



Figure 1. Physical Photos of ALRS12V10AT

## FEATURES

- Input Voltage Range: 90V ~ 264VAC
- Output Current: 10A
- High Efficiency: >85%
- 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:  $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$

## APPLICATIONS

The 120W 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 120W 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 120W 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 120W single output switching power supply can be used to power mining equipment such as ASIC miners.

Overall, this 120W 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	L	Line terminal: AC Input Voltage	Power input
2	N	Neutral terminal: AC Input Voltage	Power input
3	FG	Power Ground	Ground for power supply
4~5	V-	Negative DC Output Voltage	Power output
6~7	V+	Positive DC Output Voltage	Power output
ADJ	ADJ	Adjust the Output Voltage	Analog input



## DESCRIPTION AND SPECIFICATIONS

ALRS12V10AT is a highly efficient 120W 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 85%, 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 ALRS12V10AT 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 Current	$I_{IN}$	$V_{IN}=110V$		2.4		A
		$V_{IN}=264V$		0.91		A
Leakage Current		$V_{IN}=260V$			0.5	mA
Inrush Current		$V_{IN}=110V$		4.2		A
		$V_{IN}=264V$		2.1		A
OUTPUT						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit/Note
Output Power	P				120	W
Output Voltage	$V_{OUT}$		11.4	12	12.6	V
Rated Output Current	$I_{OUT}$		0		10	A
Output Current Range		$V_{IN}=110V$	0		8	A
		$V_{IN}=264V$	0		10	A
Output Voltage Tolerance			±0.1%			
Line Regulation	$\Delta V_{OUT}/\Delta V_{VPS}$	Input voltage change: ±1%	-0.5		0.5	%
Load Regulation	$\Delta V_{OUT}/\Delta I_{OUT}$	Load change from 10% to 100%	-0.5		0.5	%
Ripple & Noise					120	mV <sub>p-p</sub>
Efficiency	$\eta$			85		%
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			198×98×42			mm
			7.80×3.86×1.65			inch
Weight				420		g
				0.93		lbs
				14.82		Oz

## Block Diagram

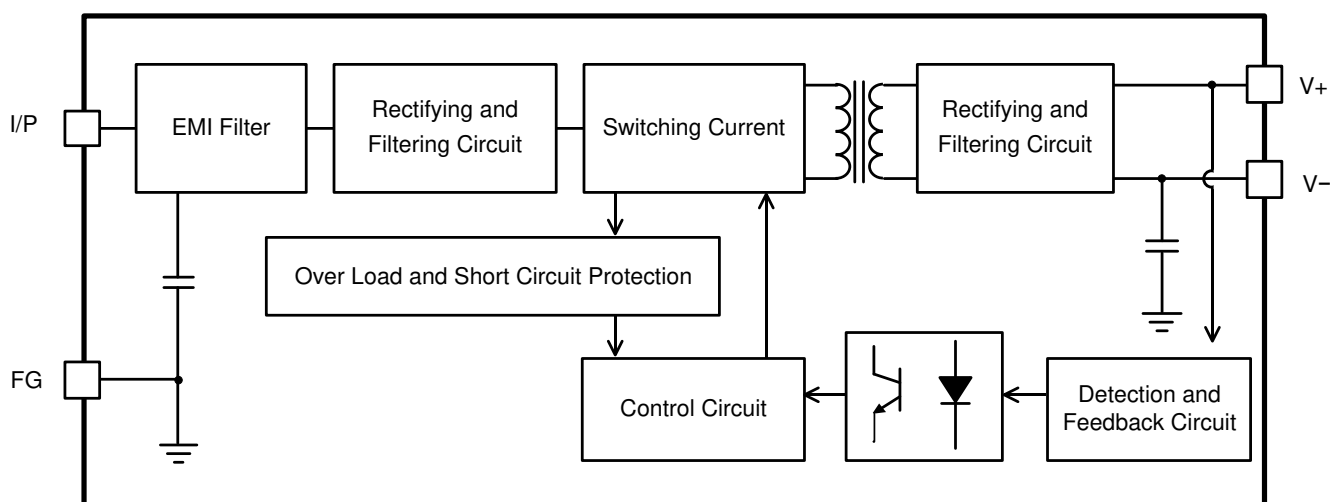


Figure 2. Power Supply Function Block Diagram



### OUTLINE DIMENSIONS

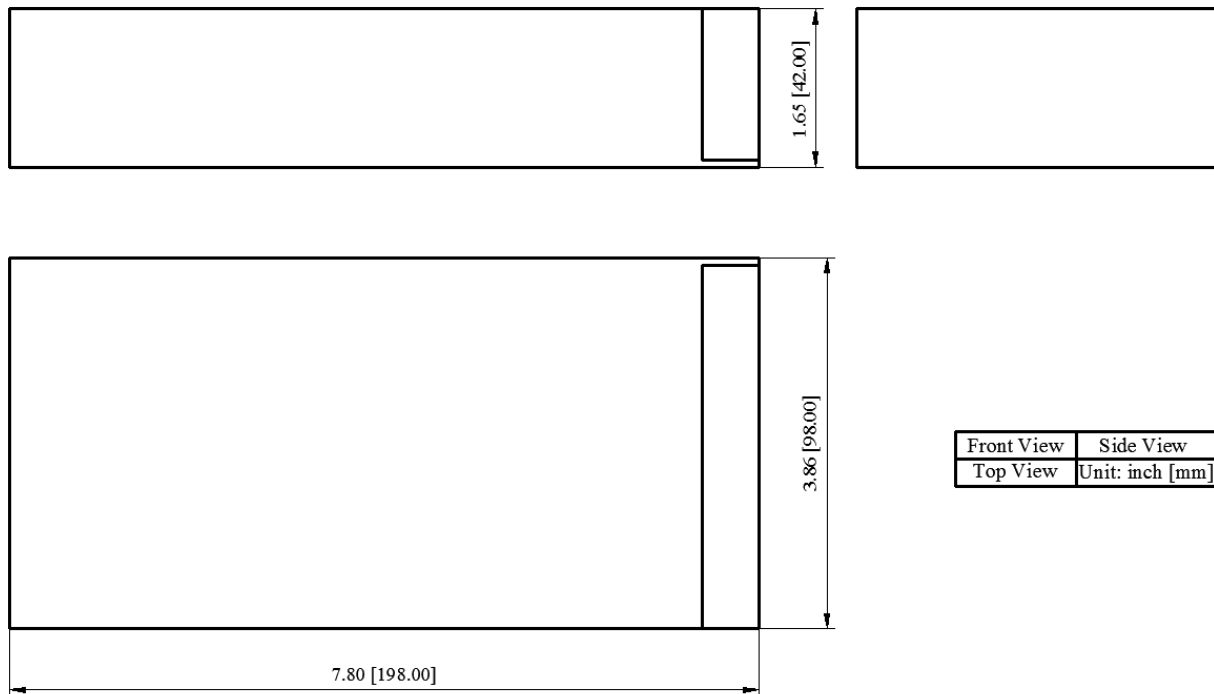


Figure 3. Outline Dimensions

### NAMING CONVENTION

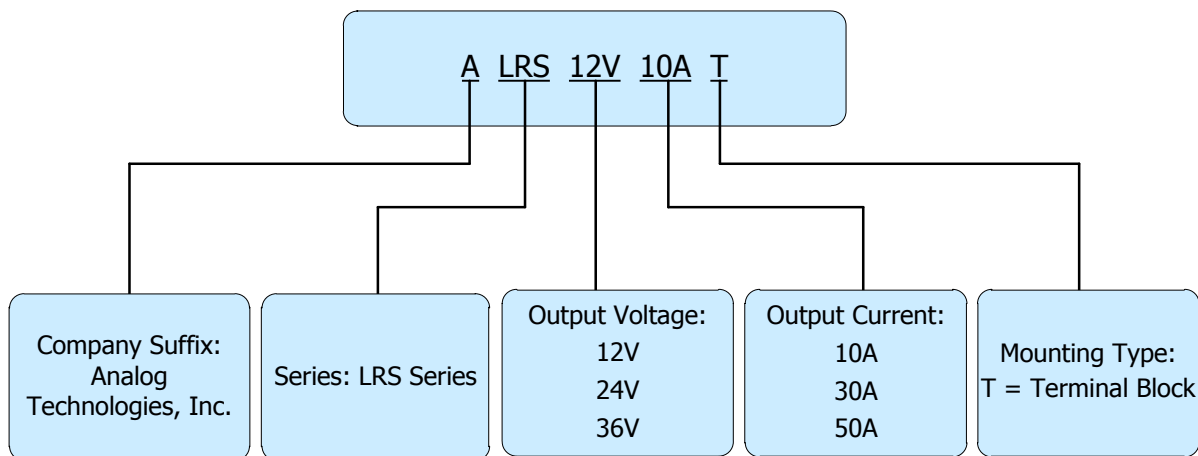




Figure 4. Naming Convention



### ORDERING INFORMATION

Part Number	Buy Now
ALRS12V10AT	 *  *



\*: 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. ALRS12V10AT 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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