

MEDIUM POWER & DISTRIBUTION TRANSFORMER

SELECTION TABLE 20 KV SYSTEM VOLTAGE

SPLN D3.002-1: 2007

PHASE	CAPACITY	IMPEDANCE	NO LOAD LOSSES	LOAD LOSSES	OIL VOLUME	TOTAL WEIGHT	TOTAL DIMENSION		
							mm		
	kVA	%	Watt	Watt	Lt	Kg	L	W	H
3	25	4	75	425	90	320	870	545	1100
3	50	4	125	800	125	415	935	590	1140
3	100	4	210	1420	145	570	1010	675	1210
3	160	4	300	2000	210	770	1090	715	1300
3	200	4	355	2350	230	940	1170	725	1350
3	250	4	420	2750	250	1040	1345	735	1390
3	400	4	595	3850	305	1340	1425	815	1500
3	630	4	835	5400	380	1580	1550	945	1670

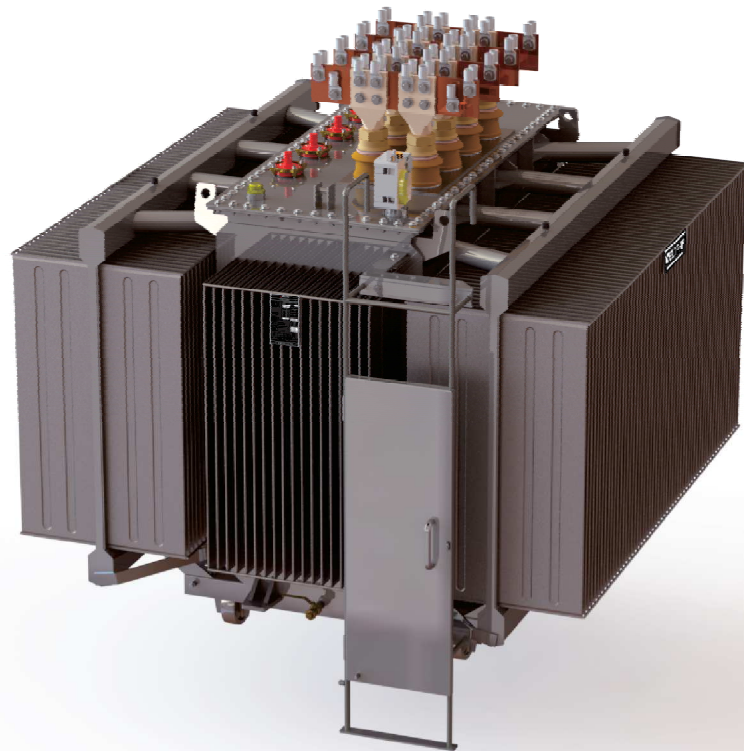
IEC 60076

PHASE	CAPACITY	IMPEDANCE	NO LOAD LOSSES	LOAD LOSSES	OIL VOLUME	TOTAL WEIGHT	TOTAL DIMENSION		
							mm		
Φ	kVA	%	Watt	Watt	Lt	Kg	L	W	H
3	400	4.0	930	4600	300	1290	1360	880	1400
3	630	4.0	1300	6500	410	1780	1460	940	1470
3	800	4.5	1700	9000	530	2250	1690	1140	1510
3	1000	5.0	1950	12000	580	2500	1750	1190	1555
3	1250	5.5	2000	15000	670	2860	1890	1310	1555
3	1600	6.0	2200	19000	890	3580	2000	1340	1700
3	2000	7.0	2700	25000	1000	4060	2080	1430	1730
3	2500	7.0	2800	28000	1430	5130	2240	1490	2120
3	3000	7.5	3250	31500	1590	5790	2440	1490	2170
3	3150	7.5	3400	32500	1550	6300	2450	1500	2150
3	4000	7.5	3600	35000	2150	8000	2650	1650	2400
3	5000	8.0	4300	44000	2700	8800	2700	1700	2500
3	6000	8.0	5200	45500	3400	10950	3100	1750	3000
3	7500	8.5	5800	47000	3650	12100	3200	1800	3200
3	8000	8.5	7200	55000	4400	15550	2950	4200	3250
3	10000	8.5	7700	60000	4300	16450	3100	4400	3350
3	12000	9.0	8200	70000	5100	18900	3250	4550	3450
3	13000	9.0	10100	80000	5550	20450	3250	4650	3550
3	15000	10	11500	90000	6450	22350	3450	4800	3600
3	16000	10	12500	100000	7150	26150	3600	4900	3750
3	18000	10	13400	115000	7400	26600	3850	5050	3750
3	20000	12	13900	130000	7600	27000	3950	5150	3750

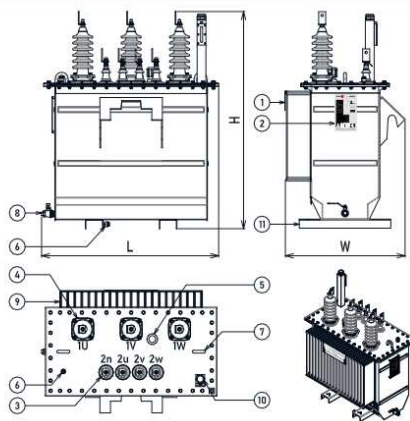
The above table is sample product offering.
Contact us for other ratings and specifications.

Note: The dimensions and weights are approximate.
Detail drawing will be issued after order.

The table above is a sample of product offerings.
Contact us for other ratings and specifications.

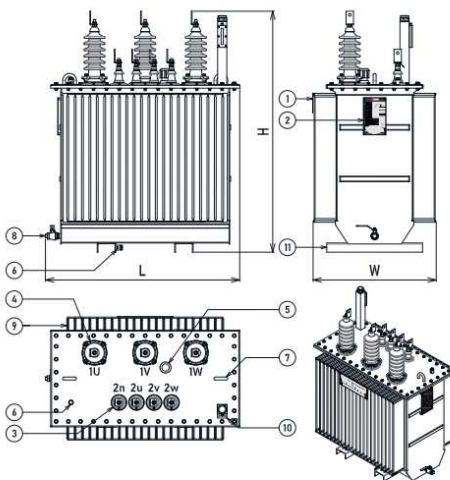


25 kVA up to 100 kVA



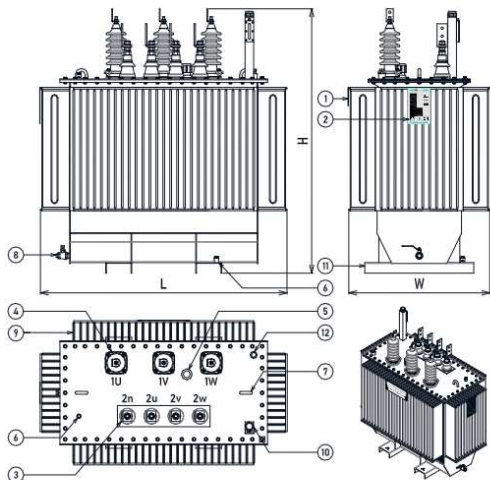
- No PARTS NAME**
- ① BRAND PLATE
 - ② RATING PLATE
 - ③ LV BUSHING
 - ④ HV BUSHING
 - ⑤ OFF CIRCUIT TAP CHANGER
 - ⑥ EARTHING TERMINAL
 - ⑦ LIFTING LUGS
 - ⑧ DRAIN VALVE
 - ⑨ RADIATOR
 - ⑩ OIL LEVEL, PRESSURE RELIEF & OIL FILLING
 - ⑪ CHANNEL BASE

160 kVA



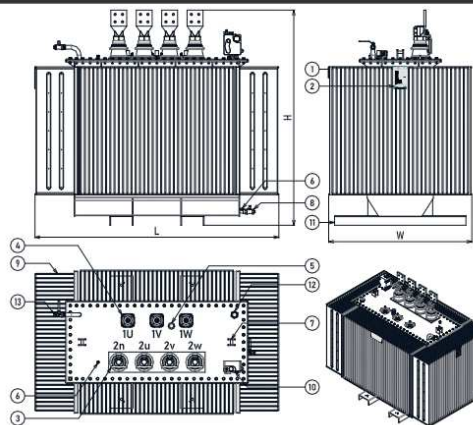
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 - ② RATING PLATE
 - ③ LV BUSHING
 - ④ HV BUSHING
 - ⑤ OFF CIRCUIT TAP CHANGER
 - ⑥ EARTHING TERMINAL
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 - ⑧ DRAIN VALVE
 - ⑨ RADIATOR
 - ⑩ OIL LEVEL, PRESSURE RELIEF & OIL FILLING
 - ⑪ CHANNEL BASE

200 kVA up to 400 kVA



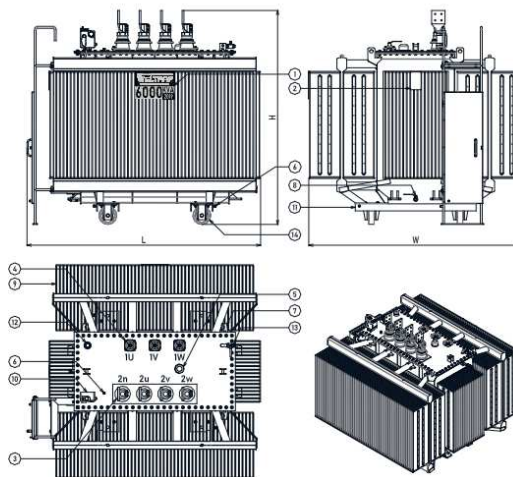
- No PARTS NAME**
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 - ② RATING PLATE
 - ③ LV BUSHING
 - ④ HV BUSHING
 - ⑤ OFF CIRCUIT TAP CHANGER
 - ⑥ EARTHING TERMINAL
 - ⑦ LIFTING LUGS
 - ⑧ DRAIN VALVE
 - ⑨ RADIATOR
 - ⑩ OIL LEVEL, PRESSURE RELIEF & OIL FILLING
 - ⑪ CHANNEL BASE
 - ⑫ THERMOMETER POCKET

630 kVA up to 3150 kVA



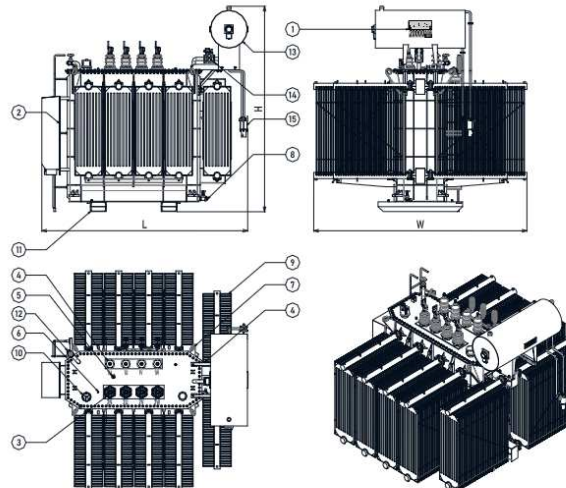
- No PARTS NAME**
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 - ② RATING PLATE
 - ③ LV BUSHING
 - ④ HV BUSHING
 - ⑤ OFF CIRCUIT TAP CHANGER
 - ⑥ EARTHING TERMINAL
 - ⑦ LIFTING LUGS
 - ⑧ DRAIN VALVE
 - ⑨ RADIATOR
 - ⑩ TRANSFORMER SAFETY DEVICE
 - ⑪ CHANNEL BASE
 - ⑫ PRESSURE RELIEF VALVE
 - ⑬ OIL FILTER VALVE

3500 kVA up to 6000 kVA



- No PARTS NAME**
- ① BRAND PLATE
 - ② RATING PLATE
 - ③ LV BUSHING
 - ④ HV BUSHING
 - ⑤ OFF CIRCUIT TAP CHANGER
 - ⑥ EARTHING TERMINAL
 - ⑦ LIFTING LUGS
 - ⑧ DRAIN VALVE
 - ⑨ RADIATOR
 - ⑩ TRANSFORMER SAFETY DEVICE
 - ⑪ CHANNEL BASE
 - ⑫ PRESSURE RELIEF VALVE
 - ⑬ OIL FILTER VALVE
 - ⑭ ROLLER

7500 kVA up to 20000 kVA



- No PARTS NAME**
- ① BRAND PLATE
 - ② RATING PLATE
 - ③ LV BUSHING
 - ④ HV BUSHING
 - ⑤ OFF CIRCUIT TAP CHANGER
 - ⑥ EARTHING TERMINAL
 - ⑦ LIFTING LUGS
 - ⑧ DRAIN VALVE
 - ⑨ RADIATOR
 - ⑩ PRESSURE RELIEF DEVICE
 - ⑪ SKID BASE
 - ⑫ OIL FILTER VALVE
 - ⑬ CONSERVATOR
 - ⑭ BUCHHOLZ RELAY
 - ⑮ BREATHER

MEDIUM POWER & DISTRIBUTION TRANSFORMER



SELECTION TABLE
20 kV SYSTEM VOLTAGE
SPLN D3.002-1: 2020

PHASE	CAPACITY	WINDING MATERIAL	IMPEDANCE	NO LOAD LOSSES	LOAD LOSSES	OIL VOLUME	TOTAL WEIGHT	TOTAL DIMENSION		
								L	W	H
	kVA		%	Watt	Watt	Lt	Kg	mm		
3	50	AL - CU	4	90	800	95	472	800	670	1130
3	50	AL - AL	4	90	800	82	470	771	640	1210
3	100	AL - CU	4	145	1420	132	665	860	710	1210
3	100	AL - AL	4	145	1420	131	672	841	700	1270
3	160	AL - CU	4	210	2000	188	907	920	740	1290
3	160	AL - AL	4	210	2000	220	1022	959	720	1400
3	250	AL - AL	4	300	2750	235	1145	1010	790	1465
3	400	AL - AL	4	430	3850	394	1751	1130	955	1555
3	630	AL - AL	4	600	5400	483	2365	1226	955	1750

PT. SYMPHOS ELECTRIC

Jl. Raya Agarindo No.10, Kel. Bunder Kec. Cikupa, Tangerang - Banten 15710

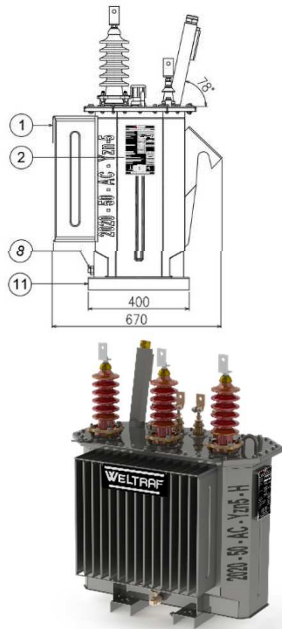
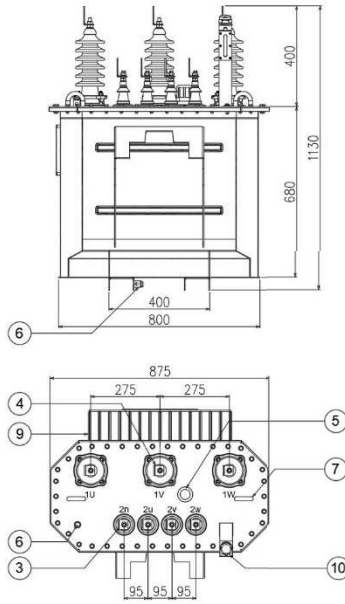
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Email: marketing@symphos-weltraf.com | Instagram : @symphosweltraf

www.symphoselectric.com

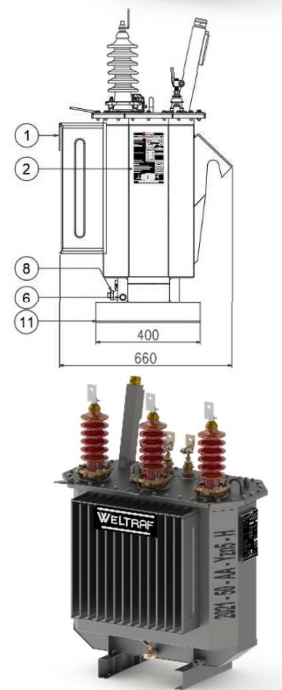
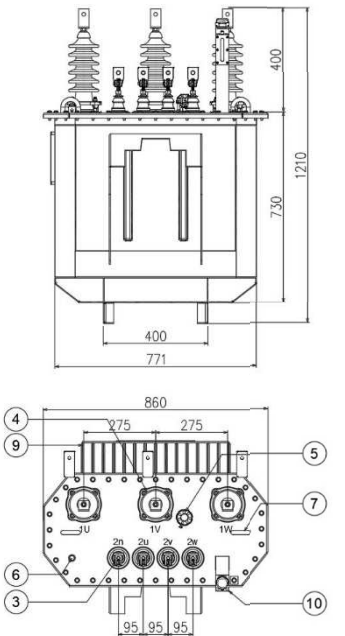
MADE IN INDONESIA

50 kVA AL-CU



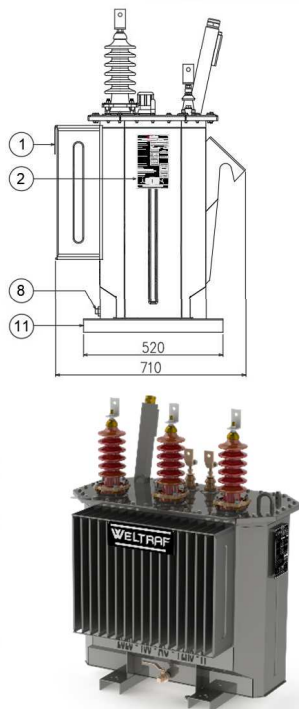
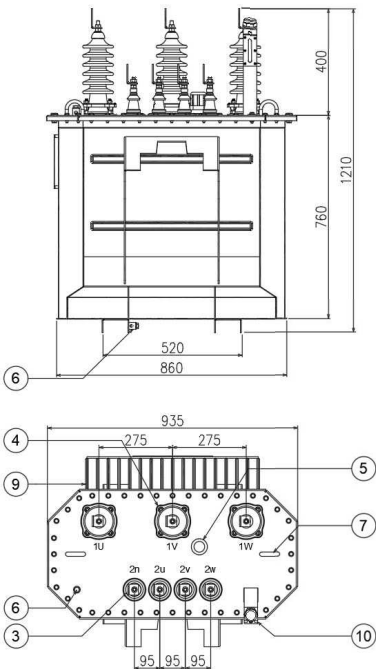
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①	NAME PLATE
②	RATING PLATE
③	LV BUSHING
④	HV BUSHING
⑤	OFF CIRCUIT TAP CHANGER
⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

50 kVA AL-AL



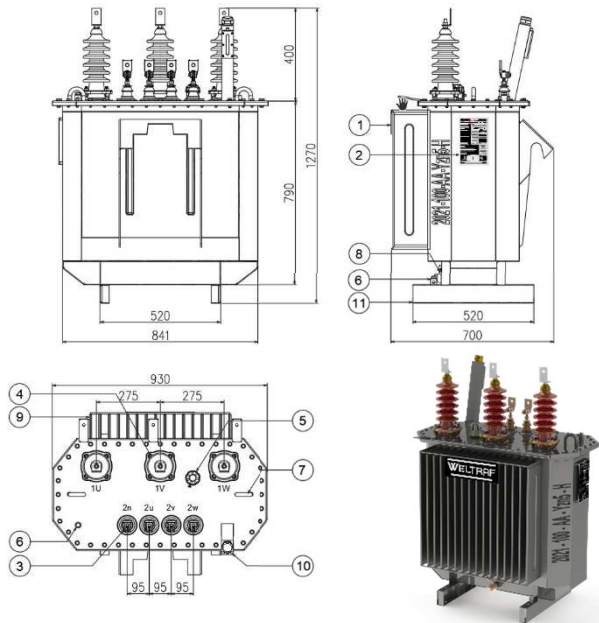
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②	RATING PLATE
③	LV BUSHING
④	HV BUSHING
⑤	OFF CIRCUIT TAP CHANGER
⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

100 kVA AL-CU



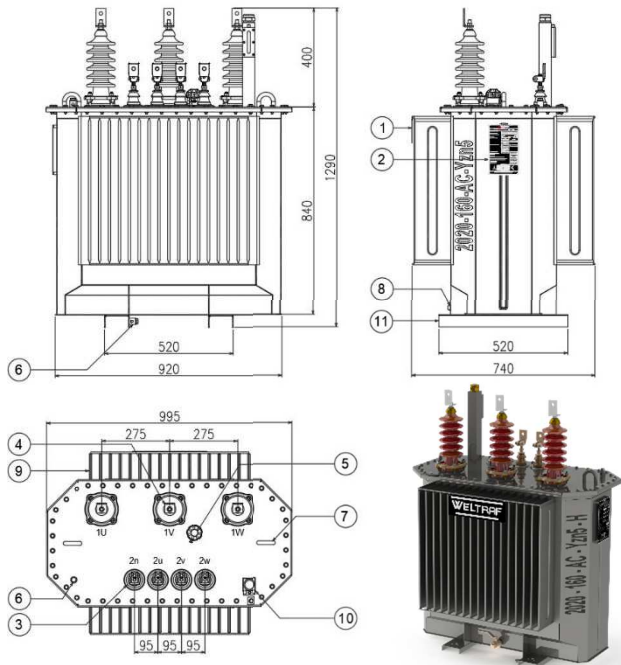
No	PARTS NAME
①	NAME PLATE
②	RATING PLATE
③	LV BUSHING
④	HV BUSHING
⑤	OFF CIRCUIT TAP CHANGER
⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

100 kVA AL-AL



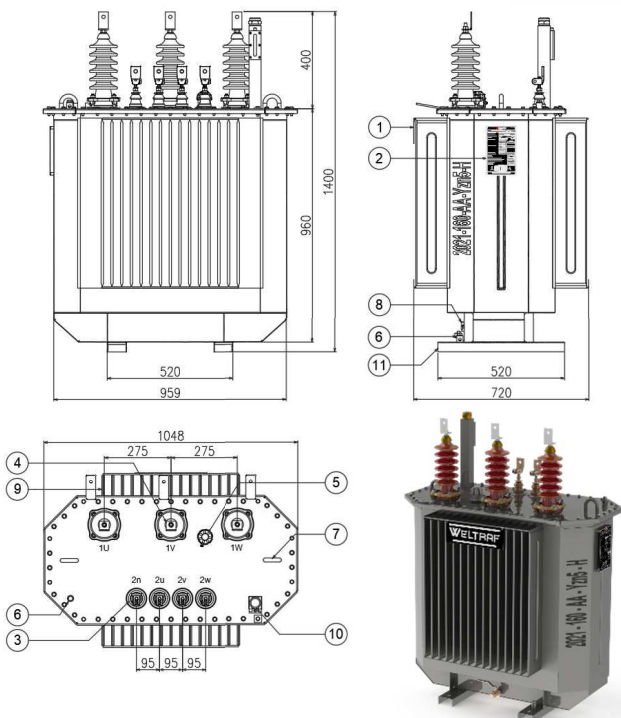
No	PARTS NAME
①	NAME PLATE
②	RATING PLATE
③	LV BUSHING
④	HV BUSHING
⑤	OFF CIRCUIT TAP CHANGER
⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

160 kVA AL-CU



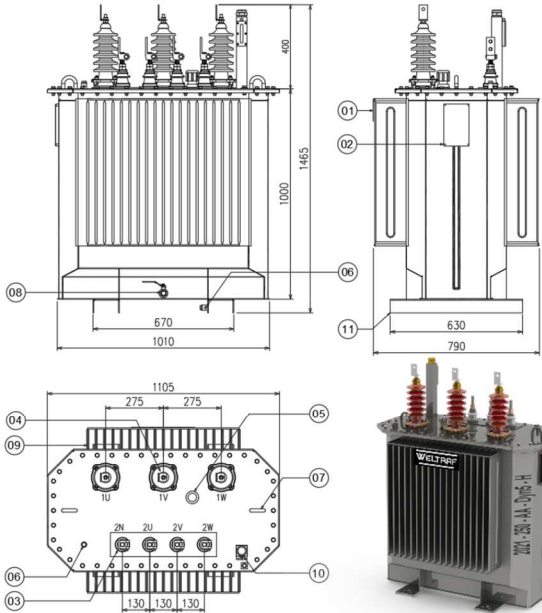
No	PARTS NAME
①	NAME PLATE
②	RATING PLATE
③	LV BUSHING
④	HV BUSHING
⑤	OFF CIRCUIT TAP CHANGER
⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

160 kVA AL-AL



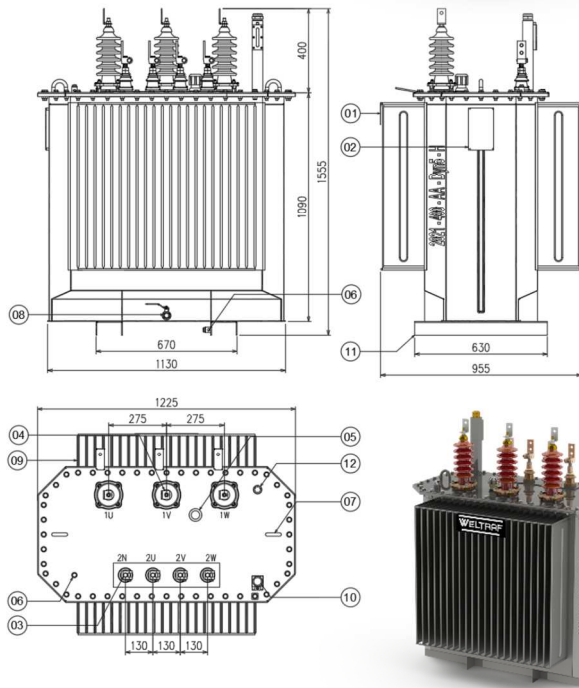
No	PARTS NAME
①	NAME PLATE
②	RATING PLATE
③	LV BUSHING
④	HV BUSHING
⑤	OFF CIRCUIT TAP CHANGER
⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

250 kVA AL-AL



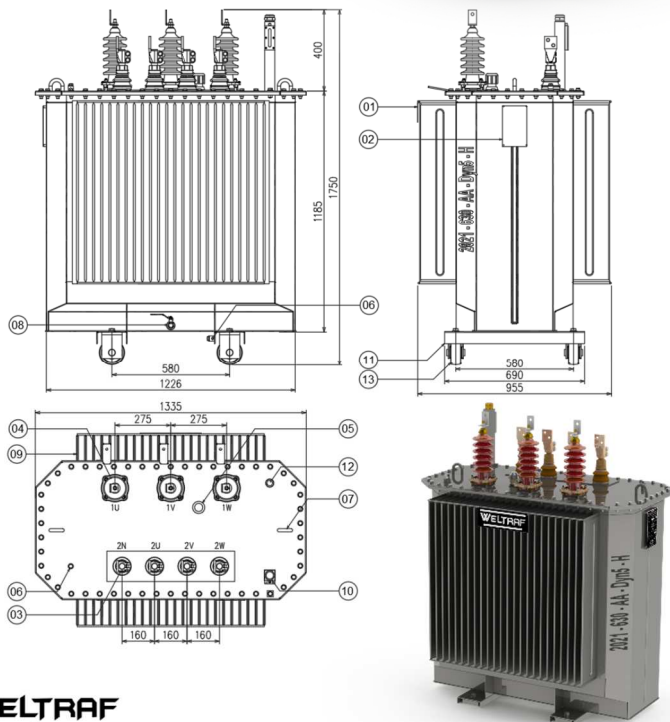
No	PARTS NAME
①	NAME PLATE
②	RATING PLATE
③	LV BUSHING
④	HV BUSHING
⑤	OFF CIRCUIT TAP CHANGER
⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

400 kVA AL-AL



No	PARTS NAME
①	NAME PLATE
②	RATING PLATE
③	LV BUSHING
④	HV BUSHING
⑤	OFF CIRCUIT TAP CHANGER
⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

630 kVA AL-AL



No	PARTS NAME
①	NAME PLATE
②	RATING PLATE
③	LV BUSHING
④	HV BUSHING
⑤	OFF CIRCUIT TAP CHANGER
⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	SKID BASE
⑫	POCKET THERMOMETER
⑬	ROLLER

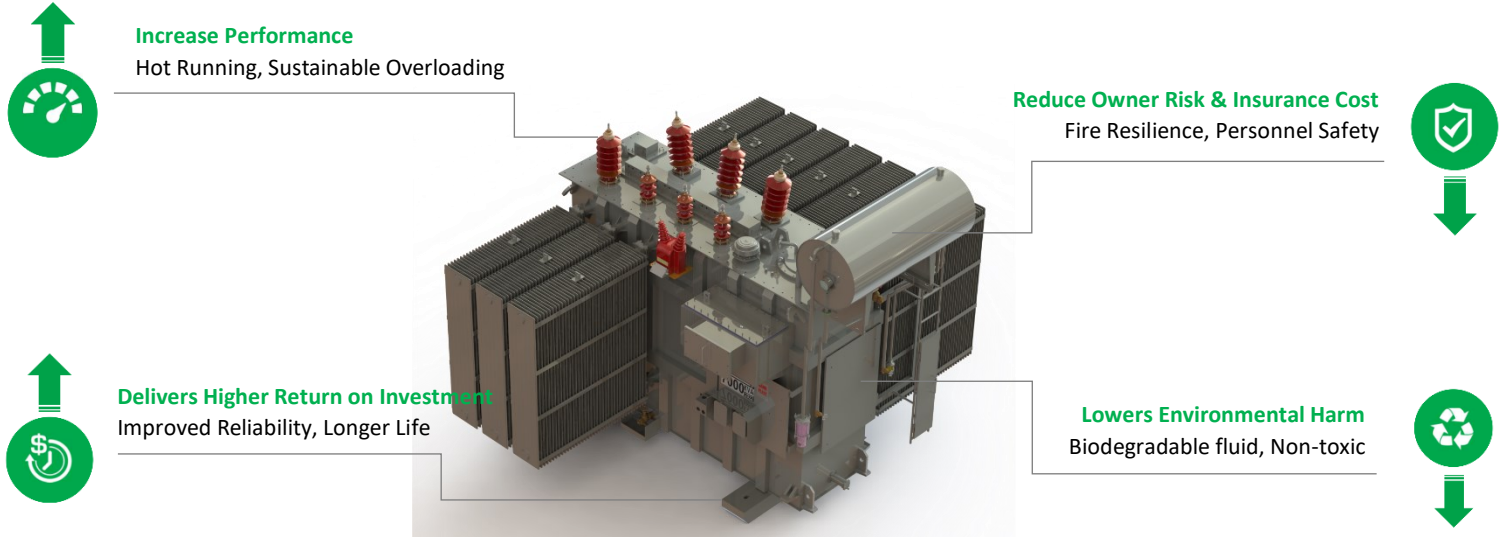


SAFER, GREENER, MORE RELIABLE TRANSFORMERS

WITH ESTER OIL

Why ESTER OIL

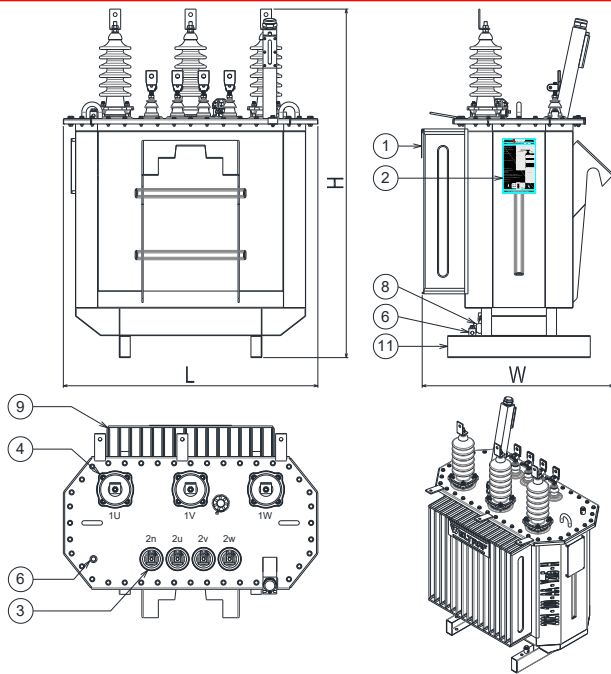
When a transformer is filled with ESTER oil instead of mineral oil, it...



Synthetic vs Natural Esters

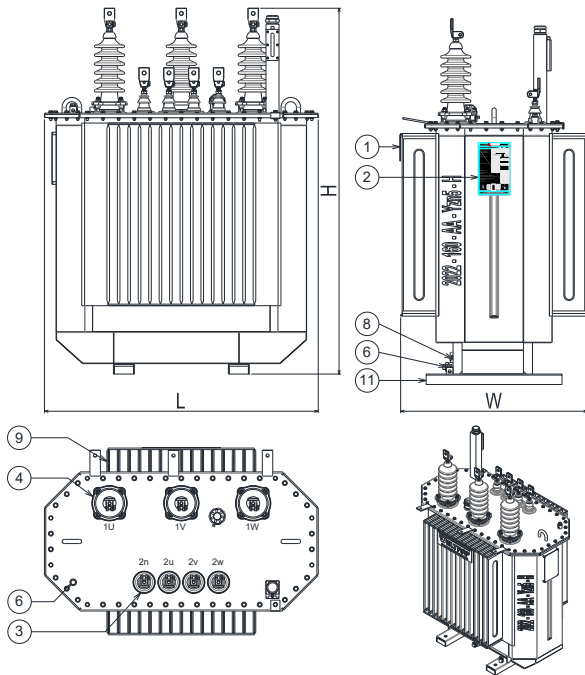
- **Oxygen Stability**
 - Natural ester suitable for sealed transformers only
 - Synthetic ester suitable for sealed and breathing transformers
- **Cold Temperature Performance**
 - Natural ester has higher pour points, more suitable for temperate climates
 - Synthetic ester suitable for cold climates (pour point -56°C)
- **Moisture Tolerance**
 - Natural ester high moisture tolerance
 - Synthetic ester very high moisture tolerance

25 kVA up to 100 kVA



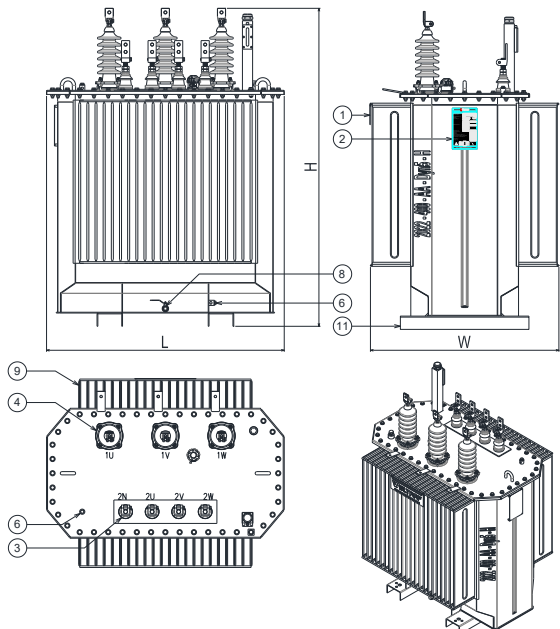
No	PARTS NAME
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④	HV BUSHING
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⑥	EARTHING TERMINAL
⑦	LIFTING LUGS
⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

160 kVA



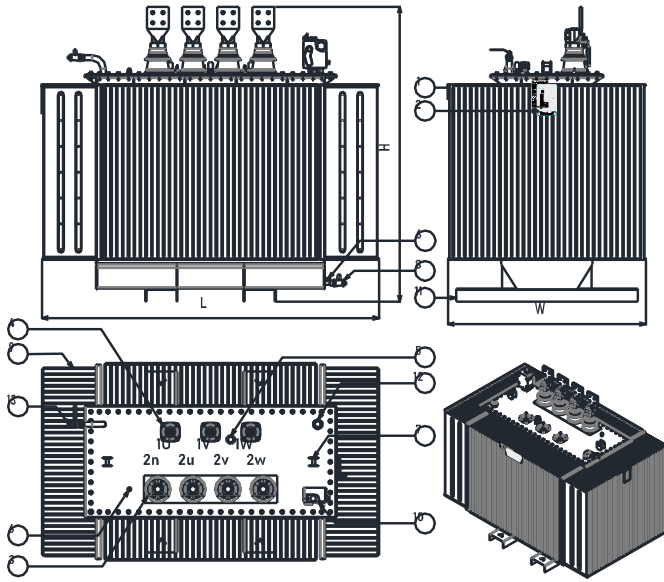
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⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE

200 kVA up to 400 kVA



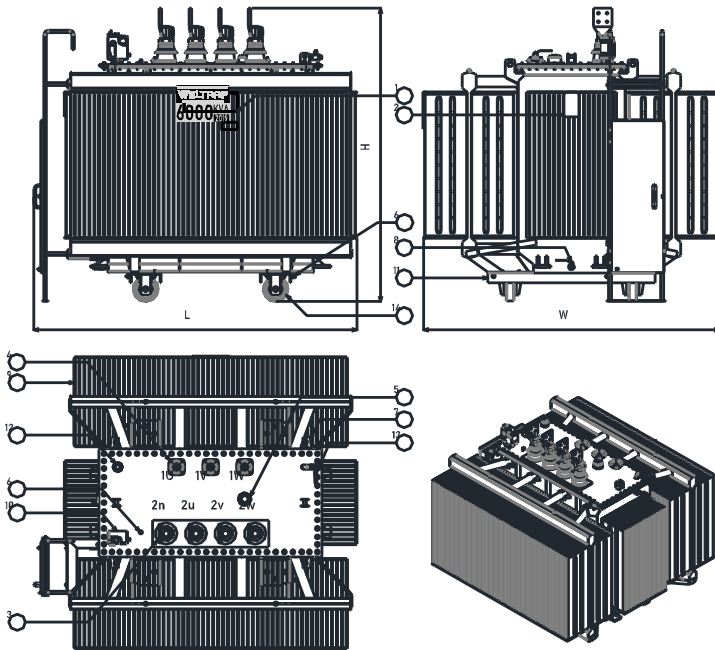
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⑧	DRAIN VALVE
⑨	RADIATOR
⑩	OIL LEVEL, PRESSURE RELIEF & OIL FILLING
⑪	CHANNEL BASE
⑫	THERMOMETER POCKET

500 kVA up to 3150 kVA



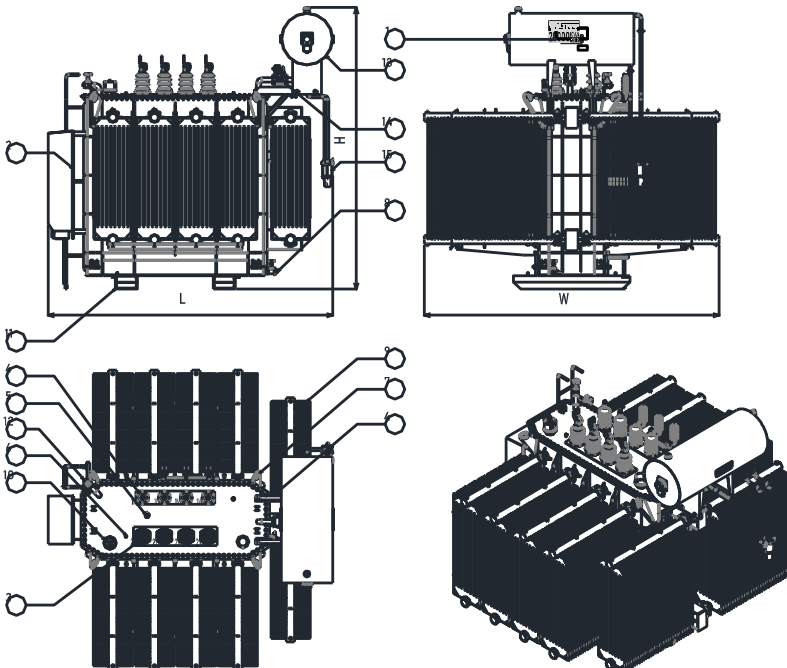
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|----|---------------------------|
| ① | BRAND PLATE |
| ② | RATING PLATE |
| ③ | LV BUSHING |
| ④ | HV BUSHING |
| ⑤ | OFF CIRCUIT TAP CHANGER |
| ⑥ | EARTHING TERMINAL |
| ⑦ | LIFTING LUGS |
| ⑧ | DRAIN VALVE |
| ⑨ | RADIATOR |
| ⑩ | TRANSFORMER SAFETY DEVICE |
| ⑪ | CHANNEL BASE |
| ⑫ | PRESSURE RELIEF VALVE |
| ⑬ | OIL FILTER VALVE |

3500 kVA up to 6000 kVA



- | No | PARTS NAME |
|----|---------------------------|
| ① | BRAND PLATE |
| ② | RATING PLATE |
| ③ | LV BUSHING |
| ④ | HV BUSHING |
| ⑤ | OFF CIRCUIT TAP CHANGER |
| ⑥ | EARTHING TERMINAL |
| ⑦ | LIFTING LUGS |
| ⑧ | DRAIN VALVE |
| ⑨ | RADIATOR |
| ⑩ | TRANSFORMER SAFETY DEVICE |
| ⑪ | CHANNEL BASE |
| ⑫ | PRESSURE RELIEF VALVE |
| ⑬ | OIL FILTER VALVE |
| ⑭ | ROLLER |

7500 kVA up to 20000 kVA



- | No | PARTS NAME |
|----|-------------------------|
| ① | BRAND PLATE |
| ② | RATING PLATE |
| ③ | LV BUSHING |
| ④ | HV BUSHING |
| ⑤ | OFF CIRCUIT TAP CHANGER |
| ⑥ | EARTHING TERMINAL |
| ⑦ | LIFTING LUGS |
| ⑧ | DRAIN VALVE |
| ⑨ | RADIATOR |
| ⑩ | PRESSURE RELIEF DEVICE |
| ⑪ | SKID BASE |
| ⑫ | OIL FILTER VALVE |
| ⑬ | CONSERVATOR |
| ⑭ | BUCHHOLZ RELAY |
| ⑮ | BREATHER |

SELECTION TABLE
20 kV SYSTEM VOLTAGE

SPLN D3.002-1: 2020 – ESTER OIL

PHASE	CAPACITY	IMPEDANCE	NO LOAD LOSSES	LOAD LOSSES	OIL VOLUME	TOTAL WEIGHT	TOTAL DIMENSION		
	kVA	%	Watt	Watt	Lt	Kg	mm		
							L	W	H
3	50	4	90	800	85	470	860	640	1210
3	100	4	145	1420	130	675	930	700	1270
3	160	4	210	2000	220	1025	1050	720	1400
3	250	4	300	2750	255	1233	1105	790	1485
3	400	4	430	3850	395	1750	1225	955	1555
3	630	4	600	5400	485	2365	1335	955	1750

IEC 60076 – ESTER OIL

PHASE	CAPACITY	IMPEDANCE	NO LOAD LOSSES	LOAD LOSSES	OIL VOLUME	TOTAL WEIGHT	TOTAL DIMENSION		
Φ	kVA	%	Watt	Watt	Lt	Kg	mm		
							L	W	H
3	100	4.0	400	1700	145	610	830	630	1150
3	160	4.0	480	2600	250	920	950	650	1350
3	200	4.0	500	3200	260	1010	990	690	1390
3	250	4.0	570	2400	270	1110	1000	710	1400
3	315	4.0	700	4300	290	1190	1210	810	1400
3	400	4.0	850	5000	300	1290	1360	880	1400
3	500	4.0	950	5800	380	1520	1400	910	1440
3	630	4.0	1100	7000	410	1780	1460	940	1470
3	800	4.5	1250	9500	530	2250	1690	1140	1510
3	1000	5.0	1450	12550	580	2500	1750	1190	1555
3	1250	5.5	1550	17000	670	2860	1890	1310	1555
3	1600	6.0	2200	19000	890	3580	2000	1340	1700
3	2000	7.0	2700	25000	1000	4060	2080	1430	1730
3	2500	7.0	2800	28000	1430	5130	2240	1490	2120
3	3000	7.5	3250	31500	1590	5790	2440	1490	2170
3	3150	7.5	3400	32500	1550	6300	2450	1500	2150
3	3500	7.5	4000	38500	1980	7000	2570	1600	2230
3	4000	7.5	4300	43000	2150	8000	2650	1650	2400
3	4500	8.0	4950	44500	2450	8400	2690	1680	2450
3	5000	8.0	5450	45500	2700	8800	2700	1700	2500
3	6000	8.0	5800	48500	3400	10950	3100	1750	3000
3	7500	8.5	7250	60600	3650	12100	3200	1800	3200
3	8000	8.5	7800	65000	4400	15550	2950	4200	3250
3	10000	8.5	8500	70000	4300	16450	3100	4400	3350
3	12500	9.0	11250	85000	5100	18900	3250	4550	3450
3	13000	9.0	11700	88500	5550	20450	3250	4650	3550
3	15000	10	12100	94500	6450	22350	3450	4800	3600
3	16000	10	13200	102000	7150	26150	3600	4900	3750
3	18000	10	14000	117000	7400	26600	3850	5050	3750
3	20000	12	14500	130000	7600	27000	3950	5150	3750

The above table is sample product offering.
Contact us of other ratings and specifications.

Note: The dimensions and weights are approximate.
Detail drawing will be issued after order.