

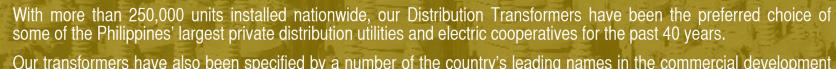


FIRST PHILEC INC. is the pioneer and leader in transformer solutions in the Philippines. It has been the preferred solutions provider to the country's power utilities, commercial and industrial businesses for more than 45 years. The company is also the largest manufacturer of amorphous transformers in Southeast Asia.

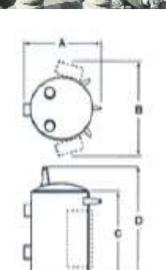
A member of the Lopez Group, FIRST PHILEC is the intermediate holding company of First Philippine Holdings Corporation (FPH) primarily for its manufacturing and technology-related investments. Through FIRST PHILEC, FPH intends to grow its investments in manufacturing to provide a more robust backbone to the country's economy—one that is founded on technological competitiveness and increased ability to add value to products and manufacturing services for the global market. FIRST PHILEC intends to achieve its growth by building on its core strength in operations excellence. With manufacturing as our core, we aim to engineer innovative industrial solutions.







Our transformers have also been specified by a number of the country's leading names in the commercial development and industrial sectors. Our products not only conform to international standards, but also withstand the test of time. Our designs conform to applicable standards of ANSI / IEEE and NEMA.



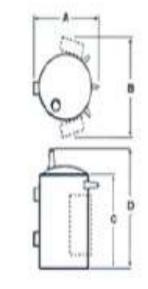


FIGURE 1

FIGURE 2

EXTERNAL FEATURES

HIGH VOLTAGE BUSHINGS. The cover-mounted and tank-wall mounted high voltage bushings are made of wet process porcelain suitable for both copper and aluminum conductors.

LOW VOLTAGE BUSHINGS. Single or double eyebolt or spade terminal made of wet process porcelain.

TANK AND COVER. Manufactured from hot-rolled steel sheets and pressure tested to ensure a leak-free enclosure. Grit blasted or chemically treated to remove every trace of scale, rust or oil for better paint adhesion. Outer and inner surfaces are primed with epoxy for rust prevention and the outer surface is coated with polyurethane.

PRESSURE RELIEF VALVE. Gradually releases excess pressure and designed for outdoor conditions.

TANK AND LOW VOLTAGE GROUNDING PROVISIONS. Provided to help prevent damage to the transformer during electrical surges.

EXTERNALLY OPERATED NO-LOAD TAP CHANGER.

Provides up to five (5) primary voltage settings for convenient changing of high voltage tap connection at no-load.

RADIATORS. Made of hot-rolled steel sheets these are provided for higher kVA units for added cooling surface.

INTERNAL FEATURES

MAXIMUM:

CORE COIL ASSEMBLY. Uses a superior transformer insulation system and is permanently centered in the tank using a close fitted steel frame. Materials used for our coils are wither Silicon-Iron for our Blue and Silver series or Amorphous Metal for our Gold line.

WINDING MATERIAL. Our distribution transformers use a combination of standard Copper-Aluminum or Copper-Copper winding materials.

INSULATING DIELECTRIC FLUID. The dielectric fluid used are either Mineral Oil or High Fire Point fluid.

COIL SUPPORT. We use compatible materials to hold the coil in place and restrain it during short-circuit conditions. Core clamps and clamp angles are also used to ensure that the core and windings are effectively secured even during mechanical stresses.

STANDARD TESTS

ROUTINE TESTS

Induced Potential Test

Transformer Turns Ratio (TTR) Test
Polarity Test
Winding Resistance Test
Insulation Resistance Test
Insulation Power Factor (IPF) Test
Open Circuit with Excitation Test
Short Circuit and Voltage Impedance Test
Applied Potential Test

TYPE TESTS

Temperature Rise Test Basic Impulse Level (BIL) Test

DISTRIBUTION TRANSFORMERS

STANDARD SPECIFICATIONS

kVA Ratings	10, 15, 25, 37.5, 50, 75, 100, 167, 250, 333, 500 (special), 667 (special)
Number of Phase	Single
Insulation/Cooling	Dielectric Fluid Immersed Self-Cooled
Di-Electric Fluid	Mineral Oil or High Fire Point Fluid
Core Materials	Silicon Steel (SiFe), Amorphous (AMDT)
Winding Temp Rise	65°C
Frequency	60 Hz
Taps	Externally operated. 2A2B x 2.5%, 1A3B x 2.5%, 0A4B (14.4, 13.8, 13.2, 12.87, 12.54 kV)
Winding Materials	Copper-Aluminum (Cu-Al), Copper-Copper (Cu-Cu) (special)
HV Bushings	Single or Double Bushing
LV Bushings	3 or 4
Applicable Standards	ANSI / IEEE, NEMA
Application	Outdoor
Mounting	Pole-mounted



FIRST PHILEC GOLD SERIES

Amorphous Metal Distribution Transformers (AMDT)

The GOLD series is our high-efficiency distribution transformer line. The core is made of amorphous metal, which enables lower No-Load Losses (NLL) as much as 30% in comparison to its SiFe counterparts. This ensures cost savings in the long run.



FIRST PHILEC SILVER SERIES

NEA Compliant Distribution Transformers

The SILVER series distribution transformers conform to applicable NEA loss standards. These are most appropriate for electric cooperatives and private distribution utilities.

Our SILVER series can either be Silicon or Amorphous Cores.



FIRST PHILEC BLUE SERIES

Silicon Iron Distribution Transformers

The BLUE series distribution transformers offer high durability, premium quality, and long life.

DISTRIBUTION TRANSFORMERS



Silver Series (NEA Compliant)

SILICON MODELS

HV Rating,	ng, LV Rating, BIL	Taps	kVA	Number of LV Bushings		Dimensio	Weight	Figure			
BIL			NVA		Α	В	С	D	(kg)	riguic	
Jan W.			2.4	10	3	630	565	785	985	181	2
		2A2B, 2.5%	15	3	660	590	805	1005	210	2	
7620/13.2Y	100/040 00		25	3	705	630	825	1025	276	2	
kV,			37.5	3	770	695	785	985	336	2	
95 KV BIL		L 5.2	50 3 770 695	825	1025	375	2				
			75	3	860	770	970	1170	538	2	
22	26		100	3	950	840	980	1182	663	2	

AMORPHOUS MODELS

HV Rating,	LV Rating,	Taps	kVA	Number of LV Bushings		Dimensio	Weight	Figure		
BIL BIL	BIL	ταμο			Α	В	С	D	(kg)	riguic
		20/240, 30 kV BIL 2A2B, 2.5%	10	3	630	565	745	1000	166	2
	- 10		15	3	595	525	815	1015	160	2
	100/040 00		25	3	640	565	745	945	183	2
			37.5	3	665	590	805	1005	243	2
	KV BIE		50	3	705	630	825	1025	282	2
			75	3	805	695	935	1135	388	2
			100	3	885	815	940	1140	496	2



Blue Series for PDUs

SILICON MODELS

HV Rating,	LV Rating,	Taps	kVA	Number of LV		Dimension	Weight	Figure		
BIL	BIL	·		Bushings	Α	В	С	D	(kg)	
	2	100	25	3	665	590	745	1000	179	2
	120/240, 30	14400, 13800, 13200,	37.5	3	670	470	680	1020	227	2
14 4/04 04V	kV BIL		50	3	735	715	935	1190	316	2
14.4/24.94Y kv, 125 kV	- (40)		75	3	770	805	940	1195	363	2
BIL		12870, 12540	100	3	790	950	935	1190	424	2
	240/480, 30 kV BIL	480,	167	4	915	1040	1020	1275	607	2
			25	3	635	565	845	1100	187	2
,94			50	3	735	805	935	1190	369	2
			15	3	630	565	785	1040	171	2
	100/040 00		25	3	665	590	805	1060	216	2
	120/240, 30 kV BIL		37.5	3	705	630	825	1080	248	2
0/10	140	2A2B,	50	3	735	660	885	1140	301	2
13.8/23.9 Y			75	3	805	750	935	1190	409	2
kV, 125 kV BIL	2.5%	2.5%	100	3	830	840	935	1190	440	2
DIL	040/400		75	4	860	750	935	1190	409	2
	240/480, 30 kV BIL		100	4	860	840	935	1190	452	2
-	JO KV BIL		167	4	915	950	990	1245	621	2
			250	4	925	1110	1060	1315	910	2
Note: Weight are all in approximate values.										

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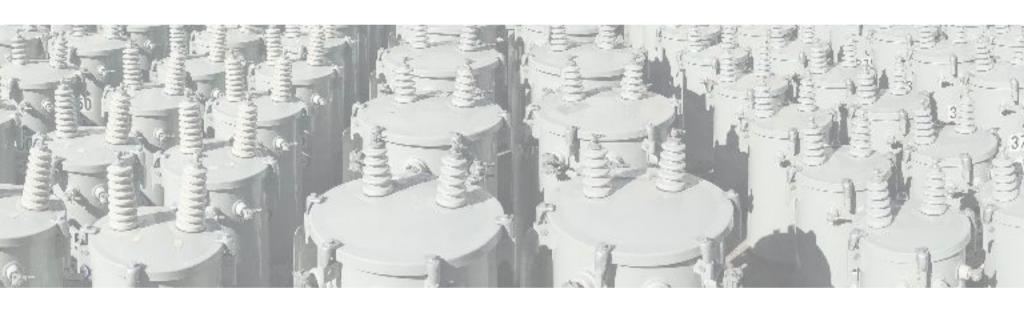


Blue Series

SILICON MODELS

No. Patting	SILICON WODELS											
Fig.			Taps	kVA						Figure		
15 3 570 505 571 500 120 120 2 2 2 2 2 2 2 37.5 3 3600 590 820 1020 130 2 2 2 2 37.5 3 3670 595 890 1080 227 2 2 2 3 3 3 3 3 3 3	DIL	DIL			Bushings	Α	В	С	D	(kg)		
120 120				10	3	570	505	710	910	118	2	
782013.2 kV, 85 kV BIL 85				15	3	570	505	710	910	132	2	
TREQUIS 2 KV SIL 120/240, SI 120/240, SI 120/240, SIL 140/24 SIL 140/				25	3	605	530	820	1020	180	2	
95 KV BIL 30 KV BIL 2.5% 75 3 770 805 940 1140 346 2				37.5	3	670	595	890	1080	227	2	
100 3 830 830 930 1190 411 2 2 2 2 2 2 2 2 2				50	3	670	650	940	1140	266	2	
14.4124.94Y kV, 125 kV BIL 12.0240, 30 kV BIL 12.65 kV BIL 14.4124.94Y kV, 125 kV BIL 12.65 kV BIL 12.65 kV BIL 12.65 kV BIL 14.4124.94Y kV, 125 kV BIL 12.65 kV BIL 12.65 kV BIL 14.4124.94Y kV, 1	95 KV BIL	30 kV BIL	2.5%									
Page												
14.4124.94Y kV, 125 kV BIL 120240, 30 kV BIL 1480, 30 kV BIL 1480, 30 kV BIL 1880, 30 kV BIL												
7620/13.2 kV, P40/480, P5 kV BIL P1												
7620°13.2 kV, 95 kV BIL 7620°13.2 kV, 95												
762013 2 kV, 95 kV BIL 762013 2 kV BIL 762013 2 kV, 95 kV BIL 762013 2 kV BIL 762013												
762013.2 kV, 95 kV BIL 14.4/24.94 V kV, 125 kV BIL 12.2 kV BIL 12.2 kV BIL 15.0 kV												
7620/13.2 kV, 95 kV BIL 95 kV BIL 95 kV BIL 95 kV BIL 14400, 125%												
95 kV BIL 14.4/24.94Y kV, 125 kV BIL 14.4/24.94Y kV, 126	7620/13 2 kV	240/480	2 / 2B									
14.4/24.94Y kV, 125 kV BIL 15.5 a 5.95 b.530 7.50 10.05 1455 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0												
167			2.0 /0									
14.4/24.94Y kV, 125 kV BIL 14.4/24.94Y kV												
14.4/24.94 kV, 125 kV BIL 14.4/24.94 Y kV, 125 kV BIL 15. 3 670 650 940 1195 666 22 16.7 3 670 670 650 940 1195 666 22 16.7 3 67												
14.4/24,94Y kV, 120/240, 30 kV BIL 14.4/24,94Y kV, 125 kV BIL 15.5												
14.4/24.94Y kV, 125 kV BIL 15.5 3 5 595 530 750 1005 1005 1005 1005 1005 1005 1005												
14.4/24.94Y kV, 125 kV BIL 240/480, 13800,												
14.4/24.94Y kV, 125 kV BIL 120/240, 30 kV BIL 120/240, 13800, 13800, 12870, 12540 12640 12670, 12540 12640 12670, 12540 126870, 12540 126870, 12540 126870, 12540 126870, 12540 100 3 830 945 940 1195 424 2 167 4 905 1085 990 1245 603 2 1870,												
125 kV BIL 120/240, 30 kV BIL 125/04	4.4.404.0424114			37.5	3	670	470	680	1020	227	2	
14.4/24.94Y kV, 125 kV BIL 12870, 12540 100 3 830 945 940 1195 424 2 1667 4 905 1085 990 1245 603 2 250 4 920 1335 1065 1320 838 2 333 4 1105 1335 1065 1320 978 2 333 4 1105 1335 1065 1320 978 2 25 3 595 530 710 965 134 2 25 3 595 530 750 1005 145 2 25 3 595 530 820 1075 177 2 37.5 3 670 595 890 1145 245 2 25 3 595 530 820 1075 177 2 37.5 3 670 595 890 1145 245 2 25 3 775 800 940 1195 360 2 25 4 920 1335 1060 1195 363 2 34.5 GrdY/ 19.92kV, 150 kV BIL 120/240, 30 kV BIL 12870, 12870, 12540 14400, 30 kV BIL 12870, 12540 14400, 37.5 3 670 595 890 1145 245 2 25 3 995 530 820 1075 177 2 25 3 775 800 940 1195 360 2 25 4 920 1335 1060 1320 828 2 25 4 920 1335 1060 1320 828 2 25 4 920 1335 1060 1320 828 2 25 3 640 565 810 1200 180 1 34.5 GrdY/ 19.92kV, 150 kV BIL 35.5 GrdY/ 19.92kV, 150 kV BIL 36.5 GrdY/ 19.92kV, 150 kV BIL 37.5 GrdY/ 19.92kV, 150 kV BIL 38.5 GrdY/ 19.92kV, 150 kV BIL 38.5 GrdY/ 19.92kV, 150	The state of the s		,	50	3	670	650	940	1195	266	2	
14.4/24.94Y kV, 125 kV BIL 34.5 GrdY/ 19.92kV, 150 kV BIL 1260 1250 1000 3 830 945 940 1195 424 2 920 1085 990 1245 603 2 1320 838 2 1333 4 1105 1335 1065 1320 978 2 10 3 595 530 710 965 134 2 15 3 595 530 750 1005 145 2 25 3 595 530 820 1075 177 2 37.5 3 670 595 890 1145 245 2 25 3 705 685 940 1195 266 2 13200 37.5 3 670 595 890 1145 245 2 2 2 100 37.5 3 705 685 940 1195 266 2 13200 37.5 3 705 685 940 1195 266 2 13200 13200 13200 13200 13200 13200 13200 13200 13200 13200 13200 13200 13200 13200 13200 13200 1333 4 1055 1333 11060 1320 828 2 2 333 4 1055 333 4 1055 333 1060 1320 828 2 333 4 1055 333 4 1055 333 11060 1320 828 2 333 4 1055 37.5 3 640 565 810 1200 180 1 142 1 15 3 75 3 740 820 940 1330 240 140 142 1 155 3 740 820 940 1330 344 1 1 34.5 GrdY/ 19.92kV, 150 kV BIL	123 KV DIL	30 kV BIL		75	3	770	805	940	1195	363	2	
14.4/24.94Y kV, 125 kV BIL				100	3	830	945	940	1195	424	2	
14.4/24.94Y kV, 125 kV BIL 1400, 1380				167	4	905	1085	990	1245	603	2	
14.4/24.94Y kV, 125 kV BIL 34.5 GrdY/ 19.92kV, 150 kV BIL 14.6/24.94Y kV, 150 kV BIL 14.400, 13800, 13800, 13800, 13800, 13200, 12870, 12540 15. 3 595 530 750 1005 145 2 25. 3 595 530 820 1075 177 2 37.5 3 705 685 940 1195 266 2 100 3 770 940 940 1195 380 2 100 3 770 940 940 1190 424 2 167 4 905 1085 940 1995 586 2 250 4 920 1335 1060 1320 828 2 333 4 1055 1330 1115 1370 982 2 34.5 GrdY/ 19.92kV, 15.5% 15.5% 15.5% 15.5% 15.5% 15.5% 15.5% 15.5% 15.5% 15.5% 15.5% 15.5% 15.5% 10.0% 1330 260 1 34.5 GrdY/ 19.92kV, 15.5% 15.5% 16.5%												
14.4/24.94Y kV, 125 kV BIL 14.4/24.94Y kV, 125 kV BIL 240/480, 30 kV BIL 250 37.5 3 595 530 750 1005 145 2 2 37.5 3 670 595 890 1145 245 2 2 256 2 2 256 2 3 775 3 775 800 940 940 1195 380 2 2 167 4 905 1085 940 11995 586 2 2 250 4 920 1335 1060 1320 828 2 2 333 4 1055 1330 1115 1370 982 2 2 2 333 4 1055 1330 1115 1370 982 2 2 10 3 595 530 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 3 635 565 750 1140 142 1 15 15 3 630 3 705 630 870 1260 237 1 1 34.5 GrdY/19.92kV, 100 3 930 935 990 1380 440 1 34.5 GrdY/19.92kV, 100 1300 145 25 250 4 960 1330 1065 1455 842 1												
14.4/24.94Y kV, 125 kV BIL 14.4/24.94Y kV, 125 kV BIL 240/480, 30 kV BIL 240/480, 30 kV BIL 240/480, 13200, 13200, 12870, 12540 12540 12540 25 3 595 530 820 1075 177 2 37.5 3 670 595 890 1145 245 2 50 3 705 685 940 1195 380 2 75 3 775 800 940 1195 380 2 167 4 905 1085 940 1995 586 2 250 4 920 1335 1060 1320 828 2 333 4 1055 1330 1115 1370 982 2 34.5 GrdY/ 19.92kV, 150 kV BIL 30 kV BIL 31 kJ B, 25% 4 960 1330 1065 1455 842 1												
14.4/24.94Y kV, 125 kV BIL 14.4/24.94Y kV, 125 kV BIL 240/480, 30 kV BIL 12540 12540 12540 12540 12540 12540 12540 100 3 775 800 940 1195 380 2 1195 380 380 2 1195 380 380 2 1195 380 380 2 1195 380 380 3 119												
14.4/24.94Y kV, 125 kV BIL 125 kV BIL 125 kV BIL 126 kV BIL 127 kV BIL 12870, 12870, 12870, 12870, 12870, 12870, 12870, 12870, 12870, 12870, 12540 13800, 13200, 12870, 12870, 12870, 150 kV BIL 13800, 13200, 13200, 13200, 12870, 150 kV BIL 14.4/24.94Y kV, 120/480, 30 kV BIL 14.4/24.94Y kV, 120/480, 13200, 13200, 1195			14400									
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167 4 905 1085 940 1995 586 2 250 4 920 1335 1060 1320 828 2 333 4 1055 1330 1115 1370 982 2 10 3 595 530 750 1140 142 1 15 3 635 565 750 1140 162 1 15 3 635 565 750 1140 162 1 15 3 635 565 810 1200 180 1 150 kV BIL 120/240, 30 kV BIL 120/240, 30 kV BIL 130/277, 150 kV BIL 143B, 2.5% 1A3B, 2.5% 1A3B, 30 40 940 1330 344 1 100 3 930 935 990 1380 440 1 100 3 930 935 990 1380 440 1 100 130 583 1 167 4 905 1040 940 1330 583 1 167 4 905 1040 940 1330 583 1		JOKY DIE										
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34.5 GrdY/ 19.92kV, 150 kV BIL 120/240, 30 kV BIL 143B, 2.5% 120/240, 30 kV BIL 143B, 2.5% 143B, 2.5% 143B, 2.5% 143B, 2.5% 143B, 2.5% 150 kV BIL 150 3 635 565 750 1140 162 1 150 3 635 565 750 1140 162 1 150 3 635 565 750 1140 162 1 150 3 635 565 750 1140 162 1 150 3 705 630 870 1260 237 1 160 3 75 3 705 630 870 1260 237 1 160 3 75 3 740 820 940 1330 344 1 160 3 930 935 990 1380 440 1 167 4 905 1040 940 1330 583 1 168 4960 1330 1065 1455 842 1												
34.5 GrdY/ 19.92kV, 150 kV BIL 120/240, 30 kV BIL 120/240, 30 kV BIL 1A3B, 2.5%												
34.5 GrdY/ 19.92kV, 150 kV BIL 120/240, 30 kV BIL 2.5% 2.5% 25 3 640 565 810 1200 180 1 37.5 3 705 630 870 1260 237 1 50 kV BIL 2.5% 37.5 3 740 820 940 1330 260 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											1	
34.5 GrdY/ 19.92kV, 150 kV BIL 150 kV BIL 2.5% 37.5 3 705 630 870 1260 237 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0450 8440 0011	400/040	4.400								1	
SO KV BIL SO K	· ·										1	
100 3 930 935 990 1380 440 1 34.5 GrdY/ 19.92kV, 139/277, 30kV BIL 1A3B, 2.5% 250 4 960 1330 1065 1455 842 1	TOOK V DIL	OOK V DIL	£10 /0	50		670	650	940	1330	260	1	
34.5 GrdY/ 19.92kV, 139/277, 30kV BIL 1A3B, 2.5% 167 4 905 1040 940 1330 583 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				75		740	820	940	1330	344	1	
34.5 Grd 7 19.92kV, 139/277, 1A3B, 150 kV BIL 30kV BIL 2.5% 250 4 960 1330 1065 1455 842 1				100	3	930	935	990	1380	440	1	
150 kV BIL 30kV BIL 2.5% 250 4 960 1330 1065 1455 842 1	3/15 GrdV/10 00k//	001/1 100/077	001/1 120/077 1400	1 / 2 D	167	4	905	1040	940	1330	583	1
	· ·		,	250	4	960	1330	1065	1455	842	1	
				333	4	1015	1290	1180	1570	1004	1	

Note: Weight are all in approximate values.



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