MORNSUN®

75W isolated DC-DC converter with ultra-wide, ultra-high 80 -1000VDC input for Renewable Energy





FEATURES

- Ultra-wide input voltage range of 80 1000VDC
- Transient power 120W last for 3s
- Industrial grade operating temperature: -40°C to **+85**℃
- High I/O isolation voltage up to 4000VAC
- High efficiency, low ripple & noise
- High reliability, long lifespan, low power consumption
- Input under-voltage protection, input reverse polarity protection, over-temperature protection, output short circuit, over-current, over-voltage protection
- Safety according to IEC62109

PV75-2YBxxR3 is a regulated DC-DC series converter with an ultra-wide and ultra-high DC input of 80-1000VDC, which design based on standard of CSA-C22.2 No. 107.1, UL 1741, EN/IEC62109. The products feature high efficiency, high reliability, high insulation and a high level of safety protection. It is widely used in renewable energy industries such as photovoltaic inverter, energy storage systems, charging pile, industrial control. The converters provide multiple protection features and guarantee stable and safe operating environments even under abnormal working conditions.

Selection Guide								
Certification	Part No.*	Output Power		Nominal Output Voltage and	Efficiency at	Capacitive		
Cermicanon		Steady	Transient (duration 3s)	Current (Vo/Io)	500VDC (%) Typ.	Load (µF) Max.		
	PV75-2YB12R3		120W	12V/6.25A	87	3000		
EN	PV75-2YB15R3	75W		15V/5.00A	87	3000		
	PV75-2YB24R3			24V/3.125A	89	1500		
Note: *Use suffix *W* for lead type version.								

Input Specifications						
Item	Operating Conditions	Min.	Тур.	Max.	Unit	
Input Voltage Range		80		1000	VDC	
long it Coursent	150VDC			0.70		
Input Current	750VDC			0.15	Α	
Inrush Current 1000VDC				150		
Input Under Veltage Protection	Lockout activation range	20		70	VDC	
Input Under-voltage Protection	Lockout deactivation range	30		80		
Input Reverse Polarity Protection		Available				
Required External Input Fuse		4A/1000VDC, required				
Hot Plug		Unavailable				

Output Specifications						
Item	Operating Conditions	Min.	Тур.	Max.	Unit	
Output Voltage Accuracy	Output Voltage Accuracy All load range		±2			
Line Regulation	Rated load		±1		%	
Load Regulation	500VDC		±2	±2		
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)			300	mV	
	500VDC			0.5	\A/	
Stand-by Power Consumption	1000VDC			1	W	
Temperature Coefficient			±0.02	-	%/℃	
Short Circuit Protection		Hicc	Hiccup, continuous, self-recovery			
	12V output	≤20VDC	≤20VDC			
Over-voltage Protection	15V output	≤23VDC	<pre><23VDC</pre>			
	24V output	≤32VDC				

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Over-current Protection					≥170%lo, se	elf-recovery	
Occupations and the Decks of the	Frall In such	Over-temperature protection start		60	_	75	°C
Over-temperature Protection	Full load	Over-temperature protection release		55	-	70	
Minimum Load				0		-	%
Hold-up Time	Room temper	Room temperature, full load 750VDC input			20	-	ms
Start-up Delay Time	Room temper	Room temperature			-	3	s
Note: *The "Tip and barrel method" is used for ripple and noise test, please refer to PV Converter Application Notes for specific information.							

General S	specifications						
Item		Operating Conditions		Min.	Тур.	Max.	Unit
	Input - output	Electric Strength Test fo	4000	-		VAC	
Isolation	Input - PE	leakage current < 10	4000	_			
	Output - PE	Electric Strength Test for leakage current <5m		2000			
	Input - output						
Insulation Resistance	Input - PE	500VDC		100		-	MΩ
	Output - PE						
Operating Temperature				-40		+85	°C
Storage Temperature				-40		+85	
Storage Humic	dity				-	95	%RH
		-40°C to -25°C		2.67	-		
		+50°C to +55°C	80-200VDC	2.00	-		%/ °C
		+55°C to +85°C	80-200VDC	2.56	-		
Power Derating	g	+55°C to +85°C	200-1000VDC	2.90			
		80-100VDC		1.50			0/ 0/00
		100-150VDC		0.80			%/VDC
		2000- 5000m		10	-		%/Km
Switching Frequency					65		kHz
Safety Standard				efer to UL1741 & EN62109-1, .2 No.107.1-16, IEC62109-1			
MTBF		MIL-HDBK-217F@25°C		≥300,000 l	≥300,000 h		

Mechanical Specifications			
Case Material Metal			
Dimensions	140.00 x 70.00 x 42.00mm		
Weight	420g (Typ.)		
Cooling Method	Free air convection		

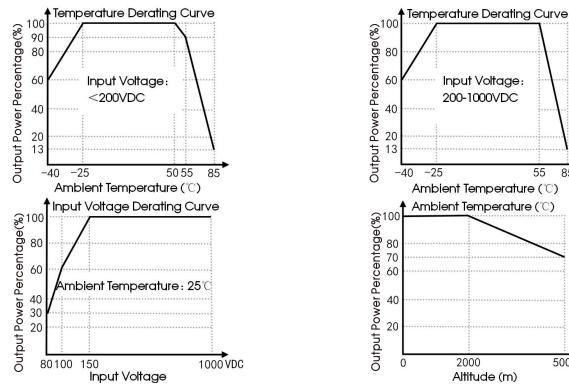
Electromagnetic Compatibility (EMC)						
Fortotore	CE	CISPR32/EN55032	CLASS A			
	CE	CISPR32/EN55032	CLASS B*			
Emissions	RE	CISPR32/EN55032	CLASS A			
	KE	CISPR32/EN55032	CLASS B*			
	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	Perf. Criteria A		
	RS	IEC/EN61000-4-3	10V/m	Perf. Criteria A		
Immunity	EFT	IEC/EN61000-4-4	±4KV	Perf. Criteria B		
	Surge	IEC/EN61000-4-5	Line to line ±1KV/line to PE ±2KV	Perf. Criteria B		
	CS	IEC/EN61000-4-6	10Vr.m.s	Perf. Criteria A		
Note: *Class B tested with 60% load.						

55

85

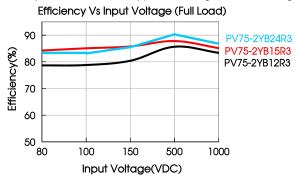
500Ó

Product Characteristic Curve

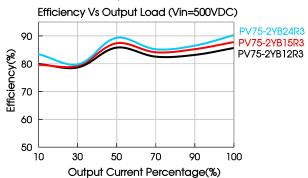


Note: ① With an input between 80 -150VDC, the output power of PV75-2YBxxR3 parts must be derated as per temperature derating curves;

② This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



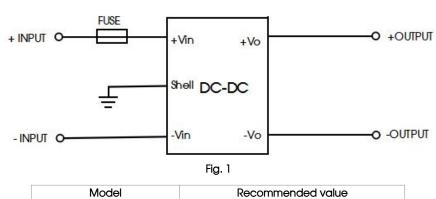
FUSE



2000

Design Reference

1. Typical application circuit



4A/1000VDC, required



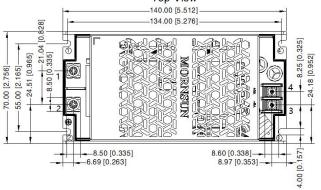
2. IMPORTANT SAFETY INSTRUCTIONS

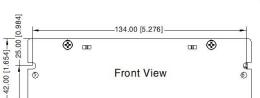
SAVE THESE INSTRUCTIONS – This manual contains important instructions for Models PV75-2YBxxR3 series that Shall be followed during installation of the DC-DC converter.

- ① Additional protective devices, such as lightning protector need to be added if there is an transient pulse voltage greater than 6KV at the input of PV products in system applications.
- ② For symbol ===, it means circuit shall be connected to a dc circuit.
- 3. For more information Please find the application notes on www.mornsun-power.com.

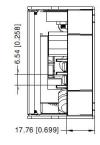
Dimensions and Recommended Layout (PV75-2YBxxR3)







Note:
Unit: mm[inch]
Wire range: 24–12AWG
Tightening torque: Max 0.4N•m
General tolerances: ±1.00[±0.039]
The mounting hole can be connected to PE

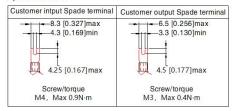


Pin-Out				
Pin	Mark			
1	Vin+			
2	Vin-			
3	Vo-			
4	Vo+			
Mounting hole	PE			



THIRD ANGLE PROJECTION 💮 🧲

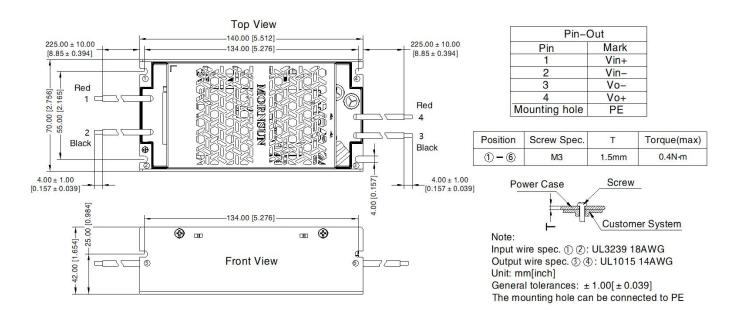
Spade terminal:





Dimensions and Recommended Layout (PV75-2YBxxWR3)







- CAUTION: "To reduce the risk of fire, connect only to a circuit provided with 4 amperes maximum branch-circuit over-current protection in accordance with the National Electrical Code, ANSI/NFPA70."
- 2. WARNING: REPLACE ONLY WITH THE SAME RATINGS AND TYPE OF FUSE.
- 3. DANGER HIGH VOLTAGE.

AVERTISSEMENT:

- 1. Avertissement: Pour réduire le risque d'incendie, veuillez connecter uniquement à des circuits de dérivation avec protection contre les surintensités conformes au code électrique national ANSI/ NFPA 70.
- 2. AVERTISSEMENT: N'UTILISER QUE DES FUSIBLES DE MÊMECALIBRE ET DE MÊME TYPE QUE LE FUSIBLE DORIGINE.
- 3. DANGER: HAUTE TENSION.

Note:

- 1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220276;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% with nominal input voltage and rated output load;
- 3. All index testing methods in this datasheet are based on our company corporate standards;
- 4. Products are related to laws and regulations: see "Features" and "EMC";
- 5. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.
- If the final product application is connected to a photovoltaic array, the array needs to be grounded and the voltage between the positive and negative poles of the product shall not be greater than 1000Vdc;

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