



Asia Trafo Co., Ltd

SPECIFICATION OF OIL IMMERSED TRANSFORMER

TRANSFORMER SPECIFICATION

160 kVA. 3Ph. 50 Hz.

22000 - 416/240 V. Dyn 11

HERMETICALLY SEAL TYPE

88/99 หมู่ 12 ซ. สุนทรวิภาค ถ.บางพลี - ตำหนุ่ ต.บางปลา อ.บางพลี จ.สมุทรปราการ 10540 Tel. (02) 346-0980-7 Fax. (02) 346-0978-9

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TECHNICAL DATA FOR 160 kVA, 22000-416 V. Dyn11

No.	Description	Unit	Guaranteed Value		
1	Manufacture's name	-	ASIA TRAF0 CO.,LTD.		
2	Country of origin	-	Thailand		
3	Applied standard	-	IEC 60076		
4	Type of Transformer	-	Hermetically seal type (Corrugate fins)		
5	Rated power	kVA	160		
6	Number of phase	-	3		
7	Rated frequency	Hz	50		
8	Rated high voltage	V	22000		
9	Rated low voltage	V	416		
10	Conection symbol	-	Dyn11		
11	Rated high current	A	4.20		
12	Rated low current	A	222.06		
13	Primary tapping :	-	Off-circuit tap changer		
14	Number of steps of high voltage tapping	Step	4 Steps 5 Position		
15	Percent of rated voltage of each tapping	%	±2 x 2.5%		
16	Type of oil preservation system	-	Completely oil fill system		
17	Operation duty	-	Continuous operation		
18	Cooling System	-	ONAN		
19	Ambient	°C	50		
20	Max. temperature rise of winding, at full load	°C	55		
21	Max. temperature rise of top oil, at full load	°C	50		
22	Class of insulation	-	A (105°C)		
23	Noise level	dB(A)	≤ 47		
24	No-load current & Tolerance	% & %	0.770 % & +30%		
25	Short-circuit impedance at 75°C & Tolerance	% & %	4.00 & ±10		
26	No-load loss	W	260		
27	Load loss at 75°C	W	2000		
28	Efficiency at 75°C	: Full load unity power factor	%	98.61	
		: Full load 0.8 power factor	%	98.27	
		: 3/4 load unity power factor	%	98.86	
		: 3/4 load 0.8 power factor	%	98.58	
		: 1/2 load unity power factor	%	99.06	
		: 1/2 load 0.8 power factor	%	98.83	
29	Voltage regulation at	: Unity power factor	%	1.32	
		: 0.8 power factor	%	1.05	
30	Winding			HV.Winding	LV.Winding
	Material of winding		-	Copper	Copper
	Insulation material of wire		-	Polyvinyl formal	Kraft paper
	Full-wave impulse withstand voltage, or BIL		kV, peak	125	30
	Power-frequency test voltage, 1 min		kV, r.m.s	50	10
Construction of winding		-	Layer winding	Layer winding	
31	Core				
	Core silicon steel grade		-	Cold rolled grain oriented electrical steel	
Rev	Date	Prepared by	Checked by	Approved by	Signature
00	3/8/2563	วรกาญ๗๗	กิตติ	กิตติ	
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TECHNICAL DATA FOR 160 kVA, 22000-416 V. Dyn11

No.	Description	Unit	Guaranteed Value	
32	Transformer oil	-		
	Type of oil	-	Mineral oil (None PCB)	
	Oil dielectric breakdown	kV	≥55	
33	Bushings		HV.Bushing	LV.Bushing
	Applied standard	-	DIN 42531	DIN 42530
	Rated current	A	250	250
	Full-wave impulse withstand voltage, or BIL	kV, peak	125	30
	Low-frequency dry 1-minute test voltage	kV, r.m.s.	50	10
	Low-frequency wet 10 second test voltage	kV, r.m.s.	50	10
	Protection class	-	20NF	1N
	Color of glazing	-	Brown	Brown
	Stud thread size (Dia)	mm.	12	12
34	Terminal connectors		HV.Terminal	LV.Terminal
	Diameter range	mm.	Clamp (7.5-12.6)	PAD 12 mm.
	Number of circuit	-	1(35.95 mm ²)	4
35	Pressure relief value			
	Operating pressure	kg / cm ²	0.45	
	Flow rate at 1.03 Kg/cm ²	cc / sec	165200	
36	Color of tank	-	Gray (RAL 7036)	

Accessories

- HV & LV Bushing with terminal connectors
- Name plate with connection diagram
- Arcing horn
- Bird guard cap
- Off-circuit tap changer
- Thermometer pocket
- Oil drain and sampling valve
- Earthing terminal
- Lifting eyes on the cover
- Lifting lugs
- Oil level gauge
- Pressure relief device
- Buchholz relay with alarm&trip contacts
- Dehydrating breather with silica gel
- Other ... Factory standard

Routine test

- Measurement of voltage ratio and check of phase displacement
- Insulation resistance test
- Measurement of winding resistance
- Separated source voltage withstand test
- Induce over voltage withstand test
- Measurement of no-load loss and exciting current
- Measurement of short circuit impedance and load loss
- Oil dielectric strength test

Type tests

- Temperature - rise test (IEC 60076-2)
- Full wave lightning impulse test (IEC 60076-1 and IEC 60076-3)
- Measurement of no-load loss and current at 90% and 110 %
Of rated voltage (IEC 60076-1)

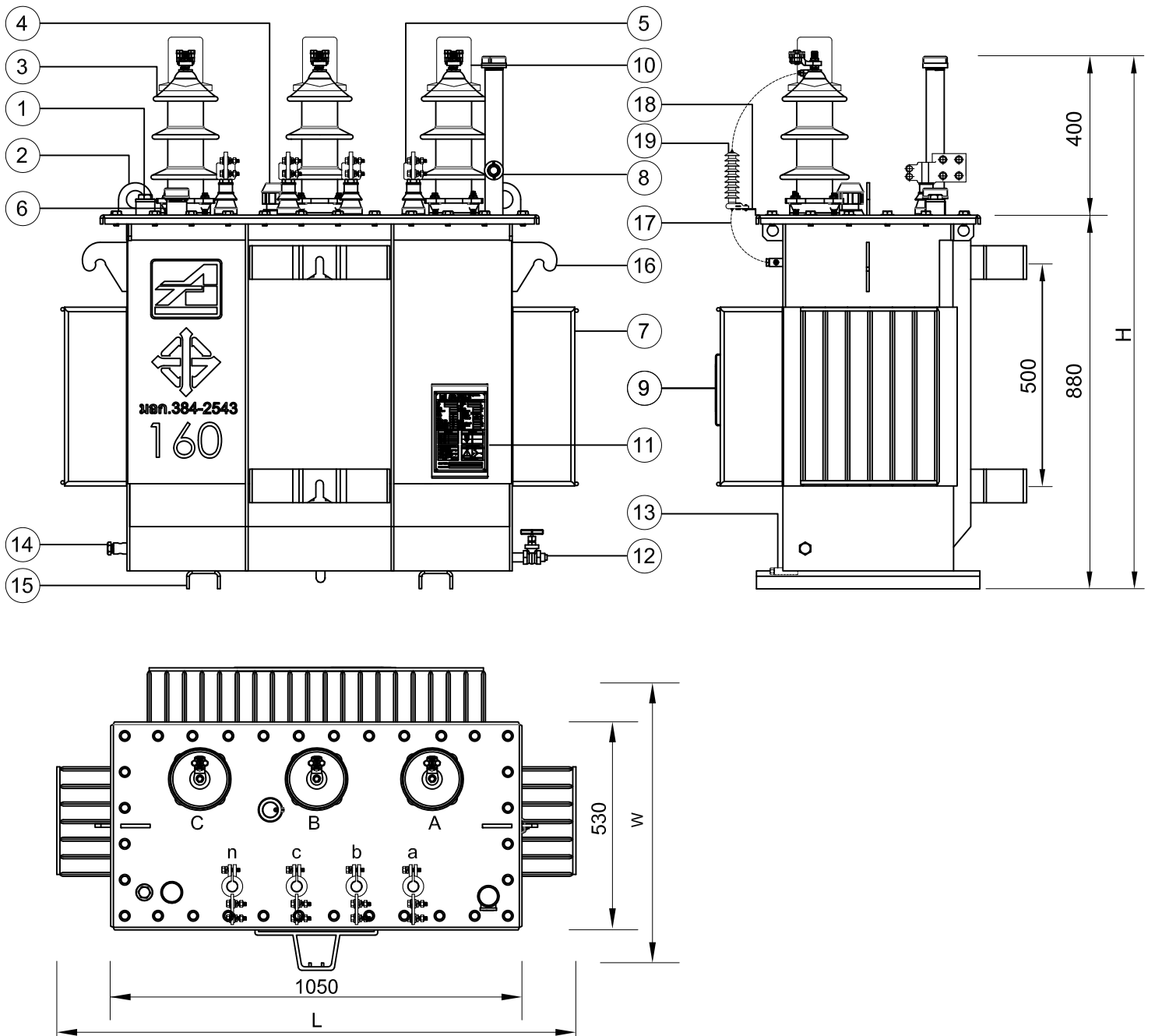
Special tests

- Short-circuit withstand test (IEC 60076-5)

with

without

Rev	Date	Prepared by	Checked by	Approved by	Signature
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LIST OF PART		
No.	PART NAME	Qty
1.	Thermometer pocket	1
2.	Lifting eye for cover	2
3.	HV.Bushing with terminal connectors	3
4.	Off load tap changer (ALUMINIUM)	1
5.	LV.Bushing with terminal connectors	4
6.	Pressure relief device	1
7.	Corrugated fins	3
8.	Oil level	1
9.	Manufactory plate	1
10.	Bird guard cap	3
11.	Nameplate with connection diagram	1
12.	Oil drain valve	1
13.	Sludge Drain Plug	1
14.	Earth terminal	1
15.	Sub base	2
16.	Lifting Lugs For Tank	2
17.	Flexible copper insulated ground lead	3
18.	Bracket for surge arrester	3
19.	Surge arrester (Polymer housing type)	3



ASIA TRAFKO CO.,LTD.

Project :

Tittle : OUTLINE DRAWING
 OIL IMMERSSED TRANSFORMER
 160 kVA 3Ph 50Hz 22000 - 416/240 V.
 TYPE : HERMETICALLY SEALED TANK

Dimension in millimeters			Weight	Oil
H	L	W	kgs	Litres
1280	1300	780	980	258

SPEC No. S-TR160-SC-22000-416/240

Signature		Date
Drawn By		
Checked By		
Approved By		