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| <b>Examination Procedure</b><br><br>Rubrik / Title<br><b>Calibration of analogue instruments and equipment</b> | Beteckning / Document<br><b>KBE EP-105</b> |
|  | Utgåva / Issue<br><b>2 (E)</b>             |
|  | Datum / Date<br><b>2003-04-01</b>          |
|  | Ersätter / Supersedes<br><b>1 (E)</b>      |

## 1 Scope

This Examination Procedure is applicable to analogue instruments and equipment, and is to be carried out as routine inspection or type inspection, as specified in the Inspection Plan.

## 2 Objective

To calibrate and to verify the accuracy of instruments and equipment for analogue measurements.

## 3 Method

The equipment is to be switched on and allowed to achieve thermal equilibrium. Outputs are to be loaded to specified level. Zero offset should be checked and adjusted if required. The input is to be set in increasing as well as decreasing modes for a theoretical output of 0, 10, 25, 50, 75, 90 and 100 % of full measurement range/scale deflection and the indicated output signal/scale deflection is recorded. Unless otherwise agreed, each measurement range of equipment having several ranges must be individually calibrated. When measurement error is calculated, reference standard accuracy, reading accuracy, linearity error, hysteresis and reproducibility are to be accounted for.

### Environment

Calibration must be performed under standard atmospheric conditions in accordance with IEC 60068.

## 4 Acceptance Criteria

The calculated accuracy must meet the requirements specified in the Technical Specification or in other relevant documents.

## 5 Documentation

Inspection performed is to be documented in an inspection certificate, record or technical report as required in the Inspection Plan. Several examinations within one and the same Inspection Plan may be reported in the same document.

Examinations carried out as routine (100%) inspection are to be reported to the Purchaser as original documents.

The document must as a minimum include the following:

- Items examined

Product, designation, quantity, serial numbers and reference to the Purchasers order.

- Identity/Traceability

The identity of the objects under examination in comparison with type tested items and in comparison with relevant specifications must be specified, unless the identity is certified in a separate document (as per KBE EP-180).

- Examination procedure

It must be clearly stated if the inspection has been performed according to this Examination Procedure or to any other procedure agreed upon.

- Measurement equipment

Type of equipment, accuracy, identification, etc., and current calibration data for the equipment used where performance is significant to the results.

- Results

It must be evident that the items have fulfilled stated requirements and acceptance criteria. Measured and recorded values that are to be documented as per the procedure as well as any deviations from requirements in applicable specifications or test procedures must be reported.

- Approval

Date of inspection and name of responsible inspector are to be included. The document must be reviewed and approved in accordance with the Manufacturers or the laboratory's internal QA/QC routines.