CONDIS®

Reference Sheet

Grid Measurement



123kV Impulse Voltage Divider for Omicron AG

Omicron AG, a worldwide company headquartered in Klaus, Austria, is renowned for providing services and solutions to support safe, secure and reliable electrical energy generation, transmission and distribution.

To evaluate of their customer's vacuum circuit breaker under the actual operating conditions, they needed a device able to measure accurately over a large frequency band as well as high frequency transients. The device needed to be able installed outdoor, continuously operating and providing flawlessly accurate output without being affected by the environmental factors.

None of the existing measuring equipment available on the market was able to cover all these stringent requirements, except for CONDIS's custom built CR divider.

Our solution

CR 123kV impulse voltage divider :

- Large frequency bandwidth up to 30kHz
- Capability of accurately measuring fast occurring events, such as HF transients
- Reduced footprint, low weight compared to
- conventional VTs
- Secondary voltage compatible with any standard
- measuring equipment, like oscilloscope and transient recorders

Why CONDIS ?

- Proven experience in high voltage capacitors design and manufacturing
- Customized solution to meet customer's requirement
- Manufacturing and testing of the entire LPIT in one factory.
- Short lead time, from conceptual design to product dispatch.

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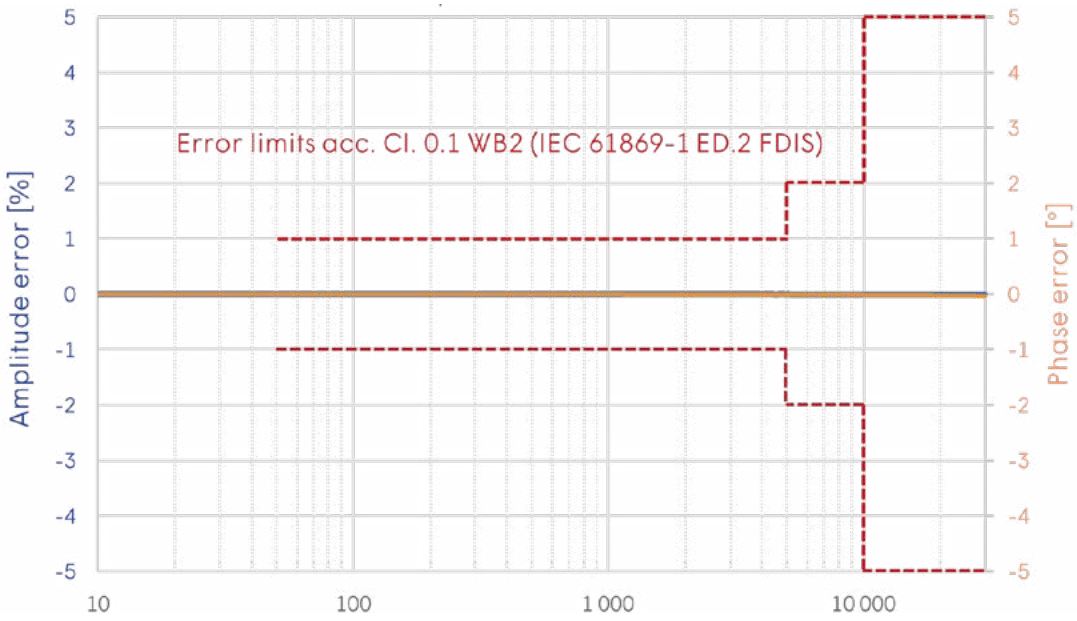
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Divider performances

Accuracy at extended frequency bandwidth

The voltage error for the extended frequency bandwidth is measured using a signal generator injecting 10 Vpp in the primary terminal of a CR divider with Um=123 kV. The secondary voltage measured on the low voltage terminal of the divider, by use of an oscilloscope, is compared to the reference signal. The sinusoidal frequency is varied from 10 Hz up to 30 kHz. The resulting voltage error of the CR divider for this extended frequency band is shown in Figure 2. The red lines show the permitted error vs. frequency according to wideband accuracy classes defined in future IEC 61869-1 Ed.2. The 123 kV CR divider is here shown to have a very stable error up to 30 kHz, beyond the requirements set forth by the standard.

Depending on the operating temperature profile required at the substation, CONDIS can offer 123kV CR dividers that meet accuracy classes 0.2 and 0.5 as defined in the IEC 61869-1.



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