Table 1-1. Specifications

DC VOLTAGE

Input Characteristics:

Range	Maximum Reading (5½ Digit)	Resolution 5½ Digit	4½ Digit	3½ Digit
.3V	±.301000V	1μV	10μV	100μV
3V	±3.01000V	10μV	100μV	1mV
30V	±30.1000V	100μV	1mV	10mV
300V	±301.000V	1mV	10mV	100mV

Input Resistance:

.3V, 3V ranges: $>10^{10}\Omega$
30V, 300V ranges: 10MΩ ± 1%

Maximum Input Voltage: (non-destructive)

Hi to Lo: 301 Vrms or 450V peak
Hi or Lo to Earth Ground: ±500V peak

Measurement Accuracy:

±(% of reading + number of counts)
Auto-zero ON

5½ Digit Mode:

Range	Cal. Temp ± 1°C 24 Hours	Cal. Temp. ±5°C 90 Day	1 Year
.3V	0.005 + 4	0.009 + 5	0.02 + 5
3V	0.0035 + 2	0.007 + 2	0.018 + 2
30V	0.005 + 3	0.009 + 3	0.02 + 3
300V	0.0055 + 2	0.009 + 2	0.02 + 2

4½ and 3½ Digit Mode:

Accuracy is the same as 5½ digit mode for % of reading; use 1 count for number of counts.

The Cal. Temp. (Calibration Temperature) is the temperature of the environment where the 3468A was calibrated. Calibration should be performed with the temperature of the environment between 20°C and 30°C.

Auto-Zero Off:

(5½ digit) for a stable environment (±1°C), for <24 hrs., add 11 counts to accuracy specification for .3V and 30V ranges, 3 counts for 3V and 300V ranges. For 4½ or 3½ digits, multiply counts by 0.1.

Temperature Coefficient:

0°C to (Cal. Temp. −5°C),(Cal. Temp. +5°C) to 55°C
5½ digit display, auto-zero ON
± (% of reading + number of counts)/°C

Range	Temperature Coefficient
.3V, 30V	0.0008 + .5
3V, 300V	0.0007 + .05

Noise Rejection:

In dB, with 1kΩ imbalance in Lo lead. AC rejection for 50, 60Hz ± 0.1%. Auto-zero ON.

Display	AC NMR	AC ECMR	DC CMR
5½ digits	80	150	140
4½ digits	59	130	140
3½ digits	0	70	140

Maximum Reading Rates: (readings/sec)

First reading is correct within .1 count of final value, when on correct range, triggered coincident with step input.

The reading rates are dependent on the speed of the controller being used.

Line Frequency	Auto Zero	Resolution 3½ Digits	4½ Digits	5½ Digits
60Hz	Off	32	21	3.7
	On	25	13.4	2
50Hz	Off	32	19	3.1
	On	25	.12	1.7

Maximum Reading Rate with 41CV:

2 readings/sec

Display Rate: (readings/sec)

For 50 or 60 Hz operation.

	5½ Digits	4½ or 3½ Digits
Auto Zero off	4	4
Auto Zero On	2	4

Resistance (2-wire Ω, 4-wire Ω)

Input Characteristics:

Range	Maximum Reading (5½ Digit)	Resolution 5½ Digit	4½ Digit	3½ Digit
300 Ω	301.000 Ω	1mΩ	10mΩ	100mΩ
3 kΩ	3.01000 kΩ	10mΩ	100mΩ	1 Ω
30 kΩ	30.1000 kΩ	100mΩ	1 Ω	10 Ω
300 kΩ	301.000 kΩ	1 Ω	10 Ω	100 Ω
3MΩ	3.01000MΩ	10 Ω	100 Ω	1 kΩ
30MΩ	30.1000MΩ	100 Ω	1 kΩ	10 kΩ

Input Protection: (non-destructive)

Hi source to Lo source: ±350V peak
Hi sense to Lo sense: ±350V peak
Hi or Lo to Earth Ground: ±500V peak

Measurement Accuracy:

±(% of reading + number of counts)
Auto-zero ON. 4-wire ohms.

Table 1-1. Specifications (Cont'd)

Resistance (2-wire Ω, 4-wire Ω) (Cont'd)

5½ Digit Mode:

Range	Cal. Temp ± 1°C 24 Hours	Cal. Temp. ±5°C 90 Day	1 Year
300Ω	0.0045 + 4	0.012 + 5	0.017 + 5
3k – 300kΩ	0.0035 + 2	0.011 + 2	0.016 + 2
3MΩ	0.0052 + 2	0.011 + 2	0.016 + 2
30MΩ	0.036 + 2	0.066 + 2	0.078 + 2

2-Wire Ohms Accuracy:

Same as 4-wire ohms, except add a maximum of 100mΩ offset.

Auto-Zero Off:

(5½ digit) for a stable environment (±1°C), for <24 hrs., add 11 counts to accuracy specification for 300Ω range 3 counts for 3kΩ through 300kΩ ranges, 8 counts for 3MΩ range, and 33 counts for 30MΩ range.

Temperature Coefficient:

0°C to (Cal. Temp. – 5°C),(Cal. Temp. + 5°C) to 55°C
5½ digit display, auto-zero ON
± (% of reading + number of counts)/°C

Range	Temperature Coefficient
300Ω	0.0009 + 0.5
3k – 300kΩ	0.0009 + 0.05
3MΩ	0.0021 + 0.05
30MΩ	0.021 + 0.05

Current Through Unknown:

Range:	300Ω	3kΩ	30kΩ	300kΩ	3MΩ	30MΩ
Current:	1mA	1mA	100μA	10μ	1μ	100nA

Maximum Open Circuit Voltage:

6.5V

Maximum Reading Rates:

Same as dc volts, except for 3MΩ and 30MΩ ranges. For 3MΩ range, add 20ms; for 30MΩ range, add 200ms per reading.

AC VOLTAGE (true rms responding)

Input Characteristics:

Range	Maximum Reading (5½ Digit)	Resolution 5½ Digit	4½ Digit	3½ Digit
.3V	.301000V	1μV	10μV	100μV
3V	3.01000V	10μV	100μV	1mV
30V	30.1000V	100μV	1mV	10mV
300V	301.000V	1mV	10mV	100mV

Input Impedance:

1MΩ ± 1% shunted by <60pF

Maximum Input Voltage: (non-destructive)

Hi to Lo: 301Vrms or 450V peak
Hi or Lo to Earth Ground: ±500V peak

Measurement Accuracy:

±(% of reading + number of counts)
Auto-zero ON. 5½ digit display. Accuracy is specified for sine-wave inputs only, >10% of full scale.
1 Year, Cal. Temp. ±5°C

Frequency	Ranges .3V	3V, 30V	300V
20Hz-50Hz	1.14 + 163	1.14 + 102	1.18 + 102
50Hz – 100Hz	0.46 + 163	0.46 + 103	0.5 + 102
100Hz – 20kHz	0.29 + 163	0.26 + 102	0.33 + 102
20kHz – 50kHz	0.56 + 247	0.41 + 180	0.55 + 180
50kHz – 100kHz	1.74 + 882	1.05 + 825	1.26 + 825
100kHz – 300kHz		10.1 + 3720 (30V range only)	

Auto-Zero Off:

(5½ digits) for a stable environment (±1°C), for <24 hrs., add 10 counts to accuracy specifications for all ranges.

Temperature Coefficient:

0°C to (Cal. Temp. – 5°C),(Cal. Temp. + 5°C) to 55°C, 5½ digit display, auto-zero ON.
For frequencies <20kHz, ±(0.016% of reading + 10 counts)/°C
For frequencies >20kHz, ±(0.04% of reading + 10 counts)/°C

Crest Factor:

>4:1 at full scale.

Common Mode Rejection:

With 1kΩ imbalance in Lo lead, >70dB, dc to 60Hz.

Maximum Reading Rates: (readings/sec)

First reading is correct within 70 counts of final value, when on correct range, triggered coincident with step input. Add 0.6 seconds for each range change.

For 50 or 60Hz operation, auto-zero ON or OFF.
3½ or 4½ digits: 1.4 readings/sec
5½ digits: 1.0 readings/sec

DC CURRENT

Input Characteristics:

Range	Maximum Reading (5½ Digit)	Resolution 5½ Digit	4½ Digit	3½ Digit
3A	±3.01000A	10μA	100μA	1mA

Maximum Input: (non-destructive)

3A from <250V source; fuse protected

Measurement Accuracy:

± (% of reading + number of counts)
Auto-zero ON. 5½ digit display.

Range	Cal. Temp. ±5°C 90 Days	1 Year
3A, <1A input	0.14 + 6	0.17 + 6
3A, >1A input	1.0 + 30	1.0 + 30

Table 1-1. Specifications (Cont'd)

DC CURRENT (Cont'd)

Auto-Zero Off:

(5½ digit) for a stable environment (±1°C), for <24 hrs., add 11 counts to accuracy specification for 5½ digit mode.

Temperature Coefficient:

0°C to (Cal. Temp. −5°C),(Cal. Temp. +5°C) to 55°C
5½ digit display, auto-zero ON
± (0.012 of reading + 0.5 counts)/°C

Maximum Burden at Full Scale:

1V

Maximum Reading Rates:

Same as dc volts

AC CURRENT (true rms responding)

Input Characteristics:

Range	Maximum Reading (5½ Digit)	Resolution 5½ Digit	4½ Digit	3½ Digit
.3A	.301000A	1μA	10μA	100μA
3A	3.01000A	10μA	100μA	1mA

Maximum Input: (non-destructive)

3A from <250V source; fuse protected

Measurement Accuracy:

± (% of reading + number of counts)
Auto-zero ON. 5½ digit display. Accuracy specified for sine-wave inputs only >10% of full scale.
1 YEAR, CAL. TEMP. ±5°C

Frequency	Ranges 300mA	3A
20Hz−50Hz	1.77 + 163	2.5 + 163
50Hz−1kHz	1.1 + 163	1.8 + 163
1kHz−10kHz	1.0 + 163	1.7 + 163
10kHz−20kHz	1.14 + 163	1.84 + 163

Auto-zero Off:

(5½ digits) for a stable environment (±1°C), for <24 hrs., add 10 counts to accuracy specification.

Temperature Coefficient:

0°C to (Cal. Temp. −5°C), (Cal. Temp. +5°C) to 55°C.
5½ digits, auto-zero ON.
± (0.021% of reading + 10 counts)/°C

Maximum Burden at Full Scale:

1V

Crest Factor:

>4:1 at full scale

Maximum Reading Rates:

Same as ac volts

GENERAL INFORMATION

Operating Temperature:

0 to 55°C

Humidity Range:

95% R.H., 0 to 40°C

Storage Temperature:

−40°C to 75°C
except for battery option, −40°C to +65°C

Warm-up Time:

1 hr. to meet all specifications.

Integration Time:

Number of Digits	Line Frequency 50Hz	60Hz
5½	200ms	166.7ms
4½	20ms	16.67ms
3½	2ms	2ms

Power:

AC Line 48−440Hz; 86−250V, (see configuration)

Battery: (Option 001)

Rechargeable lead-acid; minimum continuous operation for 5 hours at 25°C; recharge time is 16 hours with 3468A off and 36 hours with 3468A on.

Maximum Power:

<13 VA

Size:

98.4mm H x 238.1mm W x 276.2mm D
(3.88 in H x 9.38 in W x 10.88 in D)

Weight:

3468A - 2.1 kg (4.63 lbs.)
3468A with Option 001 - 3.1 kg (6.83 lbs.)