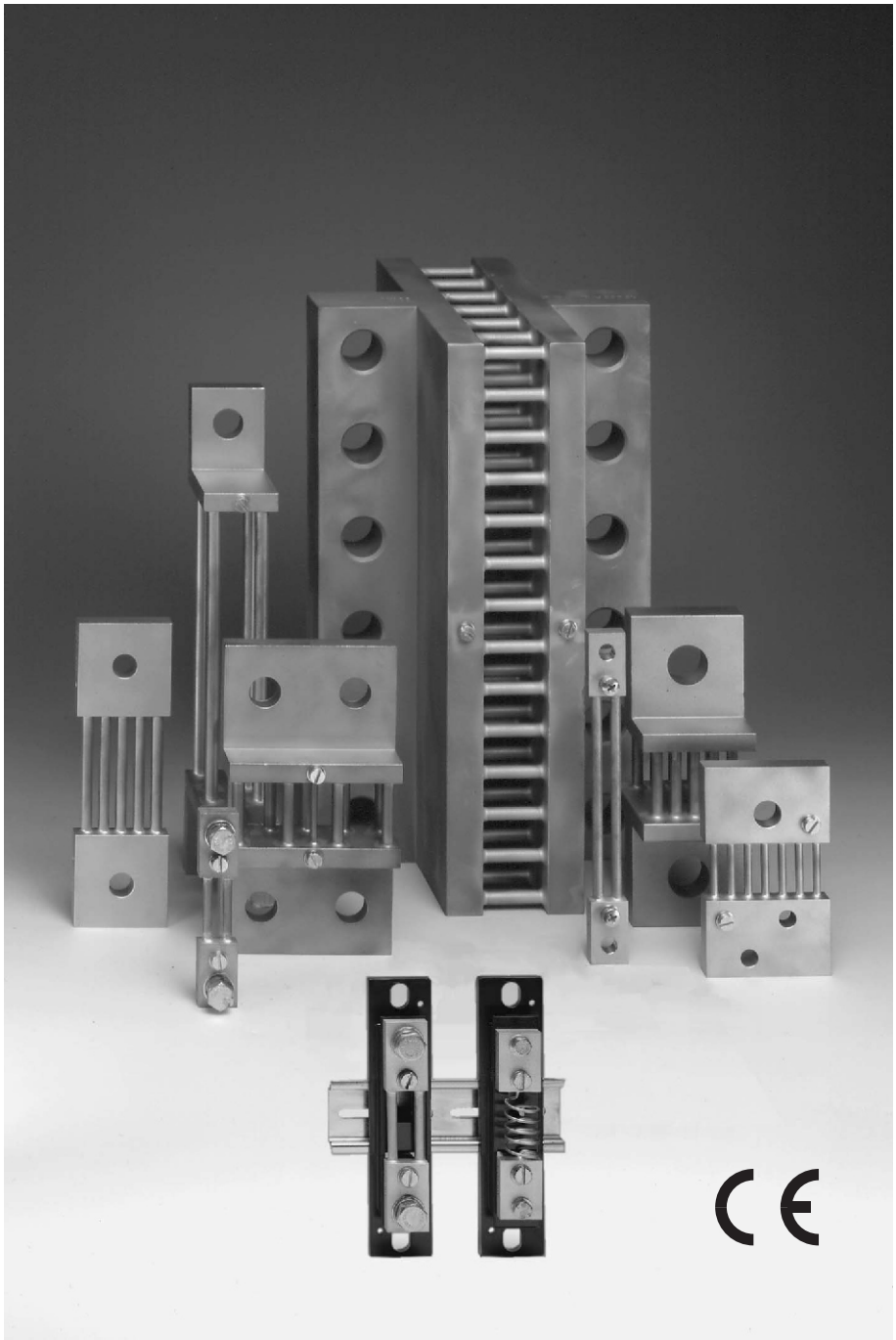
Data Sheet

Shunts
Class 0.5, 1.0

50 mV
60 mV
75 mV
150 mV



Data Sheet- Shunts

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.

Rishabh shunts are available from 1 A up to 3,000 A with an accuracy of 0.5%, 1.0%.Standard voltage drop is 50 mV, 60 mV 75 mV, 150 mV. Intermediate current ratings, other voltage outputs, better accuracy and purpose-built shunts can be suppied.

Shunts are manufactured in two format versions depending on current rating

Operating Principle

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

Shunts are calibrated in such away that they produce an accurately defined voltage drop (50 mV, 60 mV, 75 mV, 150 mV)

General Data

Form A	insulating base mounted shunts clamping to DIN mounting rail or wall mounting (up to 30 A) without insulating base (31....150 A)
Form B	L-profile end blocks
Material	
Resistance bars	Manganin
End blocks	
Form A	High conductivity brass
Form B	High conductivity brass / copper
Base material Form A	Polycarbonate, black self - extinguishing to UL rating 94 V-0
Connections	thread screws
current	please refer to "Dimensions"
voltage	M5x8
Mounting Form A	Nut Bolt (M8 max.) Clamping to DIN mounting rail (to DIN EN 50 022 - 35)
Enclosure code	IP 00
dimensions	please refer to "Dimension"
Weight	please refer to table below

rated current	weight appox.for **rated voltage drop**			
	50 mV	**60 mV**	**75 mV**	**150 mV**
1 A	0.12 kg	0.12 kg	0.12 kg	0.12 kg
1.5 A	0.13 kg	0.13 kg	0.12 kg	0.12 kg
2 A 1) 2)	0.13 kg	0.13 kg	0.12 kg	0.12 kg
2.5A	0.12 kg	0.12 kg	0.12 kg	0.12 kg
3 A 1) 2)	0.12 kg	0.12 kg	0.12 kg	0.12 kg
4 A	0.13 kg	0.13 kg	0.12 kg	0.12 kg
5 A 1) 2)	0.12 kg	0.12 kg	0.12 kg	0.12 kg
6 A	0.12 kg	0.12 kg	0.12 kg	0.13 kg
8 A 1) 2)	0.13 kg	0.13 kg	0.12 kg	0.13 kg
10 A	0.13 kg	0.13 kg	0.12 kg	0.13 kg
12 A 1) 2)	0.13 kg	0.13 kg	0.12 kg	0.13 kg
15 A	0.13 kg	0.13 kg	0.12 kg	0.13 kg
20 A 1) 2)	0.13 kg	0.13 kg	0.12 kg	0.14 kg
25 A	0.13 kg	0.13 kg	0.12 kg	0.14 kg
30 A 1) 2)	0.12 kg	0.12 kg	0.12 kg	0.15 kg
40 A	0.12 kg	0.12 kg	0.13 kg	0.16 kg
50 A 1) 2)	0.12 kg	0.12 kg	0.13 kg	0.16 kg
60 A	0.12 kg	0.12 kg	0.14 kg	0.17 kg
80 A 1) 2)	0.12 kg	0.12 kg	0.15 kg	0.18 kg
100 A	0.12 kg	0.12 kg	0.16 kg	0.20 kg
150 A	0.13 kg	0.13 kg	0.16 kg	0.23 kg
200 A 1) 2)	0.13 kg	0.13 kg	0.20 kg	0.26 kg
250 A	0.61 kg	0.61 kg	0.61 kg	0.68 kg
300 A 1) 2)	0.61 kg	0.61 kg	0.61 kg	0.72 kg
400 A	0.83 kg	0.83 kg	0.83 kg	1.05 kg
500 A 1) 2)	0.83 kg	0.83 kg	0.90 kg	1.15 kg
600 A	0.85 kg	0.85 kg	1.00 kg	1.16 kg
800 A 1) 2)	0.90 kg	0.90 kg	1.10 kg	1.30 kg
1,000 A	1.45 kg	1.45 kg	1.90 kg	2.15 kg
1,200 A 1) 2)	1.45 kg	1.45 kg	2.00 kg	2.25 kg
1,500 A	1.96 kg	1.96 kg	2.30 kg	3.10 kg
2,000 A 1) 3)	2.30 kg	2.30 kg	2.70 kg	4.00 kg
2,500 A	2.90 kg	2.90 kg	3.00 kg	5.20 kg
3,000 A 1) 3)	3.00 kg	3.00 kg	3.30 kg	7.00 kg

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

overload range (according to DIN EN 60 051)
continuously 1.2 times rated current
5 s max. <2000 A 5 times rated current
>2000 ... 10,000 A 2 times rated current

Accuracy at Reference Conditions

accuracy	class 0.5, 1.0
reference conditions	
ambient temperature	23°C+1K

Environmental Conditions

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

Applicable Standards

DIN 43 703	Shunts
DIN EN 60 051	direct acting indicating electrical measuring instruments and their accesories
DIN EN 50 022-35	mounting rails

Options

rated voltage drop	on request
rated current	on request
accuracy	class 0.2
Special purpose built shunts	on request

for other ratings refer to "Options"

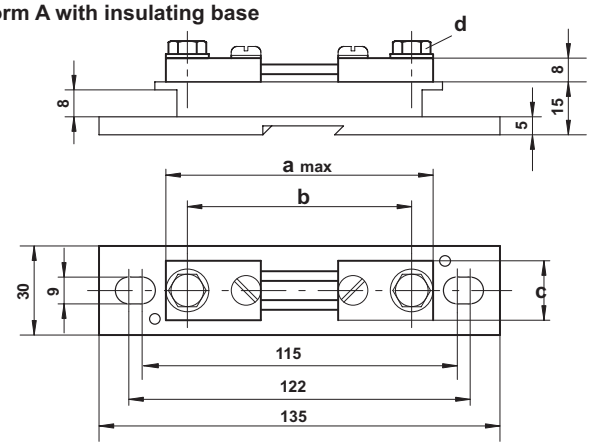
Data Sheet- Shunts

Accessory

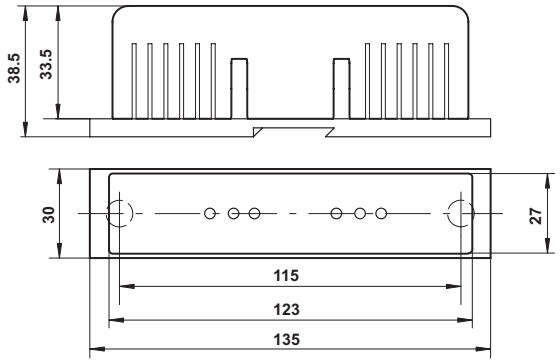
Cover	for shunt with insulating base 1... 30A / 50 mV, 60 mV, 75 mV, 150 mV

Dimensions

Form A with insulating base

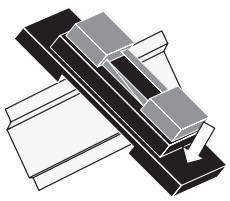


Form A with insulating base and cover

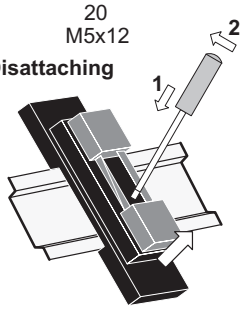


rated voltage drop	50 mV...60 mV	75 mV...150 mV
dimensions (in mm)	**1...30A**	**1...30A**
a max	90	100
b	70	88
c	20	20
d	M5x12	M5x12

Attaching



Disattaching



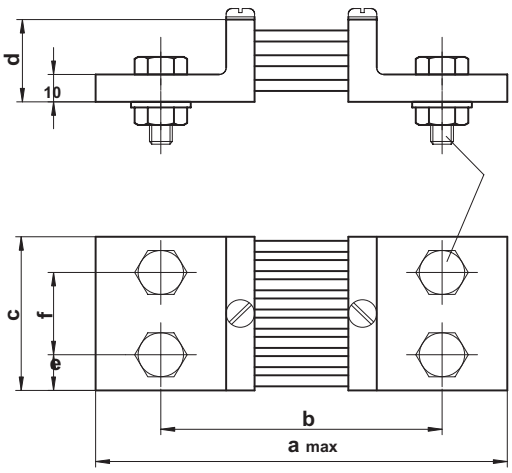
Form A without insulating base

rated voltage drop	50 mV...60 mV	75 mV	150 mV
dimensions (in mm)	**31...150A**	**31...150A**	**31...150A**
a max	110	120	225
b	80	100	205
c	20	20	20
d	M8x16	M8x16	M8x16

g

Dimensions

Form B



rated voltage drop 50 mV

dimensions (in mm)	200 A 250 A	400 A 600 A	1000 A	1500 A	2500 A
a max	155	155	175	175	175
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 60 mV

a max	155	155	175	175	175
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 75 mV

a max	165	165	185	185	185
b	125	125	135	135	135
c	30	40	60	90	120
d	30	30	30	30	30
e	15	20	30	21	30
g	M12x40	M16x45	M20x50	M16x45	M20x50
number of current connections	2x 1	2x 1	2x 1	2x 2	2x 2

rated voltage drop 150 mV

a max	270	270	290	290	290
b	230	230	240	240	240
c	30	40	70	90	120
d	50	50	60	60	60
e	15	20	35	21	30
g	M12x40	M16x45	M20x50	M16x45	M20x50
number of current connections	2x 1	2x 1	2x 1	2x 2	2x 2