

Battery-PD-Calibrator

Type PD-CLSB-CD00

Instruction Manual

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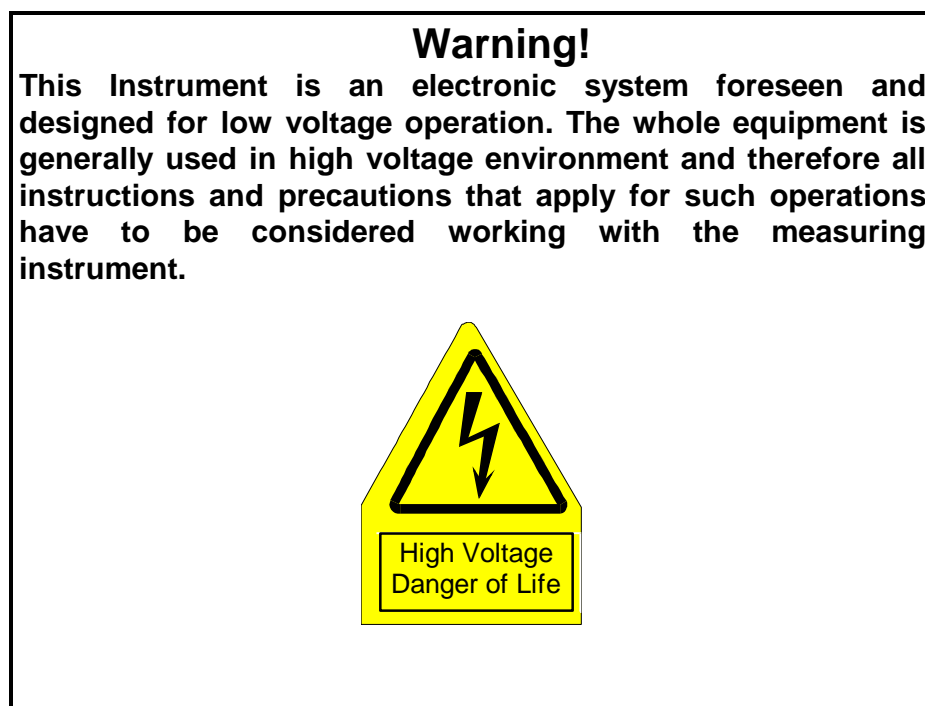
1 Precautions

1.1 Safety

The instrument described in this manual is designed to be used by properly trained personnel only. Adjustment, maintenance and repair of the exposed equipment should only be carried out by qualified personnel aware of the hazards involved.

1.2 Safety precautions

For correct and safe use of this instrument it is essential that both operation and service personnel follow generally accepted safety procedures in addition to the safety precautions specified in the manual. Specific warning and caution statements, where they apply, will be found throughout the manual. Safety is the responsibility of the user.



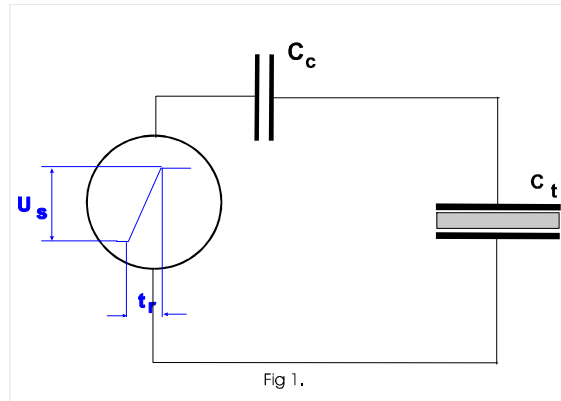
1.3 Impaired safety precautions

Whenever it is likely that safety protection has been impaired, the instrument must be made inoperative and be secured against any unintended operation. Safety protection is likely to be impaired if, for example, the instrument fails to perform the intended measurements or shows visible damage.

2. Introduction

2.1 Function Principle

The calibrator is made basically from a voltage step-generator (U_s) and a capacitance (C_c):



If $C_c \ll C_t$, the injected charge on the terminal of the test object C_t is:

$$q = U_s \cdot C_c$$

The rise time (10%) of the step voltage must be lower than 100 μ s.

The next figure shows the structure of the calibrator.

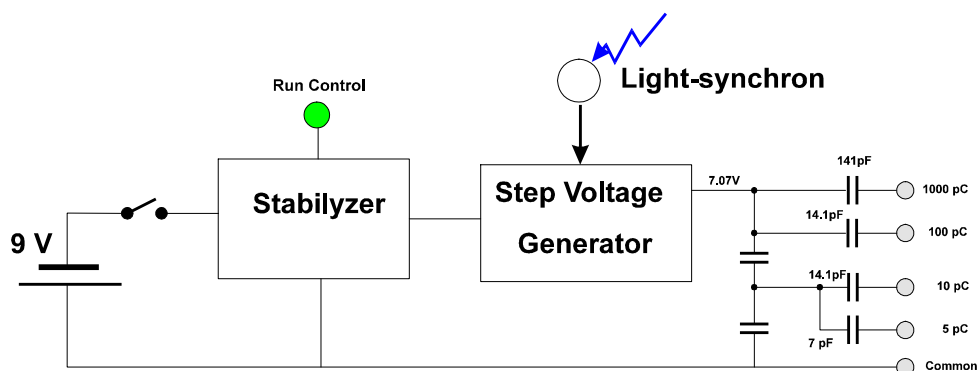


Fig.. 2

A 9 V battery delivers the necessary power. A stabiliser produces 7.07 V and a light-synchronised generator delivers the step voltage. Different capacitor units serve for the injection of charges between 5 pC and 1000 pC.

The „Run Control“ light displays the state of the battery. If the voltage of the battery is lower than 8.3 volt, the light extinguishes.

3. Technical Data

charge values	5 - 10 - 100 - 1000 pC
output capacitance	< 150 pF
rise time	< 60 ns
power supply	9 V battery type 6LR61
battery life	> 20 hours of continuous operation
synchronisation	optical pick-up of power frequency from nearby lamps
uncertainty	± 3%
supplied with calibration certificate	
Dimensions	approx. 160 x 85 x 35 mm
Weight	approx. 0.3 kg
reference conditions	
temperature	23° C ± 2° C
humidity, non condensing	45 ... 75%
altitude (pressure)	101.3 kPa
rated range of use	
according IEC 359	
temperature	5° C ... 40° C
humidity, non condensing	20 ... 95%
altitude (pressure)	70 ... 106 kPa

3.1 Ordering information

Battery-PD Calibrator	Type PD-CLSB-CD00
Scope of supply :	
1 Battery Calibrator incl. battery	
1 Instruction manual	
1 Test certificate	

4 Operation

The measurement set-up is shown in Fig. 2.

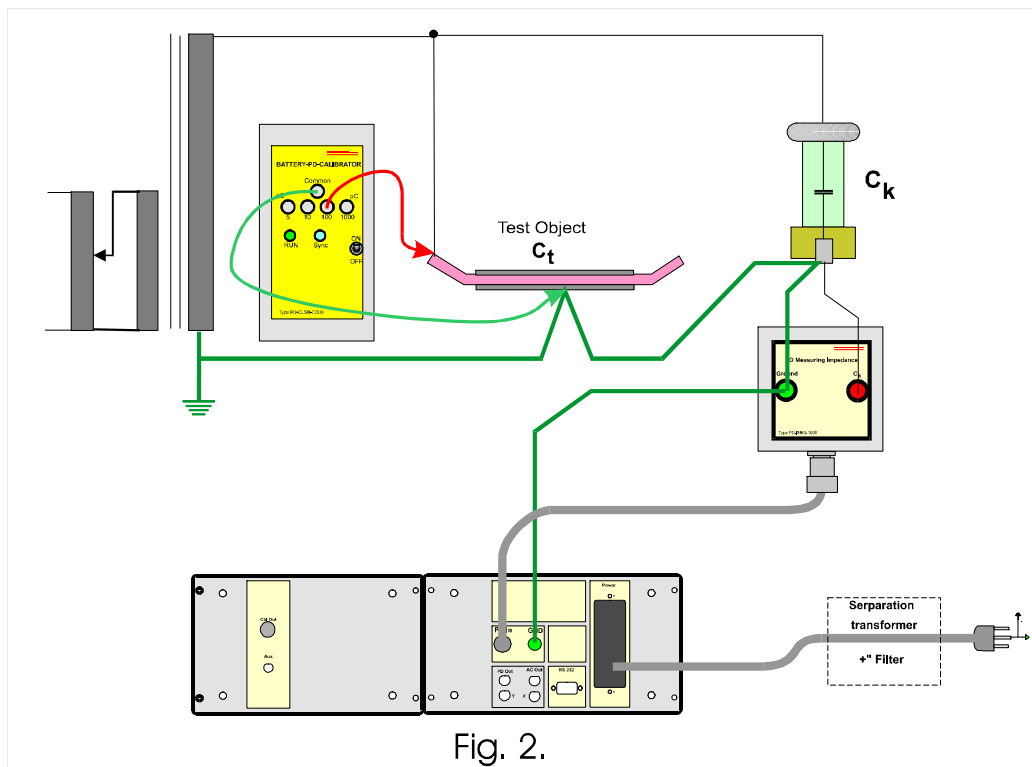


Fig. 2.

The desired charge value must be selected from the front connectors of the calibrator (2, 3, 5 or 6/ Fig. 3.).

The selected high - output (100 pC in Fig. 2.) must be connected to the high voltage terminal of the test object by a **short** lead. The common terminal is connected to the ground terminal of the test object.

The calibrator can be switched on by the switch 8/ Fig. 3..

If the battery has enough energy the green light 1/ Fig. 3. is on. If not, the battery must be exchanged.

The calibrator delivers charge pulses periodically. If the light is too weak or too intensive, or it has no modulation in the area where you are working, the calibrator goes in free run. The frequency will be app. 35 Hz. If there is light with modulated by 50 or 60 Hz, the calibrator is synchronised to this frequency.

After the calibration, the calibrator must be switched off and must be removed from the terminals of the test object. If you forget it and you give high voltage, you kill your calibrator.

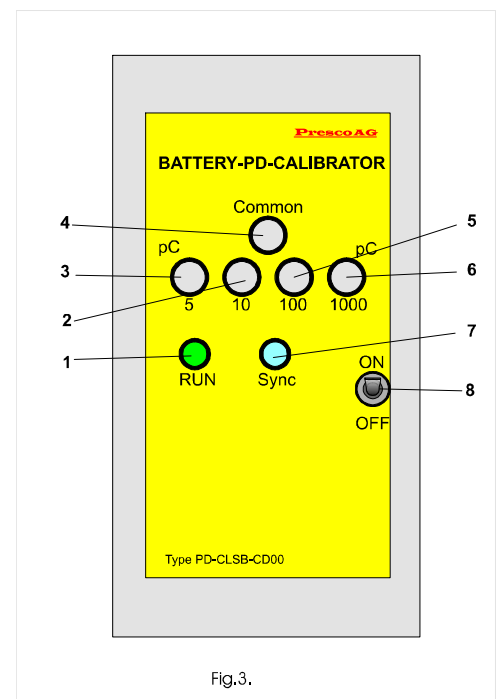


Fig.3.

5 Service

Repair work and maintenance can only be done by qualified personnel of Presco AG. In case of problems please contact the representative which delivered the instrument or Presco AG directly.