



Time Electronics

5018 Programmable DC-AC V-I Calibrator



- 0 to 22V DC (30V DC Optional)
- Optional 0 to 22V AC, 220V DC & 1kV DC
- Optional 0 to 220mA AC/DC
- 15ppm accuracy, 0.5ppm resolution
- 1999999 full scale + 10% over-range
- Deviation control -9.999% to +9.999%
- Ramping feature
- Ideal for ATE applications
- Rack mount kit option
- RS232/USB/GPIB Interface

HIGH ACCURACY PROGRAMMABLE DC/AC SOURCE

The 5018 is a versatile instrument that covers a wide range of applications. It can be configured as a simple benchtop DC voltage source or advanced AC/DC voltage and current calibrator controlled via PC or laptop, performing any number of tasks as part of a complex ATE test rig.

RAMPING FEATURE

The 5018 includes an internal ramping feature. A ramp rate per range for each function can be set via a PC. The option to ramp the output can be turned on or off via the front panel. This is particularly useful in aviation and automotive industries for testing analogue gauges.

SIMPLE OPERATION

Front panel operation allows the user to quickly set the function and output required. Using the jog / shuttle dial deviation the user can finely adjust the output value as a percentage (+/- 99.99%). All this information is shown on a clear, easy to read LED display.

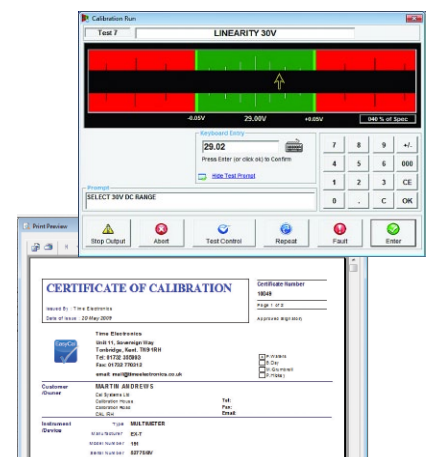
GPIB, RS232, AND USB INTERFACE

These interfaces allow the 5018 to be connected to a PC and controlled by an external program such as Time Electronics' EasyCal calibration software. The 5018 uses a SCPI command structure for programming. This makes writing control programs in Visual Basic, C and Labview a simple task.

CALIBRATION MADE EASY

Connect the 5018 to a PC or laptop (via RS232, GPIB or USB) installed with Time Electronics EasyCal software and automate the calibration process. Increase speed of calibration and consistency of results. Easily produce calibration certificates and reports to ISO 9001, ISO 17025, and other international quality standards.

EasyCal has the ability to control a wide range of programmable instruments and comprehensive ATE systems can be configured to control a variety of applications. It has full read back capability and therefore can perform closed loop testing. Conditional tests can be configured to allow decision making to further enhance the usefulness.



5018 Specifications

TECHNICAL SPECIFICATION

Accuracy specifications are shown as ppm (or %) of output + floor and apply for settings between 10% and 100% of range. Specifications apply at an ambient temperature of 22°C +/- 3°C after the calibrator has warmed up for at least 1 hour.

DC VOLTAGE

Range	Accuracy 1 year	Output Resistance	Max Output Current	Resolution
22mV (33mV)	30ppm + 4μV	10Ω (50Ω)	-	100nV
220mV (330mV)	15ppm (30ppm) + 6μV	10Ω (50Ω)	-	1μV
2.2V (3.3V)	15ppm (20ppm) + 20μV	< 0.15Ω	20mA	1μV
22V (30V)	15ppm (20ppm) + 150μV	< 0.15Ω	20mA	10μV

30V option (9724) shown in brackets above

DC HIGH VOLTAGE OPTIONS 9720/9721

Range	Accuracy 1 year	Output Resistance	Max Output Current	Resolution
220V*	15ppm + 1mV	<0.25Ω	10mA	100μV
1kV*	25ppm + 3mV	<1Ω	1mA	1mV

*Minimum Load 20kΩ

DC CURRENT OPTION 9718

Range	Accuracy 1 year	Compliance Voltage	Resolution
220μA	150ppm + 15nA	11V	1nA
2.2mA	100ppm + 40nA	11V	10nA
22mA	80ppm + 200nA	11V	10nA
220mA	80ppm + 3μA	11V	100nA

AC V OPTION 9719 10Hz to 20kHz (Sine 0.01% crystal controlled)

Range RMS	Accuracy % 1yr 10Hz - 1kHz	Accuracy % 1yr 1kHz - 10kHz	Accuracy % 1yr 10kHz - 20kHz	Output Resistance	Max Output Current	Resolution
22mV	0.05% + 100μV	0.05% + 150μV	0.05% + 250μV	10Ω	-	1μV
220mV	0.04% + 100μV	0.04% + 150μV	0.04% + 250μV	10Ω	-	1μV
2.2V	0.03% + 170μV	0.03% + 250μV	0.03% + 300μV	<0.15Ω	20mA	10μV
22V	0.03% + 2.0mV	0.03% + 3.0mV	0.03% + 4.0mV	<0.15Ω	20mA	100μV

AC CURRENT OPTION 20Hz to 1kHz (Sine) - available if current and AC options are fitted

Range RMS	Accuracy 1 year	Compliance Voltage RMS	Resolution
220μA	0.07% + 300nA	5V	10nA
2.2mA	0.05% + 300nA	5V	10nA
22mA	0.05% + 3μA	5V	100nA
220mA	0.05% + 30μA	5V	1μA

GENERAL SPECIFICATION

Warm up	1 Hour to full accuracy
Settling Time	Less than 5 seconds
Standard Interfaces	GPIO (IEEE-488), RS-232, USB
Temperature Performance	Operating: 10 to 40°C, Full Spec: 23°C +/- 5°C, Storage: -10°C to 50°C
Operating Humidity / Altitude	Humidity - Operating: < 80% non condensing. Altitude 0 to 3km. Non operating 3 to 12km
Line Power	100 to 230V AC 50/60 Hz. Power Consumption 60W typical, 80W Max.
Dimensions / Weight	W450 x D272 x H152mm (18 x 11 x 7") / 8.2Kg (18lbs)
Supplied With	User manual, RS-232 cable, USB adaptor/cable

ORDERING INFORMATION

5018	Programmable DC/AC V/I Calibrator	9541	Basic Test Lead Set
9718	Internal Current Option (220mA max)	9796	Premium Test Lead Set
9719	Internal AC Option (22V max)	C142	Factory Calibration Certificate (NPL traceable)
9721	Internal 200V DC Option	C104	UKAS Calibration Certificate (ISO 17025)
9733	Rear panel terminals	9766	External Low Noise Attenuator 1000:1
9720	Internal 1kV DC Option (includes 200V DC option 9721)	9767	External Low Noise Attenuator 100:1
9724	Internal 30V option	9795	Printer & Connectivity Kit
9728	19" Universal Rack Mount Kit	ECFLA	EasyCal Software (see separate datasheet for options)

Due to continuous development Time Electronics reserves the right to change specifications without prior notice.

Time Electronics Ltd, Unit 11 Sovereign Way, Botany Industrial Estate, Tonbridge, Kent, TN9 1RH. United Kingdom.

T: +44 (0) 1732 355993 F: +44 (0) 1732 770312 E: mail@timeelectronics.co.uk

www.timeelectronics.com

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