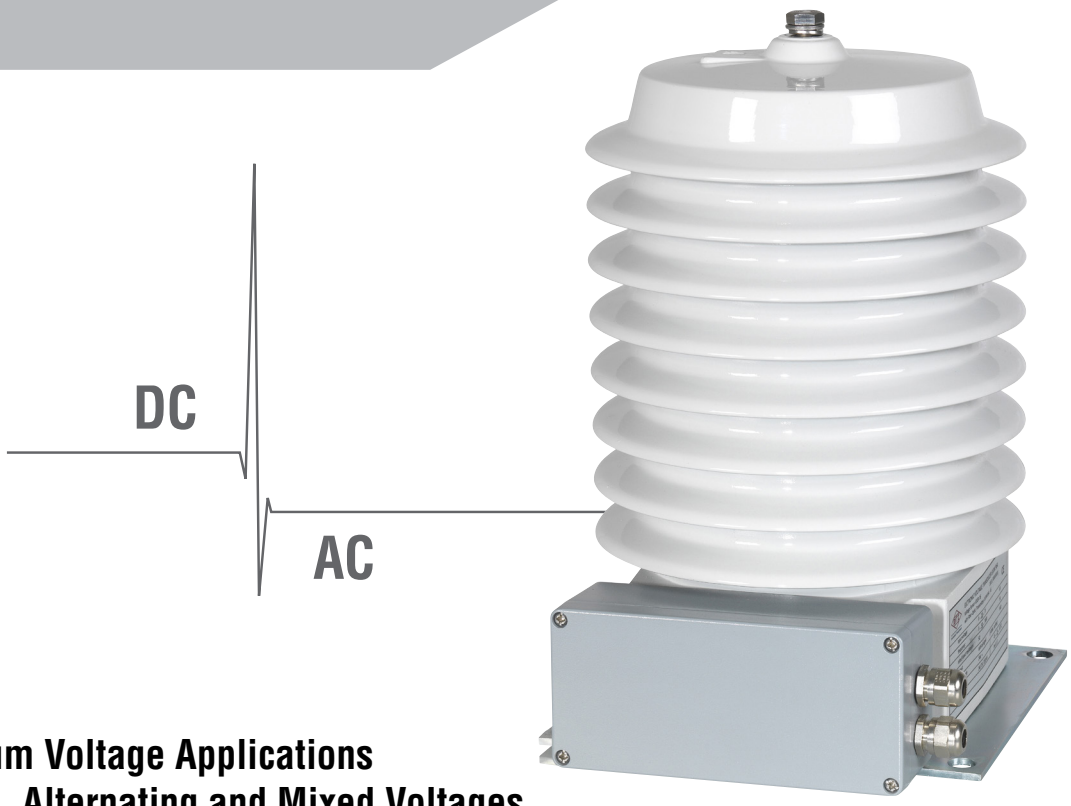
LOW-POWER PASSIVE VOLTAGE TRANSFORMER

GSER 16

DC AND AC VOLTAGE DIVIDER UP TO 36 kV



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

FEATURES

- Passive network - no auxiliary power necessary
- High electromagnetic compatibility (EMC)
- High overload capability
- Low temperature drift
- Standard and high-precision version

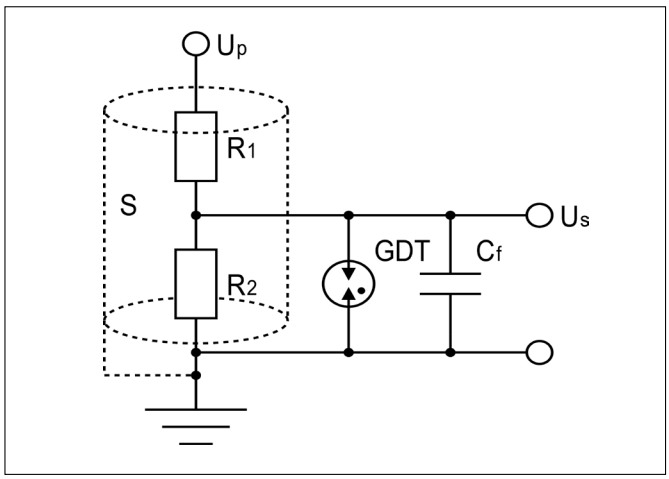
APPLICATION

The low-power passive voltage transformer GSER 16 measures direct, alternating and mixed voltages for e.g. motor management, power quality analysis and protection purposes. Its area of application are medium voltage installations like Static VAR Compensators or frequency converter installations. Due to its passive network, it is independent of any auxiliary power supply.
The GSER 16 is an alternative to conventional voltage transformers once the primary voltage contains DC components and/or higher frequencies.

DESCRIPTION

The GSER 16 consists of a high voltage resistive divider (R_1, R_2), an electromagnetic shielding (S) and a gas discharge tube (GDT) as surge protector.
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 GSER 16 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 GSER 16



TECHNICAL DATA

General

Type	GSER 16
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/√3 kV (1)
Rated voltage factor	F_v	2 (cont.)
Highest voltage for equipment	U_m	36 kV
Primary capacitance	C_1	< 10 pF
Primary resistance (±5 %)	R_1	20 / 50 / 100 MΩ
Rated frequency	f_r	50 / 60 Hz (1)
Output		
Rated secondary voltage	U_{sr}	3,25/√3 V (1)
Rated burden	R_{br}	2 MΩ || 50 pF (1) (2)
Accuracy	***Standard***	***High-Precision***
Accuracy class	1	0,2
Accuracy up to 3 kHz	±5 %	–
Accuracy up to 150 kHz	–	±5 %
Rated phase offset ϕ_{or}	0’	0’

Primary Terminal

Connector type	M10 screw
Cable type	n/a
Cable length	n/a

Secondary Terminal

Connector type	n/a
Cable type	Shielded cable (2)
Cable length	5 m (1) (2)

Insulation Level

Power frequency withstand	50 / 75 / 75 kV (50 Hz, 1 min)
Lightning impulse withstand	150 / 200 / 200 kV (1,2/50 µs)

Service Conditions

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

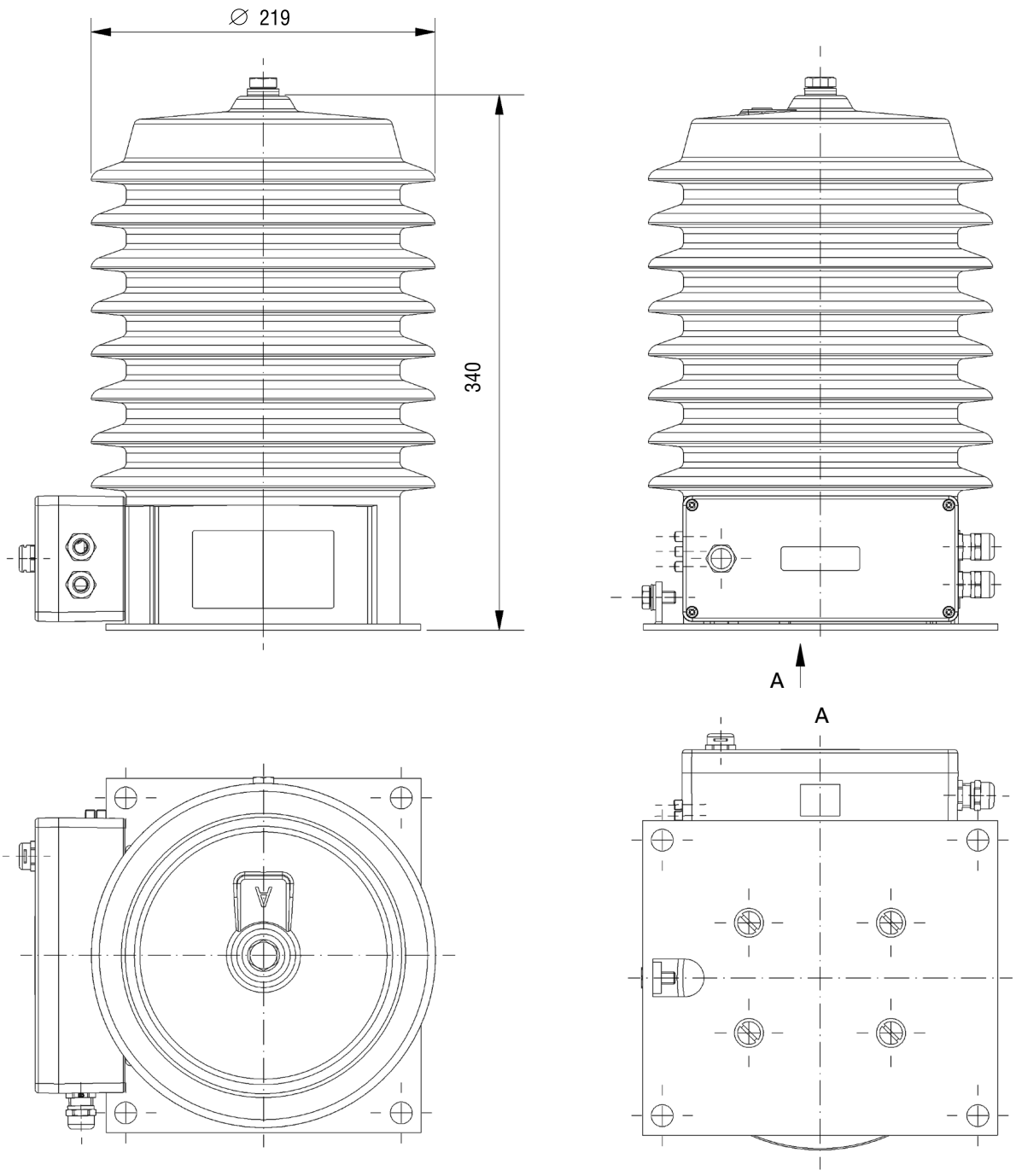
Mechanical Data

Creepage distance	572 mm
Flashover distance	325 mm
Insulator color	Grey
Size (D x H)	219 x 340 mm
Weight	approx. 20 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.

OUTLINE DRAWING



All dimensions in mm.

Vertical or horizontal mounting with electronics box facing downwards.

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

EXPERIENCE AND SOLUTIONS | TOGETHER!

RITZ INSTRUMENT TRANSFORMERS GmbH
Wandsbeker Zollstr. 92-98
22041 Hamburg
Germany
Phone: +49 40 511 23 - 0
Fax: +49 40 511 23 - 111
Email: info@ritz-international.com

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 translate your ideas into customized products. Tell us your requirements, we develop the solution.

For more information visit **www.ritz-international.com** or contact us at **info@ritz-international.com**