

signal

**Laboratory standard**

Laboratory reference level bench top instrument for electrical signals, handheld calibrators, and testing of instrumentation

**Output:**

DC current 0-100 mA  
 DC voltage 0 to 100 V  
 DC mV 0 to 100 mV  
 TC simulation -10 to 75 mV  
 Resistance 5 to 4000 ohm  
 (RTD simulation)

**Input:**

DC mV -10 to 75 mV  
 (TC temperature conversion)  
 Resistance 0 to 4000 ohm  
 (RTD temperature conversion)  
 Pressure modules

**Pressure reference capability**

Increases the flexibility of the instrument with the addition of external pressure modules. Accuracies up to 0.01%

**Temperature reference**

13 different Thermocouple types,  
 14 different RTD types  
 Accuracies of up to 0.025°C

**Fast RTD simulation**

Works with all pulsed transmitters

**Fully remote controllable**

With a parallel instrument bus IEEE-488 and RS232 serial interface

ISO 9001 Manufacturer

# JOFRA™ AMC900

## Advanced Multi-purpose Calibrator

**Multi-purpose calibrator offering laboratory features and accuracies**

The AMC900 bench calibrator is your solution for high precision signal, temperature, and pressure calibrations. This multi-purpose unit offers laboratory grade accuracy at an industrial calibrator price. The standard is delivered pre-loaded with 13 thermocouple curves and 14 RTD curves. You can also program curves to suit your individual needs. With the optional external pressure modules, you can tailor the system to address your calibration needs.



### PRODUCT DESCRIPTION

The JOFRA AMC900 not only offers temperature and pressure calibration features, it includes sourcing of current and voltage and measurement of milli-volts, and resistance. This flexibility means that you need only one unit for calibration or verification. This standard gives you the confidence you need for your test instruments as well as in your field calibrations. Upgrade your laboratory or workshop to a higher level of accuracy and flexibility with the AMC900.

The JOFRA AMC900 has the ability to store up to 9 setpoints for each output range. The setpoints can be selected manually or automatically stepped at timed intervals. The AMC900 also features an easy-to-operate front panel user interface and computer control through an RS232 or IEEE-488 interface for automated production testing. The unit sources DC voltage and current for multifunction workload coverage, enabling calibration of data loggers, strip chart recorders, multi-meters, handheld calibrators, and other industrial instruments. This is the cost-effective solution for your multiple calibration needs.

**AMETEK®**  
 CALIBRATION INSTRUMENTS

## JOFRA AMC900 APPLICATIONS

### New calibration lab with one unit

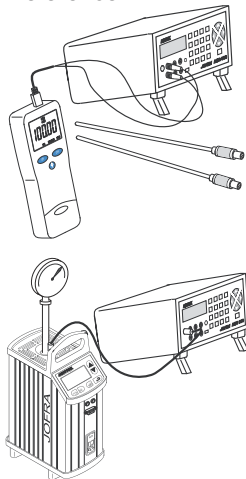
The AMC900 is the single unit that can make the greatest change to your instrument shop or calibration lab. This calibrator offers the ability to perform calibrations and verifications of signal, temperature, and pressure instrumentation with one device. You can source current and source/read voltage and resistance. Simulate virtually any temperature sensor made today. Combined with a good digital multimeter and you have a complete electrical process calibration lab.

### Saving you time

The AMC900 is flexible. If you need to store test points for particular calibrations, you can save up to 9 setpoints along with dedicated dwell times to allow for easy repeat calibrations. AMC900 has also installed many of the curves for today's wide range of temperature sensors so that you can spend time calibrating instruments and not programming the calibrator or referencing look up tables. Your pressure calibration needs are met with a vast array of modules that communicate directly with the AMC900. Additionally, you have the option of using an RS232 or IEEE-488 interface to easily automate your calibrations. Just use HyperTerminal, Visual Basic, or any other software using an ASCII interface.

### AMC900 as your temperature reference

Use the AMC900 to maintain a high level of confidence in all your handheld temperature indicators. Check the electrical side against the AMC900 and the probes in a JOFRA dry-block calibrator - using the AMC900 as the external temperature reference.

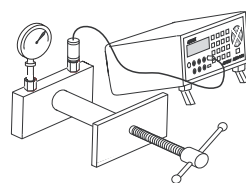


The AMC900 is a versatile performer. In addition to the 14 RTD curves and 13 T/C curves are factory-installed on the unit, you may have an occasional need to add a custom curve for a specific sensor. The user interface allows you to add the constants to calibrate these sensors.

Save money by maintaining all your temperature calibration equipment yourself. The AMC900 can be a standard for your dry-block calibrators. The unit is configured to accept reference probe inputs for temperature verification. You can calibrate any of our dry-block calibrators using a reference probe and the AMC900. As a temperature reference

you can also verify temperature generation devices such as circulating baths, other dry-block calibrators, and ovens.

### In the lab or in the shop

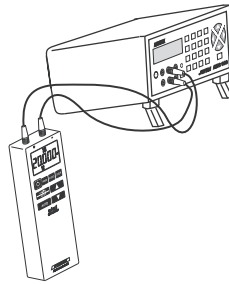


The AMC900 is designed to meet calibration needs in a laboratory environment or as a reference standard for instrument shops. The adaptability of this calibrator allows it to be utilized in a lab to be the standard for signal, temperature, and pressure calibrations.

Where you are responsible for the operation of a wide range of equipment, such as in an instrument shop, you can bench-test instruments before installation and you can save money by maintaining the traceability and performance of all your test instruments in operating order with this efficient calibrator.

## APM PRESSURE MODULES

### JOFRA APM (Advanced Pressure Module)



The APM series of pressure modules offer the flexibility to perform pressure calibrations with the AMC900. Independent of the engineering unit of the module you can change units on the AMC900 at any time.

The APM series of pressure modules by JOFRA are compatible with your AMC900, ASC300 or APC calibrators.

These units are available in a series of ranges, units, and pressure references. From vacuum to absolute pressure, AMETEK has your application covered with the pressure modules to meet your calibration needs. There are different accuracies, ranges, and references designed to offer you the exact specifications you need for your pressure calibrations. Pressure can be displayed in a wide range of engineering units with up to 0.01% full scale accuracy. The modules are designed so that they plug into the front panel and communicate directly with the AMC900 and the handheld multifunction calibrator JOFRA ASC300.

These rugged modules are engineered for in-plant, field, or laboratory use. They are ready-to-use with the JOFRA calibrators and the protocol allows for immediate recognition and use of the module once it is plugged into the calibrator. If you have pressure instrumentation, these modules are for you. When combined with the JOFRA calibrators and pump systems these modules make for a powerful arsenal of calibration tools. And, you can always add more as your needs change. For use out-of-the-box anywhere in the world all units are supplied with a 1/4 in NPT and a BSP female adapter.

Please see more about the APM series in specification sheet SS-CP-2190 at [www.jofra.com](http://www.jofra.com)

The JOFRA APM S series are industrial pressure modules with good accuracies up to  $\pm 0.05\%$  of F.S. The modules are designed so that the cable is integrated into the module housing, and the overall profile allows for easy storage of multiple modules.



The JOFRA APM H series are high accuracy laboratory units: 0.01% of F.S. The outstanding performance makes these modules perfect for use as an electronic pressure reference at the top of your calibration hierarchy. These modules are easy to work with and easy to transport.



AMETEK offers the user several solutions for pressure generation. This line spans from a small pneumatic "bicycle" type pump to a hydraulic pump that generates up to 15,000 psi / 1,000 bar. These are durable pumps with features such as vernier valves, vent valves, manifold connections, swivel fittings, and optional O-ring materials and fittings making the pumps flexible to meet your calibration and testing applications.



Please see more at [www.jofra.com](http://www.jofra.com)

JOFRA STS REFERENCE PROBES

JOFRA industrial temperature reference probes are based on more than 50 years of industrial temperature sensor manufacturing experience. The main requirement of a reference probe is stability: The less the probe drifts, the lower the measurement uncertainty.

The JOFRA STS100A industrial temperature reference probes are built to last. All JOFRA Secondary Temperature Standard probes are economical and offer fast response times, low immersion depths, compact physical sizes, and specified low drift rates: even at high temperatures. These are all important considerations when selecting a reference probe.

In addition to straight probes, AMETEK offers a 90° angled version specifically developed for use with dry-block temperature calibrators.

This probe allows the user to have both the sensor-under-test and the reference probe in the thermowell at the same time: even if the sensors have a connection or a transmitter head.

All probes are subjected to a long approval process. This includes mechanical stress reduction of the entire assembly as well as aging the sensor element itself. The purpose of aging the sensor is to remove the initial drift. The procedure involves cycling the sensor to 650°C / 1202°F a number of times and monitoring the drift. Finally all sensors are exposed to maximum temperature for 16 hours and again monitored for drift. To be accepted for final calibration and certification, the probe must meet our minimum tolerance.

For more details about the JOFRA STS-100 series please see specification sheet: SS-CP-2290 at [www.jofra.com](http://www.jofra.com)

SPECIFICATIONS AMC900

Mains specifications

Selectable ..... 115 V(90-132), 230 V(197-264)  
 Frequency ..... 47 - 63 Hz  
 Power consumption (max.) ..... 15 VA

Warm up and settling time

Warm up - maximum ..... 30 minutes  
 Settling time ..... Less than 5 sec.

Ambient temperature

Operating ..... 0 to 50°C / 32 to 122°F  
 Calibration (tcal) ..... 18 to 28°C / 64 to 82°F  
 Storage ..... -20 to 70°C / -4 to 158°F  
 Temperature coefficient (outside tcal ±5°C / ±9°F):  
 Celsius ..... 10% of specification per °C  
 Fahrenheit ..... 5.5% of specification per °F

Relative humidity

Operating ..... < 80% to 30°C / 86°F  
 ..... < 70% to 40°C / 104°F  
 ..... < 40% to 50°C / 122°F  
 Storage ..... <95% non-condensing

Altitude

Operating ..... < 3,050 m / 10,000 ft  
 Non-operating ..... < 12,200 m / 40,000 ft

Standard interface

Serial ..... RS 232  
 Parallel ..... IEEE-488 (GPIB)

CE-conformity

EN61326: 1997/A1:1998

Safety

EN 61010 Second, ANSI/ISA-S82.01-1994  
 CAN/CSA-C22.2 No. 1010.1-92, NRTL

Isolation

Analog low isolation ..... 20 V

Instrument dimensions

AMC900 W×H×D: ..... 300×120×220 mm / 11.5×4.7×8.9 in

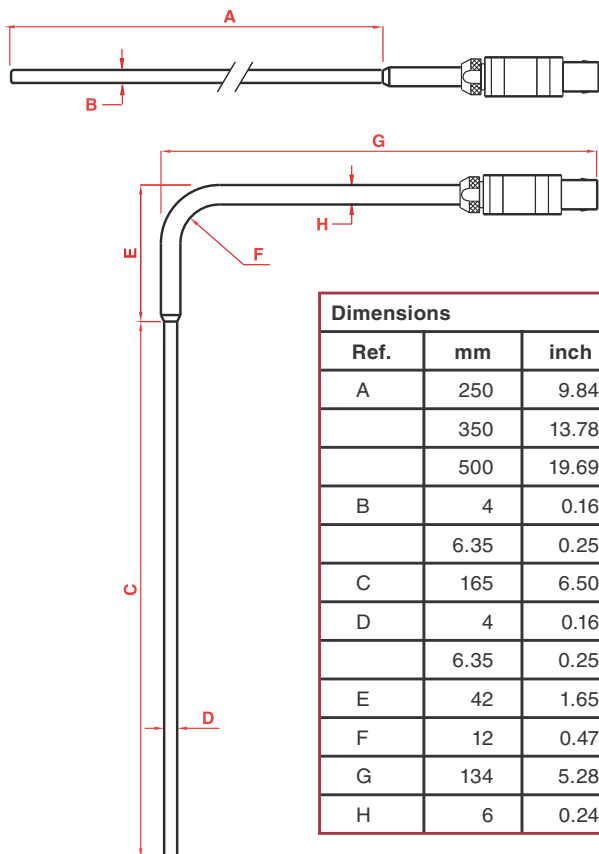
Instrument weight

AMC900 ..... 2.3 kg / 5 lb

Pressure specifications

The JOFRA AMC900 can display pressure from the modules in any of the below mentioned engineering units.

Range: ..... determined by module  
 Accuracy: ..... determined by module  
 Resolution: ..... 5 digits  
 psi ..... pound per square inch  
 inH2O4°C ..... inches of water at 4°C  
 inH2O20°C ..... inches of water at 20°C  
 cmH2O4°C ..... centimeters of water at 4°C  
 cmH2O20°C ..... centimeters of water at 20°C  
 BAR ..... bars  
 mBAR ..... millibars  
 KPAL ..... kilopascals  
 inHG 0°C ..... inches of mercury at 0°C  
 mmHG 0°C ..... millimeter of mercury at 0°C  
 Kg/cm2 ..... kilograms per square centimeter



**SPECIFICATIONS**

Resistance			INPUT Accuracy		OUTPUT Accuracy	
	Resolution	Allowable current <sup>1</sup>	90 days	12 months	90 days	12 months
<b>5 to 400 ohm</b>	0.01 ohm	1 to 10 mA			±0.025 ohm	±0.03 ohm
<b>5 to 4000 ohm</b>	0.1 ohm	250 µA to 1 mA			±0.25 ohm	±0.3 ohm
<b>0 to 400 ohm</b>	0.001 ohm	1 mA	±35 ppm + 0.003 ohm	±40 ppm + 0.003 ohm		
<b>401 to 4001 ohm</b>	0.01 ohm	0.1 mA	±35 ppm + 0.03 ohm	±40 ppm + 0.03 ohm		

Absolute uncertainty, tcal ±5°C / 9°F

1. Continuously variable from 0 to 4 Kohm (Output). Current is fixed to 1 and 0.1 mA in input

RTD and thermistor		TEMPERATURE range		INPUT accuracy ±		OUTPUT <sup>1</sup> accuracy ±	
		from °C / °F	to °C / °F	90 days °C / °F	12 months °C / °F	90 days °C / °F	12 months °C / °F
<b>Pt100 alpha 3916</b>	°C	-200°C	-190°C	0.006°C	0.006°C	0.06°C	0.07°C
		-190°C	-80°C	0.011°C	0.012°C	0.06°C	0.08°C
		-80°C	0°C	0.014°C	0.015°C	0.06°C	0.08°C
		0°C	100°C	0.018°C	0.019°C	0.06°C	0.08°C
		100°C	260°C	0.025°C	0.028°C	0.07°C	0.08°C
		260°C	300°C	0.026°C	0.029°C	0.07°C	0.08°C
		300°C	400°C	0.031°C	0.034°C	0.07°C	0.09°C
		400°C	600°C	0.040°C	0.045°C	0.08°C	0.09°C
	°F	600°C	630°C	0.042°C	0.047°C	0.08°C	0.09°C
		-328°F	-310°F	0.011°F	0.011°F	0.11°F	0.13°F
		-310°F	-112°F	0.020°F	0.022°F	0.11°F	0.14°F
		-112°F	32°F	0.025°F	0.027°F	0.11°F	0.14°F
		32°F	212°F	0.032°F	0.034°F	0.11°F	0.14°F
		212°F	500°F	0.045°F	0.050°F	0.13°F	0.14°F
		500°F	572°F	0.047°F	0.052°F	0.13°F	0.14°F
		572°F	752°F	0.056°F	0.061°F	0.13°F	0.16°F
<b>Cu100 Russian Gost</b>	°C	-180°C	-50°C	0.18°C	0.19°C	0.23°C	0.24°C
		-50°C	200°C	0.14°C	0.15°C	0.18°C	0.20°C
	°F	-292°F	-58°F	0.32°F	0.34°F	0.41°F	0.43°F
		-58°F	392°F	0.25°F	0.27°F	0.32°F	0.36°F
<b>Pt200 alpha 385</b>	°C	-200°C	-80°C	0.031°C	0.032°C	0.31°C	0.38°C
		-80°C	-0°C	0.035°C	0.036°C	0.32°C	0.38°C
		0°C	100°C	0.039°C	0.041°C	0.33°C	0.39°C
		100°C	260°C	0.042°C	0.045°C	0.33°C	0.39°C
		260°C	300°C	0.050°C	0.053°C	0.36°C	0.43°C
		300°C	400°C	0.053°C	0.057°C	0.36°C	0.43°C
		400°C	600°C	0.070°C	0.075°C	0.42°C	0.50°C
		600°C	630°C	0.071°C	0.076°C	0.42°C	0.50°C
	°F	-328°F	-112°F	0.056°F	0.058°F	0.56°F	0.68°F
		-112°F	32°F	0.063°F	0.065°F	0.58°F	0.68°F
		32°F	212°F	0.070°F	0.074°F	0.59°F	0.70°F
		212°F	500°F	0.076°F	0.081°F	0.59°F	0.70°F
		500°F	572°F	0.090°F	0.095°F	0.65°F	0.77°F
		572°F	752°F	0.095°F	0.103°F	0.65°F	0.77°F
		752°F	1112°F	0.126°F	0.135°F	0.76°F	0.90°F
		1112°F	1166°F	0.128°F	0.137°F	0.76°F	0.90°F

Absolute uncertainty, tcal ±5°C / 9°F 1. 2-wire output 2. Based on MINCO application aid no. 18.

RTD and Thermistor		TEMPERATURE range		INPUT accuracy ±		OUTPUT <sup>1</sup> accuracy ±		
		from	to	90 days	12 months	90 days	12 months	
Pt500 alpha 385	°C	-200°C	-80°C	0.016°C	0.017°C	0.13°C	0.15°C	
		-80°C	-0°C	0.019°C	0.020°C	0.13°C	0.15°C	
		0°C	100°C	0.023°C	0.025°C	0.13°C	0.16°C	
		100°C	260°C	0.030°C	0.033°C	0.14°C	0.17°C	
		260°C	300°C	0.032°C	0.035°C	0.14°C	0.17°C	
		300°C	400°C	0.037°C	0.041°C	0.15°C	0.18°C	
		400°C	600°C	0.047°C	0.052°C	0.16°C	0.19°C	
	°F	600°C	630°C	0.048°C	0.076°C	0.16°C	0.19°C	
		-328°F	-112°F	0.029°F	0.031°F	0.23°F	0.27°F	
		-112°F	32°F	0.034°F	0.036°F	0.23°F	0.27°F	
		32°F	212°F	0.041°F	0.045°F	0.23°F	0.29°F	
		212°F	500°F	0.054°F	0.059°F	0.25°F	0.31°F	
		500°F	572°F	0.058°F	0.063°F	0.25°F	0.31°F	
		572°F	752°F	0.067°F	0.074°F	0.27°F	0.32°F	
Pt10 alpha 385	°C	752°F	1112°F	0.085°F	0.094°F	0.29°F	0.34°F	
		1112°F	1166°F	0.086°F	0.137°F	0.29°F	0.34°F	
		-200°C	-0°C	0.11°C	0.11°C	0.75°C	0.90°C	
		-0°C	400°C	0.17°C	0.18°C	0.75°C	0.90°C	
	°F	400°C	800°C	0.17°C	0.18°C	0.85°C	1.00°C	
		-328°F	32°F	0.20°F	0.20°F	1.35°F	1.62°F	
		32°F	752°F	0.31°F	0.32°F	1.35°F	1.62°F	
		752°F	1472°F	0.31°F	0.32°F	1.53°F	1.80°F	
	Pt50 alpha 385	°C	-200°C	400°C	0.045°C	0.047°C	0.15°C	0.18°C
			400°C	800°C	0.065°C	0.071°C	0.17°C	0.20°C
		°F	-328°F	752°F	0.08°F	0.08°F	0.27°F	0.32°F
			752°F	1472°F	0.12°F	0.13°F	0.31°F	0.36°F
	Cu50 Russian Gost	°C	-180°C	-50°C	0.19°C	0.20°C	0.3°C	0.31°C
			-50°C	200°C	0.15°C	0.16°C	0.25°C	0.26°C
°F		-292°F	-58°F	0.34°F	0.36°F	0.54°F	0.56°F	
		-58°F	392°F	0.27°F	0.29°F	0.45°F	0.47°F	
Pt100 alpha 385	°C	-200°C	-80°C	0.011°C	0.012°C	0.06°C	0.07°C	
		-80°C	0°C	0.018°C	0.020°C	0.08°C	0.10°C	
		0°C	100°C	0.018°C	0.020°C	0.08°C	0.10°C	
		100°C	300°C	0.027°C	0.030°C	0.07°C	0.09°C	
		300°C	400°C	0.031°C	0.035°C	0.07°C	0.09°C	
		400°C	630°C	0.042°C	0.047°C	0.08°C	0.09°C	
		630°C	800°C	0.050°C	0.057°C	0.08°C	0.10°C	
	°F	-328°F	-112°F	0.023°F	0.022°F	0.11°F	0.13°F	
		-112°F	32°F	0.032°F	0.036°F	0.14°F	0.18°F	
		32°F	212°F	0.032°F	0.036°F	0.14°F	0.18°F	
		212°F	572°F	0.049°F	0.054°F	0.13°F	0.16°F	
		572°F	752°F	0.056°F	0.063°F	0.13°F	0.16°F	
		752°F	1166°F	0.076°F	0.085°F	0.14°F	0.16°F	
		1166°F	1472°F	0.090°F	0.103°F	0.14°F	0.18°F	
Pt100 alpha 3926	°C	-200°C	-80°C	0.011°C	0.011°C	0.06°C	0.07°C	
		-80°C	0°C	0.014°C	0.015°C	0.06°C	0.07°C	
		0°C	100°C	0.018°C	0.019°C	0.06°C	0.08°C	
		100°C	300°C	0.026°C	0.029°C	0.07°C	0.08°C	
		300°C	400°C	0.031°C	0.034°C	0.07°C	0.09°C	
		400°C	630°C	0.041°C	0.046°C	0.08°C	0.09°C	
		630°C	800°C	0.050°C	0.057°C	0.08°C	0.10°C	
	°F	-328°F	-112°F	0.020°F	0.020°F	0.11°F	0.13°F	
		-112°F	32°F	0.025°F	0.027°F	0.11°F	0.13°F	
		32°F	212°F	0.032°F	0.034°F	0.11°F	0.14°F	
		212°F	572°F	0.047°F	0.052°F	0.13°F	0.14°F	
		572°F	752°F	0.056°F	0.061°F	0.13°F	0.16°F	
		752°F	1166°F	0.074°F	0.083°F	0.14°F	0.16°F	
		1166°F	1472°F	0.090°F	0.103°F	0.14°F	0.16°F	

Absolute uncertainty, tcal ±5°C / 9°F 1. 2-wire output 2. Based on MINCO application aid no. 18.

RTD and Thermistor	TEMPERATURE range		INPUT accuracy ±		OUTPUT <sup>1</sup> accuracy ±		
	from	to	90 days	12 months	90 days	12 months	
Pt1000 alpha 385	°C	-200°C	-80°C	0.011°C	0.012°C	0.06°C	0.07°C
		-80°C	0°C	0.014°C	0.015°C	0.06°C	0.08°C
		0°C	100°C	0.019°C	0.020°C	0.07°C	0.08°C
		100°C	260°C	0.025°C	0.028°C	0.07°C	0.08°C
		260°C	300°C	0.027°C	0.030°C	0.07°C	0.09°C
		300°C	400°C	0.030°C	0.034°C	0.07°C	0.09°C
		400°C	600°C	0.041°C	0.045°C	0.08°C	0.09°C
	°F	-328°F	-112°F	0.020°F	0.022°F	0.11°F	0.13°F
		-112°F	32°F	0.025°F	0.027°F	0.11°F	0.14°F
		32°F	212°F	0.034°F	0.036°F	0.13°F	0.14°F
		212°F	500°F	0.045°F	0.050°F	0.13°F	0.14°F
		500°F	572°F	0.049°F	0.054°F	0.13°F	0.16°F
		572°F	752°F	0.054°F	0.061°F	0.13°F	0.16°F
		752°F	1112°F	0.074°F	0.081°F	0.14°F	0.16°F
Ni 120 alpha 385	°C	-80°C	0°C	0.009°C	0.010°C	0.04°C	0.05°C
		0°C	100°C	0.010°C	0.011°C	0.04°C	0.04°C
		100°C	260°C	0.011°C	0.012°C	0.03°C	0.03°C
	°F	-112°F	32°F	0.016°F	0.018°F	0.07°F	0.09°F
		32°F	212°F	0.018°F	0.020°F	0.07°F	0.07°F
Cu10 alpha 427 <sup>2</sup>	°C	-100°C	260°C	0.067°C	0.069°C	0.63°C	0.75°C
	°F	-148°F	500°F	0.121°F	0.124°F	1.13°F	1.35°F
YSI 400	°C	15°C	50°C	0.005°C	0.007°C	0.005°C	0.007°C
	°F	59°F	122°F	0.009°F	0.013°F	0.009°F	0.013°F
Pt25 SPRT	°C	-200°C	660°C	0.05°C	0.06°C	-	-
	°F	-328°F	1220°F	0.09°F	0.11°F	-	-

Absolute uncertainty, tcal ±5°C / 9°F 1. 2-wire Output 2. Based on MINCO application aid no. 18.

DC Voltage	Resolution	Maximum burden <sup>2</sup>	Stability - 24 hours ±1°C / 1.8°F	OUTPUT <sup>1</sup> Accuracy	
				90 days	12 months
0 to 100 mV	1 µV	10 mA	±5 ppm + 2 µV	±25 ppm + 3 µV	±30 ppm + 3 µV
0 to 1 V	10 µV	10 mA	±4 ppm + 20 µV	±25 ppm + 30 µV	±30 ppm + 20 µV
0 to 10 V	100 µV	10 mA	±4 ppm + 200 µV	±25 ppm + 200 µV	±30 ppm + 200 µV
0 to 100 V	1 mV	1 mA	±5 ppm + 1 mV	±25 ppm + 2 mV	±30 ppm + 2 mV
<b>Thermocouple output</b>					
-10 to 75 mV	1 µV	10 mV	±5 ppm + 2 µV	±25 ppm + 3 µV	±30 ppm + 3 µV

Absolute Uncertainty, tcal ±5°C / 9°F 1. All outputs are positive only 2. Remote sensing is not provided. Output resistance is < 1 ohm  
 Noise: 0 to 100 mV: 1 µV p-p from 0.1 to 10 Hz, 6 µV rms from 10 Hz to 10 KHz  
 Noise: 0 to 1 V: 10 µV p-p from 0.1 to 10 Hz, 60 µV rms from 10 Hz to 10 KHz  
 Noise: 0 to 10 V: 100 µV p-p from 0.1 to 10 Hz, 600 µV rms from 10 Hz to 10 KHz  
 Noise: 0 to 100 V: 10 ppm + 1 mV p-p from 0.1 to 10 Hz, 20 mV rms from 10 Hz to 10 KHz

DC Current	Resolution	Maximum compliance voltage	Maximum inductive load	OUTPUT <sup>1</sup> Accuracy	
				90 days	12 months
0 to 100 mA	1 mA	10V	100 mH	±85 ppm + 2 µA	±100 ppm + 2 µA

Absolute uncertainty, tcal ±5°C / 9°F  
 1. All outputs are positive only.  
 Noise: 2 µA p-p from 0.1 to 10 Hz, 20 µA from 10 Hz to 10 KHz

Thermo-couple	TEMPERATURE range		INPUT and OUTPUT accuracy ± <sup>1</sup>	
	from	to	90 days	12 months
B °C	600°C	800°C	0.32°C	0.36°C
	800°C	1000°C	0.29°C	0.29°C
	1000°C	1550°C	0.30°C	0.30°C
	1550°C	1820°C	0.34°C	0.35°C
	1112°F	1472°F	0.58°F	0.65°F
	1472°F	1832°F	0.52°F	0.52°F
	1832°F	2822°F	0.54°F	0.54°F
°F	2822°F	3308°F	0.61°F	0.63°F
	0°C	150°C	0.15°C	0.20°C
	150°C	650°C	0.11°C	0.16°C
	650°C	1000°C	0.13°C	0.21°C
	1000°C	1800°C	0.28°C	0.40°C
	1800°C	2316°C	0.53°C	0.74°C
	32°F	302°F	0.27°F	0.36°F
°F	302°F	1202°F	0.20°F	0.29°F
	1202°F	1832°F	0.23°F	0.38°F
	1832°F	3272°F	0.50°F	0.72°F
	3272°F	4200°F	0.95°F	1.33°F
	-250°C	-100°C	0.28°C	0.40°C
	-100°C	-25°C	0.06°C	0.08°C
	-25°C	350°C	0.04°C	0.05°C
°F	350°C	650°C	0.04°C	0.06°C
	650°C	1000°C	0.06°C	0.11°C
	-418°F	-148°F	0.50°F	0.72°F
	-148°F	-13°F	0.11°F	0.14°F
	-13°F	662°F	0.07°F	0.09°F
	662°F	1202°F	0.07°F	0.11°F
	1202°F	1832°F	0.11°F	0.20°F
°F	-210°C	-100°C	0.10°C	0.17°C
	-100°C	-30°C	0.08°C	0.10°C
	-30°C	150°C	0.04°C	0.06°C
	150°C	760°C	0.04°C	0.07°C
	760°C	1200°C	0.08°C	0.13°C
	-346°F	-148°F	0.18°F	0.28°F
	-148°F	-22°F	0.14°F	0.18°F
°F	-22°F	302°F	0.07°F	0.11°F
	302°F	1400°F	0.07°F	0.13°F
	1400°F	2192°F	0.14°F	0.23°F
	-200°C	-100°C	0.15°C	0.23°C
	-100°C	-25°C	0.09°C	0.22°C
	-25°C	120°C	0.04°C	0.06°C
	120°C	1000°C	0.09°C	0.16°C
°F	1000°C	1372°C	0.20°C	0.30°C
	-328°F	-148°F	0.27°F	0.41°F
	-148°F	-13°F	0.16°F	0.40°F
	-13°F	248°F	0.07°F	0.11°F
	248°F	1832°F	0.16°F	0.29°F
	1832°F	2501°F	0.36°F	0.54°F
	200°C	-100°C	0.27°C	0.27°C
°F	-100°C	-800°C	0.16°C	0.16°C
	800°C	900°C	0.07°C	0.07°C
	392°F	-148°F	0.49°F	0.49°F
	-148°F	1472°F	0.29°F	0.29°F
	1472°F	1652°F	0.13°F	0.13°F

Absolute uncertainty, total ±5°C / 9°F <sup>1</sup>. Does not include thermocouple wire error and Cold Junction compensation.

Thermo couple	TEMPERATURE range		INPUT and OUTPUT accuracy ± <sup>1</sup>	
	from	to	90 days	12 months
N °C	-200°C	-100°C	0.23°C	0.30°C
	-100°C	-25°C	0.10°C	0.14°C
	-25°C	120°C	0.06°C	0.09°C
	120°C	410°C	0.04°C	0.08°C
	410°C	1300°C	0.11°C	0.17°C
	-328°F	-148°F	0.41°F	0.54°F
	°F	-148°F	-13°F	0.18°F
-13°F		248°F	0.11°F	0.16°F
248°F		770°F	0.07°F	0.14°F
770°F		2372°F	0.20°F	0.31°F
0°C		250°C	0.48°C	0.48°C
250°C		400°C	0.24°C	0.25°C
400°C		1000°C	0.21°C	0.23°C
°F	1000°C	1750°C	0.20°C	0.30°C
	32°F	482°F	0.86°F	0.86°F
	482°F	752°F	0.43°F	0.45°F
	752°F	1832°F	0.38°F	0.41°F
	1832°F	3182°F	0.36°F	0.54°F
	0°C	250°C	0.46°C	0.46°C
	250°C	1000°C	0.26°C	0.26°C
°F	1000°C	1400°C	0.20°C	0.27°C
	1400°C	1750°C	0.25°C	0.36°C
	32°F	482°F	0.83°F	0.83°F
	482°F	1832°F	0.47°F	0.47°F
	1832°F	2552°F	0.36°F	0.49°F
	2552°F	3182°F	0.45°F	0.65°F
	-250°C	-150°C	0.41°C	0.53°C
°F	-150°C	0°C	0.08°C	0.14°C
	0°C	120°C	0.03°C	0.06°C
	120°C	400°C	0.02°C	0.04°C
	-418°F	-238°F	0.74°F	0.95°F
	-238°F	32°F	0.14°F	0.25°F
	32°F	248°F	0.05°F	0.11°F
	248°F	752°F	0.04°F	0.07°F
°F	-200°C	0°C	0.46°C	0.46°C
	0°C	600°C	0.17°C	0.17°C
	-328°F	32°F	0.83°F	0.83°F
	32°F	1112°F	0.31°F	0.31°F
	0°C	200°C	0.32°C	0.32°C
	200°C	600°C	0.22°C	0.22°C
	600°C	800°C	0.29°C	0.06°C
°F	800°C	1600°C	0.35°C	0.16°C
	1600°C	2000°C	0.47°C	0.30°C
	2000°C	2500°C	0.57°C	0.70°C
	32°F	392°F	0.58°F	0.58°F
	392°F	1112°F	0.40°F	0.40°F
	1112°F	1472°F	0.52°F	0.54°F
	1472°F	2912°F	0.63°F	0.65°F
°F	2912°F	3632°F	0.85°F	0.86°F
	3632°F	4532°F	1.03°F	1.26°F
	-200°C	-100°C	0.12°C	0.12°C
	-100°C	300°C	0.02°C	0.03°C
	300°C	800°C	0.09°C	0.10°C
	328°F	-148°F	0.22°F	0.22°F
	-148°F	572°F	0.04°F	0.05°F
°F	572°F	1472°F	0.16°F	0.18°F

Absolute uncertainty, total ±5°C / 9°F <sup>1</sup>. Does not include thermocouple wire error and Cold Junction compensation.

Thermocouple Cold junction	Temperature range		Accuracy ± 12 months
	min	max	
CJC compensation	18°C / 64°F	28°C / 83°F	0.1°C / 0.18°F
CJC outside above			0.05°C/°C / 0.05°F/°F

## ORDERING INFORMATION

### JOFRA AMC900 - Advanced Multi-purpose Calibrator

Order No.	Description
<b>AMC900</b>	<b>Base model number (1st thru 6th characters)</b> JOFRA AMC900 Benchtop calibrator
	<b>Power supply - (7th thru 9th characters)</b>
115	115 VAC, 50/60 Hz
220	230 VAC, 50/60 Hz
	<b>Mains power cable type (10th character)</b>
A	EUROPEAN, 230 V
B	USA/CANADA, 115 V
C	UK, 240 V
D	SOUTH AFRICA, 220 V
E	ITALY, 220
F	AUSTRALIA, 240 V
G	DENMARK, 230 V
H	SWITZERLAND, 220 V
I	ISRAEL, 230 V
	<b>Certificate (11th character)</b>
G	NIST traceable certificate (standard)
H	Accredited certificate
<b>AMC900 115 B G</b>	<b>Sample order number</b> JOFRA AMC900 for 115 VAC, NIST traceable certificate.

#### Standard delivery

- JOFRA AMC900 Calibrator
- Power cord
- Operating Manual
- NIST traceable calibration certificate

## ACCESSORIES

Part No.	Description
SPK-AMC-001	LEMO to banana bushings with 1m / 3 ft. cable
SPK-AMC-002	Rack/panel mount kit
SPK-AMC-003	LEMO connector (kit)
121985	Extension cable for Pt100 sensor 5 m
121983	Extension cable for type K 5 m
122523	Extension cable for type N 5 m
124012	Aluminum carrying case
120519	Thermocouple male plug - type Cu-Cu (White)
120518	Thermocouple male plug - type R-S (Green)
120517	Thermocouple male plug - type K (Yellow)
120516	Thermocouple male plug - type J (Black)
120515	Thermocouple male plug - type T (Blue)
120514	Thermocouple male plug - type N (Orange)
2206011	Wire adapter - type K
2206012	Wire adapter - type T
104203	Test lead set
105366	RS232 cable for the AMC900 unit



AMETEK Calibration Instruments is one of the world's leading manufacturers and developers of calibration instruments for temperature, pressure and process signals as well as for temperature sensors both from a commercial and a technological point of view.



#### AMETEK Calibration Instruments

offers a complete range of calibration equipment for pressure, temperature, and signal - including software.

#### JOFRA Temperature standards

Portable precision thermometer. Dry-block calibrators: 4 series, more than 20 models - featuring speed, portability, accuracy, and advanced documenting functions.

#### JOFRA Pressure standards

Convenient electronic systems ranging from -1 to 700 bar (25 inHg to 10,000 psi) - multiple choices of pressure ranges, pumps, and accuracies, fully temperature-compensated for problem-free and accurate field use.

#### JOFRA Signal calibration

Process signal measurement and simulation for easy control loop calibration and measurement tasks - from handheld field instruments for multi or single signals to laboratory reference level bench top instruments.

#### Frode Pedersen sensors

AMETEK are producing and selling temperature sensors for industrial and marine use under the brand name Frode Pedersen.

#### JOFRA & JF Marine Instruments

AMETEK offers a complete range of calibration equipment for temperature, pressure, and signal approved for marine use.

*...because calibration is  
a matter of confidence*