Varat Tunisie

TRANSFORMERS

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Varat Tunisie

a company founded in 1993, specializes in the manufacturing of electrical transformers and lighting products under the brand **"SOMEF Lighting."**
It has established strong partnerships with renowned companies and is part of the leading electrical sector group, **SOMEF**.
The company has made a significant impact both in the local market by offering a wide range of products and internationally by developing products compliant with European standards. It has quickly earned the trust of its customers through the quality of its product solutions and services.

In Numbers

Partners

30
Years of experience

20%
Supervision rate

31%
Export rate

5000m²
Of factory space

Quality :

Our company is committed to providing superior quality solutions and services.

We ensure the quality of our products and services through a certified ISO 9001: 2015 system, rigorous daily testing of all our products, and annual surveys of our customers.

Transformers :

The manufacturing of a low-voltage electrical transformer is a complex process that involves several critical stages that can vary depending on the complexity and requirements of the transformer. Each stage must be carried out with care to ensure the quality and reliability of the final electrical transformer. Here is a general list of the steps to follow when manufacturing a low-voltage electrical transformer :

Design :

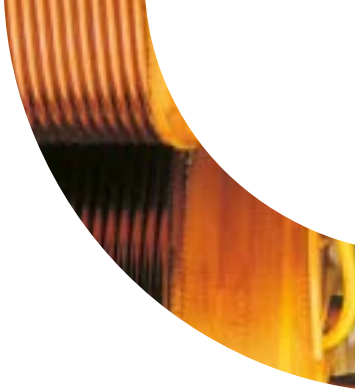
The first step involves designing the electrical transformer based on the customer's requirements, industry standards, and manufacturing considerations. This stage may include material selection, core design, electrical specification calculations, and more.

Component Manufacturing :

After the design phase, it's time to manufacture the transformer's components. This can include core fabrication, winding of coils, cutting of laminations, manufacturing of supports, and more.

Assembly :

Once the components are manufactured, it's time to assemble them. This step may involve attaching the windings to the cores, connecting wires, installing supports, and so on.



Insulation :

After assembly, the components need to be insulated to ensure protection against electrical arcs and discharges. This step may involve applying insulating varnish, installing insulating tape, and other insulation measures.

Quality Testing :

After insulation, it's time to test the quality of the electrical transformer. This step may include resistance tests, leakage current tests, voltage tests, short-circuit current tests, and more.

Final Assembly :

If the electrical transformer is intended to be used in a housing or panel, it's time to assemble it into its final location.

Packaging and Shipping :

The final step involves packaging the electrical transformer and shipping it to the customer.

Single-Phase Control
Transformers

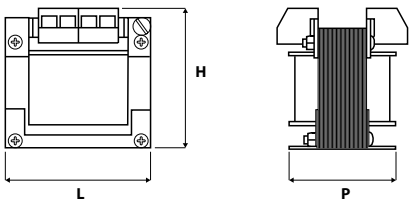
- Control transformer compliant with IEC 96.1 (IEC 61558) standards.
- Primary voltage: Single or dual voltage.
- Maximum secondary voltage: 500V.
- Insulation class: Class F.
- Maximum ambient temperature : 45°C.
- IP00 protection rating.
- Angular fixing bracket made of zinc-plated tropicalized steel.
- Impregnated with Class F varnish and oven-dried.
- Transformers specially designed for installation in electrical panels to control contactors.
- Power rating from 15VA to 3000VA.

Both primary voltages are at full power.

Peak power ratings are calculated for a load with a power factor of 0.5 and a maximum secondary voltage drop of 5%.

Note : Upon request, it is possible to add a thermal fuse for transformers of 100 VA and higher.

Power	Peak Power	Loss	Efficiency %	Dimensions			Weight
				L	P	H	
15 VA	35 VA	3,7 W	87,5	68	69	70	0,81
30 VA	63 VA	7,2 W	80,1	75	75	78	1,1
50 VA	93 VA	10,4 W	82	75	80	78	1,3
63 VA	149VA	14,3 W	83,2	85	80	86	1,6
100 VA	266 VA	18,2 W	82,6	85	91	86	2
160 VA	343 VA	19,8 W	88,1	96	91	95	2,6
200 VA	425 VA	25,7 W	88,4	96	101	95	3,2
300 VA	765 VA	30,7 W	90,7	120	96	113	4,6
400 VA	942 VA	38,2 W	91,2	120	111	131	5,3
500 VA	1115 VA	43,5 W	91,7	120	116	131	5,9
630 VA	1480 VA	48,1 W	92,4	150	115	163	8
750 VA	1945 VA	54 W	93,4	150	125	163	9,4
1000 VA	2950 VA	60,9 W	94,3	150	145	163	12
1500 VA	4625 VA	73,6 W	95,1	180	140	190	17,6
2000 VA	6300 VA	82,3 W	95,9	180	160	190	19,7

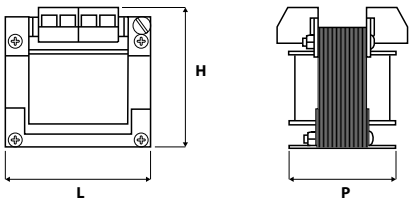


Single-Phase Safety
Transformers

- Control transformers compliant with IEC 96.2 (IEC 61558-1 and IEC 61558-2-8) standards.
- Dual primary voltage options: 220-380 or 230-400.
- Nominal secondary output: 0-12-24V.
- Class F insulation.
- Maximum ambient temperature : 45°C.
- IP00 protection rating.
- Angular fixing bracket made of zinc-plated tropicalized steel.
- Impregnated with Class F varnish and oven-dried.
- Safety transformers can be used in hospital installations or humid environments, providing intrinsic safety both in terms of insulation class and low secondary voltage.

It is possible to use the 0/12/24V secondary to power two separate loads of the same power at 12V (e.g., two halogen lamps). The power of each load should be half of the total transformer power.

Power	Loss	Dimensions			Weight
		L	P	H	
25 VA	6,8 W	75	70	87	1,0
40 VA	8,7 W	75	80	87	1,2
63 VA	12,8 W	84	80	96	1,6
100 VA	17,9 W	96	80	106	2,2
160 VA	19,7 W	96	105	106	3,6
250 VA	28,3 W	120	100	125	4,9
400 VA	37,8 W	120	130	125	7,4
630 VA	47,9 W	150	130	150	10,5
1000 VA	58,7 W	180	135	180	14,1
1600 VA	73,8 W	180	180	180	20



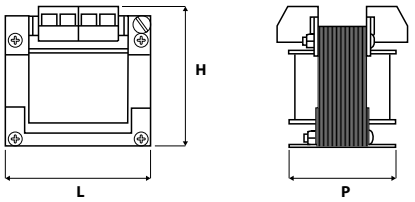
Single-Phase Isolation **Transformers**

- Control transformers compliant with IEC 96.2 (IEC 61558-1 and IEC 61558-2-4) standards.
- Dual primary voltage options: 220-380 or 230-400.
- Nominal secondary output: 0-110/0-110.
- Class F insulation.
- Maximum ambient temperature : 45°C.
- IP00 protection rating.
- Impregnated with Class F varnish and oven-dried.
- Power rating from 25VA to 2000VA.

Isolation transformers can be used in low-voltage installations, e.g., 220V for powering small motors or for network isolation (if regulations allow).

This series is constructed with two identical secondary windings of the same power, which can be connected in series or parallel for 110V or 220V operation under full load (for parallel connection : 0-0; 110-110).

Power	Loss	Dimensions			Weight
		L	P	H	
25 VA	6,8 W	75	70	87	1,0
40 VA	8,7 W	75	80	87	1,2
63 VA	12,8 W	84	80	96	1,6
100 VA	17,9 W	96	80	106	2,2
160 VA	19,7 W	96	105	106	3,6
250 VA	28,3 W	120	100	125	4,9
400 VA	37,8 W	120	130	125	7,4
630 VA	47,9 W	150	130	150	10,5
1000 VA	58,7 W	180	135	180	14,1
1600 VA	73,8 W	180	180	180	20



Single-Phase Safety
Transformers for DIN Rail Mounting

IP20

- **Frequency :** 50/60 Hz
- **Primary voltage :** Single/dual voltage up to a maximum of 1000V
- **Secondary voltage :** Nominal output of 0-12-24V
- **Standards :** IEC 96:2 (IEC 61558-1 and IEC 61558-2-8), IP20
- **Maximum ambient temperature :** 45°C
- **Insulation :** Class F
- **Enclosure :** Polyamide (PA) with physical separation between the primary and secondary windings
- **Varnishing :** The transformer is impregnated with Class H varnish and oven-dried (under vacuum or atmospheric pressure).

Transformers
with Waterproof Box

IP66

- **Standards :** IEC 96:2 (IEC 61558-1 and IEC 61558-2-8)
- **Maximum ambient temperature :** 45°C
- **Insulation :** Class F
- **Enclosure :** Polyamide (PA) with physical separation between the primary and secondary windings
- **Bracket :** Zinc-plated tropicalized steel angular fixing bracket
- **Terminal Block :** Polyamide (PA) with screw connections
- **Varnishing :** The transformer is impregnated with Class H varnish and oven-dried (under vacuum or atmospheric pressure)

Waterproof Box : *Made of polycarbonate (PC) with 4 screws for closure, Class 2, IP66 protection rating, IK07 impact resistance. Inlet and outlet connections are made via cable glands.*

Single-Phase Power Column
Transformers

- Power transformers compliant with IEC 14.8 standards.
- Single voltage primary, maximum 1000V.
- Maximum secondary voltage: 1000V.
- Insulation : Class F.
- Maximum ambient temperature : 45°C.
- IP00 protection rating.
- Impregnated with Class H varnish and oven-dried.
- Magnetic core made of grain-oriented and low-loss laminations.

Note : Upon request, it is possible to add an electrostatic screen between the primary and secondary, connected to a grounding terminal.

Power	Perte	Efficiency %	Dimensions			Weight	Fig
			L	P	H		
1,5 KVA	74 W	95	160	155	210	16,8	1-2
2 KVA	98 W	95,2	200	134	260	17,9	1-2
2,5 KVA	121 W	95,2	200	134	260	19	1-2
3 KVA	128 W	95,8	200	144	260	22,5	1-2
4 KVA	163 W	95,9	200	154	260	25,8	1-2
5 KVA	180 W	96,4	200	164	260	30,3	1-2
6 KVA	231 W	96,2	240	160	310	36	1-2
8 KVA	262 W	96,7	240	190	310	47,8	1-2
10 KVA	335 W	96,7	280	190	360	55,6	1-2
12 KVA	373 W	96,9	280	200	360	62,5	2
15 KVA	410 W	97,3	280	220	360	76	2
20 KVA	562 W	97,2	320	222	410	89,8	2

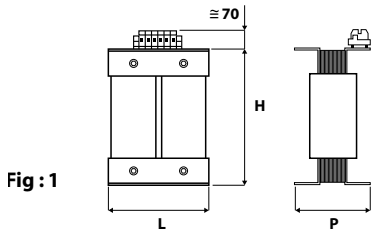


Fig : 1

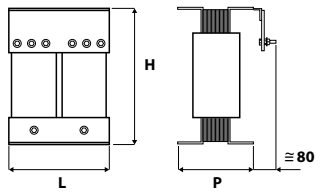


Fig : 2

Three-Phase Power
Transformers

- Three-phase transformers are classified as isolation transformers according to IEC 96.1 (IEC 61558-1) and IEC 61558-2-4 standards for up to 5KVA, and IEC 61558-2-4 standards.
- Single voltage primary, maximum 1000V.
- Single voltage secondary, maximum 1000V.
- Insulation : Class F.
- Maximum ambient temperature : 45°C.
- IP00 protection rating.
- Impregnated with Class H varnish and oven-dried.
- Low-loss magnetic core (1.5 W/Kg).
- Grain-oriented laminations for power ratings exceeding 6KVA.
- Star/Delta/Zigzag connections.

Note : Upon request, it is possible to add an electrostatic screen between the primary and secondary, connected to a grounding terminal.

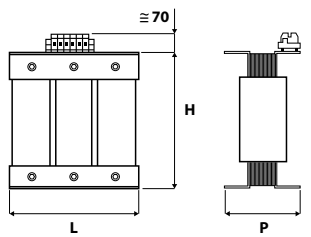


Fig : 1

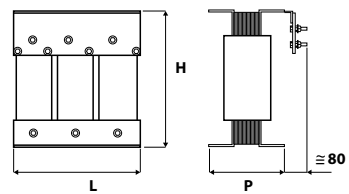


Fig : 2

Power	Loss	Efficiency %	Dimensions			Weight	Fig
			L	P	H		
50 VA	9 W	82	120	70	110	1,7	1
100 VA	16 W	84	140	75	135	3,2	1
200 VA	24 W	88	140	90	135	5	1
300 VA	32 W	89,3	180	90	160	6	1
400 VA	40 W	90	180	100	160	7,5	1
500 VA	47 W	90,6	180	110	160	9,2	1
1000 VA	73 W	92,7	180	120	160	12,3	1
1500 VA	106 W	92,9	240	130	250	18,1	1
2000 VA	128 W	93,6	240	140	250	21,6	1
2500 VA	165 W	93,4	300	134	250	28	1
3000 VA	184 W	93,9	300	144	260	32,5	1
4000 VA	217 W	94,5	300	154	260	38,7	1-2
5000 VA	256 W	94,9	300	164	260	43,9	1-2
6 KVA	260 W	95,6	360	170	310	47,8	1-2
8 KVA	320 W	96	360	180	310	56	1-2
10 KVA	370 W	96,3	360	190	310	64,2	1-2
12 KVA	410 W	96,5	360	200	310	72	1-2
15 KVA	520 W	96,5	420	200	360	81	1-2
18 KVA	590 W	96,7	420	210	360	91,6	1-2
20 KVA	600 W	97	420	230	360	106	1-2
25 KVA	754 W	96,9	480	212	310	126	1-2
30 KVA	838 W	97,2	480	222	410	141	2
40 KVA	1102 W	97,2	540	280	460	188	2
50 KVA	1321 W	97,4	540	300	460	224	2
60 KVA	1364 W	97,7	540	330	460	272	2
70 KVA	1668 W	97,6	600	325	410	326	2
80 KVA	1822 W	97,7	600	335	610	354	2
90 KVA	1880 W	97,9	600	340	610	372	2
100 KVA	2156 W	97,8	600	350	610	395	2

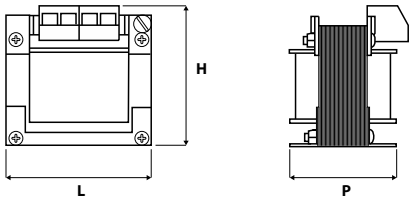
Single-Phase
Auto-Transformers

- Single-phase auto-transformer with a ratio of 110-220, built according to IEC 96.1 or IEC 989 standards for up to 1000VA, and IEC 14.8 for higher power ratings.

- Insulation class : F.
- IP00 protection rating.
- Tropicalized zinc-plated steel bracket.
- Impregnated with Class F varnish and oven-dried.
- **Power rating :** From 1KVA to 50KVA.

Power	Loss	Efficiency %	Dimensions			Weight	Fig
			L	P	H		
300 VA	24 W	92	96	111	95	7,9	1
400 VA	30 W	92,5	120	81	113	8,8	1
500 VA	38 W	92,4	120	101	113	12,7	1
750 VA	48 W	93,6	120	111	113	15,6	1
1000 VA	60 W	94	120	136	113	19,7	1
1500 VA	82 W	94,5	150	125	163	26,6	1
2000 VA	104 W	94,8	150	145	163	35,2	1
2500 VA	120 W	95,2	180	120	190	38,4	1
3000 VA	137 W	95,4	180	130	190	44,6	1
4000 VA	171 W	95,7	180	150	190	57	1
5 KVA	151 W	96,9	200	134	260	18,6	2
6 KVA	187 W	96,8	200	134	260	19,6	2
8 KVA	207 W	97,4	200	154	260	25,6	2
10 KVA	244 W	97,6	200	164	260	29,5	2
12,5 KVA	315 W	97,5	240	160	310	35,2	2
15 KVA	372 W	97,5	240	170	310	39,7	2
20 KVA	415 W	97,9	240	190	310	50	2
25 KVA	534 W	97,8	280	190	360	57,6	2
30 KVA	600 W	98	280	210	360	68,5	2

Fig : 1



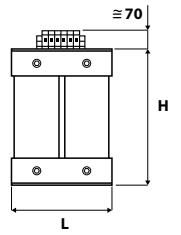


Fig : 2

Notes

TRANSFORMERS

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