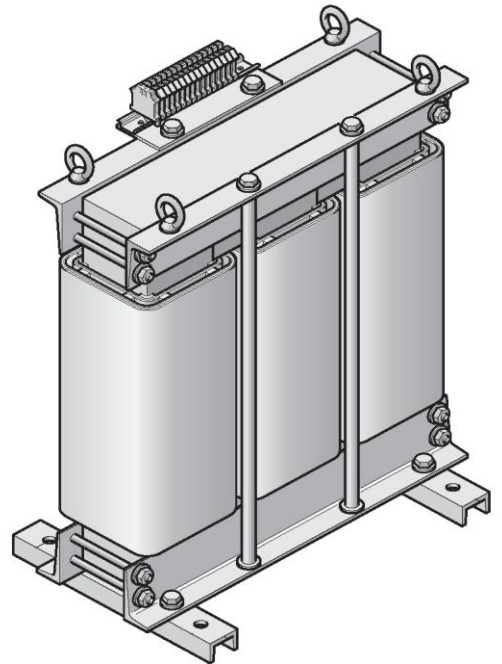
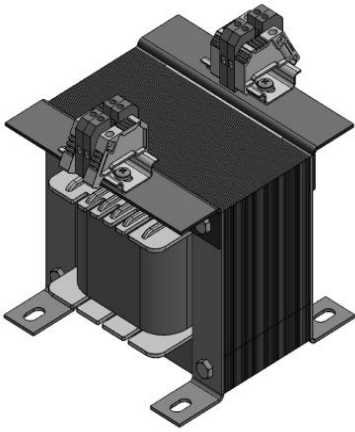




Transformer Technology



SANA ISATIS KAVIR

Advance solutions for your power

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
- ☒ Elevator
- ☒ Lifting Industry

Designed and tested according to

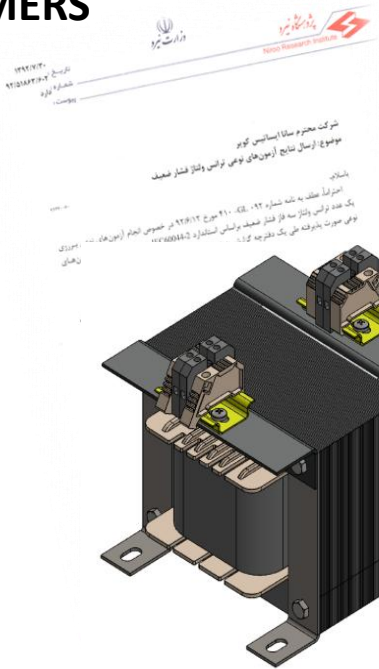
- ✓ IEC 60044-2

Typical applications

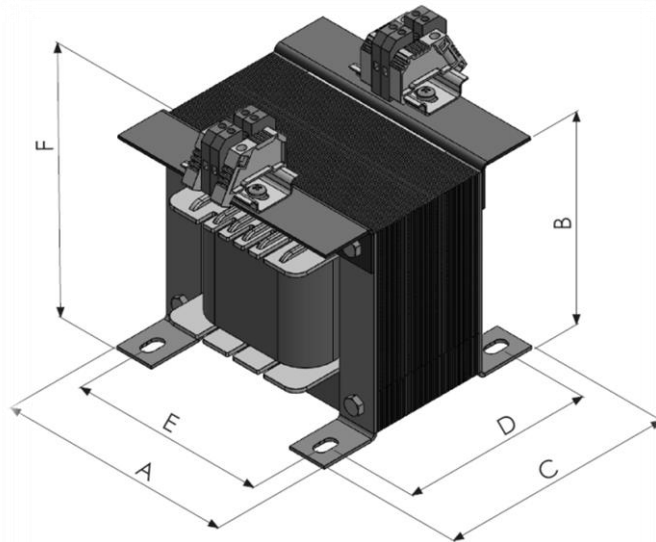
- ✓ Control voltage circuits
- ✓ Functional low voltage

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 galvanic 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 900kVA.

The electrical connection is done via terminal blocks or bars. Any vector connection type is available on request.



INDUSTRIAL APPLICATIONS

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

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

Designed and tested according to

- ✓ IEC 60044-2

Basic equipment

- ✓ Separate windings
- ✓ Connection terminal
- ✓ Frequency 50/60 Hz
- ✓ $\pm 5\%$ tapping on the primary side

MEDICAL TRANSFORMERS

The transformers used in hospitals and medical clinics are supplying extremely sensitive medical equipment. 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.

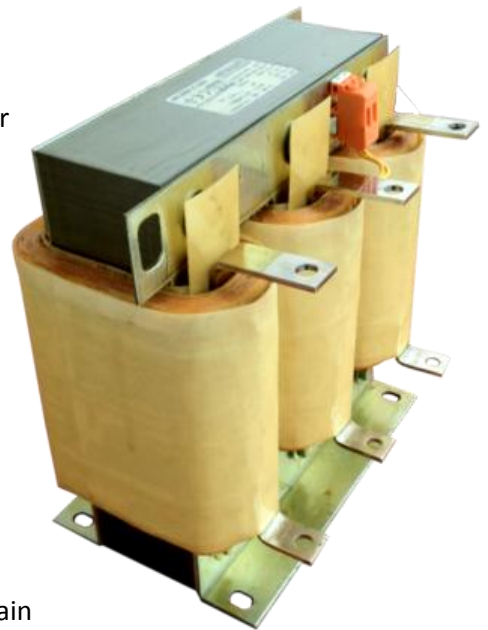


HARMONIC FILTER REACTORS

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.



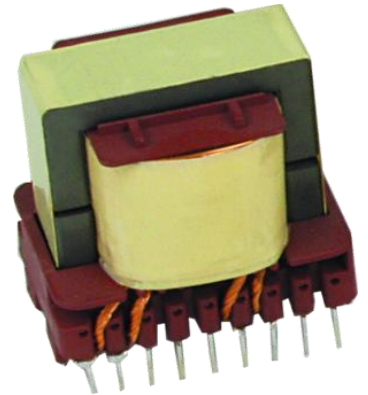
CHOOSING CORRECT HARMONIC FILTER REACTOR

- 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 reactor. 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

HIGH FREQUENCY TRANSFORMERS



High frequency ferrite core transformers are used for switch mode power supplies and telecommunication applications. Operation at a very high frequency ensures very small size at large powers. Magnetic iron cores are usually not suitable for high frequency applications 10 Hz-500 KHz. Therefore ferrite core transformers are preferred for this area.

The outputs of the transformer can be pin or cable output type. Design and production can be carried out for any switch mode topology available. Furthermore, for smaller powers, common switch mode integrated circuits are supported as well.

INDUSTRY APPLICATIONS

- ❏ Telecommunications
- ❏ Household Appliances
- ❏ Security Systems
- ❏ Lighting
- ❏ Automation Systems
- ❏ Power Supplies

References:



- ✦ Electro Kavir
- ✦ Runin Sanat
- ✦ Lena Yazd
- ✦ Satha
- ✦ Kiyani Isatis Pars
- ✦ Pars Kavir Arvand
- ✦ Persia power plant
- ✦ Mehregan
- ✦ Various different projects





SANA ISATIS KAVIR

Tel.: +98 353-7273466

Fax: +98 353-7272386

Email: info@sana-isatis.com

Web: www.sana-isatis.com

Address: Postal Code 8947183647, Kaaj Blvd, Yazd industrial zone, Yazd, Iran

