

NOTE

This manual documents the Model 8050A and its assemblies at the revision levels shown in Appendix A. If your instrument contains assemblies with different revision letters, it will be necessary for you to either update or backdate this manual. Refer to the supplemental change/errata sheet for newer assemblies, or to the backdating sheet in Appendix A for older assemblies.

8050A

Digital Multimeter

Instruction Manual

P/N 530907
October 1979
REV 1 8/80



Dear Customer:

Congratulations! We at Fluke are proud to present you with the 8050A Multimeter. This instrument represents the very latest in integrated circuit and display technology. As a result, the end product is a rugged and reliable instrument whose performance and design exhibits the qualities of a finely engineered lab instrument. It also provides some unique measurement capabilities in addition to those normally found in an ordinary multimeter.

To fully appreciate and protect your investment, we suggest that you take a few moments to read the manual. As always, Fluke stands behind your instrument with a full 1-year warranty and a worldwide service organization. If the need arises, please don't hesitate to call on us.

Thank you for your trust and confidence.

John Fluke Mfg. Co., Inc.

WARRANTY

Notwithstanding any provision of any agreement the following warranty is exclusive.

The JOHN FLUKE MFG. CO., INC., warrants each instrument it manufactures to be free from defects in material and workmanship under normal use and service for the period of 1-year from date of purchase. This warranty extends only to the original purchaser. This warranty shall not apply to fuses, disposable batteries (rechargeable type batteries are warranted for 90-days), or any product or parts which have been subject to misuse, neglect, accident or abnormal conditions of operations.

In the event of failure of a product covered by this warranty, John Fluke Mfg. Co., Inc., will repair and calibrate an instrument returned to an authorized Service Facility within 1 year of the original purchase; provided the warrantor's examination discloses to its satisfaction that the product was defective. The warrantor may, at its option, replace the product in lieu of repair. With regard to any instrument returned within one year of the original purchase, said repairs or replacement will be made without charge. If the failure has been caused by misuse, neglect, accident or abnormal conditions of operations, repairs will be billed at a nominal cost. In such case, an estimate will be submitted before work is started, if requested.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS OR ADEQUACY FOR ANY PARTICULAR PURPOSE OR USE. JOHN FLUKE MFG. CO., INC., SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER IN CONTRACT, TORT OR OTHERWISE.

If any failure occurs, the following steps should be taken:

1. Notify the JOHN FLUKE MFG. CO., INC., or the nearest Service facility, giving full details of the difficulty, and include the Model number, type number, and serial number. On receipt of this information, service data or shipping instructions will be forwarded to you.
2. On receipt of the shipping instructions, forward the instrument, transportation prepaid. Repairs will be made at the Service Facility and the instrument returned, transportation prepaid.

SHIPPING TO MANUFACTURER FOR REPAIR OR ADJUSTMENT

All shipments of JOHN FLUKE MFG. CO., INC., instruments should be made via United Parcel Service or "Best Way" prepaid. The instrument should be shipped in the original packing carton; or if it is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the instrument should be wrapped in paper and surrounded with at least four inches of excelsior or similar shock-absorbing material.

CLAIM FOR DAMAGE IN SHIPMENT TO ORIGINAL PURCHASER

The instrument should be thoroughly inspected immediately upon original delivery to purchaser. All material in the container should be checked against the enclosed packing list. The manufacturer will not be responsible for shortages against the packing sheet unless notified immediately. If the instrument is damaged in any way, a claim should be filed with the carrier immediately. (To obtain a quotation to repair shipment damage, contact the nearest Fluke Technical Center.) Final claim and negotiations with the carrier must be completed by the customer.

The JOHN FLUKE MFG. CO., INC., will be happy to answer all application or use questions, which will enhance your use of the instrument. Please address your requests or correspondence to: JOHN FLUKE MFG. CO., INC., P.O. BOX 43210, MOUNTLAKE TERRACE, WASHINGTON 98043, ATTEN: Sales Dept. For European Customers: Fluke (Nederland) B.V., Zevenhevelenweg 5, Tilburg, The Netherlands.

* For European customers, Air Freight prepaid.

John Fluke Mfg. Co., Inc., • P.O. Box 43210 • Mountlake Terrace, Washington 98043

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RANGE #1-12879, 12889

On page 1-7, under AC VOLTS, delete from the bottom of the accuracy table:

/10 mV to 750 V/20 Hz to 45 Hz/±1% + 10 digits/

On page 1-8, under DB RANGES, delete from the bottom of the accuracy table:

/0.77 mV to 2 mV/20 Hz to 45 Hz/±0.5 dBm/

/2 mV to 750V/20 Hz to 45 Hz/±0.25 dBm/

On page 5-6 and 601-6:

ADD: R4/RES, DEP. CAR, 100 ±5%, 1/4W/348771/80031/CR251-4-5P100E/4

Change TOT QTY of R22, FROM: 3, TO: REF

On page 4-10, Table 4-12, under "TEST POINT":

Change, FROM: "3 or cathode of CR12", TO: "3".

On page 5-10, 601-10, 7-2, and 7-8:

Move TP3 from between R52 and C13, to between R43 and MP10.

On page 5-7 and 601-6:

FROM: R48/RES, DEP. CAR, 15K ±5%, 1/4W/348854/80031/CR251-4-5P15K/REF

TO: R48/RES, DEP. CAR, 10K ±5%, 1/4W/348839/80031/CR251-4-5-10KT/1

Change TOT QTY of R36, FROM: 4, TO: 3.

On page 7-6:

Change value of R48, FROM: 15 k, TO: 10 k.

On page 5-5:

DELETE: C38/CAP, TA, 39UF ±20%, 6V/163915/56289/196D396X0006KA1/2

Change TOT QTY of C39, FROM: REF, TO: 1

On page 5-10, and 7-2:

DELETE: "C38" FROM the blank circle next to C15.

On page 7-7:

ADD: "BATT" adjacent to C38.

On page 5-7, 601-6, and 601-7:

FROM: R37/RES, COMP, 4.7M ±5%, 1/4W/220046/01121/CB4755/REF

TO: R37/RES, COMP, 3.3M ±5%, 1/4W/208389/01121/CB3355/2

FROM: R53/RES, COMP, 4.7M ±5%, 1/4W/220046/01121/CB4755/REF

TO: R53/RES, COMP, 3.3M ±5%, 1/4W/208389/01121/CB3355/REF

Change TOT QTY of R14, FROM: 5, TO: 3

On page 7-4 and 7-5:

Change value of R53, FROM: 4.7 M, TO: 3.3 M.

On page 7-6:

Change value of R37, FROM: 4.7 M, TO: 3.3 M.

CHANGE #1-12879, 12889 (cont)

On page 5-5, and 601-4:

FROM: C15/CAP, TA, 22 UF ±20%, 15V/423012/56289/196D226X0015KA1/1
 TO: C15/CAP, TA, 10 UF ±20%, 15V/193623/56289/196D106X0015A1/REF
 FROM: C7/CAP, FLM, 1.0 UF ±10%, 100V/447847/73445/C280MAH/A1M/1
 TO: C7/CAP, MYLAR, 1.0 UF ±10%, 250V/519900/89536/519900//1

Change TOT QTY of C8, FROM: 5, TO: 6.

On page 7-6:

Change value of C15, FROM: 22/15, TO: 10/15.

On page 601-10, and 7-8:

Move FP2 from between TP3 and C13, to between U26 and R27.
 Move C20 from between R27 and C38, to between C22 and Q6.

On page 7-7:

Change U34-7, FROM: +10V, TO: -5V.

On page 5-7, and 601-6:

FROM: R40/RES, DEP. CAR, 680 ±5%, 1/4W/368779/80031/CR251-4-5P680ET/1
 TO: R40/RES, DEP. CAR, 1K ±5%, 1/4W/343426/80031/CR251-4-5P1KT/1

On page 5-5, and 601-4:

FROM: C29/CAP, MICA, 180 PF ±5%, 500V/148460/72136/DM15F181J/1
 TO: C29/CAP, MICA, 120 PF ±5%, 500V/148486/72136/DM15F121J/1
 FROM: C30/CAP, MICA, 68 PF ±5%, 500V/148510/72136/DM15F680J/1
 TO: C30/CAP, MICA, 100 PF ±5%, 500V/148494/72136/DM15F101J/1

Change TOT QTY of C3, FROM: 2, TO: 3.

On page 7-6:

Change value of C29, FROM: 180 pF, TO: 120 pF.
 Change value of C30, FROM: 68 pF, TO: 100 pF.

CHANGE #2-13075

On page 5-7, and 601-6:

FROM: R43/Resistor (selected in test)/442525/89536/442525/1/1
 TO: R43/Resistor (selected)/342634/89536/342634/1/1

On page 601-7:

FROM: VR2/DIODE ZENER, 5.6 V, (Selected in Test)/535559/89536/535559/1
 TO: VR2/DIODE, ZENER, 5.6V/277236/07910/1N752A/1

On page 7-6:

Change resistance value of U5-6,7, FROM: 21 k, TO: 32 k.
 Change resistance value of U5-6,8, FROM: 1.05 k, TO: 1.6 k.

CHANGE #3-13146, 13303

On page 5-7:

FROM: R42 RES, DEP. CAR, 27K ±5%, 1/4W/441501/80031/CR251-4-5P27KT/2
 TO: R42 RES, DEP. CAR, 15K ±5%, 1/4W/348854/80031/CR251-4-5P15K/REF

FROM: R46 RES, DEP. CAR, 24K ±5%, 1/4W/442384/80031/CR251-4-5P24KT/1
 TO: R46 RES, DEP. CAR, 27K ±5%, 1/4W/441501/80031/CR251-4-5P27KT/1

Change TOT QTY of R36, FROM: 3, TO: 4.

Change TOT QTY of R49, FROM: REF, TO: 1.

On page 601-6 and 601-7:

FROM: R42 RES, DEP. CAR, 27K ±5%, 1/4W/441501/80031/CR251-4-5P27KT/2
 TO: R42 RES, DEP. CAR, 15K ±5%, 1/4W/348854/80031/CR251-4-5P15K/REF

Change TOT QTY of R36, FROM: 3, TO: 4.

Change TOT QTY of R49, FROM: REF, TO: 1.

FROM: R47 RES, DEP. CAR, 3.9K ±5%, 1/4W/342600/80031/CR251-4-5P3K9T/1
 TO: R47 RES, DEP. CAR, 10K ±5%, 1/4W/348839/80031/CR251-4-5-10KT/1

FROM: VR3 DIODE, ZENER, 5.6V (Sel. in Test)/535559/89536/535559/REF

TO: VR3 DIODE, ZENER, 20 MA, 5.1V/159798/07910/1N751A/1

Change TOT QTY of VR2, FROM: 2, TO: 1.

On page 7-6:

Change value of R47, FROM: 3.9 k, TO: 10 k.

Change value of R46, FROM: 24 k, TO: 27 k.

Change value of VR3, FROM: 5.6V, TO: 5.1V.

On page 7-7:

Change value of R42, FROM: 27 k, TO: 15 k.

Change Figure 7-1 as shown in Figure 1.

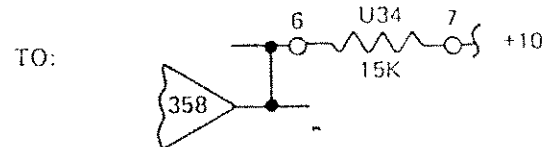
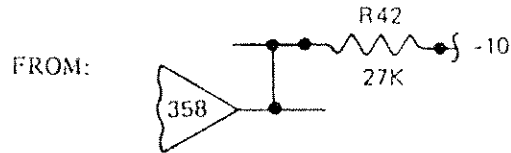
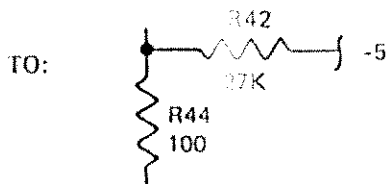
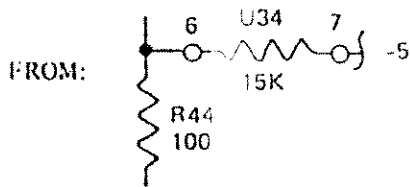


Figure 1

CHANGE #4-13368

On page 601-7:

CHANGE: VR2/DIODE, ZENER, 5.6V (SELECTED IN TEST)/535559/89536/535559/2

TO: VR2/DIODE, ZENER/277236/ /1N752A/1

CHANGE: VR3/DIODE, ZENER, 5.6V (SELECTED IN TEST)/535559/89536/535559/REF

TO: VR3/DIODE, ZENER/159798/ /1N751A/1

CHANGE/ERRATA INFORMATION

ISSUE NO: 1

1/81

This change/errata contains information necessary to ensure the accuracy of the following manual. Enter the corrections in the manual if either one of the these conditions exist:

1. The revision letter stamped on the indicated PCB is equal to or higher* than that given with each change.
2. No revision letter is indicated at the beginning of each change.

* Revision letters are given in alphabetical order, where A is considered the lowest and Z the highest.

MANUAL

Title: 8050A Digital Multimeter
Print Date: October 1979
Rev. and Date: 1 8/80

C/E PAGE EFFECTIVITY

Page No. Print Date
1 1/81

RANGE #1 - 10214

Rev.- F, A1 Main PCB Assy. (8050A-4001)

Rev.- F, A1 Main PCB Assy. Battery Option (8050A-4011)

On page 5-7 and 601-6:

CHANGE: R14 RES, DEP. CAR, 4.7M ±5%, 1/4W | 220046 | 01121 | CB4755 | 1

TO: R14 RES, DEP. CAR, 1M ±5%, 1/4W | 348987 | 80031 | CR251-4-5210 | 1

Change the TOT QTY of R32, TO: REF

RANGE #2 - 10444

Rev.- G, A1 Main PCB Assy. (8050A-4001)

Rev.- G, A1 Main PCB Assy. Battery Option (8050A-4011)

On page 5-8 and 601-8:

CHANGE: U21 IC, OP AMP, J-FET INPUT | 418780 | 12040 | LF351 | 2 | 1

TO: U21 IC, OP AMP, (8050A-4504) | 609883 | 89536 | 609333 | 2 | 1

CHANGE: U23 IC, OP AMP, J-FET INPUT | 418780 | 12040 | LF351 | 2 | 1

TO: U21 IC, OP AMP, (8050A-4504) | 609883 | 89536 | 609333 | 2 | 1

RANGE #3 - 10461

Rev.- H, A1 Main PCB Assy. (8050A-4001)

Rev.- H, A1 Main PCB Assy. Battery Option (8050A-4011)

On page 5-7 and 601-7:

ADD: R34 RES, COMP 10M ±5%, 1/4W | 194944 | 01121 | CB1065 | 1

On page 7-6:

Delete U22B and all connections to it.

Add U22B and R34 as shown in Figure 1.

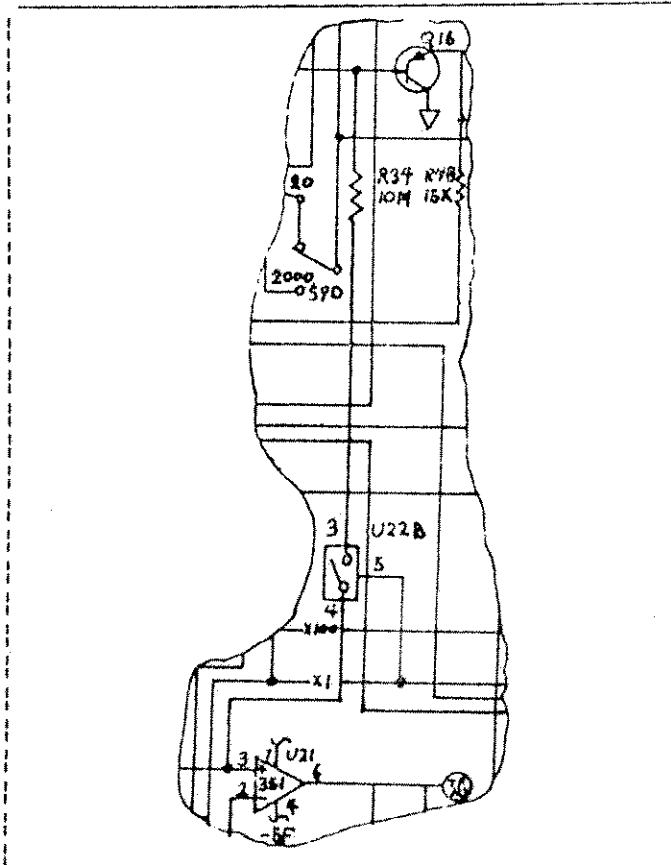


Figure 1.