SI 7063
DIGITAL
MULTIMETER

SI 7063 Digital Multimeter

The SI 7063 is Schlumberger Instruments' most versatile multimeter yet, combining high speed systems and bench measurement facilities in a rugged **half-rack** case.

SI 7063 –
Your first choice

6½ Digit Performance –
20 Practical
Measurement Functions

Volts dc

True rms Volts ac

True rms Volts ac + dc

True rms Volts ac LF

Frequency Vac

Frequency Iac

Frequency TTL

Period Vac

Period Iac

Period TTL

2-4 Wire Ohms

Low Drive Ohms

True Ohms

Continuity

Diode Test

Current dc

True rms Current ac

Current ac + dc

Current ac LF

Temperature

Performance:	6½ digits; 2,100,000 full scale
Speed:	1,000 readings per second
Sensitivity:	100nV; 100µΩ; 1m deg
Accuracy:	0.002%
Environment:	Military construction to Def std 66/31 Cat 111
Assessment:	BS 5750; 1987 part 1. AQAP 1

SI 7063 Flexibility –
Choose the version you require:

SI 7063A

▮ Voltage dc

▮ 2-4 wire resistance

▮ Current dc

▮ Temperature

▮ IEEE-488

Why pay for functions
you may not use?

SI 7063B

SI 7063A plus:

▮ Voltage ac

▮ Current ac

▮ Frequency

▮ Period

The supreme multimeter for systems and general purpose use

Offering classic 6½ digit performance with 20 practical measurement functions, the SI 7063 is a bench/systems ATE multimeter which provides high standards of speed and accuracy in a compact half-rack format.

So easy to use

The ergonomically designed front panel of the SI 7063 sets new standards for DMM operation:

▌ Bright vacuum fluorescent display makes results easy to read in all light conditions.

▌ Tactile switching with audible feedback gives precise front panel control.

▌ Logical menu-driven commands simplify operation, allowing you to move from one level to another with a single key-stroke.

More speed . . . more features

You get more measurement functions with the SI 7063 . . . and more choice. For example, temperature measurements can be made using thermocouples or a platinum resistance thermometer (linearised to IEC 751), while the frequency function provides alternative ranges of 1Hz to 20MHz at TTL level, or 1Hz to 1MHz for Vac/Iac.

An IEEE-488 interface comes as standard, facilitating remote control of all functions, as well as transmission of results to a printer or PC for immediate analysis. To speed up data transfer, the command set is compressed by an integral data reduction buffer.

Special programs are provided to verify input limits and drift as well as offering statistics, polynomial and other mathematical functions.

Control lines are available for external trigger input, measurement complete, digitised output and alarm output.

Pulse-Width Conversion – the secret of success

Perhaps the most valuable part of the SI 7063 is Schlumberger's 30 years' of experience in the design and manufacture of precision DMM's, and in particular, the use of our exclusive Pulse-Width Conversion technique. The most advanced precision ADC available, Pulse-Width Conversion is unique to Schlumberger Instruments and is perhaps the single most important feature that really sets them apart.

Pulse-Width Conversion performs true continuous integration (not just digital sampling) and eliminates polarity reversal errors, giving superb linearity over the full dynamic voltage range.

TAKE A LOOK AT THESE BENEFITS

Continuous Integration
No gaps between measurements
Thanks to Pulse-Width Conversion, the SI 7063 can perform continuous averaging, definable by the user from 333µs to 9999 seconds, without any gaps. Because all input variations are included in the measurement, **nothing** is missed, and the output reading is the true average value of the input.

Superb Linearity
Consistent measurements of either polarity
Conversion is inherently linear and includes a special selected reference supply circuit which is polarity balanced. No other conversion method offers this feature which ensures consistent, repeatable measurement of either polarity.

Variable Integration Time
Gives you the precision you require
The Pulse-Width Conversion technique allows you to vary the integration times, giving maximum flexibility for the reduction of noise under varying measurement conditions. A power frequency servo tracks changes in supply frequency and adjusts the integration period, cycle by cycle, to reject pick-up and interference.

Fast Auto-Ranging
Prevents over-stressing of components
Overload detection is interleaved during measurement every 300µs. Upranging therefore occurs the instant an overload is detected, speeding up the measurement process and preventing the over-stressing of components.

With measurement capability covering 10 decades from 100nV to 1050V, the SI 7063 has the capacity to meet all your present and future requirements with ease. Compare it with a DMM from any other manufacturer . . . and measure the difference in the quality of results.

Two graphical examples of the advantages of Pulse Width Conversion

Superb linearity
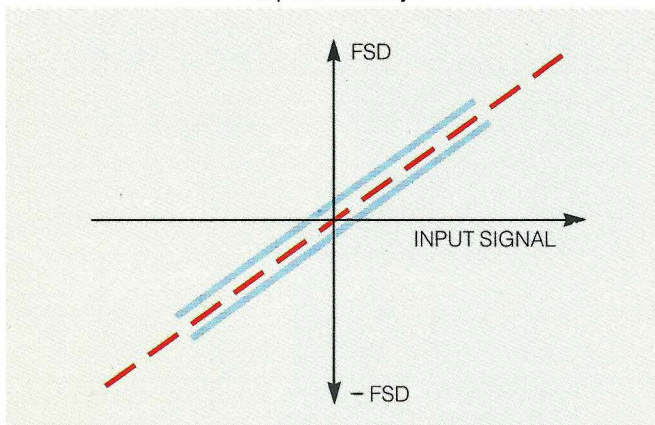
Continuous integration
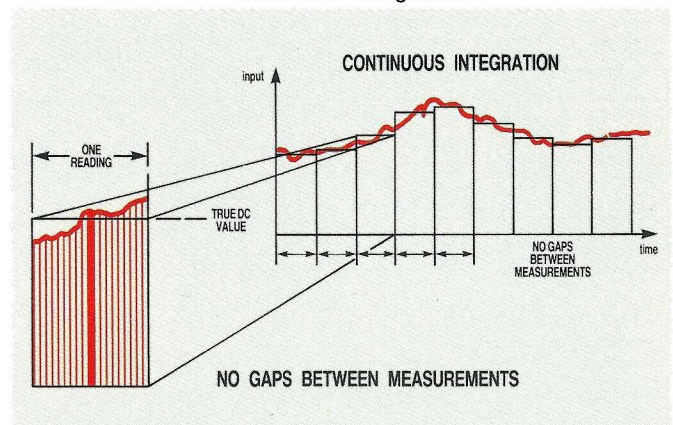
Measurement performance

SI 7063B

SI 7063A

VOLTAGE	CURRENT	RESISTANCE	TEMPERATURE
VOLTAGE DC	CURRENT DC	CONTINUITY	DEG C (THERMO)
VOLTAGE LF AC	CURRENT LF AC	TRUE OHMS	DEG F (THERMO)
		DIODE TEST	DEG C (PRT)
		LOW DRIVE OHMS	DEG F (PRT)

DC Voltage

- Multiple choice 3½, 4½, 5½ or 6½ digits resolution.
- 100nV sensitivity.
- High amplifier impedance greater than 10GΩ up to 21V.
- Pulse-Width Conversion ADC linearity better than 5ppm, with no polarity reversal errors.
- Accuracy 0.004% for 1 year.
- On-board temperature sensor corrects for a wide range of temperatures automatically, allowing the SI 7063 to be used in a varying ambient temperature.
- Five available ranges: 200mV to 1050V.
- High read rates of 1000 rdg/sec into memory buffer frees PC time for multi-tasking. Up to 190 rdg/sec can be made directly on to the communications bus.
- Patented high-speed ADC technique gives rms value of ac from 0.5Hz to 3Hz.

Current DC

- Four ranges: 200µA, 2mA, 200mA and 2A.
- Multiple choice 3½, 4½, 5½ or 6½ digits resolution.
- 1nA sensitivity.
- Integral fuse protection.
- Patented Pulse-Width algorithm ADC technique gives lower value frequencies from 0.5Hz to 3Hz.

Resistance

- Seven available ranges, 200Ω to 999MΩ.
- Multiple choice 3½, 4½, 5½ or 6½ digits resolution.
- 100µΩ sensitivity, 5ppm linearity.
- Accuracy 0.002% for 24 hours, 0.007% for 1 year.
- Auto-sense 4-wire measurement eliminates the need to switch between 2- and 4-wire inputs; full overload protection to 350V peak on all ranges.
- True-Ohms function with automatic thermal error rejection.
- Low Drive Ohms with reduced current drive and open terminal voltages offers greater protection for in-circuit measurements.
- Diode measurements with unique zener voltage read-out.
- Continuity with variable tone facility for the detection of short circuits.

PRT

- Temperature range −200°C to 850°C.
- Resolution 1m °C or F.
- Resistance at 0°C user-selectable. (Default 100Ω).

Thermocouple

- Thermocouple types J, K, R or T. Other types may be used by the use of the MATH facility (polynomial).
- Selectable cold junction temperature.

VOLTAGE	CURRENT	FREQUENCY	PERIOD
VOLTAGE AC	CURRENT AC	FREQUENCY VOLTS	PERIOD VOLTS
VOLTAGE AC+DC	CURRENT AC+DC	FREQUENCY AMPS	PERIOD AMPS
		FREQUENCY TTL	PERIOD TTL

True RMS Volts AC, AC + DC and LF AC

- Multiple choice 3½, 4½, 5½ or 6½ digits resolution.
- Band-width 20Hz to 1MHz.
- 100nV sensitivity.
- Accuracy 0.03% for 24 hours, 0.07% for 1 year.
- High crest factor of 10:1 for complex waveforms maintains true rms value and performs well with non-sinusoidal signals.
- Five available ranges from 200mV to 1050V maintains full 1,000V rms capability.
- DC coupled AC offers true RMS measurements for combined AC values with DC content.

Current AC

- Two ranges available: 2mA and 2A.
- Multiple choice 3½, 4½, 5½ or 6½ digits resolution.
- 0.05% accuracy.
- Integral fuse protection.
- Band-width 20Hz to 10kHz.

Frequency

- Frequency measurement of Voltage or Current signals.
- Analogue or TTL Digital inputs.
- Range: 1Hz to 1MHz (analogue) or 1Hz to 20MHz (digital).

Period

- Period measurement of Voltage or Current signals.
- Analogue or TTL Digital inputs.
- Range: 1µs to 1s (analogue) or 100ns to 1s (digital).
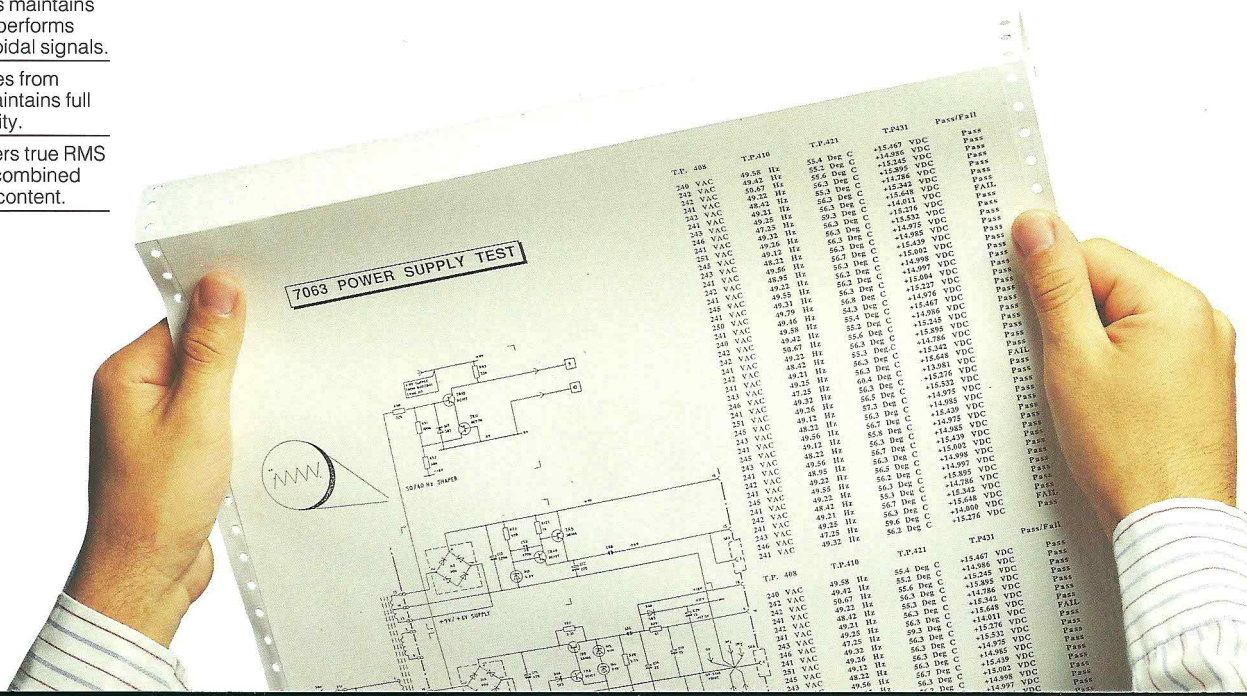
Extended measurements to suit your application

▨ Temperature

Temperature readings may be displayed in °C or °F with maximum 1m-degree resolution.

▨ PRT readings

Offering linearisation to IEC 751 and IPTS-68 with selectable Ro value, the SI 7063 can be used in conjunction with a Platinum Resistance Thermometer in a 4-wire configuration, to give precision measurements with excellent 1m-degree sensitivity.

With a PRT there is no requirement for cold junction compensation, and use of the true Ohms function eliminates all unwanted thermal EMF errors.

▨ Thermocouple readings J, K, R, T

The SI 7063 also offers built-in thermocouple linearisation with 100nV dc measurement sensitivity: a powerful combination which can measure temperature down to a few tens of milli-degrees. Special thermocouples can also be accommodated using a general purpose polynomial.

▨ Frequency and Period

There's no need to purchase a separate instrument for frequency and period measurements . . . the SI 7063B offers two dynamic frequency/period ranges with 10mV, 100μA sensitivity:

- ▨ 1Hz to 20MHz for TTL levels.
- ▨ 0.1μs to 1s for TTL levels.
- ▨ 1Hz to 1MHz Vac and Current ranges.
- ▨ 1μs to 1s Vac and Current ranges.

▨ Digital Calibration

Minimizes downtime and improves reliability

Digital calibration of the SI 7063 is simplicity itself using either the front panel keys or the IEEE-488 bus: just select the measurement function and range, connect an appropriate standard and enter its value. Constants are stored in non-volatile memory (retained for 10 years without batteries) and protected from unauthorized tampering by a calibration switch.

The following lists the facilities available from the **front panel:**

A FUNCTION mode to store front panel key stroke sequences.
Auto zero on or off.
Calibration control.
Cold junction temperature for Thermocouple measurement.
Current shunt (and its resistance value).
External trigger control.
Filters (walking window averaging or 4 times integral).
Gate time (from 10ms to 10s).
GPIB set-up (address).
High Voltage probe.
History file, clear, view or dump.
Information on Status, Options fitted, Serial number and Calibration date.
Integration time (from zero to 9999.9999s).
Measurement delay (from 1ms to 9999.9999s).
Number of Digits (3½ to 6½).
Processing (see right).
Reset or Initialise.
Ro value for PRT.
Self test modes (confidence, full, keyboard or display).
Type of thermocouple to be used.

The following program routines are available for processing measured results and may be used singly or in multiples, and in any order.

Scale
Multiplies the measured result by a user-defined constant.

Percentage Deviation
Computes the percentage deviation of an input from a user-defined value N.

Offset
Adds a user-defined constant C to the measured value.

Division
Acts on the measured result in 4 different ways using a user-defined constant N.

Max-Min
Saves the maximum, minimum and peak-to-peak measured results. In this way, AC signals may be characterized using DC sampling or input drift over time may be monitored.

Limits
Classifies the measured result as being HI, LO, GO and NO GO. Performance checking and quality control of components is simple and straightforward.

Statistics
Computes the MEAN, VARIANCE, STANDARD DEVIATION and ROOT-MEAN-SQUARE from a series of measured results.

Polynomial
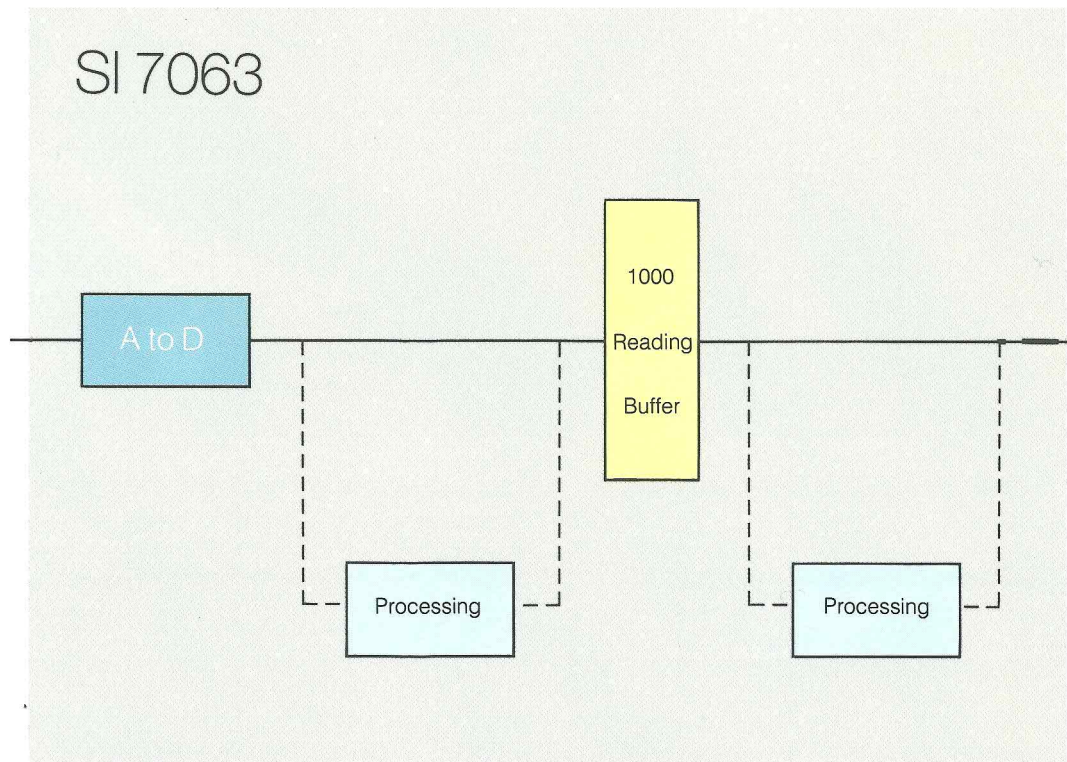Computes up to a 4th order polynomial on the measured result.

Peak/Trough
Computes only the peaks and troughs of a varying input signal that is detected to be outside a pre-defined hysterisis band.

Simplified programming

SI 7063

▮ Flexible Output Options
Designed with the systems development engineer in mind

The SI 7063 gives the design engineer an important choice. Measurements may either be stored internally at the rate of 1000 readings per second into a 1000 location buffer, ready for subsequent analysis by the instrument itself, or they may be transmitted directly on the communications bus for real time decision making by a controlling computer.

▮ Intelligent Translator Software

Intelligent translation software within the SI 7063 has been designed with the appreciation that not all operators of the instrument will be familiar with the whole range of key-stroke input commands that are available, and in the event of command syntax errors being made, is able to interpret and correct most of these, and to then perform the function as intended by the operator.

▮ Flexible Command Syntax
Saves time and engineering resources

The SI 7063 can be programmed using either English verbose or shortform commands, giving you the flexibility to develop and debug programs with ease.

▮ User Defined Command String

Remote control command strings for certain operational modes of the DMM could be very lengthy. In order to help avoid errors in typing these and certainly to speed up the overall processing within the multimeter, ten of these may be initially stored into internal memory, syntax checked and compressed. To invoke any of these thereafter, the respective commands can be as simple as two digits.

▮ Comprehensive Command Interrogation
'HELP' systems command

Unique to the SI 7063 the 'HELP' command enables the systems development engineer to quickly and easily interrogate the instrument over the IEEE-488. It recalls from memory the correct, structured syntax required for each and every command available. 'HELP' removes the need for the programmer to refer back to the users handbook when developing measurement system programs.
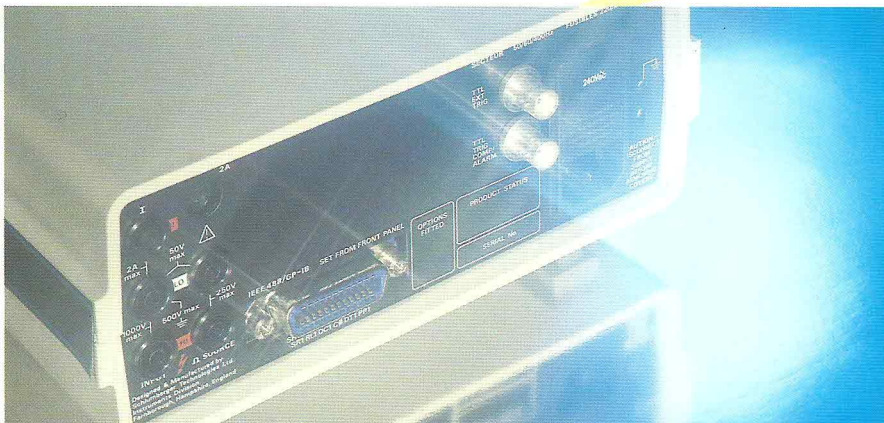
Efficient processing
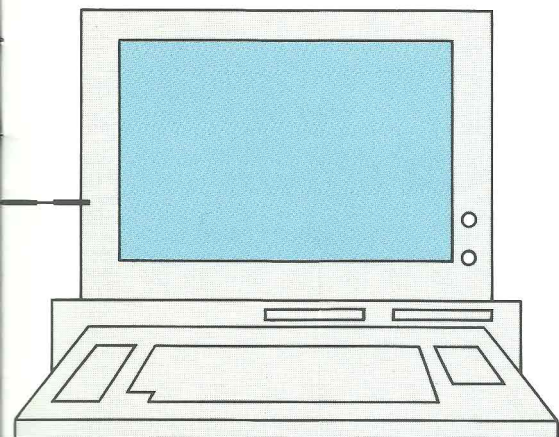
▮ Increased Analysis

Reduce system overhead
The SI 7063 has 9 built-in programs which permit pre- and post-processing of results.

▮ Real Time Events Capture

1,000 results can be written into internal memory every second, enabling the SI 7063 to capture real-time events.

▮ Parallel Performance

The programs provided within the SI 7063 allow a degree of processing and data reduction. This contributes to a reduction of traffic onto the bus and thereby releases an external controller to undertake additional routines in parallel.

Specification for the SI 7063

DC VOLTAGE

Accuracy: ± [% rdg + counts].
Filter in, 6½ digits (800ms).

Nom Range	Input Sens.	Input Resistance	Stability Te ± 1°C 24hrs	Limits of Error Te ± 5°C 90 day	Limits of Error Te ± 5°C 1 year	Temp Coefficients
0.2V	100nV	>10GΩ	0.002+8	0.005+15	0.007+15	0.0005+1.5
2.0V	1µV	>10GΩ	0.001+6	0.003+8	0.004+8	0.0003+0.8
20V	10µV	>10GΩ	0.001+5	0.004+5	0.005+5	0.0004+0.5
200V	100µV	10MΩ	0.002+8	0.008+10	0.010+10	0.0004+1
1000V	1mV	10MΩ	0.002+8	0.008+10	0.010+10	0.0004+1

For 5½, 4½ and 3½ digits divide the count error by 2.

Linearity:

Ranges up to 200V:	<10 ppm of full scale
1000V range only:	<20 ppm of full scale

Calibration Temperature

Calibration Temperature (T_e) is the temperature of the calibration room environment. Calibration occurs at 20°C (23°C for USA) and is directly traceable to International Standards via the National Physical Laboratory or the National Bureau of Standards. Recalibration is valid at T_e from 18°C to 25°C.

Maximum Readings per Second (Filter Out)

Digits	Full Scale	Integration Time	Into Memory	Onto Bus Track
3½	2100	1.0ms	1000	190
4½	21000	2.0ms	500	187
4½	21000	16.6ms	60	–
5½	210000	20ms	50	–
6½	2100000	200ms	5	–

Full scale on 1000V range is 1050V.

Input Current (0.2V, 2V and 20V ranges):	<80pA at 20°C
(200V and 1kV ranges):	<200pA at 50°C
Range of Zero:	±1% of full scale
	(Zero stability for 24 hrs <1µV after a range change settling time of 5 minutes)
Overload Protection:	1500V peak

Temperature Coefficient

Expressed as ± (ppm reading + counts) /°C. Valid from 15 to 35°C. Temperature coefficient need only be applied outside the temperature span quoted with T_e.

RESISTANCE

Accuracy: ± [% rdg + counts].
Filter in, 6½ digits (800ms).

Nom Range Ω	Input Sens. Ω	Measuring Current	Stability Te ± 1°C 24hrs	Limits of Error Te ± 5°C 90 day	Limits of Error Te ± 5°C 1 year	Temp Coefficients
200	100µ	1mA	0.003+10	0.007+10	0.010+10	0.0007+1
2.0k	1m	1mA	0.002+8	0.010+10	0.014+10	0.0005+1
20k	10m	50µA	0.002+8	0.010+10	0.014+10	0.0005+1
200k	100m	50µA	0.002+8	0.010+10	0.014+10	0.0005+1
2.0M	1	5µA	0.003+10	0.014+15	0.020+15	0.0007+1.5
20M	10	<0.65µA	0.006+20	0.044+25	0.060+30	0.0022+2.5
999M	100	<0.65µA	0.2+100	0.6+150	0.8+150	0.03+15

For 5½, 4½ and 3½ digits divide counts error by 2.
Max reading 999.9999 MΩ.

Max lead resistance (any lead):

100Ω	20Ω to 2kΩ ranges
1kΩ	20 kΩ to 999MΩ ranges

Maximum Readings per Second for normal 2/4-wire, as dc voltage (up to 2MΩ).

Maximum overload:	250V rms (±350V peak)

Maximum Open Terminal Voltage:

0.2Ω, 2.0Ω, 20kΩ, 20MΩ and 999MΩ	6.5V
200kΩ and 2MΩ	15V
Low drive ohm ranges	6.5V
Zero:	±1% of full scale
	(Zero stability for 24hrs <1mΩ after a range settling time > 5 minutes)

Linearity:

200Ω to 2MΩ range	<10 ppm of full scale
20MΩ and 200MΩ range	<100 ppm of full scale

Low Drive Ohms:

Max reading 21kΩ

Nom Range Ω	Input Sens. Ω	Measuring Current	Stability Te ± 1°C 24hrs	Limits of Error Te ± 5°C 90 day	Limits of Error Te ± 5°C 1 year	Temp Coefficients
2.0k	1m	50µA	0.004+20	0.030+20	0.040+20	0.0015+2
20k	10m	5µA	0.005+20	0.044+20	0.060+20	0.0022+2

True Ohms:

This compensates 2 or 4 wire resistance measurements up to and including the 2MΩ range for thermal voltage offsets. It is especially effective for low resistance measurement.
Additional delays for thermal error correction provides a maximum speed of 20 readings/second.

Diode:

Nom Range	Input Sens.	Measuring Current	Stability Te ± 1°C 24hrs	Limits of Error Te ± 5°C 90 day	Limits of Error Te ± 5°C 1 year	Temp Coefficients
10V	10µV	1mA	0.004+8	0.005+10	0.007+10	0.0005+1

Continuity:

Audible indication of continuity levels by three tones:

Tone 1:	0 to 0.1Ω
Tone 2:	>0.1 to 1Ω
Tone 3:	>1 to 10Ω

DC CURRENT

Accuracy: ± [% rdg + counts]

Filter in, 5½ digits (80ms)

Nominal Range*	Input Sensitivity	Stability 24 hrs, Te ± 1°C	Limits of Error 1yr, Te ± 5°C
200µA	1nA	0.01+20	0.02+20
2mA	10nA	0.01+5	0.02+5
200mA	1µA	0.02+10	0.04+10
2000mA	10µA	0.02+5	0.1+5

For 4½ and 3½ digits divide counts by 3.
*Auto range is limited for the dc current mode.

Maximum Scale:	2100.00mA
Measurement Resistor:	
up to 2mA range	100Ω
above 2mA range	100mΩ
Temperature Coefficient:	<0.002% rdg/°C
Burden:	
up to 2mA range	<0.3V
above 2mA range	<0.8V
Overload Protection:	2A fuse 250V max.
Zero:	±1% range
Speeds and Integration Times:	As dc voltage

TEMPERATURE

PRT (Platinum Resistance Thermometer)

Linearized to IEC751.

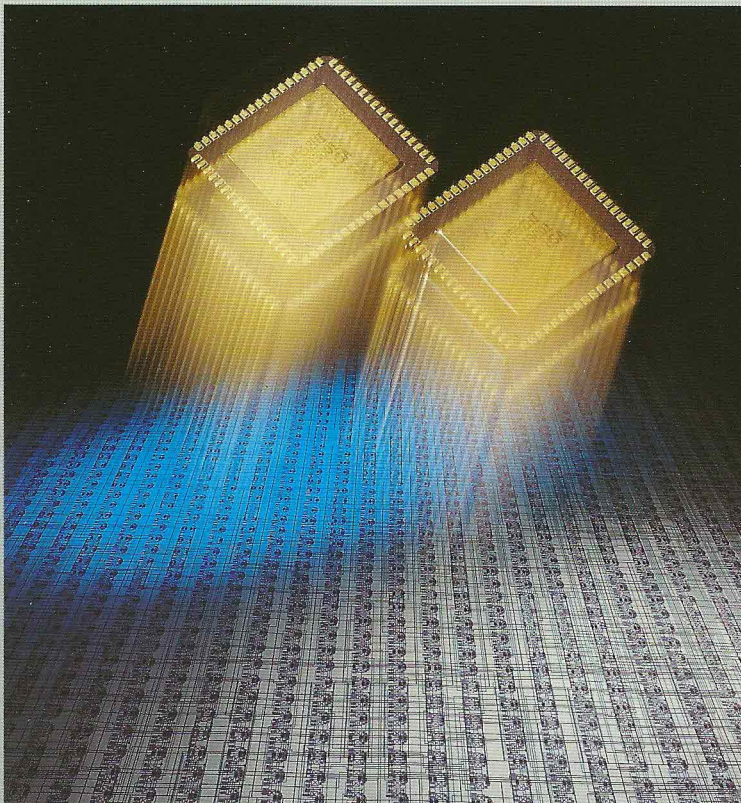|	
Temperature range:	−200.00°C to +850.00°C
Resolution:	1m °C or °F
Conformance to IEC751	0.1°C
Measurement current:	1mA
Resistance at 0°C	user-selectable (100Ω default)
Alpha value:	0.0385

Thermocouple

Linearization for J, K, R and T thermocouples to IEC584/BS4937. The default configuration is to use an external ice point.

Schlumberger developed 32 bit control logic as used in SI 7063. (A 2 micron CMOS gate array containing 21840 transistors).

AC VOLTAGE (SI 7063B version)

True rms of ac or ac + dc inputs of sinusoidal form.

Accuracy: ± [% rdg + counts].

Applies to inputs >10% range.

Stability, 24hrs, Te ± 1°C. Filter in below 400 Hz, 5½ digits (80ms).

Nom Range	Input Sensitivity 5½ digit	Input Sensitivity 6½ digit	20 to 40 Hz*	40 to 10 kHz	10k to 30 kHz	30k to 100 kHz
0.2V	1µV	100nV	0.13+30	0.03+20	0.05+30	0.25+150
2.0V	10µV	1µV	0.13+30	0.03+20	0.05+30	0.25+150
20V	100µV	10µV	0.15+35	0.05+25	0.05+50	0.4+200
200V	1mV	100µV	0.15+35	0.05+25	0.05+50	0.4+200
1000V	10mV	1mV	0.15+35	0.05+25	0.05+50	0.4+200

Limits of Error

90 day Te ± 5°C

Nominal Range	20 to 40 Hz*	40 to 10 kHz	10k to 30 kHz	30k to 100 kHz
0.2V	0.15+30	0.05+20	0.07+30	0.30+150
2.0V	0.15+30	0.05+20	0.07+30	0.30+150
20V	0.17+35	0.07+25	0.07+50	0.45+200
200V	0.17+35	0.07+25	0.07+50	0.45+200
1000V	0.17+35	0.07+25	0.07+50	0.45+200

1 year Te ± 5°C

Nominal Range	20 to 40 Hz*	40 to 10 kHz	10k to 30 kHz	30k to 100 kHz
0.2V	0.17+30	0.07+20	0.09+30	0.35+150
2.0V	0.17+30	0.07+20	0.09+30	0.35+150
20V	0.19+35	0.09+25	0.09+50	0.50+200
200V	0.19+35	0.09+25	0.09+50	0.50+200
1000V	0.19+35	0.09+25	0.09+50	0.50+200

For 3½ and 4½ digit accuracy, divide count error by 5.
For 6½ digit accuracy, multiply count error by 10.

Max input on any range is 1050V rms.

For inputs from 1% to 10% of range, double count error.

Extended Frequency Error

Frequency Range	ac coupled	ac + dc coupled
DC coupled	N/A	add 0.1% rdg + 100 counts
1 Hz to 5 Hz*	N/A	20% rdg
5 Hz to 10 Hz*	5% rdg	1% rdg
10 to 25 Hz*	0.4% rdg + 40 counts	0.2% rdg + 200 counts
100kHz to 300 kHz	10% rdg + 1% range	10% rdg + 1% range
300kHz to 500 kHz	25% rdg + 2% range	25% rdg + 2% range
500kHz to 1 MHz (typical)	30% rdg + 5% range	30% rdg + 5% range

Temperature coefficient:

10 Hz to 30 kHz	<0.003% rdg/°C
30 kHz to 50 kHz	0.01% rdg/°C
Input Impedance	1 MΩ, 150 pF nominal
Crest Factor 10:1	add 1% rdg
Peak Input	maximum 5 times full scale value

Maximum Readings per Second

Digits	Integration	Into Memory	Onto Bus Track	Onto Bus Trigger
3½	2.0 ms	300	150	100
4½	16.7 ms	60	53	50
4½	20 ms	50	44	40
5½	200 ms	5	5	5
6½	2s	0.5	0.5	0.5

Analog settling time (5½ digits):

filter out	0.5 s
filter in	1 s

Maximum ratings: 1050V rms or 1.5 kV peak
2×10^7 VHz

DC Content: 400V max when ac coupled
1050V max when ac + dc coupled

*6½ digits only.

AC CURRENT (SI 7063B version)

True rms of ac or ac + dc input.

Accuracy: ± [% rdg + counts].

Filter in, 5½ digits (80ms). Applies to inputs >10% of range.

Stability, 24hrs, Te ± 1°C.

Nominal Range	Sensitivity 5½ digit	40 to 400 Hz	400 to 5 kHz	5 kHz to 10 kHz
2mA	10nA	0.05+25	0.15+25	0.5+25
2000mA	10µA	0.05+25	0.15+25	0.5+25

Limits of Error, 1 year Te ± 5°C

Nominal Range	40 to 400 Hz	400 to 5 kHz	5 kHz to 10 kHz
2mA	0.1+25	0.2+25	0.5+25
2000mA	0.2+25	0.3+25	0.5+25

For 4½ and 3½ digits, divide 5½ count error by 10.

Full Scale:	2100.00 mA (max resolution)
Speeds:	as AC voltage
Temperature Coefficient:	<0.01% rdg/°C

No autoranging on this mode

Low-level inputs

Input (as % FS)	Correction
below 0.1%	multiply count error by 6
>0.1% to 1%	multiply count error by 4
>1% to <10%	multiply count error by 2

FREQUENCY (SI 7063B version)

TTL Mode:
(No half cycle to be less than 25ns).

TTL levels, input impedance 10kΩ.

Range:	1 Hz to 20 MHz
Resolution:	1 Hz, 0.03% rdg accuracy
Maximum ratings:	<1 kHz 500V rms, 700V peak
	>1 kHz 120V rms, 170V peak
	<2 x 10^7 VHz

Analog Mode:

Input impedance:	
Vac:	1MΩ, 150 pF
Iac:	0.1Ω to 100Ω (nominal) depending on range
Sensitivity:	10 mV, 100 µA
Maximum ratings:	<1 kHz 500V rms, 700V peak, 2A rms
	>1 kHz 120V rms, 170V peak, 2A rms
	<2 x 10^7 VHz

Detects zero crossings.

Allows frequency measurement of Vac input, Iac input.

Range:	1 Hz to 1 MHz
Resolution:	1 Hz
Accuracy:	0.03% rdg

PERIOD (SI 7063B version)

TTL Mode:
Same input details as for the TTL mode of frequency measurement.

Period range:	sensitivity 100ns, full scale 1s.

AC Mode:
Same input details as for the AC mode of frequency measurement.

Period range:	1µs to 1s

INTERFERENCE REJECTION

Normal Mode:

DC measurement	Rejection of 50 (60) Hz ±3%	>70dB

Effective Common Mode:
Measured with 1kΩ imbalance in Lo lead

Maximum Common Mode Voltage		500V, dc or peak
DC measurement	Rejection of dc	>140dB
	Rejection of 50 (60) Hz ±3%	>140dB
AC measurement	Rejection of dc	>140dB
	Rejection of 50 (60) Hz ±3%	>60dB

GENERAL DATA

Stand-alone Unit

Height	104 mm	4.09 in
Width	228 mm	8.98 in
Depth	300 mm	11.8 in
Weight*	3.14 kg	6.93 lbs

* SI 7063B

SAFETY
Designed to conform to IEC348 class 1 and BS 4743

POWER SUPPLY

Voltage:	100/120/220/240V ac ±10%
Frequency:	50/60/400 Hz ±3%
Consumption:	<30VA

PROTECTION

Power supply:	Fused line and neutral
Current measurement:	Fused 2A
Voltage measurement:	spark gap at 1.7kV

GPIB Interface
The GPIB interface conforms to IEEE 488 (1978).

The GPIB subsets are:
SH1, AH1, T5, TE0, L3, LE0, SR1, RL1, DC1, C0, DT1, E1 and PP1.

GPIB address (and Talk-only and Listen-only) is set by front panel menus.

Environment
Designed and constructed to Def. std 66-31. Issue 1 cat. III and MIL-T-28800C. Type III class 5 style D.

Operating:	0°C to 40°C, RH <93%
	−5°C to 55°C, RH <30%
Storage:	−40°C to +70°C
Operating humidity:	93% maximum, non condensing

Ordering information

7063A: Systems Multimeter
DC Voltage and Current
Resistance and Temperature

7063B: Systems Multimeter
As 7063A plus
AC Voltage and Current
Frequency and Period

Standard accessory kit
Power lead
Test leads
Spare fuses
Test results/cal sheet
Operating manual

Optional accessories

Temperature probe, insertion	71517A
Temperature probe, surface	71517B
Radio frequency probe	71457F
High voltage probe	70457E
Current shunt	70457X
NATO set of leads	71517C
Rack mounting kit	71501A
AC/Freq option*	70631A

* Calibration required after fitting
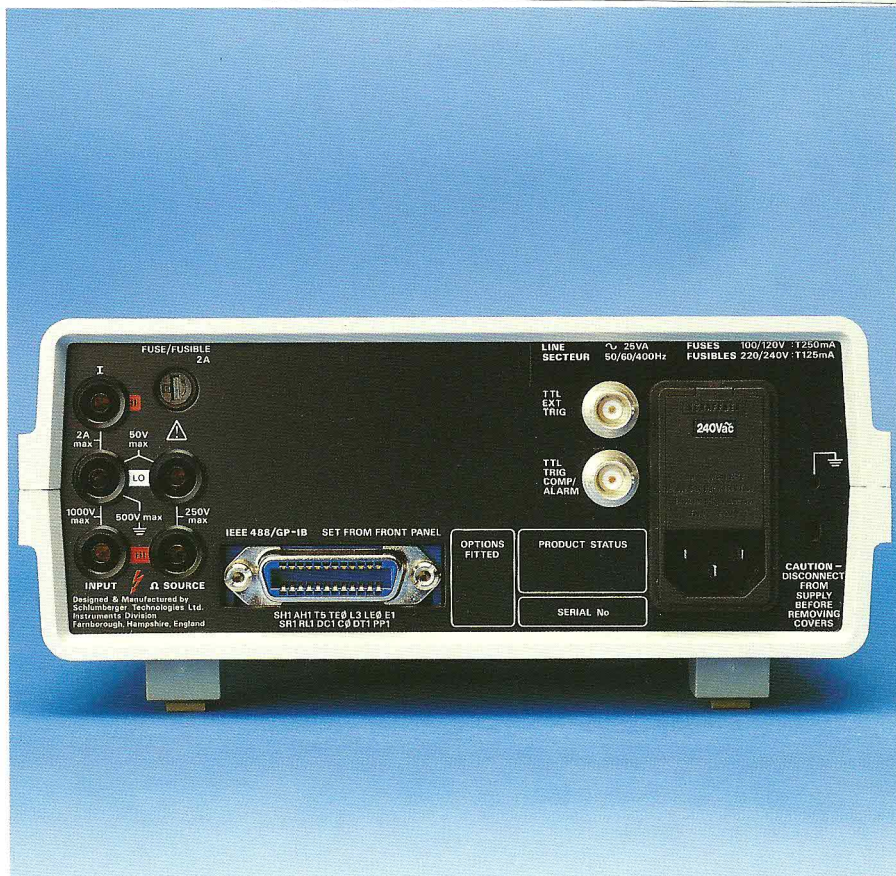
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