



› Transformadores de
Distribuição Herméticos

› Hermetically Sealed
Distribution Transformers

Transformadores de Distribuição de Energia
Energy Distribution Transformers



Este catálogo contém as características técnicas dos transformadores trifásicos de distribuição de 160 a 2500 kVA, herméticos, imersos em óleo mineral e para a instalação interior ou exterior.

São fabricados de acordo com a norma CEI 60076.

Tensões Normalizadas

- Alta tensão: até 36 kV;
Regulação $\pm 2 \times 2,5\%$ por comutador manobrável fora de tensão
- Baixa tensão: 420 V

Ligações

- Dyn5

Frequência

- 50 Hz (60 Hz em opção)

This catalogue shows the specifications of the three-phase distribution transformers mineral oil filled and hermetically sealed, for indoor or outdoor installation, from 160 to 2500 kVA.

They are in accordance with the IEC 60076 standard.

Standard Voltages

- High voltage: up to 36 kV;
Tapping range $\pm 2 \times 2,5\%$ by an off-circuit tap changer.
- Low voltage: 420 V

Connection symbols

- Dyn5

Frequency

- 50 Hz (optionally 60 Hz)





> Características Técnicas

> Technical Characteristics

Tensão mais elevada
Highest voltage | ≤ 24 kV

Potência / Rated power (kVA)		160	250	315	400	500	630	800	1000	1250	1600	2000	2500
Perdas em vazio / No-load losses	W	460	650	770	930	1100	1300	1550	1800	2150	2550	2900	3550
Perdas em carga / Load losses (75°C)	W	2350	3250	3900	4600	5500	6500	8200	10200	12100	14500	17500	21000
Tensão CC / Impedance voltage (75°C)	%	4,0	4,0	4,0	4,0	4,0	4,0	4,5	4,5	4,5	4,5	4,5	4,5
Corrente nominal (BT) / Rated current (LV)	A	219,9	343,7	433,0	549,9	687,3	866,0	1100	1375	1718	2199	2749	3437
Corrente CC (BT) / Short-circuit current (LV)	kA	5,5	8,6	10,8	13,7	17,2	21,7	24,4	30,6	38,2	48,9	61,1	76,4
Rendimento / Efficiency (75°C)													
Cos Φ = 1,0	50%	98,69	98,83	98,89	98,96	99,01	99,07	99,10	99,13	99,17	99,23	99,27	99,30
	75%	98,52	98,68	98,75	98,83	98,88	98,95	98,97	99,00	99,04	99,11	99,15	99,18
	100%	98,24	98,44	98,52	98,62	98,68	98,76	98,78	98,80	98,86	98,93	98,98	99,02
Cos Φ = 0,8	50%	98,36	98,54	98,62	98,70	98,76	98,84	98,88	98,91	98,97	99,04	99,09	99,12
	75%	98,14	98,35	98,43	98,53	98,60	98,69	98,72	98,74	98,81	98,88	98,94	98,98
	100%	97,80	98,05	98,15	98,27	98,35	98,45	98,48	98,50	98,58	98,67	98,73	98,77
Queda de tensão / Voltage drop (75°C)													
Cos Φ = 1,0	%	1,54	1,37	1,31	1,22	1,17	1,11	1,12	1,12	1,06	1,00	0,97	0,94
Cos Φ = 0,8	%	3,43	3,33	3,30	3,25	3,22	3,17	3,49	3,49	3,45	3,41	3,39	3,37
Potência sonora / Sound power level (L_{WA})	dB(A)	62	65	65	68	69	70	72	73	73	74	74	76

Tensão mais elevada
Highest voltage | 36 kV

Perdas em vazio / No-load losses	W	500	700	820	1000	1170	1400	1650	1900	2250	2650	3050	3650
Perdas em carga / Load losses (75°C)	W	2550	3600	4150	5050	5650	6650	8300	10400	12400	15800	18000	22500
Tensão CC / Impedance voltage (75°C)	%	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0
Corrente nominal (BT) / Rated current (LV)	A	219,9	343,7	433,0	549,9	687,3	866,0	1100	1375	1718	2199	2749	3437
Corrente CC (BT) / Short-circuit current (LV)	kA	4,4	6,9	8,7	11,0	13,7	17,3	22,0	27,5	34,4	44,0	55,0	68,7
Rendimento / Efficiency (75°C)													
Cos Φ = 1,0	50%	98,58	98,72	98,82	98,87	98,97	99,03	99,07	99,10	99,14	99,18	99,25	99,26
	75%	98,39	98,55	98,66	98,72	98,84	98,91	98,95	98,97	99,02	99,04	99,12	99,13
	100%	98,09	98,28	98,42	98,49	98,64	98,72	98,76	98,77	98,83	98,85	98,95	98,95
Cos Φ = 0,8	50%	98,22	98,40	98,53	98,59	98,71	98,78	98,84	98,88	98,93	98,97	99,06	99,07
	75%	97,99	98,18	98,33	98,40	98,55	98,64	98,68	98,71	98,77	98,80	98,90	98,91
	100%	97,62	97,85	98,03	98,11	98,30	98,40	98,45	98,46	98,54	98,56	98,68	98,69
Queda de tensão / Voltage drop (75°C)													
Cos Φ = 1,0	%	1,71	1,55	1,43	1,38	1,25	1,17	1,16	1,16	1,11	1,11	1,02	1,02
Cos Φ = 0,8	%	4,16	4,07	4,00	3,96	3,88	3,83	3,82	3,82	3,79	3,79	3,73	3,73
Potência sonora / Sound power level (L_{WA})	dB(A)	62	65	65	68	69	70	73	73	74	75	75	77



> Dimensões e Pesos

> Dimensions and Weight

Tensão mais elevada | ≤ 24 kV
Highest voltage

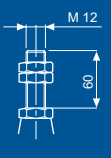
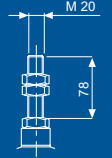
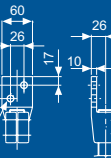
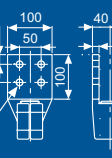
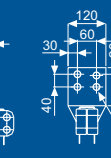
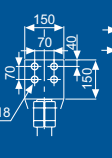
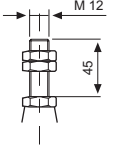
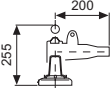
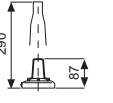
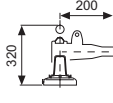
Tensão mais elevada | 36 kV
Highest voltage

Potência / Rated power (kVA) 160 250 315 400 500 630 800 1000 1250 1600 2000 2500

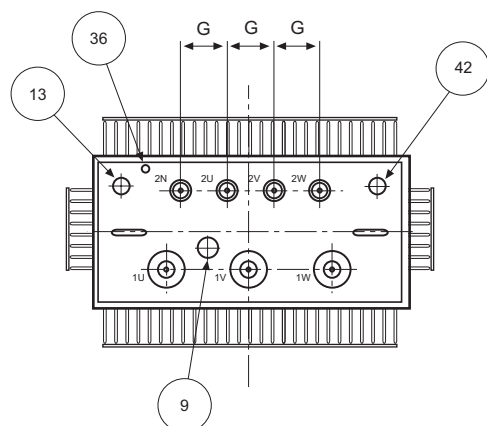
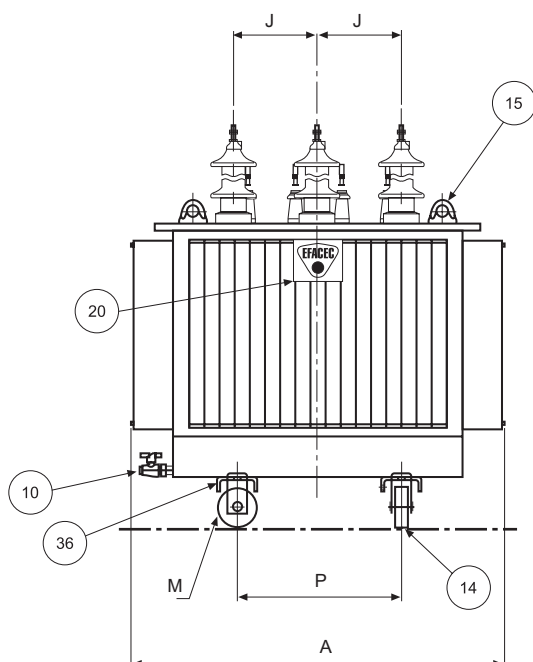
Tolerâncias dimensionais / Dimensional tolerances ± 5%

Dimensões / Dimensions (mm)		A	810	1174	1225	1275	1415	1425	1525	1625	1565	1925	2045	2230
		B	795	814	795	835	995	935	1075	1110	1075	1075	1215	1340
		C	1205	1205	1180	1305	1305	1455	1555	1560	1790	1840	2040	2315
		D	820	820	920	920	920	1070	1170	1175	1410	1455	1660	1930
		G	150	150	150	150	150	150	150	150	150	165	165	165
		H	185	210	180	180	260	260	340	340	340	355	355	234
		I	385	385	260	385	385	385	385	385	385	385	385	385
		J	265	265	265	265	265	265	265	265	265	265	265	265
		K	120	130	110	140	150	140	160	160	190	160	170	180
		L	140	150	140	160	170	145	155	155	185	145	155	160
		M	125	125	125	125	125	125	125	125	200	200	200	200
		N	40	40	40	40	40	40	40	40	70	70	70	70
		P	520	520	670	670	670	670	670	820	820	820	820	820
Peso do óleo / Oil weight		Kg	130	150	175	200	230	270	365	430	500	600	940	950
Peso total / Total weight		Kg	670	850	980	1140	1330	1530	1885	2220	2630	3310	4220	5160

		A	960	1275	1275	1375	1425	1574	1565	1625	1675	1975	2195	2330
		B	855	845	845	915	954	1015	1095	1095	1095	1135	1265	1380
		C	1505	1560	1560	1555	1605	1655	1755	1755	1990	2045	2235	2415
		D	920	975	975	860	1020	1070	1170	1170	1405	1660	1650	1930
		G	150	150	150	150	150	150	150	165	150	165	165	165
		H	185	215	180	320	265	265	340	340	340	360	360	234
		I	585	585	585	693	585	585	585	585	585	385	585	485
		J	340	340	340	340	340	340	340	340	340	340	340	340
		K	140	160	160	170	190	170	190	220	210	180	190	200
		L	170	190	190	200	205	185	195	215	215	175	185	180
		M	125	125	125	125	125	125	125	125	200	200	200	200
		N	40	40	40	40	40	40	40	40	70	70	70	70
		P	520	520	520	670	670	670	670	820	820	820	820	820
Peso do óleo / Oil weight		Kg	205	280	270	295	365	380	450	500	620	900	1160	1100
Peso total / Total weight		Kg	800	1060	1140	1305	1550	1760	2040	2400	2850	3770	4635	5450

Pormenor das travessias BT LV bushings detail						
	250 A	630 A	1000 A	2000 A	3150 A	4500 A
Pormenor das travessias AT HV bushings detail	 250 A					
	Optional On request	≤ 24 kV			36 kV	

Dimensões
Dimensions (mm)



- 1 - Travessia AT / HV bushing
- 2 - Travessia BT / LV bushing
- 9 - Comutador fora de tensão / Off-circuit tap changer
- 10 - Válvula de esvaziamento / Drain valve
- 13 - Bolsa para termómetro / Thermometer pocket
- 14 - Roda bidireccional / Bidirectional wheel
- 15 - Olhal de suspensão / Lifting lug
- 18 - Chapa de características / Rating plate
- 20 - Chapa de publicidade / Name plate
- 36 - Terminal de terra / Earthing terminal
- 42 - Bujão de enchimento / Filling hole



EFACEC DT - Transformadores de Distribuição de Energia, S.A.



Mod. DT 01 B 0202 B1