

Features

The long-life shunts are used to expand the current measuring range of moving coil ammeters for the reliable displaying and further processing of direct currents, especially at high rates of up to 15 000 A.

The direct current flowing through the shunt generates a proportional voltage drop which, for example, can be displayed by means of a moving coil meter connected in parallel or be further processed electronically.

The shunts manufactured by us comply with EN 60051-1, EN IEC 60051-8 and DIN 43703.

The accuracy is 0.5% relative to the nominal value. In addition, shunts with an increased accuracy of 0.2% or 0.1% can be realised on request. The rated currents are in the range of 1 A to 15,000 A. Shunts are manufactured in three different designs, depending on the nominal current.

Up to 25 A, the shunts are always mounted on an insulating base which can be mounted on a 35 mm DIN rail or by means of screw fixing. Above 25 A, an insulating base is optionally available for SHU-B1, as well as for some current ranges in SHU-B2.

Variants

Model	Voltage drop	Rated current	Accuracy class	Index
SHU-B1	60 mV	60 A	0.5	WASHUB1V1A0060M1C5
SHU-B2	60 mV	250 A	0.5	WASHUB2V1A0250M2C5
SHU-B3	60 mV	4000 A	0.5	WASHUB3V1A4000M2C5

It is possible to prepare a version of the shunt with parameters requested by the customer (see section **Specifications**). A flexible manufacturing allows the realisation of individually customised shunts.

- Different voltage drop
- Different rated current
- Accuracy class 0.2 (0.1 on request)
- Customised designs

Ordering example:

- Voltage drop: 60 mV
- Rated current: 1000 A
- Accuracy class: 0.5

Specifications

Material

Resistor	manganin
Connector, SHU-B1	brass
Connector, SHU-B2	brass/copper
Connector, SHU-B3	copper

Connections

Current path	see dimension drawings
Voltage path	M5 x 8

Safety

Protection class	IP00
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Connector shape

SHU-B1	flat profile, standard with insulating base (1...25 A) flat profile, optionally with insulating base (30...400 A)
SHU-B2	L-section
SHU-B3	T-section

Standard designs

Voltage drop	60 mV, 100 mV, 150 mV, 300 mV
Overload withstand	1.2-fold rated current, permanently 5-fold rated current, max. 5 s (≤ 2000 A) 2-fold rated current, max. 5 s (> 2000 A...10 000 A)
Rated current	1...15 000 A
Accuracy	class 0.5 (optionally class 0.2 or 0.1)
Insulating base	1...25 A (standard) 30...400 A (optional)
Insulation cover cap available as accessory	1...400 A (60 mV) 1...25 A (100 mV) 1...25 A (150 mV)

Operating conditions

Operating temperature	-10...+55°C 14...131°F
Storage temperature	-25...+65°C -13...149°F
Humidity (no condensation)	$\leq 75\%$
Climatic conditions	climatic class 3 according to VDE/VDI 3540

Applied standards

DIN 43703	shunt dimensions
EN 60051-1	Direct acting indicating analogue electrical measuring instruments and their accessories. Part 1: Definitions and general requirements common to all parts
EN IEC 60051-8	Direct acting indicating analogue electrical measuring instruments and their accessories. Part 8: Special requirements for accessories

SHU-B1 | Specifications

Voltage drop 60 mV – class 0.5

Rated current [A]	Insulating base*	Weight	Current connection (dimension g)	Number of connections
1	√	0.10 kg	M5x12	2 x 1
1.5	√	0.10 kg	M5x12	2 x 1
2.5	√	0.10 kg	M5x12	2 x 1
4	√	0.10 kg	M5x12	2 x 1
6	√	0.10 kg	M5x12	2 x 1
10	√	0.10 kg	M5x12	2 x 1
15	√	0.11 kg	M5x12	2 x 1
25	√	0.11 kg	M5x12	2 x 1
40	optional	0.12 kg	M8x16	2 x 1
50	optional	0.12 kg	M8x16	2 x 1
60	optional	0.13 kg	M8x16	2 x 1
80	optional	0.13 kg	M8x16	2 x 1
100	optional	0.13 kg	M8x16	2 x 1
150	optional	0.13 kg	M8x16	2 x 1
200	optional	0.13 kg	M8x16	2 x 1
250	optional	0.13 kg	M8x16	2 x 1
300	optional	0.21 kg	M10x20	2 x 1
400	optional	0.21 kg	M10x20	2 x 1

*cover cap available as accessory for voltage drop 60 mV

Voltage drop 150 mV – class 0.5

Rated current [A]	Insulating base*	Weight	Current connection (dimension g)	Number of connections
1	√	0.10 kg	M5x12	2 x 1
1.5	√	0.10 kg	M5x12	2 x 1
2.5	√	0.11 kg	M5x12	2 x 1
4	√	0.11 kg	M5x12	2 x 1
6	√	0.11 kg	M5x12	2 x 1
10	√	0.11 kg	M5x12	2 x 1
15	√	0.11 kg	M5x12	2 x 1
25	√	0.12 kg	M5x12	2 x 1
40	optional	0.17 kg	M8x16	2 x 1
50	optional	0.17 kg	M8x16	2 x 1
60	optional	0.18 kg	M8x16	2 x 1
80	optional	0.19 kg	M8x16	2 x 1
100	optional	0.21 kg	M8x16	2 x 1
150	optional	0.24 kg	M8x16	2 x 1
200	optional	0.24 kg	M8x16	2 x 1
250	optional	0.26 kg	M8x16	2 x 1

*cover cap available as accessory for up to 25 A/150 mV

Voltage drop 100 mV – class 0.5

Rated current [A]	Insulating base*	Weight	Current connection (dimension g)	Number of connections
1	√	0.10 kg	M5x12	2 x 1
1.5	√	0.10 kg	M5x12	2 x 1
2.5	√	0.10 kg	M5x12	2 x 1
4	√	0.10 kg	M5x12	2 x 1
6	√	0.10 kg	M5x12	2 x 1
10	√	0.11 kg	M5x12	2 x 1
15	√	0.11 kg	M5x12	2 x 1
25	√	0.11 kg	M5x12	2 x 1
40	optional	0.16 kg	M8x16	2 x 1
50	optional	0.16 kg	M8x16	2 x 1
60	optional	0.16 kg	M8x16	2 x 1
80	optional	0.16 kg	M8x16	2 x 1
100	optional	0.17 kg	M8x16	2 x 1
150	optional	0.18 kg	M8x16	2 x 1
200	optional	0.18 kg	M8x16	2 x 1
250	optional	0.18 kg	M8x16	2 x 1

*cover cap available as accessory for up to 25 A/100 mV

Voltage drop 300 mV – class 0.5

Rated current [A]	Insulating base	Weight	Current connection (dimension g)	Number of connections
1	√	0.11 kg	M5x12	2 x 1
1.5	√	0.11 kg	M5x12	2 x 1
2.5	√	0.11 kg	M5x12	2 x 1
4	√	0.11 kg	M5x12	2 x 1
6	√	0.11 kg	M5x12	2 x 1
10	√	0.11 kg	M5x12	2 x 1
15	√	0.12 kg	M5x12	2 x 1
25	√	0.13 kg	M5x12	2 x 1
40	optional	0.19 kg	M8x16	2 x 1
50	optional	0.19 kg	M8x16	2 x 1
60	optional	0.22 kg	M8x16	2 x 1
80	optional	0.24 kg	M8x16	2 x 1
100	optional	0.27 kg	M8x16	2 x 1
150	optional	0.33 kg	M8x16	2 x 1
200	optional	0.33 kg	M8x16	2 x 1
250	optional	0.33 kg	M8x16	2 x 1

SHU-B2 | Specifications

Voltage drop 60 mV – class 0.5

Rated current [A]	Insulating base	Weight	Current connection (dimension g)	Number of connections
250	optional	0.5 kg	M12x40	2 x 1
400	optional	0.8 kg	M16x45	2 x 1
600	optional	0.8 kg	M16x45	2 x 1
1000	-	1.4 kg	M20x50	2 x 1
1500	optional	2.0 kg	M16x45	2 x 2
2500	-	2.9 kg	M20x50	2 x 2

Voltage drop 100 mV – class 0.5

Rated current [A]	Insulating base	Weight	Current connection (dimension g)	Number of connections
250	optional	0.6 kg	M12x40	2 x 1
400	optional	0.9 kg	M16x45	2 x 1
600	optional	0.9 kg	M16x45	2 x 1
1000	-	1.6 kg	M20x50	2 x 1
1500	optional	3.1 kg	M16x45	2 x 2

Voltage drop 150 mV – class 0.5

Rated current [A]	Insulating base	Weight	Current connection (dimension g)	Number of connections
250	optional	0.8 kg	M12x40	2 x 1
400	optional	1.2 kg	M16x45	2 x 1
600	optional	1.3 kg	M16x45	2 x 1
1000	-	2.5 kg	M20x50	2 x 1

Voltage drop 300 mV – class 0.5

Rated current [A]	Insulating base	Weight	Current connection (dimension g)	Number of connections
250	optional	0.9 kg	M12x40	2 x 1
400	optional	1.4 kg	M16x45	2 x 1
600	optional	1.7 kg	M16x45	2 x 1
1000	-	3.1 kg	M20x50	2 x 1

SHU-B3 | Specifications

Voltage drop 60 mV – class 0.5

Rated current [A]	Insulating base	Weight	Current connection (dimension g)	Number of connections
4000	-	4.3 kg	M20x60	2 x 2
6000	-	10.9 kg	M20x75	2 x 3
10000	-	21.1 kg	M20x80	2 x 4
15000	-	31.7 kg	M20x80	2 x 6

Voltage drop 100 mV – class 0.5

Rated current [A]	Insulating base	Weight	Current connection (dimension g)	Number of connections
2500	-	4.6 kg	M20x60	2 x 2
4000	-	8.9 kg	M20x75	2 x 2
6000	-	11.9 kg	M20x75	2 x 3

Voltage drop 150 mV – class 0.5

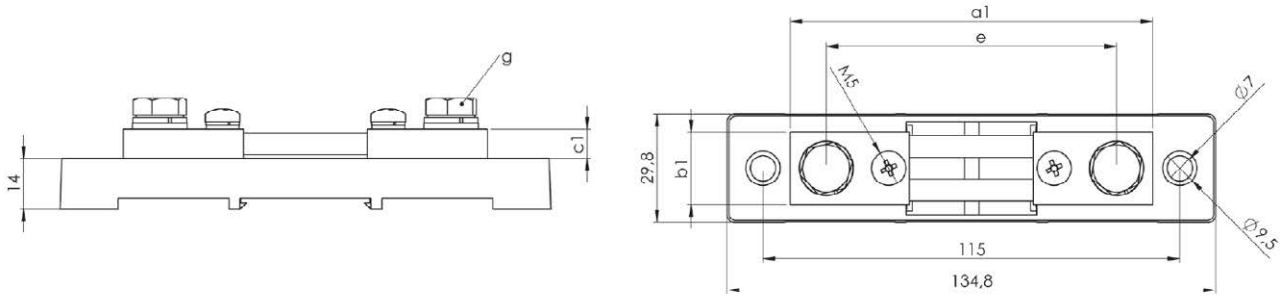
Rated current [A]	Insulating base	Weight	Current connection (dimension g)	Number of connections
1500	-	3.8 kg	M16x60	2 x 2
2500	-	5.5 kg	M20x60	2 x 2
4000	-	10.0 kg	M20x75	2 x 2
6000	-	14.2 kg	M20x75	2 x 3
10000	-	26.5 kg	M20x80	2 x 4

Voltage drop 300 mV – class 0.5

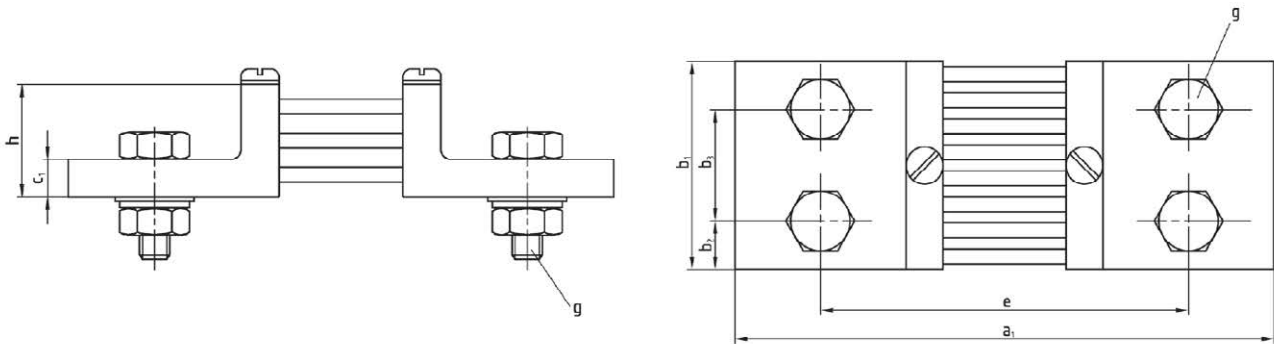
Rated current [A]	Insulating base	Weight	Current connection (dimension g)	Number of connections
1500	-	4.7 kg	M16x60	2 x 2
2500	-	7.1 kg	M20x60	2 x 2
4000	-	13.0 kg	M20x75	2 x 2
6000	-	17.6 kg	M20x75	2 x 3

Dimensions

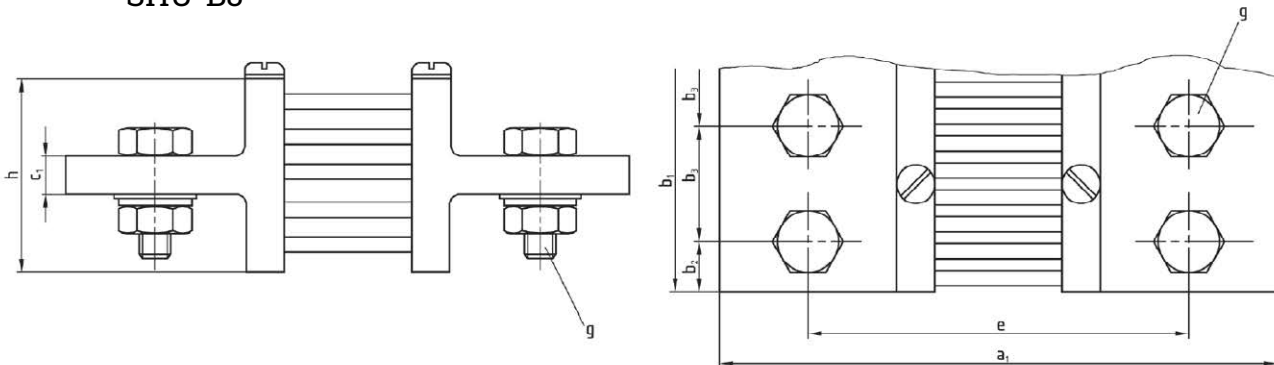
SHU-B1



SHU-B2



SHU-B3



Dimensions

Voltage drop [mV]	Dimensions [mm]	Rated current [A]												
		1-25	30-250	300-400	200-350	400-800	900-1000	1000-1250	1500-2000	2500-3000	3000-5000	6000-8000	8000-10000	15000
60		SHU-B1			SHU-B2						SHU-B3			
	a ₁	90	100		145		165				165	175	185	
	b ₁	20		30	30	40	60		90	120	120	154	206	310
	b ₂	-			15	20	30		21	30	30	25		
	b ₃	-			-				48	60	60	52		
	c ₁	8		10	10						15	25	30	
	e	78	80		105		115				115	125	135	
	h	-			30						60	130	170	
100		SHU-B1			SHU-B2				SHU-B3					
	a ₁	90	145	-	190		210		210	220		-	-	
	b ₁	20	25	-	30	40	60		120	120		154	-	-
	b ₂	-		-	15	20	30		30		30	25	-	-
	b ₃	-		-	-				60	60	52		-	-
	c ₁	8		-	10				15	25		-	-	
	e	78	125	-	150		160		160	170		-	-	
	h	-		-	30				60	130		-	-	
150		SHU-B1			SHU-B2				SHU-B3					
	a ₁	90	225	-	270		290		290		300		310	
	b ₁	20	25	-	30	40	70		90	120		154	206	310
	b ₂	-		-	15	20	35		21	30		25		
	b ₃	-		-	-				48	60		52		
	c ₁	8		-	10				15		25		30	
	e	78	205	-	230		240		240		250		260	
	h	-		-	50		60		60		130		170	
300		SHU-B1			SHU-B2				SHU-B3					
	a ₁	90	384	-	429		449		449		459		-	-
	b ₁	20	25	-	30	40	70		90	120		154	-	-
	b ₂	-		-	15	20	35		21	30		25	-	-
	b ₃	-		-	-				48	60		52	-	-
	c ₁	8		-	10				15		25		-	-
	e	78	364	-	389		399		399		409		-	-
	h	-		-	50		60		60		130		-	-