

Distribution Transformers

Product Catalog

Office

Central Park, APL Office Tower Lt. 10 Unit T.5,
Jl. Letjen S. Parman Kav. 28, Kel. Tanjung Duren Selatan, Kec. Grogol Petamburan, Jakarta Barat, DKI Jakarta 11470, Indonesia

Factory

Jl. Jati III Blok J7-3, Newton Techno Park, Lippo Cikarang, Kel. Serang, Kec. Cikarang Selatan, Kab. Bekasi, Jawa Barat 17550, Indonesia

Contact

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Transforming the Future of Energy

Indonesia’s leading manufacturer of power and distribution transformers



SINTRA is a market leader in the design and manufacturing of 1-phase and 3-phase oil-immersed distribution transformers up to 20,000 kVA and 33 kV.

Distribution transformers are essential components in the distribution system to adjust the voltage of electrical power to suitable levels for industrial, commercial, and/or residential use.

Depending on the customers' electrical needs, SINTRA designs and customizes the distribution transformers to any voltage level, power capacity, and technical standard necessary.

For Indonesia's electrical distribution system, distribution transformers are standardized to convert 20 kV to 400 V.



Product types for
PT. PLN (Persero)



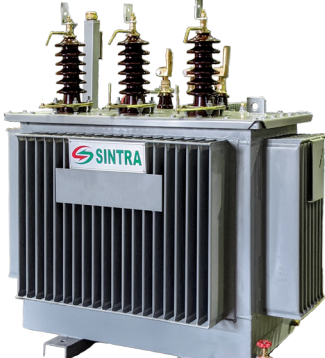
1-Phase 50 kVA CSP



3-Phase 50 kVA Yzn5



3-Phase 50 kVA YNyn0



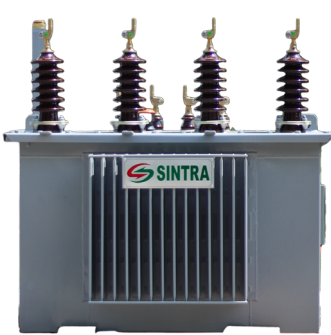
250 kVA



3-Phase 630 kVA



3-Phase 100 kVA Yzn5



3-Phase 100 kVA YNyn0



3-Phase 160 kVA Yzn5



3-Phase 2000 kVA



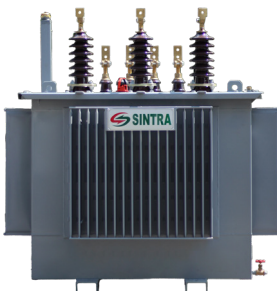
3-Phase 4000 kVA



5000 kVA



3-Phase 160 kVA YNyn0



3-Phase 250 kVA Dyn5

Core

The transformer core is composed of high quality cold-rolled grain-oriented silicon steel sheets.

SINTRA's cores boast exceptional properties like low iron loss, low noise, compact size, high mechanical strength, and excellent magnetic characteristics.

01. Strip-Wound Core

For application of 1-phase or 3-phase compact size transformers with low noise and excellent magnetic circuit characteristics.



02. Stacking Core

A mitered core, joined by 45-degree cut silicon steel sheets, with excellent mechanical strength and low iron loss. For the application of high capacity transformers.



03. Step-Lap Core

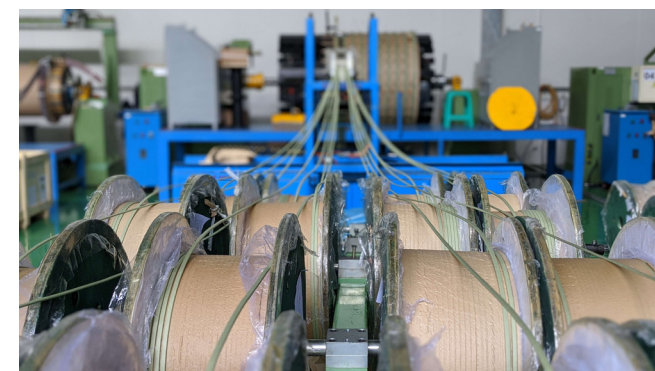
For applications of 1-phase or 3-phase core-type or shell-type transformers of high capacity and voltage. This type of core has high mechanical strength and allows for a smooth magnetic flux path to considerably minimize iron loss.



Windings

SINTRA windings have compact sizing, excellent heat transmission, low loaded loss, high lightning impulse resistivity, and exceptional anti-short circuit strength.

They are composed of high quality round magnetic wire, paper-insulated conductor, and copper or aluminum foil.



Accessories



01. Insulation

Pressboard, thermally upgraded insulating Kraft paper, high breakdown resistance transformer oil.

02. Bushings

High quality porcelain bushings with optional bushing wells and plug-in bushings upon request. This option allows cables to be inserted directly, with no live parts outside.

03. Clamp

Step-lap cores and stacking cores have different clamping arrangements. SINTRA's core clamps are manufactured in-house to be capable of withstanding strong axial electromagnetic force. This is critical in guaranteeing the safety of the transformer in an abnormal event of overload.

04. Standard Accessories

Name plate, rating plate, oil level indicator, oil temperature indicator, fill and drain valves, lifting lugs, tap changer, base roller or skid base.

05. Accessories for Conventional Tank

Conservator with breather, Buchholz relay, dial-type thermometer with alarm and tripping contacts, bushings cable box, elastimold epoxy resin bushing for HV side.

06. Accessories for Hermetically-Sealed Tank

Pressure relief device, pressure vacuum gauge, nitrogen filling valve, dial thermometer with alarm and tripping contacts, bushings cable box, elastimold bushing.

Testing



Quality control is exceptionally important to us. Despite our large production capacity, SINTRA ensures that all products pass routine tests as specified by customers standards.

Test items include, but are not limited to, the following:

- Turn ratio test
- Polarity test
- Copper loss (load loss) test
- Iron loss (no-load loss) test
- Transformer oil breakdown voltage test
- Measurement of no-load current (exciting current)
- Measurement of impedance
- Applied voltage test
- Induced over-voltage test
- Impulse voltage test
- Temperature rise test

Arrangement Drawings

	1Ø 50Hz 25 – 50 kVA 11.547 – 0.231 kV li-0
	1Ø 50Hz 15 – 50 kVA 20 – 0.231 kV li-0
	3Ø 50Hz 25 – 160 kVA 20 – 0.4 kV Yzn5
	3Ø 50Hz 200 – 630 kVA 20 – 0.4 kV Dyn5
	3Ø 50Hz 800 – 2500 kVA 20 – 0.4 kV Dyn5

	1Ø 50Hz 25 – 50 kVA 11.547 – 0.231 kV li-0
	3Ø 50Hz 15 – 50 kVA 20 – 0.231 kV li-0
	3Ø 50Hz 25 – 160 kVA 20 – 0.4 kV Dyn5
	3Ø 50Hz 200 – 2500 kVA 20 – 0.4 kV Dyn5

Table of Reference (SPLN D3)

1-Phase

Rated Voltage: 11.574 - 0.231 kV (SPLN D3.002-2 : 2008)

* Values are standard and for reference only

Rated Power	No-Load Loss	Loaded Loss @ 75°C	Total Losses	Impedance @ 75°C	Efficiency PF 1.0	Voltage Regulation PF 1.0	Overall Dimension			Oil Volume	Total Weight
							A Length	B Width	C Height		
(kVA)	(W)	(W)	(W)	(%)	(%)	(%)	(mm)	(mm)	(mm)	(L)	(kg)
25	70	370	440	2.50	98.27	1.50	600	695	1130	95	240
50	120	585	705	2.85	98.61	1.20	680	775	1220	125	360

3-Phase

Rated Voltage: 20 - 0.4 kV (SPLN D3.002-1:2020)

Rated Power	No-Load Loss	Loaded Loss @ 75°C	Total Losses	Impedance @ 75°C	Efficiency PF 1.0	Voltage Regulation PF 1.0	Overall Dimension			Oil Volume	Total Weight
							A Length	B Width	C Height		
(kVA)	(W)	(W)	(W)	(%)	(%)	(%)	(mm)	(mm)	(mm)	(L)	(kg)
50	90	800	890	4,00	98.25	1.67	910	680	1130	110	520
100	145	1420	1565	4,00	98.46	1.44	945	700	1180	127	690
160	210	2000	2210	4,00	98.64	1.27	1060	730	1270	235	1060
250	300	2750	3050	4,00	98.79	1.17	1290	770	1280	230	1080
400	430	3850	4280	4,00	98.94	1.04	1680	1010	1555	450	1980
630	600	5400	6000	4,00	99.06	0.93	1780	1045	1720	630	2760

3-Phase

Rated Voltage: 20 - 0.4 kV (SPLN D3.002-1 : 2007)

* Values are standard and for reference only

Rated Power	No-Load Loss	Loaded Loss @ 75°C	Total Losses	Impedance @ 75°C	Efficiency PF 1.0	Voltage Regulation PF 1.0	Overall Dimension			Oil Volume	Total Weight
							A Length	B Width	C Height		
(kVA)	(W)	(W)	(W)	(%)	(%)	(%)	(mm)	(mm)	(mm)	(L)	(kg)
25	75	425	500	4.00	98.57	1.77	840	580	1070	110	390
50	125	800	925	4.00	98.72	1.67	890	745	1080	135	450
100	210	1420	1630	4.00	98.88	1.49	970	770	1220	200	690
160	300	2000	2300	4.00	99.01	1.32	1060	740	1230	230	905
200	355	2350	2705	4.00	99.07	1.25	1070	745	1250	245	925
250	420	2750	3170	4.00	99.12	1.17	1260	750	1270	275	1140
315	500	3250	3750	4.00	99.17	1.11	1300	970	1380	360	1580
400	595	3750	4345	4.00	99.23	1.04	1320	1000	1470	450	1630
500	700	4550	5250	4.00	99.27	0.99	1370	1030	1580	640	2170
630	835	5400	6235	4.00	99.31	0.93	1450	1060	1630	760	2540
800	1000	6850	7850	4.00	99.33	0.95	1870	1080	1690	880	2850
1000	1100	8550	9650	4.00	99.36	0.98	1970	1090	1700	1030	3330
1250	1400	10600	12000	4.00	99.36	1.00	2230	1110	1830	1120	3760
1600	1680	13550	15230	4.00	99.37	1.02	2340	1150	1860	1280	4430
2000	1990	16900	18890	4.00	99.38	1.09	2400	1430	1920	1510	5100
2500	2350	21000	23350	4.00	99.40	1.08	2500	1450	1980	1700	5780



Table of Reference (IEC 60076)

3-Phase

Rated Voltage: up to 33 kV (IEC 60076)

* Values are standard and for reference only

3-Phase

Rated Voltage: up to 33 kV (IEC 60076)

* Values are standard and for reference only

Rated Power	No-Load Loss	Loaded Loss @ 75°C	Total Losses	Impedance @ 75°C	Efficiency PF 1.0	Voltage Regulation PF 1.0	Overall Dimension			Oil Volume	Total Weight
							A Length	B Width	C Height		
(kVA)	(W)	(W)	(W)	(%)	(%)	(%)	(mm)	(mm)	(mm)	(L)	(kg)
25	75	425	500	4.00	98.90	1.78	860	600	990	105	370
50	150	800	950	4.00	98.13	1.68	870	645	1060	115	390
100	300	1600	1900	4.00	98.13	1.68	880	785	1130	145	520
160	400	2000	2400	4.00	95.52	1.33	1080	725	1150	190	800
200	480	2500	2980	4.00	98.53	1.33	1180	840	1190	185	850
250	600	3000	3600	4.00	98.58	1.28	1310	865	1200	220	960
315	770	3900	4670	4.00	98.54	1.32	1420	935	1250	230	1100
400	930	46000	5530	4.00	98.64	1.23	1450	980	1380	265	1300
500	1100	5500	6600	4.00	98.70	1.18	1480	990	1410	320	1500
630	1300	6500	7800	4.00	98.78	1.11	1580	1060	1450	420	1610
800	1750	9100	10850	4.50	98.66	1.24	1700	1190	1470	590	2210
1000	2300	12100	14400	5.00	98.50	1.33	1980	1090	1670	810	290
1250	2500	15000	17500	5.50	98.60	1.35	2030	1090	1800	850	3070
1600	3000	18100	21100	6.00	98.68	1.31	2140	1340	1830	900	4000
2000	3600	21000	24600	7.00	98.78	1.29	2200	1410	2010	1020	4700
2500	4000	25000	29000	7.00	98.85	1.24	2400	1480	2200	1340	5470

Rated Power	No-Load Loss	Loaded Loss @ 75°C	Total Losses	Impedance @ 75°C	Efficiency PF 1.0	Voltage Regulation PF 1.0	Overall Dimension			Oil Volume	Total Weight
							A Length	B Width	C Height		
(kVA)	(W)	(W)	(W)	(%)	(%)	(%)	(mm)	(mm)	(mm)	(L)	(kg)
3000	3300	31000	34300	7.50	98.87	1.31	2650	1890	2280	1480	5600
3500	3800	35000	38800	7.50	98.90	1.28	2720	2200	2330	1550	6980
4000	4400	40000	44400	7.50	98.90	1.28	2740	2210	2610	1800	7200
5000	5500	45000	50500	8.00	99.00	1.22	2910	2660	3270	2500	10400
6300	6400	48000	54400	8.00	99.14	1.08	2950	2720	3370	3400	12700
8000	7500	59000	66500	8.00	99.17	1.06	3080	2980	3480	4100	13900
10000	9000	71000	80000	8.50	99.21	1.07	3320	3120	3520	4900	18500
12500	11000	83000	94000	9.00	99.25	1.07	3460	3300	3580	5300	20200
15000	13000	98000	111000	9.00	99.26	1.06	3680	3450	3650	5700	21500
18000	15000	120000	135000	10.00	99.26	1.17	4400	4000	3880	6100	25800
20000	16000	130000	146000	10.00	99.28	1.15	4650	4020	4020	6600	27700

