

CHOOSING THE RIGHT **TRANSFORMER**



THE RIGHT TRANSFORMER TO SUIT ANY NEEDS

We offer a comprehensive range of transformers to suit different demands, such as confined installation spaces and special designs, energy loss and cooling issues, a need to cut sales prices and controlling operative costs.

We are particularly focussed on making an active contribution to sustainability and energy efficiency with our products. Our Smart-E-Power® range is the most recent example in this context. Let me introduce it to you in more detail.

We work together with you
to find a solution perfectly
tailored to your needs.

Our transformers at a glance



SMART-E-POWER® 203 DESIGN

COMPACT

LOWEST LOSS

AFFORDABLE



SUSTAINABLE 202 DESIGN

COMPACT

LOW LOSS

AFFORDABLE



COMPACT 204 DESIGN

MOST COMPACT

LOW LOSS

AFFORDABLE



STANDARD 201 DESIGN

COMPACT

LOW LOSS

MOST COMPETITIVELY PRICED

All transformers are available with the following features:

- ✓ As control, isolating, safety or autotransformers.
- ✓ Customer-specific primary and secondary voltage range up to 690V, optionally higher.
- ✓ Core dimensions designed for 50/60Hz, other frequencies optionally available.
- ✓ Open variant for permanent installation, housing installation available.
- ✓ We supply products in compliance with a host of different standards, also with UL-CSA certification, Lloyds, SEV, VDE, etc.

	SMART-E-POWER®	SUSTAINABLE	COMPACT	STANDARD
	203 DESIGN (BDVU)	202 DESIGN (BDVA)	204 DESIGN (BDVK)	201 DESIGN (BDF)
Output	20 kVA	20 kVA	20 kVA	20 kVA
Weight	155 kg	128 kg	99 kg	117 kg
Volume	40.8 dm ³	36.3 dm ³	25.7 dm ³	31.7 dm ³
Core temperature increase	27 K	48 K	55 K	63 K
Coil temperature increase	34 K	60 K	78 K	81 K
No-load losses	97 W	126 W	97 W	213 W
Coil losses	135 W	249 W	399 W	350 W
Efficiency	98.85 %	98.15 %	97.6 %	97.26 %
Loss in 1 year	2032 kWh	3285 kWh	4345 kWh	4932 kWh
Loss in 10 years	20.3 MWh	32.8 MWh	43.5 MWh	49.3 MWh
CO ₂ equivalent in 1 year	1199 kg	1938 kg	2564 kg	2910 kg
CO ₂ equivalent in 10 years	12 t	19.4 t	25.6 t	29.1 t
Energy costs in 1 year (CHF0,12/kWh)	CHF 244	CHF 394	CHF 522	CHF 592
Energy costs in 10 years (CHF0,12/kWh)	CHF 2438	CHF 3938	CHF 5214	CHF 5918

Values calculated for transformer with 20 kVA, 3AC400 V // 3AC400V+N, Dyn5 circuit group, IP00

About “CO₂ equivalent”

Loss generated by thermal heat-up occurs in all electrical components – also in transformers. Although the efficiency of these is up to >99% nowadays, the loss at all active transformers in Central and Northern Europe is around 5.7%. This energy loss must not only be additionally produced, it goes without saying that it also costs natural resources. It is a common fact that electrical energy heats up the ambient air and thus has detrimental consequences for the climate. Energy generation methods involving fossil fuels have a greater impact on the environment. The production of electrical power units, such as solar panels or vehicle batteries uses considerable amounts of energy and around 70% of the global energy required for this purpose is produced by burning coal.

The CO₂ equivalent provides information about the quantity of gas emissions generated during energy production. IWR/2013 defines that in Switzerland, Northern and Western Europe one kilowatt hour of energy (1 kWh) generates 590g of carbon dioxide.

Example of a charger connected to the mains:



P_{cu} + P_{fe} losses in kWh/year



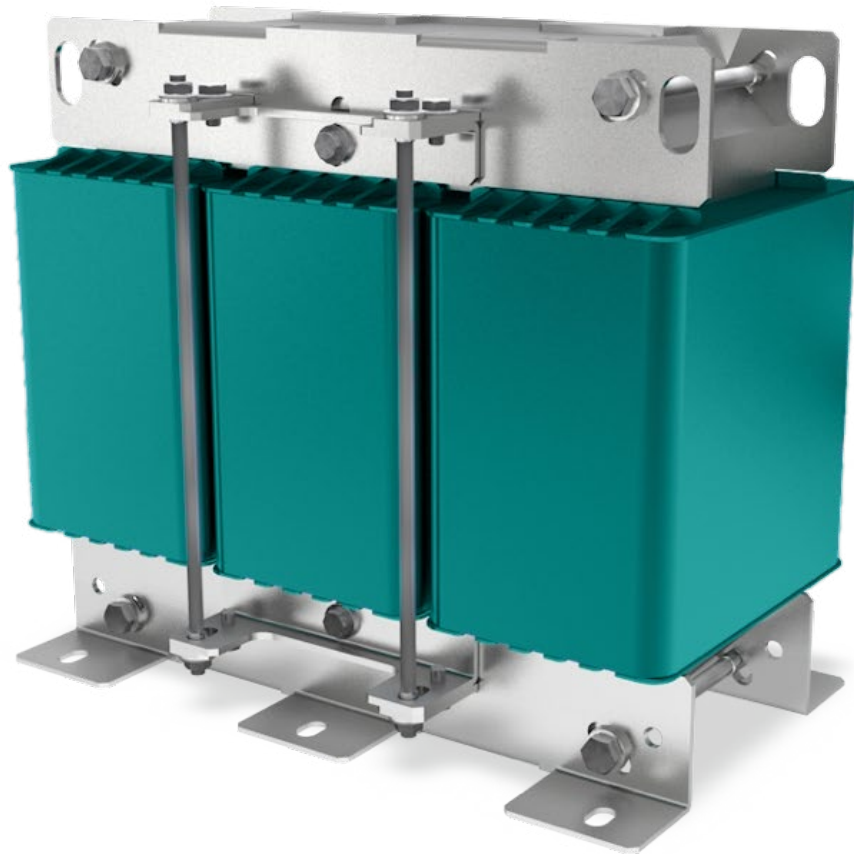
CO₂ emissions in kg/year*



Energy costs in 10 years based on CHF0.12/kWh



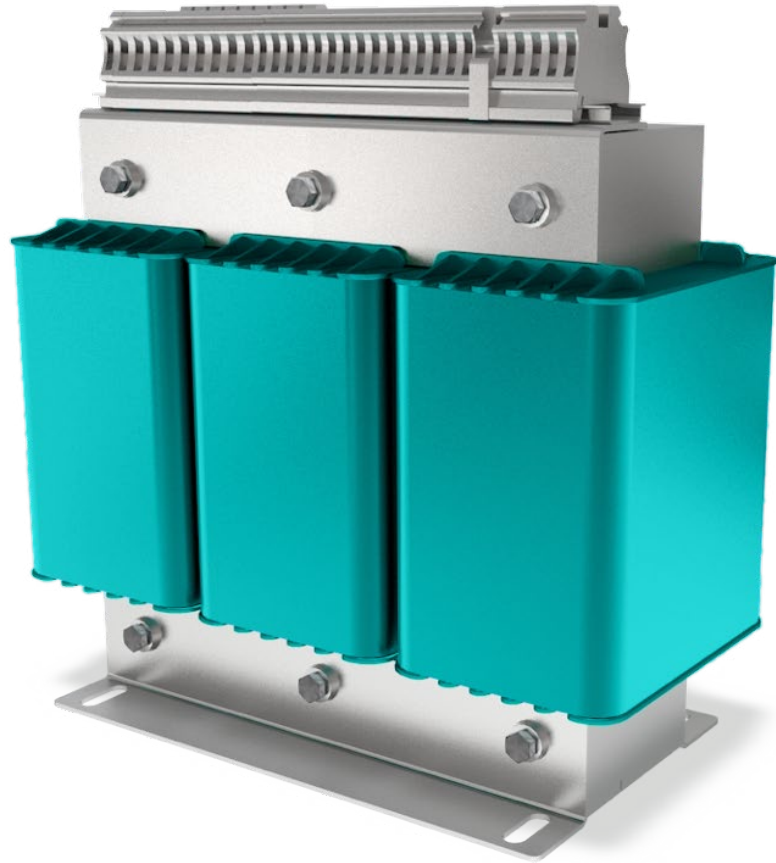
*Average energy value in Switzerland according to energy producers, copied from IWR, 6 June 2013, 1 kWh/year = 0.59 kg CO₂



203 DESIGN (BDVU) **SMART-E-POWER®**

This extremely efficient Smart-E-Power® transformer has been optimised to generate the lowest levels of load loss. It is characterised by a tremendous overload tolerance of 10 minutes. If you take into account lifecycle costs, the Smart-E-Power® is the best product, there is no doubt about it! Efficiency levels over 99% are already possible from around 25kVA. It is also the most silent unit generating the lowest levels of no-load losses of all series.

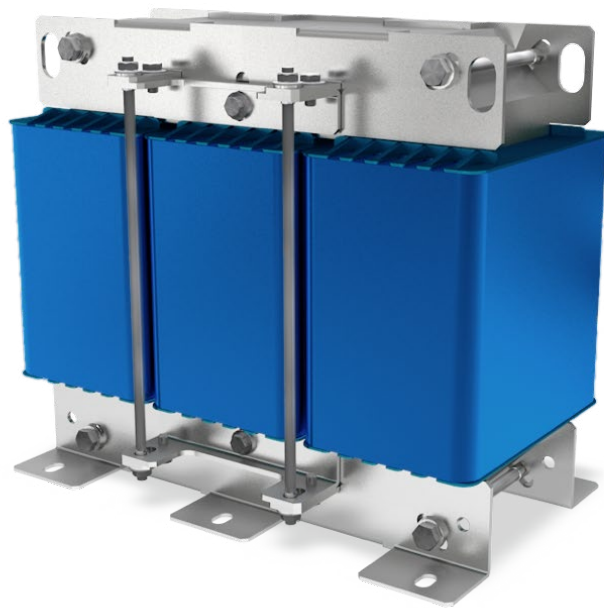
NIN 2020 NIBT



202 DESIGN (BDVA) **SUSTAINABLE**

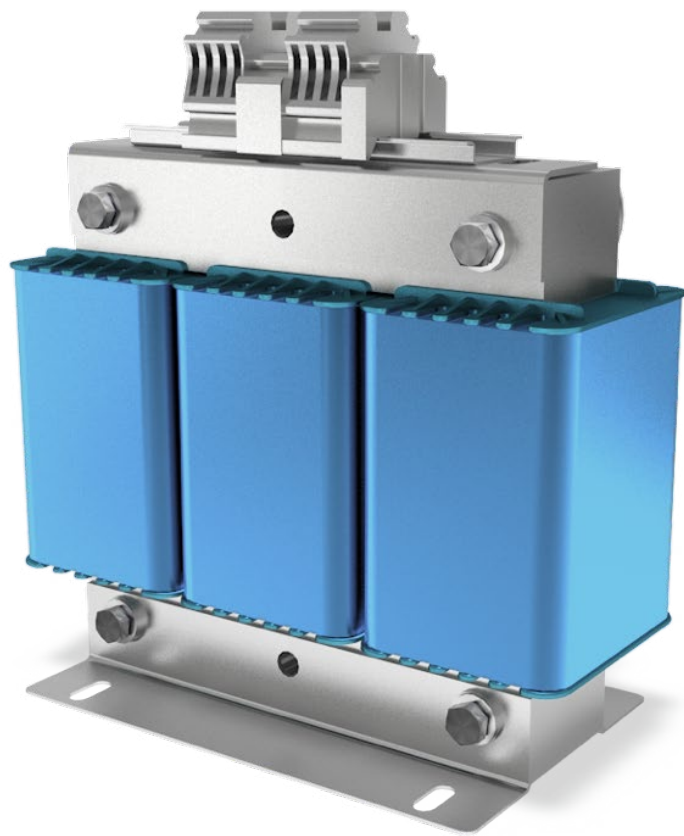
This transformer is suitable for a short-term tendency to harmonics and is very efficient. Its sustainable design guarantees customers benefit from appealing lifecycle costs and make a great choice in terms of the CO₂ equivalent. Thanks to a special processing method and the use of grain-oriented sheet metal panels, this series is particularly silent.

NIN 2020 NIBT



204 DESIGN (BDVK) **COMPACT**

This transformer is characterised by its low weight and compact design. Its width, depth or height can be adapted to meet customer demands and suit the corresponding installation space. The use of high-grade materials is reflected in the product quality. The noise generated by the 204 design has been restricted to a minimum, thus making it very versatile.



201 DESIGN (BDF) **STANDARD**

The standard transformer is particularly suitable whenever its use is not specifically linked to a certain function. For this design we use materials that are common within the industry. It goes without saying that we also focus on quality in this context. The procurement costs of the standard series are the lowest.

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