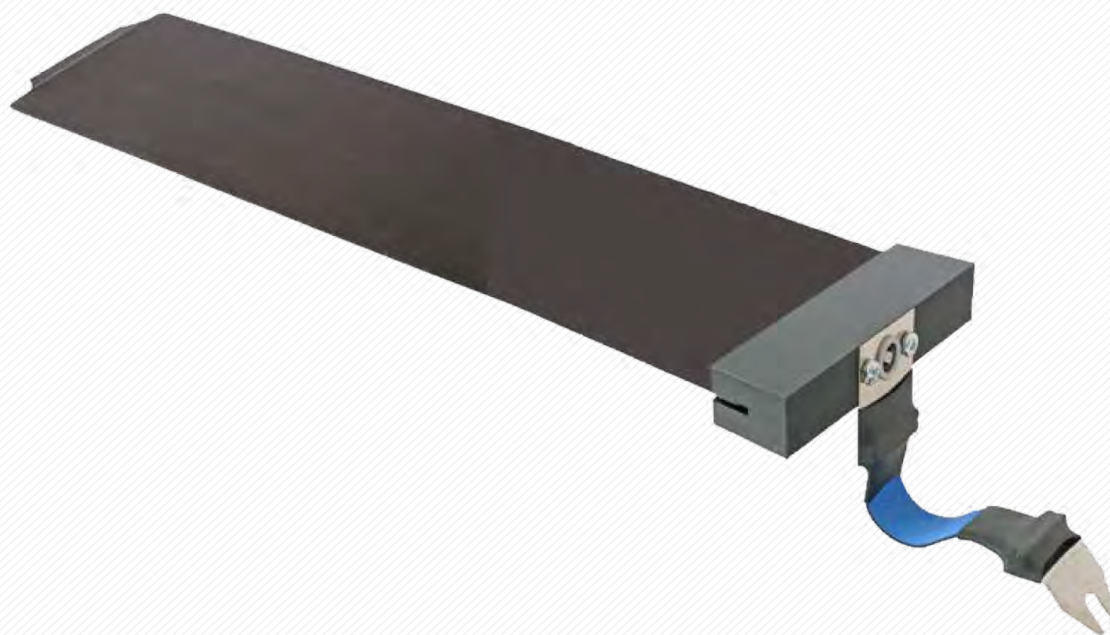


OPERATION MANUAL

EFT-DLC-CAL

CALIBRATION - SET

***FOR CAPACITIVE COUPLING CLAMP (BURST)
ACC. TO IEC 61000-4-4, 2012***



INTRODUCTION

The capacitive coupling clamp is specified in the standard IEC / EN 61000-4-4, chapter 6.4. It provides the ability of coupling the fast transients / bursts to the circuit under test without any galvanic connection to the terminals of the EUT's ports, shielding of the cables or any other part of the EUT.

With the release of the standard IEC 61000-4-4, 2012 the capacitive coupling clamp is also to verify at their characteristics and to calibrate.

CALIBRATION OF THE CAPACITIVE COUPLING CLAMP

Required accessories:

■ Calibration-Set

Transducer plate with connection adapter with support for the measurement attenuator

■ Attenuators

Measurement 50 Ohm / 54 db = 500:1 at 50 ohm load

Measurement equipment that is specified as suitable to perform the calibrations defined in IEC 61000-4-4, chapter 6.2.3 (Burst generator verification) shall also be used for the calibration of the characteristics of the capacitive coupling clamp.

Transducer plate with connection adapter

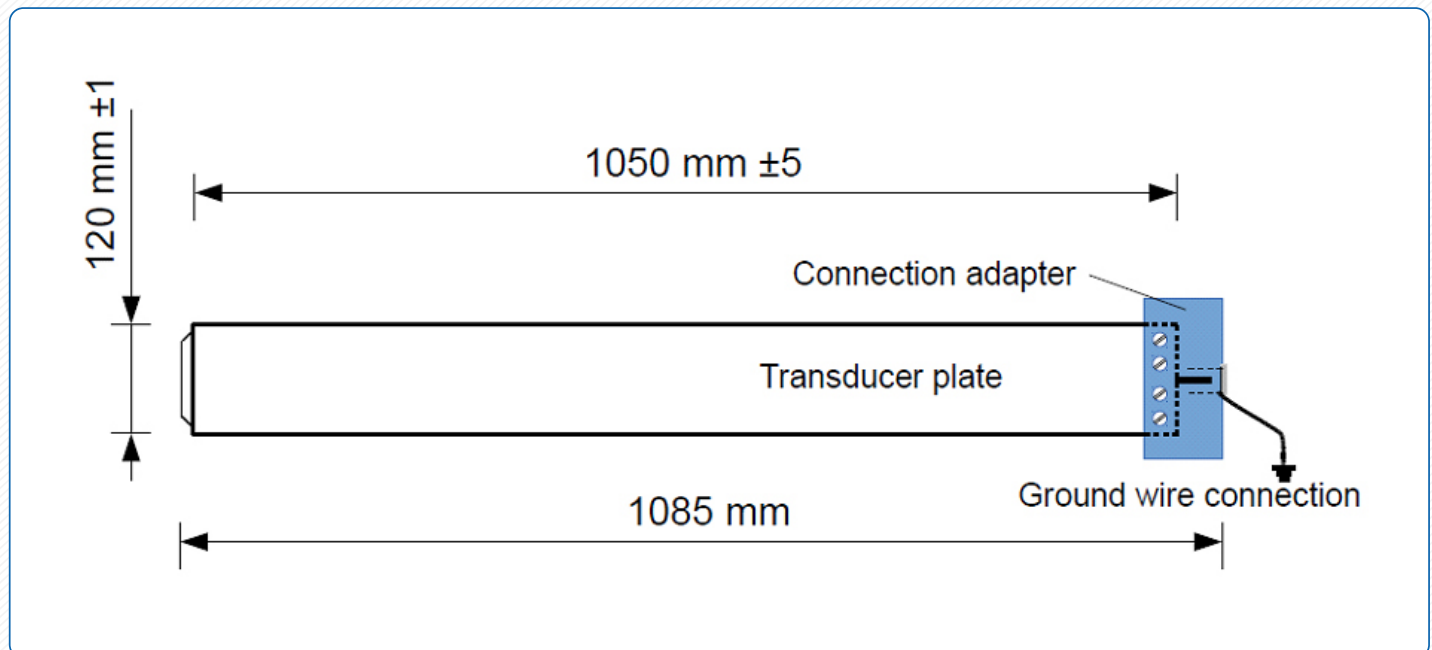


Figure 1
Transducer plate with connection adapter

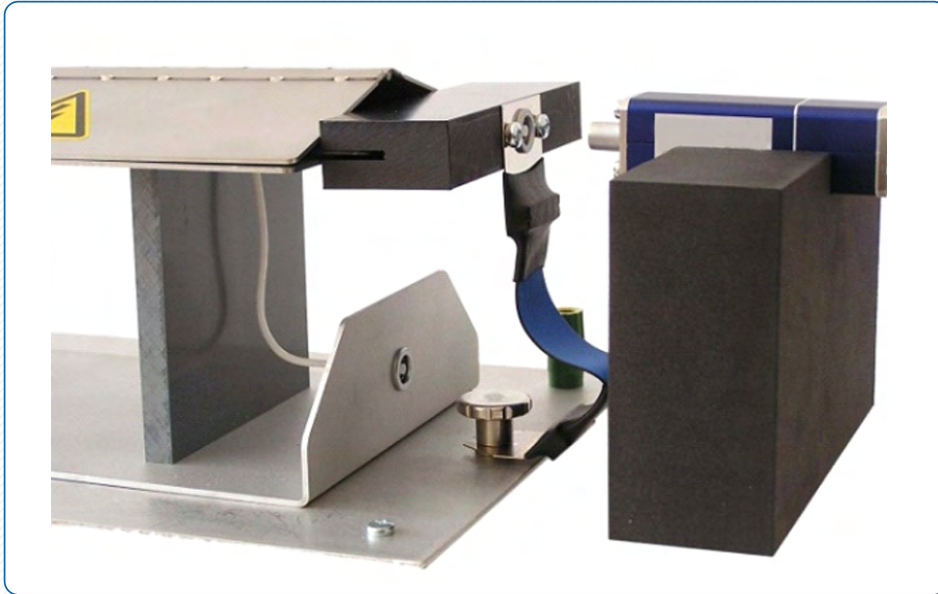


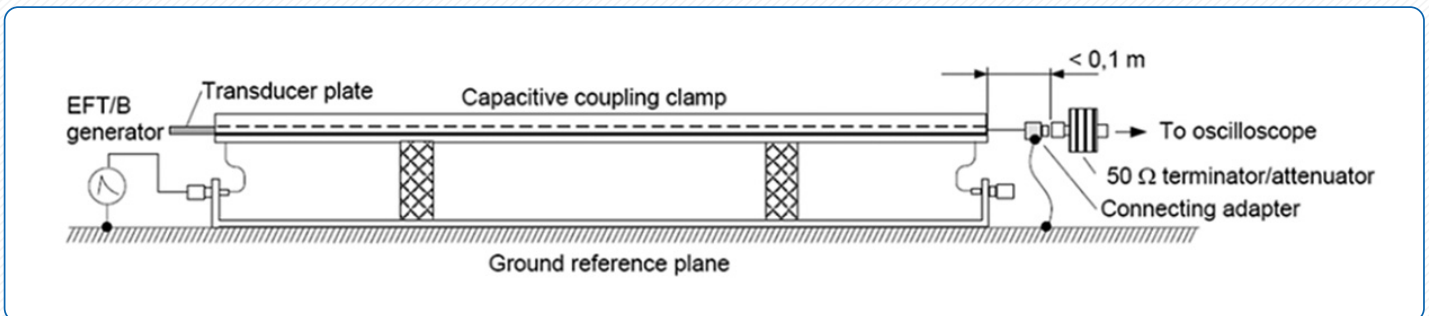
Figure 2
Transducer plate with connection adapter and measurement attenuator

The complete measuring probe (Fig. 1) must be inserted into the coupling clamp and connected at one end to the connecting adapter in the shortest possible path (maximum 30 mm). The measuring probe must be arranged in the capacitive coupling clamp such that the end with the connection is in agreement with the end of the lower coupling plate. For the ground connection of the coaxial 50 ohm termination (50 ohm attenuator), the connection adapter must support a low impedance connection to the reference ground plate. The distance between the measuring probe and the 50-ohm measuring terminal (attenuator) must not exceed 0.1 m.

Figure 3
Calibration setup

Transducer plate with connection adapter and measurement attenuator

The test setup is equivalent the following drawing. The calibration of the capacitive coupling-clamp is performed by use the transducer plate.



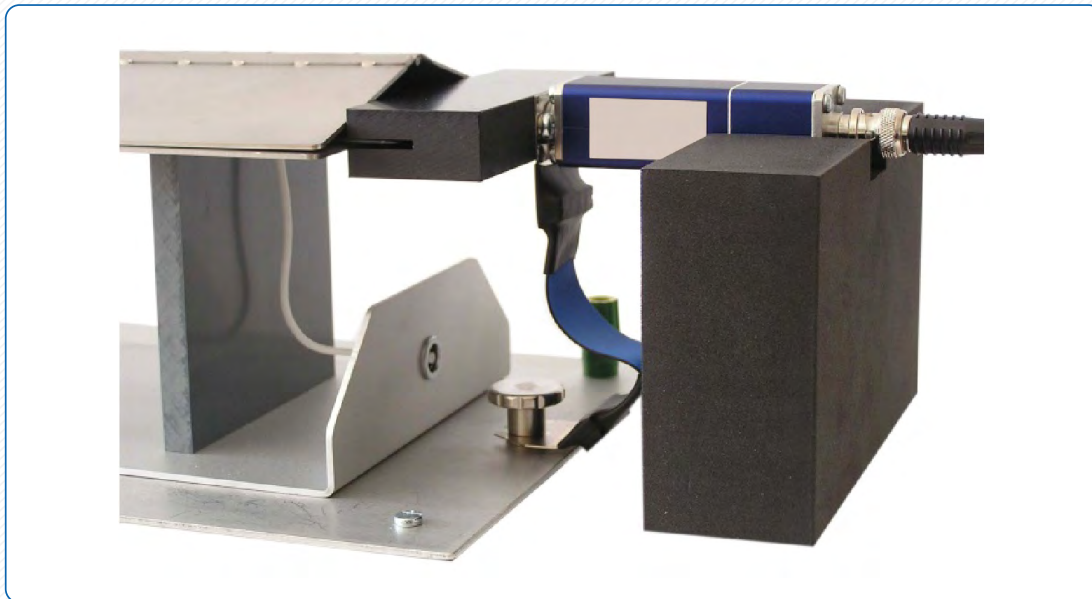
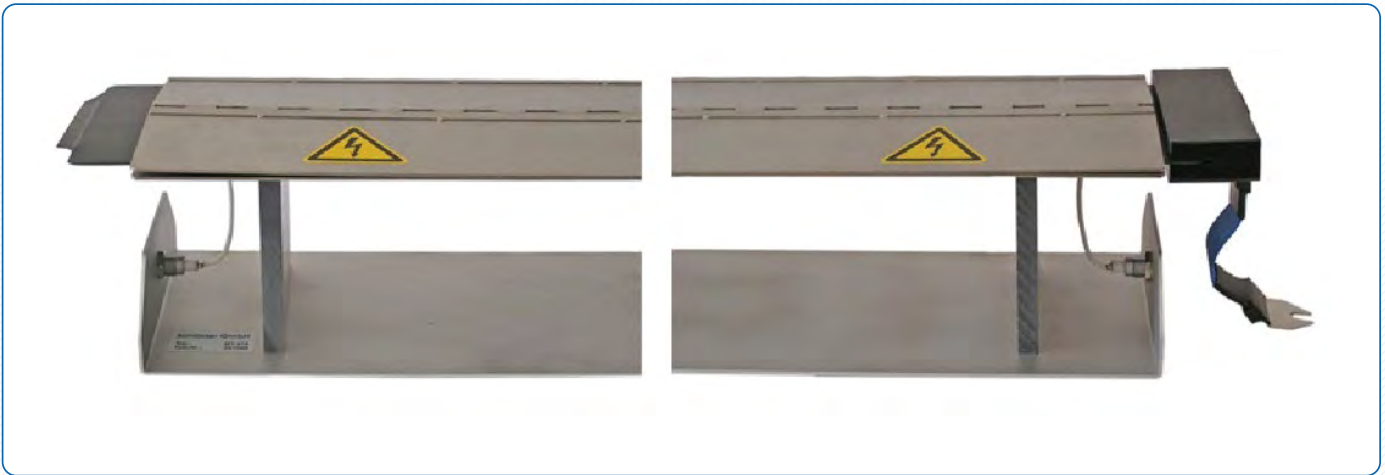


Figure 3: calibration setup

Transducer plate with connection adapter

- The HV-output of the burst generator is connected to the input of the coupling clamp. The clamp shall be calibrated with a generator, which has been shown to be compliant with the requirements of IEC / EN 61000-4-4, chapter 6.2.2 and 6.2.3.
- Put the transducer plate with connection adapter into the capacitive coupling clamp. Connect the 50 ohm measurement attenuator (figure 3).
- Connect the oscilloscope with a bandwidth of minimum 400 MHz.
- The waveform shall be calibrated with a single 50 ohm termination.
- The calibration is performed with the burst generator output voltage set to 2000 V.
- The peak voltage and waveform parameters are recorded at the transducer plate output located at the opposite end of the clamp. The value of the output voltage on the 50 ohm measurement attenuator is 1000 V.

Waveform characteristics:

- Rise time: 5 ns +/- 1,5 ns
- Pulse duration: 50 ns +/- 15 ns
- Peak voltage: 1000 V +/- 200 V

TECHNICAL DATA

Transducer plate with connection adapter:

Material:	stainless steel plate, conducting
Dimension:	120 mm x 1050 mm
Material thickness:	0,5 mm
Isolation:	dielectric foil with thickness of 0,5 mm, all around
Insulation voltage:	min.2,5 kV – to all sides
Connection for 50 ohm:	Fischer HV-female connector Other connectors (BNC HV) on request
Total set length:	1085 mm (with adapter)
Weight:	720 g
Working temperature:	0 - 40° Celsius
Relative humidity:	0 - 60%

SCOPE OF DELIVERY:

■ Calibration – Set (EFT-DLC-CAL)

Transducer plate with connection adapter include support for the measurement attenuator

ACCESSORIES (OPTIONAL)

- **EFT-CAL-KIT Attenuator Set for EFT Waveform Verification**
50Ω and 1000Ω attenuators in description

Reference: IEC / EN 61000-4-4, 2012

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