240W All-In-One Intelligent Security Power

DRS-240 series

User's Manual

UL62368-1 BS EN/EN62368-1 AS/NZS 62368.1 TPTC004 IEC62368-1

Security Network Telecom Automate Industrial

Features

- Universal input 90~305VAC (277VAC available)
- All-in-one function with Power supply, DC-UPS, battery charger and status monitoring in ONE compact unit
- Signal and alarms design meet UL2524,NFPA 1221,BS EN/EN54-4 and GB17945 requirement, with adjustable parameters configurable by communication interface
- Form C relay contacts and LED indicators for AC Fail, Battery Low, Charger Fail, and DC-OK
- Load-dependent high speed battery charging
- Built-in MODBus or CANBus protocol
- Protections: Short circuit / Overload / Over voltage / Over temperature(auto derating) / Battery reverse polarity (No damage) / Battery cut off
- Battery low protection / Battery reverse polarity protection
- -30 ~ +70℃ wide operating temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- Charging curve can be set with SBP-001(only for CANBus model)
  (Smart programmer sold separately, please refer to: https://www.meanwell.com/webapp/product/search.aspx?prod=SBP-001)
- 20~100% charging current adjustable by VR
- 2 or 3-stage selectable by DIP S.W
- Suitable for lead acid and lithium-ion batteries
- 3 years warranty

Applications

- Public safety battery back-up (Red box)
- Security system
- Emergency lighting system
- Alarm system
- Uninterruptible DC-UPS system, battery detection system
- Central monitoring system
- Industrial automation

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

DRS-240 is a 240W AC/DC DIN rail type security power supply series. In addition to the primary output, there is an additional charger circuit that will automatically adjust charge current depending on the primary output current. DRS-240 accepts the universal input between 90VAC and 305VAC, and supports output 12VDC, 24VDC, 36VDC, and 48VDC nominal systems. With high efficiency up to 92%, it can operate with free air convection cooling under -30℃ through 70℃ ambient temperature. In addition to the key protection features such as overload protection, over voltage protection, battery low voltage disconnect, and battery reverse polarity protection, the DRS-240 also provides Form-C contacts and LED indicator alarm signals for AC-fail, battery low, charger circuit fail, and DC-OK to allow easy integration into security systems that comply with local alarm codes.

Model Encoding

DRS - 240 - 48 ☐

- ☐ : Function (Blank: Built-in MODBus, CAN: Built-in CANBus)
- 48 : Output voltage(12V/24V/36V/48V)
- 240 : Rated wattage
- DRS : Series name

SPECIFICATION

MODEL			DRS-240-12□	DRS-240-24□	DRS-240-36□	DRS-240-48□
			□=Blank, CAN			
OUTPUT	OUTPUT VOLTAGE Note.2		12V	24V	36V	48V
	CURRENT RANGE		0 ~ 20A	0 ~ 10A	0 ~ 6.6A	0 ~ 5A
	BATTERY CURRENT (CC)(max.)		15.4A	7.7A	5.1A	3.85A
	RECOMMENDED BATTERY CAPACITY(AMP HOURS)Note.3		20 ~ 200AH	10 ~ 100AH	6.6 ~ 66AH	5 ~ 50AH
	TOTAL OUTPUT POWER Note.4		Combined power on all Channels must not exceed 240W, load has priority. 275W peak capability within 5s.			
	RIPPLE & NOISE (max.) Note.5		150mVp-p	240mVp-p	360mVp-p	480mVp-p
	VOLTAGE TOLERANCE Note.6		±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION		±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION		±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7		2400ms, 1000ms/230VAC 2400ms, 1000ms/115VAC at full load			
	HOLD UP TIME (Typ.)		16ms/230VAC 10ms/115VAC at full load			
INPUT	VOLTAGE RANGE		90 ~ 305VAC 127 ~ 431VDC			
	FREQUENCY RANGE		47 ~ 63Hz			
	POWER FACTOR (Typ.)		PF>0.95/230VAC PF>0.98/115VAC at full load			
	EFFICIENCY (Typ.)		90%	92%	92%	92%
	AC CURRENT (Typ.)		2.8A/115VAC 1.4A/230VAC			
	INRUSH CURRENT (Typ.)		COLD START 30A/115VAC 60A/230VAC			
PROTECTION	SHORT CIRCUIT		Protection type: Constant current limiting, power will shutdown after 5 sec, re-power on to recover.			
	OVERLOAD		105 ~ 135% rated output power			
			Protection type: Constant current limiting, shutdown output voltage after 5 sec.			
	OVER TEMPERATURE		Automatically drop load with temperature only for bat. load. Protection type : Shut down o/p voltage, recover automatically after temperature goes down.			
	OVER VOLTAGE		Load main output : 16.2 ~ 18.6V	Load main output : 32.4 ~ 37.3V	Load main output : 48.6 ~ 55.9V	Load main output : 64.8 ~ 74.5V
			Protection type : Shut down o/p voltage, re-power on to recover			
	BATTERY CUT OFF		10.5±0.3V	20.9±0.5V	31.3±0.7V	41.8±1V
	REVERSE POLARITY		By internal MOSFET, no damage, recovers automatically after fault condition is removed.			
FUNCTION	FORM-C RELAY	AC FAIL	Signals AC failure and activates when input voltage drops below : 79~89VAC of 120AC, 132~187VAC of 220VAC. Relay contact output, ON : AC OK ; OFF : AC Fail ; max. rating : 30Vdc/1A			
		CHARGER FAIL	Relay contact output, ON : Charger OK ; OFF : Charger Fail ; max. rating : 30Vdc/1A			
		DC OK	Signals normal DC output and activates when output voltage > 90% rated value. Relay contact output, ON : DC OK ; OFF : DC Fail ; max. rating : 30Vdc/1A			
		BATTERY LOW/ ABNORMAL/ DISCONNECTED	Relay contact output, ON : Battery OK ; OFF : Battery Low ; max. rating : 30Vdc/1A			
			Battery low voltage:< 11±0.2V	Battery low voltage:< 22±0.3V	Battery low voltage:< 33±0.4V	Battery low voltage:< 44±0.5V
	BATTERY START		Restart system directly from battery and does not require AC power			
	DC-UPS		UPS switch to battery power within 10ms of AC failure			
	ADJUSTABLE CHARGING CURRENT		20% ~ 100% charging current adjustable by VR			
	BATTERY TEMPERATURE COMPENSATION		The system can change the battery charging voltage by detecting the temperature (Please refer to page 9~10 for more details).			
ENVIRONMENT	WORKING TEMP.		-30 ~ +70℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY		20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY		-40 ~ +85℃, 10 ~ 95% RH non-condensing			
	TEMP. COEFFICIENT		±0.03%/℃ (0 ~ 50℃) on Load output			
	VIBRATION		10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes			
	OPERATING ALTITUDE Note.8		2000 meters / OVC Ⅲ			
	OVER VOLTAGE CATEGORY		Ⅲ; According to Dekra BS EN/EN62368-1; altitude up to 2000 meters			
SAFETY & EMC (Note.9)	SAFETY STANDARDS		UL62368-1, Dekra BS EN/EN62368-1, RCM AS/NZS 62368.1, EAC TP TC 004 approved			
	WITHSTAND VOLTAGE		I/P-O/P: 4KVAC I/P-FG: 2KVAC O/P-FG: 1.5KVAC			
	ISOLATION RESISTANCE		I/P-O/P, I/P-FG, O/P-FG: 100M Ohms/500VDC/25℃/ 70%RH			
	EMC EMISSION		**Parameter**	**Standard**	**Test Level / Note**	
			Conducted	BS EN/EN55032 (CISPR32)	Class B	
			Radiated	BS EN/EN55032 (CISPR32)	Class B	
			Harmonic Current	BS EN/EN61000-3-2	-----	
			Voltage Flicker	BS EN/EN61000-3-2	-----	
	EMC IMMUNITY		BS EN/EN55035 , BS EN/EN61204-3, BS EN/EN61000-6-2(BS EN/EN50082-2)			
			Parameter	**Standard**	**Test Level / Note**	
			ESD	BS EN/EN61000-4-2	Level 3, 8KV air ; Level 2, 4KV contact; criteria A	
			Radiated	BS EN/EN61000-4-3	Level 3, 10V/m ; criteria A	
			EFT / Burst	BS EN/EN61000-4-4	Level 3, 2KV ; criteria A	
			Surge	BS EN/EN61000-4-5	Level 3, 1KV/Line-Line ;Level 3, 2KV/Line-Line-Chassis ;criteria A	
			Conducted	BS EN/EN61000-4-6	Level 3, 10V ; criteria A	
			Magnetic Field	BS EN/EN61000-4-8	Level 4, 30A/m ; criteria A	
	FIRE DETECTION AND FIRE ALARM SYSTEM		Compliance to BS EN/EN54-4			
OTHERS	MTBF		564.7K hrs min. Telcordia SR-332 (Bellcore); 73.3K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION		85.5*125.2*129.2mm (W*H*D)			
	PACKING		1.19Kg; 8pcs/ 12.5Kg / 1.08CUFT			

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Variable with charger voltage when battery is connected.
3. This is Mean Well's suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation.
4. If load current increases, the system will prioritize load current demand and automatically reduce the battery charging current.
5. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μF & 47 μF parallel capacitor.
6. Tolerance : includes set up tolerance, line regulation and load regulation.
7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
8. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
9. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15cm clearance is recommended.
10. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 720mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)

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