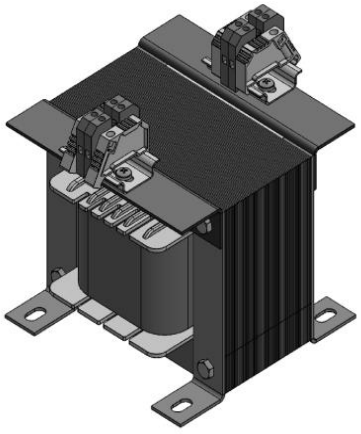
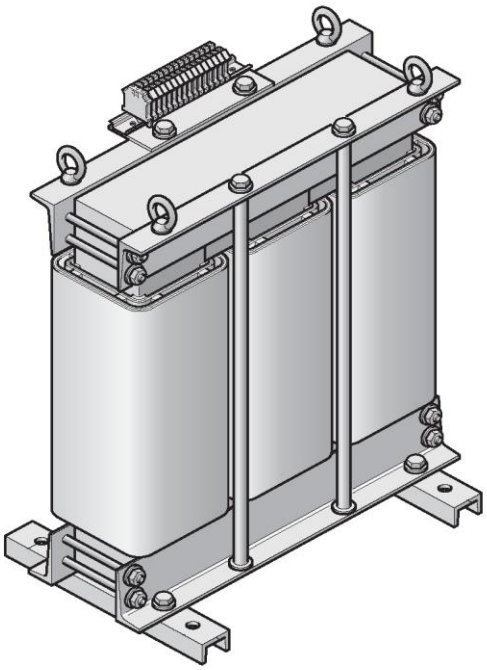
SANA

Low Voltage Transformers





SANA ISATIS KAVIR

Advanced solutions for your power

Cat.002

About us

Sana Isatis Kavir designs and manufactures control, instrument, isolating transformers and harmonic filter reactors in low voltage since 2011 focusing on the quality of its product performance. Depending on the configuration, our transformers bear NRI.
Our experience and technology allow to develop and manufacture in a short time new products to meet any customers' requests and to improve new products programs.

Planning & design

We use Swiss calculation software for designing the transformers and harmonic filter reactors. During the calculation spacers and cooling channels are properly sized to assure a long and reliable service life.

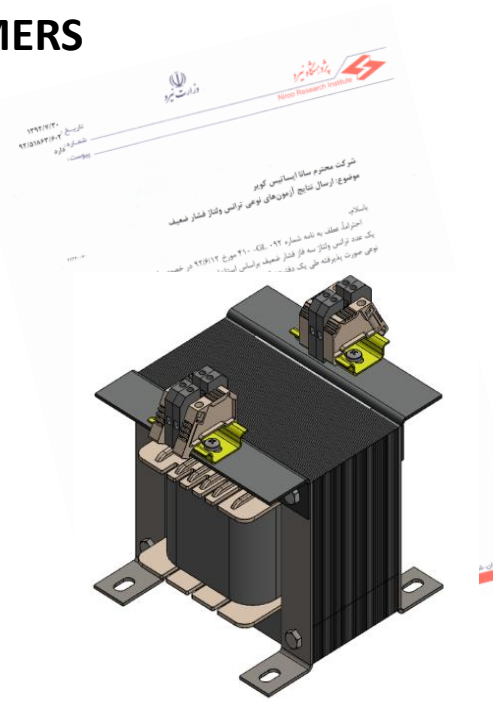
Production

The manufacturing process is carried out internally: preliminary controls, winding for small transformers and winding on machine for flat cable, copper strip for bigger transformers, core-assembly and soaking or resin. At the end of production all transformers are tested internally with instruments according to IEC standards.

TEST

Our transformers are 100% tested and test results are stored in our database and available on customers request. Test equipment allows to carry out all tests required by IEC standards.

CONTROL AND INSTRUMENT TRANSFORMERS



Control transformers are widely used in industrial applications such as electrical panels or PLC power supplies.

Input and output voltages may vary up to 1000V and they possibly include voltage taps or shielding windings. Power ratings of these transformers go up to 10kVA. The electrical connection is done via terminal blocks and special mounting for DIN rails is available on request.

Instrument transformers intended to supply measuring instruments, meters, relays and other similar apparatus.

Voltage transformers are producing in accuracy class 0.5 and 1 for measuring purpose and class 3P and 6P for protection purpose. Also it can be producing in measuring and protection class together e.g. 0.5+3P.

INDUSTRIAL APPLICATIONS

Control transformers are used in various industries across the world. To mention a few:

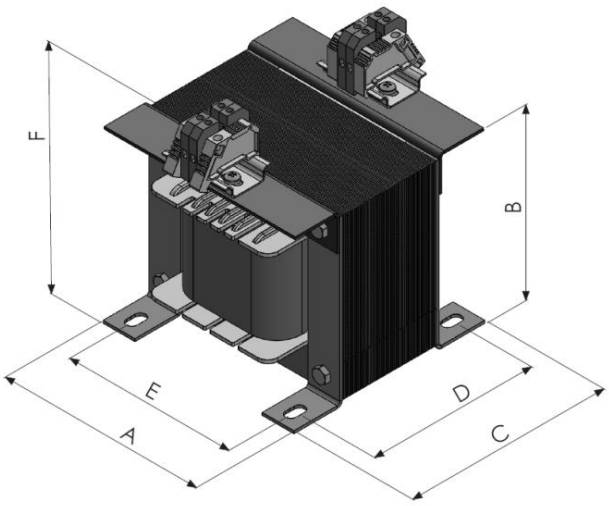
- Lighting
- Electric Automation
- Steel
- Machinery
- Ship Construction
- Lifting Industry

Designed and tested according to
- ✓ IEC 60076

Typical applications
- ✓ Control voltage circuits
- ✓ Functional low voltage

Basic equipment
- ✓ Separate windings
- ✓ Connection terminal
- ✓ Frequency 50/60 Hz

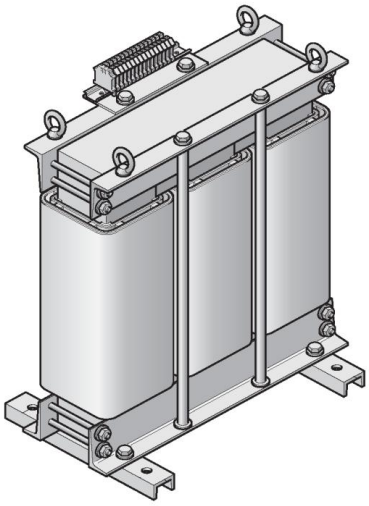
CONTROL TRANSFORMERS



VA	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	WEIGHT(Kg)
2500	192	190	207.5	181.5	166	213	28
2000	192	170	174	148	166	213	24
1500	192	170	157	131	166	213	19.5
1000	150	135	172	146	124	178	13.5
700	150	135	143	117	124	178	10.5
500	150	130	134	108	124	173	9.5
400	120	109	124	100	96	136	7
300	120	109	124	100	96	136	6
250	105	95	145	121	81	122	5.5
150	96	88	121	99	74	115	3.9
100	84	84.8	99.8	77.8	63	109.8	2.8
25	55	70	80	63	45	97	1

* Dimension values may change depending on design

ISOLATING TRANSFORMERS



Isolating Transformers are designed to be used on one or three phase systems where isolation or voltage level change is required.

Input and output voltages may vary up to 1000V and they possibly include voltage taps or shielding windings. Power ratings of these transformers go up to 200kVA.

INDUSTRIAL APPLICATIONS

Isolating transformers are used in various industries across the world. To mention a few:

- Lighting
- Electric Automation
- Steel
- Machinery
- Ship Construction
- Elevator

Designed and tested according to

✓ IEC 60076

Basic equipment

✓ Separate windings
✓ Connection terminal
✓ Frequency 50/60 Hz
✓ ±5 % tapping on the primary side

MEDICAL TRANSFORMERS

A medical isolating transformer offers the perfect solution to protect patients and operating personnel.

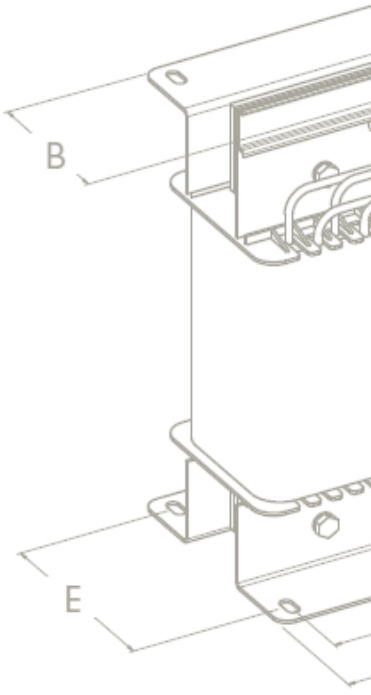
Therefore these transformers are designed and built to meet the specifications for these places. The IEC 61558-2-15 standard describes the additional specifications.

Medical transformers can be produced according to customers voltage requests. Different voltage ratings for different regions are usable.

Protect your patients and employees and meet the strict legal requirements by using a
medical power supply

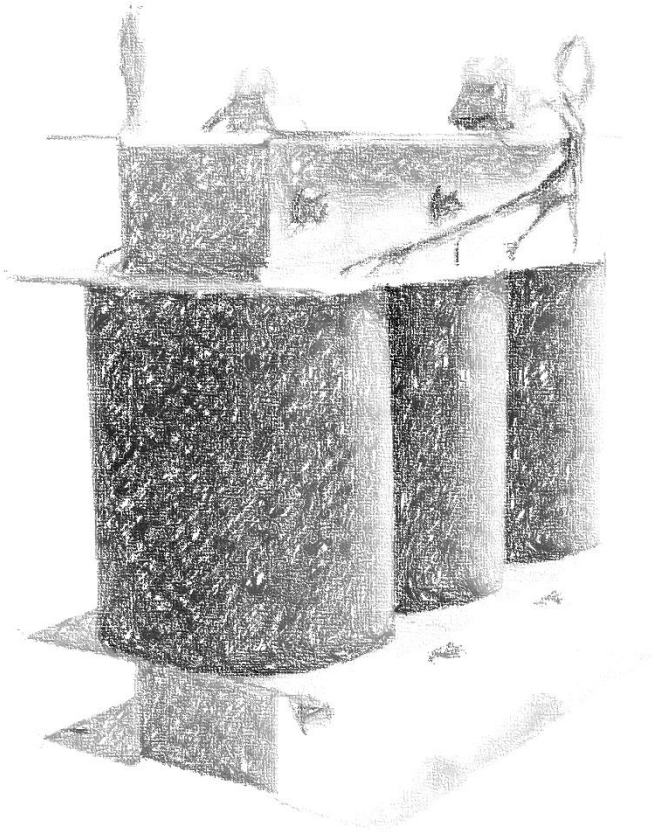
Designed and tested according to
- ✓ IEC 61558-2-15

Basic equipment
- ✓ Separate windings
- ✓ Connection terminal
- ✓ Frequency 50/60 Hz

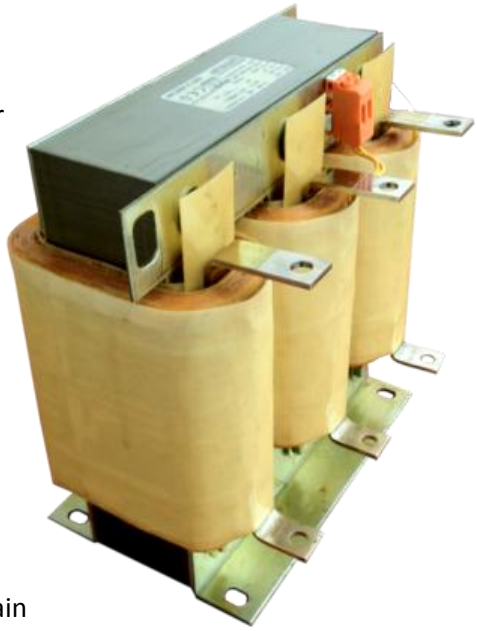


CUSTOMIZED TRANSFORMERS

Upon request the transformers could be customized to meet clients' specifications such as voltage, power, climate, Insulation class, regulation, tap, and enclosure. The engineering department takes these requirements and turns them into designs.
The software we use for calculation VT gives us an exact data for production compatible with international standards.



HARMONIC FILTER REACTORS



Harmonic Filter Reactors, are used in series with capacitor banks in power factor correction units. By using these types of harmonic filter reactors it is possible to avoid following negative effects on system.

- Over current during switching on the capacitor banks
- Overload of capacitor banks because of the harmonic resonance.
- Short lifetime on capacitors
- Overheating of the utility transmission cables.
- Overheating of the distribution transformer.
- Unintended triggering of the protective devices.
- Distortion of utility voltage waveform and problems on voltage sensitive devices
- Interferences on data transmission systems
- Unexplainable faults in electronic boards

Choosing the correct harmonic filter reactor and capacitor value on harmonic power factor correction systems is very important. To obtain optimum performance form a harmonic power factor correction system following criteria must be controlled and met during the pairing of the reactors and capacitors.

CHOOSING CORRECT HARMONIC FILTER REACTOR

- The resonance frequency must be chosen according to harmonic analysis of the system.
- The voltage across the terminals of the capacitor will increase because of the inductive reaction of the rector.

The rated voltage of the capacitors must be chosen according to the resonance frequency.

- In harmonic power factor correction systems, presence of higher voltage rated capacitors and reactors causes a difference between rated capacitor power and obtained reactive power. The obtained power must be calculated in order to avoid low compensation.
- The reactors will generate extensive heat due to heavy harmonic load on them. The cabinets must be designed to disperse this heat.

VALUES TO BE SPECIFIED FOR CUSTOM HARMONIC FILTER REACTORS

- Utility Voltage
- Resonance Frequency
- Information on the available capacitors

REFERENCE

Our productions were used in a variety of applications such as oil, gas, petrochemical, power plant and industry projects.

Power plant

Petrochemical

Gas

Industry

Oil

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