OSWELL

OSWELL E-GROUP LIMITED

www.eoswell.com

Company Profile

OSWELL E-GROUP, located in Shanghai of China, as a leading supplier of electronic components, has been devoted to develop a full range of smart products for auto controlling system, automative, metering, switching power supply, communication system, etc. Our goal is to be Professional, Innovative, Honesty, and International.

The rich experience design team helps to ensure the best design with reasonable cost. High quality and excellent performance is guaranteed by the high precision welding equipment, auto resistance -adjusting tester, skilled workers and QC. Professional Sales are always ready for any questions and communication with clients and distributors.

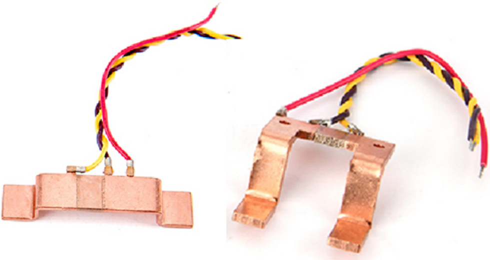
Electron Beam Weld Shunt

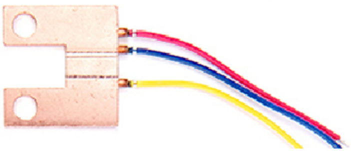
General Description

Shunt is one of the main current sensor used in kWh meter, especially in single phase kWh meter. There are 2 types of shunt-Braze weld shunt and electron beam shunt. Electron beam weld shunt is a new technology product. E-B weld has strict requirement to manganin and copper materials, the shunt by E-B weld is in high quality. E-B shunt is more and more popular and extensively used to replace the old braze weld shunt worldwide.

Features

- **High Linerarity & Reliability**
- **Small Self-heat**
- **Low Temperature Coefficient**
- **Resistant to Oxidation**
- **Small Size and Low Weight**





Specifications

kWh Meter		Shunt			
Current Range	**Class**	**Weld**	**Thickness**	**Typical value (uΩ)**	**Error**
5(30)A	1.0/2.0	E-B weld	1.0mm	400-600	1-5%
10(40)A	1.0/2.0	E-B weld	1.0mm	300-500	1-5%
5(60)A	1.0/2.0	E-B weld	1.0-1.5mm	200-400	1-5%
10(60)A	1.0/2.0	E-B weld	1.0-1.5mm	150-350	1-5%
10(80)A	1.0/2.0	E-B weld	1.5mm	150-250	1-5%
10(100)A	1.0/2.0	E-B weld	1.5-2.0mm	100-250	1-5%
20(120)A	1.0/2.0	E-B weld	2.0-2.5mm	100-150	1-5%

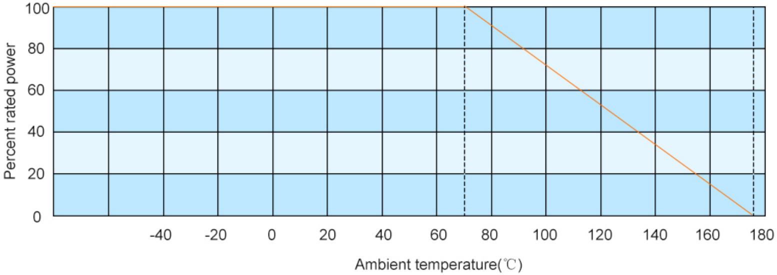
Character Curve

Performance

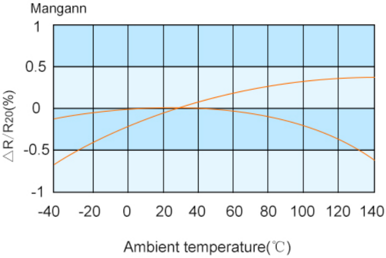
Test item	Specifications	Test Methods
Thermal Shock	△R≤±0.5%R	-55℃/175℃。30min, 5cycles
Over Load	△R≤±0.5%R	5PR, 5S
Leaching	△R≤±0.5%R	260±2℃, 10±1S
Damp heat,Steady	△R≤±1.0%R	-55℃，RH93±3%，56d
Vibration	△R≤±0.5%R	10~200Hz.98m/s^2，6H
Load life	△R≤±1.0%R	70℃, PR, 1000h
High temperature Exposure	△R≤±1.0%R	175℃, 1000h

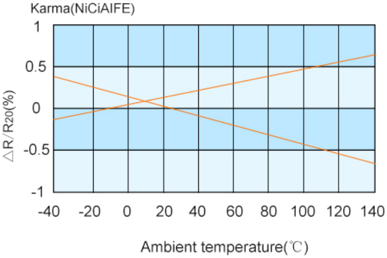
Derating Curve

75 175

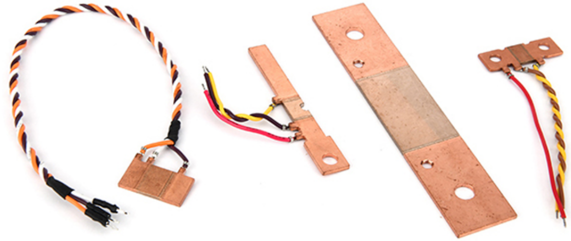


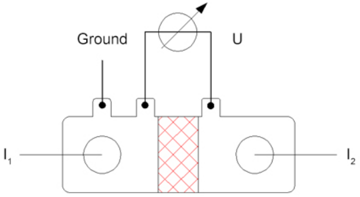
Resistance Change VS Temperature



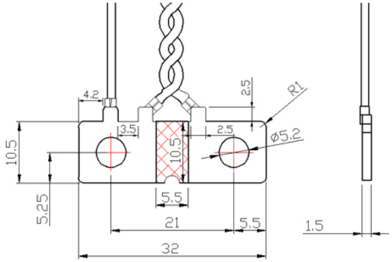


Types and Dimensions



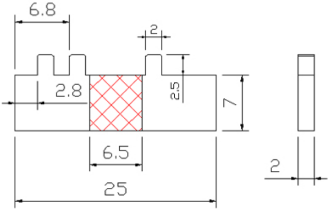

Ground
U
I_1
I_2

Mode A


4.2
2.5
R1
3.5
2.5
Ø5.2
10.5
10.5
5.25
5.5
21
5.5
32
1.5

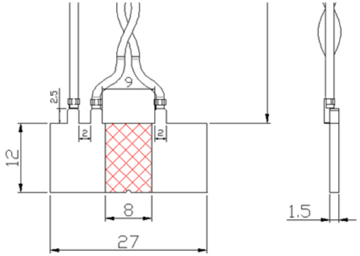
EBSA151757-32-10.5-21-5.2-V1

1.5mm 175μΩ±5%


6.8
2
2.8
2.5
7
6.5
25
2

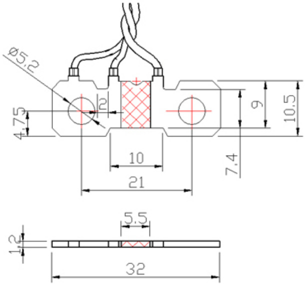
EBSA20200-25-7-V1

2.0mm 200μΩ±5%


9
2.5
2
2
12
8
27
1.5

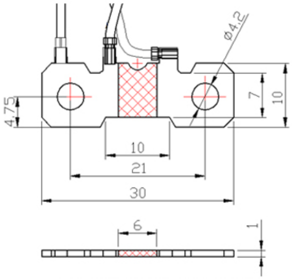
EBSA15200-27-12-V1

1.5mm 200μΩ±5%


Ø5.2
4.75
2
9
10.5
10
7.4
21
5.5
1.2
32

EBSA12250-32-10.5-21-5.2-V2

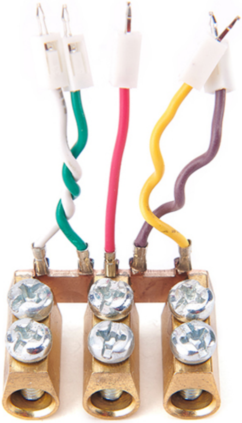
1.2mm 250μΩ±5%

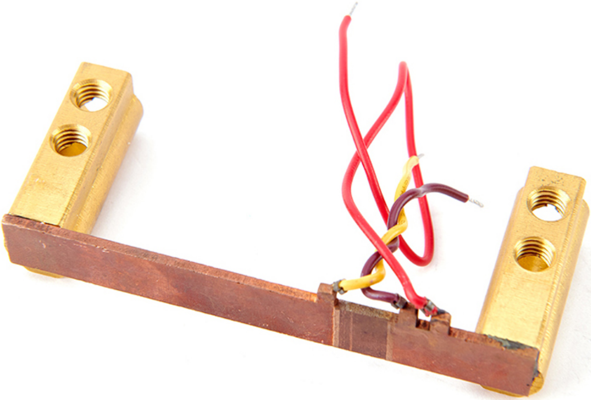

Ø4.2
4.75
7
10
10
21
30
6
1

EBSA10350-30-10-21-4.2-V1

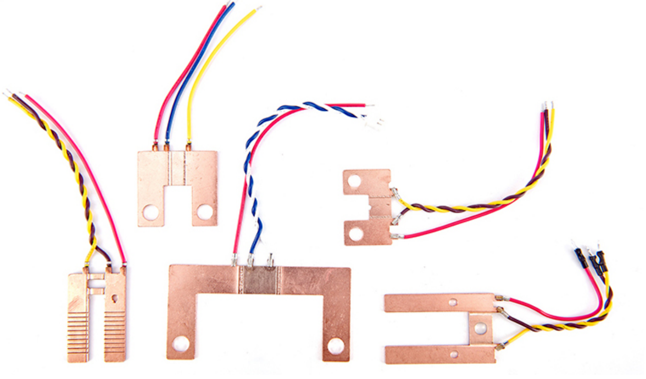
1.0mm 350μΩ±5%

Application





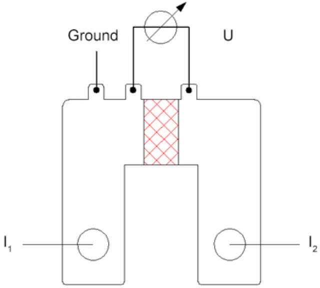
Type B



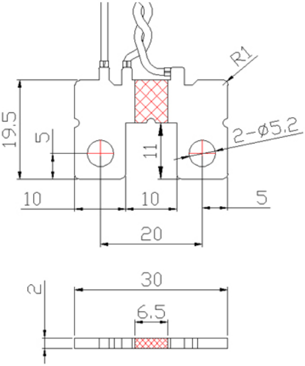
This mode is suitable for the connection between Terminals with barrier.

This connection don't allow to use Type A and need longer "leg" for mounting, so manganin is away from the terminals.

The design is very helpful for anti-magnetic meters, more and more customers like and recommend.

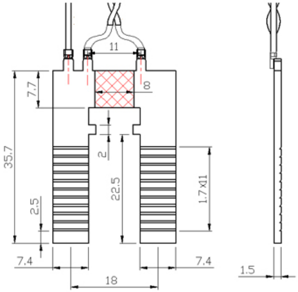

Ground
U
I_1
I_2

Mode B


R1
19.5
5
11
2-Ø5.2
10
10
5
20
30
6.5
2

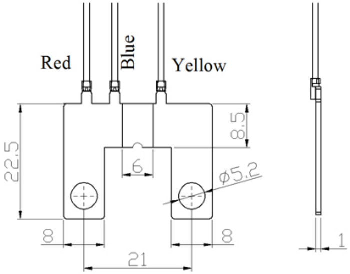
EBSB20200-30-10-20-5.2-V1

2.0mm 195μΩ±5%


11
8
7.7
35.7
2
22.5
1.7x11
2.5
7.4
7.4
18
1.5

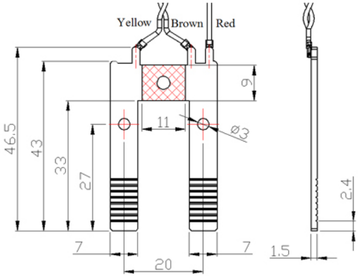
EBSB15300-25.4-7.4-18-ES-V1

1.5mm 300μΩ±5%


Red
Blue
Yellow
22.5
8.5
6
ϕ5.2
8
8
21
1

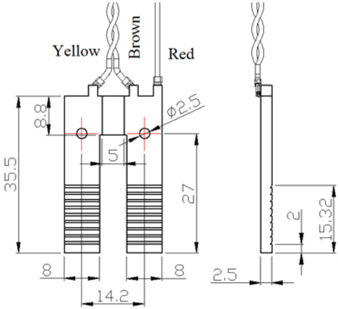
EBSB10350-29-8-21-5.2-V1

1.0mm 350μΩ±5%


Yellow
Brown
Red
46.5
43
33
27
9
11
ϕ3
2.4
7
7
20
1.5

EBSB15540-27-7-20-3-V1

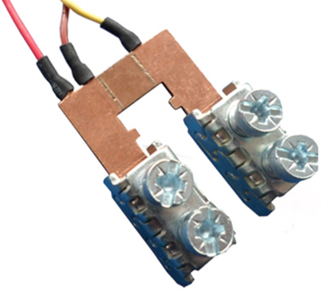
1.5mm 540μΩ±5%


Yellow
Brown
Red
8.8
ϕ2.5
35.5
5
27
2
15.32
8
8
14.2
2.5

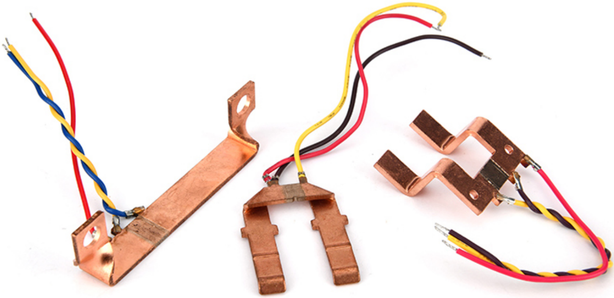
EBSB25100-22.2-8-14.2-2.5-V1

2.5mm 100μΩ±5%

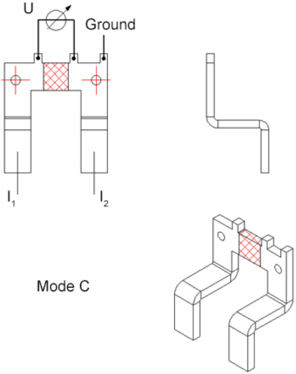
Application



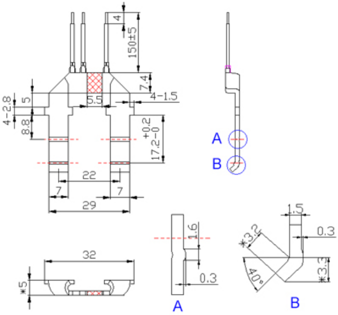
Type C



This type is flexible for 1-2 and 1-4 terminal structure inserted into terminal hole and then mounted by screws, usually assembled with cage terminal. It's changed and folded from Type A. That's a good choice for customers if their meter has special intrusive terminals

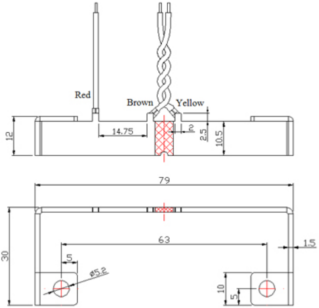

U
Ground
I_1
I_2

Mode C


4
150±5
7.4
4-1.5
5.5
5
4-2.8
8.8
17.2 +0.2 -0
22
7
7
29
A
B
32
*5
1.6
0.3
A
1.5
0.3
*3.2
40°
*3.3
B

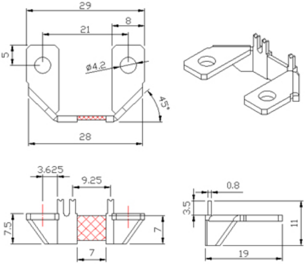
EBSC15220-32-7-22-R-V1

1.5mm 220μΩ±5%


Red
Brown
Yellow
12
14.75
2
2.5
10.5
79
30
63
1.5
5
ø5.2
10
5

EBSC15175-79-10.5-63-5.2-V1

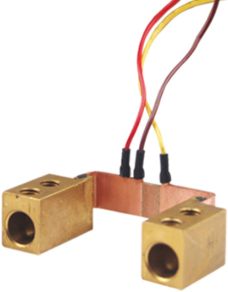
1.5mm 175μΩ±5%

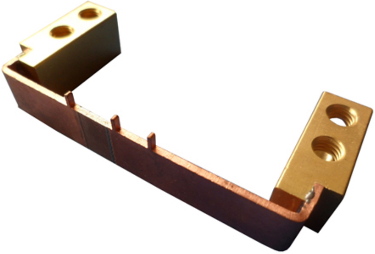

29
8
21
5
ø4.2
45°
28
3.625
9.25
0.8
3.5
7.5
7
7
11
19

EBSC15500-29-8-21-4.2-V1

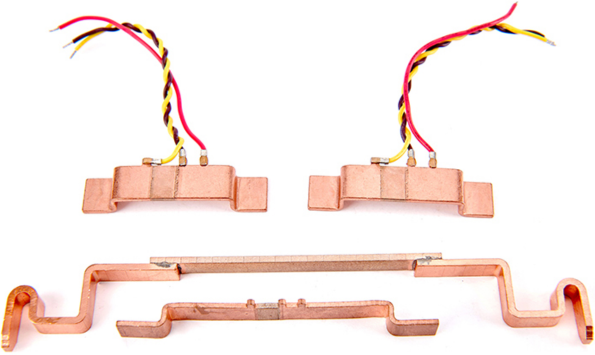
1.5mm 500μΩ±5%

Application

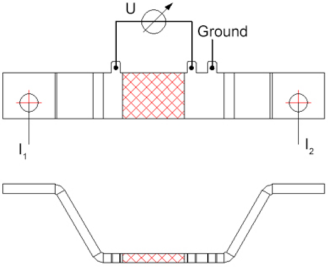




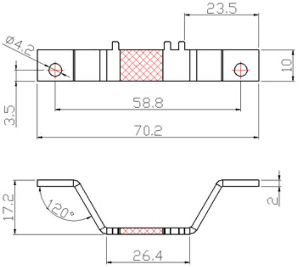
Type G



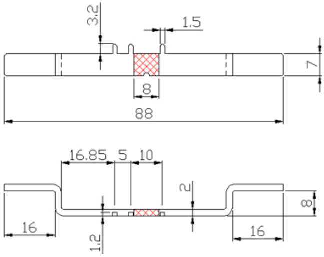
This mode looks like overpass and can avoid the barrier on the terminal block. It is suitable for 1-4 terminal connection, and also another shunt mode A or B can be installed between terminal 2 and 3 if it's a two-phase meters. Or CT will be installed between terminal 2 and 3 if it's an anti-temper meter.


U
Ground
I1
I2

Mode G


23.5
ø4.2
10
3.5
58.8
70.2
17.2
120°
2
26.4

EBSG20300-70.2-10-58.8-4.2-V1
2.0mm 300μΩ±5%


3.2
1.5
7
8
88
16.85
5
10
2
8
16
16
1.2

EBSG20300-88-7-V1
1.2mm 300μΩ±5%

Application