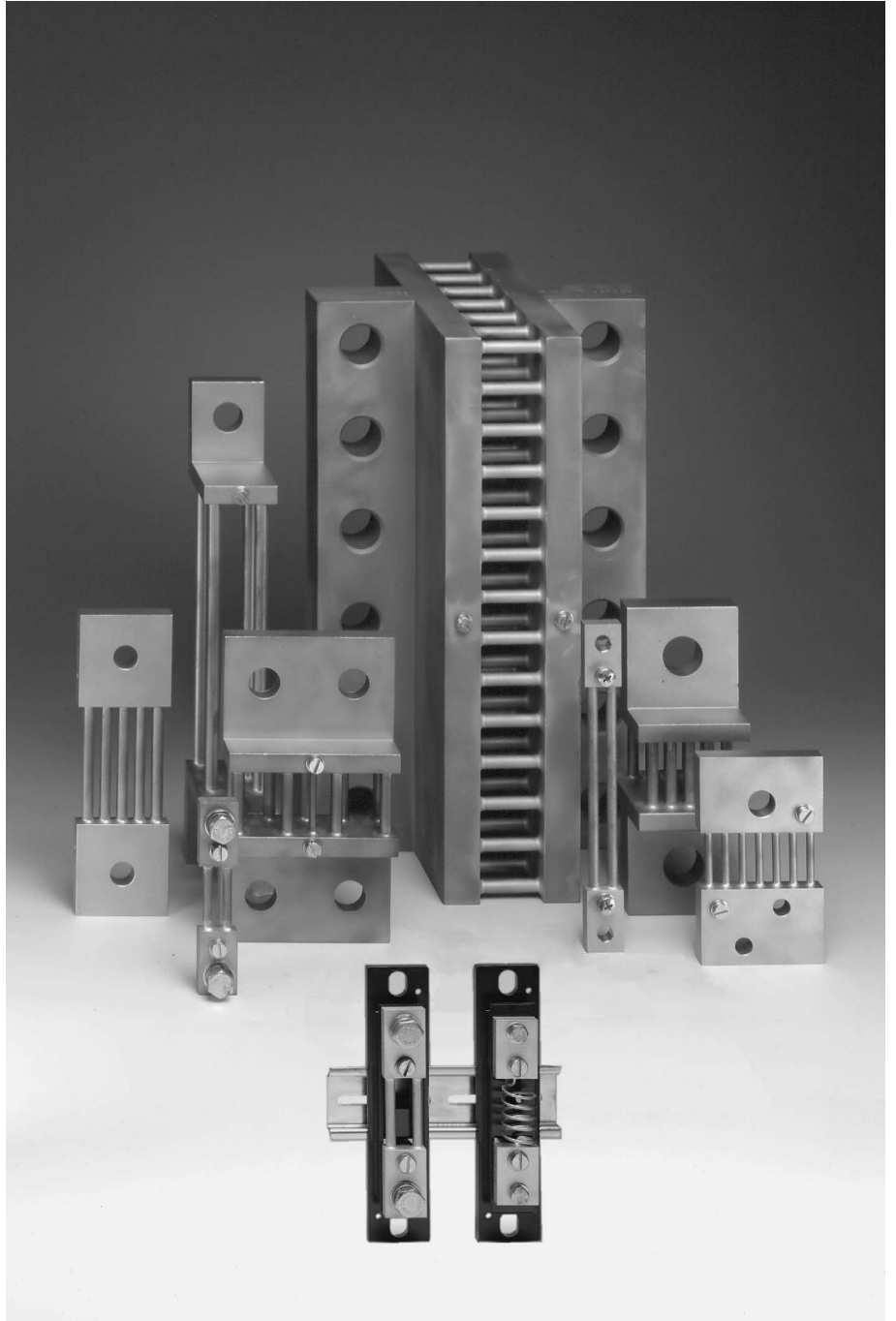


# Data Sheet

800.D.101.07

## Shunts Class 0.5

60 mV  
100 mV  
150 mV  
300 mV



## Application

Shunts provide an accurate DC millivolt signal to drive ammeter indicators, overload protection and control devices, especially for higher amperage. They supply a voltage drop proportional to the DC current which is measured and indicated by a moving-coil meter with the dial calibrated in amps.

In accordance with DIN standard 43 703 shunts are available from 1 A up to 15,000 A with an accuracy of 0.5%. Standard voltage drop is 60 mV or 150 mV. Intermediate current ratings, other voltage outputs, better accuracy and purpose-built shunts can be supplied.

Shunts are manufactured in three different format versions depending on current ratings.

## Operating Principle

The current passing through the shunt produces a proportional voltage drop. A moving coil instrument connected to the shunt measures the voltage drop across the shunt terminals.

Shunts are calibrated in such a way that they produce an accurately defined voltage drop (60 mV, 150 mV or other).

## General Data

format version A	insulating base mounted shunts clamping to DIN mounting rail or wall mounting (up to 25 A / 60, 100, 150 or 300 mV); without insulating base (30 ... 150 A) †
format version B	L-profile end blocks
format version C	T-profile end blocks
material	
resistance bars	manganin
end blocks	
format version A	high conductivity brass
format version B	high conductivity brass/solid copper
format version C	solid copper
base material	Lexan, black
format version A	self-extinguishing to UL rating 94 V-0
connections	thread screws
current	please refer to "Dimensions"
voltage	M5x8
mounting	screw mounting (M8 max.) or clamping to DIN mounting rail (to DIN EN 60 715)
format version A	
enclosure code	IP 00
dimensions	please refer to "Dimensions"
weight	please refer to table below
<b>rated current †</b>	<b>weight approx. for rated voltage drop †</b>
	<b>60 mV    100 mV<sup>1)</sup>    150 mV    300 mV<sup>1)</sup></b>

<b>1 A</b>	0.10 kg	0.10 kg	0.10 kg	0.11 kg
<b>1.5 A</b>	0.10 kg	0.10 kg	0.10 kg	0.11 kg
<b>2 A</b> <sup>1) 2)</sup>	0.10 kg	0.10 kg	0.10 kg	0.11 kg
<b>2.5 A</b>	0.10 kg	0.10 kg	0.11 kg	0.11 kg
<b>3 A</b> <sup>1) 2)</sup>	0.10 kg	0.10 kg	0.11 kg	0.11 kg
<b>4 A</b>	0.10 kg	0.10 kg	0.11 kg	0.11 kg
<b>5 A</b> <sup>1) 2)</sup>	0.10 kg	0.10 kg	0.11 kg	0.11 kg
<b>6 A</b>	0.10 kg	0.10 kg	0.11 kg	0.11 kg
<b>8 A</b> <sup>1) 2)</sup>	0.10 kg	0.10 kg	0.11 kg	0.11 kg
<b>10 A</b>	0.10 kg	0.11 kg	0.11 kg	0.11 kg
<b>12 A</b> <sup>1) 2)</sup>	0.11 kg	0.11 kg	0.11 kg	0.12 kg
<b>15 A</b>	0.11 kg	0.11 kg	0.11 kg	0.12 kg
<b>20 A</b> <sup>1) 2)</sup>	0.11 kg	0.11 kg	0.11 kg	0.12 kg
<b>25 A</b>	0.11 kg	0.11 kg	0.12 kg	0.13 kg
<b>30 A</b> <sup>1) 2)</sup>	0.12 kg	0.15 kg	0.16 kg	0.18 kg
<b>40 A</b>	0.12 kg	0.16 kg	0.17 kg	0.19 kg
<b>50 A</b> <sup>1) 2)</sup>	0.13 kg	0.16 kg	0.17 kg	0.20 kg

<b>rated current †</b>	<b>weight approx. for rated voltage drop †</b>			
	<b>60 mV</b>	<b>100 mV<sup>1)</sup></b>	<b>150 mV</b>	<b>300 mV<sup>1)</sup></b>
<b>60 A</b>	0.13 kg	0.16 kg	0.18 kg	0.22 kg
<b>80 A</b> <sup>1) 2)</sup>	0.13 kg	0.16 kg	0.19 kg	0.24 kg
<b>100 A</b>	0.13 kg	0.17 kg	0.21 kg	0.27 kg
<b>150 A</b>	0.13 kg	0.18 kg	0.24 kg	0.33 kg
<b>200 A</b> <sup>1) 2)</sup>	0.52 kg	0.55 kg	0.76 kg	0.88 kg
<b>250 A</b>	0.53 kg	0.58 kg	0.79 kg	0.94 kg
<b>300 A</b> <sup>1) 2)</sup>	0.79 kg	0.84 kg	1.12 kg	1.30 kg
<b>400 A</b>	0.79 kg	0.86 kg	1.18 kg	1.43 kg
<b>500 A</b> <sup>1) 2)</sup>	0.80 kg	0.88 kg	1.24 kg	1.55 kg
<b>600 A</b>	0.81 kg	0.90 kg	1.31 kg	1.68 kg
<b>800 A</b> <sup>1) 3)</sup>	0.82 kg	0.95 kg	1.42 kg	1.91 kg
<b>1,000 A</b>	1.44 kg	1.60 kg	2.52 kg	3.13 kg
<b>1,200 A</b> <sup>1) 2)</sup>	1.95 kg	3.00 kg	3.56 kg	4.30 kg
<b>1,500 A</b>	1.98 kg	3.08 kg	3.76 kg	4.68 kg
<b>2,000 A</b> <sup>1)</sup>	2.01 kg <sup>3)</sup>	3.19 kg <sup>3)</sup>	5.20 kg <sup>2)</sup>	6.42 kg <sup>2)</sup>
<b>2,500 A</b>	2.91 kg	4.55 kg	5.52 kg	7.06 kg
<b>3,000 A</b> <sup>1)</sup>	2.94 kg <sup>3)</sup>	4.66 kg <sup>3)</sup>	9.87 kg <sup>2)</sup>	11.70 kg <sup>2)</sup>
<b>4,000 A</b>	4.26 kg	8.93 kg	10.00 kg	12.98 kg
<b>5,000 A</b> <sup>1)</sup>	4.33 kg <sup>3)</sup>	9.19 kg <sup>3)</sup>	13.60 kg <sup>2)</sup>	16.68 kg <sup>2)</sup>
<b>6,000 A</b>	10.93 kg	11.89 kg	14.22 kg	17.92 kg
<b>8,000 A</b> <sup>1)</sup>	11.08 kg <sup>3)</sup>	–	25.30 kg <sup>2)</sup>	–
<b>10,000 A</b>	21.05 kg	–	26.54 kg	–
<b>15,000 A</b>	31.7 kg	–	–	–
<b>20,000 A</b> <sup>1)</sup>	37.2 kg	–	–	–

- 1) ratings deviating from DIN standard  
 2) dimensions equal to next higher current rating  
 3) dimensions equal to next lower current rating

overload range	
continuously	1.2 times rated current
5 s max. ≤ 2,000 A	5 times rated current
>2,000 ... 10,000 A	2 times rated current

## Accuracy at Reference Conditions

accuracy class 0.5 †

### reference conditions

ambient temperature 23°C ± 1K

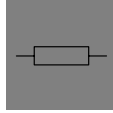
## Environmental

climatic suitability	climatic class 3 acc. to VDE/VDI 3540
operating temperature range	–10 ... +55°C
storage temperature range	–25 ... +65°C
relative humidity	≤ 75% annual average, non-condensing

## Rules and Standards

DIN 43 703	Shunts
DIN EN 60 051	Direct acting indicating analogue electrical measuring instruments and their accessories
–1	Part 1: Definitions and general requirements common to all parts
–8	Part 8: Special requirements for accessories
–9	Part 9: Recommended test methods
DIN EN 60 715	Dimensions of low voltage switching devices: standardized DIN rails for mechanical fixation of electrical devices in switchgears

† for other ratings refer to "Options"



## Shunts Class 0.5

### Options (on Request)

rated voltage drop	on request
rated current	on request
accuracy class 0.2	produced in class 0.5 and calibrated to class 0.2 or produced in class 0.2 (please order dimensional drawing)
insulating base	suitable for shunts 30 ... 150 A / 60 mV others on request
purpose built shunts	on request

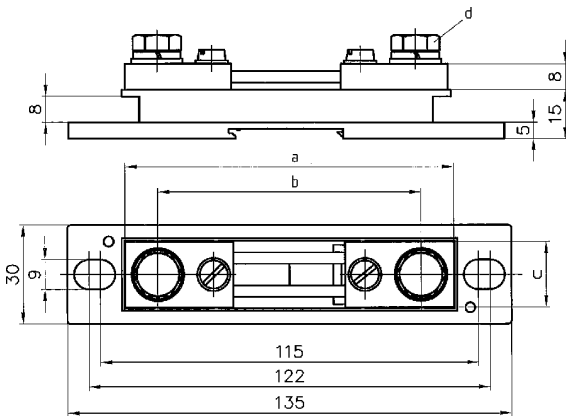
### Accessory

cover	for shunts with insulating base 1 ... 25 A / 60 mV – 100 mV – 150 mV 30 ... 150 A / 60 mV
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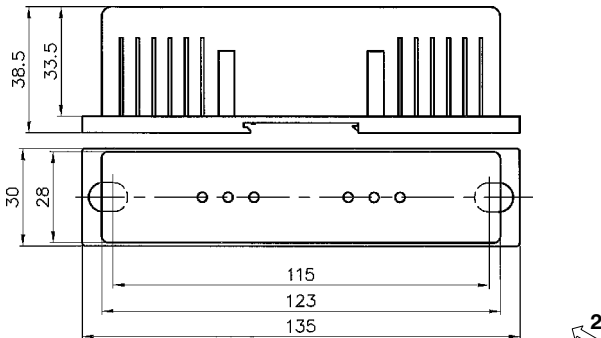
### Dimensions

#### format version A

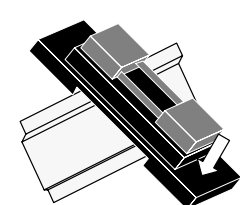
with insulating base



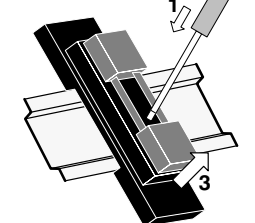
with insulating base and cover



Attaching



Disattaching

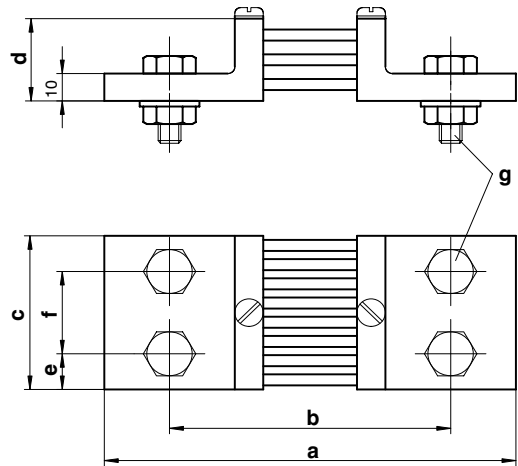


rated voltage drop	60 ... 300 mV	60 mV
dimensions (in mm)	1 ... 25 A	30 ... 150 A
a	90	100
b	78	80
c	20	20
d	M5x12	M8x16

format version A without insulating base

rated voltage drop	100 mV	150 mV	300 mV
dimensions (in mm)	30 ... 150 A	30 ... 150 A	30 ... 150 A
a	145	225	384
b	125	205	364
c	25	25	25
d	M8x16	M8x16	M8x16

format version B



rated voltage drop 60 mV

dimensions (in mm)	200 A	400 A	1.000 A	1.500 A	2.500 A
	250 A	600 A			
a	145	145	165	165	165
b	105	105	115	115	115
c	30	40	60	90	120
d	30	30	30	30	30
e	15	20	30	21	30
f	–	–	–	48	60
g	M12x40	M16x45	M20x50	M16x45	M20x50
number of current connections	2x 1	2x 1	2x 1	2x 2	2x 2

rated voltage drop 100 mV

a	190	190	210	210
b	150	150	160	160
c	30	40	60	120
d	30	30	30	30
e	15	20	30	30
f	–	–	–	60
g	M12x40	M16x45	M20x50	M20x50
number of current connections	2x 1	2x 1	2x 1	2x 2

rated voltage drop 150 mV

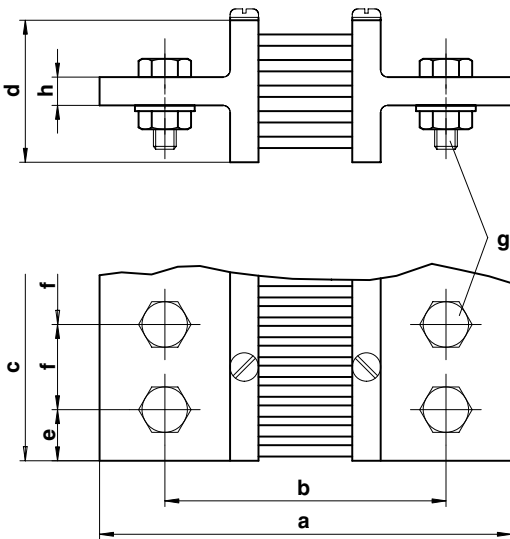
a	270	270	290
b	230	230	240
c	30	40	70
d	50	50	60
e	15	20	35
g	M12x40	M16x45	M20x50
number of current connections	2x 1	2x 1	2x 1

**rated voltage drop 300 mV**

<b>a</b>	429	429	449
<b>b</b>	389	389	399
<b>c</b>	30	40	70
<b>d</b>	50	50	60
<b>e</b>	15	20	35
<b>g</b>	M12x40	M16x45	M20x50

number of current connections 2x 1 2x 1 2x 1

**format version C**



**rated voltage drop 60 mV**

**dimensions** (in mm) 4.000 A 6.000 A 10.000 A 15.000A 20.000A

<b>a</b>	165	175	185	185	185
<b>b</b>	115	125	135	135	135
<b>c</b>	120	154	206	310	362
<b>d</b>	60	130	170	170	170
<b>e</b>	30	25	25	25	25
<b>f</b>	60	52	52	52	52
<b>g</b>	M20x60	M20x75	M20x80	M20x80	M20x80
<b>h</b>	15	25	30	30	30

number of current connections 2x 2 2x 3 2x 4 2x 6 2x 7

**rated voltage drop 100 mV**

**dimensions** (in mm) 2.500 A 4.000 A 6.000 A

<b>a</b>	210	220	220
<b>b</b>	160	170	170
<b>c</b>	120	120	154
<b>d</b>	60	130	130
<b>e</b>	30	30	25
<b>f</b>	60	60	52
<b>g</b>	M20x60	M20x75	M20x75
<b>h</b>	15	25	25

number of current connections 2x 2 2x 2 2x 3

**rated voltage drop 150 mV**

**dimensions** (in mm) 1.500 A 2.500 A 4.000 A 6.000 A 10.000A

<b>a</b>	290	290	300	300	310
<b>b</b>	240	240	250	250	260
<b>c</b>	90	120	120	154	206
<b>d</b>	60	60	130	130	170
<b>e</b>	21	30	30	25	25
<b>f</b>	48	60	60	52	52
<b>g</b>	M16x60	M20x60	M20x75	M20x75	M20x80
<b>h</b>	15	15	25	25	30

number of current connections 2x 2 2x 2 2x 2 2x 3 2x 4

**rated voltage drop 300 mV**

**dimensions** (in mm) 1.500 A 2.500 A 4.000 A 6.000 A

<b>a</b>	449	449	459	459
<b>b</b>	399	399	409	409
<b>c</b>	90	120	120	154
<b>d</b>	60	60	130	130
<b>e</b>	21	30	30	25
<b>f</b>	48	60	60	52
<b>g</b>	M16x60	M20x60	M20x75	M20x75
<b>h</b>	15	15	25	25

number of current connections 2x 2 2x 2 2x 2 2x 3

**Ordering Information**

<b>type</b>	shunt
<b>rated voltage drop</b>	60 mV 100 mV 150 mV 300 mV purpose built on request **)
<b>rated current</b>	please refer to table inside purpose built on request **)
<b>accuracy</b>	class 0.5 *) class 0.2
<b>insulating base</b>	included (up to 25 A) *) not included (more than 25 A) *) included (more than 25 A)
<b>cover</b>	none *) for shunts with insulating base
<b>purpose built</b>	on request **)

\*) standard

\*\*) Please clearly add the desired specifications.

**ordering example**

shunt, rated voltage drop 60 mV, rated current 1,000 A, accuracy class 0.5

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– specifications subject to change without notice; date of issue 08/13 –

