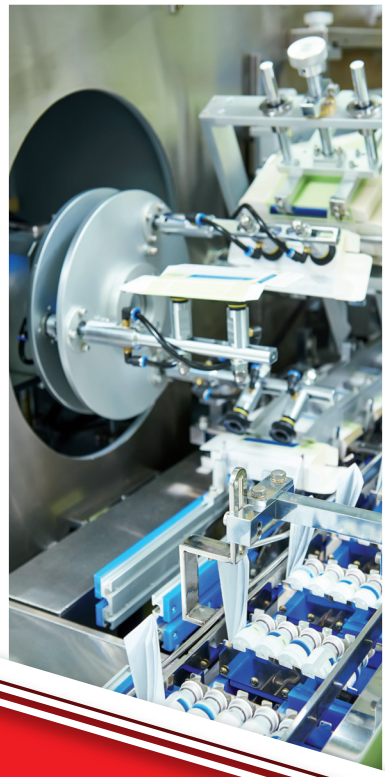
ENERDOOR

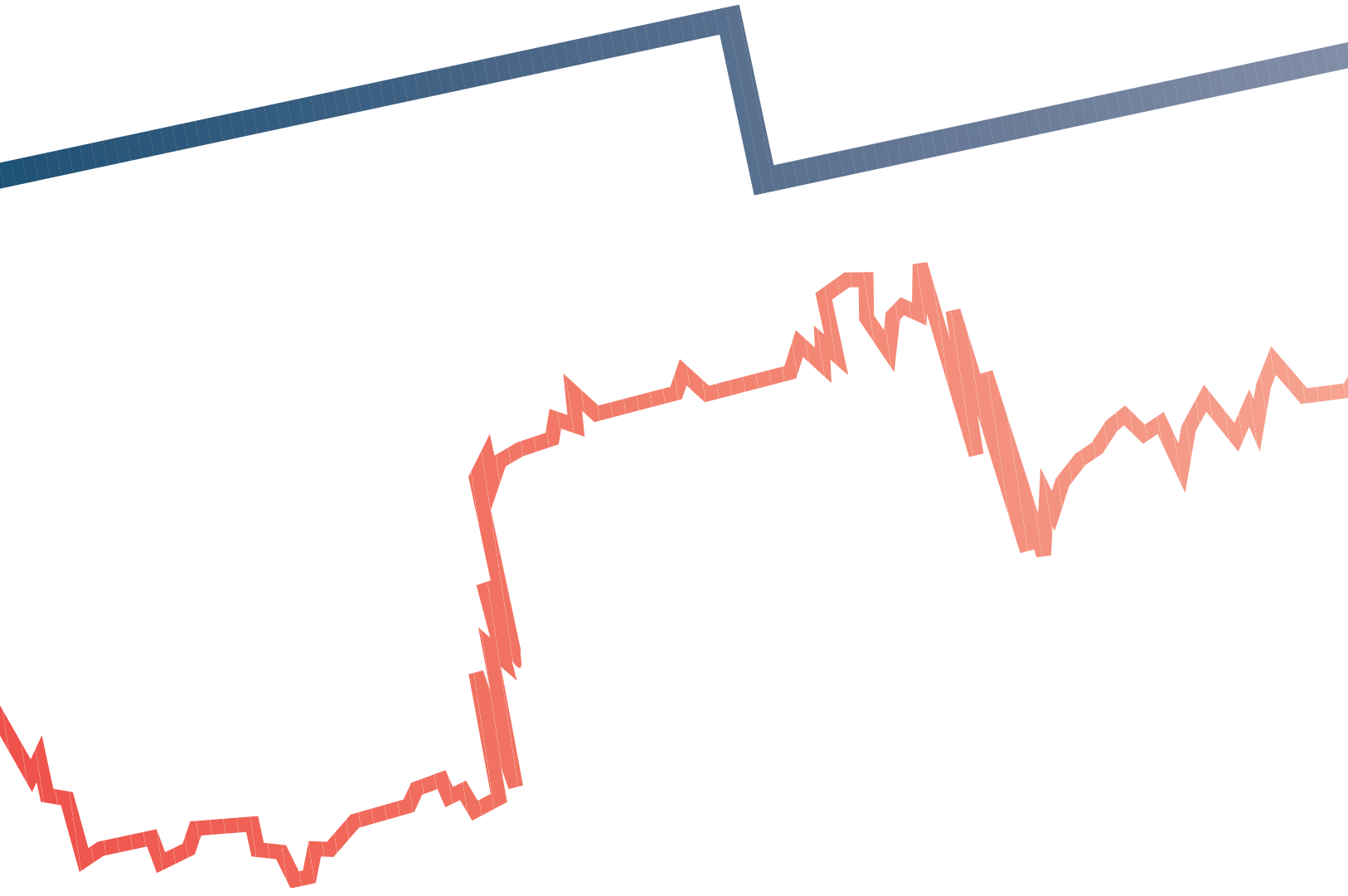
Engineered by Finmotor



Power Transformers

c UL us CE RoHS

5 ★ ★ ★ ★ ★ year warranty



ENERDOOR

INDEX

CODE

TT	10	40	Y	48	Y	M	M	0	0	0
MODEL	NOMINAL POWER (KVA)	PRIMARY VOLTAGE	PRIMARY WINDING	SECONDARY TENSION	SECONDARY WINDING	PRIMARY CONNECTION	SECONDARY CONNECTION	MULTITAP	BOX	OPTIONS
TT = three-phase transformer	05 = 0.5KVA 1 = 1KVA 10 = 10KVA 100 = 100KVA	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	D = triangle Y = star YN = star with accessible neutral X = not applicable	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	D = triangle Y = star YN = star with accessible neutral X = not applicable	M = clamp B = busbar	M = clamp B = busbar	0 = no tap 5 = +/-5% 10 = +/-10% 15 = +/-15% 510 = +/-5.10%	0 = no box 1 = IP23 box 2 = IP54 box	0 = no options B = switch F = fuses T = term. central T3 = term. each branch

COMPANY OVERVIEW

1992 Finmotor founded in Rozzano, Milan - Italy

Enerdoor / Finmotor headquarters Milan, Italy

Enerdoor / Eichhoff production facility Vac, Hungary

The Enerdoor Group consists of Enerdoor in the United States, Germany and Switzerland; Finmotor and Finlab in Italy; and Eichhoff Elektro in Hungary.

Since 1992, the Enerdoor Group has been an international leader in the development and production of power quality and electromagnetic solutions for automated machinery and industrial plants. Enerdoor's broad range of products include: power transformers, EMI/RFI filters, motor protection devices, harmonic filters, line reactors, surge arresters, voltage stabilizers, and customized solutions.

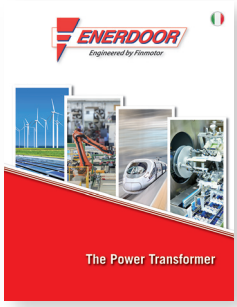
Advancements in semiconductor technology in the 1970's led to the development of the earliest variable frequency drives (VFDs) in Europe. VFDs are inherently "noisy", due to their high frequency switching characteristics. In response to market needs, Enerdoor physicists and engineers created a broad range of EMI/RFI filter solutions to solve challenges related to VFD usage. Enerdoor filters were the perfect power quality solution for the growing industrial equipment market.

With the increased use of high frequency products in the industrial market, it became clear that regulations would need to be established, and CE compliance became a requirement in 1993. Due to Enerdoor's vision and expertise, the company became and continues to be one of the top CE and power quality testing agencies in the world.

Enerdoor began operations in Maine, USA in 2007. Organic growth lead to expanding operations into Switzerland in 2007 and Germany in 2010. With the 2011 acquisition of the Hungarian transformer manufacturer, Eichhoff Elektro, Enerdoor has grown to be a global supplier, with manufacturing and R&D in four countries and a worldwide network of distributor and manufacturer representatives.

Enerdoor remains committed to providing quality solutions and outstanding service to customers and sales channel partners. Our ability to understand and diagnose the root cause of electrical noise, allows Enerdoor to provide the best solution for any industry and application.

In addition to power transformers, Enerdoor specializes in power quality products, EMC testing and CE Certification for every industry and application.

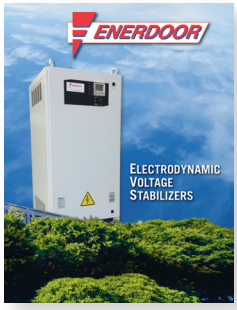


EMI/RFI Filters, Harmonic Solutions and Motor Protection Devices

Rated voltage up to 690 Vac
Rated current up to 3000 A
Harmonic reduction below 5%
dV/dt reduction on the motor

Surge Arresters

Class I, I+II, II, II+III
Rated voltage up to 690 Vac (1200 Vdc)
Surge capacity up to 300 kA
Visual and remote indicator
DIN rail mounting

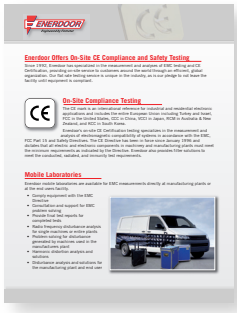


Voltage Stabilizers

Single-phase stabilizer:
Nominal voltage up to 277 Vac
Rated power up to 320 kVA
Three-phase stabilizer:
Nominal voltage up to 600 Vac
Rated power up to 4000 kVA
Asymmetrical and symmetrical adjustment
Electronic regulation control

Transformers and Ignition Systems

Safety encapsulated transformer 0.35 to 100 VA
Primary voltage up to 600 Vac
Secondary voltage up to 48 V
Electronic ignition systems
High frequency ignition systems



CE Certification and Consulting

Mobile EMC testing and CE Certification
Machinery Directive and safety consulting
Problem solving in manufacturing plants
Power quality analysis
Motor analysis

POWER TRANSFORMERS

Enerdoor is a global leader in the development and production of power transformers with customized solutions.

INTRODUCTION - THE TRANSFORMER

A power transformer is a passive component that alternates current for the purpose of transmitting electrical power. It uses electromotive force (EMF) to transform alternating voltage and current into a different value of voltage and current, while maintaining the same frequency.

Enerdoor transformers offer a power range up to 225 KVA and are available as single-phase, three-phase, isolation, and autotransformers with voltages up to 10 kV.

Built according to CE regulations, these products are available with terminal or busbar connections and offer different options such as: boxes with various IP protections, circuit breakers, fuses, and thermocouples for temperature control.

TRANSFORMER POWER

The power of a transformer is defined in VOLTS AMPER (VA). Losses in a transformer are divided into iron loss and copper loss.

Iron loss is due to Foucault currents, and mainly depends on the quality of the ferromagnet material, regardless of its dimensions. Iron loss occurs in the magnetic core of a transformer due to the flow of alternating magnetic flux through it. For this reason, iron loss is often called core loss.

Copper loss is the term given to heat produced by electrical currents in the conductors of transformer windings, or other electrical devices. All transformers can work without distinction at 50/60 Hz.

INSULATION CLASS

A constructive characteristic of a transformer is the protection class:

Protection class I

All metal parts of the transformer are separated from live parts by insulation and all accessible conductive metal parts must be connected by an earth terminal to a protective conductor forming part of the installation electrical installation.

Protection class II

All metal parts of the transformer are separated from live parts by means of a double or reinforced insulation to ensure that all accessible parts of the transformer are separated from live parts. In this case the transformer must not be equipped with an earth terminal.

Protection class III

The protection against direct and indirect contacts is based on the low voltage power supply that must be less than 50 Vac. In this case the transformer is a safety device and does not have an earth terminal.

Norm	Description	Note
CEI EN 61558-1	Transformer safety	Common general part
CEI EN 61558-2-1	Separation transformers for general use	Primary and secondary voltage <1000 Vac
CEI EN 61558-2-2	Control transformers	Primary and secondary voltage >1000 Vac Double insulation is not required
CEI EN 61558-2-4	Isolation transformers	Primary voltage <1000 Vac Secondary voltage <500 Vac
CEI EN 61558-2-6	Safety transformers	Primary voltage <1000 Vac Secondary voltage <50 Vac
CEI EN 61558-2-13	Autotransformers for general use	Primary voltage <1000 Vac without insulation Three-phase secondary voltage <100 KVA
CEI EN 61558-2-15	Isolation transformers for medical use	Primary voltage 250 Vac Secondary voltage 250 Vac Double insulation between primary and secondary is required. Power <10 KVA
CEI EN 61558-2-20	Reactors	Inductance, reactance and impedance
CEI EN 60289	Reactors	Inductance, reactance and impedance
UL 508	Control equipment for industrial use	Power supplies and transformers
UL 506	Transformers - general purpose	USA regulations
CSA 66	Transformers - general purpose	Canadian regulations

TEMPERATURE

The defined target temperature TA is 40 °C.

If a transformer has to work at higher temperatures it is possible to downgrade it, in terms of power available, according to the below chart.

The insulation class of transformers is determined by the type of materials used and is reported in letters:

A=105°C; E=120°C; B=130°C; F=155°C; H=180°C.

INSULATION CLASS

A transformer that works at ambient temperature of 40°C at a steady state may have a variation of maximum temperature for each class of insulation as follows:

Insulation class A 60 °C
Insulation class E 75°C
Insulation class B 80°C
Insulation class F 100°C
Insulation class H 125°C

Power Trend in Ambient Temperature

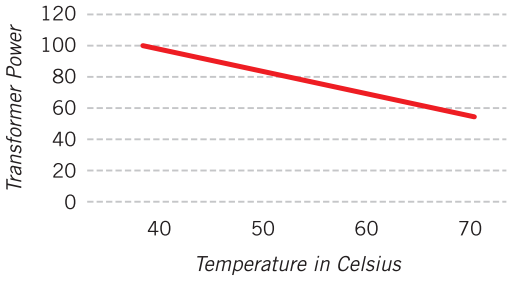


Fig.1 Power trend of the ambient temperature for a transformer in operation

ALTITUDE DERATEMENT

In general, a derating of power by 5% for every thousand meters of altitude.

PROTECTION

Enerdoor power transformers range from 1 VA to 250 KVA.

In small transformers it is possible to insert a fuse in the primary circuit.

In larger transformers, the protection must be inserted in the electric circuit.

OVERLOAD

The overload of a transformer is defined by the manufacturer.

It is not possible to give an overload value for very small 1 VA transformers.

For larger transformers, the overload is indicated on a case-by-case basis on the datasheet.

EVALUATION OF A QUALITY TRANSFORMERS

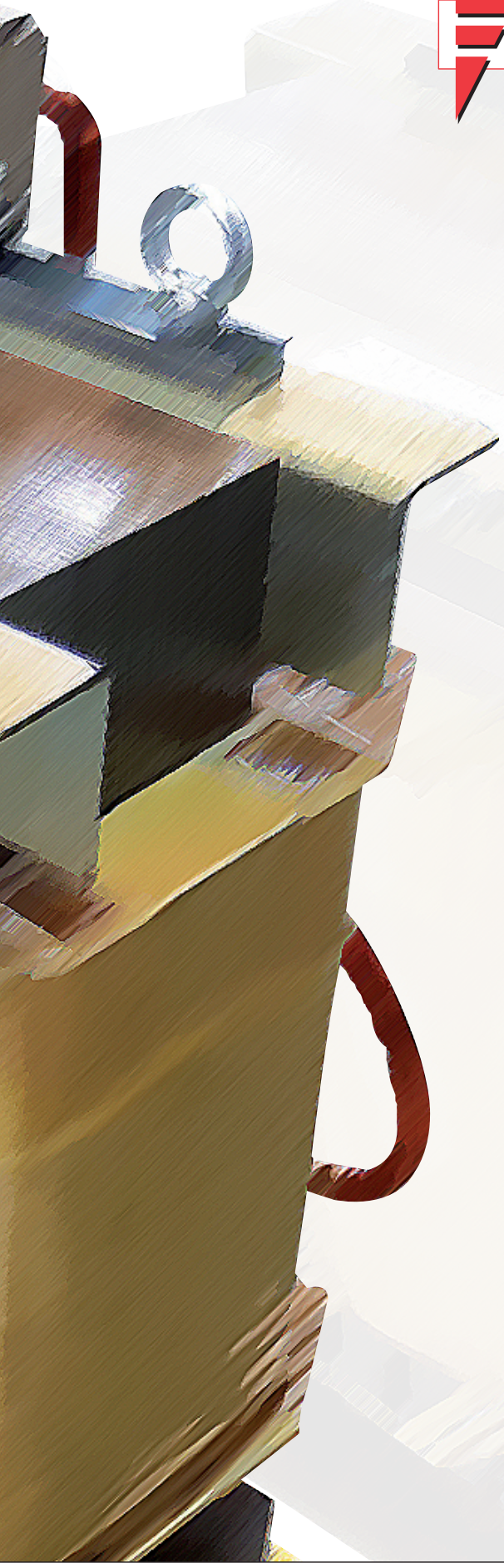
It is possible to evaluate a quality transformer by carring out a simple test with suitable power:

Copper Loss: Copper loss is evaluated by running the transformer in short circuit. In this condition the voltage on the secondary is zero and the voltage on the primary is the minimum such as to have the rated current on the secondary; this way the power is only that dissipated by the windings.

Iron loss: Iron loss is evaluated by running the transformer without load; by feeding the primary at a voltage usually 10% higher than the nominal one, the power absorbed in this condition is exclusively due to the iron loss.

ENERDOOR

Transformer Selection Guide				CONNECTIONS				BENEFITS				APPLICATIONS					ACCESSORIES			
Transformers	Description	Power (KVA)	Voltage (Vac)	Cables	Terminal blocks	Bus bar	Pins	Low power loss	Complete isolation between primary and secondary	Low frequency noise reduction	Customizable	Automation	Machine tools	Packaging machines	Equipment import / export	Electronic boards	Box	Fuse	Switch	Thermal pads
EI	1-phase	0.003-0.1	0-480	✘			✘		✘		✘	✘				✘	✘	✘		✘
TME	1-phase	0.1-2.5	0-1000	✘	✘			✘			✘		✘				✘	✘	✘	✘
TMEI	1-phase	0.1-2.5	0-1000	✘	✘			✘	✘	✘	✘				✘	✘	✘	✘	✘	✘
TMU	1-phase	2.5-25	0-1000	✘	✘	✘		✘			✘						✘	✘	✘	✘
TMUI	1-phase	2.5-25	0-1000	✘	✘	✘		✘	✘	✘	✘		✘				✘	✘	✘	✘
TT	3-phase 3-phase+N	2-225	0-1000		✘	✘		✘			✘	✘	✘	✘	✘	✘	✘	✘	✘	✘
TTI	3-phase 3-phase+N	2-225	0-1000		✘	✘		✘	✘	✘	✘		✘				✘	✘	✘	✘
ATT	3-phase 3-phase+N	2-225	0-1000		✘	✘		✘			✘	✘	✘		✘	✘	✘	✘	✘	✘



Power Transformers

A power transformer is a passive component that alternates current for the purpose of transmitting electrical power. It uses electromotive force (EMF) to transform alternating voltage and current into a different value of voltage and current, while maintaining the same frequency.

Enerdoor transformers offer a power range up to 225 KVA and are available as single-phase, three-phase, isolation, and autotransformers with voltages up to 10 kV.

Built according to CE regulations, these products are available with terminal or busbar connections and offer different options such as: boxes with various IP protections, circuit breakers, fuses, and thermocouples for temperature control.

Power transformers applications include:

- Automated machinery
- Switchboards
- Control equipment
- Industrial automation
- Electronic devices
- Machine tools
- Machine exporting/importing

Datasheet 202303

Single-phase safety transformers 0.35 to 100 VA

APPROVALS

CHARACTERISTICS

- Rated power from 0.35 to 100 VA
- Available with various connections
- Available with integrated fuse

BENEFITS

- Vacuum resin coating
- Available with series or parallel voltage

MARKETS

- Electronic devices
- Home appliances
- Electronic boards

POWER VA

2	30	60	90	120	180

CODE

EI	30	03	13	21	A	4	100	5	10
LAMINATED TYPE	LAMINATED DIMENSION (mm)	WITHOUT ASSEMBLY "0"	WITH ASSEMBLY "K"	VERTICAL VERSION	FUSE PROTECTION	MAX AMBIENT TEMPERATURE	INTERNAL CODE	SECONDARY VOLTAGE	PRIMARY VOLTAGE
EE EI UI	20 30 38 42 48 54 60 66 84	01 02 03 12 32 34 X6 X10 Y7 Y8 Y9 Y10	13 33 35	21 31 41	A = external secondary E = primary external G = external F = temperature sensor T = temperature switch	40C = 4 70C = 7		6V = 0 9V = 1 12V = 2 15V = 3 18V = 4 24V = 5	115V = 10 230V = 12 240V = 04

TECHNICAL SPECIFICATIONS

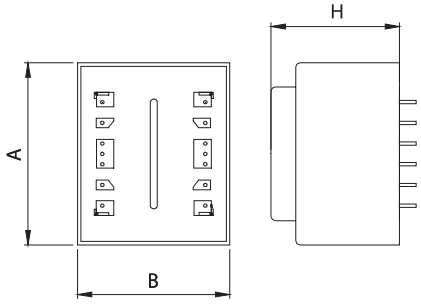
Primary voltage	0 - 690 Vac
Secondary voltage	0 - 690 Vac
Power	0.35 - 100 VA
Insulation class	B
Temperature class	-20° C to +80° C
Winding	Copper
Service	Continuous
Derating	-20° C to +80° C
Altitude derating	1500m, over 1% decrease every 100m
Wrapped IP protection	IP20
Connection protection	IP00 with pins IP20 with cable
Frequency	50/60 Hz
Dielectric strength	4 KV

MECHANICAL DIMENSIONS mm

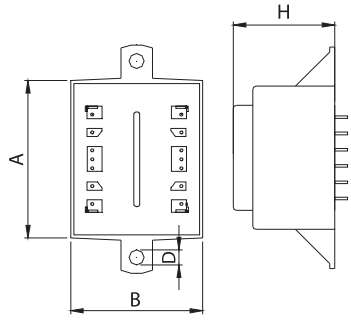
Model	Power (VA)		External Dimensions (mm)				Weight (Kg)	Case
			A	B	H			
	Min	Max			Min	Max		
EI30* **	0.35	4.8	32.3	27.3	16.5	33.8	0.140	1,2
EI38* **	2	6	40.6	34.9	22.1	32	0.173	1,2
EI42* **	4	8.6	43.8	36.8	32.3	38	0.255	1,2,3
EI48* **	7	14	51.2	43	37.8	38.5	0.335	1,2,3
EI54* **	7	20.5	57.6	48.6	41.7	43.2	0.500	1,2,3
EI60* **	20	30	63.6	53.6	47.5	57.3	0.806	1,2,3
EI66* **	15	50	69.6	58.6	48.5	61	0.950	1,2,3
EI84* **	85	100	93.5	75.5	63.8	76.5	64	2,3

***** Product code name**
Transformer measurements in the table are intended for Case 1
Contact Enerdoor for Case 2 and Case 3 dimensions

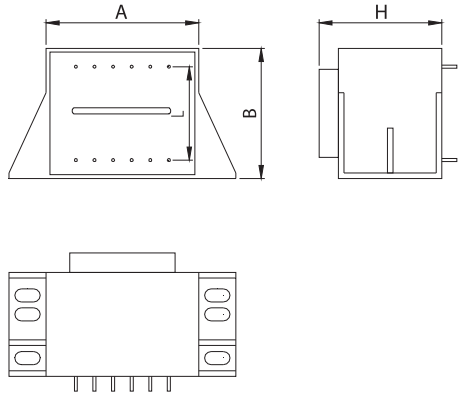
CASE 1



CASE 2



CASE 3



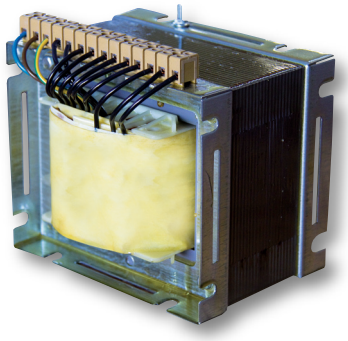
Datasheet 202303

Single-phase EI power transformers from 100 to 2500 VA

APPROVALS

c UL us
E517613 - INSULATION SYSTEM 180H

CE



CHARACTERISTICS

- Rated power from 100 to 2500 VA
- Compact dimensions
- Available in different voltages / types

BENEFITS

- Low power loss
- Available with box, switch or fuses
- Custom solutions available

MARKETS

- Machine tools
- Automated machinery
- Packaging
- Automation control panels
- Industrial automation

POWER VA

0 | 500 | 1000 | 2000 | 3000 | 4000

CODE

TME	1	40	X	48	X	M	M	0	0	0
MODEL	POWER (KVA)	PRIMARY VOLTAGE	PRIMARY WINDING	SECONDARY VOLTAGE	SECONDARY WINDING	PRIMARY CONNECTION	SECONDARY CONNECTION	MULTITAP	BOX	OPTIONS
TME = Single-phase EI transformer	01 = 0,1KVA 05 = 0,5KVA 1 = 1KVA 2.5 = 2,5KVA	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V	X = non applicabile	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V	X = non applicabile	M = clamp B = busbar	M = clamp B = busbar	0 = no tap 5 = +/-5% 10 = +/-10% 15 = +/-15% 510 = +/-5.10%	0 = no box 1 = IP23 box 2 = IP54 box	0 = no options B = switch F = fuses T = term. central T3 = term. each branch

TECHNICAL SPECIFICATIONS

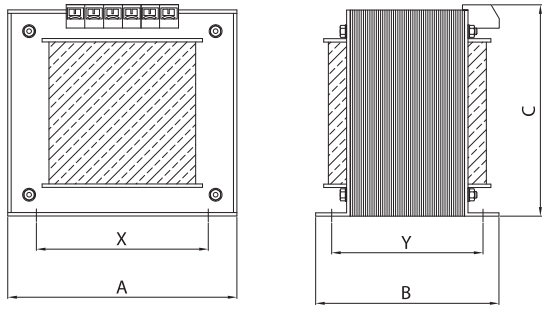
Primary voltage	0 - 690 Vac
Secondary voltage	0 - 690 Vac
Power	100 - 2500 VA
Insulation class	F or H
Temperature class	-20° C to +80° C
Winding	Copper
Service	Continuous
Derating	-20° C to +80° C
Altitude derating	1500m, over 1% decrease every 100m
Wrapped IP protection	IP00
Connection protection	IP20 (with terminals)
Frequency	50/60 Hz
Dielectric strength	5.5 KV

MECHANICAL DIMENSIONS mm

Model	Power (VA)	External Dimensions			Interaxis		Weight (Kg)	Case	Box IP23
		A	B	C	X	Y			
TME01* **	100	87	100	105	56	76	2.7	1	B01
TME0125* **	120	98	90	113	57	65	2.7	1	B01
TME015* **	120	98	100	113	57	75	3	1	B01
TME020* **	200	98	115	113	57	90	3.8	1	B01
TME025* **	250	125	100	134	70	73	4.3	1	B01
TME030* **	300	125	110	134	70	83	5	1	B01
TME035* **	350	125	120	134	70	93	6	1	B01
TME040* **	400	125	130	134	70	103	6.8	1	B01
TME045* **	450	125	140	134	70	113	7.5	1	B01
TME050* **	500	125	140	134	70	113	7.5	1	B01
TME060* **	600	154.5	115	160	94	86	8	1	B01
TME070* **	700	154.5	125	160	94	96	9	1	B01
TME080* **	800	154.5	145	160	94	116	11	1	B01
TME090* **	900	154.5	155	160	94	126	12.5	1	B01
TME1* **	1000	154.5	165	160	94	136	14	1	B01
TME1.2* **	1200	192	140	195	132	100	15.5	1	B01
TME1.4* **	1400	192	150	195	132	110	17.5	1	B01
TME1.5* **	1500	192	160	195	132	120	19.5	1	B01
TME1.6* **	1600	192	160	195	132	120	20	1	B01
TME1.8* **	1800	192	170	195	132	130	21.5	1	B01
TME2* **	2000	192	190	195	132	150	23.5	1	B01
TME2.5* **	2500	192	210	195	132	170	29	1	B01

*** **Product code name**

CASE 1



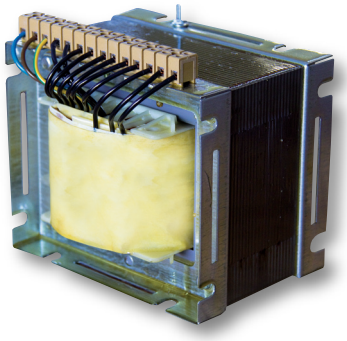
Datasheet 202303

Single-phase isolation EI transformers from 100 to 2500 VA

APPROVALS

c UL us E517613 - INSULATION SYSTEM 180H

CE



CHARACTERISTICS

- Rated power from 100 to 2500 VA
- Compact dimensions
- Isolation transformer

BENEFITS

- Low power loss
- Available with box, switch or fuses
- Custom solutions available

MARKETS

- Machine tools
- Automated machinery
- Packaging
- Automation control panels
- Industrial automation

POWER VA

0 | 500 | 1000 | 2000 | 3000 | 4000

CODE

TMEI	1	40	X	48	X	M	M	0	0	0
MODEL	POWER (KVA)	PRIMARY VOLTAGE	PRIMARY WINDING	SECONDARY VOLTAGE	SECONDARY WINDING	PRIMARY CONNECTION	SECONDARY CONNECTION	MULTITAP	BOX	OPTIONS
TMEI = single-phase isolation transformer	01 = 0.1KVA 05 = 0.5KVA 1 = 1KVA 2.5 = 2.5KVA	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V	X = non applicabile	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V	X = non applicabile	M = clamp B = busbar	M = clamp B = busbar	0 = no tap 5 = +/-5% 10 = +/-10% 15 = +/-15% 510 = +/-5.10%	0 = no box 1 = IP23 box 2 = IP54 box	0 = no options B = switch F = uses T = term. central T3 = term. each branch

TECHNICAL SPECIFICATIONS

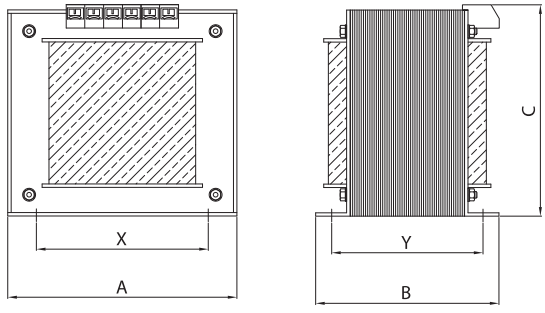
Primary voltage	0 - 690 Vac
Secondary voltage	0 - 690 Vac
Power	100 - 2500 VA
Insulation class	F or H
Temperature class	-20° C to +80° C
Winding	Copper
Service	Continuous
Derating	-20° C to +80° C
Altitude derating	1500m, over 1% decrease every 100m
Wrapped IP protection	IP00
Connection protection	IP20 (with terminals)
Frequency	50/60 Hz
Dielectric strength	5.5 KV

MECHANICAL DIMENSIONS mm

Model	Power (VA)	External Dimensions			Interaxis		Weight (Kg)	Case	Box IP23
		A	B	C	X	Y			
TMEI01* **	100	87	100	105	56	76	2.7	1	B01
TMEI0125* **	125	98	90	113	57	65	2.7	1	B01
TMEI015* **	150	98	100	113	57	75	3	1	B01
TMEI020* **	200	98	115	113	57	90	3.8	1	B01
TMEI025* **	250	125	100	134	70	73	4.3	1	B01
TMEI030* **	300	125	110	134	70	83	5	1	B01
TMEI035* **	350	125	120	134	70	93	6	1	B01
TMEI040* **	400	125	130	134	70	103	6.8	1	B01
TMEI045* **	450	125	140	134	70	113	7.5	1	B01
TMEI050* **	500	125	140	134	70	113	7.5	1	B01
TMEI060* **	600	154.5	115	160	94	86	8	1	B01
TMEI070* **	700	154.5	125	160	94	96	9	1	B01
TMEI080* **	800	154.5	145	160	94	116	11	1	B01
TMEI090* **	900	154.5	155	160	94	126	12.5	1	B01
TMEI1* **	1000	154.5	165	160	94	136	14	1	B01
TMEI1.2* **	1200	192	140	195	132	100	15.5	1	B01
TMEI1.4* **	1400	192	150	195	132	110	17.5	1	B01
TMEI15* **	1500	192	160	195	132	120	19.5	1	B01
TMEI1.6* **	1600	192	160	195	132	120	20	1	B01
TMEI1.8* **	1800	192	170	195	132	130	21.5	1	B01
TMEI2* **	2000	192	190	195	132	150	23.5	1	B01
TMEI2.5* **	2500	192	210	195	132	170	29	1	B01

*** **Product code name**

CASE 1



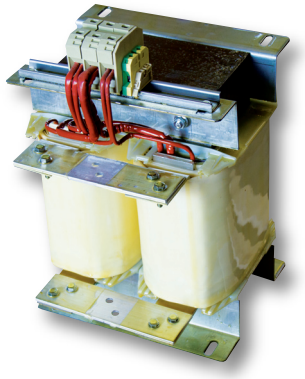
Datasheet 202303

Single-phase UI power transformers from 2.5 to 25 KVA

APPROVALS

c UL us
E517613 - INSULATION SYSTEM 180H

CE



CHARACTERISTICS

- Rated power from 2.5 to 25 KVA
- Compact dimensions
- Available in different voltages / types

BENEFITS

- Low power loss
- Available with box, switch or fuses
- Custom solutions available

MARKETS

- Machine tools
- Automated machinery
- Packaging
- Automation control panels
- Industrial automation

POWER KVA

0 | 5 | 10 | 15 | 20 | 25 | 30

CODE

TMU	10	40	X	48	X	M	M	0	0	0
MODEL	POWER (KVA)	PRIMARY VOLTAGE	PRIMARY WINDING	SECONDARY VOLTAGE	SECONDARY WINDING	PRIMARY CONNECTION	SECONDARY CONNECTION	MULTITAP	BOX	OPTIONS
TMU = single-phase UI transformer	05 = 0.5KVA 1 = 1KVA 10 = 10KVA 100 = 100KVA	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V	X = non applicabile	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V	X = non applicabile	M = clamp B = busbar	M = clamp B = busbar	0 = no tap 5 = +/-5% 10 = +/-10% 15 = +/-15% 510 = +/-5.10%	0 = no box 1 = IP21 box 2 = IP24 box 3 = IP54 box	0 = no options B = switch F = fuses T = term. central T3 = term. each branch

TECHNICAL SPECIFICATIONS

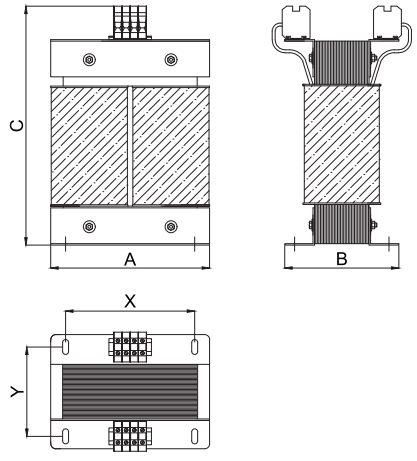
Primary voltage	0 - 690 Vac
Secondary voltage	0 - 690 Vac
Power	2.5 - 25 KVA
Insulation class	F or H
Temperature class	-20° C to +80° C
Winding	Copper / Aluminum
Service	Continuous
Derating	-20° C to +80° C
Altitude derating	1500m, over 1% decrease every 100m
Wrapped IP protection	IP00
Connection protection	IP20 (with terminals) IP00 (with busbar)
Frequency	50/60 Hz
Dielectric strength	5.5 KV

MECHANICAL DIMENSIONS mm

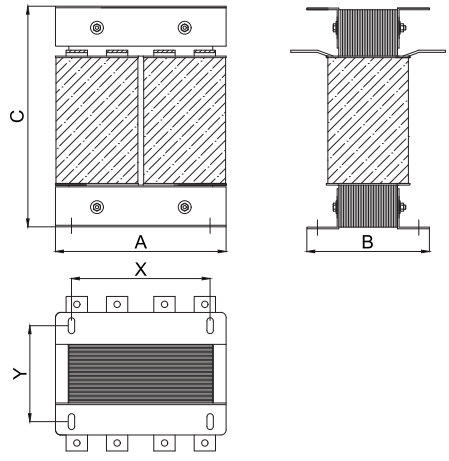
Model	Power (VA)	External Dimensions			Interaxis		Weight (Kg)	Case	Box IP21
		A	B	C	X	Y			
TMU2.5* **	2.5	200	200	320	150	115	18	1	B01
TMU5* **	5	240	220	370	180	145	34	1	B01
TMU7.5* **	7.5	320	270	490	260	155	50	1	B01
TMU10* **	10	320	270	490	260	155	53	1	B01
TMU12* **	12	320	300	490	260	185	69	1/2	B01
TMU15* **	15	320	320	490	260	185	85	1/2	B01
TMU18* **	18	320	330	490	260	215	92	1/2	B01
TMU20* **	20	320	330	490	260	215	95	1/2	B01
TMU22* **	22	320	350	490	260	235	104	1/2	B01
TMU25* **	25	320	350	490	260	235	108	1/2	B01

*** **Product code name**

CASE 1



CASE 2



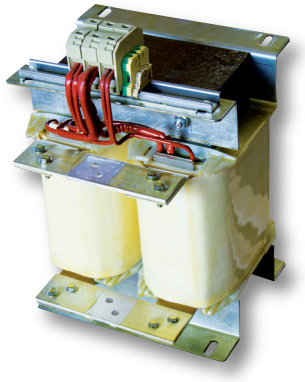
Datasheet 202303

Single-phase UI isolation power transformers from 2.5 to 25 KVA

APPROVALS

c UL us
E517613 - INSULATION SYSTEM 180H

CE



CHARACTERISTICS

- Rated power from 2.5 to 25 KVA
- Compact dimensions
- Available in different voltages / types

BENEFITS

- Low power loss
- Available with box, switch or fuses
- Custom solutions available

MARKETS

- Machine tools
- Automated machinery
- Packaging
- Automation control panels
- Industrial automation

POWER KVA

0 | 5 | 10 | 15 | 20 | 25 | 30

CODE

TMUI	10	40	X	48	X	M	M	0	0	0
MODEL	POWER (KVA)	PRIMARY VOLTAGE	PRIMARY WINDING	SECONDARY VOLTAGE	SECONDARY WINDING	PRIMARY CONNECTION	SECONDARY CONNECTION	MULTITAP	BOX	OPTIONS
TMUI = single-phase UI isolation transformer	05 = 0.5KVA 1 = 1KVA 10 = 10KVA 100 = 100KVA	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V	X = non applicabile	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V	X = non applicabile	M = clamp B = busbar	M = clamp B = busbar	0 = no tap 5 = +/-5% 10 = +/-10% 15 = +/-15% 510 = +/-5.10%	0 = no box 1 = IP21 box 2 = IP24 box 3 = IP54 box	0 = no options B = switch F = fuses T = term. central T3 = term. each branch

TECHNICAL SPECIFICATIONS

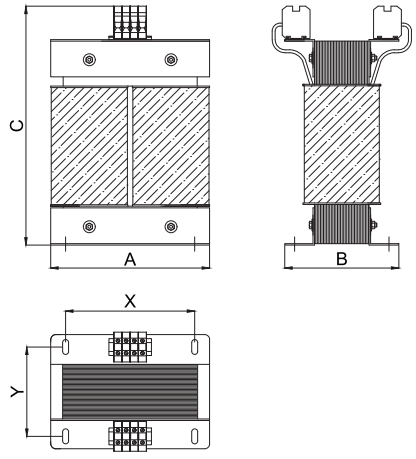
Primary voltage	0 - 690 Vac
Secondary voltage	0 - 690 Vac
Power	2.5 - 25 KVA
Insulation class	F or H
Temperature class	-20° C to +80° C
Winding	Copper / Aluminum
Service	Continuous
Derating	-20° C to +80° C
Altitude derating	1500m, over 1% decrease every 100m
Wrapped IP protection	IP00
Connection protection	IP20 (with terminals) IP00 (with busbar)
Frequency	50/60 Hz
Dielectric strength	5.5 KV

MECHANICAL DIMENSIONS mm

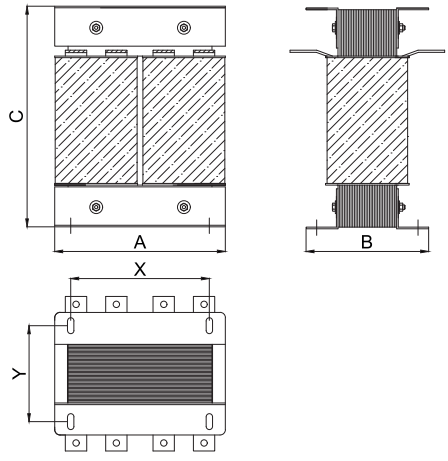
Model	Power (VA)	External Dimensions			Interaxis		Weight (Kg)	Case	Box IP21
		A	B	C	X	Y			
TMUI2.5* **	2.5	200	200	320	150	115	18	1	B01
TMUI5* **	5	240	220	370	180	145	34	1	B01
TMUI7.5* **	7.5	320	270	490	260	155	50	1	B01
TMUI10* **	10	320	270	490	260	155	53	1	B01
TMUI12* **	12	320	300	490	260	185	69	1/2	B01
TMUI15* **	15	320	320	490	260	205	85	1/2	B01
TMUI18* **	18	320	330	490	260	215	92	1/2	B01
TMUI20* **	20	320	330	490	260	215	95	1/2	B01
TMUI22* **	22	320	350	490	260	235	104	1/2	B01
TMUI25* **	25	320	350	490	260	235	108	1/2	B01

*** **Product code name**

CASE 1



CASE 2



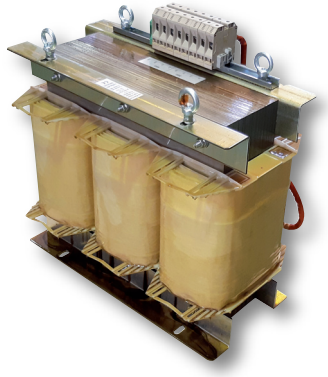
Datasheet 202303

Three-phase power transformers from 2 to 225 KVA

APPROVALS

c UL us E517613 - INSULATION SYSTEM 180H

CE



CHARACTERISTICS

- Rated power from 2 to 225 KVA
- Compact dimensions
- Available in different voltages / types

BENEFITS

- Low power loss
- Available with box, switch or fuses
- Custom solutions available

MARKETS

- Machine tools
- Automated machinery
- Packaging
- Machine exporting/importing
- Industrial automation

POWER KVA

50 | 100 | 150 | 200 | 250 | 300

CODE

TT	10	40	Y	48	Y	M	M	0	0	0
MODEL	POWER (KVA)	PRIMARY VOLTAGE	PRIMARY WINDING	SECONDARY VOLTAGE	SECONDARY WINDING	PRIMARY CONNECTION	SECONDARY CONNECTION	MULTITAP	BOX	OPTIONS
TT = three-phase transformer	05 = 0.5KVA 1 = 1KVA 10 = 10KVA 100 = 100KVA	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	D = triangle Y = star YN = star with accessible neutral	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	D = triangle Y = star YN = star with accessible neutral	M = clamp B = busbar	M = clamp B = busbar	0 = no tap 5 = +/-5% 10 = +/-10% 15 = +/-15% 510 = +/-5.10%	0 = no box 1 = IP23 box 2 = IP54 box	0 = no options B = switch F = fuses T = term. central T3 = term. each branch

TECHNICAL SPECIFICATIONS

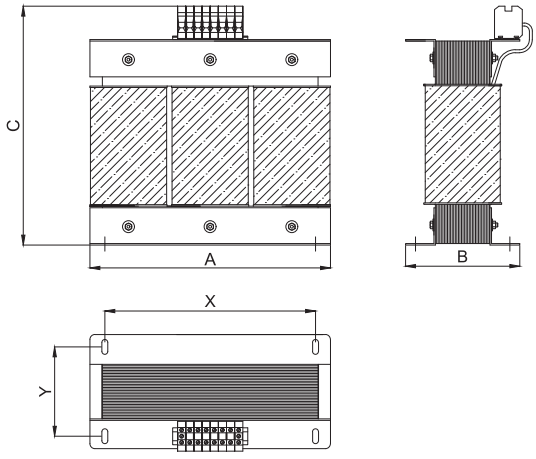
Primary voltage	0 - 10 KVac
Secondary voltage	0 - 10 KVac
Power	2 - 225 KVA
Insulation class	F or H
Temperature class	-20° C to +80° C
Winding	Aluminum / Copper
Service	Continuous
Derating	-20° C to +80° C
Altitude derating	1500m, over 1% decrease every 100m
Wrapped IP protection	IP00
Connection protection	IP20 (with terminals) IP00 (with busbar)
Frequency	50/60 Hz
Dielectric strength	5.5 KV

MECHANICAL DIMENSIONS mm

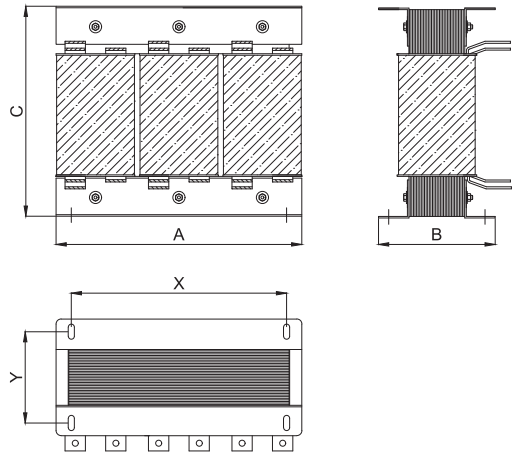
Model	Power (KVA)	External Dimensions			Interaxis		Weight (Kg)	Case	Box IP23
		A	B	C	X	Y			
TT2***	2	240	160	280	200	115	22	1	B01
TT2.5***	2.5	240	220	280	200	115	23	1	B01
TT3***	3	300	180	330	260	90	24	1	B01
TT4***	4	300	200	330	260	110	31	1	B01
TT5***	5	300	220	330	260	130	38	1	B01
TT6***	6	360	190	380	260	115	46	1	B01
TT7.5***	7.5	360	220	380	260	145	62	1	B01
TT9***	9	360	220	380	260	145	64	1	B01
TT10***	10	360	230	380	260	165	75	1	B01
TT12***	12	480	290	490	360	155	88	1	B02
TT15***	15	480	290	490	360	155	91	1	B02
TT18***	18	480	290	490	360	185	118	1	B02
TT20***	20	480	320	490	360	185	122	1	B02
TT25***	25	480	350	490	360	215	152	1	B02
TT30***	30	480	350	490	360	215	157	1	B02
TT35***	35	480	370	490	360	235	175	1	B02
TT40***	40	600	390	640	380	210	230	1	B03
TT45***	45	600	290	640	380	210	235	1	B03
TT50***	50	600	390	640	380	210	245	1	B03
TT60***	60	600	420	640	380	240	285	1 / 2	B03
TT70***	70	600	440	640	380	260	330	1 / 2	B03
TT80***	80	600	480	640	380	300	390	1 / 2	B03
TT90***	90	600	490	640	380	310	420	1 / 2	B03
TT100***	100	600	510	640	380	330	450	1 / 2	B03

***** Product code name**
The size of the transformers from 60 to 100 KVA are intended for the clamp version enclosure 1
For busbar connections - housing 2, contact the factory
For transformers above 100 KVA contact the factory

CASE 1



CASE 2



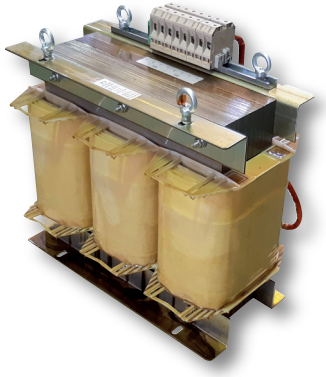
Datasheet 202303

Three-phase isolation power transformers from 2 to 225 KVA

APPROVALS

c UL us
E517613 - INSULATION SYSTEM 180H

CE



CHARACTERISTICS

- Rated power from 2 to 225 KVA
- Compact dimensions
- Isolation transformer

BENEFITS

- Low power loss
- Available with box, switch or fuses
- Custom solutions available

MARKETS

- Machine tools
- Automated machinery
- Packaging
- Machine exporting/importing
- Industrial automation

POWER KVA

50 | 100 | 150 | 200 | 250 | 300

CODE

TTI	10	40	Y	48	Y	M	M	0	0	0
MODEL	POWER (KVA)	PRIMARY VOLTAGE	PRIMARY WINDING	SECONDARY VOLTAGE	SECONDARY WINDING	PRIMARY CONNECTION	SECONDARY CONNECTION	MULTITAP	BOX	OPTIONS
TTI = three-phase isolation transformer	05 = 0.5KVA 1 = 1KVA 10 = 10KVA 100 = 100KVA	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	D = triangle Y = star YN = star with accessible neutral	10 = 100V 12 = 120V 23 = 230V 40 = 400V 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	D = triangle Y = star YN = star with accessible neutral	M = clamp B = busbar	M = clamp B = busbar	0 = no tap 5 = +/-5% 10 = +/-10% 15 = +/-15% 510 = +/-5.10%	0 = no box 1 = IP23 box 2 = IP54 box	0 = no options B = switch F = fuses T = term. central T3 = term. each branch

TECHNICAL SPECIFICATIONS

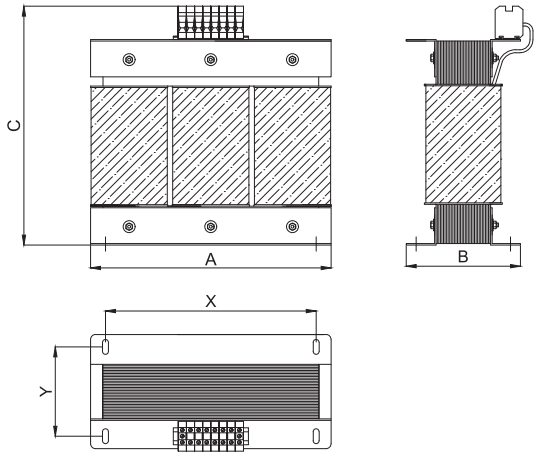
Primary voltage	0 - 10 KVac
Secondary voltage	0 - 10 KVac
Power	2 - 225 KVA
Insulation class	F or H
Temperature class	-20° C to +80° C
Winding	Aluminum / Copper
Service	Continuous
Derating	-20° C to +80° C
Altitude derating	1500m, over 1% decrease every 100m
Wrapped IP protection	IP00
Connection protection	IP20 (with terminals) IP00 (with busbar)
Frequency	50/60 Hz
Dielectric strength	5.5 KV

MECHANICAL DIMENSIONS mm

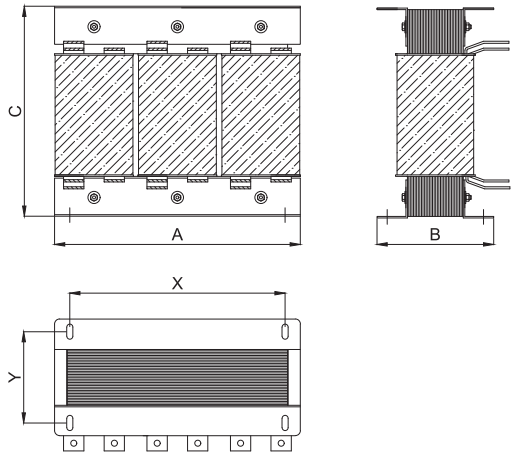
Model	Power (KVA)	External Dimensions			Interaxis		Weight (Kg)	Case	Box IP23
		A	B	C	X	Y			
TTI2***	2	240	220	280	200	115	22	1	B01
TTI2.5***	2.5	240	160	280	200	115	23	1	B01
TTI3***	3	300	180	330	260	90	24	1	B01
TTI4***	4	300	200	330	260	110	31	1	B01
TTI5***	5	300	220	330	260	130	38	1	B01
TTI6***	6	360	190	380	260	115	46	1	B01
TTI7.5***	7.5	360	220	380	260	145	62	1	B01
TTI9***	9	360	220	380	260	145	64	1	B01
TTI10***	10	360	230	380	260	165	75	1	B01
TTI12***	12	480	290	490	360	155	88	1	B02
TTI15***	15	480	290	490	360	155	91	1	B02
TTI18***	18	480	290	490	360	185	118	1	B02
TTI20***	20	480	320	490	360	185	122	1	B02
TTI25***	25	480	350	490	360	215	152	1	B02
TTI30***	30	480	350	490	360	215	157	1	B02
TTI35***	35	480	370	490	360	235	175	1	B02
TTI40***	40	600	390	640	380	210	230	1	B03
TTI45***	45	600	290	640	380	210	235	1	B03
TTI50***	50	600	390	640	380	210	245	1	B03
TTI60***	60	600	420	640	380	240	285	1 / 2	B03
TTI70***	70	600	440	640	380	260	330	1 / 2	B03
TTI80***	80	600	480	640	380	300	390	1 / 2	B03
TTI90***	90	600	490	640	380	310	420	1 / 2	B03
TTI100***	100	600	510	640	380	330	450	1 / 2	B03

***** Product code name**
The size of the transformers from 60 to 100 KVA are intended for the clamp version enclosure 1
For busbar connections - housing 2, contact the factory
For transformers above 100 KVA contact the factory

CASE 1



CASE 2



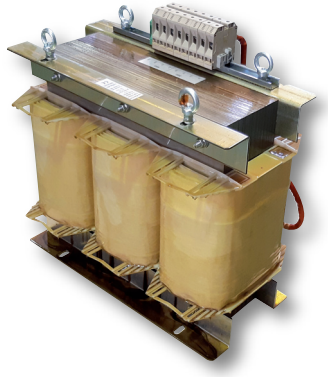
Datasheet 202303

Three-phase power autotransformers from 2.5 to 225 KVA with voltage 230/400 Vac or 400/230 Vac

APPROVALS

c UL us
E517613 - INSULATION SYSTEM 180H

CE



CHARACTERISTICS

- Rated power from 2.5 to 225 KVA
- Compact dimensions
- Available in different voltages / types

BENEFITS

- Low power loss
- Available with box, switch or fuses
- Custom solutions available

MARKETS

- Machine tools
- Automated machinery
- Packaging
- Machine exporting/importing
- Industrial automation

POWER KVA

50 | 100 | 150 | 200 | 250 | 300

CODE

ATT	10	40	YN	48	YN	M	M	0	0	0
MODEL	POWER (KVA)	PRIMARY VOLTAGE	PRIMARY WINDING	SECONDARY VOLTAGE	SECONDARY WINDING	PRIMARY CONNECTION	SECONDARY CONNECTION	MULTITAP	BOX	OPTIONS
ATT = three-phase auto-transformer	05 = 0.5KVA 1 = 1KVA 10 = 10KVA 100 = 100KVA	10 = 100V 12 = 120V 23 = 230V 40 = 400V * Note 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	YN = star with accessible neutral	10 = 100V 12 = 120V 23 = 230V 40 = 400V * Note 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	YN = star with accessible neutral	M = clamp L = lugs B = busbar	M = clamp L = lugs B = busbar	0 = no tap 5 = +/-5% 10 = +/-10% 15 = +/-15% 510 = +/-5.10%	0 = no box 1 = IP21 box 2 = IP24 box 3 = IP54 box	0 = no options B = switch F = fuses T = term. central T3 = term. each branch

*** Note:**
Three-phase autotransformers are available with different primary and secondary voltages

TECHNICAL SPECIFICATIONS

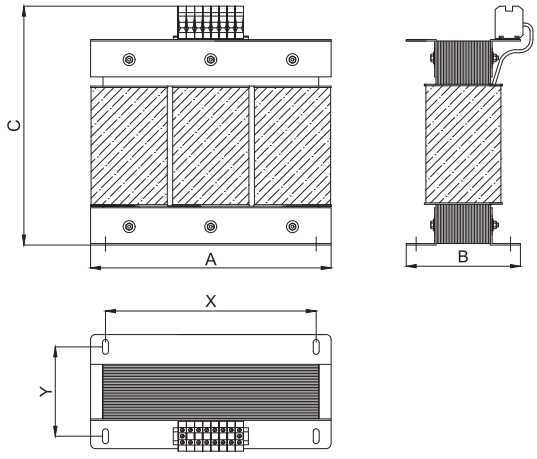
Primary voltage	0 - 10 KVac
Secondary voltage	0 - 10 KVac
Power	2 - 225 KVA
Insulation class	F or H
Temperature class	-20° C to +80° C
Winding	Aluminum / copper
Service	Continuous
Derating	-20° C to +80° C
Altitude derating	1500m, over 1% decrease every 100m
Wrapped IP protection	IP00
Connection protection	IP20 (with terminals) IP00 (with busbar)
Frequency	50/60 Hz
Dielectric strength	5.5 KV

MECHANICAL DIMENSIONS mm

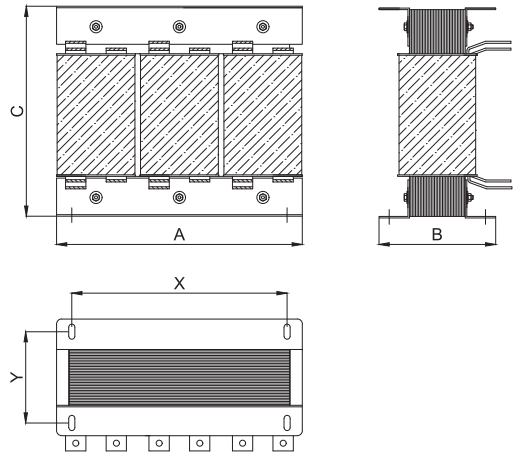
Model	Power (KVA)	External Dimensions			Interaxis		Weight (Kg)	Case	Box IP21
		A	B	C	X	Y			
ATT2.5* **	2.5	240	150	270	200	95	15	1	B01
ATT3* **	3	240	150	270	200	95	16	1	B01
ATT4* **	4	240	150	270	200	95	19	1	B01
ATT5* **	5	240	170	270	200	115	24	1	B01
ATT6* **	6	240	170	270	200	115	25	1	B01
ATT7.5* **	7.5	300	170	320	260	110	28	1	B01
ATT9* **	9	300	170	320	260	110	31	1	B01
ATT10* **	10	300	190	320	260	130	34	1	B01
ATT12* **	12	300	190	320	260	130	38	1	B02
ATT14* **	14	360	200	380	280	115	46	1	B02
ATT15* **	15	360	200	380	280	145	52	1	B02
ATT18* **	18	360	210	380	280	145	62	1	B02
ATT20* **	20	360	240	380	280	145	64	1	B02
ATT25* **	25	480	210	480	360	155	79	1	B02
ATT30* **	30	360	240	380	280	185	90	1	B02
ATT35* **	35	480	210	500	360	155	91	1	B02
ATT40* **	40	480	240	500	360	185	116	1	B03
ATT45* **	45	480	240	500	360	185	120	1	B03
ATT50* **	50	480	250	500	360	195	130	1	B03
ATT60* **	60	480	270	500	360	215	152	1 / 2	B03
ATT70* **	70	480	270	500	360	215	157	1 / 2	B03
ATT80* **	80	480	290	500	360	235	175	1 / 2	B03
ATT90* **	90	600	280	600	380	210	220	1 / 2	B03
ATT100* **	100	600	280	600	380	210	230	1 / 2	B03

***** Product code name**
The size of the transformers from 60 to 100 KVA are intended for the clamp version enclosure 1
For case 2 dimensions contact the factory
For transformers above 100 KVA contact the factory

CASE 1



CASE 2



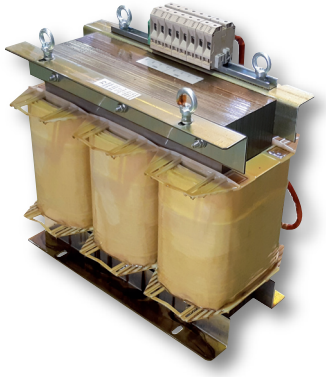
Datasheet 202303

Three-phase power autotransformers from 2.5 to 225 KVA with voltage 400/480 Vac or 480/400 Vac

APPROVALS

c UL us
E517613 - INSULATION SYSTEM 180H

CE



CHARACTERISTICS

- Nominal power from 2.5 to 225 KVA
- Compact dimensions
- Available in different voltages / types

BENEFITS

- Low power loss
- Available with box, switch or fuses
- Custom solutions available

MARKETS

- Machine tools
- Automated machinery
- Packaging
- Machine exporting/importing
- Industrial automation

POWER KVA

50 | 100 | 150 | 200 | 250 | 300

CODE

ATT	10	40	YN	48	YN	M	M	0	0	0
MODEL	POWER (KVA)	PRIMARY VOLTAGE	PRIMARY WINDING	SECONDARY VOLTAGE	SECONDARY WINDING	PRIMARY CONNECTION	SECONDARY CONNECTION	MULTITAP	BOX	OPTIONS
ATT = three-phase transformer	05 = 0.5KVA 1 = 1KVA 10 = 10KVA 100 = 100KVA	10 = 100V 12 = 120V 23 = 230V 40 = 400V * Note 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	YN = star with accessible neutral	10 = 100V 12 = 120V 23 = 230V 40 = 400V * Note 48 = 480V 60 = 600V 69 = 690V 450 = 4500V 1K0 = 10KV	YN = star with accessible neutral	M = clamp L = lugs B = busbar	M = clamp L = lugs B = busbar	0 = no tap 5 = +/-5% 10 = +/-10% 15 = +/-15% 510 = +/-5.10%	0 = no box 1 = IP21 box 2 = IP24 box 3 = IP54 box	0 = no options B = switch F = fuses T = term. central T3 = term. each branch

*** Note:**
Three-phase autotransformers are available with different primary and secondary voltages

TECHNICAL SPECIFICATIONS

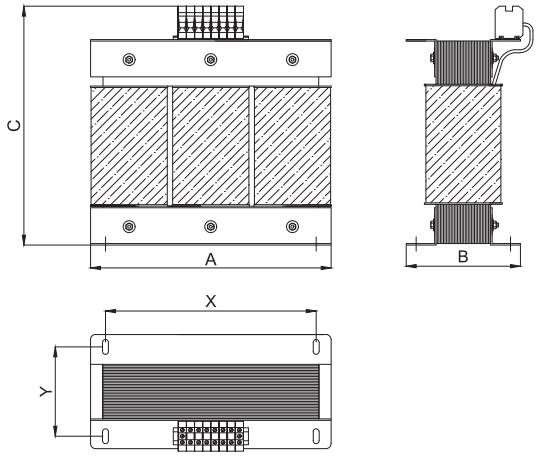
Primary voltage	0 - 10 KVac
Secondary voltage	0 - 10 KVac
Power	2 - 225 KVA
Insulation class	F or H
Temperature class	-20° C to +80° C
Winding	Aluminum / copper
Service	Continuous
Derating	-20° C to +80° C
Altitude derating	1500m, over 1% decrease every 100m
Wrapped IP protection	IP00
Connection protection	IP20 (with terminals) IP00 (with busbar)
Frequency	50/60 Hz
Dielectric strength	5.5 KV

MECHANICAL DIMENSIONS mm

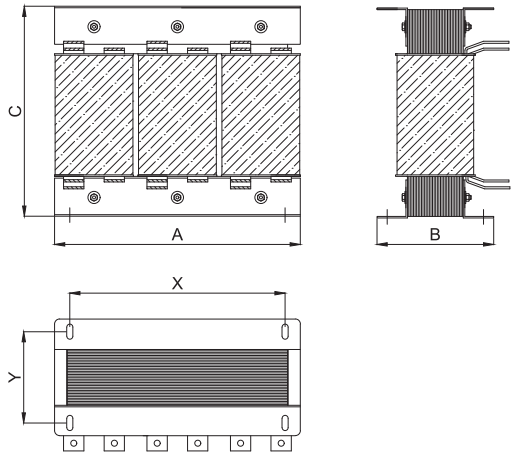
Model	Power (KVA)	External Dimensions			Interaxis		Weight (Kg)	Case	Box IP21
		A	B	C	X	Y			
ATT2.5* **	2.5	180	120	220	150	75	9	1	B01
ATT3* **	3	180	120	220	150	75	10	1	B01
ATT4* **	4	180	130	220	150	85	10	1	B01
ATT5* **	5	180	140	220	150	85	11	1	B01
ATT6* **	6	240	150	270	200	95	15	1	B01
ATT7.5* **	7.5	240	150	270	200	95	16	1	B01
ATT9* **	9	240	150	270	200	95	18	1	B01
ATT10* **	10	240	150	270	200	95	20	1	B01
ATT12* **	12	240	170	270	200	115	22	1	B02
ATT14* **	14	240	170	270	200	115	23	1	B02
ATT15* **	15	240	170	270	200	115	23	1	B02
ATT18* **	18	300	150	320	260	90	24	1	B02
ATT20* **	20	300	170	320	260	110	27	1	B02
ATT25* **	25	300	190	320	260	130	35	1	B02
ATT30* **	30	300	190	320	260	130	38	1	B02
ATT35* **	35	360	175	380	280	115	46	1	B02
ATT40* **	40	360	205	380	280	145	54	1	B03
ATT45* **	45	360	205	380	280	145	62	1	B03
ATT50* **	50	360	205	380	280	145	64	1	B03
ATT60* **	60	360	225	380	280	165	75	1 / 2	B03
ATT70* **	70	480	210	500	360	155	88	1 / 2	B03
ATT80* **	80	360	245	380	280	185	91	1 / 2	B03
ATT90* **	90	480	220	500	360	165	95	1 / 2	B03
ATT100* **	100	480	240	500	360	185	110	1 / 2	B03

***** Product code name**
The size of the transformers from 60 to 100 KVA are intended for the clamp version enclosure 1
For dimensions in case 2 contact the factory
For transformers above 100 KVA contact the factory

CASE 1



CASE 2



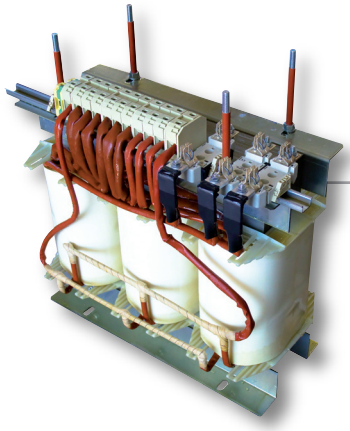
Datasheet 202303

Custom transformers, reactors, inductors and chokes up to 10 kV and 225 KVA

APPROVALS

c UL us E517613 - INSULATION SYSTEM 180H

CE

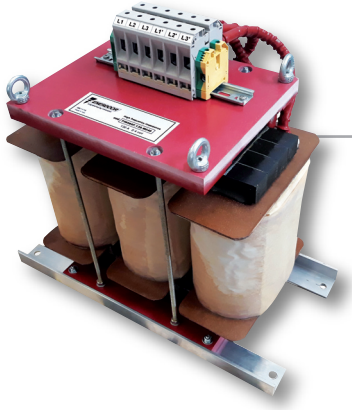


Custom transformers

Rated voltage up to 10 kV
Rated power up to 225 KVA
Box versions
Customized solutions for the medical industry
Customized solutions for the military sector

Inductors and reactors for motor starting

Rated voltage up to 10 kV
Rated power up to 225 KVA
Inductors for harmonic reduction 3% & 5%
Low loss solutions for motor protection
Customized solutions



High frequency chokes

Rated voltage up to 1000 Vac
Rated current up to 1000 A
Inductors for motor protection against overvoltages
Low power loss
Customized solutions

Transformer boxes

Datasheet 202303

APPROVALS

CE

CHARACTERISTICS

- Boxes available with various IP protections
- Available for single-phase and three-phase transformers

BENEFITS

- Quick installation
- Available with ventilation and switch accessories

MARKETS

- Applications for internal use

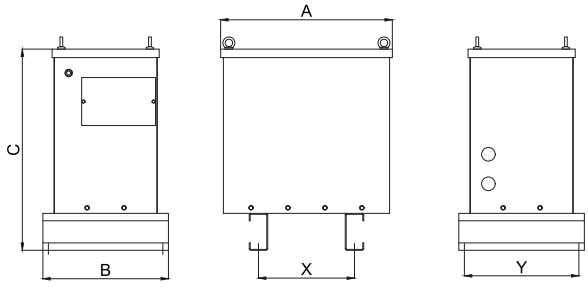
CODE

- FINENC .B01
  Model *Size*

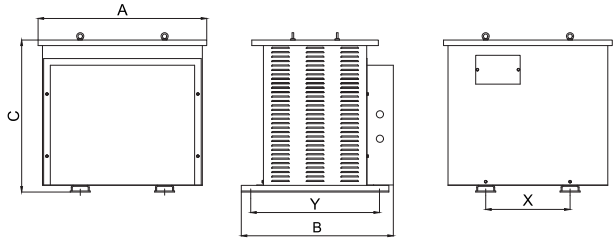
MECHANICAL DIMENSIONS mm

FINENCL	IP Protection (Nema)	A	B	C	X	Y	Weight (Kg)	Case
.B01	IP21 (Nema 1)	450	340	545	260	310	23	1
.B02	IP21 (Nema 1)	630	440	645	360	410	35	1
.B03	IP21 (Nema 1)	760	685	685	380	580	47	3

CASE 1



CASE 2



The present General Use instructions are intended as a general guide for the correct use of power transformer filters being used in safe conditions.

Filters must be installed, protected and used correctly in order to avoid dangers.
Filters must be employed satisfying the conditions of use for which they were designed and guaranteed.
Filters must not be exposed to chemical substance damage, unless specifically designed to withstand such substances. Examples of damaging substances are as follow but not limited to: solvents, oils, grease, base or acid solutions, and chemical products.
Filters must be adequately protected against the risk of mechanical damage both during installation and under normal working conditions.
Filters must not be installed in places subject to rainfall or in contact with water, unless expressly declared to be suitable for withstanding such conditions. Particular attention should be paid to not exposing filters to polluted atmospheres or harmful substances.
Filters are designed for use in closed spaces, usually inside electrical cubicles. They may be used outside stated enclosures but only when the necessary protection is supplied.

GENERAL INSTALLATION REQUIREMENTS

In the absence of specific special installation instructions, the following rules are to be applied:

- *Connections must scrupulously follow the technical indications and be carried out with suitable tools.*
- *Metal container must be properly grounded.*
- *Products must not be installed in contact with or near hot surfaces, unless they have been suitably prepared for such conditions, so as to provide for to derating of 10% for every 20°C of temperature, up to to maximum of 30% up to 100°C room temperature.*
- *Products must be adequately supported and must not be damaged by the mechanical fixings used to support them.*
- *Products must be adequately protected on the contact terminals, by means of protections that must not be removed after installation, in order to always guarantee operator safety. For installation on mobile, portable or transportable equipment, always make sure (by appropriate tightening of the contact terminals of the cable towards the filter) that the terminal cannot disconnect from the contact due to vibrations. Tightening must be accurate and checked periodically. For installation on mobile equipment, the products must be placed in enclosures which guarantee their electrical and mechanical protection, in the part of the connection terminals. In case of connection of filters and coils with shielded cables, the unshielded cable parts must be as short as possible.*
- *Products must not be subject to mechanical stress (traction, torsion and compression of any kind), as well as crushing and abrasion of any kind.*

In any case, for the aforementioned applications it is always necessary to contact the Enerdoor / Finmotor Service Centre.

GENERAL USE REQUIREMENTS

As regards to the "limit conditions" of use (such as for rated voltage, current capacity, operating temperature, thermal effects, etc.) reference must be made and followed according to what is specified in the Technical Specifications. The operating voltages and currents refer to an ambient temperature of 40°C and characteristics indicated in the product specifications must always be consulted and followed.

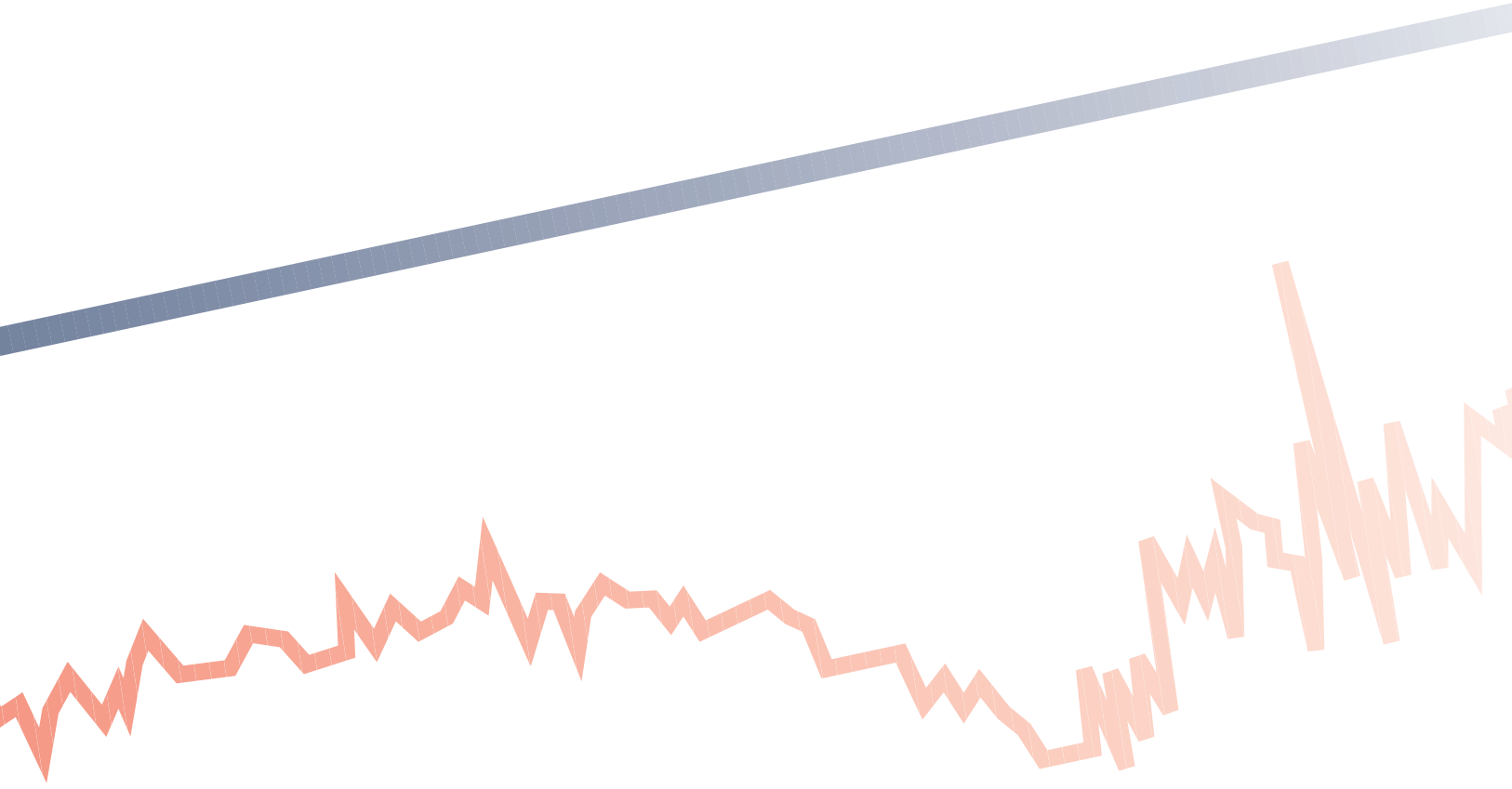
PERIODIC CHECKS BY THE BUYER

The products must be examined periodically and whenever there is to suspicion they may have been damaged by electrical stresses (overvoltages, overloads), or mechanical stresses (crushing, twisting, abrasion, etc.). If the product shows visible changes in appearance or signs of damage or wear, it must be repaired using suitable means and by expert and qualified personnel, or it must be replaced. Products mounted on mobile or portable devices must be examined after each use.

GENERAL STORAGE CONDITIONS

Products that are not intended to be installed outdoors must be stored indoors in dry rooms.

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



ENERDOOR

ITALY - FINMOTOR Srl
Phone +39 02 4891 0020
Fax +39 02 4891 0053
info@finmotor.com
www.finmotor.com

SWITZERLAND
ENERDOOR SA
Phone +41 (0) 91 9228060
Fax +41 (0) 91 9228061
info@enerdoor.ch
www.enerdoor.ch

USA
ENERDOOR Inc
Toll Free 1-877-778-2875
Phone 1-207-210-6511
Fax 1-207-210-6512
info@enerdoor.com
www.enerdoor.com

GERMANY
ENERDOOR Gmbh
info@enerdoor.de
www.enerdoor.de

HUNGARY
EICHHOFF ELEKTRO Kft
Phone +36 27 511180
Fax +36 27 511187
info@eichhoff-elektro.com
www.eichhoff-kft.com

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