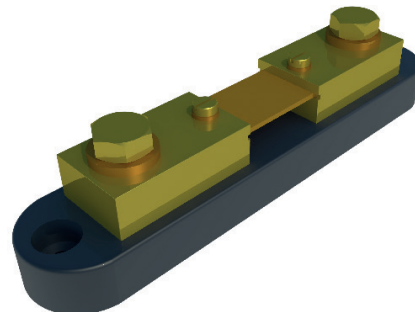


FEATURES

- Rated Output 50mV, 100mV*
 - DC - Current 1A - 500A
 - Rated Accuracy to $\pm 0,1\%$
 - Precision: Class 0,1
 - RoHS compliant
- (*other values on request)



RATED VALUES (IEC 60115-1)

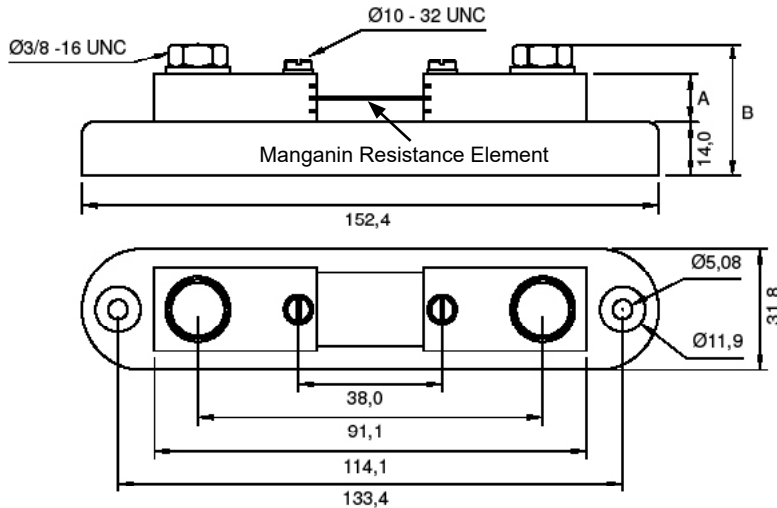
Resistance Range	Ω	0,10m Ω to 100m Ω
Resistance Tolerance	%	$\pm 0,1\%$
Temperature Coefficient	ppm/ $^{\circ}\text{C}$	Typical value for Manganin $< \pm 20\text{ppm} / ^{\circ}\text{C}$ (reference value for resistive element)
Voltage Drop (u)	V	50mV, 100mV
Dielectric Strength (U_{ins})	Ω	750VDC (Measuring circuit to mounting plate)
Operating Temperature Range (T)	$^{\circ}\text{C}$	$-10^{\circ}\text{C} - 60^{\circ}\text{C}$
Reference Temperature (T_{ref})	$^{\circ}\text{C}$	$25^{\circ}\text{C} \pm 1^{\circ}\text{C}$

*Rated Current I_{nom}	*Operating Current I_{25}	50mV - Resistance Value	100mV - Resistance Value
(A)	(A)	(m Ω)	(m Ω)
1	0,667	50	100
2	1,330	25	50
5	3,330	10	20
10	6,670	5	10
20	13,33	2,5	5
50	33,33	1	2
100	66,67	0,50	1
150	100,0	0,333	0,667
200	133,33	0,25	0,50
250	166,67	0,20	0,40
300	200,0	1,167	0,333
400	266,67	0,125	0,25
500	333,33	0,10	0,20

***Nominal current and working current:** If the shunt resistors are operated in continuous operation, the rated working current is to be assumed as the nominal value. At an ambient temperature of 25°C and sufficient convection thus remains a power or safety reserve, for trouble-free operation of the resistor.

Temperature coefficient and resistance within a measuring circuit: shunt resistors are very low-resistance resistors. The construction, especially connecting wires affect the total resistance and TCR. While the total resistance can be adjusted, the TCR value can only be optimized to an insignificant degree. Consequently, the temperature coefficient is many times greater than the TCR value of the Manganin resistance element, thus no comparable value in the selection of a shunt resistor.

DIMENSIONS



Type	Range	A	B
50mV	1...200A	35,05	12,7
100mV	1...300A	35,05	12,7
50mV	250...500A	41,4	19,05
100mV	400...500A	41,4	19,05

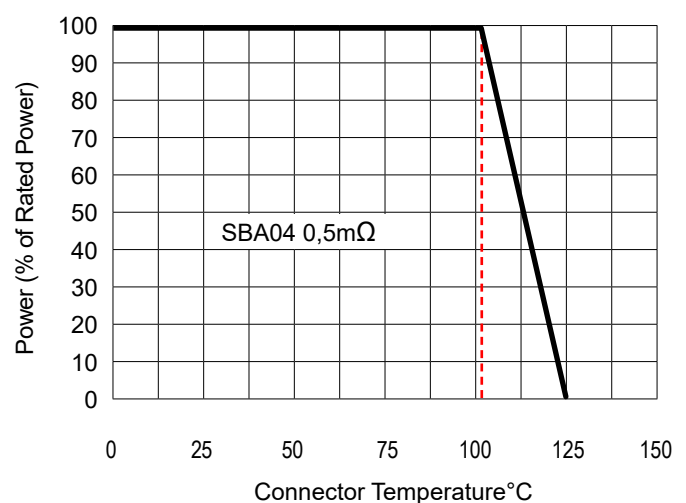
All Dimension in mm
Stand Tolerance: $\pm 0,08$ mm
Boring $\pm 0,04$ mm

- Installation instructions:** The shunt resistor should be mounted vertically with vertical oriented connection screws. Only in this way an optimal convection around the resistance elements is guaranteed. It must be ensured that the resistance elements do not heat above 125 ° C, otherwise irreversible changes in the nominal values will result. This is especially important, if the shunt resistor is installed in enclosures or control cabinets.
- Recommended tightening torques for the connection screws:** 1/4 inch - 28 UNF: 4.1 - 4.5Nm; 8 - 32 UNC: 1.6 - 1.7Nm The connecting wires are to be dimensioned according to the required currents and should be flexible in order to avoid mechanical loads against the shunt resistance. Cable lugs should be selected so that maximum utilization of the contact surfaces of the terminal screws is possible.

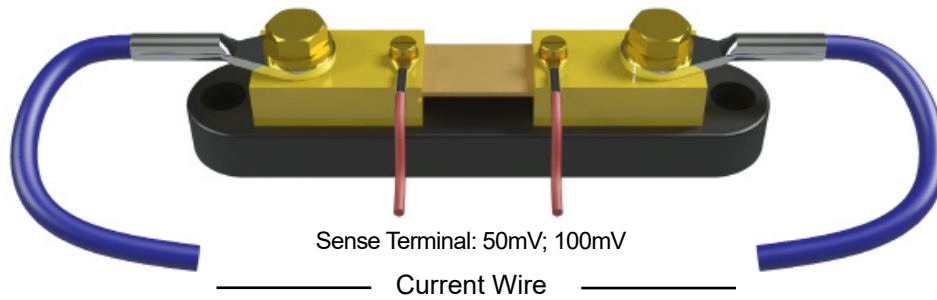
CONSTRUCTION

Resistance Material	Manganin
Resistance Element	Full Metal
Terminal Block / Screws	Bras
Mounting Plate	Thermoset Plastics
Soldering Connection	Tin, Lead - free
Weight	0,1 Kg

POWER DERATING CURVE



CONNECTING AND OPERATION NOTE



- **Pulse load behavior:** If shunt resistors are not used in continuous operation, they are able to briefly absorb currents greater than the nominal currents. In addition to the pulse load and pulse duration, the calculation also includes temperature values (ambient temperature, self-heating). In individual cases, it must be checked and calculated which maximum currents are permissible. We are happy to help.

- **Warning:** all metallic parts of the resistors are not insulated. The resistor may only be installed and put into operation by qualified personnel.

OPTIONS

Other Designs, Rated Outputs	Upon Request
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ORDERING INFORMATION

SBA04 0R1000 0,25% 50mV 10A (SBA04; 100mOhm; $\pm 0,25\%$; 50Millivolt; 10Ampere)

Typ	Resistance Value	Tolerance	Temperature Coefficient	Rated Output	Rated Current
SBA04	0M1000 (0,1m Ω) ... 0R1000 (100m Ω)	0,25% 0,10%	- (Standard)	50mV 100mV	1A; 2A; 5A; 10A; 20A; 50A; 100A; 150A; 200A; 250A; 300A; 400A; 500A

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