

## DP120 Differential Voltage Probe

Service Sheet  
4822 872 05374

### Service Centers

For service information, contact your local Fluke service center. To locate an authorized service center, visit us on the World Wide Web:

<http://www.fluke.com>

or call Fluke using any of the phone numbers listed below:

- +1-800-443-5853 in U.S.A. and Canada
- +31-402-678-200 in Europe
- +1-206-356-5500 from other countries

### General Safety Information

Disconnect the differential voltage probe from all voltage sources before you open the covers.

#### Warning

**Servicing described in this service sheet is to be done by qualified service personnel. To avoid electrical shock, do not service the differential voltage probe unless you are qualified to do so.**

### Fault Finding

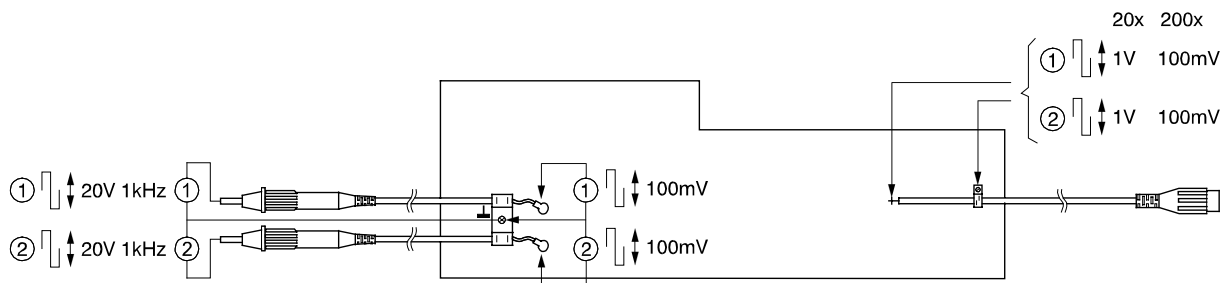


Figure 1. Fault Finding on the DP120

### Calibration Adjustment

Adjust the DP120 after the replacing of a probe or the complete board.

#### Recommended test equipment:

Instrument type	Recommended Model
ScopeMeter® test tool	Fluke 123 + BB120
Multi-Product Calibrator	Fluke 5500A

Before starting the procedure you must RESET the Fluke 123. You can do this by keeping the backlight key pressed during switching on. Use the NORMAL output of the Fluke 5500A.

Connect the DP120 to the red input A jack of the Fluke 123 via the banana-to-BNC adapter BB120.

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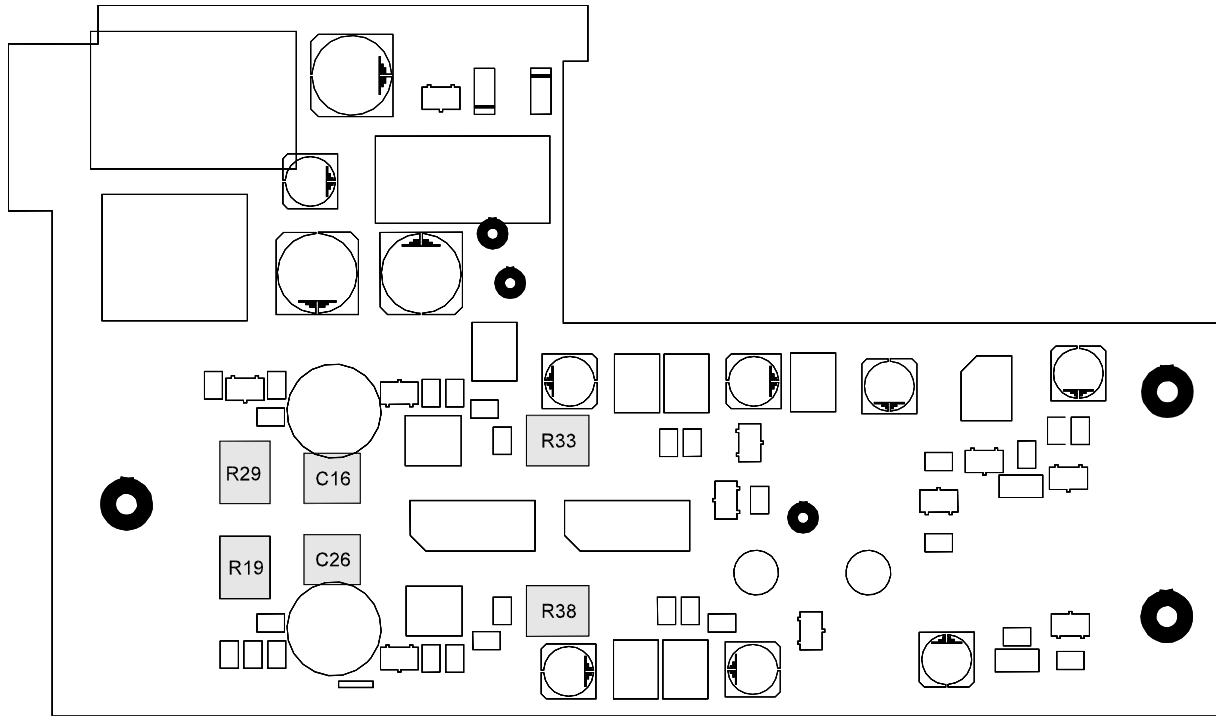



Figure 2. Adjusting elements

Step	Input Signal/Connections	DP120	Setting Fluke 123	Adjust	Reading Fluke 123
① Offset (coarse)	Short circuit red and black probe (use AC85A)	20 x	50 mV/div. 10 ms/div.	R29	Adjust to zero
② LF-CMRR	Apply: Sine wave, 20Vpp, 60Hz Connect: Red and black probe to HI Fluke 5500 LO Fluke 5500 to COM Fluke 123	20 x	10 mV/div. 10 ms/div.	R19	Adjust to minimum signal
③ LF square wave response	Apply: Square wave, 20Vpp, 1 kHz Connect: Red probe to HI Fluke 5500 Black probe to LO Fluke 5500	20x	200 mV/div. 100 $\mu$ s/div.	C16	Adjust for a flat pulse top
④ MF-CMRR	Apply: Sine wave, 20 Vpp, 100 kHz Connect: Red and black probe to HI Fluke 5500 LO Fluke 5500 to COM Fluke 123	20x	10 mV/div. 10 $\mu$ s/div.	C26	Adjust to minimum signal
⑤ Offset (fine)	Short circuit red and black probe (use AC85A)	20x	10 mV/div. 10 ms/div.   WAVEFORM: SMOOTH	R29	Adjust to zero
⑥ Gain 20x	Apply: + 100 Vdc Connect: Red probe to HI Fluke 5500 Black probe to LO Fluke 5500	20x	AUTO	R38	Adjust meter reading to: 5V $\pm$ 0.125V
⑦ Gain 200x	Apply: + 1000 Vdc Connect: Red probe to HI Fluke 5500 Black probe to LO Fluke 5500	200x	AUTO	R33	Adjust meter reading to: 5V $\pm$ 0.125V

## Repairing the Probe

### Warning

To avoid electrical shock, disconnect power supply and probes from any live source and from the differential voltage probe itself. Always remove the battery before completely disassembling the probe. If repair of the disassembled probe is required, it shall be carried out only by qualified personnel using customary precautions against electric shock.

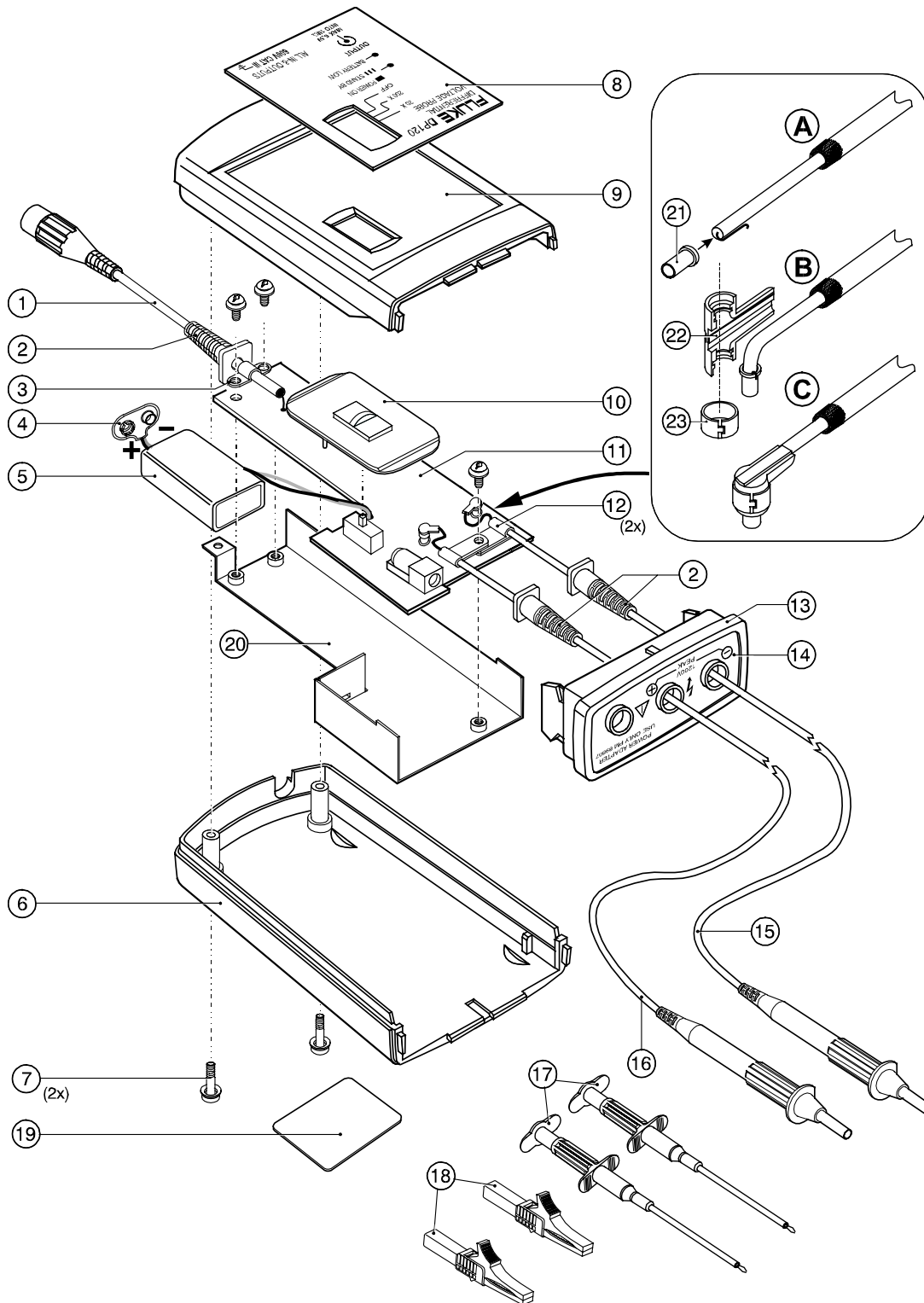


Figure 3. Exploded View

## Replaceable Parts

Contact your local Fluke representative. To ensure prompt delivery of the correct part, include the following information when you place an order:



- Instrument model (DP120).
- Ordering code
- Item number
- Description
- Quantity

Refer to the exploded view (Figure 3) for the item numbers.

Item	Ordering Code	Description
1	5322 322 10122	BNC Cable, 50 cm
2	5322 325 10162	Cable Grommet
3	5322 401 11652	Cable Clamp
4	4822 290 80346	Battery Connection Cable
5	4822 138 10116	9V Alkaline Battery
6	5322 442 00162	Bottom Cover
7	5322 502 14063	Captive Screw M3x20
8	5322 454 13213	Top Text Plate
9	5322 442 00161	Top Cover
10	5322 410 10319	Slider
11	5322 216 04299	Printed Circuit Assembly
12	5322 401 11648	Cable Clamp
13	5322 442 00865	Front Cover
14	5322 454 13214	Front Text Plate
15	5322 210 10744	Red Probe Assembly, 1.5m
16	5322 210 10745	Black Probe Assembly, 1.5m
17	AC83	Pin-Grabber Test Clips (Red&Black)
18	AC85A	Large Jaw Alligator Clips (Red&Black)
19	5322 454 13216	Warning Sticker
20	5322 466 11494	Metal Screening
21	5322 325 10197	Crimp Bus
22	5322 325 10198	Corner Grommet
23	5322 492 64337	Clip

## Optional Accessories

Available power adapters:

Model	Description
PM8907/801	Universal Europe 230V, 50 Hz
PM8907/803	North America 120V, 60 Hz 
PM8907/804	United Kingdom 240V, 50 Hz
PM8907/806	Japan 100V, 60 Hz
PM8907/807	Australia 240V, 50 Hz
PM8907/808	Universal 115V/230V 

### Note

The 230V rating of the PM8907/808 is not for use in North America. A line plug adapter complying with the applicable National Requirements may be provided to alter the blade configurations for a specific country.