

The infrared verification of the function of TRAFOSEAL II

by

Ing. Altmann ARS - GROUP

The verification of the TRAFOSEAL function is performed by the infrared camera measuring surfaces temperatures of two furnace transformers. The first one (KM108) with the TRAFOSEAL II and the second one (KM 106) is used as a reference system. The both transformes are the same type and working under the same load conditions.

Weitere Informationen

Referenzaufnahme

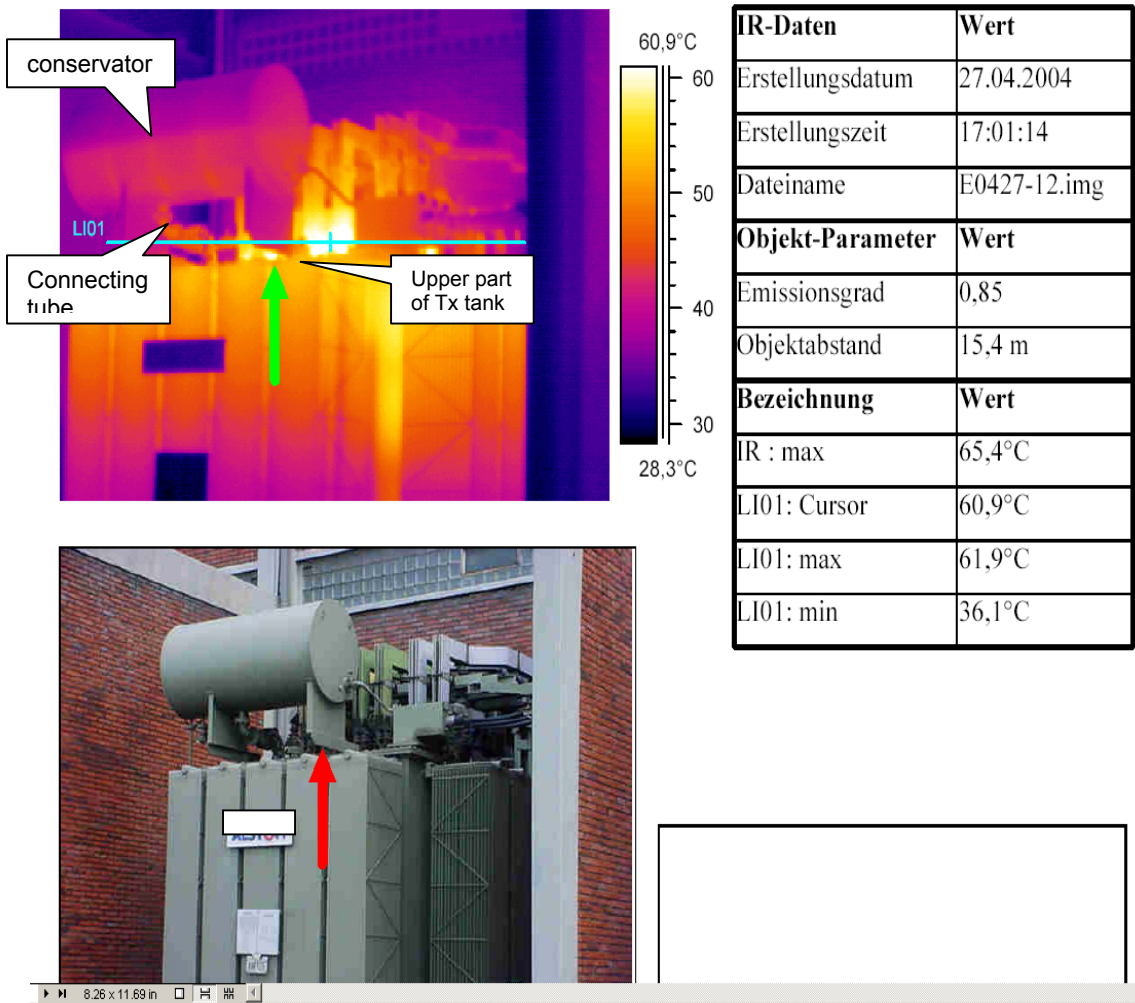


Fig. 1 The distribution of surface temperatures of the reference transformer.

The Fig. 1 shows that the conservator of the reference transformer (KM106) is continuously „flushed“ by the hot oil from the upper part of the main tank. The conservator serves therefore as an auxiliary cooler and the saturation of the oil by the air is maximal.

This process should be effectively suppressed because the continuous saturation of the oil by the oxygen (O₂) together with the relatively high temperature of the transformer inevitably results in the increase of the oxidation ageing of the cellulose materials.

The intensity of the O₂ contamination should to be radically suppressed but the free dilatation of the transformer oil inventory has to be maintained.

The problem is completely solved by the TRAFOSEAL II.

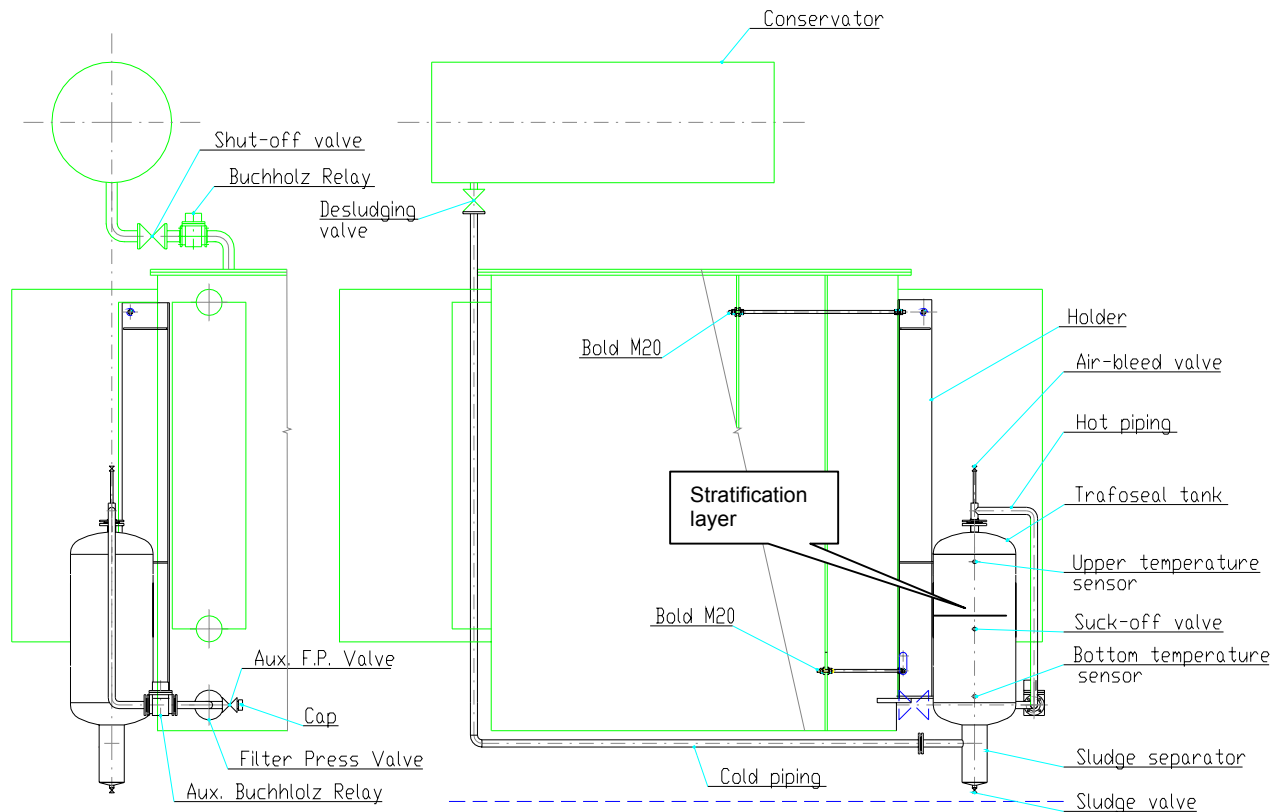


Fig. 2 The lay-out of the TRAFOSEAL II – transformer KM108

The bottom part of the TRAFOSEAL II is connected by the so-called cold piping to the desludging cock of the conservator and the upper part of the TRAFOSEAL II is connected by the so-called hot piping to the main tank.

The stratification layer, a mebrane –like phenomenon, between the hot and cold oil in the oil inventory of the TRAFOSEAL II tank originates spontaneously, and suppress the free mixing the cold (in the conservator potentially contaminated) oil and hot oil from the transformer.

The dilatation of the oil inventory of the transformer with the temperature (load) generates only a vertical shift the stratification layer up and down.

The effect of the TRACOSEAL II shows the folowing picture at Fig. 3.

Bereich / Gebäude

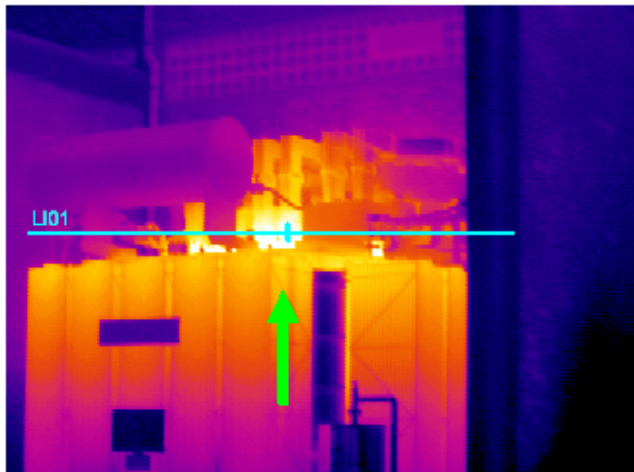
Trafo KM 108

Verteilung / Feld

Standort rechts vom Trafo

Bauteil / Maschine

Weitere Informationen



IR-Daten	Wert
Erstellungsdatum	27.04.2004
Erstellungszeit	17:07:46
Dateiname	E0427-20.img
Objekt-Parameter	Wert
Emissionsgrad	0,85
Objektabstand	15,4 m
Bezeichnung	Wert
IR : max	67,7°C
LI01: Cursor	61,4°C
LI01: max	62,0°C
LI01: min	29,8°C

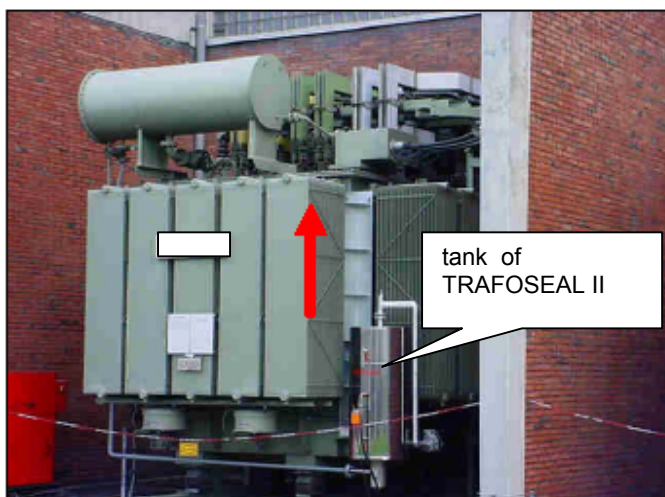


Fig. 3 The distribution of surface temperatures of the KM108 transformer hermetized by the TRAFOSEAL II

The fig. 3 shows that the surface temperature of the conservator remains low and corresponds only to the heating by the warm air from the air coolers situated under the conservator.

The piping connecting the main tank and the conservator is closed. The hydraulical connection between both tanks is provided only by the TRAFOSEAL II.

Conclusion: TRAFOSEAL II effectively suppress the thermosiphon effect and therefore ingress of gases into the transformer