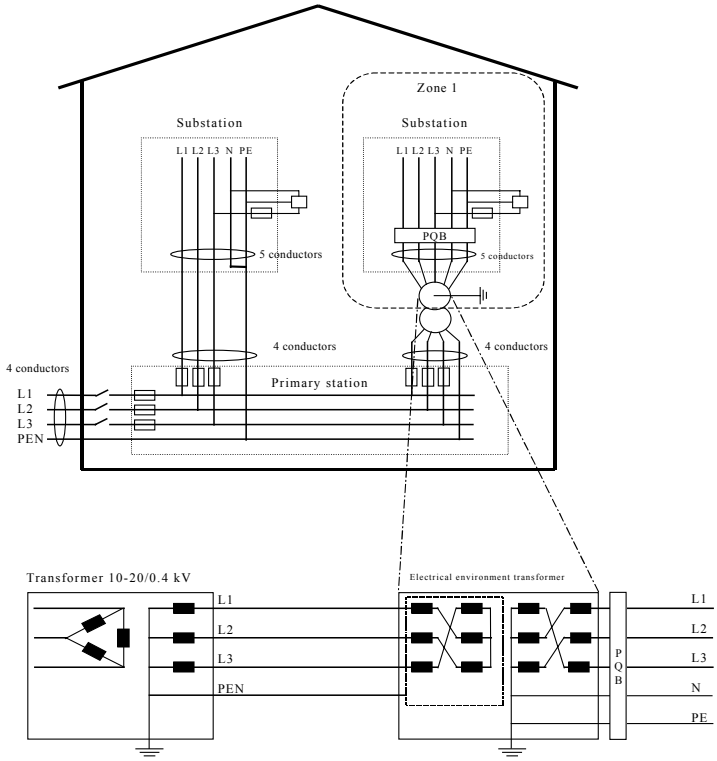
NETCLEANER

ELECTRICAL ENVIRONMENT TRANSFORMER FOR MODERN INSTALLATIONS

- Complete transformer 400/400
- Shielded winding connected Z primary and Z secondary
- Low zero-sequence impedance
- Low noise level
- Low losses
- Low magnetic field
- Reduces harmonics and ground currents effectively
- Improved electrical quality
- Suitable for zoning from TN-C to TN-S
- Creates conditions for handling interference environments and EMC earthing.
- Insulated for separate earth electrode.

SVENSK ELMILJÖUTVECKLING



> NETCLEANER

Electrical environment transformer for modern installations

Netcleaner is an electrical environment transformer designed as an insulated complete transformer with entirely separate primary and secondary windings.

The design is characterised by 3 toroidal cores, one for each phase, positioned horizontally above each other. Both the primary side and secondary side are Z-connected. Each coil is individually shielded.

The transformer is completely encapsulated and is covered with an all-welded metal housing which is connected to the transformer's neutral point. This design allows the transformer to be placed at a local ground level. The transformer's base plate then consists of a low-resistant contact for higher frequencies between ground level and the transformer's neutral point. The transformer's neutral point can be linked to the primary side's system earth or with separate earth electrode.

Housing is available in several designs, both for placement in distribution boxes and in spatial, public environments.

The transformer handles asymmetric loading effectively where the load is distributed across the three phases primarily. The design is patented.

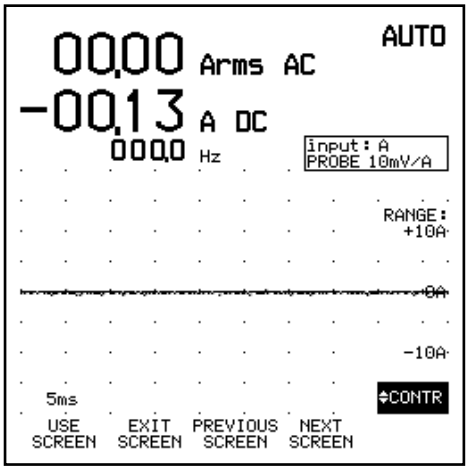
The transformer's unique properties make it possible to use it to create an insulated protected zone with a local TN-S system in which the interference environment can be managed.

Properties achieved are limited by outside interference in a wide spectrum of frequencies, elimination of the load's harmonics in neutral conductor and 3rd tone in phase conductor. With Z-connection harmonics of only the secondary winding are managed distinct from a D/Y coupled transformer where both primary and secondary windings are used. Damping of HF noise in the installation. Effective potential balancing between system earth and ground level. Stray currents are limited through its terminals on the transformer's secondary side not needing to go to the power plant transformer 10-20/0.4 kV. The transformer has low zero-sequence impedance.

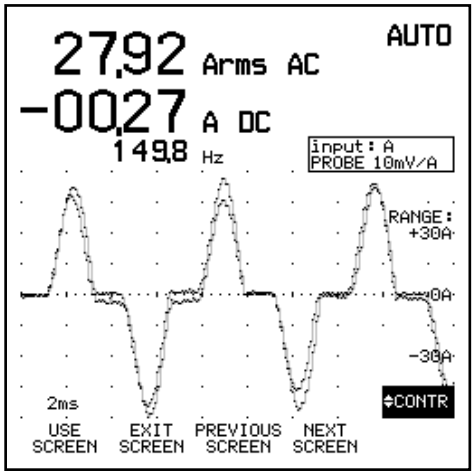
Low losses provide a quiet operation and extremely low magnetic field. The transformer can therefore be installed in sensitive environments where transformers have traditionally been regarded as disturbing.

Example of harmonics reduction in the use of electrical environment transformer

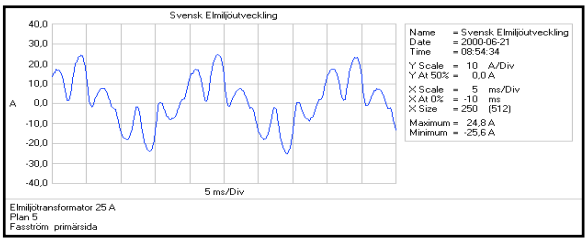
Neutral conductor, secondary side



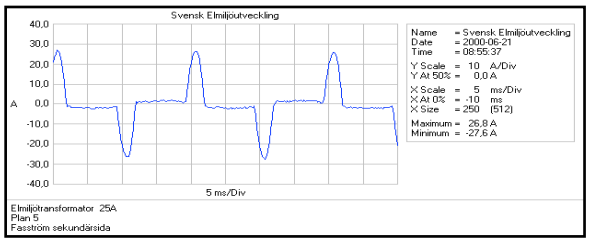
Neutral conductor, primary side



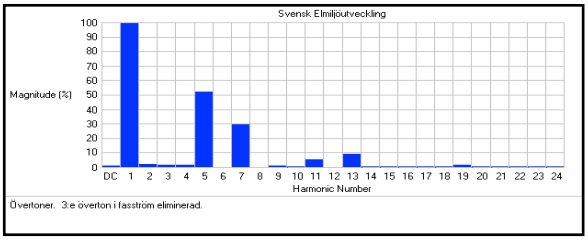
Phase current, primary side



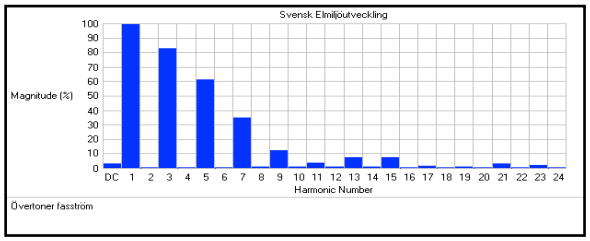
Phase current, secondary side



Harmonics in phase current, primary side



Harmonics in phase current, secondary side



Housing is available in several designs, both for placement in distribution boxes and for spatial, public environments.

For example, EMT –25 with maximum slant load gives <100 nT at 1 m distance measured 0.75 m above floor.

Technical data

Primary voltage	AC 400 V
Secondary voltage	AC 400 V
Nominal frequency	50 Hz
Primary connection	D,Y,Z
Secondary connection	Z

Technical information – electrical environment transformer

Model	Output (kVA)	Voltage (V)	Current (A)	Dimension D*H	Weight (kg)	Idle losses	Load losses
EMT-4	2,8	400/400	4	240*355	50	23	50
EMT-16	11,0	400/400	16	320*425	130	75	122
EMT-25	17,3	400/400	25	360*500	200	110	140
EMT-35	24		35	460*525	260		
EMT-50	34,5	400/400	50	420*555	320	140	202

Larger size can be achieved through parallel connection of two transformers. The transformer has CE marking, has no noticeable sound level and has an extremely low magnetic field.

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