



VMA

Voltage Metering Amplifier

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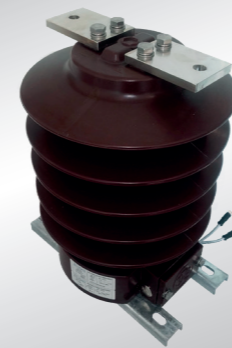
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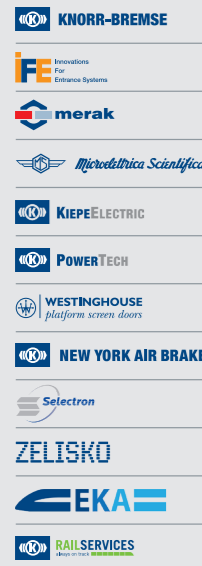
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MORE FLEXIBILITY FOR METERING
IN MEDIUM-VOLTAGE POWER GRIDS

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VOLTAGE METERING AMPLIFIER

VMA (3-CHANNEL VOLTAGE AMPLIFIER FOR LOW-VOLTAGE INSTRUMENT TRANSFORMERS)

MORE FLEXIBILITY IN SUBSTATIONS. An easy integration of LPVT technology with existing equipment directly supports the modernization of power-grids. Extended compatibility is achieved through amplification of the Zelisko sensors' secondary output voltage. This allows the usage of energy meters or other measurement appliances designed for signal levels of conventional instrument transformers.

Extending the Zelisko sensor portfolio with peripheral equipment for active voltage amplification provides an easier retrofitting for metering purposes.



Additional on-site calibrations of sensors and VMA are not necessary (Plug and Play concept). The overall accuracy of the VMA and the corresponding sensors is guaranteed by a joint routine test. The respective limits are specified via the chosen accuracy class according to IEC 61869-11.

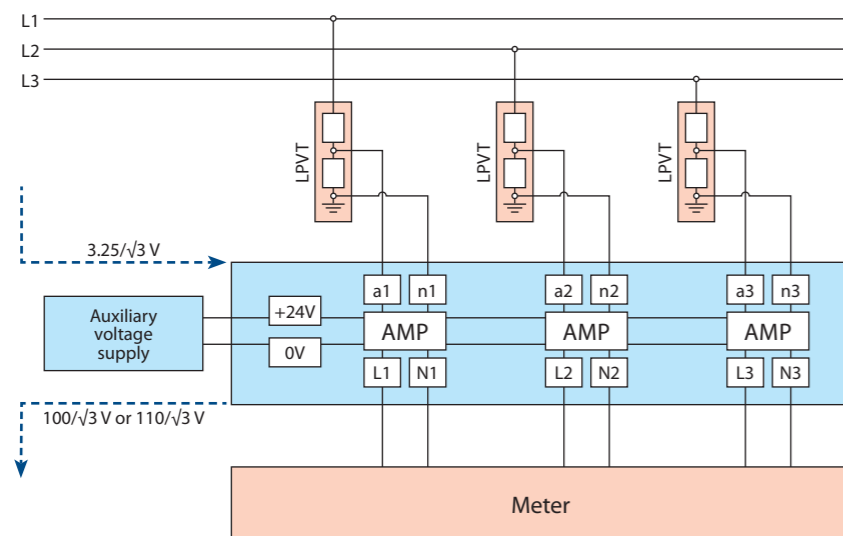
Upon request, a calibration according to ISO/IEC 17025 for the complete system is possible as well. The accuracy rating is verified by an included calibration certificate and calibration mark.

ZELISKO VMA

The Zelisko VMA is an active high-precision voltage amplifier with 3 channels. In combination with Zelisko low-power voltage sensors it converts the output voltages from $3.25/\sqrt{3}$ V to $100/\sqrt{3}$ V or $110/\sqrt{3}$ V. Therefore, the use of Zelisko sensor technology is no longer limited to metering equipment with built-in low-voltage inputs.

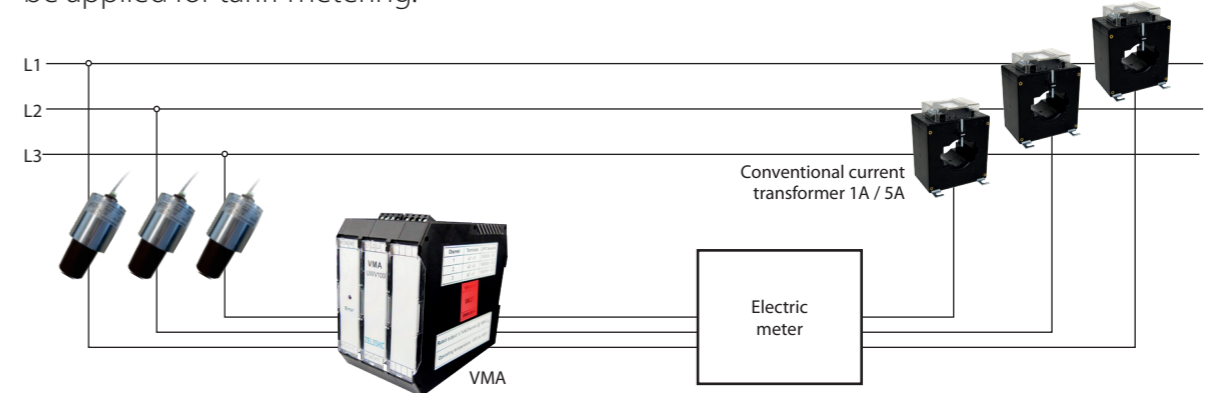
ADVANTAGES

- Precise metering of voltage signals up to class 0.2
- Immediate operation without additional on-site calibration
- Independent amplification of up to three sensor signals
- Simple installation on DIN top hat rails
- No requirement for equipment with low-voltage inputs



TARIFF METERING

UNLOCKING THE FULL POTENTIAL OF ZELISKO LPVT HIGH-PRECISION MEASUREMENT. Through combination of Zelisko low-voltage sensors with the VMA voltage amplifier the sensor technology can be applied for tariff metering.

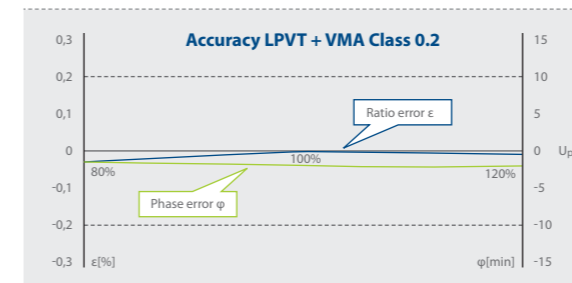


The guaranteed overall accuracy of voltage sensors and VMA up to class 0.2 in combination with conventional Zelisko current transformers allows the usage for tariff metering purposes. Verification of the overall system is given through calibrated measurement and calibration certificate according to ISO/IEC 17025.

Output signal levels of 1 A or 5 A for Zelisko current transformers and $100/\sqrt{3}$ V or $110/\sqrt{3}$ V for Zelisko LPVT + VMA respectively make for an easy connection to a broad range of established electric meter types.

ADVANTAGES

- Precise current metering according to IEC 61869-2 accuracy classes 0.2 or 0.2S
- Precise voltage metering according to IEC 61869-11 accuracy class 0.2
- Immediate operation without additional on-site calibration
- Attestation of accuracy through calibrated measurement and calibration certificate according to ISO/IEC 17025
- Easy connection to established electric meter types



CHARACTERISTICS

- Inputs:**
 - Up to 3 inputs for Zelisko voltage sensors (according to IEC 61869-11)
 - Max. input voltage of 190% * U_n
 - Distinct assignment of every sensor to a specific channel
- Outputs:**
 - Up to 3 outputs for AC voltage pre-configured to $100/\sqrt{3}$ V or $110/\sqrt{3}$ V
 - Rated output of up to 1 VA per channel
- Notifications:**
 - 1 LED signals system failure

- Auxiliary supply voltage:**
 - DC 24V ± 10%
 - Power consumption 1.2 W (max. 15 W)
- Temperature range:**
 - Operation from -10° C to +55° C
 - Storage from -25° C to +70° C
- Housing:**
 - Polyamide housing for mounting on DIN top hat rails
 - Dimensions 67.5 x 99 x 114.5 mm (W / H / D)
 - Protection class IP20