

METREL test and measurement accessories:



Calibration Box 5kV A 1740

Instruction manual

Version 1.1.1, Code no. 20 753 135

Distributor:

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1 Preface


It is essential that all measurement instruments are regularly calibrated. For occasional daily use we recommend an annual calibration to be carried out. When the instrument is used continuously every day, shorter periodical calibration of the instrument is recommended.

A 1740 Calibration Box 5kV is optional accessory intended for time-to-time verification of insulation resistance measurement of the Metrel instruments. This unit contains four high ohm resistors enclosed in plastic package.





2 Safety and operational considerations

2.1 Warnings and notes

In order to reach high level of operator's safety as well as to keep the accessory and equipment undamaged, it is necessary to consider the following general warnings:

- ❑  **Warning on the A 1740 means »Read the Instruction manual with special care to safety operation«. The symbol requires an action!**
- ❑ **If the A 1740 is used in a manner not specified in this Instruction manual or the manual of target test equipment, the protection provided by the A 1740 and equipment may be impaired!**
- ❑ **Read this Instruction manual carefully, otherwise use of the A 1740 may be dangerous for the operator, for test equipment or for the tested object!**
- ❑ **Do not use the A 1740 if any damage is noticed!**
- ❑ **Consider all generally known precautions in order to avoid risk of electric shock while dealing with hazardous voltages!**
- ❑ **Service intervention is allowed to be carried out only by a competent authorized person!**
- ❑ **The A 1740 is intended to be applied with Metrel insulation testers!**

2.2 Markings on the A 1740

Symbol	Description
	Read the Instruction manual with special care to safety operation«. The symbol requires an action!
	The symbol on the Calibration Box 5kV means "Hazardous voltage may be present at the test terminals!".
	Mark on your equipment certifies that it meets requirements of all subjected EU regulations.
	This equipment should be recycled as electronic waste.

2.3 Standards applied

A 1740 Calibration Box 5kV is manufactured and tested according to the following regulations, listed below.

Safety

EN 61010 - 1 Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements

3 A 1740 Description

Outlook of calibration unit

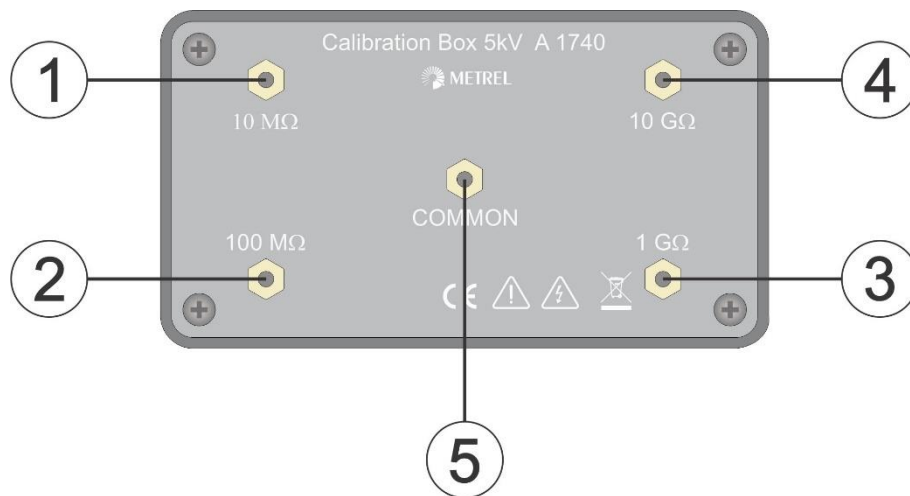


Figure 3.1: Calibration Box 5kV (A 1740)

Legend:

- 1.....10 MΩ connection stub, (intended for connection of +Rx)
- 2.....100 MΩ connection stub, (intended for connection of +Rx)
- 3.....1 GΩ connection stub, (intended for connection of +Rx)
- 4.....10 GΩ connection stub, (intended for connection of +Rx)
- 5.....COMMON connection stub, (intended for connection of –Rx)

4 A 1740 Application

Procedure:

- ❑ Connect –RX to COMMON connection stub and +Rx to 10 MΩ connection stub.
- ❑ Set test voltage, press **START / STOP** key on the instrument and wait until result becomes stable, then verify indication.
- ❑ Press **START / STOP** key again to stop the measurement.
- ❑ Repeat the same procedure with the rest test values.

The instrument does not require any adjustment if indications are inside the stated limits.

Warning:

- ❑ Do not touch Calibration Box 5 kV (A 1740) during measurement! Risk of electric shock!

Notes:

- ❑ Pay attention on humidity condition and dirt of the instrument, test leads and calibration unit due to their high influence on results especially when very high resistances are measured. It should take an hour or more to adopt the instrument and calibration unit on new environmental condition.
- ❑ Keep calibration unit in bubble package when it is not used. Dirt on surface of calibration unit can significantly reduce the value of reference resistors.

5 Maintenance

Unauthorized person is not allowed to open the A 1740. There are no user replaceable components inside the calibration unit.

5.1 Cleaning

No special maintenance is required for the housing.

Use soft patch moisten by water or alcohol, and leave the calibration unit to dry **totally** after the cleaning.

Warnings:

- ❑ Do not use liquids based on petrol or hydrocarbons!
- ❑ Do not spill cleaning liquid over the calibration unit!

5.2 Service

For repairs under warranty, or at any other time, please contact your distributor.

6 Technical specifications

Reference resistors:

Nominal resistance value	Temperature coefficient	Voltage coefficient	Ratings
10 M Ω	± 200 ppm / $^{\circ}\text{C}$	< 10 ppm / V	2500 V
100 M Ω			5000 V
1 G Ω			5000 V
10 G Ω			5000 V

General:

Calibration accuracy	1 %
Nominal value accuracy.....	2 %
Pollution degree.....	2
Dimensions (W x H x L)	113 mm x 39 mm x 62 mm
Case	plastic
Altitude.....	2000 m
Reference temperature range.....	10 $^{\circ}\text{C}$... 30 $^{\circ}\text{C}$
Reference humidity range.....	40 % RH ... 60 % RH
Mass	120 g
Operation.....	Indoor use