



National Association of Testing Authorities, Australia  
**SCOPE OF ACCREDITATION**

**Australian Calibrating Services (A'sia) Pty Ltd - ACS**

**SOUTH AUSTRALIA LABORATORY**

| Accreditation Number: 1239 | Site Number: 22518 |

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**Availability:** Services available to external clients

Note: Not all of the columns of the scope of accreditation displayed include data.

The only data displayed is that deemed relevant and necessary for the clear description of the activities and services covered by the scope of accreditation.

Grey text appearing in a SoA is additional freetext providing further refinement or information on the data in the preceding line entry.

**ISO/IEC 17025 (2005)  
 Calibration**

SERVICE	PRODUCT	DETERMINANT	TECHNIQUE	PROCEDURE	LIMITATION/RANGE
DC and low frequency electrical metrology - Electrical instrument calibrators	Instrument calibrators	AC current; AC voltage; DC current; DC voltage; Resistance;	Comparison with a reference standard		

**CAPABILITY**

with Calibration and Measurement Capability of -

D.C. voltage

2.8  $\mu$ V + 0.0028% of reading from 1 mV to 220 mV

22  $\mu$ V + 0.0013% of reading from 220 mV to 2.2 V

120  $\mu$ V + 0.0012% of reading from 2.2 V to 11 V

230  $\mu$ V + 0.0013% of reading from 11 V to 22 V

2.3 mV + 0.0013% of reading from 22 V to 220 V

12 mV + 0.003% of reading from 220 V to 1000 V

0.5% of reading from 1 kV to 30 kV

A.C. voltage

0.062% of reading from 1 mV to 2.2 mV at 1kHz

0.022% of reading from 10 mV to 22 mV and 10 Hz to 1 kHz

0.032% of reading from 10 mV to 22 mV and 1 kHz to 50 kHz

0.065% of reading from 10 mV to 22 mV and 50 kHz to 100 kHz

0.15% of reading from 10 mV to 22 mV and 100 kHz to 300 kHz

0.102% of reading from 22 mV to 220 mV and 10 Hz to 1 kHz

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0.022% of reading from 22 mV to 220 mV and 1 kHz to 20 kHz  
 0.042% of reading from 22 mV to 220 mV and 20 kHz to 50 kHz  
 0.095% of reading from 22 mV to 220 mV and 50 kHz to 100 kHz  
 0.125% of reading from 22 mV to 220 mV and 100 kHz to 300 kHz

0.010% of reading from 220 mV to 2.2 V and 10 Hz to 1 kHz  
 0.010% of reading from 220 mV to 2.2 V and 1 kHz to 20 kHz  
 0.015% of reading from 220 mV to 2.2 V and 20 kHz to 50 kHz  
 0.035% of reading from 220 mV to 2.2 V and 50 kHz to 100 kHz  
 0.055% of reading from 220 mV to 2.2 V and 100 kHz to 300 kHz

0.011% of reading from 2.2 V to 22 V and 10 Hz to 1 kHz  
 0.010% of reading from 2.2 V to 22 V and 1 kHz to 20 kHz  
 0.011% of reading from 2.2 V to 22 V and 20 kHz to 50 kHz  
 0.022% of reading from 2.2 V to 22 V and 50 kHz to 100 kHz  
 0.036% of reading from 2.2 V to 22 V and 100 kHz to 300 kHz

0.011% of reading from 22 V to 220 V and 10 Hz to 1 kHz  
 0.011% of reading from 22 V to 220 V and 1 kHz to 20 kHz  
 0.011% of reading from 22 V to 220 V and 20 kHz to 50 kHz  
 0.030% of reading from 22 V to 220 V and 50 kHz to 100 kHz  
 0.076% of reading from 22 V to 220 V and 100 kHz to 300 kHz

0.014% of reading from 220 V to 1000 V and 10 Hz to 10 kHz

1.2% of reading from 1 kV to 28kV at 50 Hz

### D.C. current

0.003  $\mu$ A + 0.007% of reading from 1  $\mu$ A to 220  $\mu$ A  
 0.4  $\mu$ A + 0.007% of reading from 0.22 mA to 2.2 mA  
 1  $\mu$ A + 0.009% of reading from 2.2 mA to 22 mA  
 17  $\mu$ A + 0.008% of reading from 22 mA to 220 mA  
 0.4 mA + 0.019% of reading from 220 mA to 3 A  
 1 mA + 0.011% of reading from 2.2 A to 10 A  
 2.2 mA + 0.011% of reading from 10 A to 20 A

### A.C. current

0.012% of reading from 100 $\mu$ A to 220  $\mu$ A and 10 Hz to 1 kHz  
 0.082% of reading from 100  $\mu$ A to 220  $\mu$ A and 1 kHz to 5 kHz  
 0.152% of reading from 100  $\mu$ A to 220  $\mu$ A and 5 kHz to 10 kHz

0.082% of reading from 220  $\mu$ A to 2.2 mA and 10 Hz to 5 kHz  
 0.082% of reading from 220  $\mu$ A to 2.2 mA and 5 kHz to 10 kHz

0.007% of reading from 2.2 mA to 22 mA and 10 Hz to 40 Hz  
 0.072% of reading from 2.2 mA to 22 mA and 40 Hz to 30 kHz

0.007% of reading from 22 mA to 220 mA and 10 Hz to 40 Hz  
 0.010% of reading from 22 mA to 220 mA and 40 Hz to 1 kHz  
 0.034% of reading from 22 mA to 220 mA and 1 kHz to 30 kHz

0.019% of reading from 220 mA to 2.2 A and 10 Hz to 40 Hz  
 0.020% of reading from 220 mA to 2.2 A and 45 Hz to 1 kHz  
 0.080% of reading from 220 mA to 2.2 A and 1 kHz to 5 kHz  
 0.402% of reading from 220 mA to 2.2 A and 5 kHz to 10 kHz

0.045% of reading from 2.2 A to 11 A and 45 Hz to 500 Hz  
 0.155% of reading from 2.2 A to 11 A and 500 Hz to 5 kHz



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0.145% of reading from 11 A to 20 A and 45 Hz to 500 Hz

0.155% of reading from 11 A to 20 A and 500 Hz to 1 kHz

### Resistance

0.008% from 1 mΩ to 1 Ω

0.002% from 1 Ω to 10 Ω

0.016% from 10 Ω to 100kΩ

0.016% from 100 kΩ to 100 MΩ

DC and low frequency electrical metrology - Electrical measurement and test equipment	Insulation resistance test equipment	Resistance	Comparison with a reference standard		
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### **CAPABILITY**

With Calibration and Measurement Capability of -

1.6% from 500 kΩ to 5 MΩ from 250 V to 500 V

3% from 500 kΩ to 5 MΩ from 501 V to 10000 V

0.8% from 5 MΩ to 50 MΩ from 250 V to 2000 V

1.3% from 5 MΩ to 50 MΩ from 2001 V to 10000 V

0.71% from 50 MΩ to 50 GΩ from 250 to 10000 V

	Ammeters; Digital multimeters (DMM); Ohm meters; Voltmeters;	AC current; AC voltage; DC current; DC voltage; Resistance;	Comparison with a reference standard		
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### **CAPABILITY**

with Calibration and Measurement Capability of -

#### D.C. voltage

2.8 μV + 0.0013% of reading from 1 mV to 220 mV

22 μV + 0.001% of reading from 220 mV to 2.2 V

120 μV + 0.001% of reading from 2.2 V to 11 V

230 μV + 0.001% of reading from 11 V to 22 V

2.3 mV + 0.001% of reading from 22 V to 220 V

12 mV + 0.001% of reading from 220V to 1100V

0.5% of reading from 1 kV to 30 kV

#### A.C. voltage

0.06% of reading from 1 mV to 2.2 mV at 1kHz

0.02% of reading from 10 mV to 22 mV and 10 Hz to 1 kHz

0.03% of reading from 10 mV to 22 mV and 1 kHz to 50 kHz

0.06% of reading from 10 mV to 22 mV and 50 kHz to 100 kHz

0.1% of reading from 10 mV to 22 mV and 100 kHz to 300 kHz

0.22% of reading from 10 mV to 22 mV and 300 kHz to 1 MHz

0.1% of reading from 22 mV to 220 mV and 10 Hz to 1 kHz

0.02% of reading from 22 mV to 220 mV and 1 kHz to 20 kHz

0.04% of reading from 22 mV to 220 mV and 20 kHz to 50 kHz

0.09% of reading from 22 mV to 220 mV and 50 kHz to 100 kHz

0.12% of reading from 22 mV to 220 mV and 100 kHz to 300 kHz

0.37% of reading from 22 mV to 220 mV and 300 kHz to 1 MHz

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0.008% of reading from 220 mV to 2.2 V and 10 Hz to 1 kHz  
 0.008% of reading from 220 mV to 2.2 V and 1 kHz to 20 kHz  
 0.013% of reading from 220 mV to 2.2 V and 20 kHz to 50 kHz  
 0.03% of reading from 220 mV to 2.2 V and 50 kHz to 100 kHz  
 0.05% of reading from 220 mV to 2.2 V and 100 kHz to 300 kHz  
 0.25% of reading from 220 mV to 2.2 V and 300 kHz to 1 MHz  
 0.009% of reading from 2.2 V to 22 V and 10 Hz to 1 kHz  
 0.008% of reading from 2.2 V to 22 V and 1 kHz to 20 kHz  
 0.009% of reading from 2.2 V to 22 V and 20 kHz to 50 kHz  
 0.017% of reading from 2.2 V to 22 V and 50 kHz to 100 kHz  
 0.031% of reading from 2.2 V to 22 V and 100 kHz to 300 kHz  
 0.14% of reading from 2.2 V to 22 V and 300 kHz to 1 MHz  
 0.009% of reading from 22 V to 220 V and 10 Hz to 1 kHz  
 0.009% of reading from 22 V to 220 V and 1 kHz to 20 kHz  
 0.009% of reading from 22 V to 220 V and 20 kHz to 50 kHz  
 0.025% of reading from 22 V to 220 V and 50 kHz to 100 kHz  
 0.071% of reading from 22 V to 220 V and 100 kHz to 300 kHz  
 0.071% of reading from 22 V to 220 V and 300 kHz to 1 MHz  
 0.01% of reading from 220 V to 1100 V and 10 Hz to 10 kHz  
 1.2% of reading from 1 kV to 28kV at 50 Hz

### D.C. current

0.003  $\mu$ A + 0.002% of reading from 1  $\mu$ A to 220  $\mu$ A  
 0.4  $\mu$ A + 0.017% of reading from 0.22 mA to 2.2 mA  
 1  $\mu$ A + 0.007% of reading from 2.2 mA to 22 mA  
 17  $\mu$ A + 0.008% of reading from 22 mA to 220 mA  
 0.4 mA + 0.019% of reading from 220 mA to 2.2 A  
 1 mA + 0.009% of reading from 2.2 A to 11 A  
 2.2 mA + 0.011% of reading from 11 A to 20 A  
 0.34% of reading from 20 A to 1000 A

### A.C. current

0.01% of reading from 100  $\mu$ A to 220  $\mu$ A and 10 Hz to 1 kHz  
 0.08% of reading from 100  $\mu$ A to 220  $\mu$ A and 1 kHz to 5 kHz  
 0.15% of reading from 100  $\mu$ A to 220  $\mu$ A and 5 kHz to 10 kHz  
 0.08% of reading from 220  $\mu$ A to 2.2 mA and 10 Hz to 5 kHz  
 0.08% of reading from 220  $\mu$ A to 2.2 mA and 5 kHz to 10 kHz  
 0.005% of reading from 2.2 mA to 22 mA and 10 Hz to 40 Hz  
 0.07% of reading from 2.2 mA to 22 mA and 40 Hz to 30 kHz  
 0.005% of reading from 22 mA to 220 mA and 10 Hz to 40 Hz  
 0.008% of reading from 22 mA to 220 mA and 40 Hz to 1 kHz  
 0.032% of reading from 22 mA to 220 mA and 1 kHz to 30 kHz  
 0.017% of reading from 220 mA to 2.2 A and 10 Hz to 40 Hz  
 0.018% of reading from 220 mA to 2.2 A and 45 Hz to 1 kHz  
 0.078% of reading from 220 mA to 2.2 A and 1 kHz to 5 kHz  
 0.4% of reading from 220 mA to 2.2 A and 5 kHz to 10 kHz  
 0.03% of reading from 2.2 A to 11 A and 45 Hz to 500 Hz  
 0.14% of reading from 2.2 A to 11 A and 500 Hz to 5 kHz  
 0.13% of reading from 11 A to 20 A and 45 Hz to 500 Hz  
 0.14% of reading from 11 A to 20 A and 500 Hz to 1 kHz  
 for clamp-on meters using multiple turns  
 0.34% of reading from 20 to 1000 A and 10 Hz to 100 Hz

### Resistance

0.01% of reading from 1m $\Omega$  to 1  $\Omega$   
 0.015% of reading from 1  $\Omega$  to 10  $\Omega$   
 0.016% of reading from 100  $\Omega$  to 1100 M $\Omega$   
 with a maximum applicable voltage of 14.3 V  
 for portable appliance testers



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0.1% of reading from 1 mΩ to 10 MΩ

DC and low frequency electrical metrology - Electrical standards	Conductance boxes; Current shunts; Precision resistors; Resistance boxes;	Current; Resistance;	Direct measurement against a reference standard		
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### CAPABILITY

with Calibration and Measurement Capability of -  
Resistance

0.008% of reading from 1 mΩ to 1 Ω

0.002% of reading from 1 Ω to 10 Ω

0.016% of reading from 10 Ω to 100kΩ

0.016% of reading from 100 kΩ to 1.1 GΩ

### Current

D.C. shunts

0.011% of reading

A.C. shunts

0.13% of reading from 11 A to 20 A and 45 Hz to 500 Hz

Time and frequency metrology - Frequency, time and waveform measuring equipment	Clocks and timers; Frequency meters; Stroboscopes; Tachometers; Time interval meters;	Frequency; Rotational speed; Time interval;	To be determined		
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### CAPABILITY

with Calibration and Measurement Capability of -  
Frequency meters

1 in  $10^7$  from 1 Hz to 200 MHz

Time interval meters

Trip time for RCD/ELCB testers

0.3 ms from 1 ms to 100 ms

1.2 ms from 100 ms to 1000 ms

Clocks and watches

0.25 s from 1 minute to 24 h

Tachometers

including mechanical attachment and strobe functionality tests

0.011 rpm from 1 rpm to 120 rpm

0.11 rpm from 120 rpm to 1100 rpm

1 rpm from 1100 rpm to 110000 rpm

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----- END OF SCOPE -----