DESCRIPTIONS DC-DC Parallel Redundancy Module



RoHS 3 Years Warranty

CE Report EN62368-1

UKCA Report BS EN62368-1

FEATURES

- Input voltage range: 9-60VDC
- Operating ambient temperature range: -40℃ to +85℃
- High efficiency up to 98%
- 1500VAC insulation voltage
- The DC OK function is displayed, relay contact signal output
- Double side conformal coating
- Operating altitude up to 5000m
- Supporting for N+1 parallel redundancy
- Safety according to UL/IEC/EN62368、UL61010/508、ATEX、EN61558、EN60335、IECEx、EN62477、GB4943

APPLICATIONS

- Industrial Control
- electricity
- security
- telecommunications

Selection Guide

Certification	Part No.	Voltage Drop Vin-Vo (V/Typ.)	Nominal Output Current (A) Max.	Efficiency (24/48VDC, %/Typ.)
EN/BS EN	DDR20-20	0-0.2	20	98

Note: 1.*The rated voltage difference of the product is related to the input voltage and the load condition, the greater the load, the greater the pressure difference.
2.The product picture is for reference only. For details, please refer to the actual product.

Specifications

Product Specifications	Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range	DC input	9	12/24 /48	60	VDC
	Input Current Range	Each input 0-20A, continuous	--	--	20	A
	Input Peak Current	Each input 0-30A for 5s without damage	--	--	30	A
	Input Under-voltage Alarm	Input 12V on one route and test the input voltage that triggers the under-voltage(One LED goes out. The relay changed from on to off)	--	8	--	VDC
		Input 24V on one route and test the input voltage that triggers the under-voltage(One LED goes out. The relay changed from on to off)	--	18	--	
		Input 48V on one route and test the input voltage that triggers the under-voltage(One LED goes out. The relay changed from on to off)	--	36	--	
	Input Over-voltage Alarm	Input 12V on one route and test the input voltage that triggers the over-voltage(One LED goes out. The relay changed from on to off)	--	16	--	
		Input 24V on one route and test the input voltage that triggers the over-voltage(One LED goes out. The relay changed from on to off)	--	32	--	
		Input 48V on one route and test the input voltage that triggers the over-voltage(One LED goes out. The relay changed from on to off)	--	64	--	
	Hot Plug	--	Unavailable			
Output Specifications	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	--	200	--	mV
	Output Power	48V/20A	--	960	--	W
	DC OK Function	The two input voltages are normal	DC OK function is normal (relay on), two input LED indicator light on			
	LED1 (Vin1 OK)	Vin1 input OK	ON			
	LED2 (Vin2 OK)	Vin2 input OK	ON			
General Specifications	Isolation Test Input output - ⏚	Electric strength test for 1min., leakage current < 2mA	1500	--	--	VAC
	Insulation Resistance Input output - ⏚	At 500VDC	100	--	--	MΩ
	Operating Temperature		-40	--	+85	℃
	Storage Temperature		-40	--	+85	
	Storage Humidity	Non-condensing	--	--	95	%RH
	Power Derating	Operating temperature derating +60℃ to +85℃	2.25	--	--	%/℃
	Safety Class		CLASS III			

	MTBF	MIL-HDBK-217F@25℃	＞1000,000 h
	Warranty	Ambient temperature: <60℃	3years
Environmental Characteristics	Item	Operating Conditions	Standard
	High and Low Temperature Working	+85℃, -40℃	GB2423.1, IEC60068-2-1
	Sinusoidal Vibration	10 - 500Hz, 5g, three directions of X, Y, Z axis	GB2423.10, IEC60068-2-6
	Alternating Hot and Humid	+25℃, 95%RH - +60℃, 95%RH	GB2423.4, IEC60068-2-30
	Low Temperature Storage	-40℃	GB2423.1, IEC60068-2-1
	High Temperature Storage	+85℃	GB2423.2, IEC60068-2-2
	Temperature Shock	-40℃ to +85℃	GB2423.22, IEC60068-2-14
	Temperature Cycle	-25℃ to +60℃	GB2423.22, IEC60068-2-14
	Hot and Humid	+85℃, 85%RH	GB2423.50, IEC60068-2-67
	Constant Humid and Hot	+40℃, 95%RH	GB2423.3, IEC60068-2-78
	Packaging Drop	1m, one corner, three edges and six sides	GB2423.8, IEC68-2-32
Mechanical Specifications	Case Material	Metal (AL1100, SGCC)	
	Dimensions	110.00mm × 87.50mm × 32.00mm	
	Weight	255g (Typ.)	
	Cooling Method	Natural air cooling	

Note: 1.*LED state: Vin1 triggers the under-voltage alarm, Vin1 LED turns off, Vin2 LED turns on; Vin1 triggers the over-voltage alarm, Vin1 LED turns on, Vin2 LED turns off.

2.*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor,.

Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032	CLASS B
		RE	CISPR32/EN55032	CLASS B
	Immunity (EMS)	ESD	IEC/EN 61000-4-2 Contact ±8KV/Air ±15KV	Perf. Criteria A
		RS	IEC/EN 61000-4-3 10V/m	
		EFT	IEC/EN 61000-4-4 ±2KV	
		Surge	IEC/EN 61000-4-5 line to line ±1KV/line to ground ±2KV	
		MS	IEC/EN61000-4-8 30A/m	
		CS	IEC/EN61000-4-6 0.15 - 80MHz 10 Vr.m.s	

Note: *perf. Criteria:

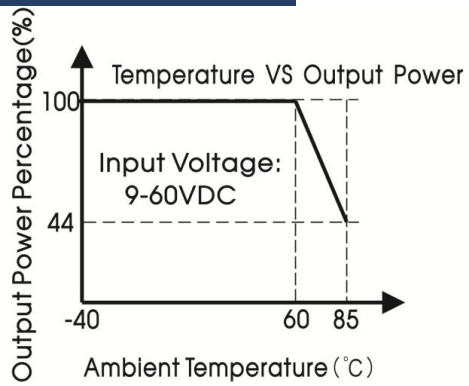
A:The product worked normally before, after and during the test.

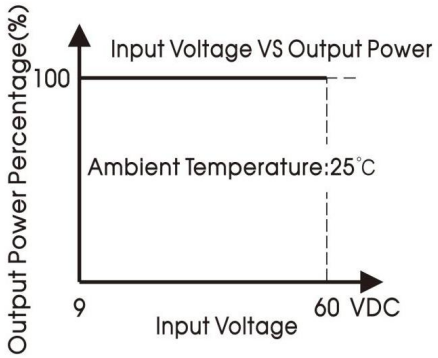
B:Temporary reduction or loss of function or performance , but self-recovery.

C:Temporary reduction or loss of function or performance requiring operator intervention or system returning.

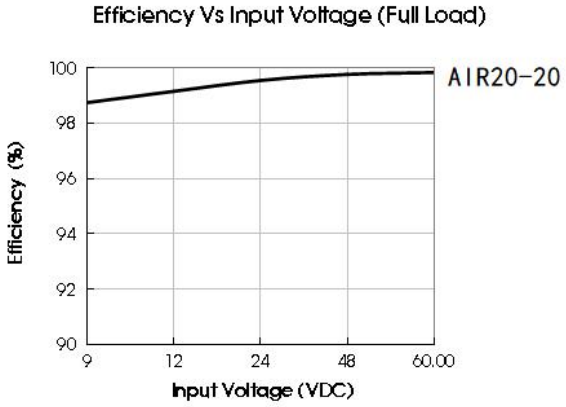
Note:Electromagnetic Compatibility (EMC):The AC-DC module is added to the front(Use with AD、ADF、ADMF、ADHF120/240/480 series product).

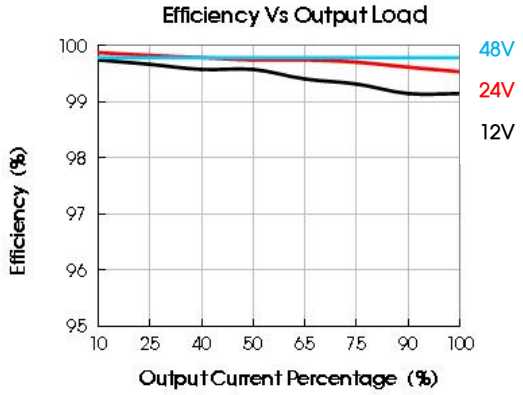
Characteristic Curve





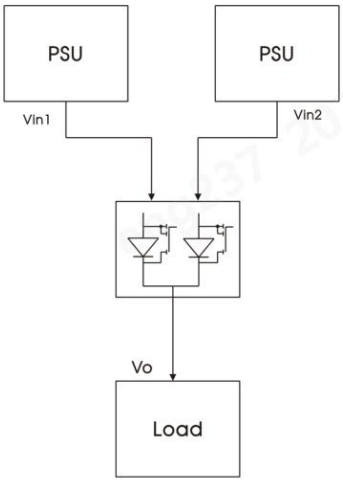
Note: This product is suitable for applications using natural air cooling.



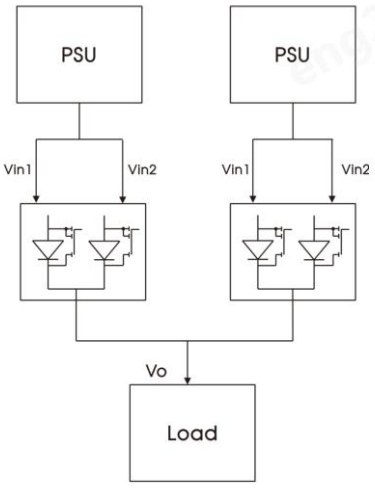


Typical Application

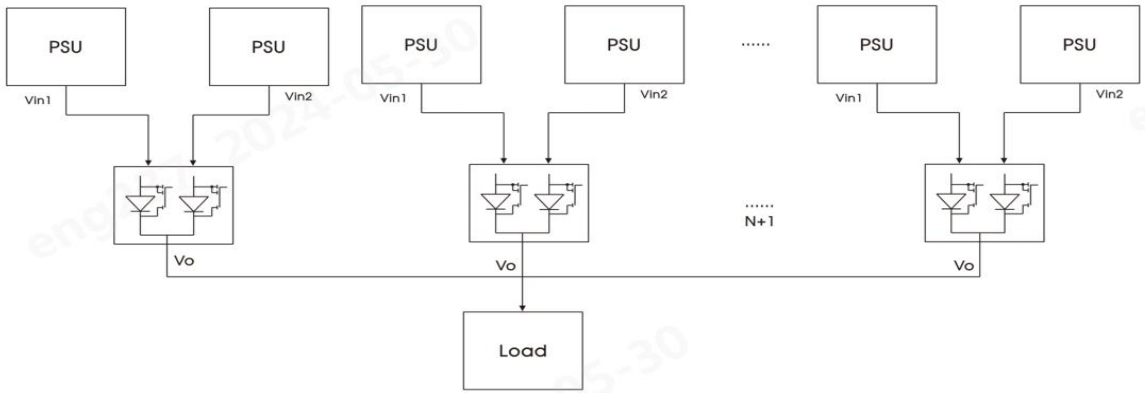
1. 1+1 Redundancy: Using 1 more PSU as the redundant unit.



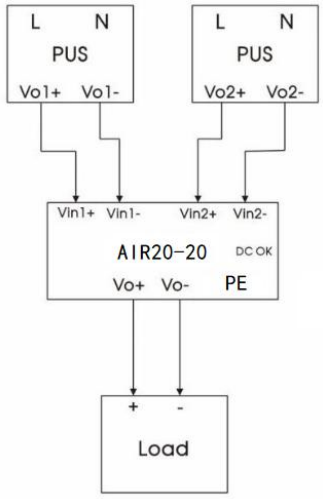
2. Single Use: Connecting only one PSU to one DDR20-20 module to Reduce the stress of the MOS and hence increase the reliability.



3. N+1 Redundancy: Using more PSUs as the redundant units to increase the reliability.



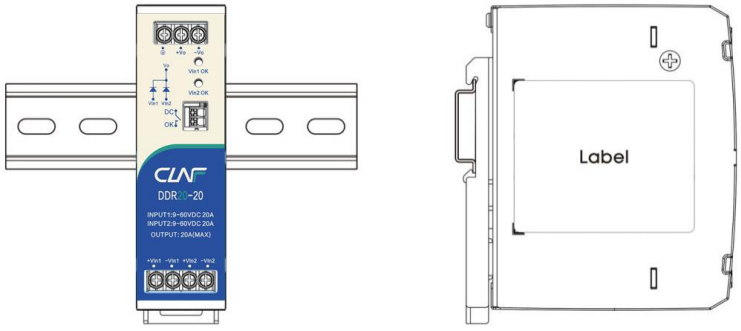
4. Cable connection reference



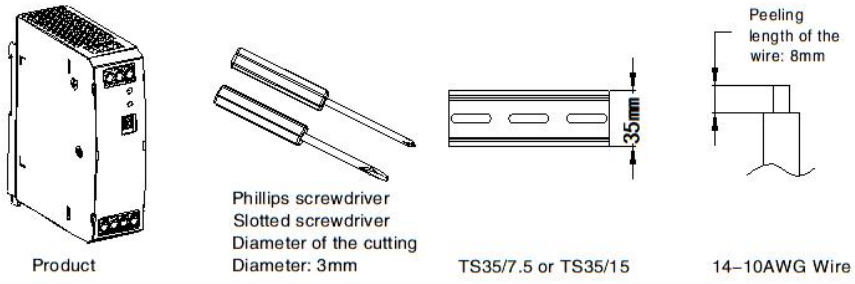
Note:

1. Please add AC-DC module at front of AD、ADF、ADMF、ADHF series products are recommended);
2. When the output is short circuited, the pre-stage AC-DC module short circuit protection will be triggered;

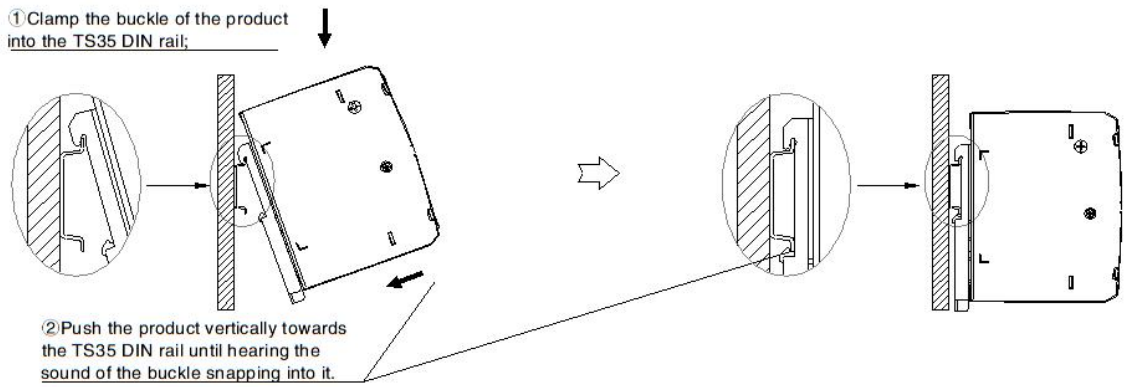
Installation Diagram



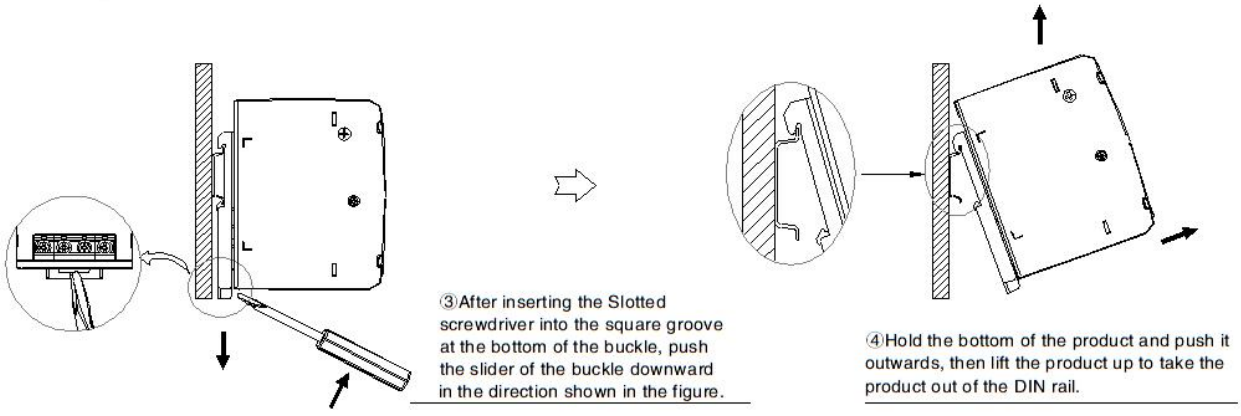
Materials required in the installation		
1	Product	1 PC
2	Phillips screwdriver Slotted screwdriver	1 PC
3	TS35/7.5 or TS35/15	1 PC
4	14–10AWG Wire	/ PCS
	The content is for reference only. Regarding the actual wire diameter and tightening torque, refer to the dimensional drawing.	



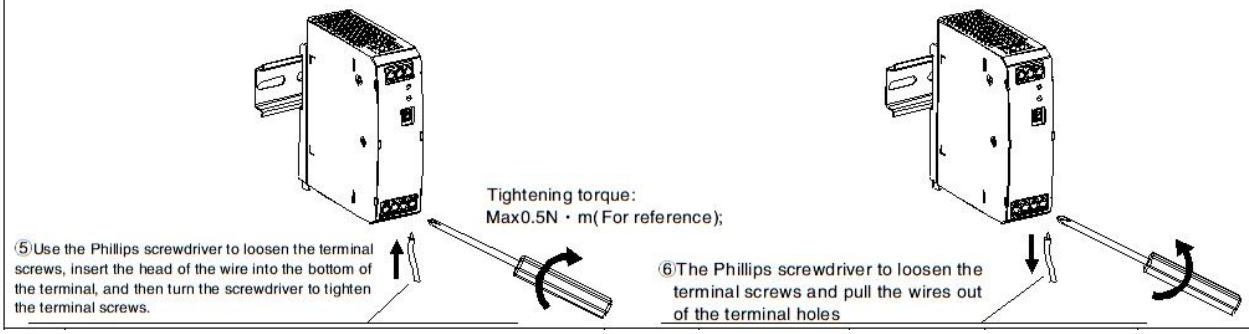
Installation Steps ①–②



Disassembly Steps ③–④

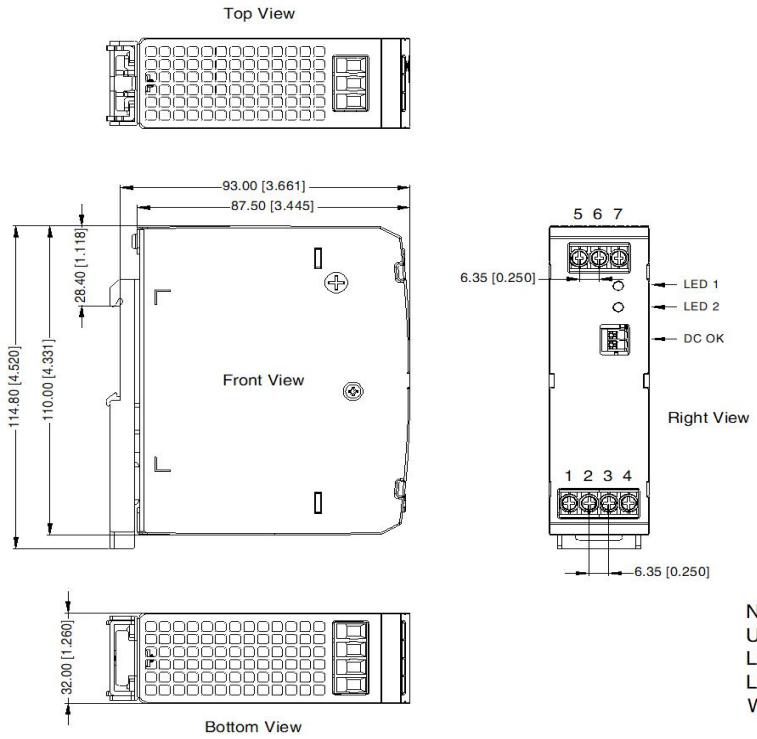


Wiring / Unwiring Steps ⑤–⑥



Note: Keep the following installation clearances: 20mm on top, 20mm on the bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. another power supply).

Dimensions and Recommended



THIRD ANGLE PROJECTION

Pin–Out

Pin	Mark
1	+Vin1
2	–Vin1
3	+Vin2
4	–Vin2
5	⏚
6	+Vo
7	–Vo

Note:
Unit: mm[inch]
LED1: Input status indicator LED
LED2: Input status indicator LED
Wire range: Input: 20A 12–10 AWG
Output: 20A 12–10 AWG
DC OK: 24–16AWG
Input/Output Tightening torque: Max 0.5 N・m
Mounting rail: TS35
General tolerances: ± 1.00[± 0.039]

Note:

1.Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75% RH with nominal input voltage and rated output load;

2.The ambient temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m;

3.All index testing methods in this datasheet are based on our company corporate standards;

4.In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;

5.We can provide product customization service, please contact our technicians directly for specific information;

6.Products are related to laws and regulations: see "Features" and "EMC";

7.When the product is used at the terminal, the shell(⏚) must be connected to the system;

8.Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;

9.The power supply should be considered as part of the components in the system, and all EMC tests should be validated in conjunction with the terminal equipment.

10.The image certification marks are for reference only; please refer to the selection table for actual specifications. Certification is based on the physical mark or packaging label.