



MODULE MKGBEA24 AS WIDEBAND TRANSFORMERS

(i.e. with optional extended frequency range)



GERMANY HAMBURG • WIRGES • KIRCHAICH • DRESDEN
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- **Metal encapsulated wideband combi-transformer with inductive, single-pole voltage and current transformer sections with damping resistor**
- **Optimised frequency transfer characteristics up to 9 kHz**
- **Specifically designed for applications in the power quality field**
- **For measurements in wind and solar plants as well as in renewable energy generation**

WIDEBAND VOLTAGE TRANSFORMER SECTION:

Inductive voltage transformers usually exhibit resonances within a few kHz in the transmission path, at frequencies that are higher than the grid frequency. The position of the first resonance point shifts towards lower frequencies with increasing rated voltage. The measuring accuracy of harmonics and intermediate harmonics with the aid of an inductive instrument transformer in medium voltage grids is therefore limited.

WIDEBAND POWER TRANSFORMER SECTION:

The frequency-dependent transmission characteristics of current transformers can be adversely affected by inductive components of load, cable resistance and various core materials.

In our test field current transformers are tested with a suitable wideband connection cable specially suited for HF harmonics. The part of the load which corresponds to the supply cable, must be taken into account by customers when selecting the transformer rating.

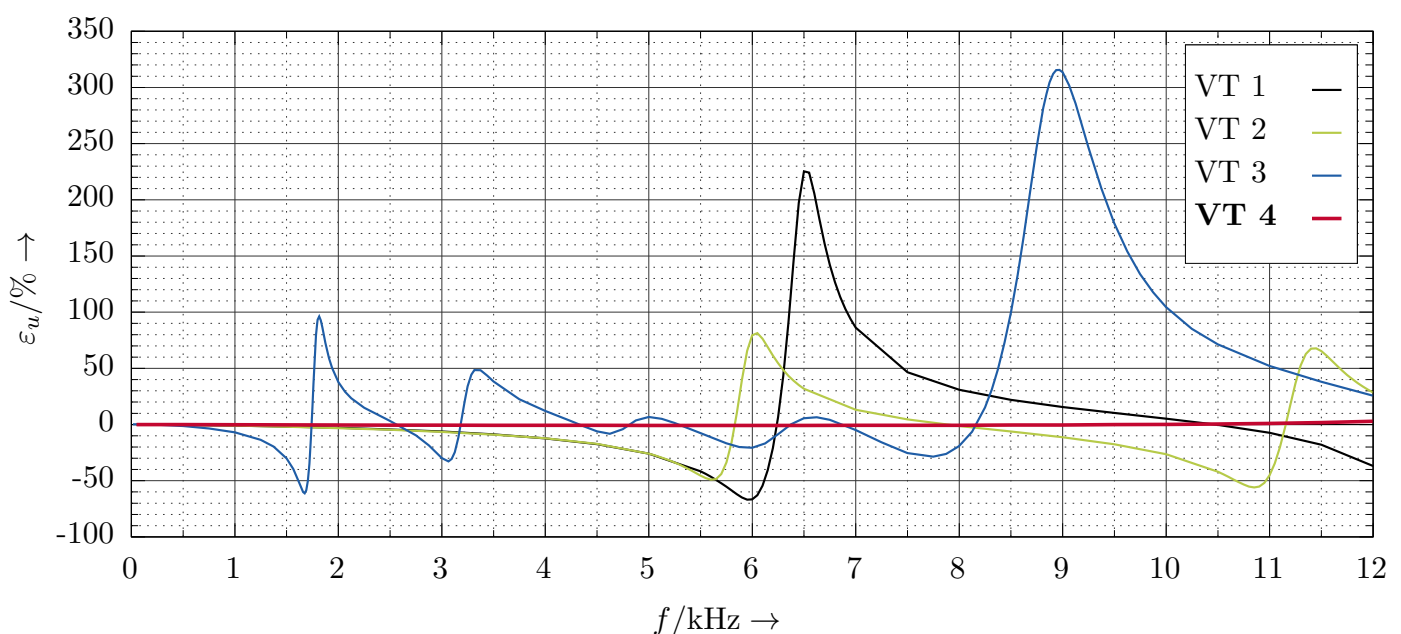
GENERAL:

The metal encapsulated wideband combi-transformer MKGBEA24 with its extended frequency range is optimised for future standards (VDE AR N 4110 and EN 50160) and measurements up to 9 kHz. Up to this frequency a class accuracy of ε_U and $\varepsilon_I < 3 \%$ is achieved. In addition to permanent and mobile monitoring of PQ requirements at grid transition points, the MKGBEA24 has also been developed for the purpose of permanently monitoring non-linear equipment, such as inverters in PV and wind parks.

Each combi transformers receives a test protocol with accuracy check & diagram of the frequency response.

Figure:

Exemplary frequency response of the voltage transformer section of the frequency-optimised KGBEA 24 (red line) compared to a conventional voltage transformer.



Errors and technical changes reserved. Similar pictures. 01.01.2019

ORDER REFERENCE: „MKGBEA24 WITH FREQUENCY OPTION“**GENERAL SPECIFICATION** *(Example: further data on request)*

Standards	IEC 61869-4, DIN 42600
Insulation	24/50/125 kV
Ambient temperature	-5°C...40°C
Weight	240 kg
Class of insulation material	E

STROMWANDLERTEIL / Bemessungsdaten für Netzfrequenz

Frequency	50 Hz
Primary rated current I_{pr}	5...600 A
Secondary rated current I_{sr}	1A, 5A
Thermal continuous rated current I_{cth}	$1,2 \times I_{pr}$, $1,0 \times I_{pr}$
Output	for example 5, 10, 15, 30...VA
Class	0,2 ; 0,5 ; 0,2S ; 0,5S ; 10P, 5P
Thermal short-time rated current I_{th}	max. 28 kA/1 s
Rated peak current I_{dyn}	$2,5 \times I_{th}$

VOLTAGE TRANSFORMER SECTION / Rated data for line frequency

Frequency	50 Hz
Voltage	20 kV / $\sqrt{3}$
Voltage factor	$1,9 \times U_N$, 8 h
Measuring coil (a-n)	100 V / $\sqrt{3}$
Output	max. 50 VA
Class	0,2; 0,5; 1
Thermal limit	250 VAth
Earth fault protection (da-dn)	100 V / 3
Output	100 VA
Class	6P

CURRENT TRANSFORMER SECTION / Additional PQ data

Frequency range	50 Hz ... 9 kHz
Accuracy $\varepsilon_I < 3\%$	measurement according to the frequency sweep test up to 50 A
Output	1 ... 5 VA
Resistive load	$\cos \beta = 1$ ($L_B < 10 \mu H$)
Wideband connection cable included	3 m

SPANNUNGSWANDLERTEIL / Zusätzliche Daten für PQ

Frequency range	50 Hz ... 9 kHz
Accuracy $\varepsilon_U < 3\%$	measurement according to the frequency sweep test with 1% U_N
Output	0 ... 5 VA
Resistive load	$\cos \beta = 1$

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Please feel free to contact us for an offer.

EXPERIENCE AND SOLUTIONS / TOGETHER!

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We are the leading specialist for instrument transformers, cast resin parts, solid bus bar systems and power transformers.

We develop your standard equipment, but also put your own ideas into customized products. Make us your requirements, we develop the solution.

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