

SINEAX U 554

Transducer for AC Voltage with Different Characteristics

With power supply
RMS value measurement
Carrying rail housing P13/70



Application

The transducer **SINEAX U 554** (Fig. 1) converts a sinusoidal or a distorted AC voltage into a **load independent** DC current or a **load independent** DC voltage proportional to the measured value.

Depending on the version, part of the measuring range of interest may be amplified at the beginning or end. The section of no or minor interest is suppressed. A live zero output signal is possible with all versions (see Fig. 3 and 4).

The transducer fulfils all the important requirements and regulations concerning electromagnetic compatibility **EMC** and **Safety** (IEC 1010 resp. EN 61 010). It was developed and is manufactured and tested in strict accordance with the **quality assurance standard** ISO 9001.



Fig. 1. Transducer SINEAX U 554 in housing **P13/70** clipped onto a top-hat rail.

Features / Benefits

- Measuring input: AC voltage, sine or distorted wave forms, RMS value measurement

Measured variable	Measuring range limits
AC voltage	0 ... 20 à 0 ... 690 V

- Measuring output: Unipolar and live-zero output variables
- Measuring principle: Logarithmic method
- DC, AC-power pack with wide power supply tolerance

Mode of operation

Input signal U_{\sim} is galvanically separated from the mains network using a transformer.

The following mathematical expression is then formed using a root-mean-square value computer

$$U_{\text{eff}} = \sqrt{\frac{1}{T} \int_0^T u^2 dt}$$

Following filtration by means of an active filter, the transformation properties of the measuring transducer are determined in the succeeding characteristics circuit.

The output amplifier transforms the measuring signal into an impressed output signal A.

The electronic components are supplied with voltage H from the mains supply unit H.

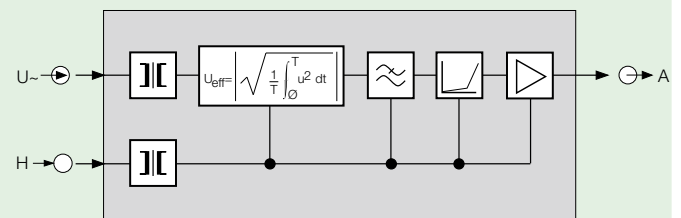


Fig. 2. Block diagram.

Technical data

General

Measured quantity:	AC voltage Sine or distorted wave form RMS value measurement
Measuring principle:	Logarithmic method