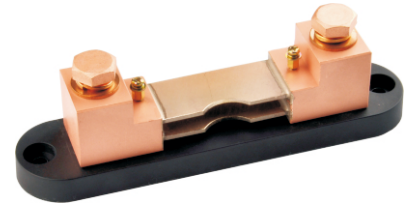


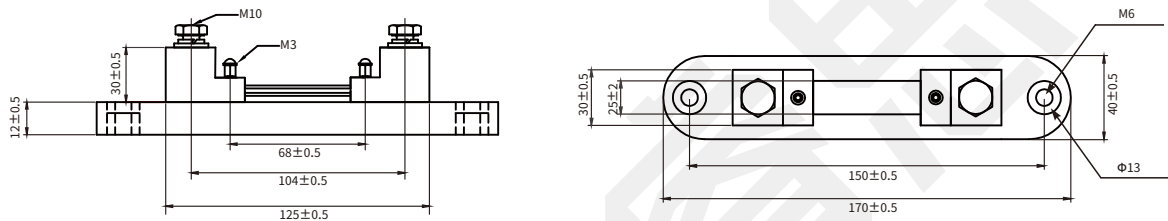
Precision Shunt, Rated Current 300A, Standard Tolerance 0.1% Low Thermal EMF, TCR 20ppm/°C, Bakelite Based

Shunt works at very high current, so the temperature of surface rises sharply which will cause the change of resistance. For precision measurement, we must choose shunts which are with low TCR, low PCR and low Thermal EMF.

Resi launched the precision shunt series which can reach 0.1% tolerance from 10% to 100% of rated current. The maximum TCR is 20ppm/°C in the range of -20°C to 120°C. Besides, the shunt has extremely stability with low PCR and low Thermal EMF



Dimensions (mm)



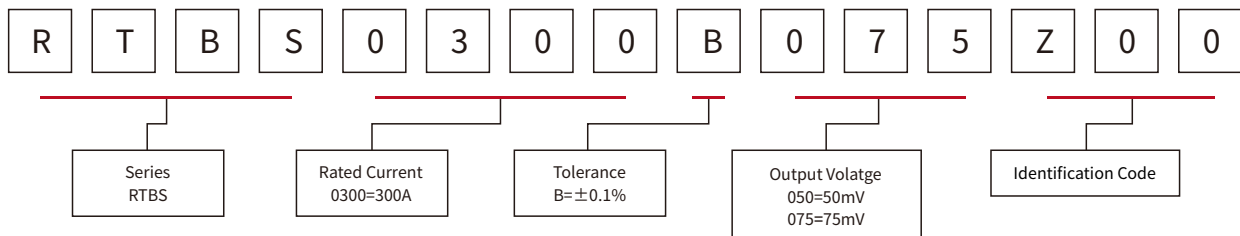
Model	Resistance	Tolerance	TCR	Output Voltage	Rated Current	Max. Current	Weight
RTBS0300B050Z00	166.6 μΩ	±0.1%	±20ppm	50mV	300A	360A	≤610g
RTBS0300B075Z00	250 μΩ			75mV			

Performance

Test	Test Method	Standard
Optimum Surface Temperature	Measured at the center of metal strip	+30°C~+90°C
Operating Temperature Range	Measured at the center of metal strip	-40°C~+140°C
Maximum Surface Temperature	Measured at the center of metal strip	140°C
Thermal EMF	When reach heat balance, disconnect the circuit and test EMF	<0.05 μV/°C
TCR	Measured temperature range of -25°C to +120°C, 25°C ref.	≤±20ppm/°C
Current Coefficient	10%-100% Rated Current Test	≤±5ppm/A
Short Time Overload	2.25 rated voltage for 5 seconds	ΔR≤±0.05%
Long Time Overload	1.2 rated voltage for 2 hours, 25°C	ΔR≤±0.1%
Thermal Equilibrium Time	Measured at the center of metal strip when resistance won't change	<5min

Part Number Information

Example: RTBS0300B075Z00 (RTBS 300A ±0.1% 75mV Identification Code)



*Better tolerance can be customized.
*60mV, 100mV can be customized.

Custom Service for Your Application (CTS Service)

Each shunt requires precise trimming of value. The main challenge in the trimming process is to reach tight tolerance both at 10% of rated current and 100% rated current. It is known that the temperature curve of Manganin material is not linear, so to adjust the surface temperature of metal strip to the optimum surface temperature is the only way to achieve tight tolerance .

CTS is a free customized trimming service. It will estimate customer's working condition and the average surface temperature of the shunt, and then provides the best resistance for precision measurement. CTS can significantly improve the tolerance. Each CTS product will be assigned with a unique identification code.

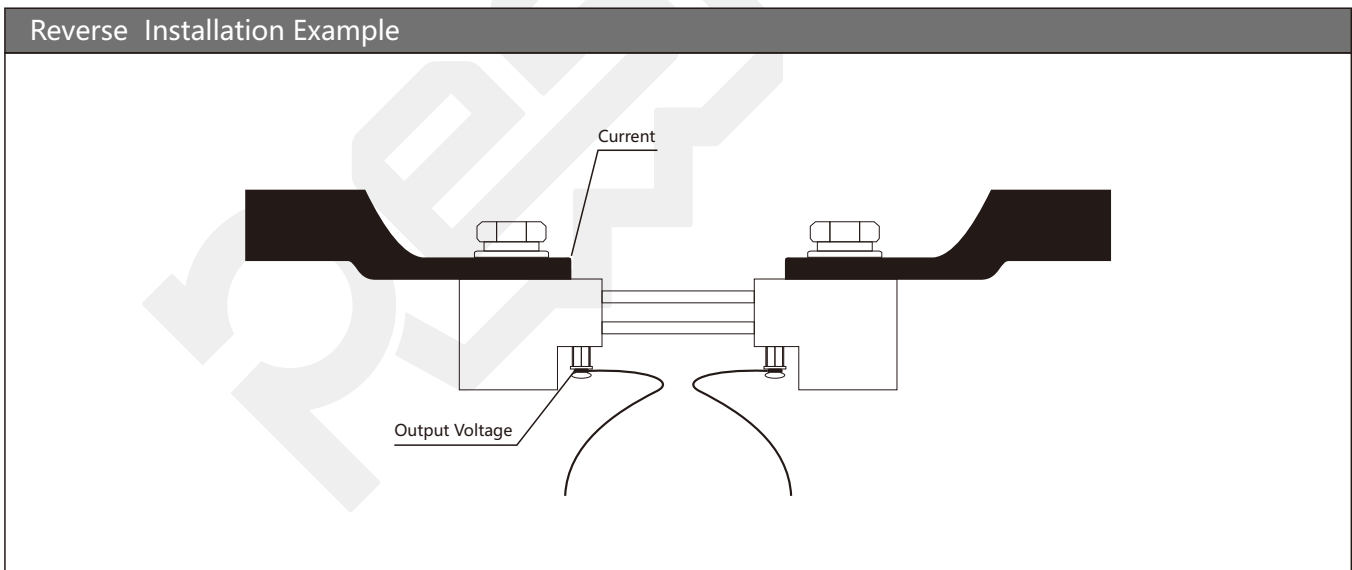
We will provide test reports for every CTS product for free.

If you are interested in CTS service, please contact our sales engineers with below required information.

Minimum Operating Current		Minimum Ambient Temperature	
Maximum Operating Current		Maximum Ambient Temperature	
Working Current Curve		Ambient Temperature Curve	
Final Product		Installation Method	
Final Product Working Condition		Heat Dissipation Condition	
Design Lifetime		Installation Notes or Picture	
Note			

Reverse Installation Advice

In the case of limited heat dissipation, the heat dissipation can be improved by reverse mounting. First of all, connect the voltage terminal, then connect the current terminal, so that the shunt blade is far away from the base, and the contact area between the copper bar and the shunt copper head get bigger.



According to the IEEE standard, the operating current should not be higher than 2/3 of the rated current under the normal conditions.

Derating is required when the ambient temperature is higher than 40 °C to avoid damaging the shunt.

Air cooling, water cooling, increased physical size, and installation of heat sinks can be used to reduce operating temperature.