

# DC/DC RDZ400-1500S110

**HESION** | 禾信

Input 900-2000Vdc Output 110V/3.7A

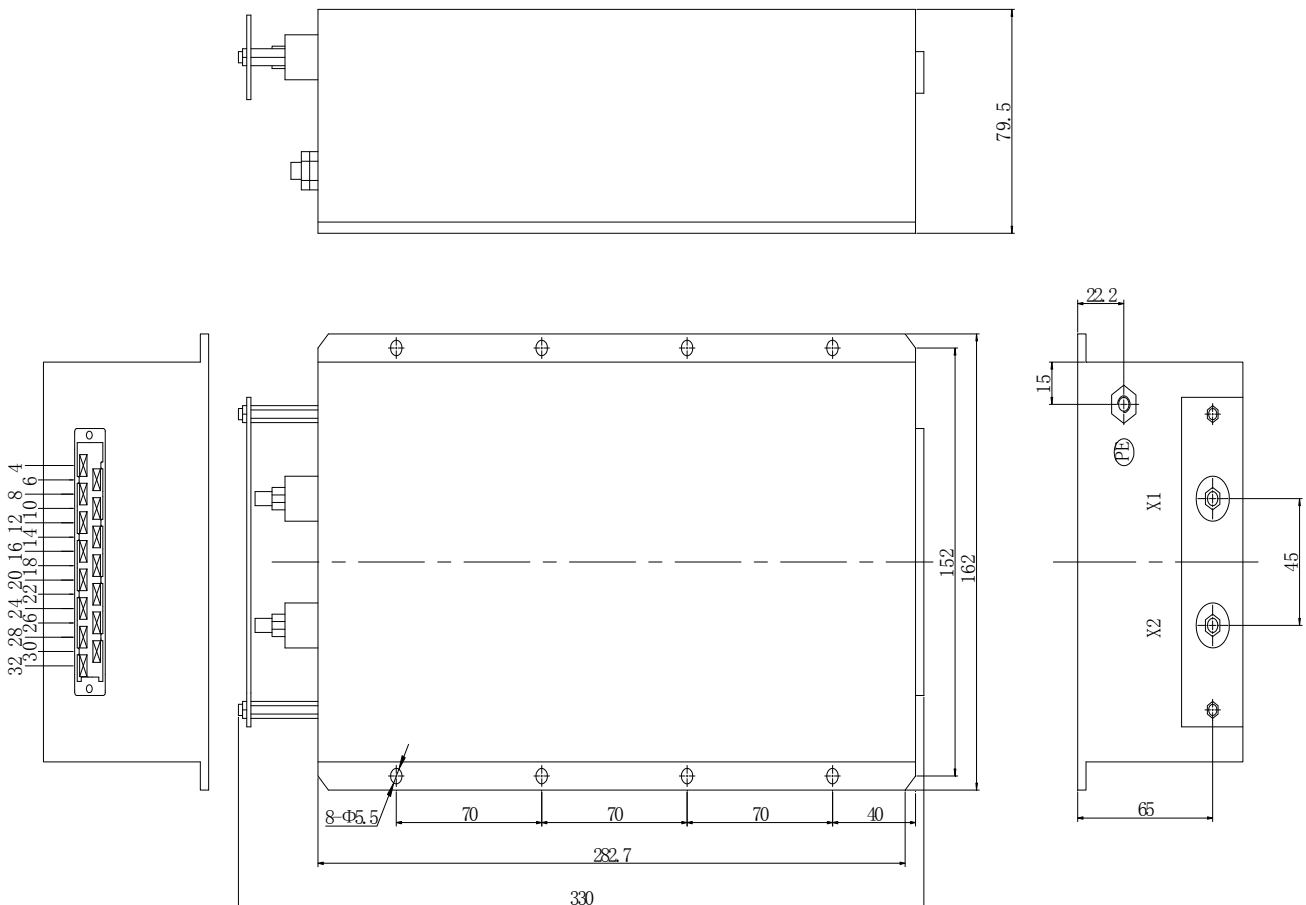
## Features

- ◇ Wide Input Voltage Range (900~2000Vdc)
- ◇ Input Under Voltage Protection, Input Over Voltage Protection
- ◇ Output Short-circuit Protection, Automatic Recovery
- ◇ Output Over Voltage Protection (Single Automatic Recovery, Multiple Locks)
- ◇ Output Over Current Protection
- ◇ 600Vac or 8500Vdc Isolation Voltage
- ◇ Operation Ambient Temperature -40 °C to +70 °C
- ◇ Applications: Industry control, Railway & Rail transit etc.

**RoHS**  
2002/95/EC



## Outline Diagram



Input 900-2000Vdc Output 110V/3.7A

Pin	Sign	Function	Pin	Sign	Function
X1	+Vin	+DC1500V Input	X3	20/22	+110V DC Output
X2	-Vin	-DC1500V Input	X3	10/22	-110V DC Output
PE	—	Protect Eearth	X3	6	Power fail output
X3	30/32	+Battery in	X3	4	Power fail output
X3	14/16	-Battery in			

Case material: plastic, black; Pin: copper with gold plating

Notes: all dimensions in mm(inches)

Tolerance: x.x mm:±0.5 (x.xx:±0.020); x.xx mm:±0.25 (x.xxx:±0.010)

X3: Harting H15 DIN41612

## Definition of indicator lights

Indicator Light	Status	Notes
ACTIVE(Green Light)	Light on	110V output is normal
	Light off	Output over voltage,Output under voltage; Power supply is in sleep mode Input under voltage,Input over voltage
FAIL(Red Light )	Light on	Power is failure
	Light off	Power is normal
IDLE(Yellow Light)	Light on	Power supply is in sleep mode,Battery works,Input power supply is normal
	Light off	110V output is normal

## Specification

Unless otherwise specified, all values are given at: 25°C, Vin=1500V, one standard atmosphere pressure, pure resistive load.

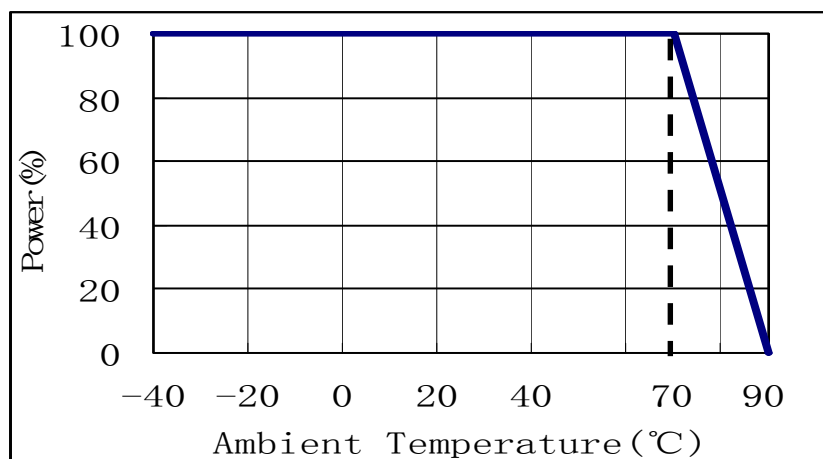
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	V <sub>in</sub>	900	1500	2000	Vdc	—
Input Current	I <sub>in</sub>	—	—	1.2	A	—
Input Current no load	—	—	—	10	mA	no load
Input Under Voltage Protection	V <sub>UVLO</sub>	800	—	900	V	—
Input Over Voltage Protection	V <sub>OVLO</sub>	2100	—	2350	V	—
Output Voltage Setting Accuracy	V <sub>o,set</sub>	104.50	110.00	115.50	V	V <sub>in</sub> =1500V, Full load
Output Overshoot	V <sub>TO</sub>	0	—	10.0	% V <sub>O</sub>	V <sub>in</sub> =1500V,I <sub>o</sub> =I <sub>o,nom</sub> , pure resistive load
Output Current	I <sub>o,nom</sub>	—	3.7	—	A	—
Output Over Voltage Protection	V <sub>ov,set</sub>	126	—	140	V	V <sub>in</sub> =1500V

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Line Regulation	$S_V$	-	-	$\pm 5$	% $V_O$	$I_o=I_{o,nom}$
Load Regulation	$S_I$	-	-	$\pm 5$	% $V_O$	$V_{in}=1500V, I_o:10\% \sim 100\% I_{o,nom}$
Output Over Current Protection Range	$I_{o,lim}$	14.5	-	-	A	Load 14.5A, duration 200ms, output voltage not less than 77V
Start-up Rise Time	$T_{rise}$	-	-	200	ms	$I_o=I_{o,nom}$
Start-up Delay Time	$T_{delay}$	-	-	3000	ms	$I_o=I_{o,nom}$
Capacitive Load	$C_O$	0	-	470	$\mu F$	$I_o=I_{o,nom}$ , pure resistive load
Peak to Peak Ripple and Noise	$\Delta V_{pp}$	-	2200	-	mV	$V_{in}=1500V, I_{o,nom}$ , 20MHz bandwidth, a 10 $\mu F$ Aluminum electrolytic capacitor and a 1 $\mu F$ ceramic capacitor
Output Short-circuit Protection	automatic recovery					
Load Transient	Recovery Time	$t_{tr}$	-	-	550	$\mu s$
	Voltage Deviation	$\Delta V_{tr}$	-	-	$\pm 5.0$	% $V_O$
						$V_{in}=1500V, 25\% \sim 50\% \sim 25\% I_{o,nom}$ or $50\% \sim 75\% \sim 50\% I_{o,nom}; 0.1A/\mu s$
Temperature Coefficient	$S_T$	-	-	0.02	%/ $^{\circ}C$	—
Efficiency	$\eta$	85	-	-	%	$V_{in}=1500V, I_{o,nom}$
Isolation Voltage	$V_{iso}$	6000	-	-	Vac	Input to output, 10mA
		6000	-	-	Vac	Input to Case, 10mA
		1500	-	-	Vac	Output to Case, 10mA
Isolation Resistance	$R_{iso}$	200	-	-	$M\Omega$	500Vdc
Over Temperature Protection Reference Point	$T_{ref}$	105	110	115	$^{\circ}C$	Temperature of the internal heat sink of the power
Operating Ambient Temperature	-	-40	-	+70	$^{\circ}C$	See the derating curve
Storage Temperature	-	-45	-	+90	$^{\circ}C$	—
Input anti reverse	Input anti reverse by diodes					
MTBF	-	-	$2 \times 10^5$	-	h	BELLCORE TR-332
Weight	-	-	3.8	-	Kg	—

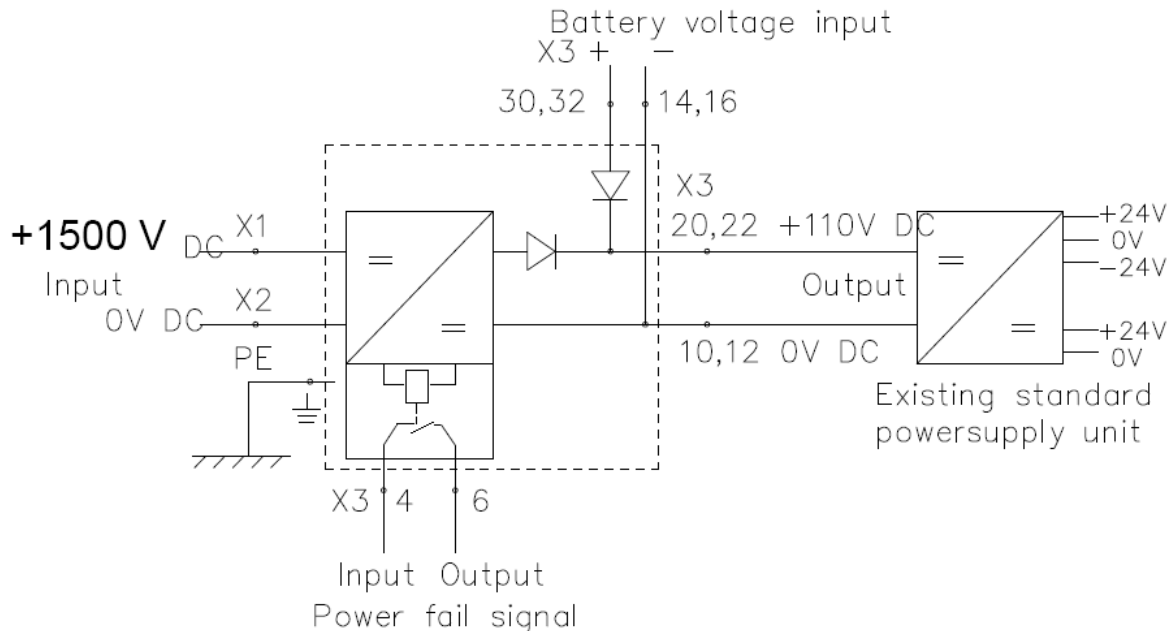
## Characteristic Curves

### Derating



## Design Considerations

### Basic Connection



Notes: Please see the application information followed for the further information.

### Thermal Consideration

The converters operate in a variety of thermal environments; however, sufficient cooling should be provided to ensure reliable operation of the unit. Heat is removed by conduction, convection and radiation to the surrounding environment.

When ambient temperature is higher than the permitted operating, the derating curves should be referred or external heat dissipation measures. Forced air cooling or heatsink, should be used. The air tunnel should be considered for forced air cooling, to avoid heated air be hindered or forming swirl; when heatsink used, it should be attached the converter closely, through double-side thermal conductivity insulation adhesive or thermal conductivity silicone for heat exchange.

### Cleaning Notice

The converter case is not a hermetically-sealed construction, a sufficient drying process is required after the converter cleaning, make sure the liquid congregated is removed, or it will damage the converter or degradation of performance

After surface treatment, the appearance of the converter may be affected by the organic solvent, protection measures should be taken before cleaning when appearance is concerned.

### Quality Statement

The converters are manufactured in accordance with ISO 9001 system requirements, and are monitored 100% by auto-testing system, 100% burn in.

The warranty for the converters is 5-year.

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## Contact Information

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