

Electrical specifications

AC voltage measurement

Accuracy (1587 FC only)

Range	Resolution	50 Hz to 60 Hz $\pm$ (% of Rdg + counts)	60 Hz to 5000 Hz $\pm$ (% of Rdg + counts)
600.0 mV	0.1 mV	$\pm$ (1 % + 3)	$\pm$ (2 % + 3)
6.000 V	0.001 V	$\pm$ (1 % + 3)	$\pm$ (2 % + 3)
60.00 V	0.01 V	$\pm$ (1 % + 3)	$\pm$ (2 % + 3)
600.0 V	0.1 V	$\pm$ (1 % + 3)	$\pm$ (2 % + 3) ¹
1000 V	1 V	$\pm$ (2 % + 3)	$\pm$ (2 % + 3) ¹

¹1 kHz bandwidth

Low-Pass Filter Voltage (1587 FC only)

Range	Resolution	50 Hz to 60 Hz $\pm$ (% of Rdg + Counts)	60 Hz to 400 Hz $\pm$ (% of Rdg + Counts)
600.0 mV	0.1 mV	$\pm$ (1 % + 3)	+ (2 % + 3) - (6 % - 3)
6.000 V	0.001 V	$\pm$ (1 % + 3)	+ (2 % + 3) - (6 % - 3)
60.00 V	0.01 V	$\pm$ (1 % + 3)	+ (2 % + 3) - (6 % - 3)
600.0 V	0.1 V	$\pm$ (1 % + 3)	+ (2 % + 3) - (6 % - 3)
1000 V	1 V	$\pm$ (2 % + 3)	+ (2 % + 3) - (6 % - 3)

1577 accuracy

Range	Resolution	50 Hz to 60 Hz ± (% of Rdg + Counts)
600.0 mV	0.1 mV	± (2 % + 3)
6.000 V	0.001 V	± (2 % + 3)
60.00 V	0.01 V	± (2 % + 3)
600.0 V	0.1 V	± (2 % + 3)
1000 V	1 V	± (2 % + 3)

AC Conversion	Inputs are ac coupled true-rms responding and specified from 5 % to 100 % of range. Input signal crest factor can be up to 3 up to 500 V, decreasing linearly to a crest factor ≤1.5 at 1000 V. For non-sinusoidal waveforms add ± (2 % reading + 2 % FS) typical, for a crest factor up to 3.	
Input Impedance	10 MΩ (nominal), <100 pF, ac-coupled	
Common mode rejection ratio (1 kΩ unbalanced)	>60 dB at dc, 50 or 60 Hz	

DC voltage measurement

Range	Resolution	Accuracy 1587 FC ¹ ± (% of Rdg + Counts)	Accuracy 1577 ¹ ± (% of Rdg + Counts)
6.000 V dc	0.001 V	± (0.09 % + 2)	± (0.2 % + 2)
60.00 V dc	0.01 V	± (0.09 % + 2)	± (0.2 % + 2)
600.0 V dc	0.1 V	± (0.09 % + 2)	± (0.2 % + 2)
1000 V dc	1 V	± (0.09 % + 2)	± (0.2 % + 2)

¹Accuracies apply to ± 100% of range.

Input Impedance: 10 MΩ (nominal), <100 pF

Normal mode rejection ratio: >60 dB @ 50 Hz or 60 Hz

Common mode rejection ratio: >120 dB @ dc, 50 Hz or 60 Hz (1 k unbalanced)

DC millivolts measurement

Range	Resolution	Accuracy 1587 FC ± (% of Rdg + Counts)	Accuracy 1577 ± (% of Rdg + Counts)
600.0 mV dc	0.1 mV	± (0.1 % + 1)	± (0.2 % + 1)

DC and AC current measurement

Range		Resolution	Accuracy 1587 FC ± (% of Rdg+Counts)	Accuracy 1577 ± (% of Rdg+Counts)	Burden voltage (Typical)
AC 45 Hz to 1000 Hz	400 mA	0.1 mA	± (1.5 % + 2) ¹	± (2 % + 2) ¹	2 mV/mA
	60 mA	0.01 mA	± (1.5 % + 2) ¹	± (2 % + 2) ¹	
DC	400 mA	0.1 mA	± (0.2 % + 2)	± (1.0 % + 2)	2 mV/mA
	60 mA	0.01 mA	± (0.2 % + 2)	± (1.0 % + 2)	

¹1 kHz bandwidth

Overload: 600 mA for 2 minutes maximum

Fuse protection for mA Input: 0.44 mA, 1000 V, IR 10 kA

AC conversion: Inputs are ac coupled true-rms responding and specified from 5 % to 100 % of range. Input signal crest factor can be up to 3 up to 300 mA, decreasing linearly to crest factor ≤1.5 at 600 mA. For non-sinusoidal waveforms add + (2 % reading + 2 % FS) typical, for a crest factor up to 3.

Ohms measurement

Range	Resolution	Accuracy 1587 FC ¹ + (% of Rdg+Counts)	Accuracy 1577 ¹ + (% of Rdg+Counts)
600.0 Ω	0.1 Ω	± (0.9 % + 2)	± (1.2 % + 2)
6.000 kΩ	0.001 kΩ		
60.00 kΩ	0.01 kΩ		
600.0 kΩ	0.1 KΩ		
6.000 MΩ	0.001 MΩ	± (1.5 % + 3)	± (2.0 % + 3)
50.0 MΩ [2]	0.01 MΩ		

¹Accuracies apply from 0 % to 100 % of range. ²Up to 80 % relative humidity.

Overload protection: 1000 V rms or dc

Open circuit test voltage: <8.0 V dc

Short circuit current: <1.1 mA

Diode test (1587 FC only)

Diode test indication	Display voltage drop: 0.6 V at 1.0 mA nominal test current:
Accuracy	± (2 % + 3)

Continuity test

Continuity indication	Continuous audible tone for test resistance below 25 Ω and off above 100 Ω. Maximum reading: 1000 Ω
Open circuit voltage	<8.0 V
Short circuit current	1.0 mA typical
Overload protection	1000 V rms
Response time	>1 m sec

Frequency measurement (1587 FC only)

Range	Resolution	Accuracy ± (% of Rdg+Counts)
99.99 Hz	0.01 Hz	± (0.1 % + 1)
999.9 Hz	0.1 Hz	± (0.1 % + 1)
9.999 kHz	0.001 kHz	± (0.1 % + 1)
99.99kHz	0.01 kHz	± (0.1 % + 1)

Frequency counter sensitivity

Input range	V ac Sensitivity (RMS Sine Wave) ¹		DC trigger levels to 20 kHz ²
	5 Hz to 20 kHz	20 kHz to 100 kHz	
600.0 mV ac	100.0 mV	150.0 mV	NA
6.0 V	1.0 V	1.5 V	-400.0 mV and 2.5 V
60.0 V	10.0 V	36.0 V	1.2 V and 4.0 V
600.0 V	100.0 V		12.0 V and 40.0 V
1000.0 V	300.0 V		12.0 V and 40.0 V

¹Maximum input for specified accuracy = 10x range (1000 V max). Noise at low frequencies and amplitudes may affect accuracy.

²Usable to 100 kHz with full scale input.

Capacitance (1587 FC only)

Range	Resolution	Accuracy ± (% of Rdg+Counts)
1000 nF	1 nF	± (1.2 % + 2)
10.00 μF	0.01 μF	
100.0 μF	0.1 μF	± (1.2 % + 90 counts)
9999 μF	1 μF	

Temperature measurement (1587 FC only)

Range	Resolution	Accuracy ¹ ± (% of Rdg+Counts)
-40 ° C to 537 ° C	0.1 ° C	± (1 % + 10 counts)
-40 ° F to 998 ° F	0.1 ° F	± (1 % + 18 counts)

¹Accuracies apply following 90 minutes settling time after a change in the ambient temperature of the instrument.

Insulation specifications

Measurement range	Model 1587 FC: 0.01 MΩ to 2 GΩ Model 1577: 0.1 MΩ to 600 MΩ
Test voltages	Model 1587 FC: 50, 100, 250, 500, 1000 V Model 1577: 500, 1000 V
Test voltage accuracy	+20 %, -0 %
Short-Circuit test current	1 mA nominal
Auto discharge	Discharge time <0.5 second for C = 1 μF or less
Live circuit detection	Inhibit test if terminal voltage > 30 V prior to initialization of test
Maximum capacitive load	Operable with up to 1 μF load

Model 1587 FC

Output voltage	Display range	Resolution	Test current	Resistance accuracy ± (% of R _{dg} + Counts)
50 V (0 % to +20 %)	0.01 to 6.00 MΩ	0.01 MΩ	1 mA @ 50 kΩ	± (3 % + 5 counts)
	6.0 to 50.0 MΩ	0.1 MΩ		
100 V (0 % to +20 %)	0.01 to 6.00 MΩ	0.01 MΩ	1 mA @ 100 kΩ	± (3 % + 5 counts)
	6.0 to 60.0 MΩ	0.1 MΩ		
	60 to 100 MΩ	1 MΩ		
250 V (0 % to +20 %)	0.1 to 60.0 MΩ	0.1 MΩ	1 mA @ 250 kΩ	± (1.5 % + 5 counts)
	60 to 250 MΩ	1 MΩ		
500 V (0 % to +20 %)	0.1 to 60.0 MΩ	0.1 MΩ	1 mA @ 500 kΩ	± (1.5 % + 5 counts)
	60 to 500 MΩ	1 MΩ		
1000 V (0 % to +20 %)	0.1 to 60.0 MΩ	0.1 MΩ	1 mA @ 1 MΩ	± (1.5 % + 5 counts)
	60 to 600 MΩ	1 MΩ		
	0.6 to 2.0 GΩ	100 MΩ		± (10 % + 3 counts)