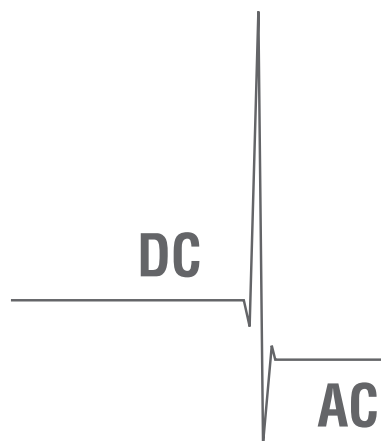




# LOW-POWER PASSIVE VOLTAGE TRANSFORMER

## GBERA 12...36

*DC AND AC VOLTAGE DIVIDER UP TO 36 kV, SHOCKPROOF*



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

LOW POWER PASSIVE VOLTAGE TRANSFORMER SERIES GB  
100 and AC voltage divider GB12-36  
Mass number

Rated primary voltage	36 kV	Rated secondary voltage	10 V
Rated resistance	100 MΩ	Rated burden	10 VA
Frequency range	0 to 100,000 Hz	Rated phase error	0.2%
Rated rms load	36/70/170 kV	Rated phase error	0.2%
Rated voltage factor	2.0		
Rated transformation ratio	3000:1		
	100 V E	Rated 10 V	
	REC 41-999-11	10 V/100	



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## FEATURES

- Passive network - no auxiliary power necessary
- High electromagnetic compatibility (EMC)
- High overload capability
- Low temperature drift
- Outside cone according to EN 50181 type A, B or C

## APPLICATION

The low-power passive voltage transformer GBERA 12...36 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 where it can be used as an accessory for power quality analyzers. Due to its passive network, it is independent of any auxiliary power supply. The GBERA 12...36 is an alternative to conventional voltage transformers once the primary voltage contains DC components and/or higher frequencies.

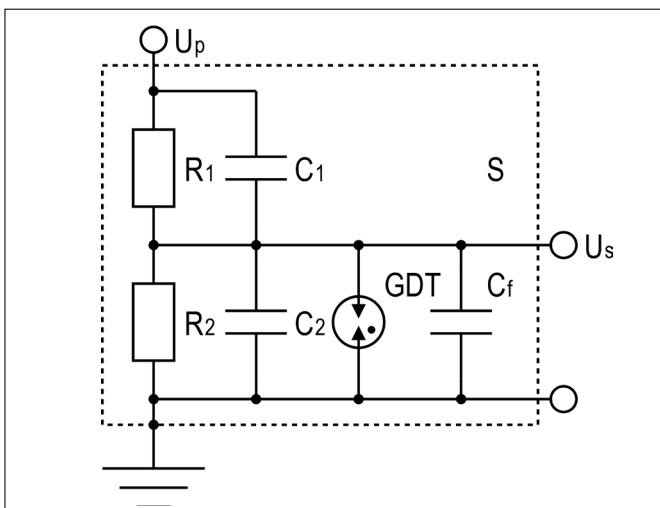
## DESCRIPTION

The GBERA 12...36 consists of a high voltage resistive divider ( $R_1$ ,  $R_2$ ), an electromagnetic shielding (S), a gas discharge tube (GDT) as surge protector and a firmly connected output cable. Due to its metal enclosure it is shockproof and thus safe to touch.

The voltage divider transforms the primary voltage  $U_p$  to a low voltage  $U_s$ , which can be processed by the secondary system. Parasitic capacitances resulting from the mechanical design of the sensor, the output cable and the input of the secondary system are compensated ( $C_f$ ), leading to a wide frequency range.

The electromagnetic shielding ensures high EMC and makes the GBERA 12...36 suitable for use in environments with heavy external interference and disturbance. The GDT protects the secondary tap against high voltages, since there is no galvanic isolation between the primary and secondary terminal.

## SCHEMATIC CIRCUIT DIAGRAM GBERA 12...36



## TECHNICAL DATA

### General

Type	GBERA 12...36
Application	Motor management, power quality analysis, protection purposes
Design	Cast resin insulated, ins. class E (IEC 60085)
Functional principle	Resistive voltage divider
Standard	IEC 61869-11

### Electrical Data

#### Input

Rated primary voltage	$U_{pr}$	30/ $\sqrt{3}$ kV <sup>(1)</sup>
Rated voltage factor	$F_v$	2 (cont.)
Highest voltage for equipment	$U_m$	36 kV
Primary capacitance	$C_1$	< 10 pF
Primary resistance ( $\pm 5\%$ )	$R_1$	20 / 50 / 100 M $\Omega$
Rated frequency	$f_r$	50 / 60 Hz <sup>(1)</sup>

#### Output

Rated secondary voltage	$U_{sr}$	3,25/ $\sqrt{3}$ V <sup>(1)</sup>
Rated burden	$R_{br}$	2 M $\Omega$    50 pF <sup>(1)(2)</sup>

#### Accuracy

Accuracy class	0,2	
Accuracy up to 150 kHz	$\pm 5\%$	
Rated phase offset	$\phi_{or}$	0°

#### Primary Terminal

Connector type	A, B or C acc. to EN 50181
Cable type	n/a
Cable length	n/a

#### Secondary Terminal

Connector type	BNC
Cable type	RG 58 C/U coaxial cable 50 $\Omega$ <sup>(2)</sup>
Cable length	5 m <sup>(1)(2)</sup>

#### Insulation Level

Power frequency withstand	70 kV (50 Hz, 1 min)
Lightning impulse withstand	170 kV (1,2/50 $\mu$ s)

#### Service Conditions

Environment	Indoor
Operating temperature	-5 – 40 °C
Storage temperature	-25 – 85 °C

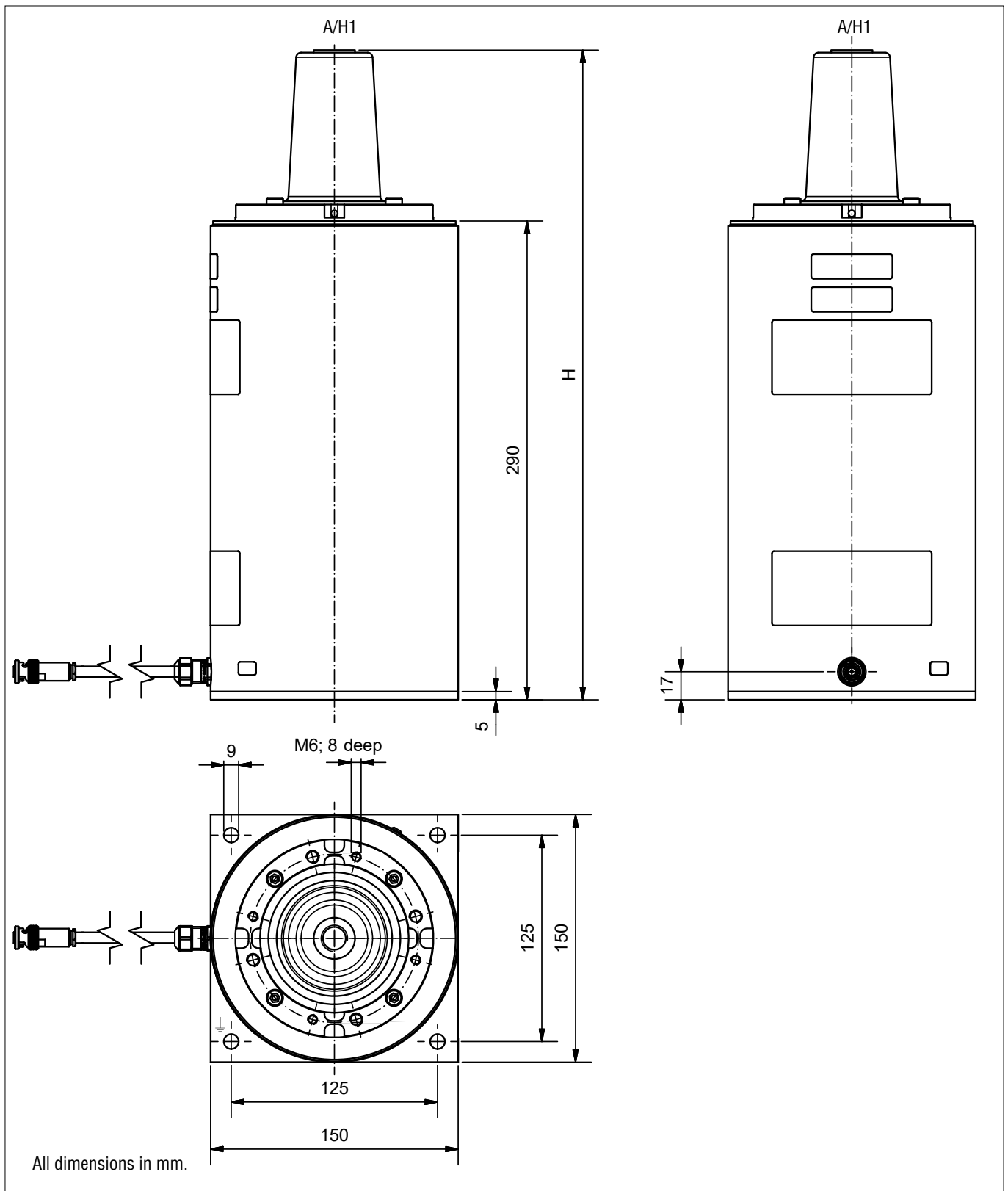
#### Mechanical Data

Creepage distance	n/a
Flashover distance	n/a
Insulator color	n/a
Size (D x H)	150 x H <sup>(3)</sup>
Weight	approx. 9 kg

#### NOTES:

- (1) Example value, other values on request
- (2) Burden and output cable capacitance belong to the individual voltage transformer adjustment. Output cable type and length must not differ from the specifications otherwise the accuracy changes.
- (3) Depends on connector type:  $H_A = 348$  mm,  $H_B = 392$  mm,  $H_C = 393.5$  mm

## OUTLINE DRAWING



### SOLUTIONS WITH ACTIVE ELECTRONICS

Electronic Voltage Transformer EGIW x64	DC and AC Measuring System with Optical Data Transmission
Electronic Voltage Transformer EGIW x85	DC and AC Voltage Divider with Isolation Amplifier
Electronic Voltage Transformer EVBA x06	DC and AC Voltage Divider with Buffer Amplifier
Buffer Amplifier EVBA 006	Add-On for Existing Low-Power Passive Voltage Transformers

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