

# DC-DC Redundancy Module

## DIN Rail

**multicomp** PRO

**RoHS  
Compliant**



### Features

- Input voltage range: 22 - 60VDC
- Operating ambient temperature range: -40°C to +80°C
- High efficiency up to 97%
- 1500VAC insulation voltage
- Two input status indicators, relay contact signal output
- DC OK function
- Operating altitude up to 5000m
- Supporting for N+1 parallel redundancy
- 3 Years Warranty

MPIR-20 is one of Mornsun Din-rail parallel redundancy module. It features wide input voltage range, wide operating temperature, cost-effective, high efficiency and high reliability. It offers excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC/EN/UL62368, EN61558, EN60335 standards and it is widely used in areas of industrial, electricity, security, telecommunications etc.

### Selection Guide

Part Number	Voltage Drop Vin-Vo (V/Typ.)	Nominal Output Current (A)	Efficiency (24/48VDC, %/Typ.)
MPIR-20	0.65	20	97

Input Specifications					
Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	DC input	22	24/48	60	V DC
Input Current Range	The sum of the two input currents is not more than 20A, input current rating of 10A per channel.		--	20	A
Input Under-voltage Alarm*	One input 24V, test another input voltage when triggers the under-voltage alarm (one LED turns off, the relay changes from on to off)		18		V DC
	One input 48V, test another input voltage when triggers the under-voltage alarm (one LED turns off, the relay changes from on to off)	--	36		
Input Over-voltage Alarm*	One input 24V, test another input voltage when triggers the over-voltage alarm (one LED turns off, the relay changes from on to off)		32		
	One input 48V, test another input voltage when triggers the over-voltage alarm (one LED turns off, the relay changes from on to off)		64		
Hot Plug		Unavailable			
Note: *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.					

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### Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	--	200	--	mV
DC OK Function	When the two input voltages are normal and the voltage difference does not exceed the over-voltage or under-voltage alarm, the DC OK function is normal (the relay on), the two input LED indicators light on		--	--	--
Output Power	24V/20A		480	--	W
	48V/20A	960			

### General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Test	Input - output $\perp$	1500	--	--	V AC
Insulation Resistance	Input - output $\perp$	50		MΩ	
Operating Temperature		-40		80	°C
Storage Temperature		-40		85	
Storage Humidity	Non-condensing	--		95	%RH
Power Derating	Operating temperature derating	+60°C to +80°C	2.25	--	%/°C
Safety Standard		Meet IEC/EN/UL62368/EN61558/EN60335			
Safety Certification		EN62368			
Safety Class		CLASS I			
MTBF	MIL-HDBK-217F @25°C	>1000,000 h			

### Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	35mm x 125mm x 112.7mm
Weight	365g (Typ.)
Cooling Method	Natural air cooling

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# DC-DC Redundancy Module

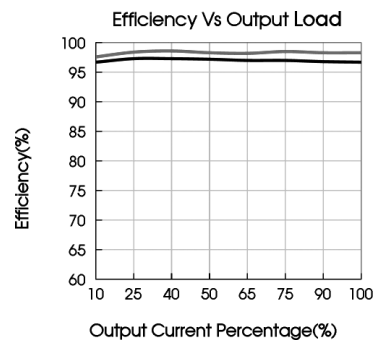
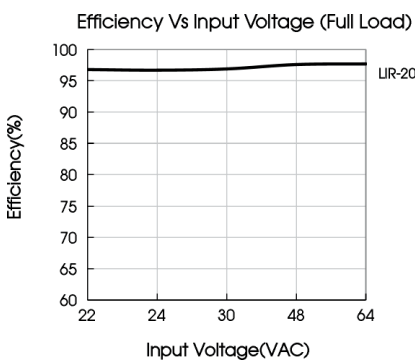
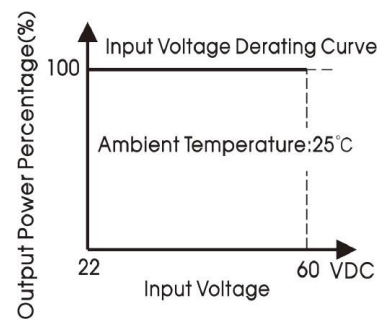
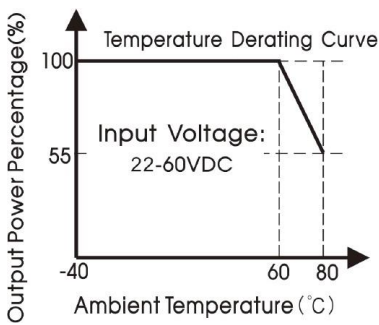
## DIN Rail

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### Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
Immunity	ESD	IEC/EN 61000-4-2	Contact $\pm 8\text{KV}$ /Air $\pm 15\text{KV}$	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	$\pm 2\text{KV}$	perf. Criteria A
	Surge	IEC/EN61000-4-5	Line to line $\pm 1\text{KV}$ /line to ground $\pm 2\text{KV}$	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A

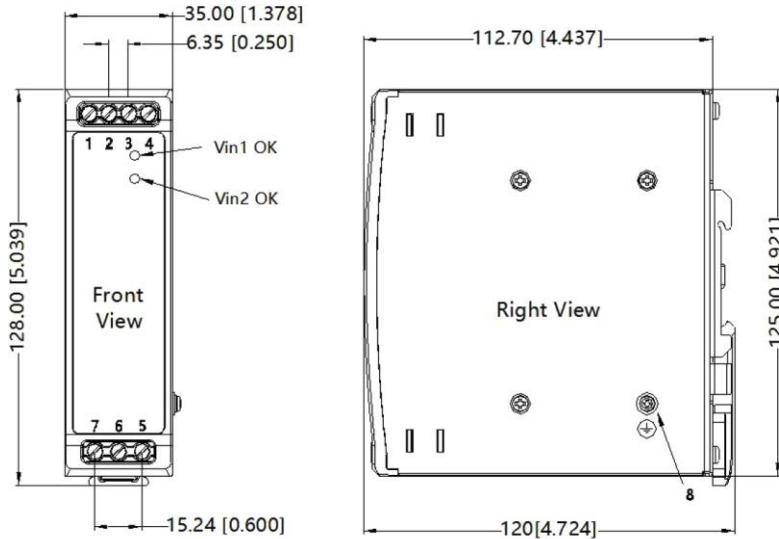
### Product Characteristic Curve



# DC-DC Redundancy Module DIN Rail



## Dimensions and Recommended Layout



Pin-Out	
Pin	Function
1	DC_OK
2	DC_OK
3	+Vo
4	+Vo
5	Vin1
6	Vin2
7	COM
8	

Note:  
 Unit: mm[inch]  
 Wire range: 26-10 AWG  
 Tightening torque: Max 0.4 N·m  
 Mounting rail: TS35, rail needs to connect safety ground  
 General tolerances: ±1.00[±0.039]

### Notes:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity<75%RH with nominal input voltage and rated output load;
2. The ambient temperature derating of  $5^{\circ}\text{C}/1000\text{m}$  is needed for operating altitude greater than 2000m;
3. 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;

### Part Number Table

Description	Part Number
DC-DC DIN Rail Redundancy Module, 20A	MPIR-20

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