

PRE-CIRCUIT TRANSFORMER

VT

100VA ... 3kVA

TYPICAL APPLICATIONS

1 phase pre-circuit transformer according to IEC/EN61558-2-13 (autotransformer) for general applications without the need of a galvanic isolation, e.g. for transforming typical mains voltage to other voltages needed by tools, machinery or other devices.

VT pre-circuit transformers and other autotransformers do not provide any electrical protection due to the lack of galvanic isolation between input and output windings.

1 phase autotransformer according to EN61558-2-13

*Voltage range:
0-110/115V | 127/133V |
220/230V | 240V*

*Power range:
100VA ... 3kVA*



EN61558-2-13

SPECIFICATIONS

Pre-circuit transformers provide windings suitable for following configurations:

0-110/115V |
127/133V |
220/230V |
240V.

These terminals can be used either as input- or output voltage terminals. Output winding must provide external fuse for safety reasons (see table for details).

Screw terminals contact proof according to VBG4

Vacuum impregnation in polyester varnish
- low operating noise.

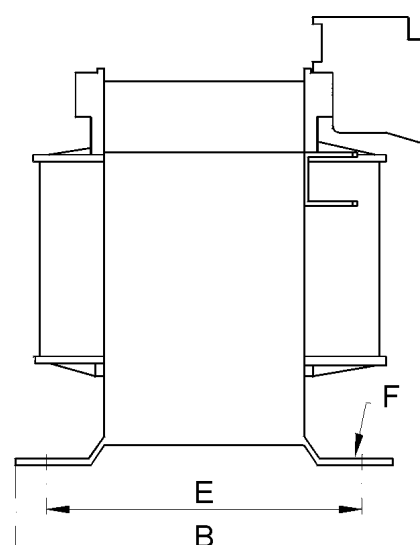
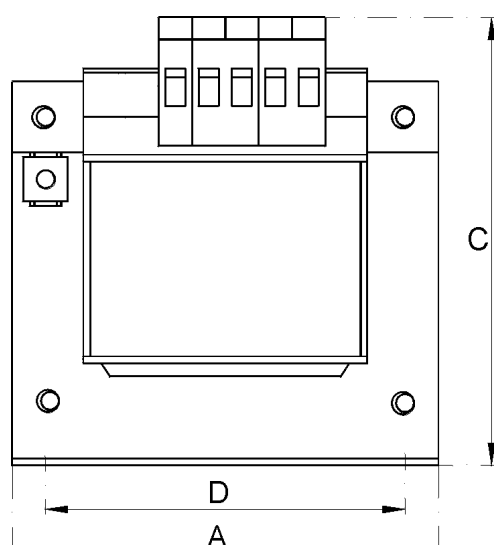
TECHNICAL DATA

Description	1 phase autotransformer according to IEC/EN61558-2-13
Voltage range for input / output	0-110/115V 127/133V 220/230V 240V
Frequency	50/ 60 Hz
Power range	100VA ... 3kVA
Important transformer features	Open transformer – degree of protection IP00
	Completely vacuum impregnated
	No galvanic isolation
Protection class	Protection class I ready
Connections	Screw terminals contact proof according to VBG4
Other data	Ready for vertical mounting - including angle brackets
	Any mounting position or angle possible

VT

100 VA ... 3 kVA

STANDARD TYPES



Power VA	Max. fuse for output winding (G delay fuse according to IEC127)				A	B	Dimensions			E	F	Copper weight KG	Total weight KG	Type and ordering no.
	A						C	D approx. mm						
	110 / 115V	127 / 133V	220 / 230V	240V										
100	0.5	0.4	0.4	0.4	78	73	84	56	45	4.8 x 9.0	0.25	1.10	VT010	
150	1.0	0.8	0.63	0.63	84	76	90	64	45	4.8 x 9.0	0.30	1.40	VT015	
250	1.6	1.6	1.0	1.0	84	90	90	64	61	4.8 x 9.0	0.40	1.95	VT025	
350	1.6	1.6	1.6	1.6	96	97	101	84	71	5.8 x 9.0	0.50	2.60	VT035	
500	2.0	2.0	2.0	2.0	96	111	101	84	86	5.8 x 9.0	0.70	3.70	VT050	
750	4.0	4.0	3.15	3.15	120	107	119	90	79	5.8 x 12.0	1.05	5.00	VT075	
1000	5.0	4.0	3.15	3.15	135	116	130	104	92	5.8 x 12.0	1.40	6.80	VT100	
1500	8.0	8.0	6.3	6.3	174	114	156	135	86	7.0 x 15.0	2.50	10.20	VT150	
2000	10.0	8.0	8.0	8.0	174	126	156	135	100	7.0 x 15.0	3.10	12.90	VT200	
3000	12.5	10.0	10.0	10.0	174	140	156	135	110	7.0 x 15.0	3.25	14.20	VT300	

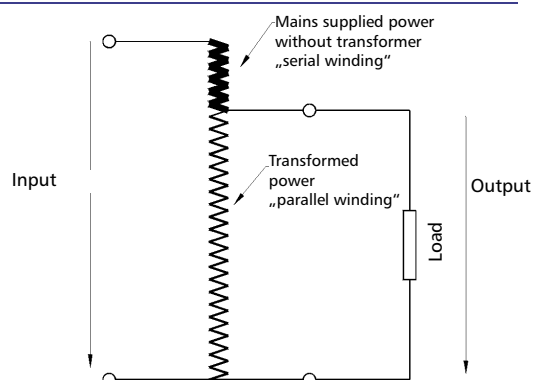
USE OF 1 PHASE AND 3 PHASE AUTOTRANSFORMERS

INFO

Autotransformers do not provide galvanic isolation. Electroconductive connection between input and output winding.

If difference between input voltage and output voltage is small...:

- ...mains power may be higher
- ...transformed power is lower
- ...size can be reduced (core, copper winding)



Please note:

Equation: Regarding input/ output „upper“ or „lower voltage“ is independant, voltage related only

For 3 phase autotransformers value of phase voltage is important.

Example shows 90% power saving compared isolating transformers. Identical equation works with 3 phase transformers.

Equation to calculate the requested size:

Example: 1 phase autotransformer
Input voltage 440V | Output voltage 400V
„Rated power“ needed for application: 5kVA

$$P_{\text{Size}} = P_{\text{load}} \times \left(1 - \frac{U_{\text{lower voltage}}}{U_{\text{upper voltage}}} \right)$$

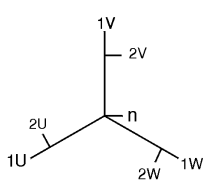
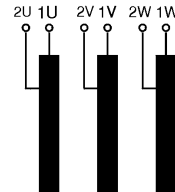
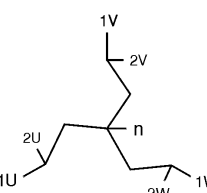
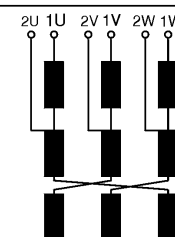
$$P_{\text{Size}} = 5\text{KVA} \times \left(1 - \frac{400\text{V}}{440\text{V}} \right)$$

$$P_{\text{Size}} = 0,45\text{KVA}$$

Standard circuit design of 3 phase autotransformers is Yan0.

Max. load at neutral wire is approx. max. 10% of nominal current (phase current). If 100% neutral wire load is requested, circuit design Zan0 is manufactured (Note: Yan0 design can be used in certain circumstances, if neutral wire at input provides full load and transformer star point is permanently connected to load.

Please don't hesitate to contact us for further informations.

Description		Schematic	Circuit diagram	Star point
Code	Circuit design			
0	Yan0			Approx. 10% load
0	Zan0			100% load