Figure 1. Physical Photos of ALRS12V10AT

FEATURES

- Input Voltage Range: 90V ~ 264VAC
- Output Current: 10A
- High Efficiency: >85%
- 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
- Protection Level: IP20
- PFC Function: NO

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

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DESCRIPTION AND SPECIFICATIONS

ALRS12V10AT is a highly efficient 120W single-output enclosed power supply with a 42mm 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}		11.94	12	12.06	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_{p-p}
Efficiency	η			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
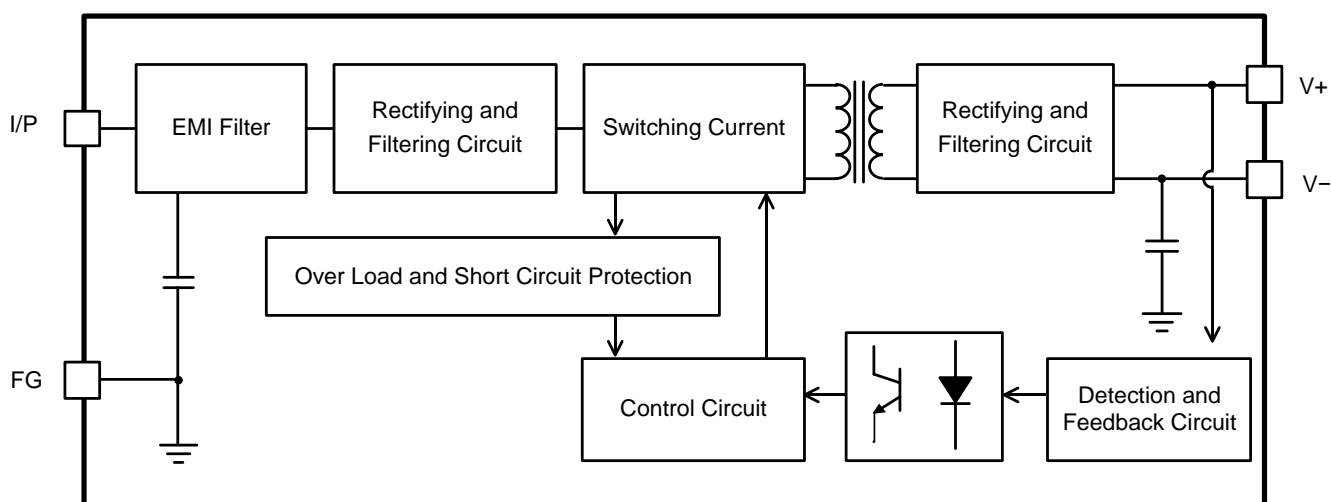
Figure 2. Power Supply Function Block Diagram

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OUTLINE DIMENSIONS

1.65 [42.00]

3.86 [98.00]

7.80 [198.00]

Front View	Side View
Top View	Unit: inch [mm]

Figure 3. Outline Dimensions

NAMING CONVENTION

A LRS 12V 10A T

| Company Suffix: Analog Technologies, Inc. | Series: LRS Series | Output Voltage: 12V 24V 36V | Output Current: 10A 30A 50A | Mounting Type: T = Terminal Block |
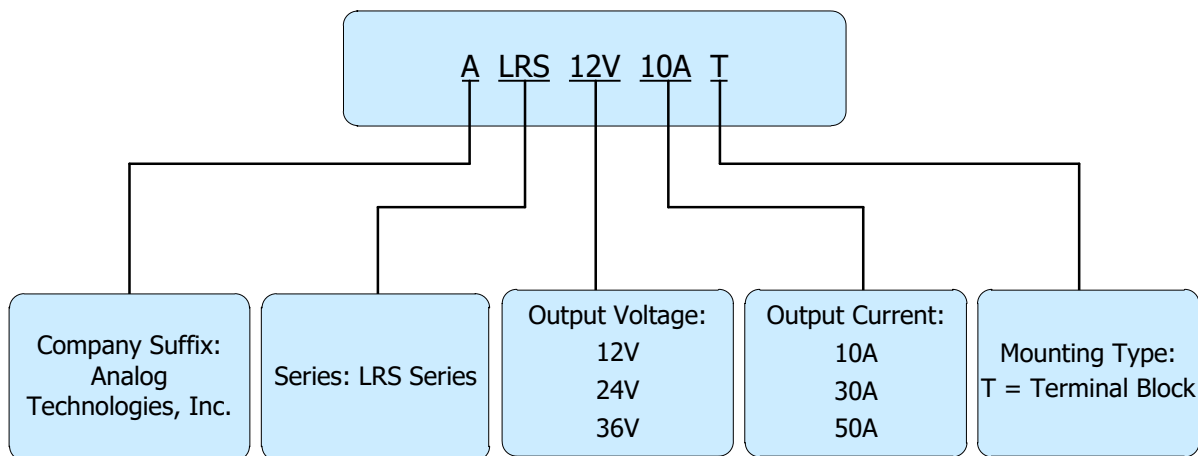
Figure 4. Naming Convention

ORDING 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	Datasheet	Buy Now*
	V	V	A	W		
ALRS12V1R3AT	90 ~ 264	12	1.3	15	📄	🛒* 🛒*
ALRS12V2R2AT	90 ~ 264	12	2.2	25	📄	🛒* 🛒*
ALRS12V3AT	90 ~ 264	12	3	36	📄	🛒* 🛒*
ALRS12V5AT	90 ~ 264	12	5	60	📄	🛒* 🛒*
ALRS12V8R4AT	90 ~ 264	12	8.4	100	📄	🛒* 🛒*
ALRS12V10AT	90 ~ 264	12	10	120	📄	🛒* 🛒*
ALRS12V12R5AT	90 ~ 264	12	12.5	150	📄	🛒* 🛒*
ALRS12V15AT	90 ~ 264	12	15	180	📄	🛒* 🛒*
ALRS12V16R7AT	90 ~ 264	12	16.7	200	📄	🛒* 🛒*
ALRS12V20AT	90 ~ 264	12	20	240	📄	🛒* 🛒*
ALRS12V25AT	90 ~ 264	12	25	300	📄	🛒* 🛒*
ALRS12V30AT	90 ~ 264	12	30	360	📄	🛒* 🛒*
ALRS12V40AT	90 ~ 264	12	40	480	📄	🛒* 🛒*
ALRS12V50AT	90 ~ 264	12	50	600	📄	🛒* 🛒*
ALRS24VR65AT	90 ~ 264	24	0.65	15	📄	🛒* 🛒*
ALRS24V1R1AT	90 ~ 264	24	1.1	25	📄	🛒* 🛒*
ALRS24V1R5AT	90 ~ 264	24	1.5	36	📄	🛒* 🛒*
ALRS24V2R5AT	90 ~ 264	24	2.5	60	📄	🛒* 🛒*
ALRS24V4R2AT	90 ~ 264	24	4.2	100	📄	🛒* 🛒*
ALRS24V5AT	90 ~ 264	24	5	120	📄	🛒* 🛒*
ALRS24V7R5AT	90 ~ 264	24	7.5	180	📄	🛒* 🛒*
ALRS24V8R4AT	90 ~ 264	24	8.4	200	📄	🛒* 🛒*

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Product Model	Input Voltage	Output Voltage	Output Current	Output Power	Datasheet	Buy Now*
	V	V	A	W		
ALRS24V10AT	90 ~ 264	24	10	240	PDF	*🛒* *🛒*
ALRS24V12R5AT	90 ~ 264	24	12.5	300	PDF	*🛒* *🛒*
ALRS24V15AT	90 ~ 264	24	15	360	PDF	*🛒* *🛒*
ALRS24V20AT	90 ~ 264	24	20	480	PDF	*🛒* *🛒*

*Note: See Figure 4.

NOTICE

1. It is important to carefully read and follow the warnings, cautions, and product-specific notes provided with electronic components. These instructions are designed to ensure the safe and proper use of the component and to prevent damage to the component or surrounding equipment. Failure to follow these instructions could result in malfunction or failure of the component, damage to surrounding equipment, or even injury or harm to individuals. Always take the necessary precautions and seek professional assistance if unsure about proper use or handling of electronic components.

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