

# Measuring current transformers WS50x80S...WS80x160S



## Measuring current transformers of the WS50x80S...WS80x160S series, split-core type



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### Product description

The highly sensitive split-core-type WS... series measuring current transformers convert residual currents of 10 mA... 100 A into evaluable RCM or EDS signals and can be retrofitted to existing electrical installations where disconnection must be prevented. The CTs are connected to the respective evaluator by two wires. Depending on the connecting lead used, the distance between the CT and the evaluator may be up to 40 m.

Make sure that all live conductors are routed through the measuring current transformer and that these conductors are not shielded.

Never route a PE conductor through the measuring current transformer!

### Application

- For residual current monitors (RCM)
- For residual current monitoring systems (RCMS)
- For insulation fault locators with additional EDS in AC and DC systems

### Standards

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

### Approvals



### Ordering information

| Internal dimensions | Approvals |     |    | Type      | Art. No. |
|---------------------|-----------|-----|----|-----------|----------|
|                     | UL        | EAC | LR |           |          |
| 50 x 80 mm          | ■         | ■   | ■  | WS50x80S  | B911741  |
| 80 x 80 mm          | ■         | ■   | ■  | WS80x80S  | B911742  |
| 80 x 120 mm         | ■         | ■   | ■  | WS80x120S | B911743  |
| 80 x 160 mm         | –         | ■   | ■  | WS80x160S | B911755  |

**Technical data**
**Insulation coordination acc. to IEC 60044-1**

|   |          |
|---|----------|
| Highest system voltage for electrical equipment $U_m$ | AC 720 V |
| Rated impulse withstand voltage $U_{isol}$            | 3 kV     |

**Measuring circuit**

|                                  |                                 |
|----------------------------------|---------------------------------|
| Rated transformation ratio       | 600/1                           |
| Rated burden                     | 180 $\Omega$                    |
| Rated primary current            | $\leq 10$ A (100 A)             |
| Rated primary current            | $\geq 10$ mA                    |
| Nominal power                    | 50 mVA                          |
| Rated frequency                  | 50...400 Hz                     |
| Internal resistance              | 5...8 $\Omega$                  |
| Secondary overvoltage protection | with suppressor diode P6KE6V8CP |
| Accuracy class                   | 5                               |
| Rated continuous thermal current | 100 A                           |
| Rated short-time thermal current | 14 kA/1 s                       |
| Rated dynamic current            | 35 kA/30 ms                     |

**Environment**

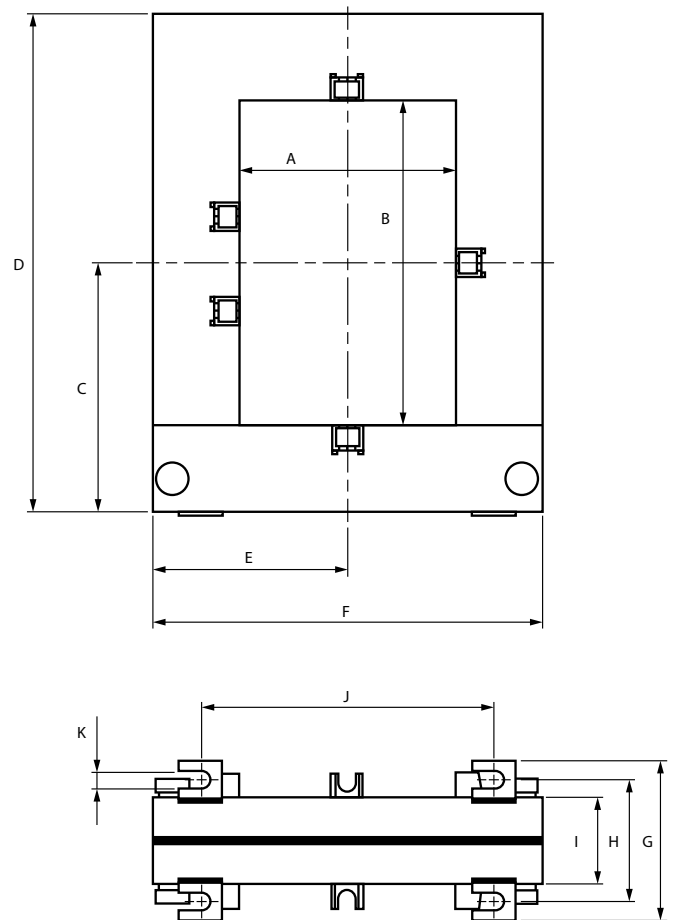
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| Standard   | IEC 60044-1     |
| Shock resistance IEC 60068-2-27 (device in operation)    | 15 g/11 ms      |
| Bumping IEC 60068-2-29 (transport)                       | 40 g/6 s        |
| Vibration resistance IEC 60068-2-6 (device in operation) | 1 g/10...150 Hz |
| Vibration resistance IEC 60068-2-6 (transport)           | 2 g/10...150 Hz |
| Ambient temperature (during operation)                   | -10...+50 °C    |
| Storage temperature range                                | -40...+70 °C    |
| Climatic class acc. to DIN IEC 60721-3-3                 | 3K23            |

**Connection**

|   |                                    |
|---|------------------------------------|
| Connection  | screw-type terminals               |
| Connection  |                                    |
| rigid/flexible                                      | 0.2...4/0.2...2.5 mm <sup>2</sup>  |
| flexible with ferrules with/without plastic sleeve  | 0.25...2.5 mm <sup>2</sup>         |
| Conductor sizes (AWG)                               | 24...12                            |
| Connection to the evaluator                         |                                    |
| 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 $\geq 0.6$ mm <sup>2</sup>           | 0...40 m                           |
| Shielded cable (shield on one side connected to PE) | recommended: J-Y(St)Y min. 2 x 0.6 |

**Other**

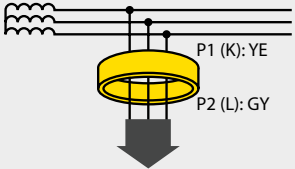
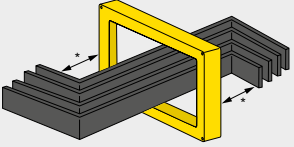
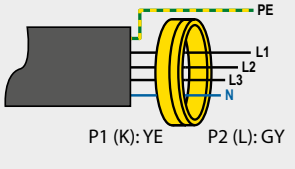
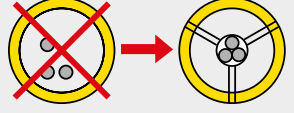
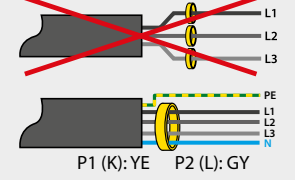
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|--|----------------------|
| Operating mode   | continuous operation |
| Mounting   | any position         |
| Degree of protection, internal components (DIN EN 60529) | IP40                 |
| Degree of protection, terminals (DIN EN 60529)           | IP20                 |
| Screw mounting   | M5                   |
| Flammability class                                       | UL94 V-0             |
| Documentation number                                     | D00145               |

**Dimensions (mm) and weights (g)**


| Type      | Dimensions (mm) |     |     |     |    |     |    |    |    |     |     | Weight |
|-----------|-----------------|-----|-----|-----|----|-----|----|----|----|-----|-----|--------|
|           | A               | B   | C   | D   | E  | F   | G  | H  | I  | J   | K   |        |
| WS50x80S  | 50              | 80  | 72  | 145 | 57 | 114 | 59 | 45 | 32 | 78  | 6.5 | 900 g  |
| WS80x80S  | 80              | 80  | 72  | 145 | 72 | 144 | 59 | 45 | 32 | 108 | 6.5 | 1050 g |
| WS80x120S | 80              | 120 | 92  | 184 | 72 | 144 | 59 | 45 | 32 | 108 | 6.5 | 1250 g |
| WS80x160S | 80              | 160 | 113 | 225 | 92 | 184 | 59 | 45 | 32 | 120 | 6.5 | 2550 g |

## 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!

|   |  |   |   |
|---|--|---|---|
| <p>It is important that the leads are passed through the measuring current transformer in the right direction</p> |   | <p>The primary conductors may only be bent from the specified minimum distance. The minimum bending radius specified by the manufacturers must be observed.</p> <p>* Distance to 90° angle: 2x transformer height</p> |  |
| <p>Never pass a PE conductor through the measuring current transformer</p>  |   | <p>The leads must be aligned with the centre of the measuring current transformer</p>   |  |
| <p>Make sure that all current-carrying leads are passed through the measuring current transformer</p>             |  |   |   |



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