

	<b>Operating Instructions</b>	<b>Datum:</b> <b>13.05.2016</b>
	<b>GSA100-GSA500</b>	<b>Revision</b> <b>01</b>

Type Code: GSA100 ... GSA110 ... GSA 120 ... GSA130... GSA135..  
 GSA150 ... GSA170 ... GSA190... GSA200 ... GSA235 ...  
 GSA250 ... GSA300 ... GSA350 ... GSA400 ... GSA500 ...

e.g. GSA200 D 90

GSA	200	D	90
Cast resin current transformer	Width	size	Inner diameter

Size	mm
A	60
B	90
C	120
D	150
E	200
F	250
G	300

Manufacturer: ELEQ Kerpen GmbH  
 Karl-Ferdinand-Braun-Straße 1  
 50170 Kerpen  
 Germany



# Contents

1. Safety Guidelines .....	2
2. Applications .....	2
3. Failures and critical loading .....	2
4. Set-ups, Mounting and De-mounting .....	3
5. Electrical connections.....	3
6. Mechanical Mounting.....	3
7. Maintenance.....	4
8. Repair.....	4
9. Applied standards.....	4
10. CE- Marking by the end customer .....	4
11. General conditions of supply.....	4
12. Appendix.....	4

## 1. Safety Guidelines

- This operating manual contains information and precaution rules for a safe installation and usage with respect to the mentioned requirements.
- Please read this instruction manual thoroughly!

## 2. Applications

### **The current transformers of the type GSA:**

- are suitable for indoor usage for ambient air temperature  $-5^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ .
- are suitable for storage and transport temperature  $-25^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .
- The current transformers are suitable for cable-cellars, switchgears and distribution centres, in low-voltage, medium-voltage and high- voltage systems. In medium voltage and high voltage switchgear, an insulated conductor must be used which suits the rated insulation levels.
- The mounting instructions must be followed carefully.

## 3. Failures and critical loading

- If the equipment safety is not guaranteed, the equipment must be switched off and further usage is prohibited.

### **The equipment safety may be endangered by:**

- o visible damage of housing or terminal lines.
- o improper storage of the transformer. **Attention! Do not store or transport transformer below above mentioned temperature.**
- o transport damage of the transformer.
- o improper mechanical loadings of the current transformer e.g. high pressure loadings and impact stresses by loading with weights (stacking) or by fall from the storage place during transport and installation.
- o improper loadings of the current transformer e.g. overload current loads beyond the rated current or extended rated current respectively as well as short-circuit currents exceeding the indicated short-circuit current in maximum value and duration.
- o The operator has to ensure that the mounted transformer is free from external magnetic fields. Such magnetic fields can be induced, among others, by return

conductors or parallel conductors. This may result in serious damage to the transformer.

- **operation of the current transformer (without burden) in an open-circuit on the secondary side. Danger to life**

#### 4. Set-ups, Mounting and De-mounting

- Any kind of work is only allowed in a voltage-free state of the transformer.
- Only qualified persons are allowed to carry out any kind of work.
- The CTs can be very heavy. For mounting and transport you have to use the lifting eyes with suitable tools.
- **Attention!** The current transformers can be very heavy. For mounting and transport you have to use the appropriate lifting tools. The current transformers must be secured in the lifting tools. Pendulousness must be avoided. Do not stand below the floating loading.
- **Recommendation:** in the case the transformer weight exceeds 10 kg appropriate lifting tools must be used.
- Wear personal protective equipment to avoid bruise and snag.
- The statutory and occupational safety guidelines must be observed.

#### 5. Electrical connections

- The general national installation standards for electrical installations are to be followed carefully.
- Generally, it has to be guaranteed that no required clearances and creepage distances are shortened by mounting of the current transformer.
- The connections of secondary leads are only allowed with suitable terminals with the sufficient diameter corresponding to the secondary current, taking into account the rated continuous thermal current [I<sub>cth</sub>] and the rated short-time thermal current [I<sub>sth</sub>].
- The terminal leads must be adequately stripped. In application of flexible wires it is to be noted that when stripping, the wires need to be ensured by end ferrules or cable shoes (M5). The tightening torque for the secondary screws is 2.5 Nm.
- Recommendation to use wire-cross-section:  
1 A transformer  $\geq 2.5\text{mm}^2$ ; 5 A transformer  $\geq 4\text{ mm}^2$ .
- The primary conductor or the primary bushings should be mounted central in the transformer, with the exception of current transformer for earth-fault detection. The operator has to ensure that the primary conductors (bushings) are sufficient to the primary current.
- **Recommendation:** Current transformers with a primary current  $\geq 3000\text{A}$  should have return conductors distance from at least 0.6m.
- **Warning 1: Do not operate with the secondary circuit open-circuited. No fuses are to be used in the secondary circuit. Danger to life!**

#### 6. Mechanical Mounting

- **Attention:** No damage at the housing may occur during installation procedure.
- The transformer can be mounted in any position. In the case the current transformers are fixed only on a vertical busbar, it can be necessary to support the current transformers for preventing slipping. Especially when the current transformers weigh more than 5kg.
- The current transformer has to be connected tightly to the fixture.

- All screws and bolts must be choose with a suffice length.
- The operator must be fixed all relevant screws and or bolts with a suitable torque, see figure1.
- The fixture bolts must be protected against loosening (state of the technology) and corrosion must be avoided.

**Figure 1:**

<b>Tightening torque for mechanical mounting parts</b>	
<b>M4</b>	<b>2,5 Nm</b>
<b>M5</b>	<b>4,5 Nm</b>
<b>M6</b>	<b>8 Nm</b>
<b>M8</b>	<b>20 Nm</b>
<b>M10</b>	<b>40 Nm</b>
<b>M12</b>	<b>65 Nm</b>

## **7. Maintenance**

The transformer is maintenance free but it is recommended:

- A visible check is to be performed at regular intervals with reference to damage of the housing and electrical connections.
- All electrical contacts including the earth-connections are to be checked in regular intervals with reference to tightness and corrosion-free state.
- All maintenance procedures are to be performed in a voltage-free state.

## **8. Repair**

- It is forbidden for the end-user to perform any repair of the transformer. In any case the transformer has to be sent back to the manufacturer.

## **9. Applied standards**

- General standards
- IEC 61869

## **10. CE- Marking by the end customer**

- The user must apply a CE-marking for the complete set-up (generator) in order to prove the compliance of all components.

## **11. General conditions of supply**

ELEQ delivers exclusive according to ORGALIME S 2012. Should customers have purchase conditions which are beyond or in contradiction with the general conditions according to ORGALIME S 2012, the general conditions according to the ORGALIME S 2012 are in force, unless there is a written declaration of consent of ELEQ for recognition of these conditions.

## **12. Appendix**

ORGALIME S 2012