



110VAC Input Voltage



220VAC Input Voltage

Figure 1. Physical Photos of ALRS12V50AT

## FEATURES

- Input Voltage Range: 90V ~ 264VAC
- Output Current: 50A
- High Efficiency: >80%
- AC Input Range Selectable by Switch
- Withstand 300VAC Surge Input for 5s
- Protections: Short Circuit/Overload/Over-voltage/Over Temperature
- Forced Air Cooling
- Built-in Cooling Fan On-Off Control
- 1U Low Profile
- Withstand 5G Vibration Test
- Wide Operating Temperature Range: -10°C ~ 60°C

## APPLICATIONS

The 600W single output switching power supply can be used in various applications that require a stable and efficient power supply. Here are some common applications:

1. Industrial automation equipment: Switching power supplies are commonly used in industrial automation equipment such as motor controllers, programmable logic controllers (PLCs), and robotic systems.
  2. LED lighting: LED lighting requires a constant and stable power supply to function effectively. A 600W single output switching power supply can provide the necessary power to run LED lighting systems.
  3. Telecom and networking equipment: Switching power supplies are widely used in telecom and networking equipment such as routers, switches, and modems.
  4. Audio and video equipment: High-end audio and video equipment such as amplifiers, mixers, and video monitors require a stable power supply to ensure optimal performance.
  5. Medical equipment: Medical equipment such as ultrasound machines, X-ray machines, and CT scanners require a reliable and stable power supply to ensure accurate readings and diagnoses.
  6. Gaming systems: High-end gaming systems require a high-power output to run efficiently. A 600W single output switching power supply can provide the necessary power to run gaming systems.
  7. Mining equipment: Cryptocurrency mining equipment requires a stable and efficient power supply to run continuously. A 600W single output switching power supply can be used to power mining equipment such as ASIC miners.
- Overall, this 600W single output switching power supply is a versatile power supply that can be used in a wide range of applications that require a stable and efficient power supply.

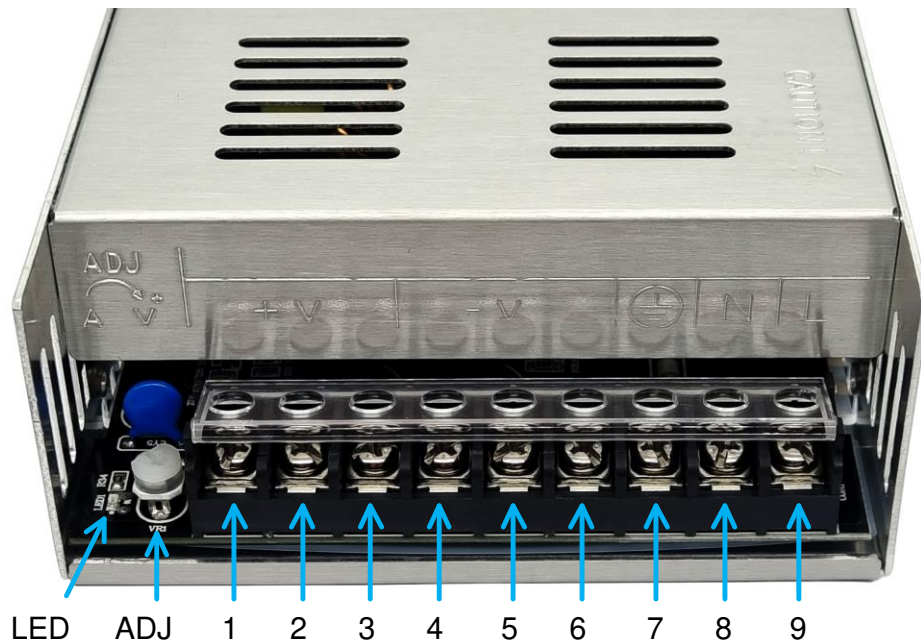


Table 1. Pin Names and Functions

No.	Name	Description	Type
1~3	V+	Positive DC Output Voltage	Power output
4~6	V-	Negative DC Output Voltage	Power output
7	FG	Power Ground	Ground for power supply
8	N	Neutral terminal: AC Input Voltage	Power input
9	L	Line terminal: AC Input Voltage	Power input
ADJ	ADJ	Adjust the Output Voltage	Analog input



### DESCRIPTION AND SPECIFICATIONS

ALRS12V50AT is a highly efficient 600W single-output enclosed power supply with a 41mm low profile design. Equipped with a built-in long-life fan, this power supply can operate effectively at full load under temperatures ranging from -10°C to 60°C.

Not only does it offer high efficiency at over 80%, but it also comes with complete protection functions and 5G anti-vibration capability, ensuring reliability and safety in industrial applications. Moreover, it complies with international safety regulations, making it a top choice for a wide range of industrial applications.

Overall, the ALRS12V50AT power supply offers an ideal solution for industries seeking a compact, durable, and high-performance power supply that can operate in extreme conditions with complete safety and reliability.

**Table 1. Specifications**

INPUT						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit/Note
Input Voltage	$V_{IN}$		90		264	VAC
Input Voltage Accuracy			±1%			
Input Current	$I_{IN}$	$V_{IN}=110V$		11		A
		$V_{IN}=264V$		4.6		A
Leakage Current		$V_{IN}=230V$			1	mA
Inrush Current		$V_{IN}=110V$		10		A
		$V_{IN}=264V$		6		A
OUTPUT						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit/Note
Output Power	P				600	W
Output Voltage	$V_{OUT}$		11.4	12	12.6	V
Output Current	$I_{OUT}$		0		50	A
Output Voltage Accuracy			±5%			
Line Regulation	$\Delta V_{OUT}/\Delta V_{VPS}$	Input voltage change: ±1%	-0.05		0.05	%
Load Regulation	$\Delta V_{OUT}/\Delta I_{OUT}$	Load change from 10% to 100%	-0.05		0.05	%
Ripple & Noise					300	mV <sub>p-p</sub>
Efficiency	$\eta$			80		%
Temperature Coefficient		Full Load @ 0 ~ 50°C	-0.03		0.03	%/°C
Over Load Protection		Protection type: Shutdown the output voltage, Reset: Automatic Recovery	105		150	%



GENERAL CHARACTERISTIC						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit/Note
Isolation Resistance				100		MΩ
Frequency	$f_{sw}$		50		60	Hz
Withstand Voltage				1.5		kVAC
Start Time	$t_s$			200		ms
Rise Time	$t_r$			50		ms
Hold Up Time	$t_h$			20		ms
Operating Temperature Range	$T_{opr}$		-10		60	°C
Operating Relative Humidity Range	$RH_{opr}$		20		90	%
Storage Temperature Range	$T_{stg}$		-20		85	°C
Storage Relative Humidity Range	$RH_{stg}$		10		95	%
External Dimensions			215×115×50			mm
			8.46×4.53×1.97			inch
Weight				800		g
				1.76		lbs
				28.2		Oz

## Block Diagram

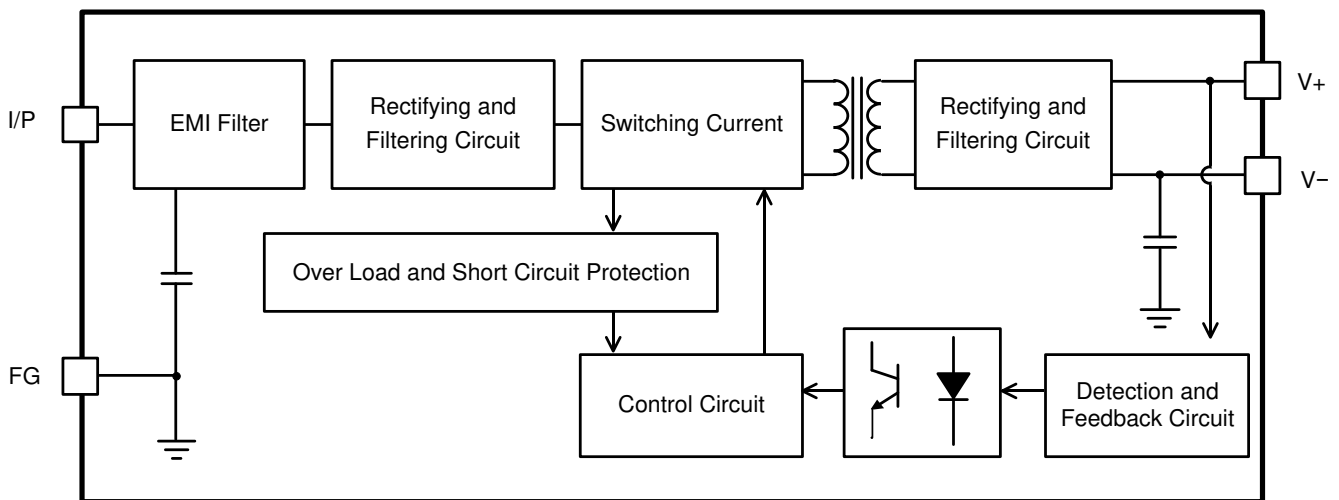


Figure 2. Power Supply Function Block Diagram



### OUTLINE DIMENSIONS

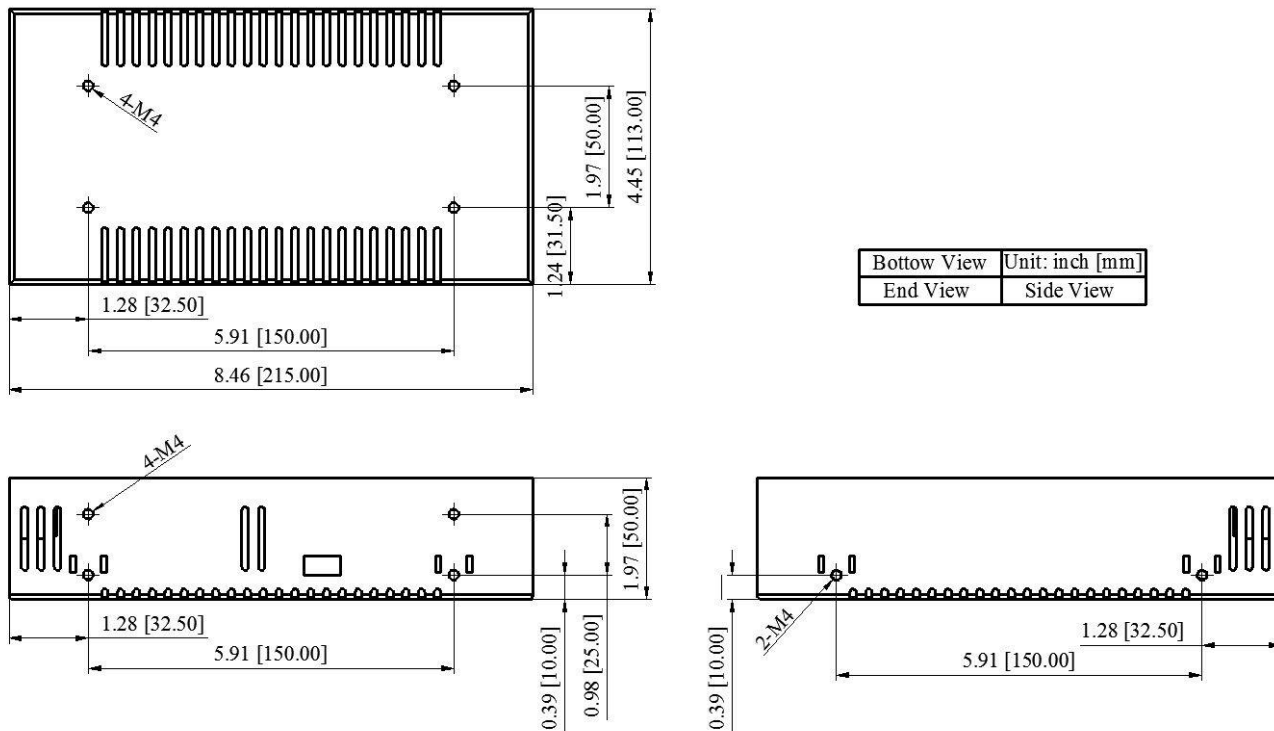


Figure 3. Outline Dimensions

### NAMING CONVENTION

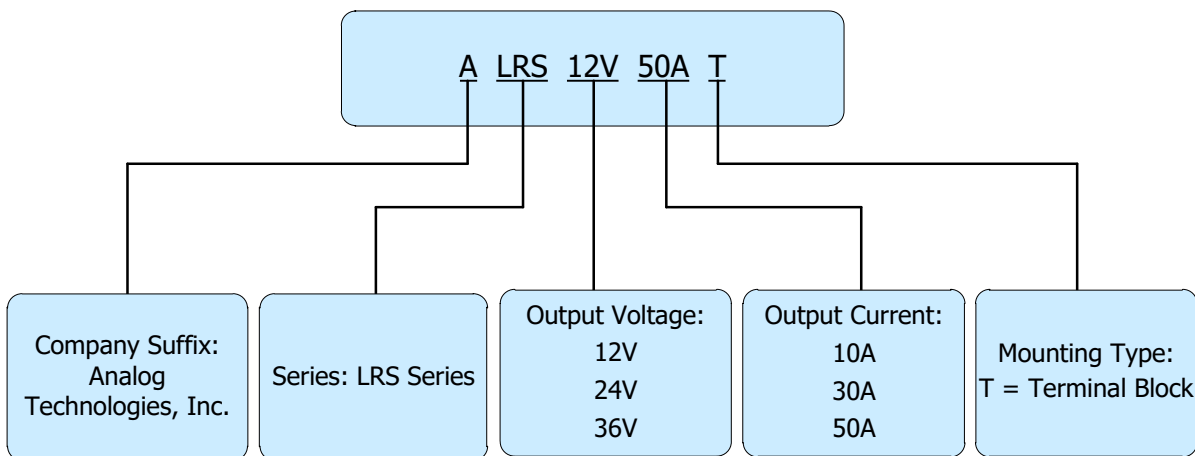






Figure 4. Naming Convention



## ORDERING INFORMATION

Part Number	Buy Now
ALRS12V50AT	 *  *

\*: both  and  are our online store icons. Our products can be ordered from either one of them with the same pricing and delivery time.

**Table 4. ALRS12V50AT Families with Different Current**

Product Model	Input Voltage	Output Voltage	Output Current	Output Power
	V	V	A	W
ALRS12V10AT	90 ~ 264	12	10	120
ALRS12V20AT	90 ~ 264	12	20	240
ALRS12V30AT	90 ~ 264	12	30	360
ALRS12V40AT	90 ~ 264	12	40	480
ALRS12V50AT	90 ~ 264	12	50	600

\*Note: See Figure 4.

## NOTICE

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