Three-phase auto transformers
acc. to VDE0570-2-13 (EN61558 /IEC61558)

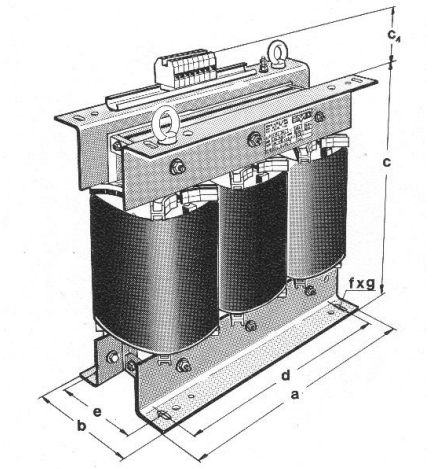
Type code:
MKDsp: Three-phase auto transformers / Modular design (strip lamination) / vertical

Generally:
- Auto transformer: transformer, where input and output voltages are discharged from one common winding.
- Degree of protection IP00 (suitable for installation in enclosures up to IP20)
- Ground connection as preparation for fitting in gears and systems with class of protection I
- Construction for pollution severity P2
- Maximum ambient temperature 40°C / Insulation cla ss F
- Frequency 50 to 60 Hz / - constructed for continuous operation (ED = 100 %)
- Vacuum-resin-impregnated
- Connections – at currents up to approx. 250 A on transformer terminals - shockproof according to BGV A3
  - at currents higher than approx. 250 A with bolt connection – shock protection has to be ensured by the installation.

Standards and basics:
- VDE0570-1 (EN61558-1 / IEC61558-1) – follow-up standard for VDE0550-1 „Safety of transformers, power packs and similar“
- VDE0570-2-13 (EN61558-2-13 / IEC61558-2-13) – follow-up standard for VDE0550-4 „Particular requirements for auto transformers for general use“
- General technical conditions and information (see page 81-85)

c UL us on request

- Variants of voltage:	
Primary: 100 - 1000 V (voltage optionally)	Secondary: 43 - 1000 V (voltage optionally)



Remark:
The size of **auto transformers (impedance matching transformer)** results from the **difference** between input and output voltage. With help of the following example an approx. size dimensioning can be made:
- Necessary:
  - input voltage: 3 x 480 V (=Uo = highest voltage)
  - output voltage: 3 x 400 V (=Uu = lowest voltage)
  - output power: 1000 kVA (= Sa = output power)
- Requested: Size (= Sb = nominal power in kVA)
- Calculation: $Sb = Sa \times \frac{Uo - Uu}{Uo} = 1000\ kVA \times \frac{480 - 400}{480} = 166{,}67\ kVA$

So in this case an output power of 1000 kVA can be made available with the size MKDsp 200 (166,67 kVA rounded up to the next size).
As a further specific feature with Three-phase auto transformers, the **neutral loading capacity** should be considered. The maximum neutral loading capacity amounts in the **normal cases 10% of the transformation ratio** (circuit Yna0 / 24 A for this example).
Should a higher neutral loading capacity be requested, this could be realised by the installation of an **equalising winding**. For such a case we gladly calculate a specially tailored auto transformer for you.

Sizes, dimensions and weights for the types MKDsp

Nominal power in kVA = type designation	a in mm	b in mm	c in mm	d in mm	e in mm	f in mm	Cu.-weight in kg	Total weight in kg
12,5	500	235	420	450	165	12 x 50	30	90
15	500	235	420	450	165	12 x 50	40	100
17,5	500	240	420	450	170	12 x 50	44	115
20	500	240	420	450	170	12 x 50	50	130
25	560	250	490	510	180	12 x 50	53	150
30	560	250	490	510	180	12 x 50	55	165
40	560	275	560	510	205	12 x 50	63	210
50	560	275	560	510	205	12 x 50	100	280
63	735	270	630	650	180	12 x 50	120	300
75	735	295	630	650	205	12 x 50	130	340
88	735	295	630	650	205	12 x 50	140	380
100	735	340	630	650	250	12 x 50	145	420
130	735	340	630	650	250	12 x 50	190	500
160	900	300	800	740	200	18 x 40	240	590
200	900	330	800	740	230	18 x 40	270	720
250	900	380	800	740	280	18 x 40	360	900
315	1020	360	990	840	260	18 x 40	380	920
400	1020	400	990	840	300	18 x 40	400	1030
500	1020	450	990	840	350	18 x 40	450	1320

Dimension c1 = 60 - 100 mm

Options (on request)
- Construction for short-time operation
- Additional tappings
- Fuses
- Installation in enclosures (see page 35)