

# Ziegler

Redefine Innovative Metering

# Technical Datasheet

SHUNT

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# SHUNT

## SHUNT

Shunts are designed to measure DC current by providing an accurate DC millivolt signal to drive ammeters, overload protection and control devices. They supply a voltage drop proportional to the DC Current which is measured and indicated by a Moving Coil Meter with the scale calibrated in Amps. Shunts are basically like resistor having some resistance due to which voltage drop is generated due to flow of current.

Ziegler shunts are made of Manganin alloys containing copper, manganese and nickel substances, due to which creating the very low temperature coefficient i.e 0.002% per °C. These shunts are mainly used in solar industries, railways, Test bench manufacturer, Battery monitoring system and in E-vehicle systems.

### Product Features

- Rating 1A to 15000A
- Riveted and brazed construction
- In-line bus bar mounting
- Very low temperature coefficient
- High overload withstand
- Shock and vibration proof
- Long term stability
- DIN shunts of 1...25 A with base
- The isolation base is adapted to be assembled on a 35 mm DIN rail

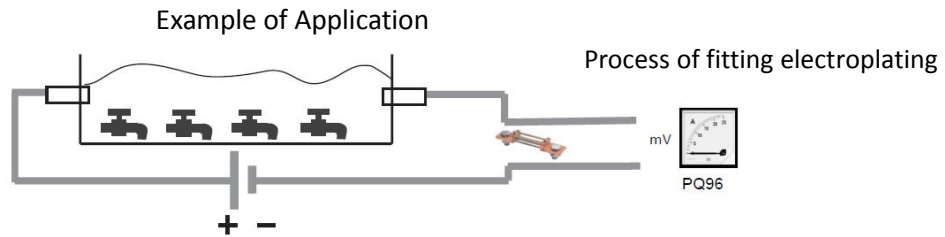


### Specifications:

<b>Electromagnetic compatibility</b>	Noise immunity	acc. to EN 61000-6-2
	Noise emissions	acc. to EN 61000-6-4
<b>Accuracy class</b>	0.5% & 1%	
<b>5 Seconds withstand</b>	10 times for 1 A to 500 A 5 times for 600 A to 2000 A 2 times for 2500 A to 15000 A	
<b>Shunts dimensions</b>	acc. to DIN 43 703 standard	
<b>Testing voltage of shunts with an isolating base</b>	5 kV	
<b>Resistance of a pair of wires connecting the shunt to the meter</b>	35 mΩ 75 mΩ, wires are not delivered with the shunt	
<b>Maximum Load</b>	The load should not exceed 0.1% or the nominal current rating for specified accuracy	
<b>Continuous Over Load</b>	20% rated current	
<b>Temperature Coefficient</b>	0.002% per°C	
<b>Ambient Temperature</b>	Calibration at 23°C	
<b>Operating Temperature</b>	- 10°C to 50°C	
<b>Storage Temperature</b>	- 20°C to 70°C	
<b>Millivolt</b>	50 mV, 60 mV, 75 mV, 100 mV, 150 mV	

# SHUNT

Shunts are manufactured in three different format versions depending upon the current rating.



## General Data

Format version :-

- A,D Insulating base mounted shunts clamping to DIN mounting (up to 25A/ 50.60.75.100, 150mV);  
without insulating base (20... 150A)
- B L-profile end blocks
- C T-profile end blocks

Material resistance bars :- Manganin

End Blocks :-

- Format version A,D high conductivity brass
- Format version B high conductivity brass/solid copper
- Format version C solid copper

## Kind of Versions

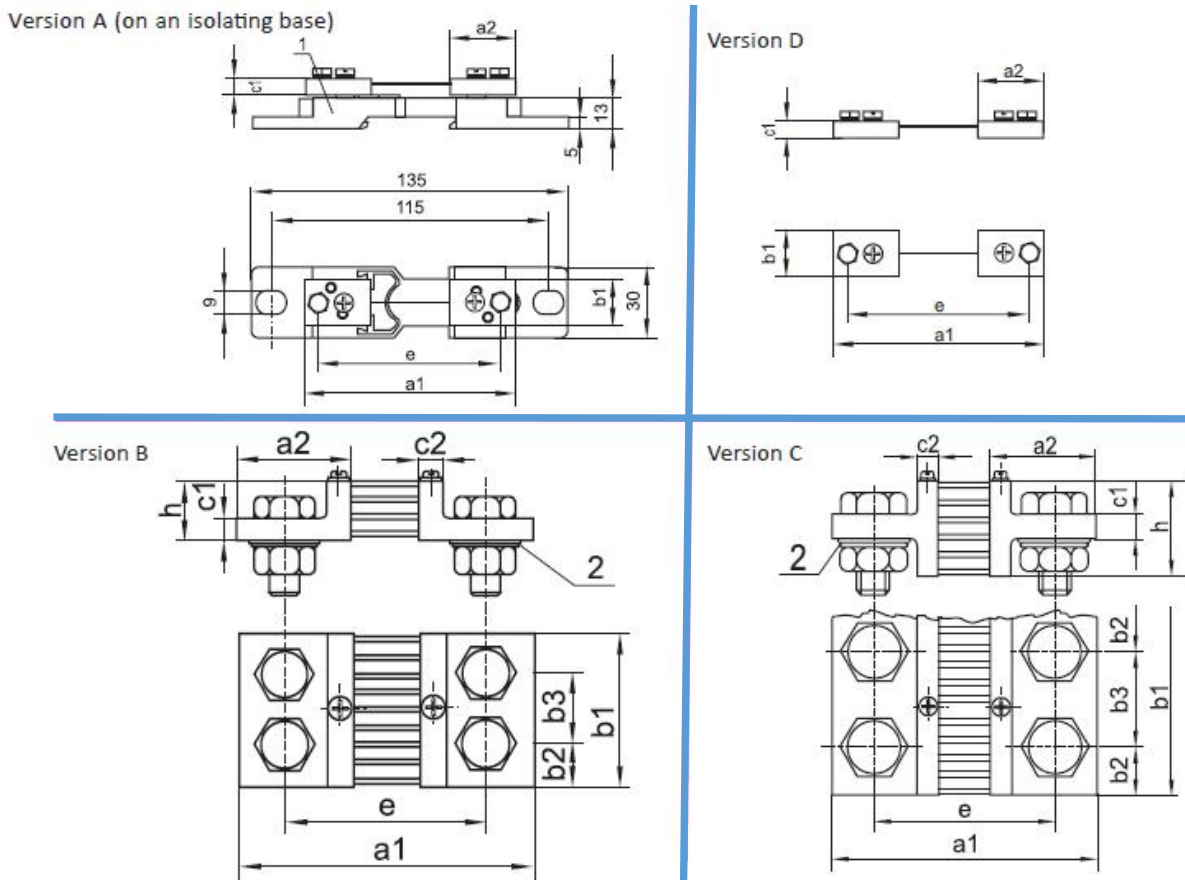


Fig.1. Fixing dimensions of shunts (1 - isolating base, 2 - round spring washer)

## DIN 43703 STANDARD

60 mV											Current Terminals			
IN (A)	Version	a1max.	a2	b1	b2	b3	c1	c2	e	h	T	Bolt	P	N
1, 1.5, 2.5, 4, 6, 10, 15, 25	A	90	28	20	....	....	8	....	78	....	2 x 1	M5 x 12	5.5	....
40, 60, 100, 150	D	100	33	20	....	....	8		80	....	2 x 1	M8 x 16	8.5	....
250	B	145	55	30	15	....	10	10	105	30	2 x 1	M12 x 40	13	M12
400	B	145	55	40	20	....	10	10	105	30	2 x 1	M16 x 45	17	M16
600	B	145	55	40	20	....	10	10	105	30	2 x 1	M16 x 45	17	M16
1000	B	165	65	60	30	....	10	10	115	30	2 x 1	M20 x 50	21	M16
1500	B	165	65	90	21	48	10	10	115	30	2 x 2	M16 x 45	17	M16
2500	B	165	65	120	30	60	10	10	115	30	2 x 2	M20 x 50	21	M20
4000	C	165	65	120	30	60	15	10	115	60	2 x 2	M20 x 60	21	M20
6000	C	175	70	154	25	52	25	15	125	130	2 x 3	M20 x 75	21	M20
10000	C	185	75	206	25	52	30	20	135	170	2 x 4	M20 x 80	21	M20
15000	C	185	75	310	25	52	30	20	135	170	2 x 6	M20 x 80	21	M20

150mV											Current Terminals			
IN (A)	Version	a1	a2	b1	b2	b3	c1	c2	e	h	T	Bolt	P	N
1, 1.5, 2.5, 4, 6, 10, 15, 25	A	90	28	20	....	....	8	....	78	....	2 x 1	M5 x 12	5.5	....
40, 60, 100, 150	D	225	33	25	....	....	8		205	....	2 x 1	M8 x 16	8.5	....
250	B	270	55	30	15	....	10	10	230	50	2 x 1	M12 x 40	13	M12
400	B	270	55	40	20	....	10	10	230	50	2 x 1	M16 x 45	17	M16
600	B	270	55	40	20	....	10	10	230	50	2 x 1	M16 x 45	17	M16
1000	B	290	65	70	35	....	10	10	240	60	2 x 1	M20 x 50	21	M16
1500	B	290	65	90	21	48	15	10	240	60	2 x 2	M16 x 60	17	M16
2500	B	290	65	120	30	60	15	10	240	60	2 x 2	M20 x 60	21	M20
4000	C	300	70	120	30	60	25	15	250	130	2 x 2	M20 x 75	21	M20
6000	C	300	70	154	25	52	25	15	250	130	2 x 3	M20 x 75	21	M20
10000	C	310	75	206	25	52	30	20	260	170	2 x 4	M20 x 80	21	M20
15000	C	310	75	310	25	52	30	20	260	170	2 x 6	M20 x 80	21	M20

**IN** - rated current

**T** - number of terminals

**Bolt** - hexagon bolt

**P** – washer

**N** – nut

**Voltage terminals** – Two M5 x 8 cylinder-head bolts with a cruciform cavity + 5.5 washers for 151 A - 15kA  
 – Two M4 x 8 cylinder-head bolts with a cruciform cavity + 4.7 washers for 1 A - 150 A

Additional mV Drop*														
75 mV											Current Terminals			
IN (A)	Version	a1max.	a2	b1	b2	b3	c1	c2	e	h	T	Bolt	P	N
1-30	A	100	28	20	....	....	8	....	88	....	2 x 1	M5 x 12	5.5	....
31-150	D	120	33	20	....	....	8		100	....	2 x 1	M8 x 16	8.5	....
151-300	B	165	55	30	15	....	10	10	125	30	2 x 1	M12 x 40	13	M12
301-750	B	165	55	40	20	....	10	10	125	30	2 x 1	M16 x 45	17	M16
751-1000	B	185	65	60	30	....	10	10	135	30	2 x 1	M20 x 50	21	M16
1001-1500	B	185	65	90	21	48	10	10	135	30	2 x 2	M16 x 45	17	M16
1501-3000	B	185	65	120	30	60	10	10	135	30	2 x 2	M20 x 50	21	M20
3001-5000	C	185	65	120	30	60	15	15	135	60	2 x 2	M20 x 60	21	M20
5001-7500	C	195	70	154	25	52	25	15	145	130	2 x 3	M20 x 75	21	M20
7501-10000	C	205	75	206	25	52	30	20	155	170	2 x 4	M20 x 80	21	M20
10001-15000	C	205	75	310	25	52	30	20	155	170	2 x 6	M20 x 80	21	M20

Additional mV Drop*														
50 mV											Current Terminals			
IN (A)	Version	a1max.	a2	b1	b2	b3	c1	c2	e	h	T	Bolt	P	N
1, 1.5, 2.5, 4, 6, 10, 15, 25	A	90	28	20	....	....	8	....	70	....	2 x 1	M5 x 12	5.5	....
40, 60, 100, 150	D	110	33	20	....	....	8		80	....	2 x 1	M8 x 16	8.5	....
250	B	155	55	30	15	....	10	10	105	30	2 x 1	M12 x 40	13	M12
400	B	155	55	40	20	....	10	10	105	30	2 x 1	M16 x 45	17	M16
600	B	155	55	40	20	....	10	10	105	30	2 x 1	M16 x 45	17	M16
1000	B	175	65	60	30	....	10	10	115	30	2 x 1	M20 x 50	21	M16
1500	B	175	65	90	21	48	10	10	115	30	2 x 2	M16 x 45	17	M16
2500	B	175	65	120	30	60	10	10	115	30	2 x 2	M20 x 50	21	M20
4000	C	175	65	120	30	60	15	15	115	60	2 x 2	M20 x 60	21	M20
6000	C	185	70	154	25	52	25	15	125	130	2 x 3	M20 x 75	21	M20
10000	C	195	75	206	25	52	30	20	135	170	2 x 4	M20 x 80	21	M20
15000	C	195	75	310	25	52	30	20	135	170	2 x 6	M20 x 80	21	M20

Additional mV Drop*														
100mV											Current Terminals			
IN (A)	Version	a1max.	a2	b1	b2	b3	c1	c2	e	h	T	Bolt	P	N
1, 1.5, 2.5, 4, 6, 10, 15, 25	A	90	28	20	....	....	8	....	78	....	2 x 1	M5 x 12	5.5	....
40, 60, 100, 150	D	145	33	25	....	....	8		125	....	2 x 1	M8 x 16	8.5	....
250	B	190	55	30	15	....	10	10	150	30	2 x 1	M12 x 40	13	M12
400	B	190	55	40	20	....	10	10	150	30	2 x 1	M16 x 45	17	M16
600	B	190	55	40	20	....	10	10	150	30	2 x 1	M16 x 45	17	M16
1000	B	210	65	60	30	....	10	10	160	30	2 x 1	M20 x 50	21	M16
1500	B	210	65	120	30	60	10	10	160	30	2 x 2	M16 x 60	17	M16
2500	B	210	65	120	30	60	15	10	160	60	2 x 2	M20 x 60	21	M20
4000	C	220	70	120	30	60	25	15	170	130	2 x 2	M20 x 75	21	M20
6000	C	220	70	154	25	52	25	15	170	130	2 x 3	M20 x 75	21	M20
10000	C	230	75	206	25	52	30	20	180	170	2 x 4	M20 x 80	21	M20
15000	C	230	75	310	25	52	30	20	180	170	2 x 6	M20 x 80	21	M20

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**IN** - rated current

**T** - number of terminals

**Bolt** - hexagon bolt

**P** – washer

**N** – nut

**Voltage terminals** – Two M5 x 8 cylinder-head bolts with a cruciform cavity + 5.5 washers for 151 A - 15kA  
– Two M4 x 8 cylinder-head bolts with a cruciform cavity + 4.7 washers for 1 A - 150 A

\* Deviating From Standard

## Ordering information

<b>Type</b>	Shunt
<b>Rated voltage</b>	50 mV *)
<b>Drop</b>	60 mV *) DIN , 60 mV *)
	75 mV *)
	100 mV *)
	150 mV *) DIN , 150 mV *)
<b>Rated current</b>	please refer to table inside purpose built on request **)
<b>Accuracy</b>	class 0.5 *)
	class 1 *)
<b>Insulating base</b>	included (up to 25 A) *) for DIN 43703 shunts included (up to 30 A) *)
<b>Cover</b>	none *)
	for shunts with insulating base

\*) Standard

\*\*) Please clearly add the desired specifications while ordering

**Example** – Shunt, rated voltage drop 60 mV DIN, rated current 1,000 A, accuracy class 0.5

# Ziegler

Redefine Innovative Metering

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