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Fluke's warranty obligation is limited, at Fluke's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to a Fluke authorized service center within the warranty period.

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Following repair, the product will be returned to the Buyer transportation prepaid and the Buyer will be billed for the repair and return transportation charges (FOB Shipping Point).

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In Case of Difficulty

For service or calibration, call your nearest authorized Fluke Service Center. A list of service centers is available on the World Wide Web at www.fluke.com or you can call Fluke using any of the phone numbers listed below.

For application or operation assistance or information on Fluke products, call:

800-44FLUKE (800-443-5853) in the USA and Canada

(31 40) 2678200 in Europe

1 206-356-5500 from other countries

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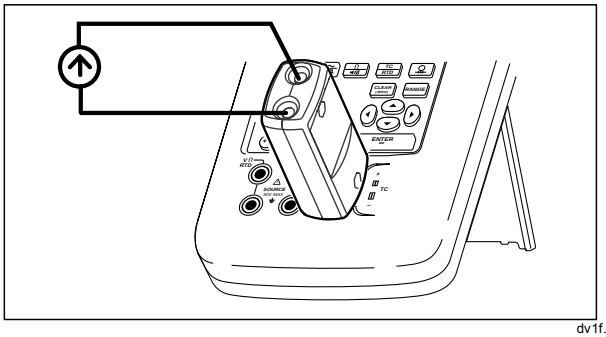
FLUKE®

700-IV Current Shunt

Instruction Sheet

Introduction

The Fluke 700-IV Current Shunt is used with the 741 or 743 Documenting Process Calibrator to measure and source current simultaneously. With the current shunt, you measure 0 to 55 mA through the calibrator's V MEAS input jacks. Read this sheet before you use the current shunt. This sheet contains specifications and input limit information.



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Using the Current Shunt

1. Plug the current shunt into the V MEAS input jacks on the 741 or 743 Calibrator as the figure above shows.
2. Select the measure dc voltage function.
3. Press the **Custom Units** softkey.
4. Press ENTER to select **Current Shunt,** which activates scaling and units programmed for the current shunt.
5. Apply the current source to be measured to the input jacks on the current shunt, and read the results in mA on the display.

Safety Specifications

Designed in accordance with IEC-1010-1; ANSI/ISA S82.01:1994; CAN/CSA C22.2 No. 1010.1 300V CAT II Low energy circuits.

PN 602257
August 1996 Rev.1, 4/97

Specifications

Input current range	0 to 55 mA dc
Conversion factor	1 mA in converts to 10 mV out
Accuracy (Note)	±0.025% of input
Calibration interval	1 year
Input resistance	250Ω nominal
Output resistance	10Ω nominal
Maximum voltage input	30V dc
Note: Specification applies for 18 to 28°C. The temperature coefficient for –10 to 18°C and 28 to 50°C is 0.001%/°C.	

To obtain the absolute specification for measuring current using the 700-IV and a Model 741 or 743 Calibrator, combine the mV measurement accuracy of the calibrator with the accuracy of the current shunt as shown in the following example.

Assumes input of 20 mA (output = 200 mV), between 18°C and 28°C:

1. Compute the current shunt error term at 20 mA input: 0.005 mA.

   This is error term A.

2. From the 731/743 Users Manual look up the 1 year 743 specification for 200 mV:

   This is 0.025% of reading +0.005% of full scale. Full scale in this case is 1.1V.

   The mV error terms are therefore 0.05 mV + 0.055 mV.

3. Convert the mV error terms to scaled mA equivalents by dividing by 10: 0.005 mA + 0.0055 mA.

   These are error terms B and C, respectively.

4. Calculate the absolute specification as follows:

   Absolute specification = $\pm \left(\sqrt{A^2 + B^2} + C\right)$

   = ±0.013 mA

Performance Test

If you need to check the integrity of the current shunt, use the current shunt as described in this instruction sheet to measure an accurate source of 10 mA. Verify that the reading is within specification.

If the current shunt does not work properly, determine the problem as follows:

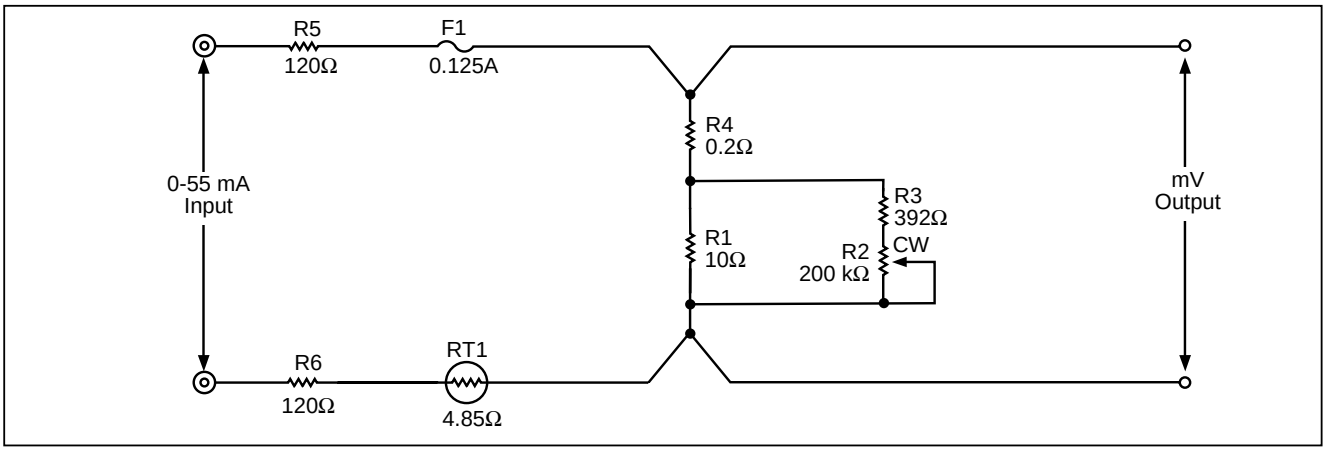
1. With the current shunt disconnected from the calibrator, measure approximately 250Ω across the current shunt input jacks. An open circuit is probably due to a blown fuse (F1).
2. With the current shunt disconnected from the calibrator, measure approximately 10Ω across the current shunt output plugs. An incorrect resistance indicates damage to any of resistors R1 through R4.

Calibration

To adjust the current shunt, apply 10 mA dc to the current shunt input and adjust Potentiometer R2 for exactly 100 mV dc at the current shunt output.

Cleaning

Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents.



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Schematic Diagram