

“Argent Angel” SL Series Flat PCB Mounting Power Transformers

LI018V8/2016-EN

1. Features

- ① The fully-encapsulated printed circuit board can be directly welded and assembled, and has a perfect outline.
- ② It has a low mounting height, compact structure, and is solid, vibration-proof, moisture-proof, flame-resistant, and has high insulation withstand voltages.;
- ③ It is easy to use and reconfigure, and alternative input/output voltages can be obtained by changing the connections of the primary and/or secondary.
- ④ It has a built-in temperature protector, making it safer to use.

2. Ambient Conditions

- ① Temperature: $-25^{\circ}\text{C}\sim+70^{\circ}\text{C}$;
- ② Relative humidity: $\leq 90\%$ at 40°C ;
- ③ Atmospheric pressure: $860\sim 1060\text{mbar}$ ($650\sim 800\text{mmHg}$ approximately).

3. Insulation Rating: Class F (155°C)

4. Safety Features

- ① Dielectric resistance: $>1000\text{M}\Omega$ in normal condition;
- ② Insulation withstand voltages: $3750\text{ V (50HZ)}/1\text{ min}$;
- ③ Insulation impact strength: Continuously 20 times impact of $6\text{KV(50HZ)}/50\mu\text{S}$;
- ④ Fire retardancy: In conformity with UL94-V0.

5. Safety approval: CE, CQC

6. Rated Power: 3VA, 6VA, 9VA, 10VA, 20VA, 30VA, 40VA, 60VA

7. Rated Voltage:

- ① Standard series:

Primary: $2\times 110\text{V}\pm 15\%-20\%$ 50Hz/60Hz

Secondary: $2\times 6\text{V}, 2\times 7.5\text{V}, 2\times 9\text{V}, 2\times 12\text{V}, 2\times 15\text{V}, 2\times 18\text{V}, 2\times 21\text{V}, 2\times 24\text{V}, 2\times 27\text{V}$

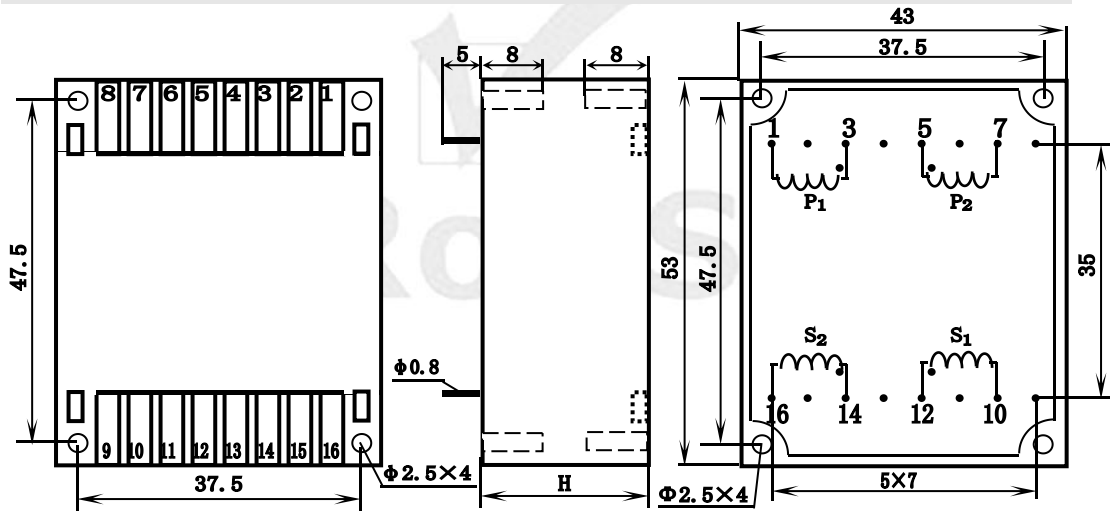
- ② Non-standard series: It can be customized based on customer's requirements.

8. Universal Technical Parameters of SL Series Standard Product

SN	Model	Output Power	Idle Current	Idle Loss	Voltage Regulation Ratio	Temperature Rise	Weight (g)	Dimension L×W×H (mm) ³
1	SL3	3VA	$\leq 12\text{mA}$	$\leq 0.25\text{W}$	$\leq 25\%$	$\leq 20^{\circ}\text{C}$	165	$53\times 43\times 21.5$
2	SL6	6VA	$\leq 15\text{mA}$	$\leq 0.32\text{W}$	$\leq 24\%$	$\leq 22^{\circ}\text{C}$	220	$53\times 43\times 25.5$
3	SL9	9VA	$\leq 20\text{ mA}$	$\leq 0.43\text{W}$	$\leq 23\%$	$\leq 25^{\circ}\text{C}$	280	$53\times 43\times 30$
4	SL10	10VA	$\leq 30\text{ mA}$	$\leq 0.75\text{W}$	$\leq 26\%$	$\leq 30^{\circ}\text{C}$	290	$68\times 55\times 24$
5	SL20	20VA	$\leq 50\text{ mA}$	$\leq 0.85\text{W}$	$\leq 18\%$	$\leq 35^{\circ}\text{C}$	420	$68\times 55\times 31$
6	SL30	30VA	$\leq 70\text{ mA}$	$\leq 1.25\text{W}$	$\leq 13\%$	$\leq 40^{\circ}\text{C}$	540	$68\times 55\times 37$
7	SL40	40VA	$\leq 65\text{ mA}$	$\leq 1.8\text{W}$	$\leq 12\%$	$\leq 45^{\circ}\text{C}$	760	$83.5\times 70.5\times 39$
8	SL60	60VA	$\leq 47\text{mA}$	$\leq 0.85\text{W}$	$\leq 11\%$	$\leq 50^{\circ}\text{C}$	1075	$83.5\times 70.5\times 48$

9. Outline, Installation Dimension and Detailed Technical Parameters of SL Series Standard Product

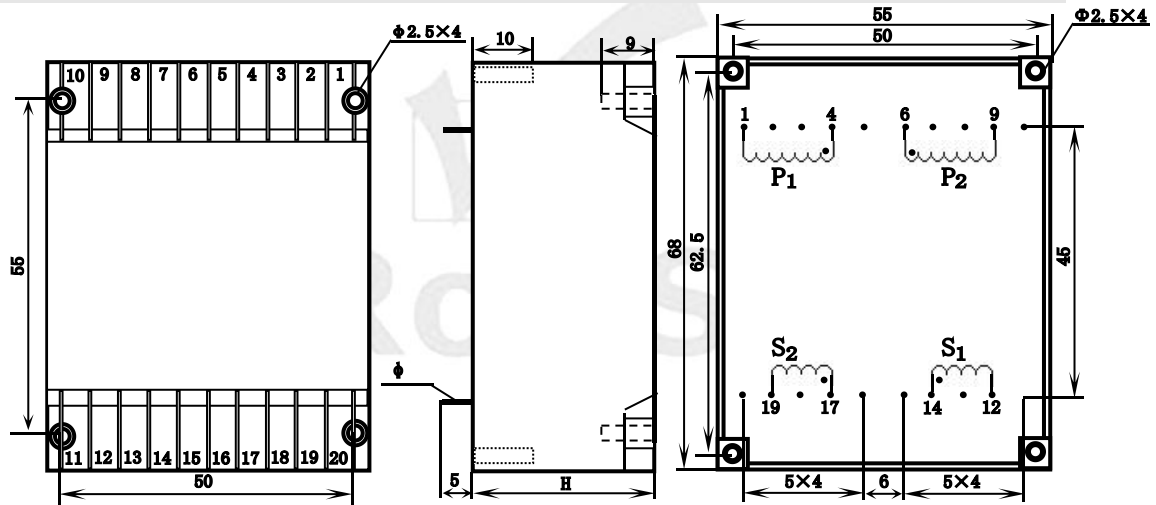
1. SL3(3VA) 2. SL6(6VA) 3. SL9(9VA) (Tolerance±0.5mm)



Power	3VA(SL3)	6VA(SL6)	9VA(SL9)
H(mm)	21.5	25.5	30

Model	Primary Voltage	Primary Operating Current		Secondary Voltage		Secondary Pins	Equivalent Internal Resistance(Ω)
		Idle	Full load	Idle	Full load		
SL3-0	2×110V ±20% 50Hz/60Hz	≤12mA	≤30mA	2×8V	2×6V	250mA	2×8
SL3-0				2×9.7V	2×7.5V	200mA	2×11.6
SL3-0				2×11.8V	2×9V	167mA	2×17.6
SL3-0				2×15.9V	2×12V	125mA	2×31.8
SL3-0				2×19.9V	2×15V	100mA	2×50.4
SL3-0				2×23.7V	2×18V	83.3mA	2×69.1
SL3-0				2×27.5V	2×21V	71.4mA	2×91.7
SL3-0				2×32.2V	2×24V	62.5mA	2×132.6
SL3-0				2×36.4V	2×27V	55.5mA	2×171
SL6-0	2×110V ±20% 50Hz/60Hz	≤15mA	≤50mA	2×7.83V	2×6V	500mA	2×3.9
SL6-0				2×9.97V	2×7.5V	400mA	2×6.4
SL6-0				2×12.2V	2×9V	333mA	2×9.9
SL6-0				2×16.25V	2×12V	250mA	2×17.6
SL6-0				2×20.5V	2×15V	200mA	2×28
SL6-0				2×24.9V	2×18V	167mA	2×41.8
SL6-0				2×28.7V	2×21V	142.8mA	2×54.5
SL6-0				2×32.7V	2×24V	125mA	2×70.2
SL6-0	2×36.4V	2×27V	111mA	2×87.4			
SL9-0	2×110V ±20% 50Hz/60Hz	≤20mA	≤70mA	2×7.75V	2×6V	750mA	2×2.3
SL9-0				2×9.6V	2×7.5V	600mA	2×3.6
SL9-0				2×11.7V	2×9V	500mA	2×5.6
SL9-0				2×15.5V	2×12V	375mA	2×9.6
SL9-0				2×19.6V	2×15V	300mA	2×15.7
SL9-0				2×23.5V	2×18V	250mA	2×22.2
SL9-0				2×27.5V	2×21V	214mA	2×30.5
SL9-0				2×31V	2×24V	187mA	2×37.8
SL9-0				2×35V	2×27V	167mA	2×66.3

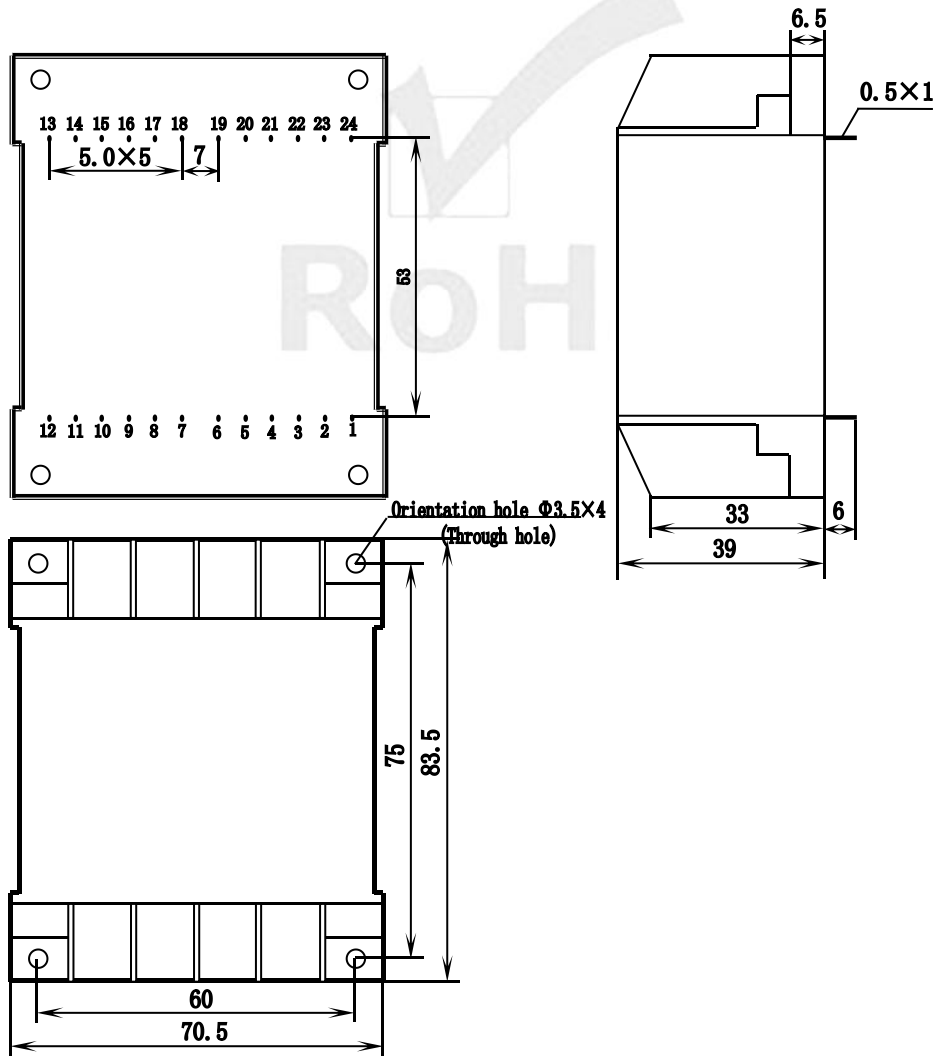
4. SL10(10VA) 5. SL20(20VA) 6. SL30(30VA) (Tolerance ±0.5mm)



Power	10VA(SL10)	20VA(SL20)	30VA(SL30)
H(mm)	24	31	37
φ	0.64	0.74	0.74

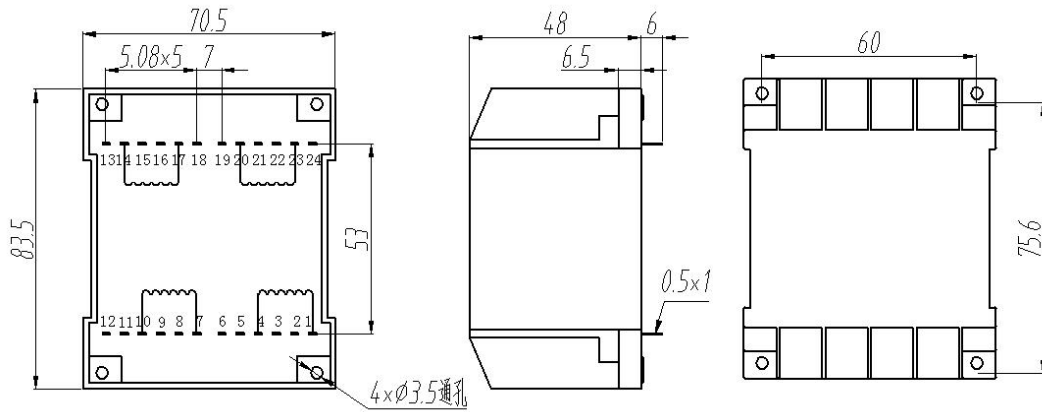
Model	Primary Voltage	Primary Operating Current		Secondary Voltage		Secondary Pins	Equivalent Internal Resistance(Ω)
		Idle	Full load	Idle	Full load		
SL10-01	2×110V ±15% 50Hz/60Hz	≤30mA	≤90mA	2×8.2V	2×6V	833mA	2×3.1
SL10-01B				2×10V	2×7.5V	667mA	2×3.7
SL10-02				2×12.5V	2×9V	555mA	2×7
SL10-03				2×16.5V	2×12V	416mA	2×12
SL10-04				2×20.5V	2×15V	333mA	2×19
SL10-05				2×25.0V	2×18V	277mA	2×27.5
SL10-05B				2×29.0V	2×21V	238mA	2×36
SL10-06				2×32V	2×24V	208mA	2×38
SL10-06B				2×36V	2×27V	185mA	2×48
SL20-01	2×110V ±15% 50Hz/60Hz	≤50mA	≤100mA	2×7.3V	2×6V	1666mA	2×0.9
SL20-01B				2×9V	2×7.5V	1333mA	2×1.1
SL20-02				2×10.8V	2×9V	1111mA	2×2
SL20-03				2×14.7V	2×12V	833mA	2×3.6
SL20-04				2×18.2V	2×15V	666mA	2×5.3
SL20-05				2×22.2V	2×18V	555mA	2×8.1
SL20-05B				2×25.6V	2×21V	476mA	2×10.5
SL20-06				2×29V	2×24V	417mA	2×12
SL20-06B				2×33V	2×27V	370mA	2×16
SL30-01	2×110V ±15% 50Hz/60Hz	≤70mA	≤150mA	2×6.8V	2×6V	2500mA	2×0.4
SL30-01B				2×8.6V	2×7.5V	2000mA	2×0.55
SL30-02				2×10.3V	2×9V	1666mA	2×0.95
SL30-03				2×13.8V	2×12V	1250mA	2×1.7
SL30-04				2×17.2V	2×15V	1000mA	2×2.6
SL30-05				2×20.7V	2×18V	833mA	2×3.6
SL30-05B				2×24.2V	2×21V	714mA	2×5
SL30-06				2×27.5V	2×24V	625mA	2×5.6
SL30-06B				2×31V	2×27V	556mA	2×7

7. SL40(40VA) (Tolerance $\pm 0.5\text{mm}$)



Model	Primary Voltage	Primary Operating Current		Secondary Voltage		Secondary Pins	Equivalent Internal Resistance(Ω)
		Idle	Full load	Idle	Full load		
SL40-01	2 \times 110V $\pm 15\%$ 50Hz/60Hz	$\leq 65\text{mA}$	$\leq 200\text{mA}$	2 \times 6.7V	2 \times 6V	2 \times 3.33	0.2
SL40-01B				2 \times 8.4V	2 \times 7.5V	2 \times 2.67	0.34
SL40-02				2 \times 10.1V	2 \times 9V	2 \times 2.22	0.49
SL40-03				2 \times 13.5V	2 \times 12V	2 \times 1.67	0.9
SL40-04				2 \times 16.9V	2 \times 15V	2 \times 1.33	1.42
SL40-05				2 \times 20.4V	2 \times 18V	2 \times 1.11	2.1
SL40-05B				2 \times 23.6V	2 \times 21V	2 \times 0.95	2.8
SL40-06				2 \times 27.2V	2 \times 24V	2 \times 0.83	3.8
SL40-06B				2 \times 30.6V	2 \times 27V	2 \times 0.74	4.9

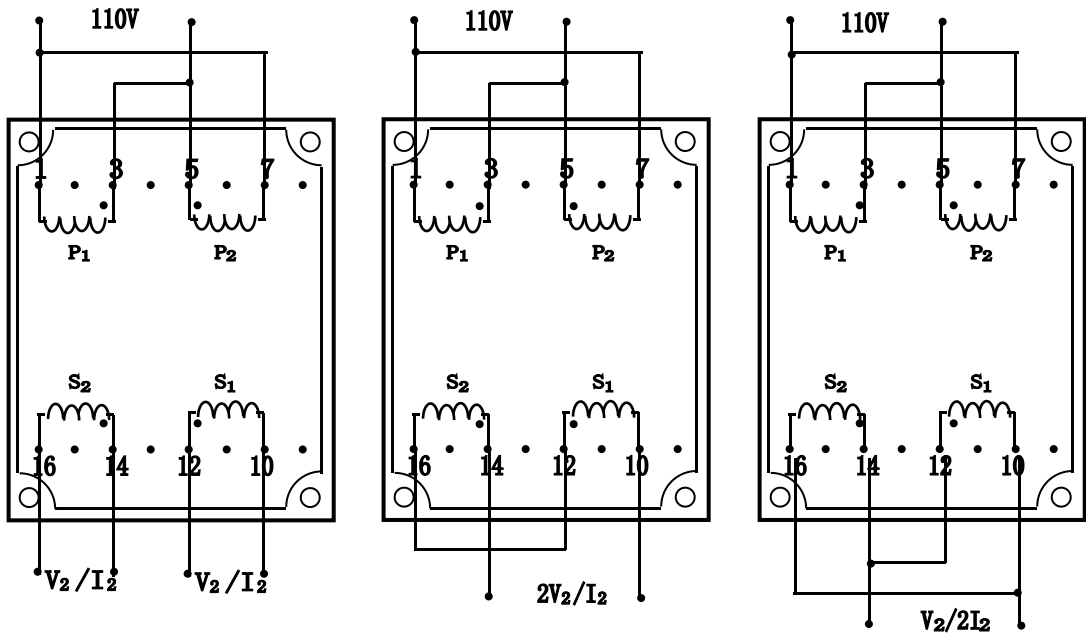
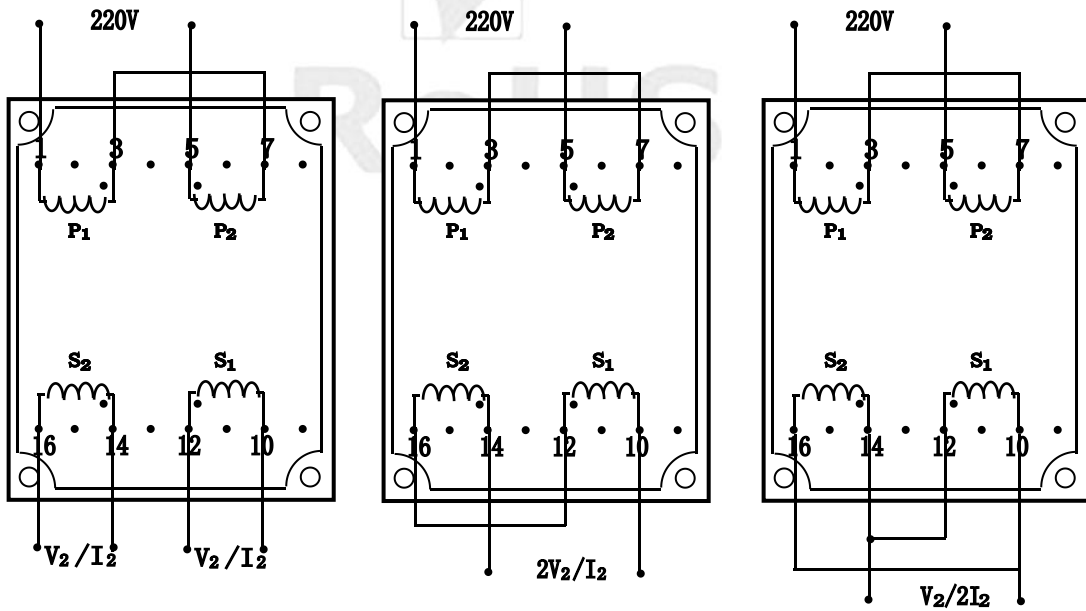
8. SL60(60VA) (Tolerance $\pm 0.5\text{mm}$)



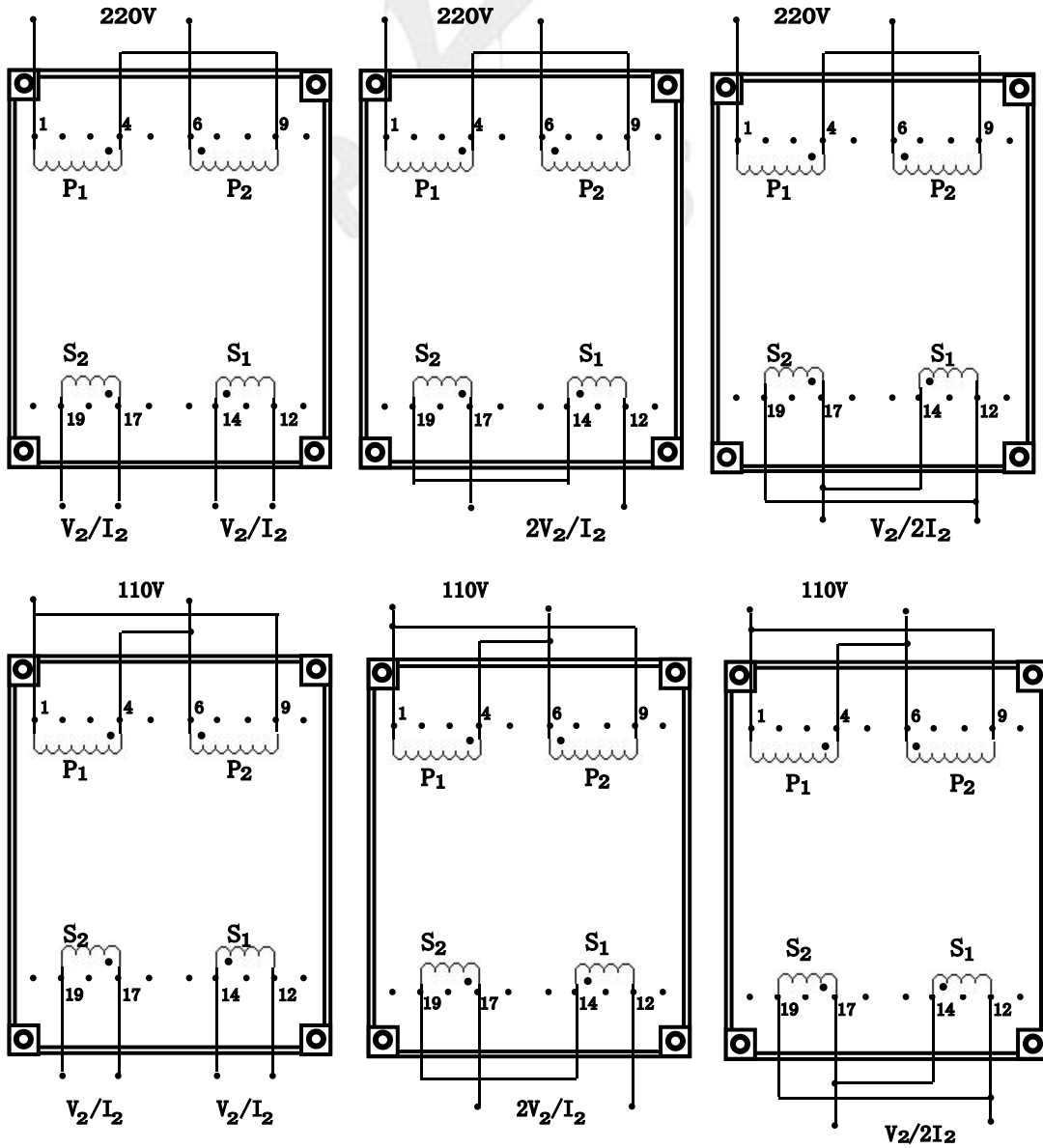
Model	Primary Voltage	Primary Operating Current		Secondary Voltage		Secondary Pins	Equivalent Internal Resistance(Ω)
		Idle	Full load	Idle	Full load		
SL60-01	2x110V $\pm 15\%$ 50Hz/60Hz	$\leq 65\text{mA}$	$\leq 200\text{mA}$	2x6.87V	2x6V	2x3.33	0.16
SL60-01B				2x8.34V	2x7.5V	2x2.67	0.22
SL60-02				2x10.04V	2x9V	2x2.22	0.34
SL60-03				2x13.34V	2x12V	2x1.67	0.56
SL60-04				2x16.78V	2x15V	2x1.33	0.84
SL60-05				2x20.87V	2x18V	2x1.11	1.36
SL60-05B				2x23.38V	2x21V	2x0.95	1.79
SL60-06				2x26.68V	2x24V	2x0.83	2.23
SL60-06B				2x30.1V	2x27V	2x0.74	2.8

10. Input/Output Wiring Diagrams of SL Series Standard Product:

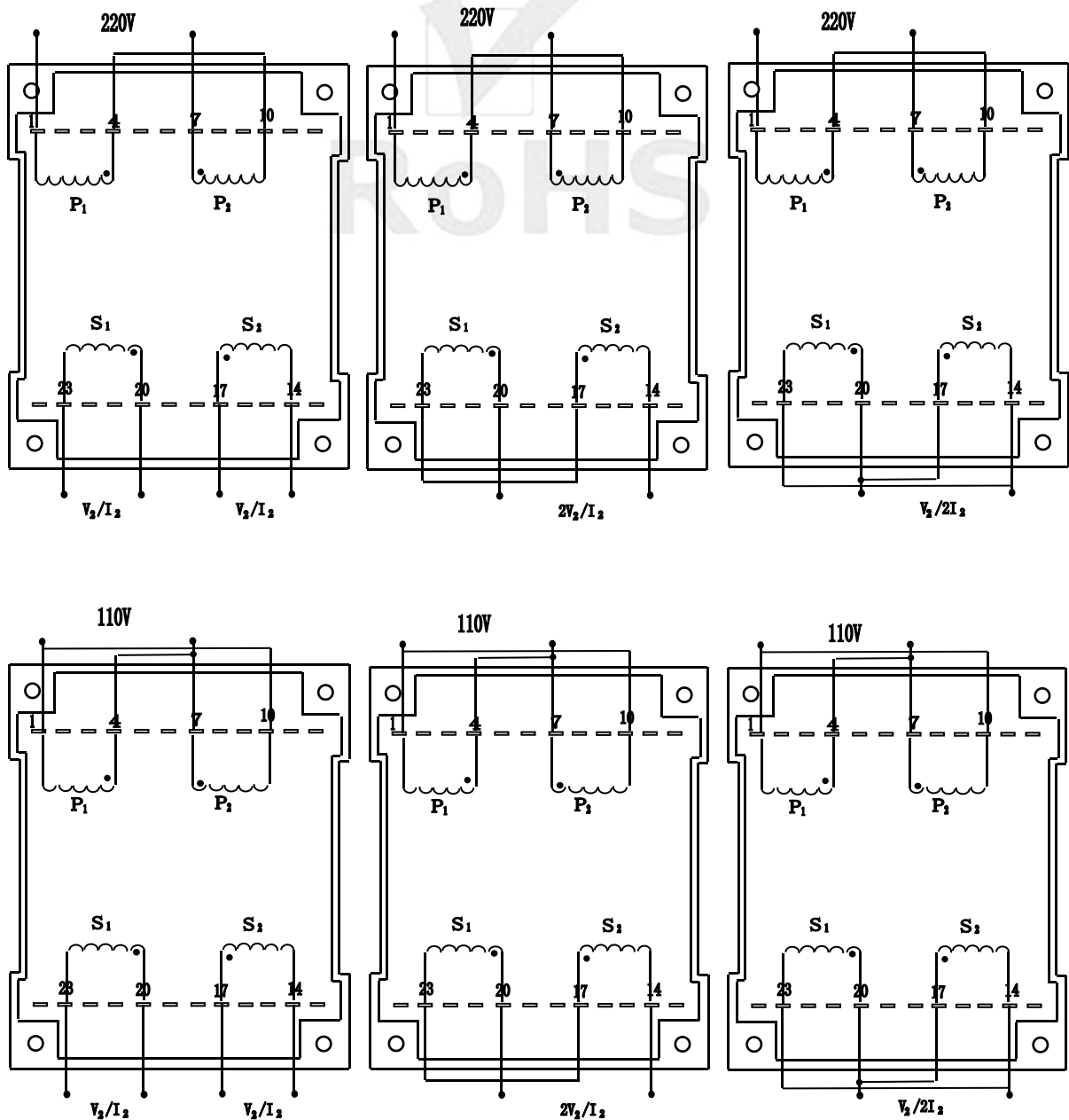
1. SL3(3VA) 2. SL6(6VA) 3. SL9(9VA)



4. SL10(10VA) 5. SL20(20VA) 6. SL30(30VA)



7. SL40(40VA) 8. SL60(60VA)



11. Attention:

Since this transformer product has many leadouts and the leadouts are relatively hard, in order to facilitate plug-in, it is suggested that when designing the PCB, leave some tolerance for the size of the transformer pin holes (if the leadout is 0.8mm, the pin hole size can be designed to 1.2mm; if the leadout is 1mm, the pin hole size can be designed to 1.5mm).