

## SIRAX BM550

### Combined Analog Bimetallic and Moving-Iron Ammeters with maximal Current Indicator

#### Description

The combined analog bimetallic and moving-iron ammeters with maximal current indicator SIRAX BM550 in a polycarbonate housing and 90° scale are intended for thermal monitoring of transformers, cables and other electrical devices which have a slow reaction to current changes.

They indicate the mean rms current value during the measuring period of the meter over 8 min, 15 min or 20 min and deflects a resettable red slave pointer which shows the maximum value reached. These meters do not react to short current pulses essentially.

The analog bimetallic instruments have a specific inertia due to their thermal time lag making these instruments especially suitable to indicate maximum demands or control long-lasting peak loads and there is additionally a moving-iron movement fitted in the opposite corner of the meter housing to get the instantaneous reading of the load current.

The measuring devices are designed for installation in control panels, machine consoles or mosaic grids up to a panel thickness of no more than 25mm.

The bezel, the glass window and the dial can be easily exchanged on site.

#### Features

- Robust polycarbonate housing with high flammability class UL94-V0
- Simple assembly using swivel screw
- Quick and easy connection using screws and clamps
- Full-surface rear wall cover as protection against accidental contact
- 90° scale
- User accessible reset Knob
- Easy replacement of the glass window and the front bezel

#### Technical Data

##### Mechanical Data

|                     |                                                                                                                   |
|---------------------|-------------------------------------------------------------------------------------------------------------------|
| Case details        | Moulded square case suitable to be mounted in control / switchgear panels, machine tool consoles or mosaic panels |
| Material of case    | Polycarbonate                                                                                                     |
| Flammability class  | UL94 V-0, self-extinguishing, non-dripping, halogen-free                                                          |
| Material of window  | Glass                                                                                                             |
| Front frame (bezel) | Polycarbonate black                                                                                               |
| Position of use     | Vertical $\pm 5^\circ$                                                                                            |
| Mounting            | stackable next to each other                                                                                      |
| Panel thickness     | $\leq 25\text{mm}$                                                                                                |
| Panel fixing        | swivel screw                                                                                                      |

##### Connections

|         |                                   |
|---------|-----------------------------------|
| Ammeter | M4 screws and wire clamps form E3 |
|---------|-----------------------------------|



#### Scaling

|                                                               |                                                                         |                             |            |             |
|---------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------|------------|-------------|
| Pointer                                                       | knife-edge pointer                                                      |                             |            |             |
| Pointer deflection                                            | 0 ... 90°                                                               |                             |            |             |
| Scale characteristics calibrated down to 1/5 th rated current | bimetallic                                                              | moving iron                 |            |             |
|                                                               | quadratisch                                                             | annähernd linear            |            |             |
| Over Range                                                    | bimetallic 1.2 times rated current<br>moving iron 2 times rated current |                             |            |             |
| Scale division                                                | Coarse-fine                                                             |                             |            |             |
| Scale length                                                  | <input type="checkbox"/> 72                                             | <input type="checkbox"/> 96 |            |             |
|                                                               | bimetallic                                                              | moving iron                 | bimetallic | moving iron |
|                                                               | 52 mm                                                                   | 61 mm                       | 71 mm      | 97 mm       |

#### Electrical Data

|                                |                                                              |
|--------------------------------|--------------------------------------------------------------|
| Measuring unit                 | AC Current                                                   |
| Frequency                      | 45 ... 65 Hz                                                 |
| Thermal time delay bimetallic  | 8, 15, 20 minutes                                            |
| Thermal time delay moving iron | < 4s                                                         |
| Power consumption              |                                                              |
| 1 A rated current              | < 2.5 VA                                                     |
| 5 A rated current              | < 3.4 VA                                                     |
| Overload capacity              | acc. to DIN EN 60 051                                        |
| Continuously                   | 1.2 times rated current                                      |
| Short duration                 | 10 x for 0.5 sec: 9 overloads<br>10 x for 5 sec: 1 overload) |
| External magnetic field        | 0.4 kA/m                                                     |

#### Reference conditions

|                       |                                   |
|-----------------------|-----------------------------------|
| Accuracy class        | 3% acc. to DIN EN 60 051          |
| Reference temperature | 23 °C / $\pm 2^\circ\text{C}$     |
| Position of use       | Nominal position $\pm 1^\circ$    |
| Input variable        | Rated measuring value             |
| Wave form             | Sinusoidal, distortion factor <5% |
| Frequency             | 45 ... 65 Hz                      |
| Other conditions      | DIN EN 60 051-1                   |

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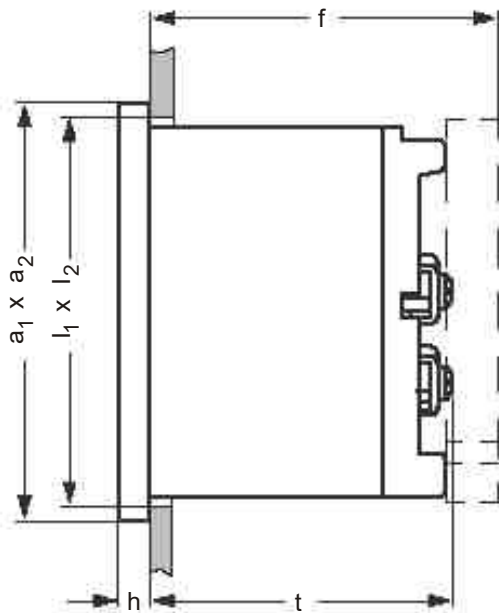
### Environmental conditions

|                       |                                                                      |
|-----------------------|----------------------------------------------------------------------|
| Climatic suitability  | Climate category 3 acc. to VDE/VDI 3540                              |
| Operating temperature | -10 ... +55 °C                                                       |
| Storage temperature   | -25 ... +65 °C                                                       |
| Relative humidity     | ≤75% annual average, non condensation                                |
| Shock                 | 150 m/s <sup>2</sup> (15g) / 11 ms                                   |
| Vibration             | 10 ... 55 ... 10 Hz, 0.15 mm amplitude (correspond to 1.5g at 50 Hz) |

### Safety

|                          |                       |
|--------------------------|-----------------------|
| EMC resistance           | acc. to EN 61 000-6-2 |
| EMC emission             | acc. to EN 61 000-6-4 |
| Safety                   | acc. to EN 60 010-1   |
| Installation category    | 300 V CATIII          |
| Pollution degree         | 2                     |
| Rated insulation voltage | 1000 V                |
| Insulation resistance    | > 50 MΩ at 500 V DC   |
| Insulation class         | A (acc. to VDE 0110)  |
| Insulation test voltage  | 3 kV                  |

### Dimensions



| Front [mm] | Nominal Dimensions [mm]         |     | Cutout [mm]<br>l <sub>1</sub> x l <sub>2</sub> | Installation depth (t) including terminal [mm] | Installation depth (f) including back cover [mm] |
|------------|---------------------------------|-----|------------------------------------------------|------------------------------------------------|--------------------------------------------------|
|            | a <sub>1</sub> x a <sub>2</sub> | h   |                                                |                                                |                                                  |
| □72        | 72 x 72                         | 5.5 | 68 <sup>+0.7</sup> x 68 <sup>+0.7</sup>        | 54                                             | 62.5                                             |
| □96        | 96 x 96                         | 5.5 | 92 <sup>+0.8</sup> x 92 <sup>+0.8</sup>        | 54                                             | 62.5                                             |

Housing protection class

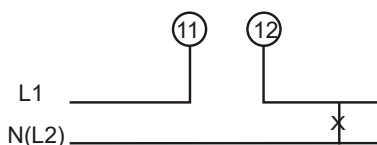
IP52 Housing on the front  
IP00 Connections without contact protection  
IP20 Connections with contact protection

Safety terminal protection

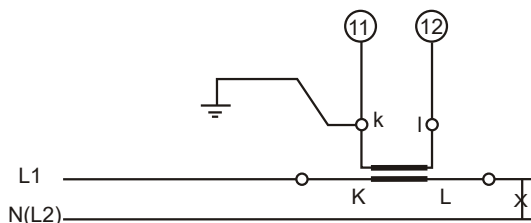
Full sized polycarbonate back cover to provide protection against accidental contact (hand and fingers) acc. to VDE 0410

### Electrical connections

Direct connection



For use with current transformer connection



### Measurement ranges

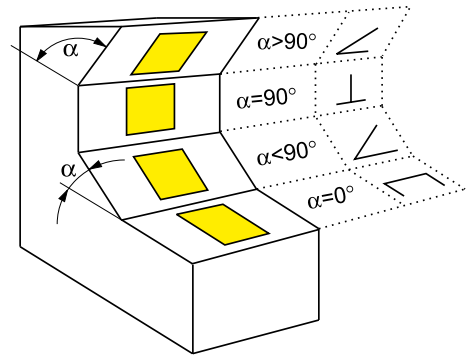
| Frontframe dimensions [mm]                     | 72 x 72                                   | 96 x 96 |
|------------------------------------------------|-------------------------------------------|---------|
| Scale length [mm]                              | 52 / 61                                   | 71 / 97 |
| Weight [kg]                                    | 0.26                                      | 0.30    |
| Type                                           | □72                                       | □96     |
| Measuring range direct connection              |                                           |         |
| Bimetal                                        | 0 ... 1 A - 1.2 times the nominal current |         |
|                                                | 0 ... 5 A - 1.2 times the nominal current |         |
| Moving iron                                    | 0 ... 1 A - 1.2 times the nominal current |         |
|                                                | 0 ... 5 A - 1.2 times the nominal current |         |
|                                                | 0 ... 1 A - 2 times the nominal current   |         |
|                                                | 0 ... 5 A - 2 times the nominal current   |         |
| Measuring range current transformer connection |                                           |         |
| Bimetal                                        | xxx/1 A - 1.2 times the nominal current   |         |
|                                                | xxx/5 A - 1.2 times the nominal current   |         |
| Moving iron                                    | xxx/1 A - 1.2 times the nominal current   |         |
|                                                | xxx/5 A - 1.2 times the nominal current   |         |
|                                                | xxx/1 A - 2 times the nominal current     |         |
|                                                | xxx/5 A - 2 times the nominal current     |         |

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### Working position

|      |                     |      |                                   |      |                      |
|------|---------------------|------|-----------------------------------|------|----------------------|
| Code | Working position    | Code | Working position                  | Code | Working position     |
| A    | $\alpha = 0^\circ$  | E    | $\alpha = 60^\circ$               | I    | $\alpha = 120^\circ$ |
| B    | $\alpha = 15^\circ$ | F    | $\alpha = 75^\circ$               | J    | $\alpha = 165^\circ$ |
| C    | $\alpha = 30^\circ$ | G    | $\alpha = 90^\circ$<br>(vertical) | K    | $\alpha = 180^\circ$ |
| D    | $\alpha = 45^\circ$ | H    | $\alpha = 105^\circ$              |      |                      |



### Order details

| Description                                                                            | Blockingcode | No-go with blockingcode | Article No. / Feature |
|----------------------------------------------------------------------------------------|--------------|-------------------------|-----------------------|
| SIRAX BM550, Analog Bimetallic and Moving-Iron Ammeters with maximal Current Indicator |              |                         | BM550-                |
| <b>Features, Selection</b>                                                             |              |                         |                       |
| <b>01 Dimensions Frontframe</b>                                                        |              |                         |                       |
| □72 (72 x 72 mm)                                                                       |              |                         | 1                     |
| □96 (96 x 96 mm)                                                                       |              |                         | 2                     |
| <b>02 Measuring range measuring unit 1 (bimetallic)</b>                                |              |                         |                       |
| AC Current for direct connection                                                       |              |                         |                       |
| 0 ... 1 A                                                                              | A            |                         | 1                     |
| 0 ... 5 A                                                                              | A            |                         | 2                     |
| AC Current for current transformer connection                                          |              |                         |                       |
| xxxx A / 1 A                                                                           |              |                         | 3                     |
| xxxx A / 5 A                                                                           |              |                         | 4                     |
| <b>03 Scale value bimetal</b>                                                          |              |                         |                       |
| Standard (overvoltage range 1.2 times the rated current)                               |              |                         | 1                     |
| <b>04 Scale value moving iron</b>                                                      |              |                         |                       |
| Standard (overvoltage range 1.2 times the rated current)                               |              | A                       | 1                     |
| Non Standard (overvoltage range 2 times the rated current)                             |              | A                       | 2                     |
| <b>05 Frequency</b>                                                                    |              |                         |                       |
| Standard 50Hz                                                                          |              |                         | 1                     |
| Non-standard 15 ... 400Hz (Please specify desired specifications when ordering)        |              |                         | 2                     |
| <b>06 Calibration delay time</b>                                                       |              |                         |                       |
| 8 min                                                                                  |              |                         | 1                     |
| 15 min                                                                                 |              |                         | 2                     |
| 20 min                                                                                 |              |                         | 3                     |
| 30 min                                                                                 |              |                         | 4                     |

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|                                                                                         |                                |  |   |   |
|-----------------------------------------------------------------------------------------|--------------------------------|--|---|---|
| <b>07 Working position</b>                                                              | $\alpha = 0^\circ$             |  |   | A |
|                                                                                         | $\alpha = 15^\circ$            |  |   | B |
|                                                                                         | $\alpha = 35^\circ$            |  |   | C |
|                                                                                         | $\alpha = 45^\circ$            |  |   | D |
|                                                                                         | $\alpha = 60^\circ$            |  |   | E |
|                                                                                         | $\alpha = 75^\circ$            |  |   | F |
|                                                                                         | $\alpha = 90^\circ$ (vertical) |  |   | G |
|                                                                                         | $\alpha = 105^\circ$           |  |   | H |
|                                                                                         | $\alpha = 120^\circ$           |  |   | I |
|                                                                                         | $\alpha = 165^\circ$           |  |   | J |
|                                                                                         | $\alpha = 180^\circ$           |  |   | K |
|                                                                                         | <b>08 Front window</b>         |  |   |   |
| Glass                                                                                   |                                |  | 1 |   |
| <b>09 Scalefactor</b>                                                                   |                                |  |   |   |
| Standard as measuring range or according to standard series with transformer connection |                                |  | 1 |   |
| Blank dial                                                                              |                                |  | 2 |   |
| Additional lettering and figuring (customized / specify exact data)                     |                                |  | 3 |   |
| <b>10 Color dial</b>                                                                    |                                |  |   |   |
| Standard (Dial white / Pointer black / Lettering black)                                 |                                |  | 1 |   |
| Non Standard (Dial / Pointer / Lettering customized)                                    |                                |  | 2 |   |
| <b>11 Contact protection</b>                                                            |                                |  |   |   |
| without back cover                                                                      |                                |  | 1 |   |
| with back cover                                                                         |                                |  | 2 |   |



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