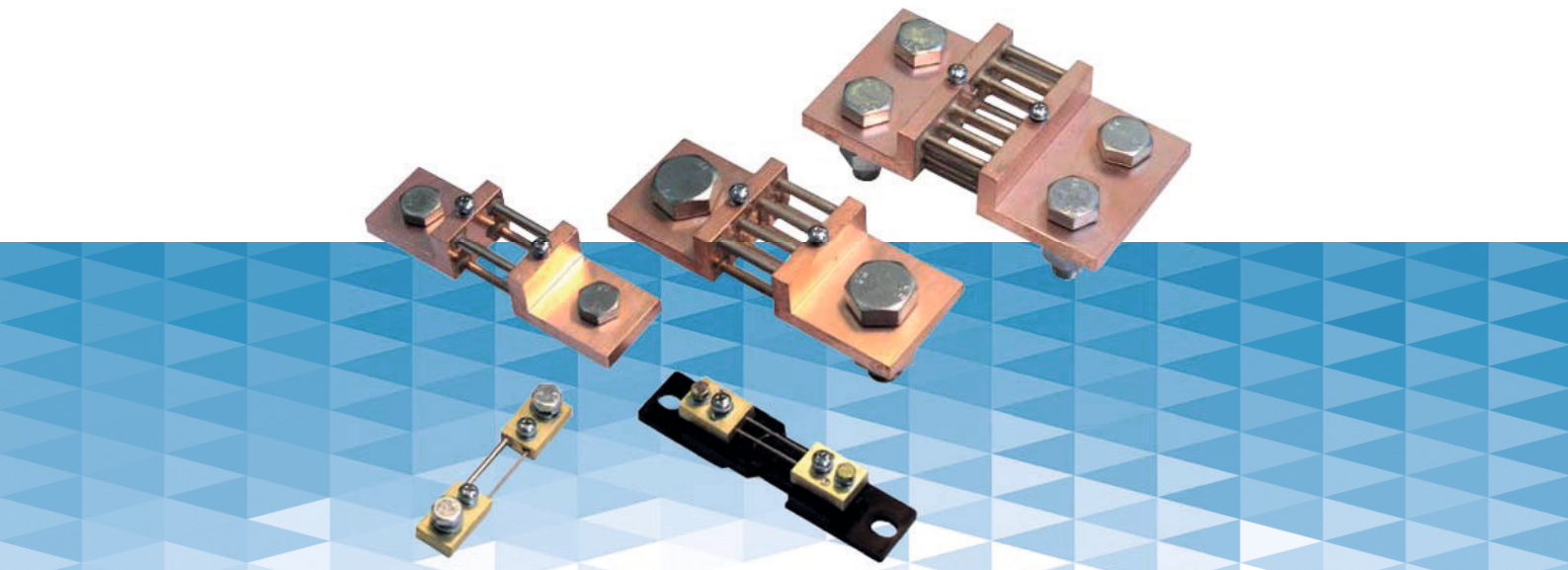
DATASHEET & INSTALLATION INSTRUCTIONS

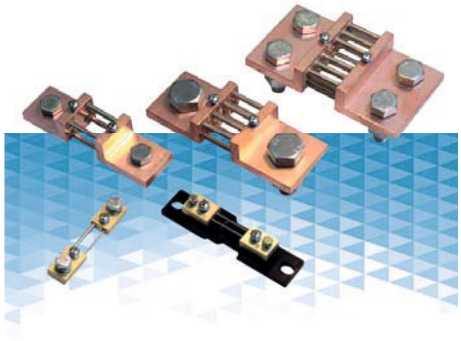


B2, B3, B4, B5, B6 MEASURING SHUNTS

E471457
(Refer *Note on page 3)

Features

- Extension of d.c. current measuring ranges of moving-coil ammeters.
- Accuracy class 0.5
- Shunts of 1…25 A ranges are fixed on an isolating base.
- The isolating base is adapted to be assembled on a 35 mm DIN rail
- On request, additional chemical coating are available: lackering, silver or nickel plating.
- Shunts upto 600A are UL recognised .



Features

1 A ... 15kA

Class 0.5

DIN 35 mm

Inputs

I

DC

Outputs

50 mV

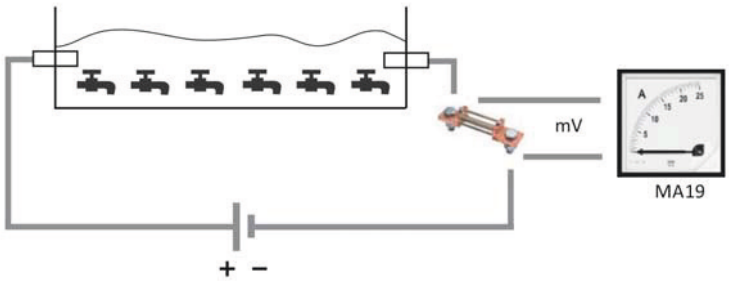
60 mV

75 mV

100 mV

150 mV

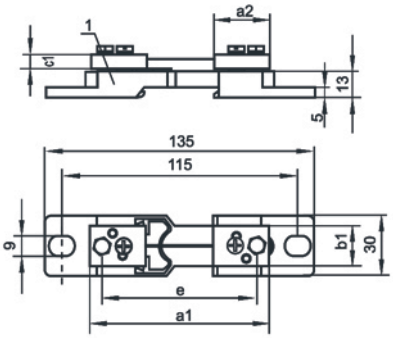
Example of application



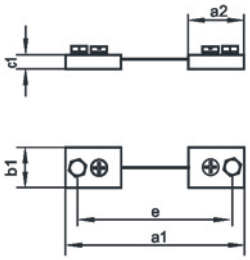
Process of electroplating.

Kind of version

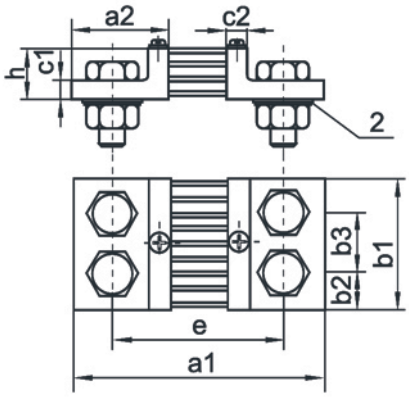
Version A (on an isolating base)



Version D



Version B



Version C

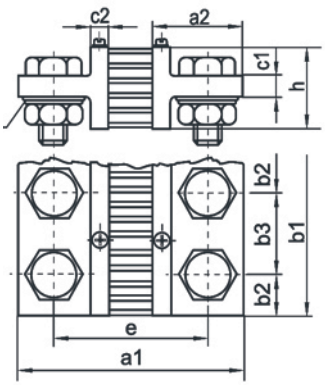
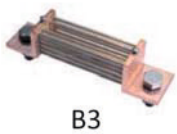


Fig.1. Fixing dimensions of shunts
1 - isolating base, 2 - round spring washer.

B2 60 mV												Current terminals			
IN [A]	Version	a1 max	a2	b1	b2	b3	c1	c2	e	h	Weight [kg]	LZ	Bolt	P (mm)	N
1, 1.5, 2.5, 4, 6 10, 15, 25	A	90	28	20	-	-	8	-	78	-	0.1	2 x 1	M5 x 12	5.5	
40, 60, 100, 150	D	100	33	20	-	-	8	-	80	-	0.1	2 x 1	M8 x 16	8.5	-
250	B	145	55	30	15	-	10	10	105	30	0.6	2 x 1	M12 x 40	13	M12
400	B	145	55	40	20	-	10	10	105	30	0.8	2 x 1	M16 x 45	17	M16
600	B	145	55	40	20	-	10	10	105	30	0.8	2 x 1	M16 x 45	17	M16
1000	B	165	65	60	30	-	10	10	115	30	1.4	2 x 1	M20 x 50	21	M16
1500	B	165	65	90	21	48	10	10	115	30	2.0	2 x 2	M16 x 45	17	M16
2500	B	165	65	120	30	60	10	10	115	30	2.9	2 x 2	M20 x 50	21	M20
4000	C	165	65	120	30	60	15	10	115	60	4.3	2 x 2	M20 x 60	21	M20
6000	C	175	70	154	25	52	25	15	125	130	10.50	2 x 3	M20 x 75	21	M20
10000	C	185	75	206	25	52	30	20	135	170	21.00	2 x 4	M20 x 80	21	M20
15000	C	185	75	310	25	52	30	20	135	170	32.00	2 x 6	M20 x 80	21	M20

B2

B3 150 mV												Current terminals			
IN [A]	Version	a1 max	a2	b1	b2	b3	c1	c2	e	h	Weight [kg]	LZ	Bolt	P (mm)	N
1, 1.5, 2.5, 4, 6 10, 15, 25	A	90	28	20	-	-	8	-	78	-	0.14	2 x 1	M5 x 12	5.5	-
40, 60, 100, 150	D	225	33	25	-	-	8	-	205	-	0.23	2 x 1	M8 x 16	8.5	-
250	B	270	55	30	15	-	10	10	230	50	0.68	2 x 1	M12 x 40	13	M12
400	B	270	55	40	20	-	10	10	230	50	1.05	2 x 1	M16 x 45	17	M16
600	B	270	55	40	20	-	10	10	230	50	1.16	2 x 1	M16 x 45	17	M16
1000	B	290	65	70	35	-	10	10	240	60	2.15	2 x 1	M20 x 50	21	M16
1500	B	290	65	90	21	48	15	10	240	60	3.10	2 x 2	M16 x 60	17	M16
2500	B	290	65	120	30	60	15	10	240	60	5.20	2 x 2	M20 x 60	21	M20
4000	C	300	70	120	30	60	25	15	250	130	8.30	2 x 2	M20 x 75	21	M20
6000	C	300	70	154	25	52	25	15	250	130	15.00	2 x 3	M20 x 75	21	M20
10000	C	310	75	206	25	52	30	20	260	170	28.00	2 x 4	M20 x 80	21	M20
15000	C	310	75	310	25	52	30	20	260	170	35.00	2 x 6	M20 x 80	21	M20



B3

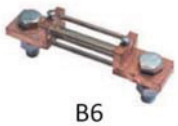
B4 50 mV												Current terminals			
IN [A]	Version	a1 max	a2	b1	b2	b3	c1	c2	e	h	Weight [kg]	LZ	Bolt	P (mm)	N
1, 1.5, 2.5, 4, 6 10, 15, 25	A	90	28	20	-	-	8	-	70	-	0.13	2 x 1	M5 x 12	5.5	-
40, 60, 100, 150	D	110	33	20	-	-	8	-	80	-	0.13	2 x 1	M8 x 16	8.5	-
250	B	155	55	30	15	-	10	10	105	30	0.60	2 x 1	M12 x 40	1	M12
400	B	155	55	40	20	-	10	10	105	30	0.85	2 x 1	M16 x 45	1	M16
600	B	155	55	40	20	-	10	10	105	30	0.85	2 x 1	M16 x 45	17	M16
750	B	175	55	40	20	-	10	10	115	30	0.85	2 x 1	M16 x 45	17	M16
1000	B	175	65	60	30	-	10	10	115	30	1.45	2 x 1	M20 x 50	21	M16
1500	B	175	65	90	21	48	10	10	115	30	2.00	2 x 2	M16 x 45	17	M16
2500	B	175	65	120	30	60	10	10	115	30	2.90	2 x 2	M20 x 50	21	M20
4000	C	175	65	120	30	60	15	10	115	60	4.30	2 x 2	M20 x 60	21	M20
6000	C	185	70	154	25	52	25	15	125	130	10.50	2 x 3	M20 x 75	21	M20
10000	C	195	75	206	25	52	30	20	135	170	21.00	2 x 4	M20 x 80	21	M20
15000	C	195	75	310	25	52	30	20	135	170	32.00	2 x 6	M20 x 80	21	M20

B4

B5 75 mV												Current terminals			
IN [A]	Version	a1 max	a2	b1	b2	b3	c1	c2	e	h	Weight [kg]	LZ	Bolt	P (mm)	N
1, 1.5, 2.5, 4, 6 10, 15, 25	A	90	28	20	-	-	8	-	78	-	0.1	2 x 1	M5 x 12	5.5	-
40, 60, 100, 150	D	115	33	25	-	-	8	-	95	-	0.1	2 x 1	M8 x 16	8.5	-
250	B	160	55	30	15	-	10	10	120	30	0.63	2 x 1	M12 x 40	13	M12
400	B	160	55	40	20	-	10	10	120	30	0.92	2 x 1	M16 x 45	17	M16
600	B	160	55	40	20	-	10	10	120	30	1.00	2 x 1	M16 x 45	17	M16
1000	B	180	65	60	30	-	10	10	130	30	1.75	2 x 1	M20 x 50	21	M16
1500	B	180	65	120	30	60	10	10	130	30	2.30	2 x 2	M16 x 45	17	M16
2500	B	180	65	120	30	60	15	10	130	60	3.10	2 x 2	M20 x 60	21	M20
4000	C	190	70	120	30	60	25	15	140	130	5.20	2 x 2	M20 x 75	21	M20
6000	C	190	70	154	25	52	25	15	140	130	11.20	2 x 3	M20 x 75	21	M20
10000	C	200	75	206	25	52	30	20	150	170	22.00	2 x 4	M20 x 80	21	M20
15000	C	200	75	310	25	52	30	20	150	170	33.00	2 x 6	M20 x 80	21	M20

B5

B6 100 mV												Current terminals			
IN [A]	Version	a1 max	a2	b1	b2	b3	c1	c2	e	h	Weight [kg]	LZ	Bolt	P (mm)	N
1, 1.5, 2.5, 4, 6 10, 15, 25	A	90	28	20	-	-	8	-	78	-	0.1	2 x 1	M5 x 12	5.5	-
40, 60, 100, 150	D	145	33	25	-	-	8	-	125	-	0.20	2 x 1	M8 x 16	8.5	-
250	B	190	55	30	15	-	10	10	150	30	0.65	2 x 1	M12 x 40	13	M12
400	B	190	55	40	20	-	10	10	150	30	1.00	2 x 1	M16 x 45	17	M16
600	B	190	55	40	20	-	10	10	150	30	1.11	2 x 1	M16 x 45	17	M16
1000	B	210	65	60	30	-	10	10	160	30	2.00	2 x 1	M20 x 50	21	M16
1500	B	210	65	120	30	60	10	10	160	30	2.50	2 x 2	M16 x 45	17	M16
2500	B	210	65	120	30	60	15	10	160	60	3.20	2 x 2	M20 x 60	21	M20
4000	C	220	70	120	30	60	25	15	170	130	5.80	2 x 2	M20 x 75	21	M20
6000	C	220	70	154	25	52	25	15	170	130	12.00	2 x 3	M20 x 75	21	M20
10000	C	230	75	206	25	52	30	20	180	170	23.00	2 x 4	M20 x 80	21	M20
15000	C	230	75	310	25	52	30	20	180	170	34.00	2 x 6	M20 x 80	21	M20



B6

IN- rated current
LZ- number of terminals
Bolt - hexagon bolt
P– washer
N– nut

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

Note : Non standard input ranges available on request.

Technical Data

Overload range	5 seconds withstand: 10 times for 1A to 500A 5 times for 600A to 2000A 2 times for 2500A to 15000A
Accuracy class	0.5% & 1%
Operating temperature	-10...+55ºC
Storage temperature	-25...+65ºC
Relative humidity	≤ 75% annual average, non-condensing
Shunts dimensions	acc. to DIN 43 703 standard
Testing voltage of shunts with an isolating base	5 kV
Resistance of a pair of wires connecting the shunt to the meter	Recommended total lead resistance 35mΩ. (connection wires are not supplied with the shunt)
Continuous overload	120%IN
Short duration overload up to 5 seconds	for range up to 2kA – 5IN for range 2kA <IN<15kA – 2IN

*Note : UL testing done upto 600A.

Installation Guidelines for Shunts :

1) It is recommended to use a flat copper busbar with a current density of 1.55 A/mm² or lower, depending on the specific requirements of the application.

2) Where possible all shunts should be mounted on ground side of circuit.For Circuits above 750VDC shunts must be mounted on the ground side of the circuit.

3) Shunts also must be installed in a way that protects them from thermal expansion forces produced from busbar or short-circuit forces. Flexible wiring may be required in high pulse current, high vibration, or high temperature applications.

4) Shunts should be mounted with manganin resistive blades in a vertical position in order to promote the free convectional flow of air. If vertical mounting is not practical, forced air cooling or adding heat sinks to the blocks can reduce the operating temperature. The manganin blades must never exceed otherwise permanent resistance change may occur.

5) Suffcient ventilation shall be provided so as to keep manganin rods temperature below 140 deg C.

6) For continuous operation, it is recommended that shunts are not run at more than two thirds (2/3) the rated current.

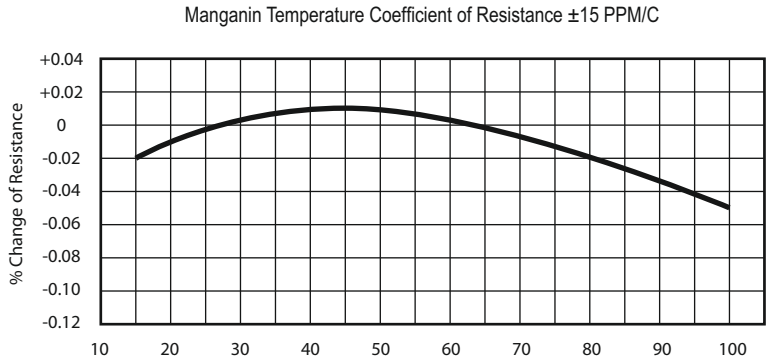


Fig. Temperature coefficient

Caution : Shunts are not insulated & protection against accidental contact may be necessary in order to comply with Health & Safety regulations.

Torque Specifications:-

Primary Bolt	Nuts	Torque (lb-in & Nm)
M5	M5	32.7 lb-in (3.7Nm)
M8	M8	141.6 lb-in (16 Nm)
M12	M12	477.9 lb-in (54 Nm)
M16	M16	1150.5 lb-in (130 Nm)
M20	M20	2256.9 lb-in (255 Nm)

Output Screw	Torque (lb-in & Nm)
M5	14.1 lb-in (1.6 Nm)
M4	12.39 lb-in (1.4 Nm)

Ordering

Product Code	YN01-	XX	XX	X	X	S	000000
Primary Current	1A	01					
	2A	02					
	5A	03					
	10A	04					
	15A	05					
	20A	06					
	25A	07					
	30A	08					
	32A	09					
	40A	10					
	50A	11					
	60A	12					
	63A	13					
	70A	14					
	75A	15					
	80A	16					
	100A	17					
	125A	18					
	150A	19					
	160A	20					
	200A	21					
	250A	22					
	300A	23					
	400A	24					
	500A	25					
	600A	26					
	750A	27					
	800A	28					
	1000A	29					
	1200A	30					
	1250A	31					
	1500A	32					
	1600A	33					
	2000A	34					
	2500A	35					
	3000A	36					
	4000A	37					
	5000A	38					
	6000A	39					
	7500A	40					
	630A	41					
	192A	42					
	175A	43					
	1800A	44					
	3A	45					
	1400A	46					
	350A	47					
	120A	48					
	10000A	49					
Voltage Drop	50mV		50				
	60mV		60				
	75mV		75				
	100mV		10				
	150mV		15				
Accuracy class	0.50%			5			
	1%			1			
Mounting Base	Insulating base				B		
	without insulating base				W		