szwengao

Input voltage	Output voltage	Output current	Output power	Efficiency	Size
9-36V DC	24V DC	10 Amps	240 Watts	97.6%	100*80*39mm

The WG9-36S2410 is a Non-isolated DC-DC converter that uses a synchronous rectification technology and features high efficiency and power density. It has the dimensions of 100mm x 80mm x 39mm and provides the rated output voltage of 24V and the maximum output current of 10A.

Features

● High efficiency: 97.6% (@ 24 Vin, 25℃)

● Input transient absorption protection

● Remote ON/OFF control（optional）

● Support -40°C environment

● 100% full load burn-in test

● Short circuit, Overload, Over temperature and Over voltage protections

● Waterproof level IP68

● 2 Years warranty

Applications

● Industrial

● Alternative Energy

● Golf Cart & EV Cars

● Forklift

● Electromotor

● Telecommunications

● Boat & Yacht

● Medical and so on.

Model naming method

WG9-36S2410	**WG** : szwengao company name
	9-36 : Input rated voltage
	S : Single output type
	24 : Output voltage
	10 : Output current

Electrical Specifications

Conditions: TA = 25 ° C (77° F), Airflow = 1 m/s (200LFM), Vin =24V, Vout =24V , unless otherwise specified.

Parameter	Min.	Typ.	Max.	Units	Remarks
Absolute maximum ratings					
Operating ambient temperature	-40	-	+50	° C	
Shell ambient temperature	-40	-	80	° C	
Storage temperature	-55	-	100	° C	
Operating humidity	5	-	95	%	Non-condensing
Atmospheric pressure	62	-	106	Kpa	
Altitude	-	-	4000	m	
Cooling way	-	-	-		Natural cooling
Input characteristics					
Input voltage	9	12/24	36	V	Continuous
Max. input voltage	-	-	40	V	
Undervoltage shutdown	7.1	7.7	7.9	V	Automatic recovery
Undervoltage recovery	7.3	7.8	8.3	V	Automatic recovery
Max. input current	-	-	34	A	Vin =7.7V; Iout =10A
No load current	-	110	140	mA	Vin =24V
Positive electrode cable	10	-	-	AWG	If the wire length is greater than 50cm, it is
Negative electrode cable	10	-	-	AWG	recommended to use a thicker wire diameter.
Enable PIN cable	22	-	-	AWG	If the product has this feature
Fuse	-	30*2	-	A	Product input positive has built-in fuse
Output characteristics					
Efficiency	-	97.6	-	%	Vin =24V; Iout =10A
Output voltage	23.9	24.0	24.3	V	Vin =24V; Iout =10A
Regulator accuracy	-	±1	-	%	
Voltage regulation	-	±1	-	%	
Load Regulation	-	±1	-	%	
Overvoltage protection	38	39	40	V	@25° C Automatic recovery
Output current	0	-	10	A	
Overcurrent protection	12	13	14	A	Vin=24V
External capacitance	0	2000	10000	µF	
Output ripple and noise	-	140	220	mVp-p	Vin =9–36V; Iout=10A Bandwidth: 20 MHz;
Output voltage rise time	-	70	100	mS	
Boot delay time	-	100	130	mS	
Out voltage overshoot	-	1	2	%	Vin=24V
Over temperature protection	100-	105-	110	° C	Shell temperature, @ 106° C Restore working
Short circuit protection	-	-	-		Long-term (4 hours) short circuit is not damaged, Hiccup mode
Positive electrode cable	14	-	-	AWG	If the wire length is greater than 50cm, it is
Negative electrode cable	14	-	-	AWG	recommended to use a thicker wire diameter.

Safety features				
Anti-electric Strength	Input to Output	-	V	Leakage current ≤ 3.5mA, 1min, no breakdown, no arcing
	Input to Shell	≥500	V	
	Output to Shell	≥500	V	
Insulation resistance	Input to Output			Test voltage = 500V
	Input to Shell	≥50	MΩ	
	Output to Shell			
Other characteristics				
Weight	≤ 550		g	
Package	White box			
MTBF	≥200,000		H	Vin =24V; Iout =10A
Switching frequency	220±10		KHz	

Characteristic Curves

Conditions: TA = 25° C (77° F), Vin = 24V, Vout =24 V , unless otherwise specified.
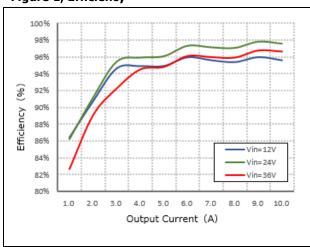
Figure 1, Efficiency
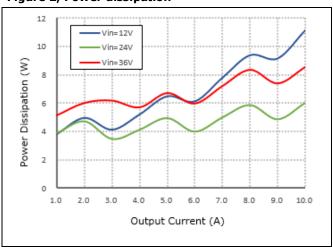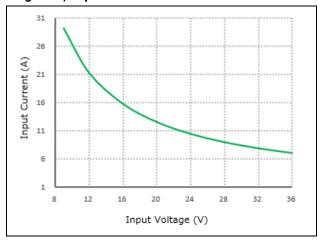

Figure 2, Power dissipation

Figure 3, Input V-I   Iout=10A

Typical Waveforms

Conditions: TA = 25°C (77°F), Vin = 24 V, unless otherwise specified.
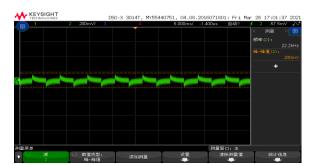
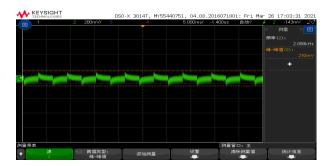**Figure 4, 25% - 50% load dynamic**

Figure 5, 50% - 75% load dynamic

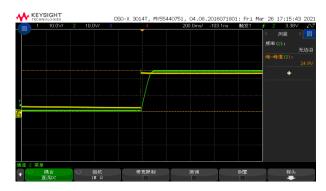

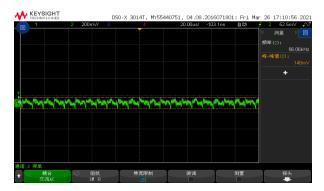**Figure 6, Output voltage established (Iout = 10A)**

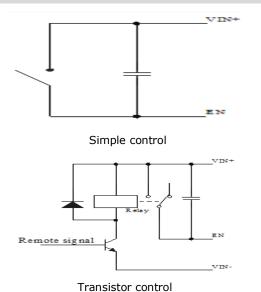**Figure 7, Output ripple & noise (Iout = 10A)**

Feature Description

Remote On/Off (EN) (Optional)

Logic Enable	Low level (0 - 8Vdc)	High level (8 - 40Vdc)	Left open
Positive logic	Off	On	Off

Various circuits for driving the EN

Simple control

Transistor control

Input Undervoltage Protection

The converter will shut down after the input voltage drops below the under-voltage protection threshold for shutdown. The converter will start to work again after the input voltage reaches the input under voltage protection threshold for startup. For the Hysteresis, see the Protection characteristics.

Output Overcurrent Protection

The converter equipped with current limiting circuitry can provide protection from an output overload or short circuit condition. If the output current exceeds the output overcurrent protection set point, the converter enters hiccup mode. When the fault condition is removed, the converter will automatically restart.

Overtemperature Protection

A temperature sensor on the converter senses the average temperature of the module. It protects the converter from being damaged at high temperatures. When the temperature exceeds the over temperature protection threshold, the output will shut down. It will allow the converter to turn on again when the temperature of the sensed location falls by the value of Over temperature Protection Hysteresis
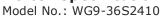
Wiring Instructions

The input and output of this product is terminals. The user should ensure that the input and output wires and terminals are connected reliably and pay attention to the wire diameter to meet the requirements of the power supply current. If the cable to be used is long, it needs Considering the voltage drop of the wire, if the voltage drop is too large, the voltage output at the load end may not meet the load demand. In this case, consider using a thicker wire diameter or reducing the length of the wire. Generally, if long wiring is required. Long line should be used on the side where the current is relatively small.

Thermal Consideration

Sufficient airflow should be provided to help ensure reliable operating of the WG9-36S2410.
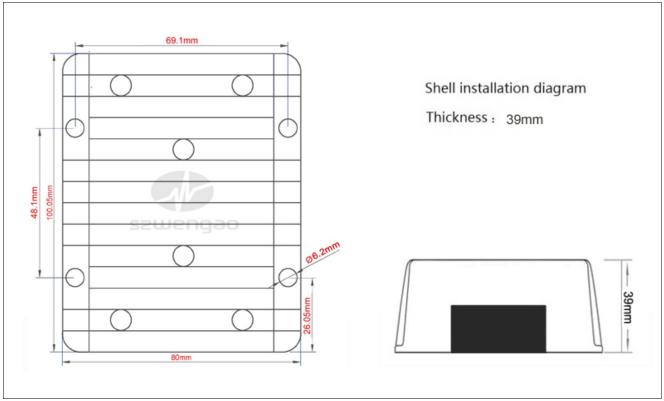
Therefore, thermal components are mounted on the top surface of the WG9-36S2410 to dissipate heat to the surrounding environment by conduction, convection, and radiation. Proper airflow can be verified by measuring the temperature at the middle of the base plate.

Middle of the shell

◢ Dimension

Shell installation diagram

Thickness： 39mm

69.1mm

48.1mm
100.05mm

Ø6.2mm

26.05mm

80mm

39mm

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