

SIRAX SH100

Shunts

Description

The shunts are used to measure DC currents, especially at high current levels. The current passing through the shunt produces a proportional voltage drop, which can then be displayed with a moving-coil instrument.

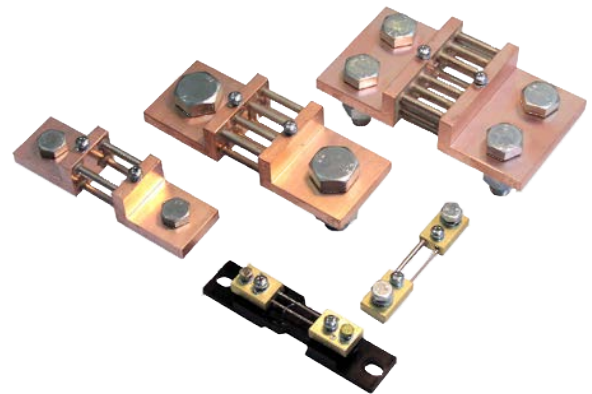
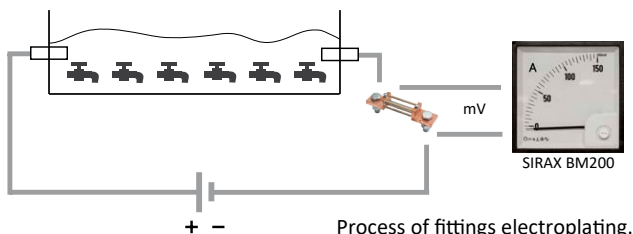
The shunts are manufactured in class 0.5 or 0.2 according to DIN 43709 and DIN 60051 with nominal currents in the range from 1A to 15000A and a voltage drop from 50mV to 150mV.

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

Features

- Large measuring range from 1A ... 15000A
- Robust construction
- In-line bus bar mounting
- Very low temperature coefficient
- high long term stability
- High overload withstand
- Shock and vibration proof

Application



Connections

Current
Voltage

thread screws
please refer to dimensional drawings
M5 x 8

Mounting

Version A

Screw mounting (max M8) or clamping to DIN mounting rail acc. to DIN EN 60715

Electrical data

| | |
|------------------------------------|--------------------------------|
| Nominal voltage drop | 50mV, 60mV, 75mV, 100mV, 150mV |
| Overload capability continuously | acc. to DIN EN 60 051 |
| max. 5s ($\leq 2000A$) | 1.2-times |
| max. 5s ($> 2000A \dots 10000A$) | 5-times |
| Nominal current | 1A ... 15000A |
| Accuracy class | 0.2 |

Environmental conditions

| | |
|-------------------------|---|
| Climatic suitability | Climatic class 3 acc. to VDE/VDI 3540 |
| Ambient temperature | 23°C \pm 1K (reference conditions) |
| Operating temperature | -10 ... +55 °C |
| Storage temperature | -25 ... +65 °C |
| Temperature coefficient | 0.002% / °C |
| Relative humidity | \leq 75% annual average, non-condensing |

Technical specifications

Mechanical data

| | |
|--------------|---|
| Version A, D | Flat profile with insulating base (up to 25A / 50, 60 , 75, 100, 150mV) |
| | Flat profile without insulating base (30 ... 150 A) |
| Version B | L-Profile |
| Version C | T-Profile |

Material

| | |
|--------------------------------|---|
| Resistance bars | Manganin |
| Connection pieces version A, D | high conductivity brass |
| Connection pieces version B | high conductivity brass/solid copper |
| Connection pieces version C | Solid copper |
| Base material version A, D | Lexan black, UL94 V-0, self-extinguishing, non-drip, halogen-free |

Safety

| | |
|-------------------------------------|---|
| EMC-Noise immunity | acc. to EN 61 000-6-2 |
| EMC-Noise emissions | acc. to EN 61 000-6-4 |
| Testing voltage with isolating base | 5kV |
| Resistance of a pair of wires | 35m Ω or 75m Ω , wires are not delivered with the shunt |
| Enclosure code | IP00 |

SIRAX SH100

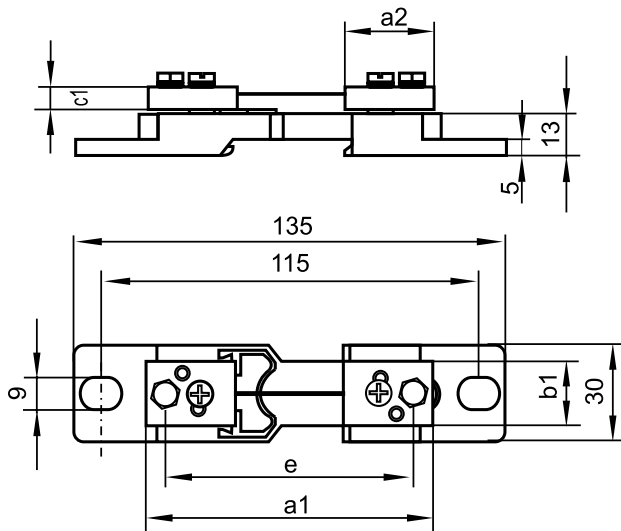
Shunts

Rules and Standards

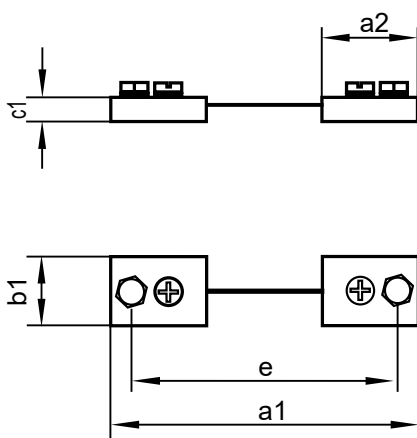
| | |
|-----------------|---|
| DIN 43 703 | Shunts |
| DIN EN 60 051 | Direct acting indicating analogue electrical measuring instruments and their accessories – |
| DIN EN 60 051-1 | Part 1: Definitions and general requirements common to all parts |
| DIN EN 60 051-8 | Part 8: Special requirements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

Dimensional drawings

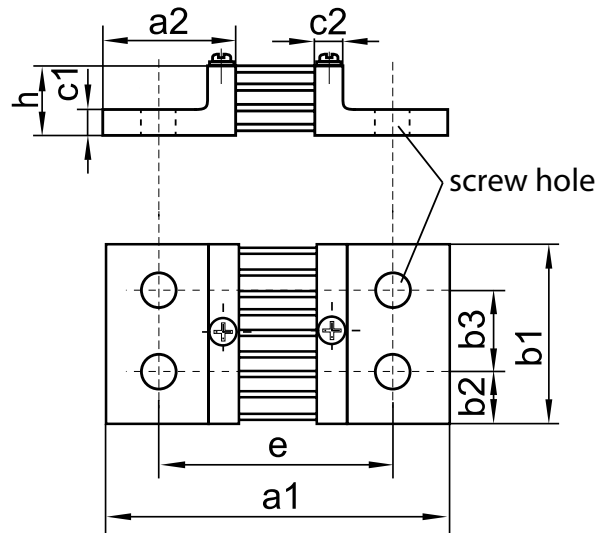
Version A (on an isolating base)



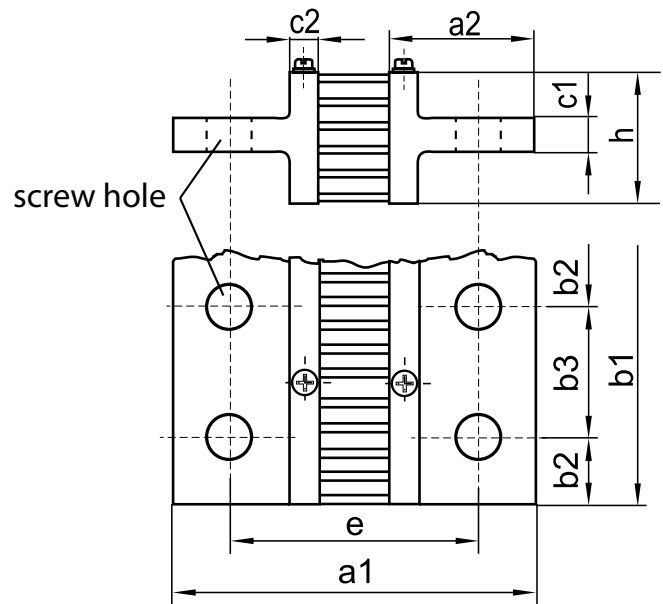
Version D



Version B



Version C



SIRAX SH100

Shunts

Dimensions

| Additional mV Drop* | | | | | | | | | | | | | | | |
|-----------------------------------|---------|--------|----|-----|----|----|----|----|-----|-----|-------------|-------------------|----------|-----|-----|
| 50mV | | | | | | | | | | | | Current terminals | | | |
| IN [A] | Version | a1 max | a2 | b1 | b2 | b3 | c1 | c2 | e | h | Weight [kg] | LZ | Bolt | P | N |
| 1, 1.5, 2.5, 4, 6, 10, 15, 20, 25 | A | 90 | 28 | 20 | -- | -- | 8 | -- | 70 | -- | 0.13 | 2 x 1 | M5 x 12 | 5.5 | -- |
| 30, 40, 60, 75, 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 | 13 | M12 |
| 300, 400 | B | 155 | 55 | 40 | 20 | -- | 10 | 10 | 105 | 30 | 0.85 | 2 x 1 | M16 x 45 | 17 | M16 |
| 600 | B | 155 | 55 | 40 | 20 | -- | 10 | 10 | 105 | 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 | M20 |
| 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 | 15 | 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 |

| DIN 43703 Standard | | | | | | | | | | | | | | | |
|-----------------------------------|---------|--------|----|-----|----|----|----|----|-----|-----|-------------|-------------------|----------|-----|-----|
| 60mV | | | | | | | | | | | | Current terminals | | | |
| IN [A] | Version | a1 max | a2 | b1 | b2 | b3 | c1 | c2 | e | h | Weight [kg] | LZ | Bolt | P | N |
| 1, 1.5, 2.5, 4, 6, 10, 15, 20, 25 | A | 90 | 28 | 20 | -- | -- | 8 | -- | 78 | -- | 0.13 | 2 x 1 | M5 x 12 | 5.5 | -- |
| 30, 40, 60, 75, 100, 150 | D | 100 | 33 | 20 | -- | -- | 8 | -- | 80 | -- | 0.13 | 2 x 1 | M8 x 16 | 8.5 | -- |
| 250 | B | 145 | 55 | 30 | 15 | -- | 10 | 10 | 105 | 30 | 0.60 | 2 x 1 | M12 x 40 | 13 | M12 |
| 300, 400 | B | 145 | 55 | 40 | 20 | -- | 10 | 10 | 105 | 30 | 0.85 | 2 x 1 | M16 x 45 | 17 | M16 |
| 600 | B | 145 | 55 | 40 | 20 | -- | 10 | 10 | 105 | 30 | 0.85 | 2 x 1 | M16 x 45 | 17 | M16 |
| 1000 | B | 165 | 65 | 60 | 30 | -- | 10 | 10 | 115 | 30 | 1.45 | 2 x 1 | M16 x 45 | 21 | M16 |
| 1500 | B | 165 | 65 | 90 | 21 | 48 | 10 | 10 | 115 | 30 | 2.00 | 2 x 2 | M16 x 45 | 17 | M16 |
| 2500 | B | 165 | 65 | 120 | 30 | 60 | 10 | 10 | 115 | 30 | 2.90 | 2 x 2 | M20 x 50 | 21 | M20 |
| 4000 | C | 165 | 65 | 120 | 30 | 60 | 15 | 10 | 115 | 60 | 4.30 | 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 |

| Additional mV Drop* | | | | | | | | | | | | | | | |
|---------------------|---------|--------|----|-----|----|----|----|----|-----|-----|-------------|-------------------|----------|-----|-----|
| 75mV | | | | | | | | | | | | Current terminals | | | |
| IN [A] | Version | a1 max | a2 | b1 | b2 | b3 | c1 | c2 | e | h | Weight [kg] | LZ | Bolt | P | N |
| 1 ... 30 | A | 100 | 28 | 20 | -- | -- | 8 | -- | 88 | -- | 0.14 | 2 x 1 | M5 x 12 | 5.5 | -- |
| 31 ... 150 | D | 120 | 33 | 20 | -- | -- | 8 | -- | 100 | -- | 0.17 | 2 x 1 | M8 x 16 | 8.5 | -- |
| 151 ... 300 | B | 165 | 55 | 30 | 15 | -- | 10 | 10 | 125 | 30 | 0.63 | 2 x 1 | M12 x 40 | 13 | M12 |
| 301 ... 750 | B | 165 | 55 | 40 | 20 | -- | 10 | 10 | 125 | 30 | 0.92 | 2 x 1 | M16 x 45 | 17 | M16 |
| 751 ... 1000 | B | 185 | 65 | 60 | 30 | -- | 10 | 10 | 135 | 30 | 1.00 | 2 x 1 | M16 x 45 | 21 | M16 |
| 1001 ... 1500 | B | 185 | 65 | 90 | 21 | 48 | 10 | 10 | 135 | 30 | 1.75 | 2 x 1 | M16 x 45 | 17 | M16 |
| 1501 ... 3000 | B | 185 | 65 | 120 | 30 | 60 | 10 | 10 | 135 | 30 | 2.30 | 2 x 2 | M16 x 45 | 21 | M20 |
| 3001 ... 5000 | C | 185 | 65 | 120 | 30 | 60 | 15 | 15 | 135 | 60 | 3.10 | 2 x 2 | M20 x 50 | 21 | M20 |
| 5001 ... 7500 ** | C | 195 | 70 | 154 | 25 | 52 | 25 | 15 | 145 | 130 | 5.20 | 2 x 2 | M20 x 60 | 21 | M20 |
| 7501 ... 10000 ** | C | 205 | 75 | 206 | 25 | 52 | 30 | 20 | 155 | 170 | 11.20 | 2 x 3 | M20 x 75 | 21 | M20 |
| 10001 ... 15000 ** | C | 205 | 75 | 310 | 25 | 52 | 30 | 20 | 155 | 170 | 22.00 | 2 x 4 | M20 x 80 | 21 | M20 |

SIRAX SH100

Shunts

| Additional mV Drop* | | | | | | | | | | | | | | | |
|-----------------------------------|---------|--------|----|-----|----|----|----|----|-----|-----|-------------|-------------------|----------|-----|-----|
| 100mV | | | | | | | | | | | | Current terminals | | | |
| IN [A] | Version | a1 max | a2 | b1 | b2 | b3 | c1 | c2 | e | h | Weight [kg] | LZ | Bolt | P | N |
| 1, 1.5, 2.5, 4, 6, 10, 15, 20, 25 | A | 90 | 28 | 20 | -- | -- | 8 | -- | 78 | -- | 0.14 | 2 x 1 | M5 x 12 | 5.5 | -- |
| 30, 40, 60, 75, 100, 150 | A, 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 |
| 300, 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 | M16 x 45 | 21 | M16 |
| 1500 | B | 210 | 65 | 120 | 30 | 60 | 10 | 10 | 160 | 30 | 2.50 | 2 x 2 | M16 x 45 | 17 | M16 |
| 2500 | C | 210 | 65 | 120 | 30 | 60 | 15 | 10 | 160 | 60 | 3.20 | 2 x 2 | M20 x 50 | 21 | M20 |
| 4000 | C | 220 | 70 | 120 | 30 | 60 | 25 | 15 | 170 | 130 | 5.80 | 2 x 2 | M20 x 60 | 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 |

| DIN 43703 Standard | | | | | | | | | | | | | | | |
|-----------------------------------|---------|--------|----|-----|----|----|----|----|-----|-----|-------------|-------------------|----------|-----|-----|
| 150mV | | | | | | | | | | | | Current terminals | | | |
| IN [A] | Version | a1 max | a2 | b1 | b2 | b3 | c1 | c2 | e | h | Weight [kg] | LZ | Bolt | P | N |
| 1, 1.5, 2.5, 4, 6, 10, 15, 20, 25 | A | 90 | 28 | 20 | -- | -- | 8 | -- | 78 | -- | 0.14 | 2 x 1 | M5 x 12 | 5.5 | -- |
| 30, 40, 60, 75, 100, 150 | A, 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 |
| 300, 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 | 50 | 2.15 | 2 x 1 | M16 x 45 | 21 | M16 |
| 1500 | C | 290 | 65 | 90 | 21 | 48 | 15 | 10 | 240 | 60 | 3.10 | 2 x 2 | M16 x 45 | 17 | M16 |
| 2500 | C | 290 | 65 | 120 | 30 | 60 | 15 | 10 | 240 | 60 | 5.20 | 2 x 2 | M20 x 50 | 21 | M20 |
| 4000 | C | 300 | 70 | 120 | 30 | 60 | 25 | 15 | 250 | 130 | 8.30 | 2 x 2 | M20 x 60 | 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 |

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 current cavity +5.5; washers for 151A - 15kA
 - two M4 x 8 cylinder-head bolts with a current cavity +4.7; washers for 1A - 150A

* Deviating from Standard

** On request

Order details

| Description | Blockingcode | No-go with blockingcode | Article No. / Feature |
|---------------------|--------------|-------------------------|-----------------------|
| SIRAX SH100, Shunt | | | SH100- |
| Features, Selection | | | |
| 01 Design | | | |
| A | A | | 1 |
| B | B | | 2 |
| C | C | | 3 |
| D | D | | 4 |

SIRAX SH100 Shunts

| | | | |
|---|---|------------|----|
| 02 Accuracy | | | |
| Class 0.2 | | | 2 |
| 03 Voltage drop | | | |
| 50 mV | | | 1 |
| 60 mV | | | 2 |
| 75 mV | | | 3 |
| 04 Measuring range * | | | |
| 1 A (for Class 0.2) | G | B, C, D, E | 02 |
| 1.5 A (for Class 0.2) | G | B, C, D, E | 04 |
| 2.5 A (for Class 0.2) | G | B, C, D, E | 06 |
| 4 A (for Class 0.2) | G | B, C, D, E | 08 |
| 6 A (for Class 0.2) | G | B, C, D, E | 10 |
| 10 A (for Class 0.2) | G | B, C, D, E | 12 |
| 15 A (for Class 0.2) | G | B, C, D, E | 14 |
| 20 A (for Class 0.2) | G | B, C, D, E | 57 |
| 25 A (for Class 0.2) | G | B, C, D, E | 16 |
| 30 A (for Class 0.2) | H | B, C, E | 59 |
| 40 A (for Class 0.2) | H | B, C, E | 18 |
| 60 A (for Class 0.2) | H | B, C, E | 20 |
| 75 A (for Class 0.2) | H | B, C, E | 22 |
| 100 A (for Class 0.2) | H | B, C, E | 24 |
| 150 A (for Class 0.2) | H | B, C, E | 28 |
| 250 A (for Class 0.2) | H | A, C, D, E | 32 |
| 300 A (for Class 0.2) | H | A, C, D, E | 61 |
| 400 A (for Class 0.2) | H | A, C, D, E | 34 |
| 600 A (for Class 0.2) | H | A, C, D, E | 36 |
| 1000 A (for Class 0.2) | H | A, C, D, E | 40 |
| 1500 A (for Class 0.2) | H | A, C, D, E | 44 |
| 2500 A (for Class 0.2) | H | A, B, D, E | 48 |
| Special version on request | | | 62 |
| 05 Insulating base | | | |
| None for version type A over 25A and for version type B, C, D | I | G | 1 |
| With for version type A up to 25A | | B, C, D, H | 2 |
| 06 Cover | | | |
| None (Standard) | | | 1 |
| With (for shunts with insulating base) | | B, C, D, I | 2 |

* Note: Class 0.2 will be applicable only up to 2500 A range, above it will be Class 0.5

SIRAX SH100 Shunts



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