

# Measuring current transformers of the W..., W...-8000 series



# Measuring current transformers of the W..., W...-8000 series



W60 – W60-8000 measuring current transformers



W20 – W20-8000 mounted on DIN rail

## Device features

### Measuring current transformers W...

- For RCMS460/490 residual current monitoring systems
- For RCM420 residual current monitors
- For EDS470, EDS460/490 insulation fault locators

### W...-8000 measuring current transformers

- For EDS461 and EDS491 insulation fault locators

## Approvals



## Product description

The highly sensitive W... and W...-8000 series measuring current transformers convert AC currents into evaluable measurement signals, in combination with RCM resp. RCMS series residual current monitors and evaluators.

In addition, the measuring current transformers can be used in combination with insulation fault location systems (EDS) for IT systems. They are designed to measure the locating current generated by a PGH locating current injector or an ISOMETER® IRDH. In combination with EDS series insulation fault locators the test current is converted into evaluable signals. Connection to the respective devices is via a two-wire cable.

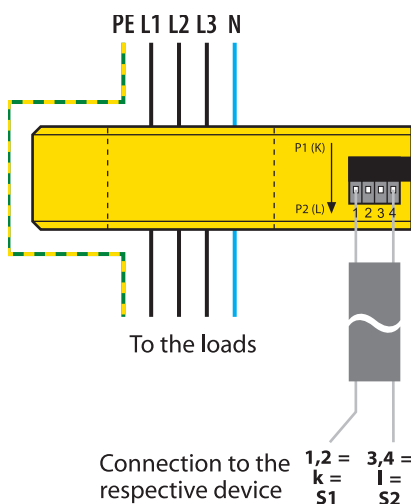
## Standards

WS... and WS...-8000 measuring current transformers comply with the device standards: DIN EN 60044-1, IEC 60044-1

## Installation instructions

- Make sure that all live conductors are routed through the measuring current transformer
- Do not route shielded conductors through the measuring current transformer
- Never route a PE conductor through the measuring current transformer!

## Wiring diagram



### W... measuring current transformers

Connection to the respective RCMS series residual current monitoring system, RCM series residual current monitor or to an EDS series insulation fault location system.

### W...-8000 measuring current transformers

Connection to the respective EDS473(E)-12, EDS474(E)-12, EDS461 and/or EDS491 series insulation fault locator.



**Technical data**

**Insulation coordination acc. to IEC 60664-1**

|  |        |
|--|--------|
| Rated insulation voltage               | 800 V  |
| Rated impulse voltage/pollution degree | 8 kV/3 |

**CT circuit W...**

|  |                                |
|--|--------------------------------|
| Rated primary residual current             | 10 A                           |
| Rated secondary residual current           | 0.0167 A                       |
| Rated transformation ratio $K_n$           | 10/0.0167 A                    |
| Rated burden                               | max. 180 $\Omega$              |
| Nominal power                              | 0.05 VA                        |
| Frequency range                            | 42 Hz...3 kHz                  |
| Rated continuous thermal current $I_{cth}$ | 40 A                           |
| Rated short-time thermal current $I_{tth}$ | 60 x $I_{cth}$ = 2.4 kA/1 s    |
| Rated dynamic current $I_{dyn}$            | 2.5 x $I_{tth}$ = 6.0 kA/40 ms |

**CT circuit W...-8000**

|  |                                |
|--|--------------------------------|
| Rated primary residual current             | 1 A                            |
| Rated secondary residual current           | 0.125 mA                       |
| Rated transformation ratio $K_n$           | 1 A/0.125 mA                   |
| Frequency range                            | 42 Hz...3 kHz                  |
| Rated continuous thermal current $I_{cth}$ | 6 A                            |
| Rated short-time thermal current $I_{tth}$ | 60 x $I_{cth}$ = 0.36 kA/1 s   |
| Rated dynamic current $I_{dyn}$            | 2.5 x $I_{tth}$ = 0.9 kA/40 ms |

**Environment**

|   |  |
|---|--|
| Operating temperature                             | -25...+70 °C                                   |
| Climatic class acc. to IEC 60721                  |  |
| Stationary use (IEC 60721-3-3)                    | 3K5 (except condensation and formation of ice) |
| Transport (IEC 60721-3-2)                         | 2K5 (except condensation and formation of ice) |
| Long-time storage (IEC 60721-3-1)                 | 1K5 (except condensation and formation of ice) |
| Classification of mechanical conditions IEC 60721 |  |
| Stationary use (IEC 60721-3-3)                    | 3M4  |
| Transport (IEC 60721-3-2)                         | 2M2  |
| Long-time storage (IEC 60721-3-1)                 | 1M3  |

**Connection**

|                                |   |
|--------------------------------|---|
| Connection                     | cage clamp spring terminal                          |
| Connection                     |   |
| rigid/flexible/conductor sizes | 0.08...2.5/0.08...2.5 mm <sup>2</sup> (AWG 28...12) |
| Stripping length               | 8...9 mm  |

**Connection EDS, RCM(S) measuring current transformers**

|  |                                  |
|--|----------------------------------|
| Single wire $\geq 0.75$ mm <sup>2</sup>  | 0...1 m                          |
| Single wire, twisted $\geq 0.75$ mm <sup>2</sup>                                     | 0...10 m                         |
| Shielded cable $\geq 0.5$ mm <sup>2</sup>  | 0...40 m                         |
| Shielded cable (shield on one side connected to L-conductor, not connected to earth) | recommended: J-Y(St)Y min. 2x0.8 |

**Other**

|  |                          |
|--|--------------------------|
| Degree of protection, internal components (DIN EN 60529) | IP40                     |
| Degree of protection, terminals (IEC 60529)              | IP20                     |
| Screw mounting   | M5 with mounting bracket |
| Flammability class                                       | UL94 V-0                 |
| Documentation number                                     | D00078                   |
| Approvals and certifications                             | UL under development     |

**Ordering information**

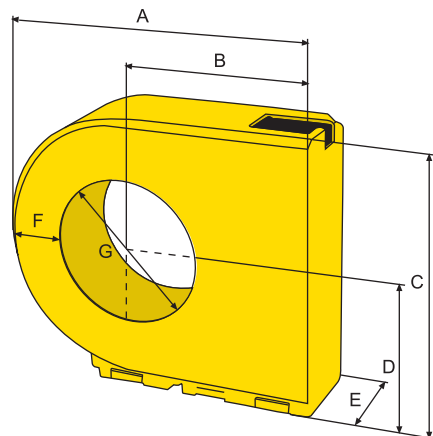
| Mounting                    | Inside diameter | Type                   | Art. No.    |
|-----------------------------|-----------------|------------------------|-------------|
| Mounting brackets, DIN rail | 20 mm           | W20                    | B 9808 0003 |
|                             |                 | W20-8000 <sup>1)</sup> | B 9808 0009 |
|                             | 35 mm           | W35                    | B 9808 0010 |
|                             |                 | W35-8000 <sup>1)</sup> | B 9808 0017 |
|                             | 60 mm           | W60                    | B 9808 0018 |
|                             |                 | W60-8000 <sup>1)</sup> | B 9808 0027 |
| Mounting brackets           | 120 mm          | W120                   | B 9808 0028 |
|                             | 210 mm          | W210                   | B 9808 0034 |

<sup>1)</sup> For EDS461/491 and EDS473/474 insulation fault locators

**Accessories**

| Type designation                           | Width   | Art. No.    |
|--|---------|-------------|
| Snap-on mounting for W20-W35, W20-W35-8000 | 43.5 mm | B 9808 0501 |
| Snap-on mounting for W60, W60-8000         | 50 mm   | B 9808 0502 |

**Dimension diagram**



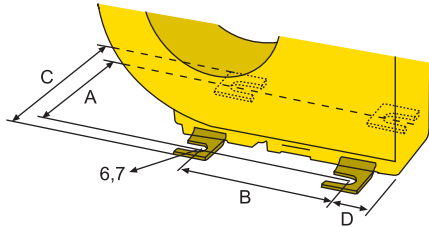
| Type      | Dimensions (mm) |       |       |       |    |      |       | Weight   |
|-----------|-----------------|-------|-------|-------|----|------|-------|----------|
|           | A               | B     | C     | D     | E  | F    | G     |          |
| W20       | 76.4            | 50    | 56.3  | 29.8  | 30 | 16.4 | ø 20  | ≤ 130 g  |
| W35       | 99.5            | 62    | 79.2  | 41.7  | 30 | 20   | ø 35  | ≤ 175 g  |
| W60       | 135             | 79    | 116.4 | 60.4  | 37 | 24   | ø 60  | ≤ 315 g  |
| W120      | 210             | 116.5 | 191.5 | 98    | 37 | 33.5 | ø 120 | ≤ 960 g  |
| W210      | 323             | 173   | 304.5 | 154.5 | 45 | 45   | ø 210 | ≤ 2900 g |
| W20-8000* | 76.4            | 50    | 56.3  | 29.8  | 30 | 16.4 | ø 20  | ≤ 150 g  |
| W35-8000* | 99.5            | 62    | 79.2  | 41.7  | 30 | 20   | ø 35  | ≤ 205 g  |
| W60-8000* | 135             | 79    | 116.4 | 60.4  | 37 | 24   | ø 60  | ≤ 355 g  |

Tolerance: ± 0.5 mm

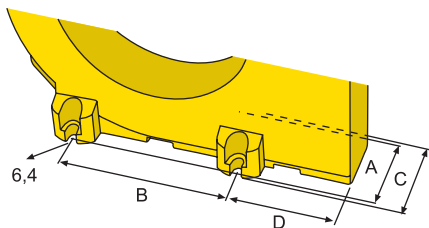
\* For EDS461/491 insulation fault locators

## Mounting details

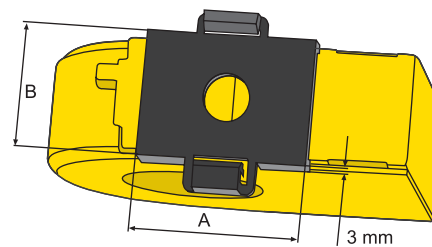
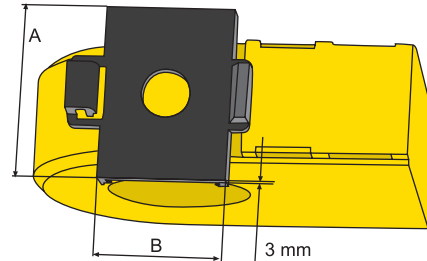
Screw mounting with mounting brackets: W20, W35, W60 and W20-8000, W35-8000, W60-8000



Screw mounting: W120, W210



Snap-on mounting on DIN rail: for vertical or horizontal mounting: W20, W35, W60 und W20-8000, W35-8000, W60-8000



| Dimensions (mm)  |    |      |      |      |
|--|----|------|------|------|
| Type   | A  | B    | C    | D    |
| <b>W20/W20-8000</b><br>(fixing with two mounting brackets, diagonally) | 49 | 31.4 | 65   | 18.6 |
| <b>W35/W35-8000</b><br>(fixing with two mounting brackets, diagonally) | 49 | 49.8 | 65   | 12.1 |
| <b>W60/W60-8000</b><br>(fixing with four mounting brackets)            | 56 | 66   | 72   | 17.7 |
| <b>W120</b> (screw mounting)   | 51 | 103  | 60.6 | 65   |
| <b>W210</b> (screw mounting)   | 59 | 180  | 68.6 | 83   |

| Dimensions (mm)     |      |    |
|---------------------|------|----|
| Type                | A    | B  |
| <b>W20/W20-8000</b> | 43.5 | 32 |
| <b>W35/W35-8000</b> | 43.5 | 32 |
| <b>W60/W60-8000</b> | 50   | 39 |

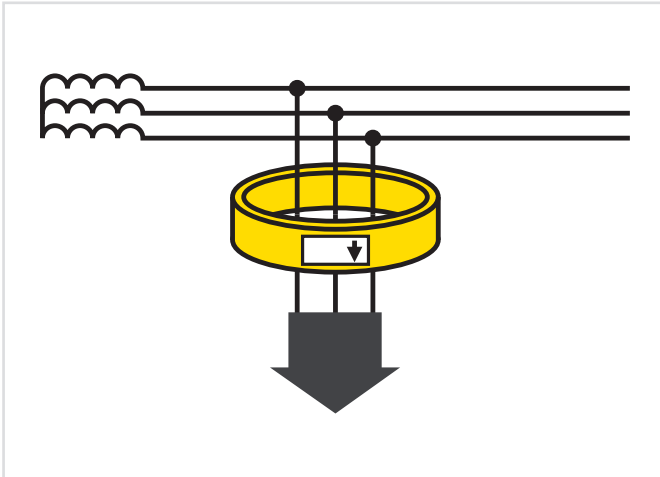
Tolerance for screw mounting with mounting brackets:  $\pm 1.5$  mm

## Selection list

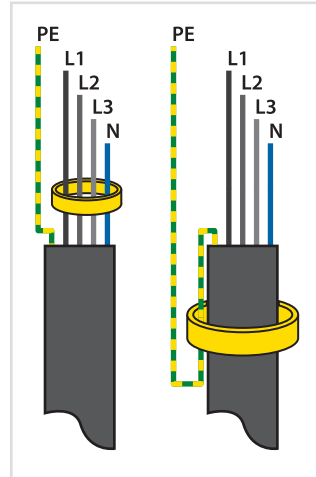
| Type     | RCM420 | RCMS460/490 | EDS460/490 | EDS461/491 |
|----------|--------|-------------|------------|------------|
| W20      | ■      | ■           | ■          | –          |
| W35      | ■      | ■           | ■          | –          |
| W60      | ■      | ■           | ■          | –          |
| W120     | ■      | ■           | ■          | –          |
| W210     | ■      | ■           | ■          | –          |
| W20-8000 | –      | –           | –          | ■          |
| W35-8000 | –      | –           | –          | ■          |
| W60-8000 | –      | –           | –          | ■          |

**Installation instructions**

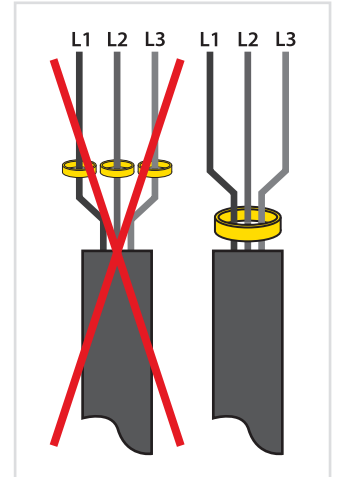
- Do not pass shielded cables through the measuring current transformer.
- As a general principle, the PE conductor and low-resistance conductor loops must not be passed through the measuring current transformer!



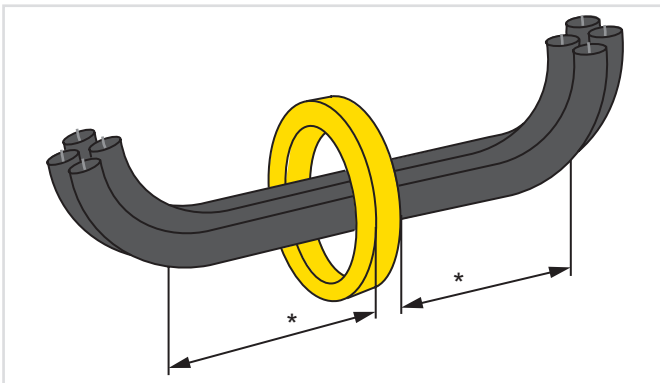
It is important that the leads are passed through the measuring current transformer in the right direction



Never pass a PE conductor through the measuring current transformer

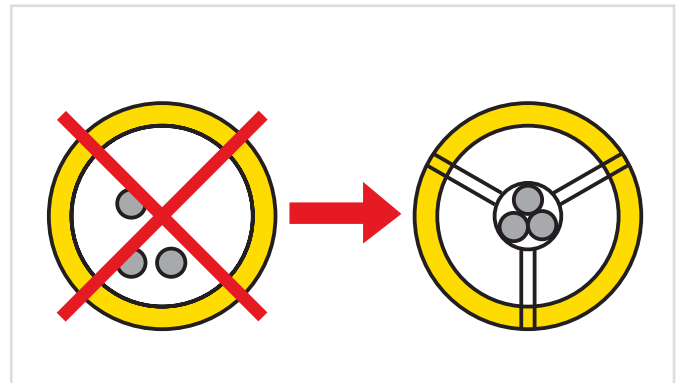


Make sure that all current-carrying leads are passed through the measuring current transformer



\* Distance to the 90° angle = 2 x transformer outside diameter

Bending a lead is only permissible with a certain distance to the current transformer



The leads must be aligned with the centre of the measuring current transformer



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