TECHRENTALS HOUSE
42 Upper Queen Street, **AUCKLAND**
Phone: +64 9 3534100 Fax: +64 9 3534111
PO Box 9564, Newmarket, **AUCKLAND**

SCHEDULE TO CERTIFICATE OF ACCREDITATION ISO 17025

Registration No 572

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range	Least uncertainty
5.28	**Flow Measuring Devices**	
	(a) Anemometers (Vane & Hotwire)	
	0.1 to 2.6m/sec	± 0.06m/sec or 1% of reading whichever is
	2.6 to 15m/sec	± 0.06m/sec or 1% of reading whichever is
	(I) Pitot tubes	
	Standard: 1.0 to 15m/sec	± 0.07m/sec or 1.6% of reading whichever is
	Type S: 1.0 to 15m/sec	± 0.07m/sec or 1.6% of reading whichever is
5.31	**Volumetric Equipment**	
	(b) Air samplers relating to (ISO/CD 14698-1, page 16 under B.3.3.2, 1996)	
	Nominal 100 Litres/min	± 1.1 Litres
5.42	**Differential Pressure Devices**	
	(a), (b), (c) Diaphragm types, Liquid column types (inclined & vertical) & other	
	0.001 to 2 inches H_20	± 0.001”
	2 to 4 inches H_20	± 0.001”
	4 to 6 inches H_20	± 0.001”
	6 to 8 inches H_20	± 0.002”
	8 to 10 inches H_20	± 0.002”
	10 to 12 inches H_20	± 0.002”
	12 to 14 inches H_20	± 0.003”
	14 to 16 inches H_20	± 0.003”
	16 to 18 inches H_20	± 0.003”
	18 to 20 inches H_20	± 0.004”
	20 to 22 inches H_20	± 0.004”
	22 to 24 inches H_20	± 0.004”

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range		Least uncertainty
5.61	**Temperature Measuring Equipment**		
	(a) Indicators, calibrators, recorders & controllers by simulated rare metal thermocouple output using multifunction calibration standard.		
	Type B	+600 to +800ºC	± 0.5ºC
		+800 to +1000ºC	± 0.4ºC
		+1000 to +1550ºC	± 0.2ºC
		+1550 to +1820ºC	± 0.2ºC
	Type R	0 to +250ºC	± 0.51ºC
		+250 to +400ºC	± 0.51ºC
		+400 to +1000ºC	± 0.51ºC
		+1000 to +1767ºC	± 0.51ºC
	Type S	0 to +250ºC	± 0.51ºC
		+250 to +1000ºC	± 0.51ºC
		+1000 to +1400ºC	± 0.51ºC
		+1400 to +1767ºC	± 0.51ºC
5.6.1	**(b) Indicators, calibrators, recorders & controllers by simulated base metal thermocouple output using multifunction calibration standard.**		
	Type E	-250 to –100ºC	± 0.07ºC
		-100 to –25ºC	± 0.06ºC
		-25 to +350ºC	± 0.06ºC
		+350 to +650ºC	± 0.06ºC
		+650 to +1000ºC	± 0.06ºC
	Type J	-210 to -100ºC	± 0.06ºC
		-100 to -30ºC	± 0.06ºC
		-30 to +150ºC	± 0.06ºC
		+150 to +760ºC	± 0.06ºC
		+760 to +1200ºC	± 0.06ºC

SCHEDULE TO CERTIFICATE OF ACCREDITATION ISO 17025
Registration No 572

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range	Least uncertainty
5.61	**Temperature Measuring Equipment**	
	(b) Indicators, calibrators, recorders & controllers by simulated base metal thermocouple output using multifunction calibration standard.	
	Type K -200 to -100ºC	± 0.09ºC
	-100 to -25ºC	± 0.07ºC
	-25 to +120ºC	± 0.07ºC
	+120 to +1000ºC	± 0.08ºC
	+1000 to +1372ºC	± 0.08ºC
	Type N -200 to -100ºC	± 0.12ºC
	-100 to -25ºC	± 0.09ºC
	-25 to +120ºC	± 0.08ºC
	+120 to +410ºC	± 0.08ºC
	+410 to +1300ºC	± 0.09ºC
	Type T -250 to –150ºC	± 0.12ºC
	-150 to 0ºC	± 0.08ºC
	0 to +120ºC	± 0.07ºC
	+120 to +400ºC	± 0.06ºC

SCHEDULE TO CERTIFICATE OF ACCREDITATION ISO 17025
Registration No 572

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range	Least uncertainty
5.61	**Temperature Measuring Equipment**	
	(c) Indicators, calibrators, recorders & controllers by simulated platinum resistance thermometer output using multifunction calibration standard.	
Pt385 100Ω 3W or 4W ITS-90 or IPTS-68	-200 to -80°C	± 0.003ºC
	-80 to 0°C	± 0.008ºC
	0 to +100°C	± 0.011ºC
	+100 to +300	± 0.02ºC
	+300 to +400°C	± 0.02ºC
	+400 to +630°C	± 0.03ºC
	+630 to +800°C	± 0.04ºC
5.61	**(a-e,k-p) Indicators, recorders, controllers & transmitters, including direct reading temperature measuring systems by direct comparison using stirred liquid bath in conjunction with a reference thermometer.**	
	-25 to 0°C	± 0.095ºC
	0 to +70°C	± 0.095ºC
	+70 to +140°C	± 0.095ºC
5.89	**Indicating instruments and Recording Instruments**	
	(a) DC Voltmeters	
	± 0 to 330mV dc	± 16ppm
	± 0 to 3.3V dc	± 13ppm
	± 0 to 33V dc	± 17ppm
	± 30 to 330V dc	± 17ppm
	± 100 to 1020V dc	± 17ppm

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range		Least uncertainty
5.89	**Indicating Instruments and Recording Instruments**		
	(b) AC Voltmeters		
	1.0 to 33mV	*10 to 45Hz*	± 0.05%
		45Hz to 10kHz	± 0.05%
		10 to 20kHz	± 0.05%
		20 to 50kHz	± 0.06%
		50 to 100kHz	± 0.21%
		100 to 500kHz	± 0.36%
	33 to 330mV	*10 to 45Hz*	± 0.013%
		45Hz to 10kHz	± 0.013%
		10 to 20kHz	± 0.013%
		20 to 50kHz	± 0.024%
		50 to 100kHz	± 0.06%
		100 to 500kHz	± 0.29%
	0.33 to 3.3V	*10 to 45Hz*	± 0.023%
		45Hz to 10kHz	± 0.013%
		10 to 20kHz	± 0.013%
		20 to 50kHz	± 0.024%
		50 to 100kHz	± 0.048%
		100 to 500kHz	± 0.35%
	3.3 to 33V	*10 to 45Hz*	± 0.021%
		45Hz to 10kHz	± 0.015%
		10 to 20kHz	± 0.015%
		20 to 50kHz	± 0.043%
		50 to 100kHz	± 0.1%
	33 to 330V	*45Hz to 1kHz*	± 0.015%
		1 to 10kHz	± 0.025%
		10 to 20kHz	± 0.046%
	330 to 1000V	*45Hz to 1kHz*	± 0.02%
		1 to 5kHz	± 0.02%
		5 to 10kHz	± 0.02%

SCHEDULE TO CERTIFICATE OF ACCREDITATION ISO 17025
Registration No 572

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range	Least uncertainty
5.89	**Indicating Instruments and Recording Instruments**	
	(c) DC Ammeters	
	± 0 to 3.3mA	± 118ppm
	± 0 to 33mA	± 116ppm
	± 0 to 330mA	± 234ppm
	± 0 to 2.2A	± 110ppm
	± 0 to 11A	± 184ppm
5.89	**(c) DC Ammeters Clamp on type**	
	± 11 to 16.5A	± 0.57A
	± 16.5 to 110A	±0.57A
	± 110 to 550A	±0.57A
5.89	**(d) AC Ammeters**	
Sine Wave	29 to 330µA *10 to 20Hz*	± 0.53%
	20 to 45Hz	± 0.29%
	45 to 1kHz	± 0.16%
	1 to 5kHz	± 0.3%
	5 to 10kHz	± 0.3%
	0.33 to 3.3mA *10 to 20Hz*	± 0.53%
	20 to 45Hz	± 0.24%
	45 to 1kHz	± 0.11%
	1 to 5kHz	± 0.25%
	5 to 10kHz	± 0.51%
	3.3 to 33mA *10 to 20Hz*	± 0.53%
	20 to 45Hz	± 0.24%
	45 to 1kHz	± 0.11%
	1 to 5kHz	± 0.25%
	5 to 10kHz	± 0.3%
	33 to 330mA *10 to 20Hz*	± 0.51%
	20 to 45Hz	± 0.24%
	45 to 1kHz	± 0.11%
	1 to 5kHz	± 0.25%
	5 to 10kHz	± 0.51%

SCHEDULE TO CERTIFICATE OF ACCREDITATION ISO 17025
Registration No 572

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range		Least uncertainty
5.89	**Indicating Instruments and Recording Instruments**		
Sine Wave	**(d) AC Ammeters**		
	0.33 to 2.2A	*10 to 45Hz*	± 0.15%
		45Hz to 1kHz	± 0.08%
		1 to 5kHz	± 0.09%
	2.2 to 11A	*45 to 65Hz*	± 0.12%
		65 to 500Hz	± 0.12%
		500Hz to 1kHz	± 0.12%
5.89	**(d) AC Ammeters Clamp on Type**		
	11 to 16.5A	*10 to 20Hz*	± 0.57A
		20 to 45Hz	± 0.57A
		45Hz to 1kHz	± 0.57A
		1 to 5kHz	± 0.57A
		5 to 10kHz	± 0.57A
	16.5 to 110A	*10 to 45Hz*	± 0.57A
		45Hz to 1kHz	± 0.57A
		1 to 5kHz	± 0.57A
	110 to 550A	*45 to 65Hz*	± 0.57A
		65 to 500Hz	± 0.57A
		500Hz to 1kHz	± 0.57A
5.89	**(i) Ohmmeters**		
2W & 4W	0 to 11Ω		± 52ppm
	11 to 33Ω		± 46ppm
	33 to 110Ω		± 35ppm
	110 to 330Ω		± 28ppm
	330 to 1.1kΩ		± 23ppm
	1.1 to 3.3kΩ		± 23ppm
	3.3 to 11kΩ		± 28ppm
	11 to 33kΩ		± 33ppm
	33 to 110kΩ		± 35ppm
	110 to 330kΩ		± 38ppm

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range		Least uncertainty
5.89	**(i) Ohmmeters**		
	330k to 1.1MΩ		± 47ppm
	1.1 to 3.3MΩ		± 90ppm
	3.3 to 11MΩ		± 145ppm
	11 to 33MΩ		± 0.43%
	33 to 110MΩ		± 0.06%
	110 to 330MΩ		± 0.29%
5.88	**Calibrators for Instrumentation (source)**		
	(a) DC voltage		
	± 0 to 100mV		± 23ppm
	± 0 to 1V		± 12ppm
	± 0 to 10V		± 11ppm
	± 0 to 100V		± 12ppm
	± 0 to 1000V		± 14ppm
True RMS Sine Wave	**(b) AC voltage**		
	0 to 100mV	*3Hz to 10Hz*	± 247ppm
		10Hz to 20kHz	± 247ppm
		20 to 50kHz	± 0.05%
	0 to 1V	*3Hz to 10Hz*	± 110ppm
		10Hz to 20kHz	± 110ppm
		20 to 50kHz	± 186ppm
	0 to 10V	*3Hz to 10Hz*	± 112ppm
		10Hz to 20kHz	± 112ppm
		20 to 50kHz	± 198ppm
	0 to 100V	*3Hz to 10Hz*	± 121ppm
		10Hz to 20kHz	± 121ppm
		20 to 50kHz	± 334ppm
	0 to 750V	*3Hz to 10Hz*	± 117ppm
		10Hz to 20kHz	± 117ppm
		20 to 50kHz	± 171ppm

SCHEDULE TO CERTIFICATE OF ACCREDITATION ISO 17025
Registration No 572

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range		Least uncertainty
5.88	**Calibrators for Instrumentation (source)**		
	(c) DC current		
	± 0 to 10mA		± 84ppm
	± 0 to 100mA		± 90ppm
	± 0 to 1A		± 145ppm
	± 0 to 3A		± 155ppm
5.88	**(d) AC current**		
True RMS Sine Wave	0 to 1A	*3Hz to 10Hz*	± 0.1%
		10Hz to 5kHz	± 0.1%
	0 to 3A	*3Hz to 10Hz*	± 0.11%
		10Hz to 5kHz	± 0.11%
5.88	**(e) Resistance**		
	Ohms 4W	0.0001Ω to 100Ω	± 0.002Ω
		0.001Ω to 1kΩ	± 0.017Ω
		0.01Ω to 10kΩ	± 0.17Ω
		0.1Ω to 100kΩ	± 2.7Ω
	Ohms 2W	1.0Ω to 1MΩ	± 38Ω
		10Ω to 10MΩ	± 640Ω
		100Ω to 100MΩ	± 40.2kΩ

SCHEDULE TO CERTIFICATE OF ACCREDITATION ISO 17025
Registration No 572

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range	Least uncertainty
5.91	Frequency Measurement and Time Measurement	
	(a) Frequency Meters	
	Sine Wave. AC Input range 1mV to 3.3V	
	0.01 to 9.99Hz	± 0.005mHz
	Sine Wave AC Input range 0.33 to 3.29999V	
	10 to 119.99Hz	± 0.05mHz
	120 to 1199Hz	± 0.5mHz
	1.2 to 9.999kHz	± 0.01mHz
	10 to 11.999kHz	± 0.05mHz
	12 to 119.99kHz	± 0.5mHz
	120 to 1199.9kHz	± 0.05mHz
	1.2 to 2.0MHz	± 0.05mHz
	10MHz (fixed sine wave)	± 0.99999mHz
5.91	**(c) Counters *(Period Measurement)***	
	Square Wave. AC Input range 1mV to 3.3V	50% duty cycle
	0.1s to 100s	± 0.8% of period + 100ns
	83ms to 0.1s	± 0.8% of period + 100ns
	0.83ms to 83ms	± 0.8% of period + 100ns
	83µs to 0.83ms	± 0.8% of period + 100ns
	0.83µs to 83µs	± 0.8% of period + 100ns
	0.83µs to 8.3µs	± 0.8% of period + 100ns
	0.5µs to 0.83µs	± 0.8% of period + 100ns
5.93	**Signal Sources**	
	(e) Other (Pt Pt385 100Ω 3W or 4W IEC751-1995)	
	-200 to -80°C	± 0.0048°C
	-80 to 0°C	± 0.0052°C
@1mA	0 to +100°C	± 0.044°C
	+100 to +300	± 0.046°C
	+300 to +400°C	± 0.048°C
	+400 to +630°C	± 0.051°C

SCHEDULE TO CERTIFICATE OF ACCREDITATION ISO 17025
Registration No 572

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range	Least uncertainty
5.93	**Signal Sources**	
	(e) Other (Rare Metal Thermocouple)	
Type B	+600 to +800ºC	± 0.5ºC
	+800 to +1000ºC	± 0.4ºC
	+1000 to +1550ºC	± 0.2ºC
Type R	0 to +250ºC	± 0.51ºC
	+250 to +400ºC	± 0.51ºC
	+400 to +1000ºC	± 0.51ºC
	+1000 to +1767ºC	± 0.51ºC
Type S	0 to +250ºC	± 0.51ºC
	+250 to +1000ºC	± 0.51ºC
	+1000 to +1400ºC	± 0.51ºC
	+1400 to +1767ºC	± 0.51ºC
5.6.1	**(e) Other (Base Metal Thermocouple)**	
Type E	-250 to –100ºC	± 0.07ºC
	-100 to –25ºC	± 0.06ºC
	-25 to +350ºC	± 0.06ºC
	+350 to +650ºC	± 0.06ºC
	+650 to +1000ºC	± 0.06ºC
Type J	-210 to -100ºC	± 0.06ºC
	-100 to -30ºC	± 0.06ºC
	-30 to +150ºC	± 0.06ºC
	+150 to +760ºC	± 0.06ºC
	+760 to +1200ºC	± 0.06ºC

SCHEDULE TO CERTIFICATE OF ACCREDITATION ISO 17025
Registration No 572

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range	Least uncertainty
5.93	**Signal Sources**	
	(e) Other (Base Metal Thermocouple)	
Type K	-200 to -100ºC	± 0.09ºC
	-100 to -25ºC	± 0.07ºC
	-25 to +120ºC	± 0.07ºC
	+120 to +1000ºC	± 0.08ºC
	+1000 to +1372ºC	± 0.08ºC
Type N	-200 to -100ºC	± 0.12ºC
	-100 to -25ºC	± 0.09ºC
	-25 to +120ºC	± 0.08ºC
	+120 to +410ºC	± 0.08ºC
	+410 to +1300ºC	± 0.09ºC
Type T	-250 to –150ºC	± 0.12ºC
	-150 to 0ºC	± 0.08ºC
	0 to +120ºC	± 0.07ºC
	+120 to +400ºC	± 0.06ºC
5.93	Signal Sources	
	(e) Other (Signal Generators 100mV to 750mVac rms**)** *Non Endorsed*	
	For sources > 10% of ACV range except 100mV range. On 100mV range, frequency must be >10Hz if source voltage is <20mV.	
Square Wave	100mV 3Hz to 500kHz	± 100ppm
	1.0V 3Hz to 500kHz	± 100ppm
	10.0V 3Hz to 500kHz	± 100ppm
	100V 3Hz to 500kHz	± 100ppm
	750V 3Hz to 500kHz	± 100ppm

Nominal calibration temperature *22℃ ± 3℃*. All measurement uncertainties are based on a confidence interval of *95%* and a coverage factor of *k=2.* Unless stated elsewhere in this schedule, calibrations are performed at the premises of the accredited laboratory.

Class No	Range	Least uncertainty
5.93	**Signal Sources**	
Square or Sine Wave	**(e) Other (Signal Generators 25mV to 250mVac rms)** *Non Endorsed*	
	0.1Hz to 9.9999999MHz	± 0.113Hz
	1Hz to 99.999999MHz	± 1.132Hz
	10Hz to 99.99999MHz	± 11.316Hz
	100Hz to 99.9999MHz	± 113.16Hz
	1kHz to 99.999MHz	± 1.132kHz
	10kHz to 99.99MHz	± 11.32kHz
Square or Sine Wave	**(e) Other (Signal Generators timers and period measurement 25mV to 250mVpp)**	
	0.1S to 10^{7}S	± 1.13^{-15}S
	0.01S to 10^{6}S	± 1.132^{-14}S
	1mS to 10^{5}S	± 1.1316^{-13}S
	0.1mS to 10^{4}S	± 1.1316^{-12}S
	100nS to 10^{3}S	± 1.132^{-11}S
	10nS to 10^{2}S	± 1.132^{-10}S