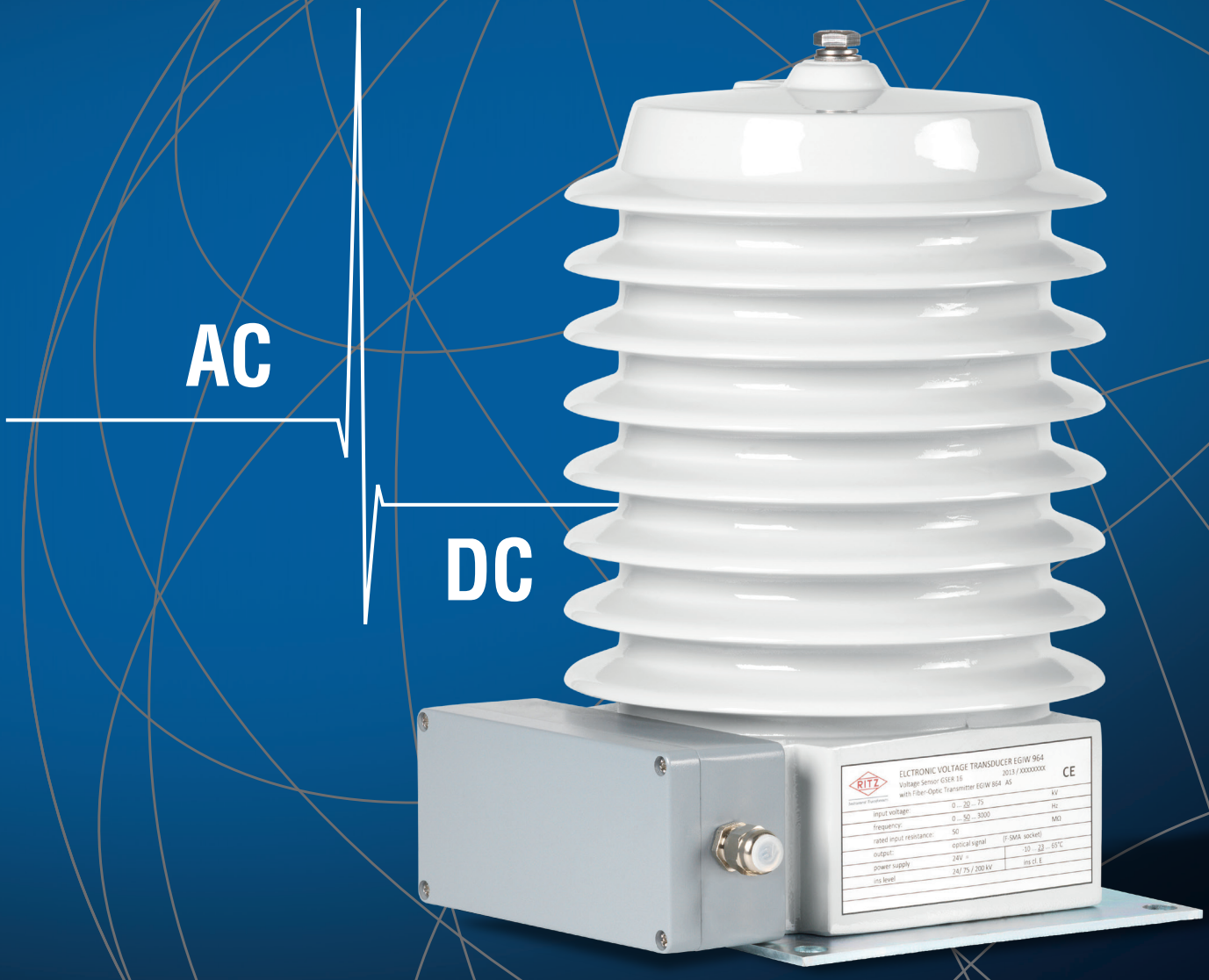
RITZ

Instrument Transformers

DC AND AC VOLTAGE SENSOR GSER 16

VOLTAGE DIVIDER

Medium voltage applications
Direct, alternating and mixed voltages
Wide frequency range



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FEATURES

- Frequency compensated
- Precision high voltage resistor
- High overload capability
- Passive network application, no auxiliary power necessary
- High electromagnetic compatibility (EMC)
- Low temperature drift

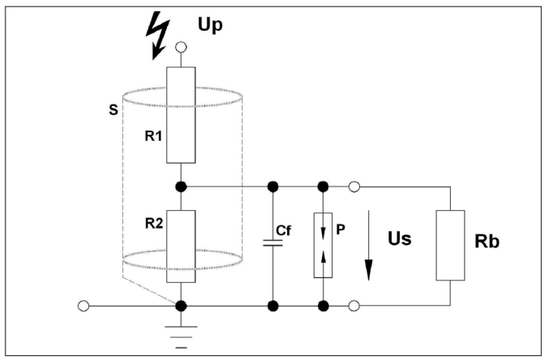
APPLICATION

The voltage sensor GSER 16 is designed for use in medium voltage installations like Static Var Compensation (SVC) or frequency converter installations. It is suitable for monitoring and measuring direct, alternating and mixed voltages for protection purposes and power quality analysis. It is independent from any auxiliary power supply.
Therefore it is a useful alternative to a voltage instrument transformer if the primary voltage contains dc components.

DESCRIPTION

The GSER 16 voltage sensor represents a measuring unit consisting of a high voltage resistive divider (R1,R2) a preventive electromagnetic shielding (S) and a protection device (P).
The resistive divider transforms the high voltage to a low power voltage signal, which is easy to handle by the following analysis systems. The electromagnetic shielding ensures high EMC and makes the GSER 16 suitable for use in environments with heavy external interferences and disturbances. The protection device prevents high voltages at the secondary tap, because there is no galvanic separation available between the high voltage terminal and secondary tap.
A wide frequency range is achieved by compensating (Cf) unwanted influences of parasitic capacities that result from the mechanical design of the sensor.

SCHEMATIC CIRCUIT DIAGRAM GSER16



DATA SHEET

General description

Voltage Sensor GSER 16	$P_{cont.\ max.}$ = 16.8W
• type I	high performance
• type II	standard
Outline drawing	MB3.5988
Functional principle	resistive voltage divider, frequency compensated
Design	cast resin insulated ins. class E (IEC 60085)
Application	measuring and protection purposes, power quality analysis
Standard	IEC 60044-7 „Electronic Voltage Transformers“

Electrical data

Input

Primary rated voltage,	U_{pr}	15kV / 24kV (1)
Frequency, rated,	f_r	50Hz / 60Hz
Input resistance,	R_1	20MΩ / 50MΩ ±1% (2)
Input capacitance,	C_1	< 10pF, typically

Output (1)

Sec. rated voltage,	U_{sr}	10V
Rated burden		1MΩ/470pF / 10MΩ/5pF (3)

Accuracy (4)	**type I**	**type II**
Accuracy at f_r	± 0,2%	± 1%
Phase displacement at f_r	10’ max.	40’ max
Bandwidth (-3dB)	0…100kHz	0…3kHz

Insulation level (2)

Max. cont. voltage,	U_m	18kV / 29kV
Power frequency withstand		50kV / 75kV (50Hz, 1min.)
Lightning impulse withstand		150kV / 200kV (1.2/50µs)

Service conditions

Environment	Indoor
Ambient temperature	-5 … +40°C

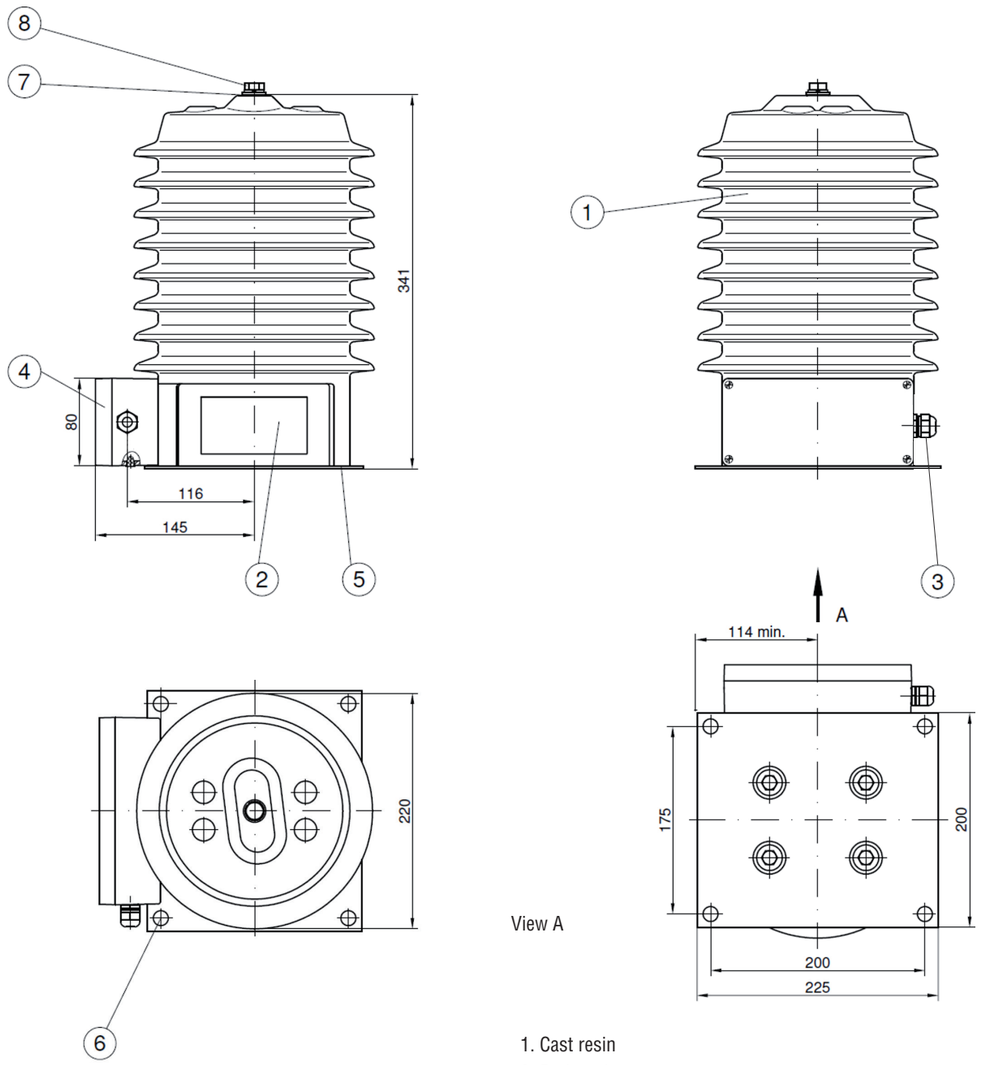
Mechanical data

Insulator colour	grey
Weight, approx.	22kg
Flashover distance, min.	250mm
Creepage distance, min.	530mm
Hight, approx.	341mm
Diameter, approx.	220mm

NOTES

(1) *other values on request*
(2) *depends on Upr*
(3) *including output cable and burden*
(4) *the quoted error percentages refer to output range*

OUTLINE DRAWING



- Vertical or horizontal mounting with electronic box downward
- Dimensions in mm
- Small deviations of dimensions and weight are possible approx ± 1%

1. Cast resin
2. Rating plate
3. Cable gland Pg 9
4. Electronic box lid of aluminium
5. Bottom plate of galvanized steel
6. ⏚ Ø 14 Internal connection between electronic box and base of plate (for grounding)
7. Insert nut of stainless steel
8. Primary screw M10 tof stainless steel

THE POWER TO MANAGE ENERGY

RITZ PRODUCT OVERVIEW

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