



CE

Features

- Compliance to EN50155 and EN45545-2 railway standard
- Ultra compact and 1U low profile(25mm)
- 4:1 wide input range
- · No minimum load required
- Protections: Short circuit / Overload / Over voltage / Input reverse polarity
- · 4000VDC I/O isolation
- · Half encapsulated, cooling by free air convection
- -40~+70°C wide working temperature
- Built-in constant current limiting circuit
- · LED indicator for power on
- · 3 years warranty









Applications

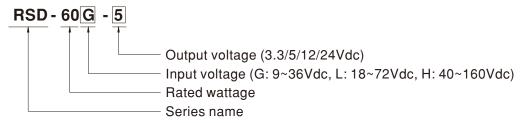
- Bus,tram,metro or railway system
- Highly vibrating, highly dusty, extremely low or high temperature harsh environment
- Wireless network
- Telecom or datacom system
- Industry control system

■ Description

RSD-60 is a 60W enclosed type DC-DC reliable railway converter. This series is compliant with EN50155/ IEC60571 railway standard, constituting three types of models with 4:1 wide but different input ranges $9\sim36V/18\sim72V/40\sim160V$, suitable for railway and all kinds of transportation systems exploiting the frequently used standard input voltages such as 12V, 24V, 36V, 48V, 72V, 96V and 110V. Various output voltages, 3.3V, 5V, 12V and 24V are available for selection.

This series has the capability of working under -40° C, low ripple and noise, supreme EMC characteristics, 4KVDC I/P-OP, low enclosure profile 25mm and an interior with semi-potted silicone. It does not only well fits the in-car systems or the facilities by rails for railway, trams and buses but also can be used in the harsh environment with high vibration, high dust, extremely low or high temperature, etc.

■ Model Encoding





SPECIFICATION

MODEL		RSD-60G-3.3	RSD-60G-5	RSD-60G-12	RSD-60G-24	RSD-60L-3.3	RSD-60L-5	RSD-60L-12	RSD-60L-24	
	DC VOLTAGE	3.3V	5V	12V	24V	3.3V	5V	12V	24V	
ОИТРИТ	RATED CURRENT	12A	12A	5A	2.5A	12A	12A	5A	2.5A	
	CURRENT RANGE	0 ~ 12A	0 ~ 12A	0 ~ 5A	0 ~ 2.5A	0 ~ 12A	0 ~ 12A	0 ~ 5A	0 ~ 2.5A	
	RATED POWER	39.6W	60W	60W	60W	39.6W	60W	60W	60W	
	RIPPLE & NOISE (max.) Note.2	60mVp-p	100mVp-p	50mVp-p	50mVp-p	60mVp-p	80mVp-p	50mVp-p	50mVp-p	
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	
	LINE REGULATION	±0.5%	±0.5%	±0.3%	±0.2%	±0.5%	±0.5%	±0.3%	±0.2%	
	LOAD REGULATION	±0.5%	±0.5%	±0.3%	±0.2%	±0.5%	±0.5%	±0.3%	±0.2%	
	SETUP, RISE TIME	100ms, 60ms a		_ = 0.070	1 - 0.270	1 = 3.3 /3	_ = 0.070	1 - 3.370	1 - 0:270	
	HOLD UP TIME (Typ.)	G type comply with S1 level(3ms) @full load,S2 level(10ms) @50% load; L type comply with S2 level(10ms) @full load								
	VOLTAGE RANGE CONTINUOUS					18 ~ 72VDC				
INPUT	EFFICIENCY (Typ.)	86.5%	88%	92%	90%	88.5%	89%	93%	92%	
	DC CURRENT (Typ.)	2.1A/24VDC	3A/24VDC	JZ /0	30 /0	0.95A/48VDC	1.5A/48VDC	3370	JZ /0	
		20A/24VDC				20A/48VDC	1.3A/40VDC			
	INRUSH CURRENT (Typ.)									
PROTECTION	OVERLOAD	105 ~ 135% rated output power Protection type: Constant current limiting, recovers automatically after fault condition is removed								
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	OVER VOLTAGE	4.3 ~ 4.95V	5.75 ~ 7V	13.8 ~ 16.2V		4.3 ~ 4.95V	5.75 ~ 7V	13.8 ~ 16.2V	27.6 ~ 32.4	
		Protection type: Shut down o/p voltage, re-power on to recover								
ENVIRONMENT	WORKING TEMP.	-40 ~ +55 °C (no derating) ; +70 °C @ 60% load by free air convection ; +70 °C (no derating with external base plate)								
	WORKING HUMIDITY	5 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +85 $^{\circ}\mathrm{C}$, 10 ~ 95% RH non-condensing								
	TEMP. COEFFICIENT	$\pm 0.03\%^{\circ}$ C (0 ~ 50°C)								
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: compliance to IEC61373								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	Meet IEC60950-1 (LVD)								
	WITHSTAND VOLTAGE	I/P-O/P:4KVDC I/P-FG:2.5KVDC O/P-FG:2.5KVDC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH								
	EMC EMISSION	Parameter Standard			ndard	Test Level / Note				
		Conducted Radiated		ENS	EN55011		Class A	Class A		
				EN5	EN55032		Class B	Class B		
				EN5	EN55011		Class A			
				EN5	EN55032		Class B			
		Harmonic Current		EN6	EN6100-3-2		Class A			
		Voltage Flicker			EN6100-3-3					
	EMC IMMUNITY	Parameter			Standard		Test Level / Note			
		ESD			EN61000-4-2		Level 3, ±8KV air ; Level 3, ±6KV con			
		Radiated Field			EN61000-4-3		Level X			
		radiated Field		LINC	EN61000-4-4			Level 3, 2KV at power		
		EFT / Burst		EN6				Level 4, 2KV at signal		
		Curao		ENG	EN61000-4-5		Level 3,1KV Line-Line, Level 3, 2KV Line-E			
		Surge								
	DAIL WAY OTANDADD	Conducted			EN61000-4-6			Level 3		
	RAILWAY STANDARD	Compliance to EN45545-2 for fire protection; Meet EN50155 / IEC60571 including IEC61373 for shock & vibration, EN50121-3-2 for							0121-3-2 for El	
OTHERS	MTBF	593.8K hrs min. MIL-HDBK-217F (25°C)								
	DIMENSION	128*60*25mm (L*W*H)								
	PACKING	0.29Kg; 48pcs/14.9Kg/0.76CUFT								
NOTE	All parameters NOT special Ripple & noise are measure Tolerance: includes set up The power supply is consid a 360mm*360mm metal plaperform these EMC tests, p Strongly recommended that	ed at 20MHz of tolerance, line rered a componente with 1mm of olease refer to "E	bandwidth by u egulation and lo ent which will be thickness. The EMI testing of c	sing a 12" twisted pad regulation. the installed into a final equipment component powe	ed pair-wire term final equipment must be re-conf r supplies." (as a	inated with a 0.1 All the EMC testirmed that it still	uf & 47uf para sts are been ex meets EMC di	kecuted by moun	_	