

Multimètre Fluke

8060A

Table 1-2. 8060A Specifications

ELECTRICAL

The following specifications are based on a one-year calibration cycle, an operating temperature of 18 to 28°C (64 to 82°F) and a relative humidity not exceeding 80%.

DC Voltage

| RANGE | RESOLUTION | ACCURACY ±(% of reading + no. of digits) |
|-------------------------|-------------------------|---|
| 200 mV 2 V | .01 mV .1 mV | 0.04% + 2 |
| 20 V 200 V 1000 V | 1 mV 10 mV 100 mV | 0.05% + 2 |

RESPONSE TIME 1 second maximum, to rated accuracy within selected range.

INPUT IMPEDANCE 10 MΩ nominal

NORMAL MODE NOISE

REJECTION >60 db at 50 Hz or 60 Hz

COMMON MODE NOISE

REJECTION >120 dB at dc, >90 dB at 50 Hz and 60 Hz (1 kΩ imbalance)

OVERLOAD

PROTECTION 1000V dc or peak ac continuous, except 20 seconds maximum on 200 mV and 2V ranges above 300V dc or rms.

DC Voltage, High Impedance Mode

All specifications are the same as for the dc voltage mode except the following (only 200 mV and 2V ranges are available):

| RANGE | RESOLUTION | ACCURACY ±(% of reading + no. of digits) |
|--------------|-----------------|---|
| 200 mV 2V | .01 mV .1 mV | 0.05% + 2 |

INPUT IMPEDANCE >10,000 MΩ, typically 80,000 MΩ

OVERLOAD

PROTECTION 300V dc or rms continuous, 20 seconds maximum 300V to 1000V dc or peak ac.

Table 1-2. 8060A Specifications (cont)

DC Voltage, dB Mode

Measurements are made in dBm referenced to 600Ω or relative dB. All specifications are the same as for dc voltage except the following:

DYNAMIC RANGE With full .01 dB resolution, 99.79 dB. Total specified dynamic range is 136.22 dB (160 μV to 1000V).

RESOLUTION AND ACCURACY Depends on linear dc count (count refers to the display independent of the decimal point — see table below).

| LINEAR COUNTS | RESOLUTION | ACCURACY |
|----------------|------------|----------|
| 19,999 to 1024 | .01 dB | ±.04 dB |
| 1023 to 128 | .1 dB | ±.2 dB |
| 127 to 16 | 1 dB | ± 1 dB |

AC Voltage (True RMS, AC-Coupled)

RANGES 200 mV, 2V, 20V, 200V, 750V

ACCURACY ±(% of reading + no. of digits). See table below:

| INPUT VOLT-AGE | RESO-LU-TION | RANGE | 20 Hz to 45 Hz | 45 Hz to 1 kHz | 1 kHz to 10 kHz | 10 kHz to 30 kHz | 30 kHz to 50 kHz | 50 kHz to 100 kHz |
|-------------------|--------------|--------|----------------|----------------|-----------------|------------------|------------------|-------------------|
| 10.0 to 199.99 mV | .01 mV | 200 mV | 1% +10 | 0.2% +10 | 0.2% +20 | 0.5% +40 | 1% +100 | |
| .1000 to 1.9999V | .1 mV | 2V | | 0.5% +10 | 0.5% +20 | 1% +40 | 2% +100 | 3% +200 |
| 1.000 to 19.999V | 1 mV | 20V | | | | | | |
| 10.00 to 199.99V | 10 mV | 200V | | | | | | |
| 100.0 to 499.9V | 100 mV | 750V | Not Specified | 1% +10 | Not Specified | | | |
| 500.0 to 750.0V | | | | | | | | |

Table 1-2. 8060A Specifications (cont)

AC Voltage (cont.)

INPUT IMPEDANCE 10 MΩ shunted by <100 pF

COMMON MODE NOISE

REJECTION >60 dB at 50 Hz and 60 Hz (1 kΩ imbalance)

CREST FACTOR RANGE . 1:1 to 3:1

RESPONSE TIME Five seconds maximum to rated accuracy within selected range, 12 seconds to rated accuracy from an overload.

OVERLOAD

PROTECTION 750V rms or 1000V peak continuous except 20 seconds maximum on the 200 mV range above 300V rms or 300V dc. Input not to exceed a volt-hertz product of 10⁷ (for example, 200V at 50 kHz).

AC Voltage, dB Mode (True RMS, AC-Coupled)

Measurements are made in dBm referenced to 600Ω or relative dB. All specifications are the same as for ac voltage except the following:

DYNAMIC RANGE With full .01 dB resolution, 97.30 dBm. Total specified dynamic range is 109.72 dBm (2.45 mV to 750.0V ac rms).

RESOLUTION Depends on number of linear ac counts (count refers to the actual number on the display independent of the decimal point. See table below).

| LINEAR COUNTS* | RESOLUTION |
|----------------|------------|
| 19,999 to 1024 | .01 dB |
| 1023 to 128 | .1 dB |
| 127 to 16 | 1 dB |

*Not specified below 245 counts.

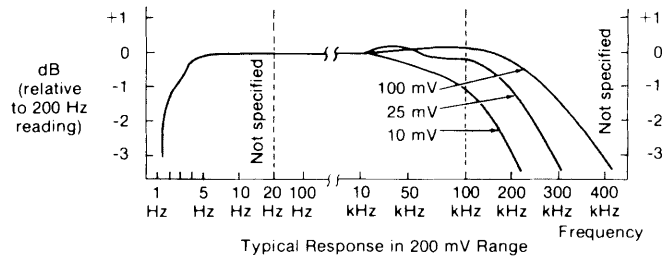
Table 1-2. 8060A Specifications (cont)

AC Voltage, dB Mode (cont.)

ACCURACY See table below:

| dBm REF. 600Ω | RANGE | 20 Hz to 45 Hz | 45 Hz to 10 kHz | 10 kHz to 30 kHz | 30 kHz to 50 kHz | 50 kHz to 100 kHz |
|--|--------|---------------------|-----------------|------------------|------------------|-------------------|
| -50.0 to -37.6 (2.45 mV to 10.23 mV) | 200 mV | 0.5 dB | 1.0 dB | 3.0 dB | Not Specified | |
| -37.58 to -31.76 (10.24 mV to 20.00 mV) | 200 mV | 0.20 dB | | 0.50 dB | 1.00 dB | 2.20 dB |
| -31.76 to -11.76 (20 mV to 199.99 mV) | 200 mV | 0.10 dB* 0.15 dB | | | | |
| -11.76 to 8.24 (.2000V to 1.9999V) | 2V | | | | | |
| 8.24 to 28.24 (2.000V to 19.999V) | 20V | | | | | |
| 28.24 to 48.24 (20.00V to 199.99V) | 200V | 1 kHz | | | | |
| 48.24 to 59.72 (200.0V to 750.0V) | 750V | 0.5 dB | Not Specified | | | |

*Specification applies above 8000 linear counts.



Frequency

| FREQUENCY RANGE (Fully Autoranging) | RESOLUTION | ACCURACY ±(% of reading + no. of digits) |
|--|------------|---|
| 200 Hz | .01 Hz | .05% + 1 |
| 2000 Hz | .1 Hz | |
| 20 kHz | 1 Hz | |
| 200 kHz | 10 Hz | |

Table 1-2. 8060A Specifications (cont)

Frequency (cont.)

| INPUT SIGNAL | SENSITIVITY (based on sine wave V rms) |
|--------------------|--|
| 12 Hz to 20 kHz | 20 mV or 10% of voltage range* |
| 20 kHz to 100 kHz | 50 mV or 25% of voltage range* |
| 100 kHz to 200 kHz | 150 mV or 75% of voltage range* |

*Whichever value is greater

| AC VOLTAGE RANGE | MAXIMUM INPUT VOLTAGE* |
|------------------|------------------------|
| 200 MV | ±5V peak |
| 2V | ±50V peak |
| 20V | ±500V peak |
| 200V | ±1000V peak |
| 750 | ±1000V peak |

*Signal not to exceed a volt-hertz product of 1×10^7 .

INPUT

CHARACTERISTICS AC-coupled, 10 MΩ shunted by <100 pF

EXTENDED FREQUENCY

Selection Enabled by holding down Hz button at power on.

Range 12 Hz to 700 kHz, typically.

Resolution 100 Hz above 200 kHz.

Accuracy ±(.05% of reading + 2 digits)

Sensitivity (sine wave V rms) Typically 100 mV at 200 kHz increasing to 4.5V at 700 kHz in the 200 mV range. Will measure a TTL signal (50% duty cycle) to 420 kHz, typically.

Table 1-2. 8060A Specifications (cont)

Resistance

RANGES 200Ω, 2 kΩ, 20 kΩ, 200 kΩ, auto-ranging MΩ. The MΩ range extends from .0001 MΩ to 300 MΩ in three autoranged ranges. Upscale range changes are made at 2 MΩ and 20 MΩ. Downscale range changes are made at 19 MΩ and 1.9 MΩ.

ACCURACY ±(% of reading + no. of digits). See table below.

| RANGE | RESOLUTION | ACCURACY | FULL-SCALE VOLTAGE | MAX CURRENT | OPEN CIRCUIT VOLTAGE | |
|----------------|--------------|----------------|--------------------|-------------|----------------------|----------|
| 200Ω | 0.01Ω | (0.07%+2+.02Ω) | <250 mV | <1.1 mA | <4.8V | |
| 2 kΩ | 0.1Ω | (0.07%+2) | | <150 μA | <1.5V | |
| 20 kΩ | 1Ω | (0.07%+2) | | <15 μA | | |
| 200 kΩ | 10Ω | (0.07%+2) | | <1.5 μA | | |
| MΩ | 0-1.9999 MΩ | 100Ω | <2.5V | <2.5 μA | <2.5V | |
| | 2-19.99 MΩ | 10 kΩ | | | | (0.2%+3) |
| | 20-99.9MΩ | 100 kΩ | | | | (1%+3) |
| | 100-300MΩ | 1 MΩ | | | | (2%+3) |
| AUTORANGING KΩ | 0.1Ω TO 1 kΩ | (.20%+2) | | <1.0 mA | | |

RESPONSE TIME Two seconds maximum to rated accuracy for all ranges except MΩ. For MΩ, 8 seconds maximum.

OVERLOAD PROTECTION 500V dc or rms ac for all ranges.

Table 1-2. 8060A/AA Specifications (cont)

Conductance

RANGE 2000 nS (equivalent to a resistance range from 500 kΩ to 10,000 MΩ)

RESOLUTION 0.1 nS

ACCURACY ±(0.5% of reading + 20 digits)

OPEN CIRCUIT VOLTAGE <1.5V

OVERLOAD PROTECTION 500V dc or rms ac

Continuity

RANGES All resistance ranges

THRESHOLD Nominally 10% of range (for example, 20Ω in the 200Ω range) for 200Ω, 2 kΩ, 20 kΩ, 200 kΩ ranges. Nominally 20 kΩ in MΩ range.

DISPLAY INDICATION ... Horizontal bar across the top of the display and/or 2.667 kHz tone. Indication is present for a minimum of 200 ms.

RESPONSE TIME 50 μs maximum (10 μs typical)

OVERLOAD PROTECTION 500V dc or rms ac

Diode Test

RANGE 2V

TEST CURRENT 1 mA ±10% (for battery voltage >6.4V)

ACCURACY ±(0.05% of reading + 2 digits)

RESPONSE TIME 2 seconds maximum

OVERLOAD PROTECTION 500V dc or rms ac

DC Current

| RANGE | RESOLUTION | ACCURACY ±(% of reading + no. of digits) | BURDEN VOLTAGE |
|---------|------------|---|----------------|
| 200 μA | .01 μA | 0.2% + 2 | .3V maximum |
| 2 mA | .1 μA | | .3V maximum |
| 20 mA | 1 μA | 0.3% + 2 | .3V maximum |
| 200 mA | 10 μA | | .3V maximum |
| 2000 mA | 100 μA | | .9V maximum |

Table 1-2. 8060A Specifications (cont)

DC Current (cont.)
OVERLOAD PROTECTION 2A/250V fuse (operator replaceable) in series with 3A/600V fuse (service personnel replaceable).

AC Current (True RMS Responding, AC-Coupled)
ACCURACY \pm (% of reading + no. of digits). See table below:

| INPUT CURRENT | RESOLUTION | RANGE | 20 Hz to 45 Hz | 45 Hz to 3 kHz | 3 kHz to 10 kHz | 10 kHz to 30 kHz |
|----------------------|-------------|-------------|----------------|----------------|-----------------|------------------|
| 10 to 199.99 μ A | 0.01 μ | 200 μ A | 1%+10 | 0.75%+10 | 2%+20 | 2%+40 |
| .1 to 1.9999 mA | 0.1 μ A | 2 mA | | | | |
| 1 to 19.999 mA | 1 μ A | 20 mA | | | | |
| 10 to 199.99 mA | 10 μ A | 200 mA | | | | |
| 100 to 1999.9 mA | 100 μ A | 2000 mA | | | Not Specified | |

BURDEN VOLTAGE 0.3V rms maximum except 2000 mA range, 0.9V rms maximum.

OVERLOAD PROTECTION 2A/250V fuse (operator replaceable) in series with 3A/600V fuse (service personnel replaceable).

Relative

SELECTION When the REL button is pushed, the input applied at that time is stored as a zero reference point. Subsequent readings indicate deviations (\pm) from the reference point.

ACCURACY Error does not exceed the sum of the errors of the reference reading and the subsequent reading.

Table 1-2. 8060A Specifications (cont)

GENERAL

Maximum Common Mode Voltage 500V dc or ac rms

Display Update Rate 2.5 readings/second for all functions except frequency and dB. For frequency, 1 reading/second. For dB, 1.4 readings/second.

Display 4½ digit duplex LCD (19,999 count), leading zero suppression, autopolarity.

Display Annunciators BT (low battery indicator), Hz or kHz (frequency unit), dB (dB function enabled), REL (relative function enabled), \leftrightarrow and \equiv (continuity function enabled), and — (bar indicates continuity detected).

A/D Converter Dual-slope converter

Power Single standard 9V battery (NEDA 1604), or Fluke A-81 Battery Eliminator option available for 100, 115, or 230V ac operation.

Battery Life Typically 170 hours with an alkaline battery. BT appears on display when approximately 20% of battery life remains.

Size 180 mm L x 86 mm W x 45 mm H (7.1" L x 3.4" W x 1.8" H)

Weight41 kg (14.5 oz.)

Shock and Vibration MIL-T-28800B

ENVIRONMENTAL

Operating Temperature 0 to 50°C

Storage Temperature -35 to +60°C

Accuracy Temperature Coefficient 0.1 x the applicable accuracy specification per °C (plus the initial 23°C specification) for 0 to 18°C and 28 to 50°C.

Relative Humidity 0 to 80% R.H. from 0 to +35°C, 0 to 70% from +35°C to +50°C, except 0 to 70% R.H. for M Ω range above 20 M Ω .