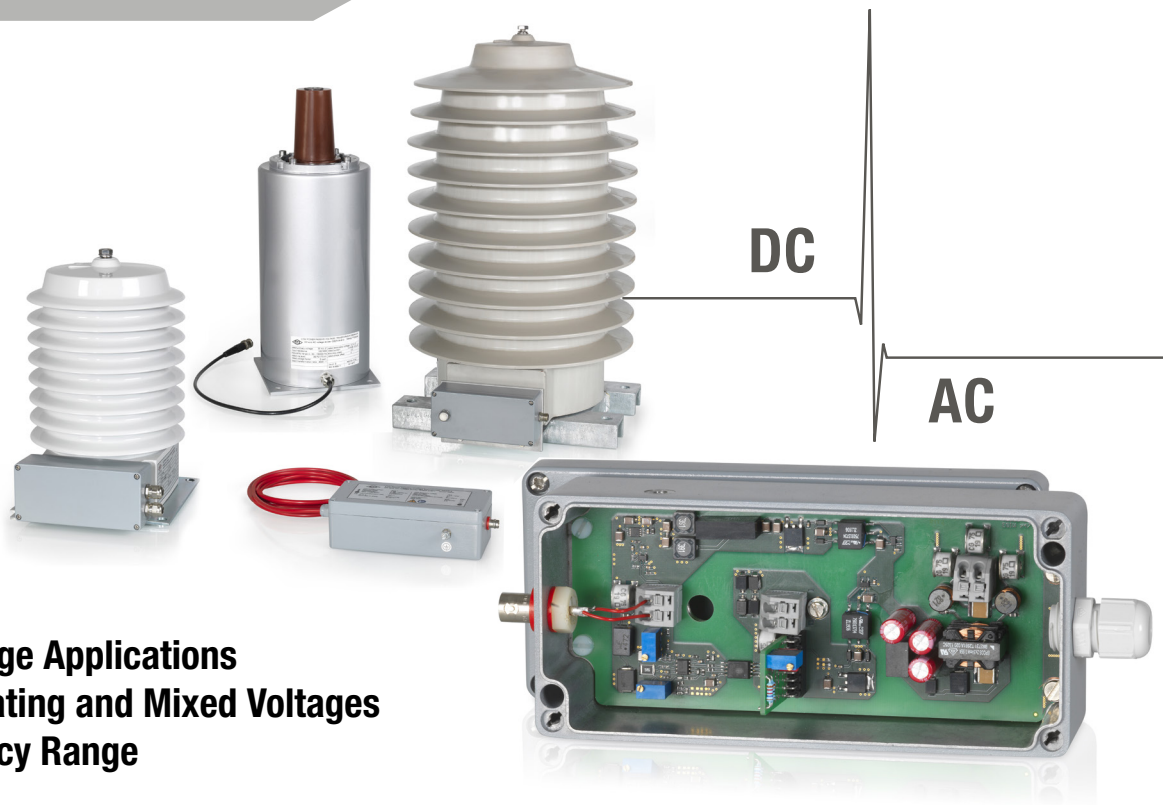




# ELECTRONIC VOLTAGE TRANSFORMER

## EGIW x45

*DC AND AC VOLTAGE DIVIDER WITH ISOLATION AMPLIFIER*



- **Medium Voltage Applications**
- **Direct, Alternating and Mixed Voltages**
- **Wide Frequency Range**



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## FEATURES

- Electrical isolation
- High electromagnetic compatibility (EMC)
- Low temperature drift
- Negligible dependence on burden

## APPLICATION

The electronic voltage transformer EGIW x45 measures direct, alternating and mixed voltages for e.g. motor management, power quality analysis and protection purposes. Its area of application are indoor medium voltage installations which require galvanic isolation between the primary and secondary voltage.

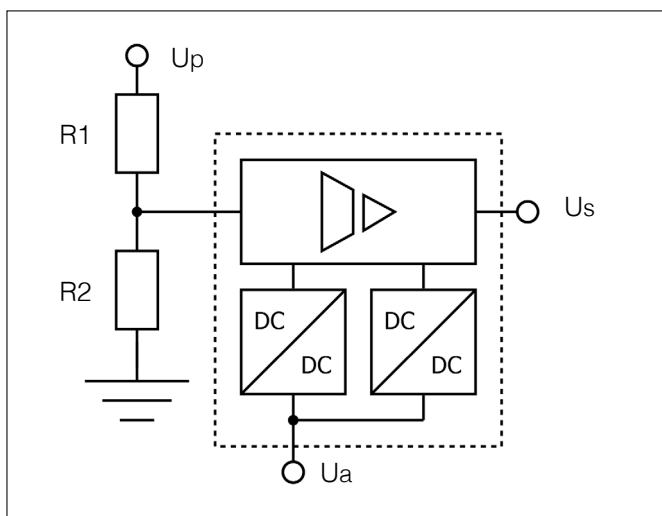
The EGIW x45 is an alternative to conventional voltage transformers once the primary voltage contains DC components and/or higher frequencies.

## DESCRIPTION

The EGIW x45 system consists of a low power passive voltage transformer (LPPVT) and an isolation amplifier. The voltage divider inside the LPPVT transforms the primary voltage  $U_p$  to a low voltage, which is digitized inside the electronics. After the galvanic isolation, the digital signal is converted back to the analog secondary voltage  $U_s$ . The auxiliary power supply  $U_a$  is required to run the electronics.

The isolation amplifier provides an isolation both between primary and secondary voltage and between auxiliary power supply and all other ports, thus extending the performance of the LPPVT.

## SCHEMATIC CIRCUIT DIAGRAM EGIW X45



## TECHNICAL DATA

### General

Type	EGIW x45
Application	Motor management, power quality analysis, protection purposes
Design	Voltage sensor with active electronics
Functional principle	Voltage divider
Standard	IEC 61869-6 / IEC 60044-7

### Versions

EGIW 945	with GSER 16, up to 36 kV
EGIW 1045	with GSER 52, up to 72,5 kV
EGIW 1145	with GSER 3, up to 6 kV
EGIW 1245	with GBERA 12...36, up to 36 kV

### Electrical Data

#### Input

Rated primary voltage	$U_{pr}$	see sensor data
Primary voltage range	$U_p$	0 - $U_m^{(1)}$
Highest voltage for equipment	$U_m$	6 - 72,5 kV
Primary capacitance	$C_1$	see sensor data
Primary resistance ( $\pm 5\%$ )	$R_1$	see sensor data
Rated frequency	$f_R$	50/60 Hz

#### Output

Rated secondary voltage	$U_{sr}$	$3,25/\sqrt{3}$ V <sup>(2)</sup>
Secondary voltage range	$U_s$	0 - 12 V
Rated burden	$R_{br}$	2 M $\Omega$    50 pF <sup>(2)</sup>
Burden range	$R_b$	100 k $\Omega$ - $\infty$    0 - 2,2 nF
Max. secondary current	$I_{smax}$	36 mA, short-circuit proof
Max. secondary voltage	$U_{smax}$	+/- 17 VDC over voltage protected

### Accuracy

Accuracy class @ $f_R$	0,2 P <sup>(4)</sup>
Accuracy up to 10 kHz	$\pm 3\%$
Cutoff frequency (-3 dB)	$f_c$ 60 kHz
Rated delay time	$t_{dr}$ 5 $\mu$ s
Rated phase offset	$\phi_{or}$ 0'

### Auxiliary Power Supply

Aux. supply voltage ( $\pm 20\%$ )	$U_a$ 24 VDC
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### Power Supply Terminal

Connector type	Push-in CAGE CLAMP <sup>®</sup>
Cable type	LiYCY-CY, 2x2x0,14 mm <sup>2</sup>
Cable length	$\leq 10$ m <sup>(3)</sup>

### Secondary Terminal

Connector type	BNC-Socket isolated
Cable type	RG-58 C/U
Cable length	$\leq 10$ m <sup>(3)</sup>

### Electrical Isolation

Port vs. port 5000 Vrms (50 Hz, 1 min)

### Insulation level

Power frequency withstand see sensor data

Lightning impulse withstand see sensor data

### Service conditions

Environment Indoor/outdoor

Temperature class -40/40

Storage temperature -40°C ... +85°C

### Mechanical Data

Creepage distance see sensor data

Flashover distance see sensor data

Insulator color see sensor data

Size (L x W x H, electronics) 175 x 80 x 57 mm

Weight, approx. (electronics) 750 g

### NOTES:

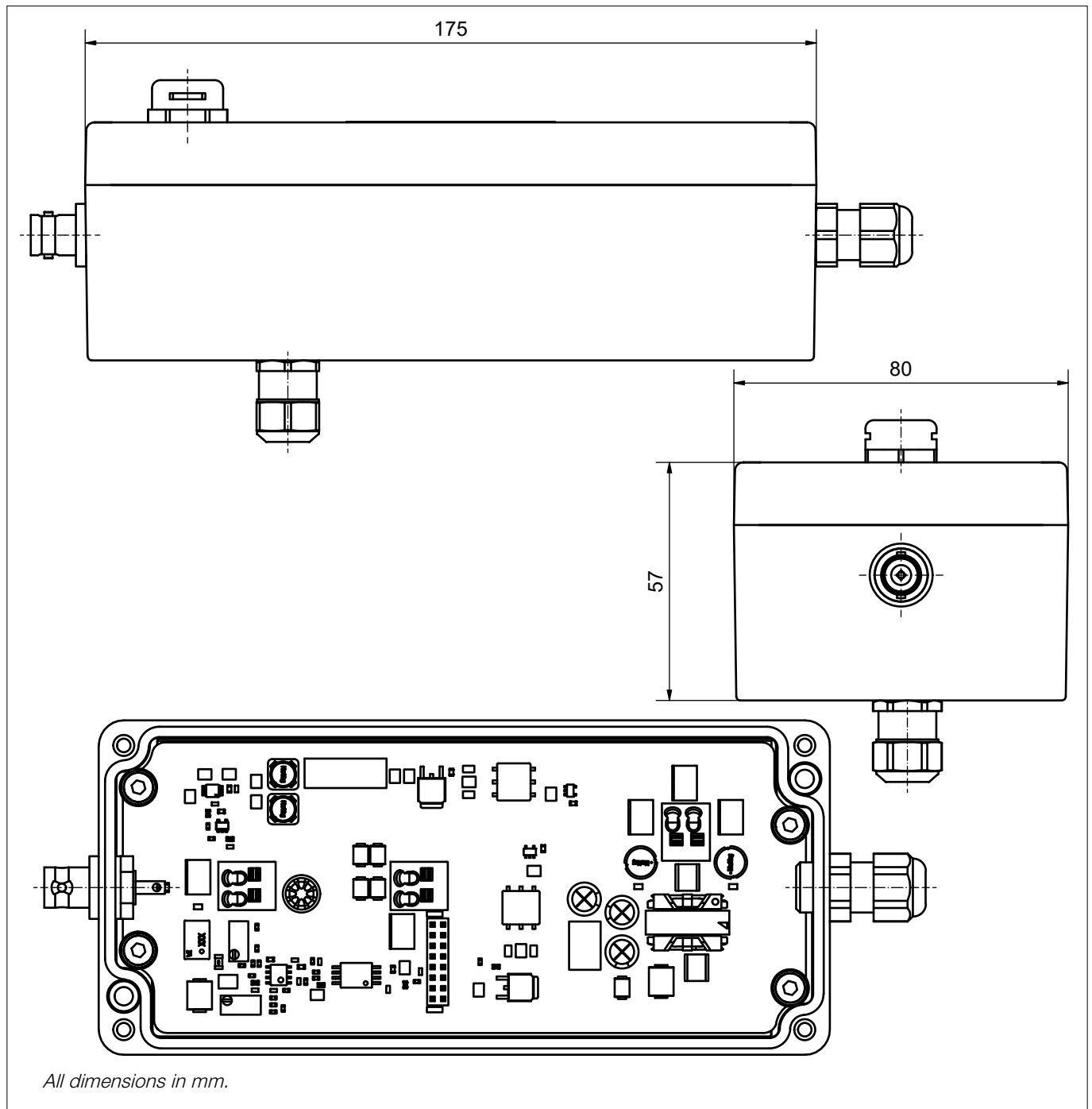
(1) For higher voltages, contact RITZ

(2) Example value, other values on request

(3) The cable is not part of the EGIW x45. If desired, it can be ordered in addition.

(4) at temperatur class -5°C...+40°C

### OUTLINE DRAWING



Subject to technical modifications. Images for reference only

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We develop your standard equipment, but also translate your ideas into customized products. Tell us your requirements, we develop the solution.

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