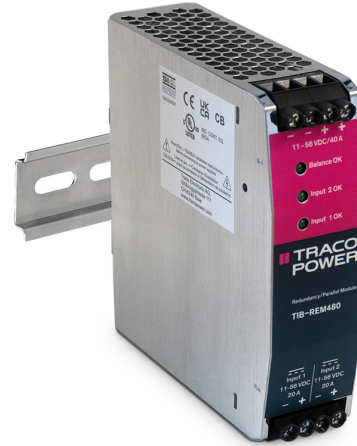


## Redundancy Module

## TIB-REM Series

- **Compact 118.6mm x 36mm x 124.2mm metal enclosure**
- **DIN-rail mounting bracket**
- **60 A boost current**
- **>99% efficiency**
- **Active current sharing**
- **«Input OK» and «Balance OK» indicators**
- **Low standby power**
- **Convection cooled**
- **UL/IEC/EN 61010-1 approvals**
- **Fits Traco Power's TIB line**



The TIB-REM480 is a compact, DIN-rail mountable redundancy module for fail-over operation of AC/DC power supplies. The redundancy function is available for nominal currents of up to 20 A over a wide input voltage range of 11-56 V. Boost currents of up to 60 A are permitted for up to 4 seconds. The TIB-REM480 uses active sharing technology to minimize the power losses during normal operation and in failover mode. The TIB-REM480 can operate at ambient temperatures between -20°C and +60°C without derating and without the need for active cooling. The TIB-REM480 is specifically designed, tested, and approved for operation with Traco Power's TIB line of DIN-rail mountable power supplies.

Models				
Order code	Input voltage range	Output Current Redundandy Operation	Output Current Parallel Operation	Output Current Boost
TIB-REM480	11 - 56 VDC	20 A	40 A	60 A / 4 s

### Input Specifications

Input Voltage Compensation Range	- Parallel Operation	$\pm 0.20$ V max.
Standby Power	12 Vin	0.12 W typ.
	24 Vin	0.3 W typ.
	48 Vin	0.9 W typ.
	56 Vin	1.2 W typ.

### Output Specifications

Boost Power	Output Current boost: 60 A max. Boost power time: 4 s max. Off Time: 10 s typ. (The off time switch off must be provided by the connected input power supplies)
Capacitive Load	Infinite
Short Circuit Protection	Specified by input power supply No internal protection

### Safety Specifications

Safety Standards	- Measurement, Control & Lab.	EN 61010-1 IEC 61010-1 UL 61010-1
	- Certification Documents	<a href="http://www.tracopower.com/overview/tib-rem">www.tracopower.com/overview/tib-rem</a>
Protection Class		Class III
Pollution Degree		PD 2
Over Voltage Category		OVC II

### EMC Specifications

EMI Emissions		EN 61000-6-3 (Generic Residential)
	- Conducted Emissions	EN 55032 class B (internal filter)
	- Radiated Emissions	EN 55032 class B (internal filter)
EMS Immunity		EN 61000-6-2 (Generic Industrial)
	- Electrostatic Discharge	Air: EN 61000-4-2, $\pm 8$ kV, perf. criteria A Contact: EN 61000-4-2, $\pm 4$ kV, perf. criteria A
	- RF Electromagnetic Field	80 - 1000 MHz: EN 61000-4-3, 10 V/m, perf. criteria A 1400 - 6000 MHz: EN 61000-4-3, 3 V/m, perf. criteria A
	- EFT (Burst)	EN 61000-4-4, $\pm 1$ kV, perf. criteria A
	- Conducted RF Disturbances	EN 61000-4-6, 10 Vrms, perf. criteria A
	- PF Magnetic Field	Continuous: EN 61000-4-8, 30 A/m, perf. criteria A

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

## General Specifications

Relative Humidity		95% max. (non condensing)
Temperature Ranges	- Operating Temperature - Storage Temperature	-20°C to +70°C -25°C to +80°C
Power Derating	- High Temperature	2 %/K above 60°C
Cooling System		Natural convection (20 LFM)
Altitude During Operation		2'000 m max.
Internal Voltage Drop	- Parallel Operation	0 to 0.2 V typ.
Isolation Test Voltage	- Input to Case, 10s - Output to Case, 10s	500 VDC 500 VDC
Power Loss	- 40 A load	<6W max.
Reliability	- Calculated MTBF	2'000'000 h (IEC 61709)
Environment	- Vibration  - Mechanical Shock	IEC 60068-2-6-3 2 g, 3 axis, sine sweep, 10-55Hz, 11 oct/min IEC 60068-2-27 25 g, 3 axis, half sine, 11 ms
Housing Material		Aluminium (Chassis) Stainless Steel (Cover)
Housing Type		Metal Case
Mounting Type		DIN-Rail Mount (EN 60715 - 35×7.5mm/35×15mm)
Connection Type		Screw Terminal
Weight		250 g
Environmental Compliance	- REACH Declaration  - RoHS Declaration  - SCIP Reference Number	<a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a> REACH SVHC list compliant REACH Annex XVII compliant <a href="http://www.tracopower.com/info/rohs-declaration.pdf">www.tracopower.com/info/rohs-declaration.pdf</a> Exemptions: 7a (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).) 2a0637a2-2dbc-4e1c-b2fd-a88f06fdd3ea

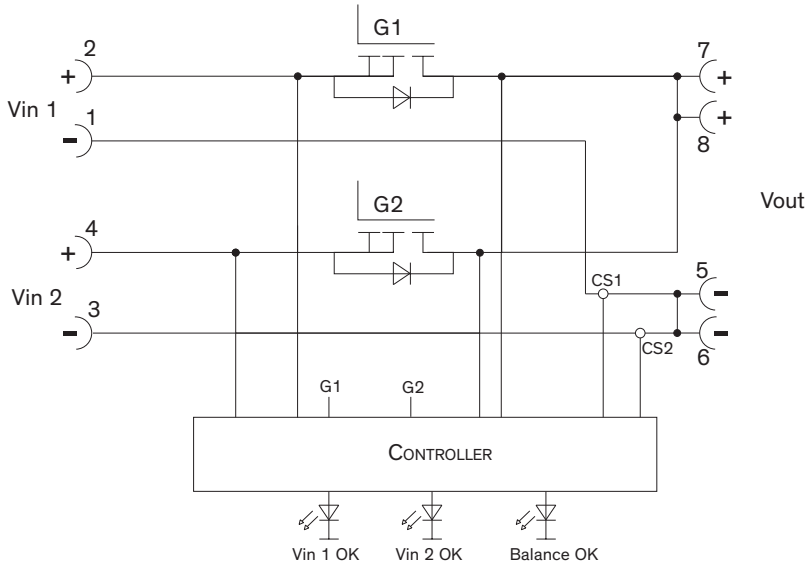
## Supporting Documents

Overview Link (for additional Documents)	<a href="http://www.tracopower.com/overview/tib-rem">www.tracopower.com/overview/tib-rem</a>
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All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

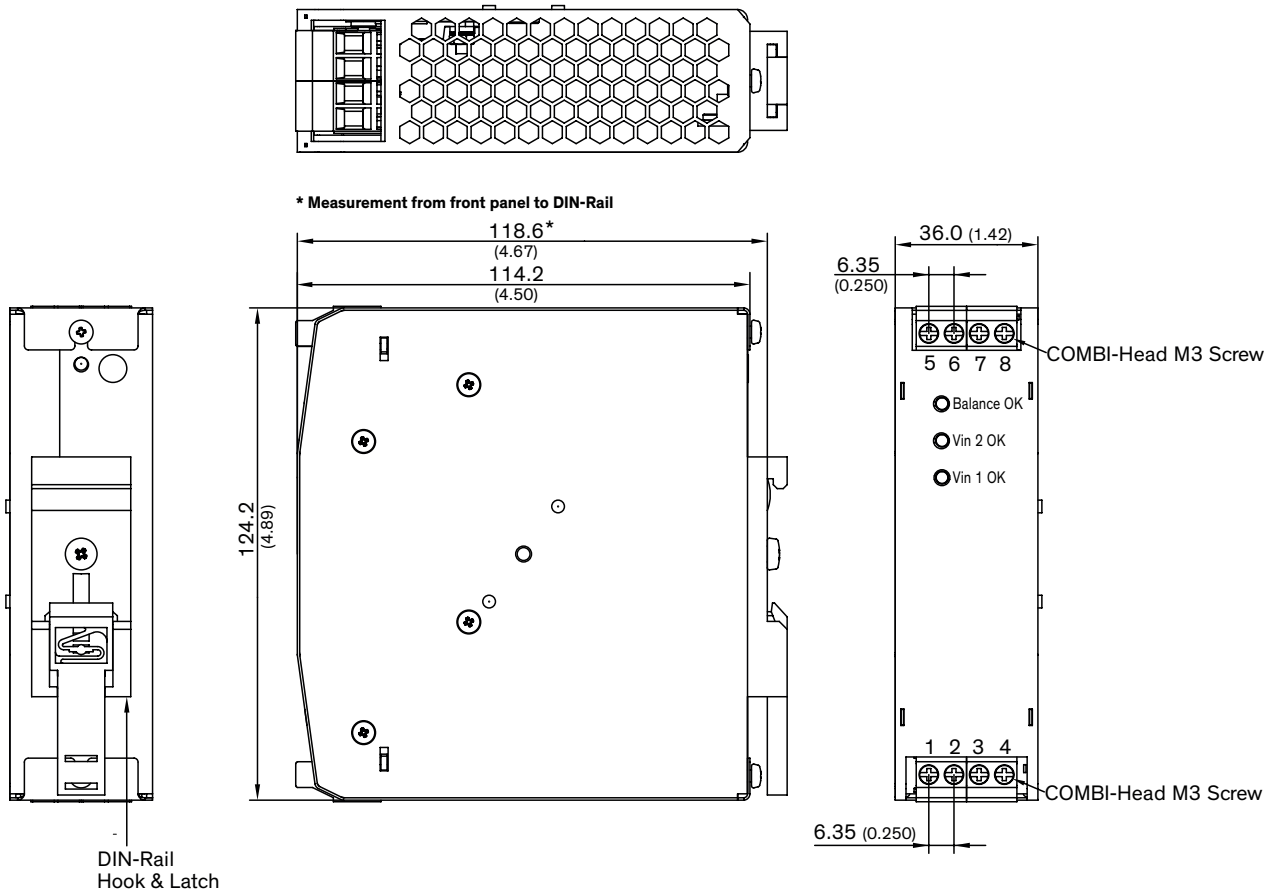
**Function Specification**

**Block Diagram:**



Balance OK LED (Green)		
Behaviour		Meaning
On		Input voltages are balanced to each other. Accuracy of current sharing is very high (Condition: $V_{in 1} = V_{in 2} (\pm 0.2 VDC)$ )
Off		Input voltages are not balanced to each other. Accuracy of current sharing will be inaccurate (Condition: $V_{in 1} \neq V_{in 2} (\pm 0.2 VDC)$ )
Input Status LEDs Vin1 OK (Green) & Vin2 OK (Green)		
Behaviour		Meaning
Vin 1 OK	Vin 2 OK	
Off	Off	- Voltage not present or out of Input Voltage Range
Off	On	- Voltage on Vin 2 OK - Voltage on Vin 1 not present - Voltage on Vin 1 out of Input Voltage Range (Condition: Voltage on Vin 1 < Vin 2 - 2 VDC)
On	Off	- Voltage on Vin 1 OK - Voltage on Vin 2 not present - Voltage on Vin 2 out of Input Voltage Range (Condition: Voltage on Vin 2 < Vin 1 - 2 VDC)
On	On	Voltage on Vin 1 and Vin 2 OK Input voltages are balanced to each other. (Condition: $V_{in 1} = V_{in 2} (\pm 2.0 VDC)$ )

### Outline Dimensions



Dimensions in mm (inch)  
Tolerances: x.x ±1.0 (x.xx ±0.04)  
x.xx ±0.2 (x.xxx ±0.008)

Screw Terminal			
Input		Output	
Pin	Function	Pin	Function
1	-Vin 1	5	-Vout
2	+Vin 1	6	-Vout
3	-Vin 2	7	+Vout
4	+Vin 2	8	+Vout

**Input:** 4-port Screw Terminal  
Stranded & Solid  
Torque: 0.6 Nm  
Wire dimension range: 16 - 10 AWG  
1.5 - 4.0 mm<sup>2</sup>

**Output:** 4-port Screw Terminal  
Stranded & Solid  
Torque: 0.6 Nm  
Wire dimension range: 16 - 10 AWG  
1.5 - 4.0 mm<sup>2</sup>