



FROM TURKEY TO ALL WORLD

Transformers & Electric Technologies



Dr.
TRAFO

ETM

Elektrik & Mühendislik

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Dr.
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Who We Are?

ETM
MÜHENDİSLİK
ENGINEERING

Who We Are?

ETM Engineering is a leading manufacturer of Dr. TRAFO transformers, catering to a wide range of applications. Since 2004, we have been at the forefront of high voltage installation and electricity, successfully completing numerous significant projects. Our experienced and senior teams stay abreast of technological advancements and continually improve their skills, enabling us to develop and implement new and alternative solutions.

In addition to our transformer production, ETM Engineering exports medium voltage electrical parts, low voltage components, cables, and various other electrical items, demonstrating our commitment to quality and innovation on a global scale.

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What do we produce

ETM Engineering is a leading manufacturer of Dr. TRAFO transformers, renowned for their quality and reliability. Our transformers are not only crafted to meet stringent standards but are also produced on request, ensuring they precisely fit our clients' needs. Additionally, our transformers undergo rigorous testing to ensure they meet our high standards for performance and safety. With a steadfast commitment to precision and customer satisfaction, ETM Engineering guarantees dependable solutions that stand the test of time.



**Hermetically Sealed Oil
Immersed Transformer**



**Medium Power Oil Immersed
Transformer**



**Oil Immersed Transformer
With Conservator Tank**



Special Transformers

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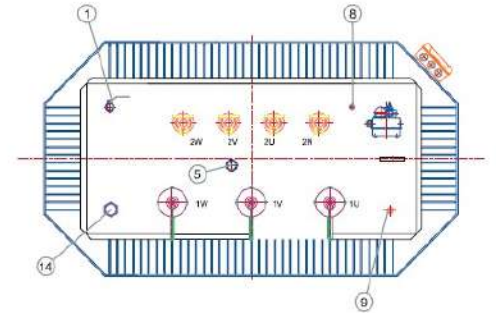
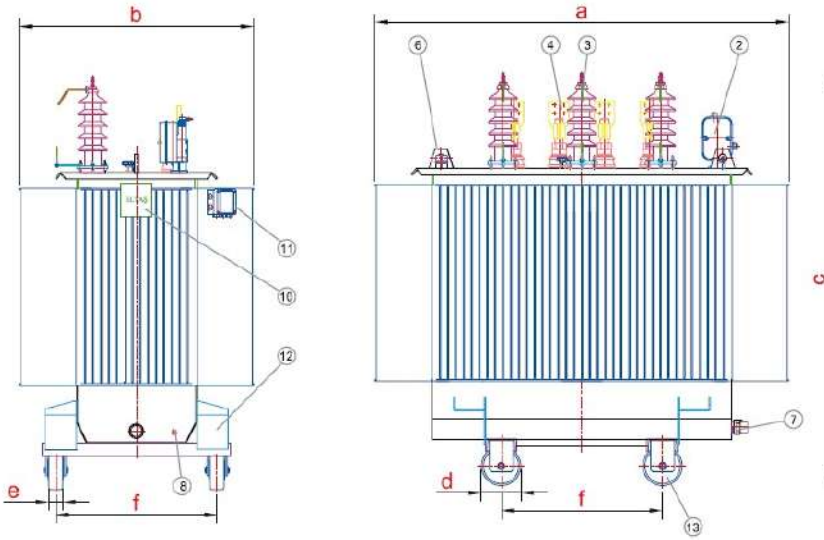


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DISTRIBUTION TRANSFORMERS

distribution transformers can change the input and output voltages up to 36 kV voltage level with capacity of 5000kVa power in desired ratios. The heat generated during operation is maintained and cooled at the normal temperature level with transformer oil. This type of transformer can be examined under two main headings as hermetic and conservator tank:



- 1) Oil filling valve, 2) Hermetic relay 3) High voltage bushing 4) A/9 low voltage bushing 5) Empty voltage adjustment mechanism, 6) Relief ear, 7) Tank oil, discharge valve, 8) Grounding bolt, 9) Thermometer pocket, 10) name plate, 11) Terminal box 12) Jack foot, 13) Wheel



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Technical data: 100 to 2500 kVA LV/HV Aluminum Wound 50 Hz.

*Oil Immersed Hermetically Sealed Type
Distribution Transformer*

Rated power P_N kVA	Max. voltage U_m kV	Impedance voltage (at 75°C) $U_{k\%}^{(1)}$ (%)	No-load losses $P_o^{(1)}$ W	Load losses (at 75°C) $P_k^{(1)}$ W	Sound-level L_{WA} dB	Dimensions (mm)						Weight (kg)
						a	b	c	d	e	f	
100	12	4	320	1750	59	1060	800	1175	-	-	520	670
	24	4	320	1750	59	1080	800	1250	-	-	520	670
	36	4.5	380	1950	56	1150	800	1360	-	-	520	790
160	12	4	460	2350	62	1180	825	1250	-	-	520	950
	24	4	460	2350	62	1180	825	1320	-	-	520	960
	36	4.5	520	2550	59	1180	825	1450	-	-	520	970
200	12	4	550	2760	64	1180	920	1300	-	-	520	1100
	24	4	550	2760	64	1180	920	1370	-	-	520	1125
	36	4.5	650	3000	61	1200	920	1470	-	-	520	1200
250	12	4	650	3250	65	1070	880	1210	-	-	520	970
	24	4	650	3250	65	1060	880	1280	-	-	520	960
	36	4.5	780	3500	62	1480	910	1420	-	-	520	1160
315	12	4	780	3850	67	1150	890	1210	-	-	520	1050
	24	4	780	3850	67	1150	890	1280	-	-	520	1080
	36	4.5	930	4100	64	1500	920	1420	-	-	520	1300
400	12	4	930	4600	68	1120	915	1360	125	40	670	1235
	24	4	930	4600	68	1155	915	1420	125	40	670	1275
	36	4.5	1120	4900	65	1520	950	1550	125	40	670	1495
500	12	4	1100	5450	69	1430	950	1490	125	40	670	1400
	24	4	1100	5450	69	1510	950	1560	125	40	670	1410
	36	4.5	1250	5650	66	1480	980	1680	125	40	670	1700
630	12	4	1300	6500	70	1530	950	1490	125	40	670	1720
	24	4	1300	6500	70	1510	950	1560	125	40	670	1750
	36	4.5	1450	6650	67	1480	980	1680	125	40	670	1885
800	12	6	1500	850	72	1760	1125	1530	160	50	820	2310
	24	6	1500	8500	72	1670	1030	1610	160	50	820	2310
	36	6	1750	8700	68	1715	1030	1730	160	50	820	2330
1000	12	6	1700	10500	73	1780	1150	1570	160	50	820	2490
	24	6	1700	10500	73	1740	1150	1605	160	50	820	2475
	36	6	2000	10500	68	1750	1150	1760	160	50	820	2510
1250	12	6	2100	13000	74	1900	1310	1700	160	50	820	2930
	24	6	2100	13000	74	1990	1310	1740	160	50	820	2980
	36	6	2250	13000	69	1860	1240	1850	160	50	820	3035
1600	12	6	2600	17000	76	1920	1270	2020	160	50	820	4000
	24	6	2600	17000	76	1940	1290	2030	160	50	820	3900
	36	6	2800	17000	71	2000	1320	2100	160	50	820	4200
2000	12	7	3000	21000	79	2250	1300	2180	200	70	1070	4980
	24	7	3000	21000	79	2285	1350	2190	200	70	1070	4930
	36	7	3000	21000	714	2285	1350	2290	200	70	1070	5200
2500	12	7	3600	28000	81	2250	1285	2290	200	70	1070	5350
	24	7	3600	28000	81	2250	1285	2335	200	70	1070	5400
	36	7	3800	28000	76	2250	1285	2435	200	70	1070	5660

*1. These values are related to the Nominal voltages and currents under naturally cooled conditions ONAN.
These values are sample figures.*

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Trafo - Kablo ve Sigorta Tablosu

GÜÇ kVA	ANMA AKIMLARI				Y.G. SİGORTA				A.G. BARA mm ²	A.G. ANAKABLO (TRAFO KABLOLARI)			TERMİK MANYETİK OTOMATİK ŞALTER		AKIM TRF. VE A.metre	ANA SAYAÇ A	Sabit KOND. (kVAR)
	04 kV	10,5 kV	15 kV	36 kV	7,2 kV A	10,5kV A	15kV A	36kV A		Yeraltı mm ²	Hava mm ²	Cinsi	Nominal Akım	Termik Bobin			
50	72	2,75	1,93	0,96	6	6	6	6		4x16	4x16	YYY	3x80	63-80	- , 3 x100	3 x100	2
100	144	5,5	3,85	1,9	16	16	10	6	40x3	3x35+16	3x50+25	YYY	3x160	125-160	3x200/5	x/5	3
160	213	8,8	6,16	3,1	25	20	16	10	40x3	3x70+35	3x95+50	YYY	3x250	200-250	3x250/5	x/5	5
200	289	11	7,7	3,8	25	20	16	10	40x3	3x120+70	3x150+70	YYY	3x300	250-300	3x400/5	x/5	6
315	455	17,32	12,13	6,07	30	25	20	16	40x3	3x185/95	2(3x95+50)	YYY	3x500	400-500	3x500/5	x/5	10
400	578	22	15,41	7,7	50	40	30	16	40x5	3x240/120	2(3x150+70)	YYY	3x600	480-600	3x600/5	x/5	12,5
									BAKIR BARA		ALÜM. BARA						
500	723	27,5	19,26	9,63		63	50	20	40x10	40x10	50x10		3x800	700-800	3x800/5	x/5	15
630	910	34,6	24,3	12,15	63	50	40	30	50x10	50x10	60x10		3x1000	800-1000	3x1000/5	x/5	20
800	1156	44	30,82	15,4	80	63	50	30	60x10	60x10	80x10		3x1200	1000-1400	3x1200/5	x/5	25
1000	1445	55	38,53	19,2	100	80	63	40	80x10	80x10	100x10		3x1600	1400-1600	3x1600/5	x/5	30
1250	1804	68,73	48,15	24,08	125	100	80	50	100x10	100x10	2(80x10)		3x2000	1600-2150	3x2000/5	x/5	40
1600	2312	88	61,6	30,8	160	125	100	63	2(80x10)	2(80x10)	2(100x10)		3x2500	2150-2500	3x2500/5	x/5	50
2000	2890	110	77	32	180	160	125	63		2(100/10)	2(100/15)		3x3000	2500-3000	3x3000/5	x/5	60
2500	3613	138	96	40	200	180	125	80		3(100/10)	3(100/15)		3x4000	3000-4000	3x4000/5	x/5	75

Dağıtım Transformatörlerinin Teknik Özellikleri

Yüksek Gerilim: 15 kV'a kadar

GÜÇ kVA	KAYIPLAR		Boşta Akım %	Kısa Devre Gerilim %UK	Cos φ =1		BOYUTLAR (mm)					AĞIRLIKLAR		
	Boşta W	Yükte (75 °C) W			Verim %	Gerilim Düşümü %e	A Boy mm	B En mm	C Yüks. mm	Kh Kazan Yüks.	Tekerlek arası	Aktif Kısım (kg)	Yağ (kg)	Toplam (kg)
50	190	1100	2,3	4	97,48	2,25	1000	653	1343	811		225	140	486
100	320	1750	2,1	4	97,97	1,81	1000	671	1408	876	520	385	160	665
160	460	2350	1,9	4	98,27	1,53	1006	766	1453	921		500	190	831
250	650	3250	1,6	4	98,46	1,37	1100	836	1583	991		632	240	1055
400	930	4600	1,5	4	98,63	1,22	1176	1016	1695	1103		880	310	1450
500	1100	5500	1,4	4	98,69	1,17	1475	1038	1650	1138		1050	355	1736
630	1300	6500	1,4	4	98,77	1,10	1743	1048	1760	1183	670	1210	410	2018
800	1550	8300	1,3	5	98,78	1,15	1613	1348	1835	1258		1500	535	2505
1000	1850	10000	1,2	5	98,82	1,12	1613	1468	1908	1331		1740	595	2895
1250	2200	12000	1,2	5	98,87	1,08	1660	1150	1968	1391	820	1970	715	3431
1600	2600	14500	1,1	6	98,94	1,08	1758	1480	2104	1441		2400	835	4054

Yüksek Gerilim: 36 kV'a kadar

GÜÇ kVA	KAYIPLAR		Boşta Akım %	Kısa Devre Gerilim %UK	Cos φ =1		BOYUTLAR (mm)					AĞIRLIKLAR		
	Boşta W	Yükte (75 °C) W			Verim %	Gerilim Düşümü %e	A Boy mm	B En mm	C Yüks. mm	Kh Kazan Yüks.	Tekerlek arası	Aktif Kısım (kg)	Yağ (kg)	Toplam (kg)
50	230	1050	2,76	4,5	97,47	2,26	1080	731	1535	891		290	170	559
100	380	2100	2,27	4,5	97,65	2,06	1150	794	1595	951		430	225	791
125	420	2400	2,14	4,5	98,79	2,00	1150	834	1640	996	520	475	260	889
160	480	2800	2,00	4,5	98,99	1,83	1150	854	1695	1051		555	285	1008
250	700	3500	1,80	4,5	98,13	1,70	1250	930	1827	1121		715	390	1319
400	900	5850	1,70	4,5	98,34	1,55	1276	1076	1931	1243		995	460	1712
500	1250	6750	1,60	4,5	98,42	1,44	1813	1098	1949	1253	670	1140	525	2052
630	1350	8000	1,60	4,5	98,53	1,39	1823	1208	2012	1333		1290	600	2342
800	1520	9700	1,50	6	98,61	1,38	1903	1368	2021	1343		1600	754	2859
1000	1600	12200	1,40	6	98,63	1,36	1908	1400	2140	1461		1820	875	3414
1250	1950	14000	1,40	6	98,74	1,29	2043	1420	2240	1476	820	2140	1000	3981
1600	2350	16500	1,30	6	98,8	1,20	2055	1480	2335	1571		2485	1125	4720
2000	3000	21000	1,1	6	99,85	1,20	2300	2150	2350	ONAN		2550	920	4820
2500	3800	24000	1	6	99,85	1,11	2450	2200	2400	ONAN		3750	1150	6700



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Our customers

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Some of our customers who can be a reference to the quality of the service we offer





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