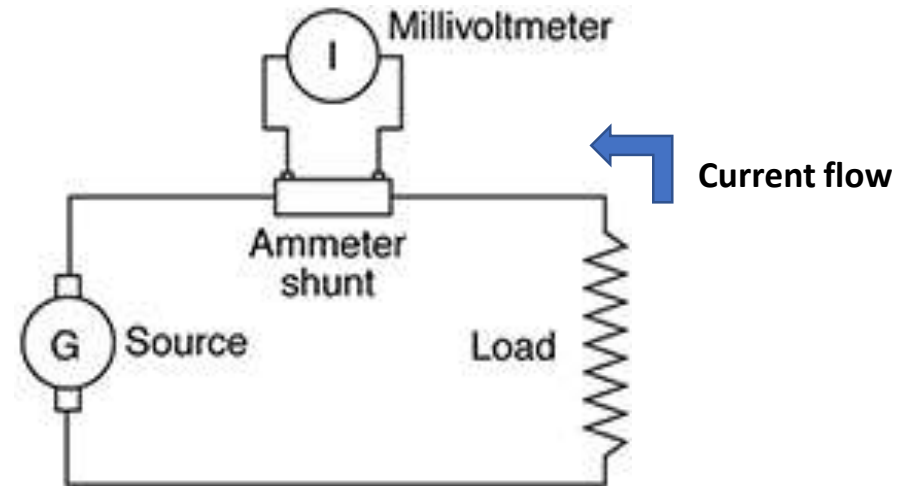
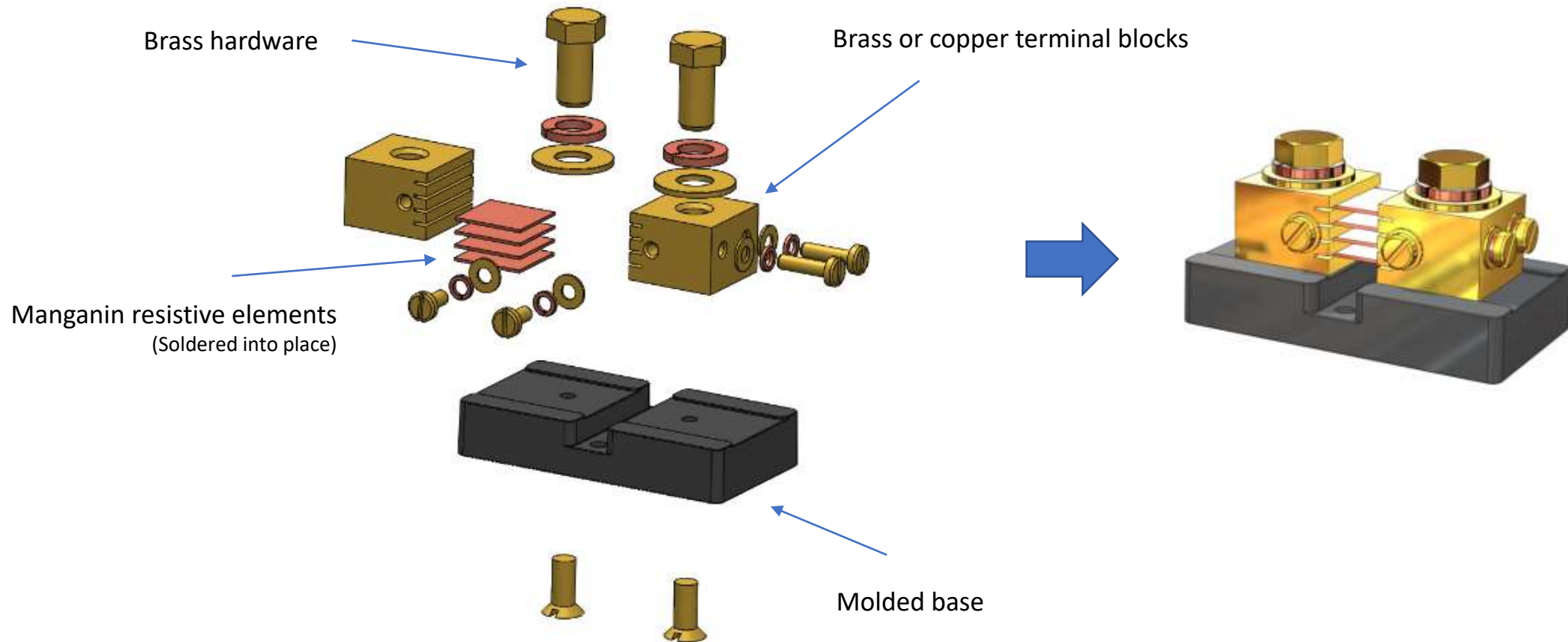


# What are shunts?

- Very precise current measurement device
- Provide a voltage proportional to the current flowing through it
- Specified by current carrying capability and voltage output
- Governed by Ohm's law
  - $V=I \cdot R$ 
    - V = voltage
    - I = current
    - R = resistance

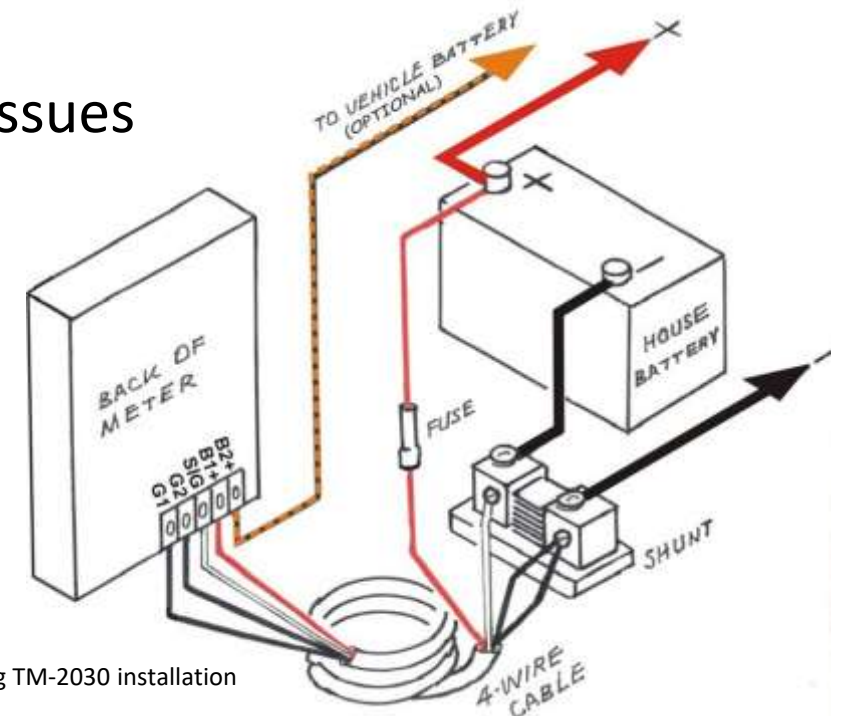


# How are shunts made?



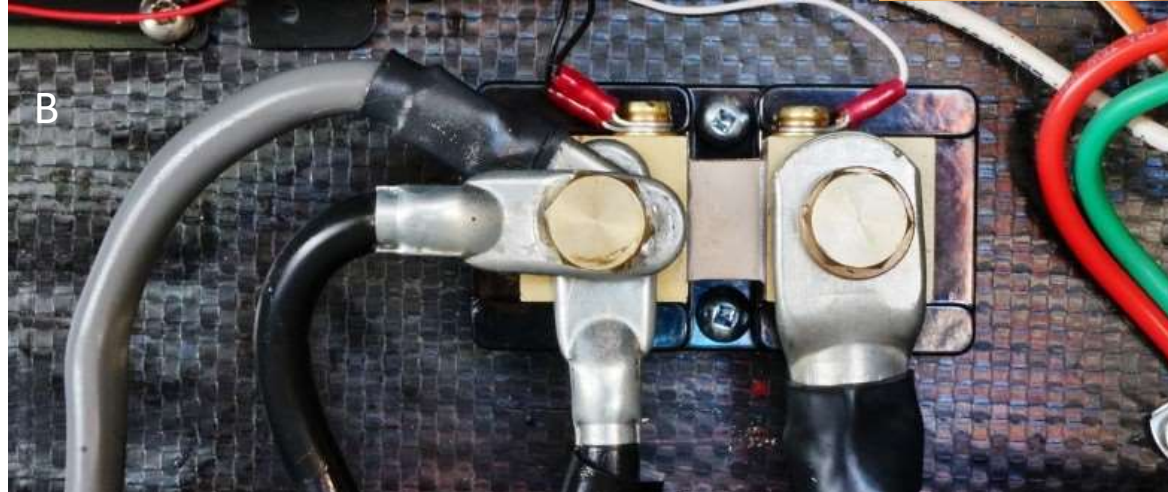
# How are they installed?

- Either busbar or panel mounted
- Best practice is to place the shunt in the ground return near the voltage source.
  - Limits potential dielectric withstanding voltage issues
  - Ensures all loads are accounted for



Bogart Engineering TM-2030 installation

# Installation examples



# Typical Applications

- Battery monitoring
  - Off grid backup
    - Recreational Vehicles
    - Emergency Vehicles
    - Marine
    - Remote Cabins
  - Forklifts
- PV inverters
- Power Conversion
- DC motor drives / Traction
- Welding equipment
- Mining
- Electroplating equipment



# How to specify a shunt?

Determine the steady-state current to be measured in **Amps**

1

Determine the desired output voltage in **millivolts**

2

Divide steady state current by 0.666 or  $\frac{2}{3}$  to determine the necessary shunt rating

3

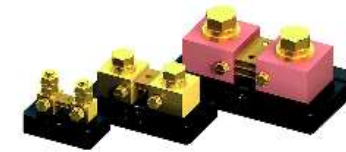
Determine the desired **tolerance**

4

Will the shunt be panel mounted or utilize busbars?

5

## RS Series Precision Current / DC Current Shunts



- Base Mounted Shunt
- Current Rating 5 to 1200 Amps
- 50mV, 100mV, or Custom Output
- Standard Tolerance  $\pm 0.25\%$
- Manganin Resistive Element
- Common Applications:  
Solar Generators, Wind Power, Heavy Industry, Electroplating, Battery Chargers, Mining

SPECIFICATIONS					
Type	Rated Current (A)	Operating Current (A)	Resistance (m $\Omega$ ) 50mV Output	Resistance (m $\Omega$ ) 100mV Output	Drawing
R3A-5	5	3.33	10.00	20.00	R3A
R3A-10	10	6.67	5.00	10.00	
R3A-15	15	10	3.333	6.667	
R3A-20	20	13.3	2.500	5.000	
R3A-30	30	20	1.667	3.333	
R3A-60	60	33.3	1.000	2.000	
R3A-75	75	60	0.667	1.333	
R3A-80	80	53.3	0.625	1.250	
R3A-85	85	56.7	0.588	1.176	
R3A-100	100	66.7	0.500	1.000	
R3A-150	150	100	0.3333	0.6667	R3B
R3B-170	170	113	0.2541	0.5082	
R3B-200	200	133	0.2500	0.5000	
R3B-250	250	166	0.2000	0.4000	
R3B-300	300	200	0.1667	0.3333	
R3B-400	400	267	0.1250	0.2500	
R3B-450	450	300	0.1111	0.2222	R3C
R3B-500	500	333	0.1000	0.2000	
R3B-600	600	400	0.0833	0.1667	
R3C-800	800	533	0.0625	0.1250	
R3C-1000	1000	666	0.0500	0.1000	
R3C-1200	1200	800	0.0417	0.0833	

# Riedon Standard Shunt offerings – 1 Amps to 10,000 Amps

77 – 173 Amps



RCS

5 – 1,200 Amps



±0.25%

RSA / RSB / RSC

1 - 500 Amps



±0.1%

RSN

300 -1,200 Amps



RSI

1,500 – 2,000 Amps



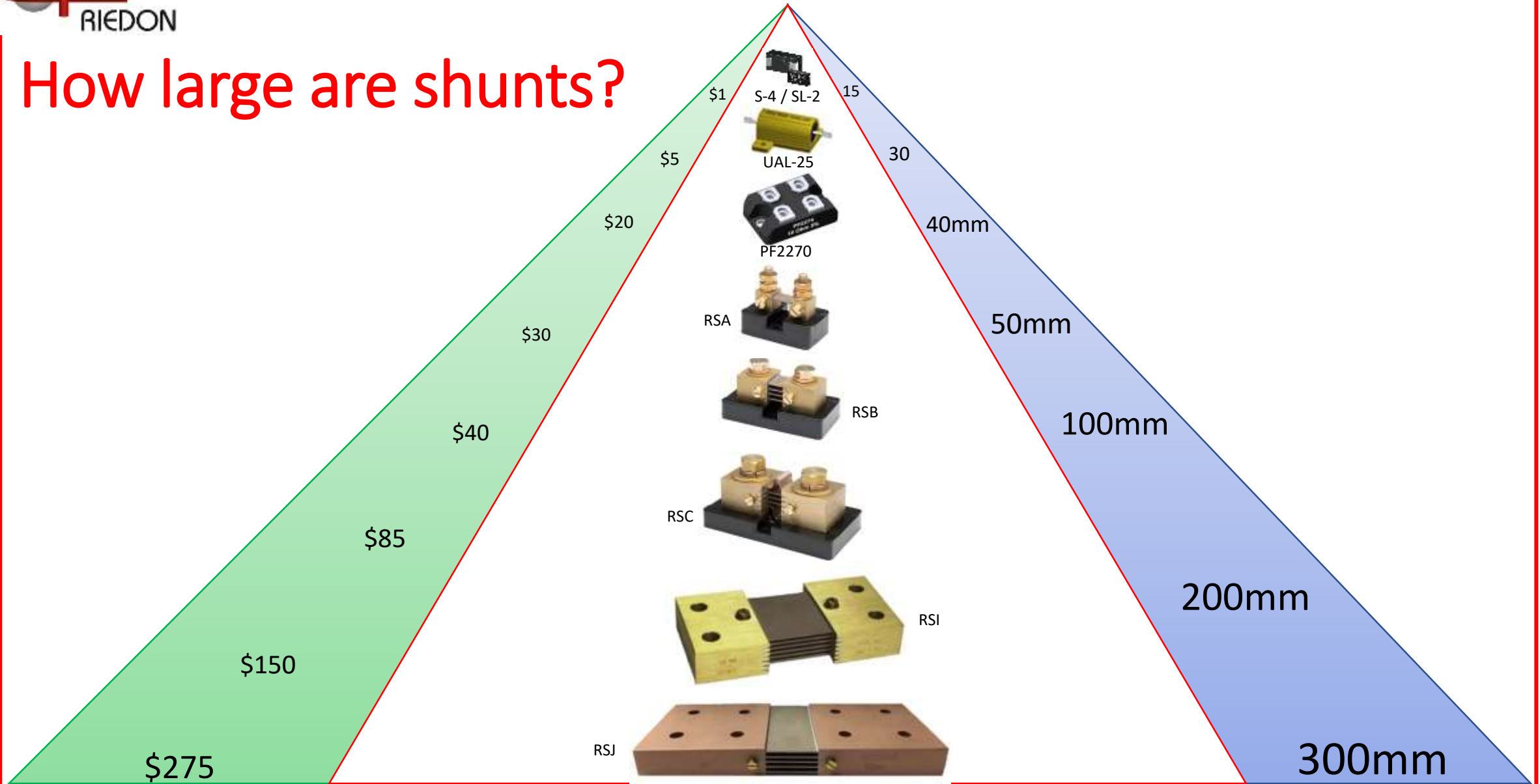
RSJ

2,500 – 10,000 Amps



RSL

# How large are shunts?





# Riedon Custom Shunt examples



500 Amps – 20mV



500 Amps – 10,000mV



100 Amps – 130mV



125 Amps - 50mV



500 Amps – 20mV



500 Amps – 50mV

# Why Choose Riedon Shunts

- Riedon is the manufacturer
- Exceptional One on One customer service
- Shortest lead time among our competitors
- Industry price leader
- Custom requests welcomed

# Summary

- Riedon ammeter shunts provide a rugged and accurate means of measuring a wide range of currents
- Many mounting configurations available to meet virtually any mounting requirement
- Multitude of standard models available from stock
- Custom design requests are welcome
- Calibration documentation available