

FEATURES

- Universal 85 - 305VAC and 100 - 430VDC
- Industry standard footprint
- Efficiency up to 90%
- No Load power consumption < 0.1W
- Operating temperature range - 40°C to +85°C
- 5000m altitude operation
- Over-voltage category OVC 111 (meet EN61558)
- EMI performance meets. CISPR32 / EN55032 CLASS B EN55014
- IEC/EN/UL62368-1/EN60335-1 EN61558-1 safety approval

RS PRO PCB mount Switch Mode Power Supplies

RS Stock No:

2275214

2275215

2275216

2275217

2275218



RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price

Embedded Switch Mode Power Supplies (SMPS)

Product Description

AC-DC PCB mount power supply suitable for a wide range of industrial, consumer and telecom instruments and applications. This compact, high efficiency series provides double or reinforced insulation and excellent EMC performance. The converters are approved to UL62368, EN62368, IEC62368, EN60335 and EN61558 and perform with the CLASS B limits of CISPR32 / EN55032/ EN55014 without external components.

General Specifications

Model	AC-DC 30W power supply
Mounting Type	PCB mount
Package Type	Black plastic, flame-retardant and heat-resistant (UL94V-0)/Metal
MTBF	MIL-HDBK-217F@25°C > 500,000 h
Applications	Industrial control systems, instrumentation and electrical equipment

RS Item No.	Input Voltage	Output Voltage	Output Current	Output Wattage	Efficiency (Typ)
2275214	85 to 305V ac 100 to 430V dc	+ 5V DC	6A	30W	86%
2275215	85 to 305V ac 100 to 430V dc	+ 12V DC	2.5A	30W	90%
2275216	85 to 305V ac 100 to 430V dc	+ 15V DC	2A	30W	90%
2275217	85 to 305V ac 100 to 430V dc	+ 24V DC	1.3A	31.2W	88%
2275218	85 to 305V ac 100 to 430V dc	+ 48V DC	0.63A	30.2W	90%

Electrical Specifications

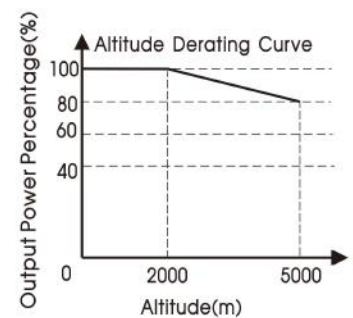
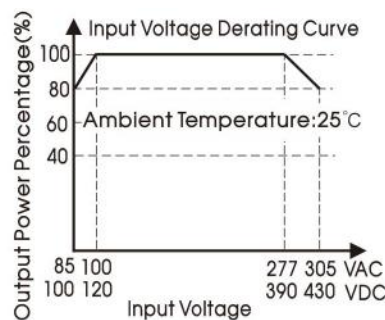
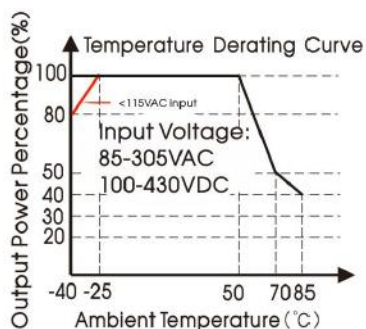
Input Specification	
Voltage Range	85 to 305V ac, 100 to 430V dc
Frequency	47 to 63Hz
AC Current Rating	0.75A/115V ac, 0.5A/230V ac
Inrush Current	25A / 115 ac, 50A / 230V ac
Input Protection	Recommend external 2A/300V, slow blow, required

Embedded Switch Mode Power Supplies (SMPS)

Output Specification					
Output voltage	5V	12V	15V	24V	48V
Rated Current	6A	2.5A	2A	1.3A	0.63A
Ripple & Noise (typ.)	100mVp-p	100mVp-p	100mVp-p	100mVp-p	150mVp-p
Ripple & Noise (max.)	100mVp-p	100mVp-p	100mVp-p	150mVp-p	150mVp-p
Rated Power	30W	30W	30W	30W	30W
Max. Capacitive Load	6600uF	4400uF	3300uF	1000uF	470uF
Voltage Tolerance	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%
Line Regulation typ.	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
Load Regulation typ.	±1.5%	±1%	±1%	±1%	±1%
Minimum Load	0%	0%	0%	0%	0%

Operation Environment Specifications

Storage Humidity	95% RH		
Cooling	Natural convection		
Operating Temperature Range	-40 to 85°C		
Storage Temperature Range	-40 to 85°C		
Power Derating	-40°C to -25°C (< 115VAC)	1.33	% / °C
	+50°C to +70°C	2.5	
	+50°C to +70°C	0.67	
	85VAC - 100VAC	1.33	% / VAC
	277VAC - 305VAC	0.72	
	2000m - 5000m	6.7	% / Km



Hold Up Time	50ms/230V ac, 10ms/115V ac
Over Voltage Protection	5VDC /12VDC Output≤16VDC (Output voltage hiccup)
	15VDC Output ≤25VDC (Output voltage hiccup)
	24VDC Output ≤35VDC (Output voltage hiccup)
	48VDC Output ≤60VDC (Output voltage hiccup)
Over-current Protection	≥110%Io, self-recovery
Short Circuit Protection	Hiccup, continuous, self-recovery
Switching Frequency	65KHz
Isolation	4.2KVAC

Typical application

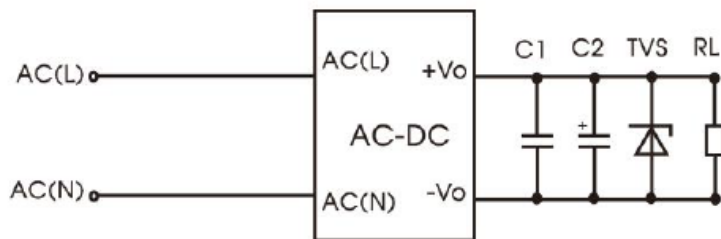


Fig. 1: Typical circuit diagram

RS Item No.	C1(μF)	C2(μF)	TVS
2275214	1μF/100V	10μF /50V	SMBJ7.0A
2275215		10μF /50V	SMBJ20A
2275216		10μF /50V	SMBJ20A
2275217		10μF /50V	SMBJ30A
2275218		10μF /63V	SMBJ64A

Output Filter Components:

C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode to protect the application in case of a converter failure.

EMC Specifications

Emissions	CE	CISPR32/EN55032 CLASS B EN55014-1	
	RE	CISPR32/EN55032 CLASS B EN55014-1	
Immunity	ESD	IEC/EN 61000-4-2 Contact $\pm 8\text{KV}/\text{Air } \pm 15\text{KV}$	Perf. Criteria A
		IEC/EN55014-2	Perf. Criteria A
	RS	IEC/EN 61000-4-3 10V/m	Perf. Criteria A
		IEC/EN55014-2	Perf. Criteria A
	EFT	IEC/EN 61000-4-4 $\pm 2\text{KV}$	Perf. Criteria A
		IEC/EN 61000-4-4 $\pm 4\text{KV}$ (See Fig. 2 for recommended circuit)	Perf. Criteria A
	Surge	IEC/EN55014-2	Perf. Criteria A
		EC/EN 61000-4-5 line to line $\pm 2\text{KV}/\text{line to ground } \pm 4\text{KV}$ (See Fig. 2 for recommended circuit)	Perf. Criteria A
CS	IEC/EN61000-4-6 10 Vr.m.s	Perf. Criteria A	
	IEC/EN55014-2	Perf. Criteria A	
Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%, 70%	Perf. Criteria B	
	IEC/EN55014-2	Perf. Criteria B	

Fig 2 Recommended circuit compliance IEC/EN61000-4-4 $\pm 4\text{kV}$ and IEC/EN61000-4-5 line to line $\pm 2\text{kV}/\text{line to ground } \pm 4\text{kV}$

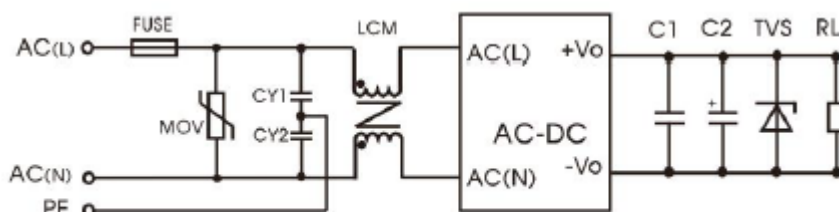


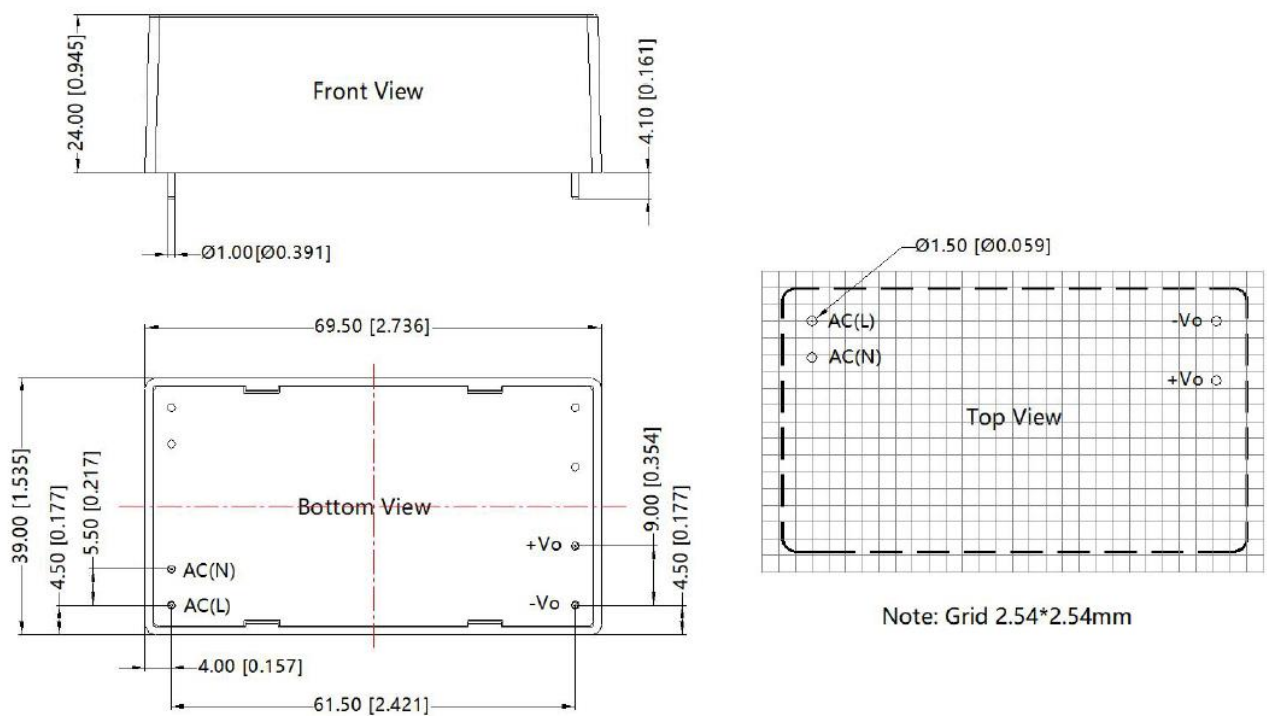
Fig 2: EMC application circuit with higher requirements

Component	Recommended value
FUSE	2A/300V, slow-blow, required
MOV1	S14K350
CY1, CY2	1nF/400VAC
LCM	10mH, we recommended using part no. FL2D-Z5-103 (MORNSUN)
C1	As above
C2	As above
TVS	As above

Mechanical Specifications

Overall Length	69.5mm
Overall Depth	24mm
Overall Width	39mm
Weight	100g (Typ.)

Dimensions and recommended layout

THIRD ANGLE PROJECTION 

Note:
 Unit: mm[inch]
 Pin diameter tolerances: ± 0.10 [± 0.004]
 General tolerances: ± 0.50 [± 0.020]

Approvals

Safety Standard	IEC/EN/UL62368/EN60335/EN61558
Safety Certificate	IEC/EN/UL62368/EN60335/EN61558
Safety Class	CLASS II
Declaration	CE and UKCA

Additional Information

Custom Tariff Number	85044030
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Notes

1. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet.
2. 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's 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.

Connection Diagrams / Assembly Diagrams / Illustrations / Accessories