

Data Sheet no. 5.68-1/3

Reference Impulse Calibrator, Type MIC330

General

The Reference Impulse Calibrator MIC330 can be used for calibration of measurement equipments such as digital recorders, peak voltmeters, dividers and others. The MIC330 is a powerful calibration unit of the highest precision class.

The reference impulse calibrator MIC330 is a modular system to perform tests on complete impulse voltage measuring systems and on digital recorders for the measurement of high impulse voltages and impulse currents. According to IEC61083-1 (IEEE1122) and IEC60060 (IEEE4) the calibration, performance check or performance test of the measuring ranges of the digital impulse voltage measuring system may be performed either by the pulse calibration method or alternatively by a separate calibration of voltage with a STEP voltage calibration.

The MIC330 is controlled by a computer via USB-bus. It is possible to use the MS-Windows® software ICS (Impulse Calibrator Software) to control the MIC330. This allows an easy handling. In the digital recorder software application IAS-CAL (Impulse Analyzer Software - Recorder Calibration) an interface is integrated for the automatic control of the MIC330. Thus, it is possible to perform a quick fully automatic calibration.

Hardware

MIC330 is a calibrator with an output voltage of up to 330 V. It is possible to calibrate all measuring ranges of the digital recorder that are used during measurement. The voltage power supply of the MIC330 is 115/240 V (60/50 Hertz). The basic device consists of the voltage source and the control unit. Furthermore, lightning impulse (LI), switching impulse (SI) and chopped lightning impulse (LIC) heads are available. Other pulse shapes are available on request.

For technical data and measuring uncertainties please refer to the last page „Technical data“.

Software

There are two software packages available for calibrator controlling:

ICS is an independent program to control the calibrator MIC330. It is possible to integrate the MIC330 in special customer programs via the COM interface.

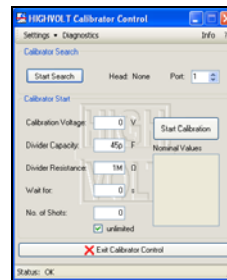


Fig.1: ICS Software

IAS-CAL is a software module for recorder calibration according to IEC61083-1 standard. The calibration unit MIC330 is controlled automatically by the software. The amplifier ranges, the input divider, the impulse shape and the number of records will be selected. After the automatic calibration procedure the calibration report can be printed directly (Data Sheet 5.62-3).

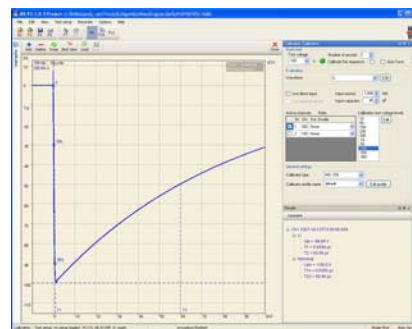


Fig.2: IAS-CAL Software

Technical data

Basic unit

The basic unit consists of the voltage source, control unit and the basic calibration software package ICS (Impulse Calibrator Software). All units have self check capability.

Power supply	115 V up to 240 V
Frequency	50 Hz or 60 Hz
DC voltage output	330 V down to 1 V
Peak std. deviation	$\pm 0.1 \%$

STEP calibrator head

Impulse voltage	330 V down to 1 V
Peak std. deviation	$\pm 0.2 \%$
Exp. peak uncertainty	$\pm 0.5 \%$

Optional Heads

LI 0.84/60 calibrator head

Impulse shape	0.84 μ s / 60 μ s
Impulse voltage	330 V down to 1 V
Peak std. deviation	$\pm 0.2 \%$
Exp. peak uncertainty	$\pm 0.6 \%$
Time std. deviation	$\pm 0.3 \%$
Exp. time uncertainty	$\pm 1.6 \%$

LI 0.84/60 and LIC calibrator head

Impulse voltage	310 V down to 30 V
Impulse shape	0.84 μ s / 60 μ s
Chopping time	$T_c = 0.5$ up to 6 μ s
Peak std. deviation	$\pm 0.2 \%$
Exp. peak uncertainty	$\pm 0.8 \%$
Time std. deviation	$\pm 0.5 \%$
Exp. time uncertainty	$\pm 1.7 \%$

LI 1.56/60 calibrator head

Impulse shape	1.56 μ s / 60 μ s
Impulse voltage	330 V down to 1 V
Peak std. deviation	$\pm 0.2 \%$
Exp. peak uncertainty	$\pm 0.6 \%$
Time std. deviation	$\pm 0.3 \%$
Exp. time uncertainty	$\pm 1.6 \%$



Fig. 3: Basic Unit MIC330
Size: 250 x 300 x 150
(depth x width x height in mm)
Weight: 3 kg



Fig. 4: Calibrator Head
Size: 30 x 65 x 115
(depth x width x height in mm)
Weight: 0.15 kg
Connector: BNC-type

SI 20/4000 calibrator head

Impulse shape	20 μ s / 4000 μ s
Impulse voltage	330 V down to 1 V
Peak std. deviation	$\pm 0.2 \%$
Exp. peak uncertainty	$\pm 0.6 \%$
Time std. deviation	$\pm 0.2 \%$
Exp. time uncertainty	$\pm 1.7 \%$

SI 250/2500 calibrator head

Impulse shape	250 μ s / 2500 μ s
Impulse voltage	330 V down to 1 V
Peak std. deviation	$\pm 0.2 \%$
Exp. peak uncertainty	$\pm 0.6 \%$
Time std. deviation	$\pm 0.2 \%$
Exp. time uncertainty	$\pm 1.7 \%$

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