

TCP SERIES TRANSFORMERS

TCP series transformers (three-phase, dry-type, isolating), rating 0.16...40 kVA, are intended for supply of three-phase voltage to rectifier circuits, semiconductor converters of machine-tools and elevators, electrically operated tools and other devices, where separation of circuits by means of reinforced insulation is required.



Transformers comply with the requirements of STB IEC 61558-1-2007 standard.

Isolating transformers of general use, with secondary rated voltage over 50 V and not more than 1000 V, comply with the requirements of IEC 6158-2-4 standard.

Safety isolating transformers – the transformers with secondary rated voltage up to 50 V – shall comply with the requirements of STB IEC 61558-2-6-2006 standard.

Winding connection / vector group – Yn/Yn-0.

Climatic version – C as in accordance with IEC 60721-2-1:2002 standard.

Nominal working values for externally induced mechanical stresses – in accordance with GOST 30631 for mechanical performance groups:

- M8 – for transformers rating 0.16 to 0.63 kVA;
- M3 – for transformers rating 1.0 to 10 kVA, however, the requirements for vibration resistance, vibration strength and shock resistance are only for vertical direction;
- M1 – for transformers rating 16, 26, 40 kVA, however, the requirements for vibration resistance, vibration strength and shock resistance are only for vertical direction.

Operable altitude elevation above sea level is not more than 1000 m.

Transformers versions: as to the installation conditions on worksite the transformers are **incorporated** ones, as to the short-circuit withstandability they are **non-short-circuit proof** transformers.

Insulation thermal-endurance class – in accordance with GOST 8865-93:

- for transformers rating 0.16 to 10 kVA – B class;
- for transformers rating 16 to 40 kVA – F class.

As to protection against electric-shock hazard the transformers belong to I class in accordance with GOST 12.2.007.0-75 and have IP00 protection degree in accordance with GOST 14254-96; contact terminals are of IP20 protection degree.

For transformers with fuse amperage up to 6.3 A inclusive as protective devices shall be used slow-action fuse-links with “T” symbol as in accordance with IEC 60127:

– for transformers of rated power of 0.16...0.63 kVA inclusive with 220...400 V primary voltage, and for transformers of 1.0 kVA rated power with 380 and 400 V primary voltage – miniature fuse-links of increased breaking capacity;

– for transformers of 1.0 kVA rated power with 220 and 230 V primary voltage and for transformers of 1.6...4.0 kVA rated power with 220 and 400 V primary voltage – miniature fuse-links of high breaking capacity.

For transformers with fuse amperage over 6.3 A as protective devices should be used time delay fuse-links with breaking capacity within “gD”-type range in accordance with IEC 60269-1. The fuse-link current rating and time-current characteristic should correspond to the ratings indicated by the transformer marking.

Corrected sound power level of transformers both under no-load run and under rated load shall not exceed:

- 49 dBA for transformers of 0.16...1.0 kVA rated power;
- 60 dBA for transformers of 1.6...40 kVA rated power.

Basic specifications of the transformers

Transformer type	P nom., kVA	Winding voltage, V		Short-circuit voltage, %	Efficiency factor, %
		U _{HV}	U _{LV}		
TCP-0.16 YXJ3	0.16	220; 230; 380; 400	10; 19; 22; 36; 85; 127; 133; 170; 220; 230	10.5	84.0
TCP-0.25 YXJ3	0.25		10; 19; 22; 36; 85; 127; 133; 170; 220; 230	7.6	86.0
TCP-0.4 YXJ3	0.40		10; 19; 22; 36; 42; 85; 127; 133; 170; 220; 230*	6.5	89.0
TCP-0.63 YXJ3	0.63		10; 12; 19; 22; 24; 36; 42; 85; 127; 133; 170; 220; 230*	6.3	91.0
TCP-1.0 YXJ3	1.00		12; 19; 22; 24; 36; 42; 85; 127; 133; 170; 220; 230*	3.9	92.0
TCP-1.6 YXJ3	1.60		12; 19; 22; 24; 36; 42; 85; 127; 133; 170; 220	4.5	94.5
TCP-2.5 YXJ3	2.50		230*; 380**; 400***	3.4	94.0
TCP-4.0 YXJ3	4.00		36; 42; 85; 127; 133; 170; 220; 230*; 380**; 400***	2.8	95.5
TCP-6.3 YXJ3	6.30			2.4	96.0
TCP-10 YXJ3	10.00			1.9	97.0
TCP-16 YXJ3	16.00		220****; 230*; 380**; 400***	2.6	97.0
TCP-25 YXJ3	25.00			2.34	97.2
TCP-40 YXJ3	40.00			2.0	97.8

* Only in case of 230 and 400 V primary winding rated voltage.
 ** Only in case of 380 V primary winding rated voltage.
 *** Only in case of 400 V primary winding rated voltage.
 **** Only in case of 220 and 380 V primary winding rated voltage.

Overall, mounting dimensions and mass

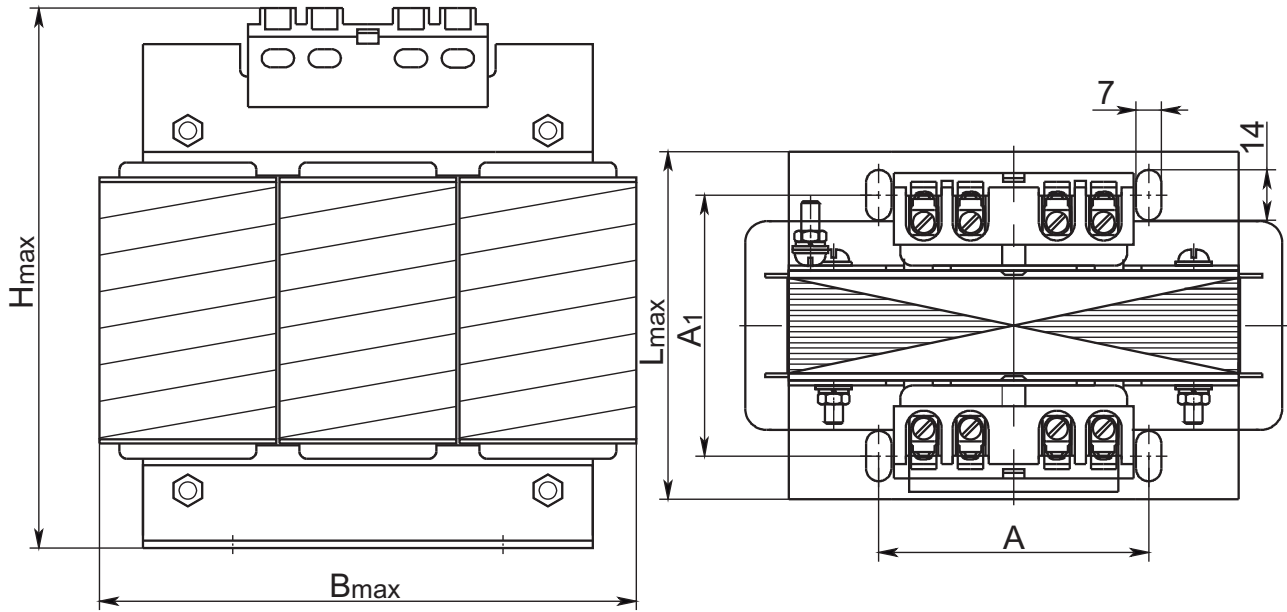


Fig. 1

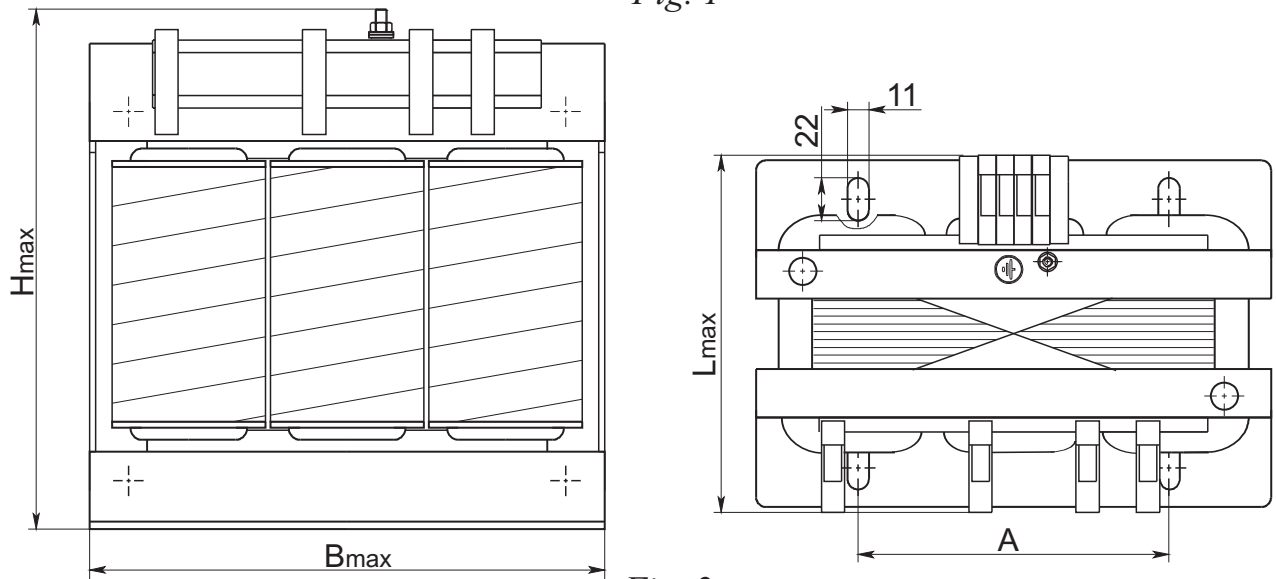


Fig. 2

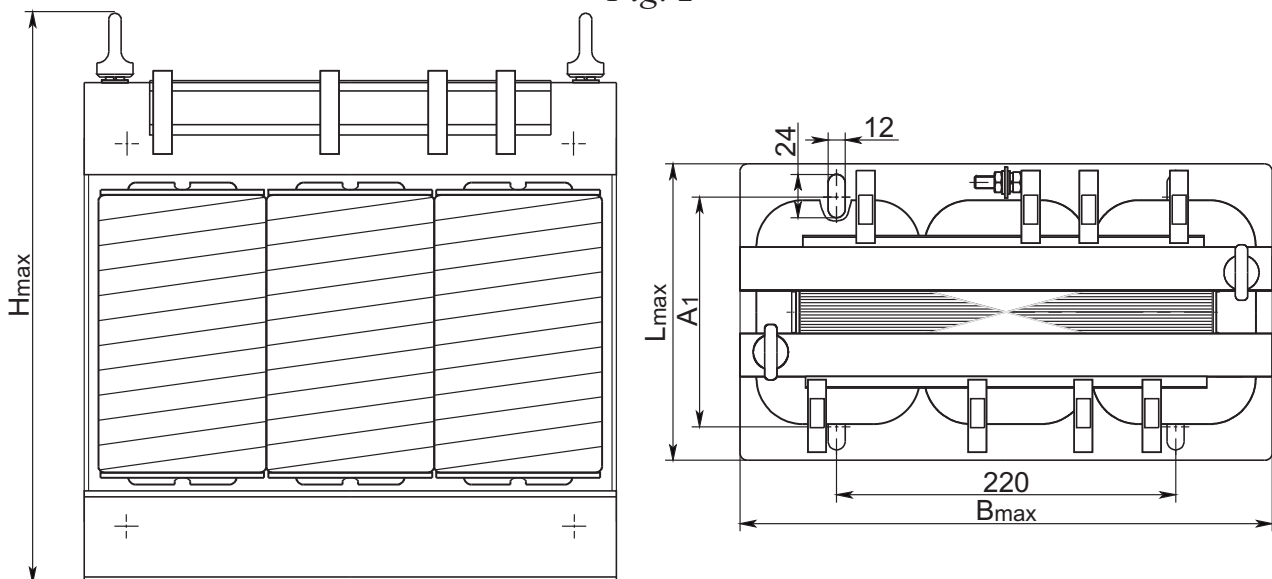


Fig. 3

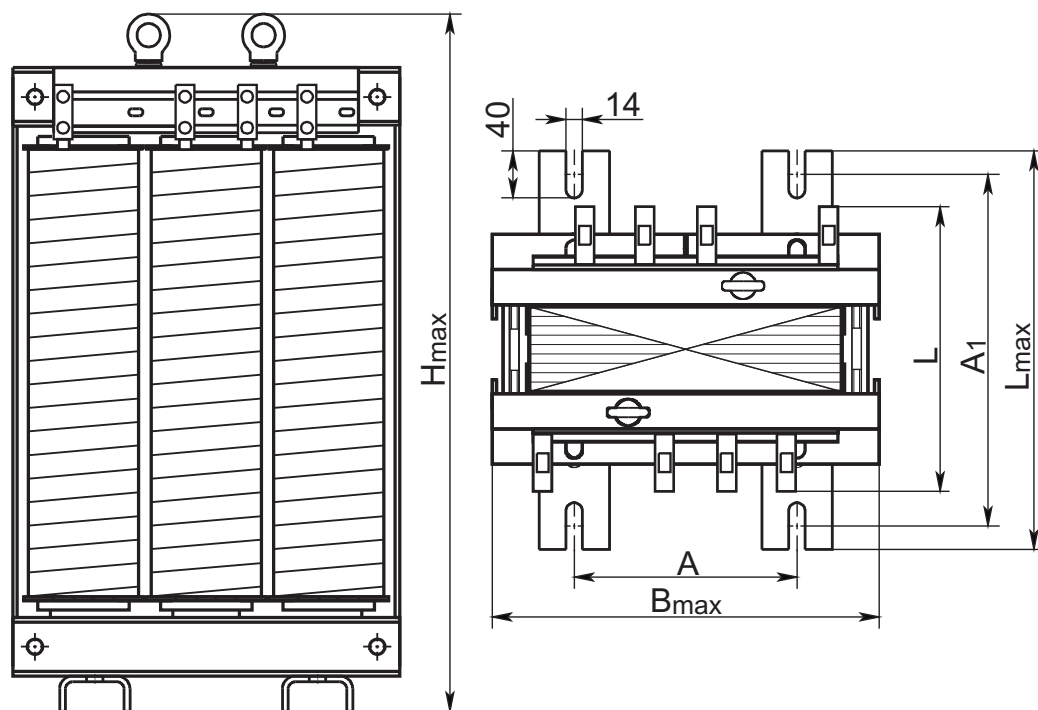


Fig. 4

dimensions in millimeters

Type designation	Fig.	B_{max}	L_{max}	L_1	H_{max}	A	A_1	Mass, kg
TCP-0.16 УХЛЗ	1	152	94	-	155	75 ± 1	66 ± 4	3.9
TCP-0.25 УХЛЗ			104				76 ± 4	4.6
TCP-0.4 УХЛЗ			118				91 ± 4	6.2
TCP-0.63 УХЛЗ			130				110 ± 4	9.1
TCP-1.0 УХЛЗ			150				110 ± 4	12.7
TCP-1.6 УХЛЗ	2	270	165	-	270	160 ± 1	112 ± 2	22.0
TCP-2.5 УХЛЗ			200				140 ± 2	30.5
TCP-4.0 УХЛЗ			345				190	300
TCP-6.3 УХЛЗ	3	350	200	-	375	220 ± 1	152 ± 2	58.0
TCP-10 УХЛЗ			230		395		181 ± 2	81.0
TCP-16 УХЛЗ	4	396	342	255	600	190 ± 2	300 ± 2	105.0
TCP-25УХЛЗ				245	735	214 ± 2		148.0
TCP-40УХЛЗ				260	790	276 ± 2		223.0

Sample of notation (to place an order, or to refer to) for TCP transformer of 0.25 kVA power rating, of 380 V primary winding voltage, of 36 V secondary winding voltage, with Yn/Yn-0 winding connection/vector group:

Transformer TCP-0,25 УХЛЗ 380/36 Ун/Ун-0 ТУ РБ 100211261.060-2008
(where ТУ РБ = Technical Specifications of the Republic of Belarus).