5	180	135	180	150	105	14,5
AVM015XX	15	11	240	120	230	200	95	20
AVM020XX	20	15	240	120	230	200	95	21
AVM025XX	25	18,4	240	130	230	200	105	25
AVM030XX	30	22	240	145	230	200	120	30
AVM040XX	40	30	300	160	290	250	112	36
AVM050XX	50	37	300	170	290	250	122	45
AVM060XX	60	45	300	180	290	250	132	53
AVM075XX	75	55	300	190	290	250	142	56
AVM135XX	135	99	360	180-220	350	325	144	78
AVM150XX	150	110	360	190-230	350	325	154	83
AVM180XX	180	133	420	240	420	375	150	110
AVM200XX	200	148	420	250	420	375	160	120
AVM220XX	220	162	420	250	420	375	160	120
AVM250XX	250	184	420	260	420	375	170	140
AVM270XX	270	200	480	320	480	423	195	190
AVM300XX	300	220	480	330	480	423	205	220

Single-phase toroidal transformers safety - isolation

Power: 50 ÷ 1000 VA
Input voltage: 100 ÷ 500 VAC
Secondary circuit output voltage: 6 ÷ 500 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-4 EN61558-2-6



Transformers for safety and isolation circuits.
The insulation between primary and secondary windings is double.
TOR series units for general use are manufactured on demand.

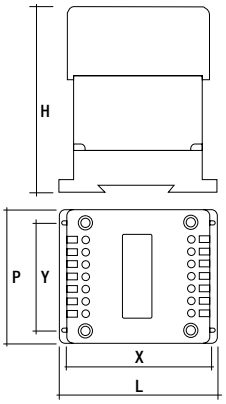
Safety code	Isolation code	Power (VA)	Outside diameter Ø (mm)	Height H (mm)	Weight (Kg)
TORS50AXX	TORI50AXX	50	85	30	0,5
TORS10BXX	TORI10BXX	100	95	45	1,2
TORS15BXX	TORI15BXX	150	100	52	1,6
TORS20BXX	TORI20BXX	200	115	55	2,2
TORS30BXX	TORI30BXX	300	130	50	2,8
TORS40BXX	TORI40BXX	400	130	55	3,5
TORS50BXX	TORI50BXX	500	132	62	4
TORS60BXX	TORI60BXX	600	136	63	5
TORS80BXX	TORI80BXX	800	150	68	6,5
TORS10CXX	TORI10CXX	1000	172	72	8

Single-phase IP20 transformers safety - isolation

Power: 30 ÷ 300 VA
Input voltage: 100 ÷ 480 VAC
Secondary circuit output voltage: 12 ÷ 480 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class II
Winding material: copper
Standards: EN61558-2-4 EN61558-2-6
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)

Transformers for safety and isolation circuits.
The insulation between the primary and secondary winding is double and created with the UL CSA certified insulation system.
DIN series units for general use with omega rail or screw fixing are manufactured on demand.



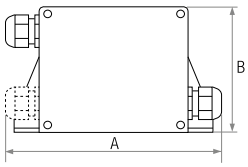
Pri. 230 400 Sec. 12	Pri. 230 400 ±15V Sec. 24	Power (VA)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing X	Fixing Y	Weight (Kg)	Losses FE W	Losses CU	Vcc %
DINS30AXX	DINI30AXX	30	90	106	87	68,5	4,5	1,3	2	1,5	8,3
DINS50AXX	DINI50AXX	50	90	106	87	68,5	4,5	1,6	2,1	1,8	8
DINS63AXX	DINI63AXX	63	90	106	96	68,5	4,5	1,7	2,1	2,4	7
DINS80AXX	DINI80AXX	80	90	106	106	68,5	4,5	1,9	2,2	2,5	6,5
DINS10BXX	DINI10BXX	100	90	106	106	68,5	4,5	2	2,3	2,5	6,5
DINS16BXX	DINI16BXX	160	126	106	127	96	121	3,8	5	3	6
DINS20BXX	DINI20BXX	200	126	136	127	96	121	4	5,7	9,5	4,7
DINS25BXX	DINI25BXX	250	126	136	127	96	121	4,8	5,7	9,7	4,7
DINS30BXX	DINI30BXX	300	126	136	127	96	121	5	6	9,8	4,5

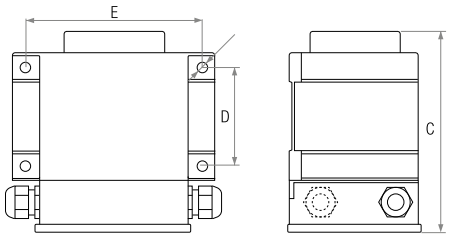
Safety transformers for lighting resin-bonded pools and fountains in an IP65 plastic case

Power: 50 ÷ 600 VA
Input voltage: 230 VAC
Secondary circuit output voltage: 12 - 24 VAC

Technical data
Series: single-phase
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP65
Connections: external connection through terminal board and cable gland
Ambient temperature: +35°C MAX
Protection against direct and indirect contact: classe II
Winding material: copper
Resistant to: short-circuit and overload
Thermal insulation class: B/130°C
Approvals: EN61558-1 EN61558 2-6

IP65 single-phase transformers for safety circuits.
The insulation between the primary and secondary windings is double and reinforced.
Equipped with thermal protection and fuse-holder on the primary,
they are encapsulated with epoxy resin in plastic cases.
The connections are external, through terminal board and cable gland bushings.
TLUX series designed to power lighting headlamps placed in a wet
and dusty environment.





Code Pri 230V Sec 12V	Code Pri 230V Sec 24V	Power (VA)	Primary 230V		Secondary					Dimensions (mm)					
			Fuse 5x20	Cable gland	Voltage (V)	Current (A)	Voltage (V)	Current (A)	Cable gland	A	B	C	D	E	Weight (Kg)
TLUX50AA	TLUX50AB	50	T 0,315	PG 11	12	4,17	24	2.08	PG 13,5	145	79,5	118	45	103	2,4
TLUX10BA	TLUX10BB	100	T 0,63	PG 11	12	8,33	24	4,17	PG 13,5	145	79,5	118	45	103	2,8
TLUX20BA	TLUX20BB	200	T 1,25	PG 11	12	16,7	24	8,33	PG 16	155	88	126	50	115	4,2
TLUX30BA	TLUX30BB	300	T 2	PG 11	12	25	24	12,5	PG 16	182	110	174	85	150	6,8
TLUX40BA	TLUX40BB	400	T 2,5	PG 11	12	33	24	16,67	PG 16	182	110	174	85	150	8
TLUX50BA	TLUX50BB	500	T 3,15	PG 11	2 x 12	2x 20,8	24	20,8	PG 16	182	110	174	85	150	8,5
TLUX60BA	TLUX60BB	600	T 4	PG 11	2 x 12	2x 25	24	25	PG 16	182	110	174	85	150	8,6

Single-phase IP68 transformers isolation - safety

Power: 30 ÷ 2000 VA
Input voltage: 12 ÷ 400 VAC
Output voltage: 6 ÷ 250 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP68
Ambient temperature: +30°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class II
Winding material: copper
Standards: EN61558-2-4 EN61558-2-6

Epoxy resin encapsulated transformers in a plastic or metal case with power supply input and transformer output on cables. TRES series for use in humidity environments including manholes, lighting poles, swimming pool spotlights, etc.
Manufactured on demand.

Single-phase transformers in portable case safety - isolation - control

Power: 30 ÷ 2000 VA
Input voltage: 12 ÷ 600 VAC
Output voltage: 12 ÷ 600 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-2 EN61558-2-4 EN61558-2-6

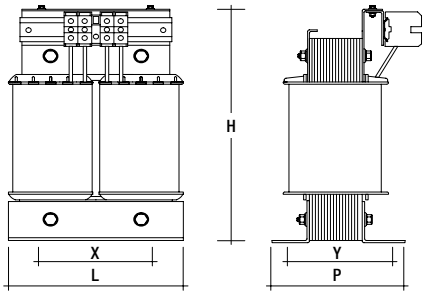
TRPO series of single-phase and three-phase transformers mounted in a portable case.
Manufactured on demand.

Single-phase isolating transformers for medical locations

Power: 3000 ÷ 10000 VA
Input voltage: 230 VAC
Output voltage: 230 VAC

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Earth leakage current of the enclosure: mA < 0,5
Earth leakage current of the secondary winding: mA < 0,5
Current between primary and secondary windings: mA < 3,5
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-1 EN61558-2-15
Approvals: cURus (insulation systems UL CSA file number E340840)

Transformers for powering group-2 medical premises, through galvanic separation between the power supply network and the user load. The insulation between the primary and secondary windings is double and reinforced, made with an UL CSA-certified insulating system.
Placed between the primary and secondary windings, the electrostatic shield helps to filter interferences in the power supply network and to reinforce insulation. Made with PT100 temperature probes for monitoring temperature or on request with 120°C temperature probes.
On request other power and voltage values as well as customized executions.



Code	Power (VA)	Current		Power-on current (In)	Loadless input current (In)	Short-circuit voltage (Vcc)	Dissipated power (W)	Length L (mm)	Depth P (mm)	Height H (mm)	Fixing		Weight (Kg)
		Pri (A)	Sec (A)								X	Y	
MED30BX	3000	13,5	13	x 12	< 3 %	< 3 %	140	200	180	290	150	135	33
MED40BX	4000	18	17,4	x 12	< 3 %	< 3 %	180	200	180	290	150	132	34
MED50BX	5000	22,5	21,7	x 12	< 3 %	< 3 %	200	200	190	290	150	142	38
MED60BX	6000	27	26	x 12	< 3 %	< 3 %	240	240	170	340	204	134	44
MED70BX	7000	31,7	30,4	x 12	< 3 %	< 3 %	260	240	180	340	204	144	48
MED80BX	8000	36	34,7	x 12	< 3 %	< 3 %	275	240	190	340	204	154	55
MED10CX	10000	45	43,5	x 12	< 3 %	< 3 %	330	280	240	420	235	150	62

AB trasformatori

Single-phase and three-phase electromedical transformer isolation - safety

Power: 30 ÷ 10000 VA
Input voltage: 200 ÷ 600 VAC
Output voltage: 6 ÷ 600 VAC

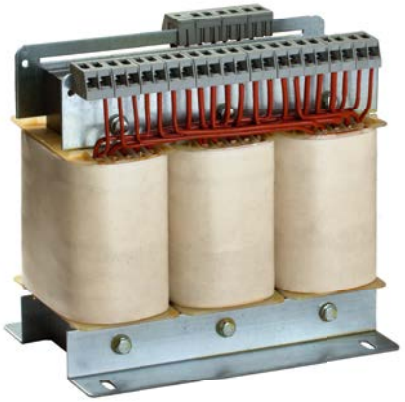
Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-4 EN61558-2-6 EN60601-1
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)

Manufactured in compliance with CEI EN60601-1 for incorporation in electromedical devices. The distinctive features of this transformer are the overheating protection of the basic insulation, the supplementary insulation, and the reinforced insulation in the event of short circuit or overload of each output winding.
The electrostatic shield interposed between the primary and secondary windings is ever present.
MEDC series units are manufactured on demand.

series
NAV

Single-phase and three-phase transformers for naval installations

Single-phase series power: 30 ÷ 20000 VA
Three-phase series power: 500 ÷ 5000 VA
Input voltage: VAC 100 ÷ 600
Output voltage: VAC 100 ÷ 600



Dati tecnici
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: MAX 40°C
Thermal insulation class: B/130°C or F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-2 EN61558-2-4 EN61558-2-6
Approvals: cURus (insulation systems UL CSA file number E340840)

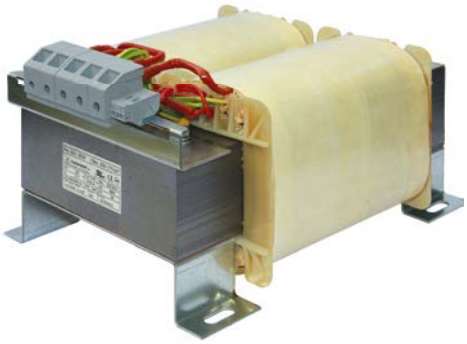
Transformers for the shipbuilding industry are designed by considering the high temperatures, small spaces and high vibrations to ensure proper operation over time. In compliance with the restrictive RINA regulations.
The insulation between the primary and secondary windings is double and made with an UL CSA certified insulating system.
NAV series designed for general naval purposes.

The data in this catalogue are not binding. We reserve the right to make changes without notice.

Single-phase and three-phase transformers for railway installations in accordance with IS 365

CE

Single-phase series power: 30 ÷ 10000 VA
Three-phase series power: 500 ÷ 30000 VA
Input voltage: 200 ÷ 1000 VAC
Output voltage: 200 ÷ 1000 VAC



Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP 00
Terminal block protection rating: IP 20
Ambient temperature: +40°C MAX
Isolation voltage: 3kV
Protection against direct and indirect contact: class II
Winding material: copper
Standards: IS365 EN61558-2-4

TRFI series single-phase or three-phase units manufactured on demand and designed to feed auxiliary signalling and control circuits for railways or subways. These transformers comply with CEI EN61558-2-4 with the incorporation of specific specifications required by IS 365 railway standard. Specifically, the transformers use low loss laminations that allow normal operation with frequency fluctuations of ±5% and voltage fluctuations of ±15% with respect to nominal values. Insulation is class H and the maximum overtemperature is 50°C above ambient temperature.

series
GEN

Neutral generator

CE cULus

Power: 3000 ÷ 50000 VA
Mains voltage: 400 ÷ 600 VAC
Connection: Zig-Zag

Technical data
Duty cycle: continuous
Frequency: 50/60 Hz
Protection rating: IP0
Terminal board protection rating: IP20
Ambient temperature: F/155°C or B/130°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-13
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)

Neutral generator for use in three-phase networks in which a neutral conductor is not available.
Composed of a single winding, this unit does not feature galvanic separation from the power supply circuit.
GEN series units are manufactured on demand.

Reactance - Impedance for motor start-up

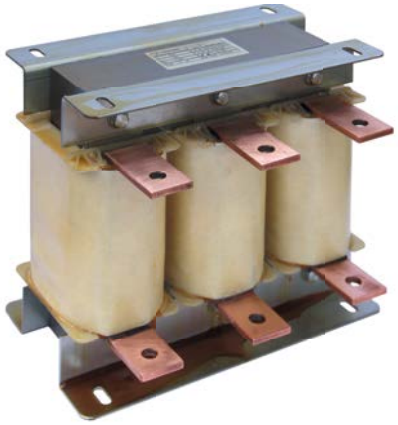
Technical data
Duty cycle: continuous
Motor efficiency: 85%
Motor peak current: 6.5 x In
Frequency: 50/60 Hz
Protection rating: IP00
Terminal board protection rating: IP00 - IP20
Ambient temperature: F/155°C
Protection against direct and indirect contact: class I
Winding material: copper
Standards: EN61558-2-20 EN60289
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)

Reactors used for starting three-phase asynchronous motors with squirrel-cage rotor.
Installing a reactor on the line limits motor inrush current.
RET series units are manufactured on demand.

Single-phase and three-phase inductors

Technical data
Duty cycle: continuous
Saturation current: In x 1,5 ÷ 2
Frequency: 50/60 Hz
Protection rating: IP00
Terminal board protection rating: IP00 - IP20
Ambient temperature: F/155°C
Protection against direct and indirect contacts: class I
Winding material: copper
Standards: EN61558-2-20 EN60289
Approvals: cURus (insulation systems AB155 UL CSA file number E340840)

Inductor to be installed at the inverter input and output to limit peak current
and the propagation of noise in the form of voltage harmonics.
IND series units are manufactured on demand.



Electromagnets

Manufactured on demand, for DC and AC power supply,
with a low-absorption strong electromagnetic force.

Single-phase and three-phase AC/DC levelled power supply units

Single-phase series power: 30 ÷ 3500 VA
Three-phase series power: 500 ÷ 10000 VA
Input voltage: 200 ÷ 1000 VAC
Output voltage: 6 ÷ 100 VCC

Rectified and regulated AC/DC power supplies for loads
that require a power input that is continuous and regulated but not stabilised.

Metal protection boxes for transformers

Technical data
Service: steel container
Painting: RAL 7035 in the furnace
Protection degree: IP23
Ventilation: air natural

COFT series of metal BOXES suitable for the installation of core-type three-phase and single-phase transformers.
This series can be customized with the addition of a wall-mounted external switchboard.

Code	Length L (mm)	Depth P (mm)	Height H (mm)
COFT30	260	200	330
COFT40	350	350	350
COFT50	390	390	400
COFT60	490	380	450
COFT70	500	450	500
COFT80	600	500	600
COFT100	740	550	800

series
COFM

Metal protection boxes for transformers

Technical data
Service: steel container
Painting: RAL 7035 in the furnace
Protection degree: IP23
Ventilation: air natural

COFM series of metal BOXES suitable for the installation of shell-type single-phase transformers.
This series can be customized with the addition of transport handles and sockets.

Code	Length L (mm)	Depth P (mm)	Height H (mm)
COFM25	120	120	120
COFM28	120	120	120
COFM32	135	135	135
COFM40	150	150	150
COFM50	185	185	185
COFM60	210	210	210
COFM64	230	230	230

Contents

Certificates

Certificate of Compliance

Certificate Number 20100908-E340840
Report Reference E340840, 2010 September 08
Issue Date 2010 September 8

Page 1 of 2

Underwriters Laboratories Inc.®

Issued to: AB TRASFORMATORI SRL
VIA PIANTADA 6
25036 PALAZZOLO SULL'OGLIO BS ITALY

This is to certify that representative samples of SYSTEMS, ELECTRICAL INSULATION
See Addendum Page

Have been investigated by Underwriters Laboratories Inc.® (UL) or any authorized licensee of UL in accordance with the Standard(s) indicated on this Certificate..

Standard(s) for Safety: Systems of Insulating Materials - General, UL 1446 Sixth Edition
General Requirements - Canadian Electrical Code, Part II CSA C22.2 No. 0-M91-CAN/CSA Eight Edition issued

Additional Information: See UL On-Line Certification Directory at www.UL.com for additional information

Only those products bearing the UL Recognized Component Marks for the U.S. and Canada should be considered as being covered by UL's Recognition and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Recognized Component Mark for the U.S. generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Programs, UL's Recognized Component Mark may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions. The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada and the manufacturer's identification and catalog number, model number or other product designation as specified under "Markings" for the particular Recognition as published in the appropriate UL Directory.

Look for the UL Recognized Component Mark on the product

William R. Carney
William R. Carney; Director, North American
Underwriters Laboratories Inc.

CERTIFICATE OF COMPLIANCE

Certificate Number 20170531-E364320
Report Reference E364320-20131129
Issue Date 2017-MAY-31

Issued to: AB TRASFORMATORI SRL
Via Piantada 6
25036 Palazzolo Sull'Oglio BS ITALY

This is to certify that representative samples of COMPONENT - TRANSFORMERS, GENERAL PURPOSE
See Addendum

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: See Addendum
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

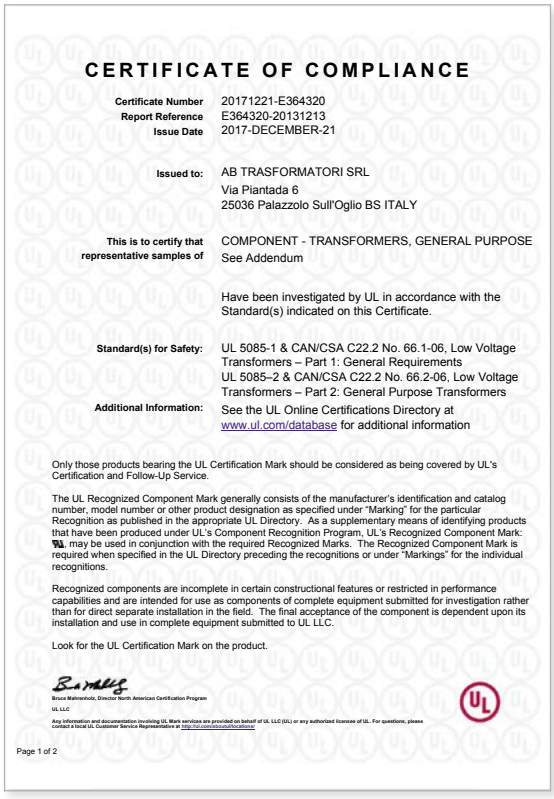
Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at http://ul.com/aboutul/locations/

Page 1 of 2



CERTIFICATE OF COMPLIANCE

Certificate Number 20171221-E364320
Report Reference E364320-20131213
Issue Date 2017-DECEMBER-21

Issued to: AB TRASFORMATORI SRL
Via Piantada 6
25036 Palazzolo Sull'Oglio BS ITALY

This is to certify that representative samples of COMPONENT - TRANSFORMERS, GENERAL PURPOSE
See Addendum

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 5085-1 & CAN/CSA C22.2 No. 66.1-06, Low Voltage Transformers – Part 1: General Requirements
UL 5085–2 & CAN/CSA C22.2 No. 66.2-06, Low Voltage Transformers – Part 2: General Purpose Transformers
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at http://ul.com/aboutul/locations/

Page 1 of 2

CERTIFICATE

Issued to:
Applicant:
AB TRASFORMATORI S.r.l.
Via Piantada, 6
25036 Palazzolo S/o (BS), Italy

Manufacturer/Licensee:
AB TRASFORMATORI S.r.l.
Via Piantada, 6
25036 Palazzolo S/o (BS), Italy

Product(s) : safety isolating transformers
Trade name(s) : AB TRASFORMATORI
Type(s)/model(s) : TMUL/02A/XXX, TMUL/03A/XXX, TMUL/045/XXX, TMUL/045/XXX, TMUL/04A/XXX, TMUL/05A/XXX, TMUL/063/XXX, TMUL/08A/XXX, TMUL/10A/XXX, TMUL/10B/XXX, TMUL/15A/XXX, TMUL/15A/XXX, TMUL/16A/XXX, TMUL/16B/XXX, TMUL/18B/XXX, TMUL/20A/XXX, TMUL/20B/XXX, TMUL/25A/XXX, TMUL/25B/XXX, TMUL/30A/XXX, TMUL/30B/XXX, TMUL/35B/XXX, TMUL/40A/XXX, TMUL/50A/XXX, TMUL/55A/XXX, TMUL/60A/XXX, TMUL/63A/XXX, TMUL/70A/XXX, TMUL/80A/XXX

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:
- a type test according to the standard EN 61558-1:2005; EN 61558-2-6:2009;
- an inspection of the production location according to CENELEC Operational Document CIG 021
- a certification agreement with the number 3503970

DEKRA hereby grants the right to use the ENEC KEMA-KEUR certification mark.

The ENEC KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration of the ENEC KEMA-KEUR certification agreement and under the conditions of the ENEC KEMA-KEUR certification agreement.

This certificate is issued on: 16 April 2015 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 3503970.01

DEKRA Certification B.V.

drs. G.J. Zoetbrood
Managing Director

P.W. Huige
Certification Manager

ACCREDITED BY THE DUTCH ACCREDITATION COUNCIL

DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Registered Arnhem 09085396

CERTIFICATE

Issued to:
Applicant:
AB TRASFORMATORI S.r.l.
Via Piantada, 6
25036 Palazzolo S/o (BS), Italy

Manufacturer/Licensee:
AB TRASFORMATORI S.r.l.
Via Piantada, 6
25036 Palazzolo S/o (BS), Italy

Product(s) : isolating transformers, single-phase
Trade name(s) : AB TRASFORMATORI
Type(s)/model(s) : TMUL SERIES

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:
- a type test according to the standard EN 61558-1:2005; EN 61558-2-4:2009;
- an inspection of the production location according to CENELEC Operational Document CIG 021
- a certification agreement with the number 3503970

DEKRA hereby grants the right to use the ENEC KEMA-KEUR certification mark.

The ENEC KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration of the ENEC KEMA-KEUR certification agreement and under the conditions of the ENEC KEMA-KEUR certification agreement.

This certificate is issued on: 16 April 2015 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 3503970.02

DEKRA Certification B.V.

drs. G.J. Zoetbrood
Managing Director

P.W. Huige
Certification Manager

ACCREDITED BY THE DUTCH ACCREDITATION COUNCIL

DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Registered Arnhem 09085396

EAC

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ
ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ

Заявитель Общество с ограниченной ответственностью «Мир Технологий».
Основной государственный регистрационный номер: 1187746469096.
Место нахождения: 117042, Российская Федерация, город Москва, улица Адмирала Руднева, дом 4, этаж 6, помещение IV, офис 613
Телефон: 89154152183, адрес электронной почты: MirTekhnologiy@gmail.com
в лице Генерального директора Киреенко Константина Борисовича
заявляет, что
Однофазные трансформаторы серии TMUL, трехфазные трансформаторы серии TTUL
Продукция изготовлена в соответствии с Директивой 2014/35/ЕС «Низковольтное оборудование»
изготовитель AB Trasformatori S.r.l.
Место нахождения: ИТАЛИЯ, Via Piantada 6, 25036 Palazzolo sull'Oglio (BS)

код ТН ВЭД ЕАЭС: 8504 31 210 9, 8504 32 000 9, 8504 33 000 9
Серийный выпуск
соответствует требованиям
Технического регламента Таможенного союза ТР ТС 004/2011 "О безопасности низковольтного оборудования".

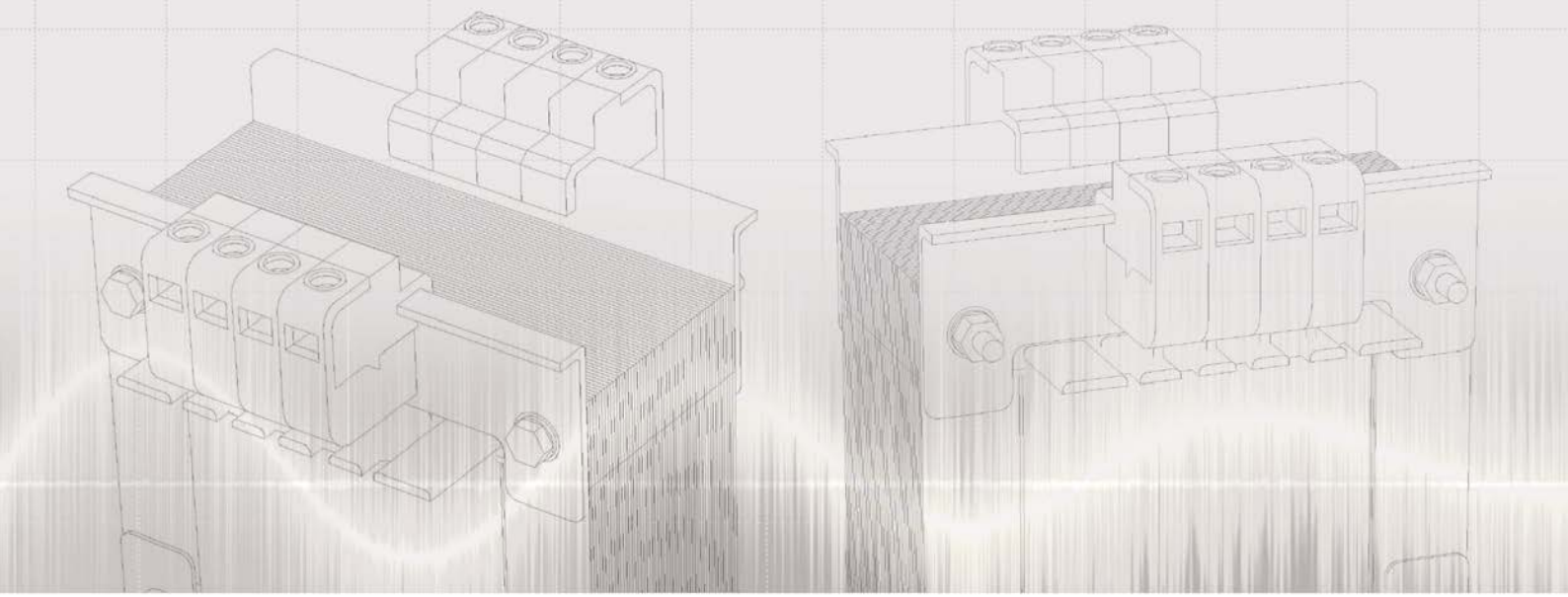
Декларация о соответствии принята на основании
протокола испытаний № 001-03/12-ЦСТ от 01.03.2019 года, выданного испытательной лабораторией «ЦСТ-Испытания» Общества с ограниченной ответственностью «ЦЕНТР-СТАНДАРТ», регистрационный № РОСС RU.31485.04ИДЮ0.004;
руководства по эксплуатации; паспорта
Схема декларирования: 1g
Дополнительная информация
Условия хранения продукции в соответствии с требованиями ГОСТ 15150-69. Срок хранения (службы, годности) указан в прилагаемой к продукции эксплуатационной документации. Стандарты, обеспечивающие соблюдение требований Технического регламента Таможенного союза ТР ТС 004/2011 "О безопасности низковольтного оборудования": ГОСТ IEC 61558-1-2012 "Безопасность силовых трансформаторов, блоков питания, электрических реакторов и аналогичных изделий. Часть 1. Общие требования и испытания"

Декларация о соответствии действительна с даты регистрации по 04.03.2024 **включительно.**

Киреенко Константин Борисович
(Ф.И.О. заявителя)

Регистрационный номер декларации о соответствии: ЕАЭС N RU Д-IT.АМ03.В.00557/19
Дата регистрации декларации о соответствии 05.03.2019

Notes



trasformatori

Via Piantada, 6 - 25036 Palazzolo Sull'Oglio (BS) - ITALY
ph. +39 030 7300444 - fax +39 030 7400902
info@abtrasformatori.it - www.abtrasformatori.it