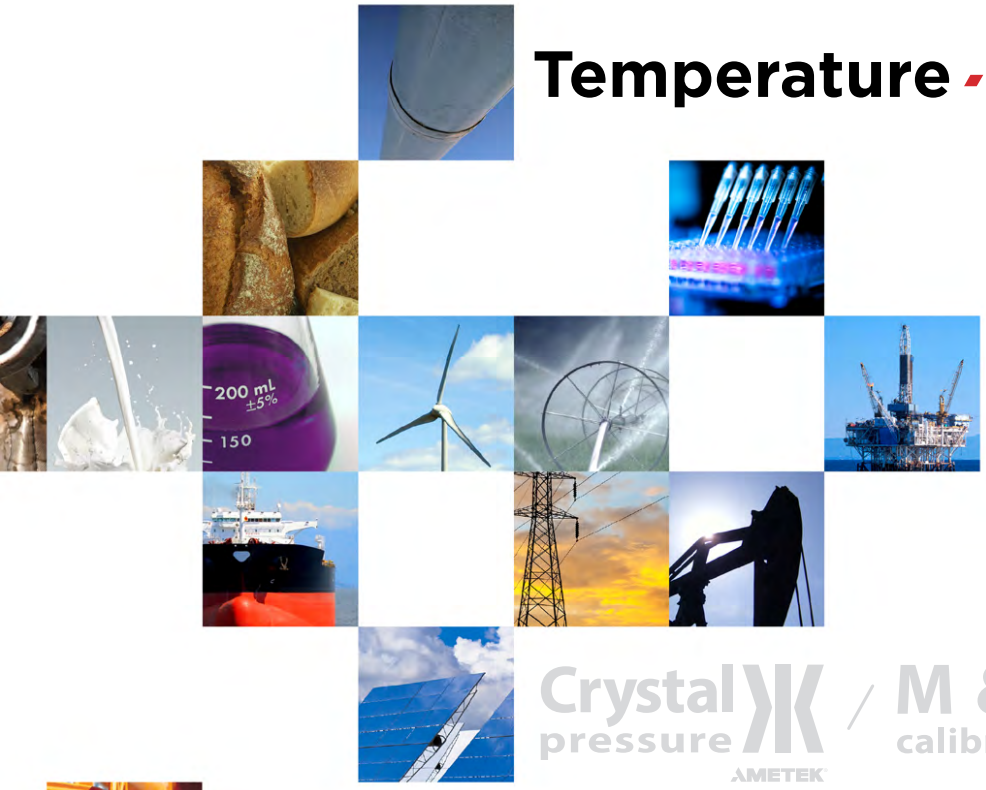
Temperature - Pressure - Process



Crystal pressure / M & G calibration / JOFRA calibration

AMETEK

SENSORS, TEST & CALIBRATION

A world leader in the development and manufacture of calibration instruments for pressure, temperature, and process.

A Truly Global Business

Ametek STC designs and manufactures some of the world's best solutions for a wide variety of markets and applications. Whether it's temperature, pressure, or process equipment you are looking for, we provide the highest quality products from our world-class calibration labs in California, Florida, and Denmark.

Combined with our software engineering and research office in India, our various sales and service centers, and over 150 distributors around the globe, our world-wide presence allows us to provide outstanding service no matter where you are!

San Luis Obispo, CA USA
Crystal Engineering

Crystal produces the industry's most accurate, field-capable, easy-to-use, reliable pressure calibration and measurement equipment from our ISO 17025 accredited lab.

Crystal pressure AMETEK

Largo, FL USA
Mansfield and Green

M&G designs and manufactures a variety of deadweight testers, hand-pumps, and comparators, for field and lab use from our ISO 9001 certified facility.

M & G calibration AMETEK

AMETEK®
SENSORS, TEST & CALIBRATION

Sales, Service, Manufacturing, and Engineering

Sales and Service

A diverse product line, unique features, and world class support for a wide range of calibration solutions.

Why We're Better

Effective Solutions

One Crystal pressure product often does the work of three to five devices from other manufacturers — replacing your data logger, your chart recorder, multiple test gauges, and even a dead-weight tester with a single device.

Shown from left to right:
The nVision, XP2i, HPC40 Series, and HPC50 Series.

The CTC-1205 and RTC-700.

Our JOFRA dry-block temperature calibrators are the fastest solution available for accurately calibrating temperature. One high speed calibrator reduces test time while also offering automated, hands-off operation, allowing a technician to complete multiple tasks simultaneously. We even have a model that only requires calibration once every three years!

AMETEK®
SENSORS, TEST & CALIBRATION

Reduce Measurement Error

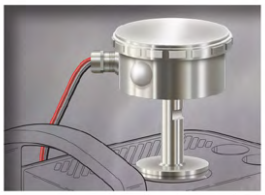
We use active temperature compensation to ensure you have lab accuracy in nearly any outdoor climate. We define our accuracy clearly, so you know where you stand without working complex calculations. And, our advanced simplicity interfaces allow you to quickly learn the product, helping to reduce user error.

Increased Safety

From the safest hoses and fittings available, to high over-pressure protection, our technology sets a new standard for safety. Why take a chance?

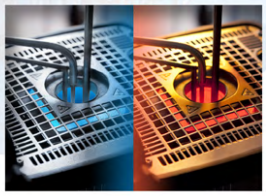
A family of intrinsically safe calibrators, gauges, and dataloggers capabile of accurate measurement up to 15 000 psi/1000 bar.

With Active Temperature Compensation, you can count on the same accuracy at any temperature between -20 and 50° C.



Fast and safe calibration of sanitary flange sensors using our unique reference sensor STS-102A and dedicated, built-in calibrator controller.

For extended recording, nVision replaces chart recorders with higher accuracy in a smaller, lighter, more rugged packgage.



Our patented cooling/heating technology makes it possible to calibrate from -100 to 155° C with one calibrator.

Create tamper proof (secure) digital records of pressure, temperature, and current recordings.

Each XP2i includes a ***free*** NIST-traceable, A2LA accredited calibration report from our world-class ISO 17025, accredited labs.
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Pneumatic and hydraulic deadweight testers provide industry standard accuracy.

"Advanced Simplicity" single layer user interface. No deep menu structure!

An array of temperature sensors to meet your specific needs, including special cable types for use under a sanitary flange.

Dry-block and liquid-bath temperature calibrators featuring portability, accuracy, and speed.

Temperature

Our dry-block and liquid bath temperature calibrators include five models, from rugged field to laboratory grade, and temperature ranges from -100 to 1205° C. Packed with advanced features, high accuracy and speed, and advanced documentation functions when combined with JOFRACAL software, we have the temperature calibrator to fit your needs.

Shown from left to right:
The ETC, CTC, PTC, and RTC.

AMETEK®
SENSORS, TEST & CALIBRATION

Innovative Temperature Measurement

From our active dual-zone calibration principle, to our patented Dynamic Load Compensation sensor, we are constantly striving to provide the most accurate and reliable temperature products available.

High Quality Sensors

Since we produce reference temperature sensors for nearly any application, we probably have the right one for yours. For added safety, our *intellegent* design ensures correct identification and calibration data are loaded into our calibrators and indicators.

Temperature Range	Internal Accuracy (°C)	External Accuracy (°C)	Stability (°C)	Resolution (°C)	Type	Insert Diameter (mm)	Immersion Depth (mm)	External Ref. Sensor	Sensor Under Test Input*	Dynamic Load Compensation	Clamp Calibration	Set Follows True	Autostep	Switch Test	Model
-100°C 155°C	0.30	0.06	0.030	0.001	Dry	29.7	190	✓	✓	✓		✓	✓	✓	RTC-159
-90°C 125°C	0.30	0.07	0.030	0.01	Dry	29.7	190	✓	✓			✓	✓	✓	PTC-125
-45°C 180°C	0.10	0.04	0.005	0.001	Dry	29.7	160	✓	✓	✓		✓	✓	✓	RTC-187
-45°C 155°C	0.10	0.04	0.005	0.001	Dry	29.7	160	✓	✓	✓		✓	✓	✓	RTC-157
-30°C 155°C	0.10	0.04	0.005	0.001	Dry	25.8	160	✓	✓	✓	✓	✓	✓	✓	RTC-156
-25°C 155°C	0.18	0.06	0.010	0.01	Dry	19.9	160	✓	✓			✓	✓	✓	PTC-155
-22°C 155°C	0.18	0.04	0.010	0.001	Dry/Wet	63.5	180	✓	✓	✓		✓	✓	✓	RTC-158
-25°C 155°C	0.30	0.20	0.040	0.1	Dry	25.8	120	✓				✓	✓	✓	CTC-155
-10°C 125°C	0.50	—	0.050	0.1	Dry	12.5	110						✓		ETC-125
Temperature Range	**Specifications**							**Functions**							**Model**

Temperature Range	Internal Accuracy (°C)	External Accuracy (°C)	Stability (°C)	Resolution (°C)	Type	Insert Diameter (mm)	Immersion Depth (mm)	External Ref. Sensor	Sensor Under Test Input*	Dynamic Load Compensation	Set Follows True	Autostep	Switch Test	Mains Variance Immunity	Model
28°C 250°C	0.28	0.07	0.020	0.001	Dry/Wet	63.5	180	✓	✓	✓	✓	✓	✓	✓	RTC-250
28°C 350°C	0.45	0.25	0.050	0.01	Dry	25.7	110	✓			✓	✓	✓	✓	CTC-350A
33°C 350°C	0.20	0.08	0.020	0.01		25.8	140		✓		✓	✓	✓	✓	PTC-350
33°C 425°C	‡ 0.20 0.25	0.13	0.020	0.01	Dry	25.8	150	✓	✓		✓	✓	✓	✓	PTC-425
28°C 400°C	0.50	—	0.150	0.1	Dry	Fixed	105					✓			ETC-400
28°C INFRARED 400°C	0.50	—	0.300	0.1	Dry	36.0	—					✓			ETC-400R
28°C 660°C	0.85	0.45	0.080	0.01	Dry	25.7	110	✓			✓	✓	✓	✓	CTC-660A
28°C 650°C	0.65	0.45	0.050	0.01	Dry	25.7	190	✓			✓	✓	✓	✓	CTC-652
33°C 660°C	0.30	0.15	0.040	0.01	Dry	24.8	150	✓	✓		✓	✓	✓	✓	PTC-660
33°C 700°C	0.29	0.11	0.020	0.001	Dry	29.8	200	✓	✓	✓	✓	✓	✓	✓	RTC-700
100°C 1205°C	2.00	2.00	0.100	0.01	Dry	27.0	137	✓			✓	✓	✓	✓	CTC-1205
Temperature Range	**Specifications**							**Functions**							**Model**

* RTD, TC, mA active, mA passive, and switch. ‡ At 33 to 350° C / At 350 to 425° C.

Pressure

Calibration solutions featuring digital gauges & calibrators, plus pneumatic & hydraulic dead-weight testers.

Shown from left to right:
The HPC50 Series, APMi, nVision, XP2i, and HPC40 Series

Shown from top to bottom:
The Type T Series, PKII Series, and HK Series.

AMETEK®
SENSORS, TEST & CALIBRATION

Our pressure equipment includes some of the world's most popular digital gauges and calibrators for a variety of applications and markets. Included are intrinsically safe "% of reading" gauges and calibrators, differential pressure gauges, reference data recorders, calibrators with built in pumps, and unique pneumatic and hydraulic deadweight testers. In many cases, one handheld calibrator can replace multiple instruments, reducing ongoing recalibration and maintenance costs. Our recorders collect readings as quickly as ten times per second, and store up to one million data points.

Pressure Range	Pressure Accuracy	Vacuum Accuracy	Operating Temp. Range	IP Rating	Pressure Sensors	Pressure Connection	Datalogging	Differential Pressure	Absolute Pressure	Read Temperature	Read Electrical	24 VDC Power Supply	Switch Test	External Pressure Module	Intrinsically Safe	Model
Vacuum to 15000 psi	± 0.035% Rdg	± 0.05% FS	-20 to 50° C	IP65	1 or 2	CPF Female		✓	✓	✓	✓	✓	✓	✓		HPC40 Series
Vacuum to 15000 psi	± 0.1% Rdg	± 0.25% FS	-10 to 50° C	IP67	1	CPF Female	✓		✓						✓	XP2i
Vacuum to 15000 psi	± 0.025% Rdg	± 0.06% FS	-20 to 50° C	IP67	1 or 2	CPF Female	✓	✓	✓	✓	✓		✓		✓	nVision
Vacuum to 10000 psi	± 0.035% Rdg	± 0.05% FS	-20 to 50° C	IP65	1 or 2	CPF Female		✓	✓	✓	✓		✓	✓	✓	HPC50 Series
Vacuum to 10000 psi	± 0.2% Rdg	± 0.25% FS	-10 to 50° C	IP65	1	CPF Female										m1
Vacuum to 5000 psi	± 0.05% Rdg + 0.005% FS	± 0.25% Rdg	0 to 50° C	—	1 or 2	1/8" NPT Female					✓				✓	30 Series
Vacuum to 3000 psi	± 0.25% Rdg	± 0.5% FS	-10 to 50° C	IP65	1	CPF Female										m1M
Vacuum to 100 psi	± 0.1% Rdg	± 0.1% Rdg	-10 to 50° C	IP67	1	1/8" NPT Female	✓	✓							✓	XP2i-DP
Pressure Range	Specifications						Functions									Model

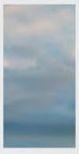
From 18 to 28° C. Typical. Plus either 0.004 or 0.01 psi. 1/4" NPT M, 1/4" BSP M, or M20 M adapter included. 1/4" NPT M and 1/4" BSP M adapters included.

Pressure Range	Standard Pressure Accuracy	Optional Pressure Accuracy (Rdg)	Maximum Pressure	Minimum Pressure	Minimum Increment	Pressure Connection*	Dual Piston Available	Dual Column Available	Tripod Compatibility	Sm. Incremental Weight Sets	Hydraulic	Pneumatic	Self Contained	Self Regulating Ball Type	Included Carrying Case	Model*
10 psi to 15000 psi	± 0.015% Rdg	± 0.025%, ± 0.1%	15000 psi	10 psi	5 psi	1/4" and 1/2" NPT F	✓	✓		✓	✓		✓		✓	Type T Series
10 psi to 3000 psi	± 0.1% Rdg	± 0.05%	3000 psi	10 psi	0.1 psi	1/4" NPT F	✓		✓		✓		✓		✓	HL Series
10 psi to 1500 psi	± 0.025% Rdg	—	1500 psi	10 psi	1 psi	7/16-20 37° AN4 M						✓		✓		HK Series
4 inH$_2$O to 301 psi	± 0.05% Rdg	± 0.025%, ± 0.015%	301 psi	4 inH$_2$O	1 inH$_2$O	1/8" NPT F			✓	✓		✓		✓	✓	RK Series
4 inH$_2$O to 30 psi	± 0.05% Rdg	± 0.025%, ± 0.015%	30 psi	4 inH$_2$O	1 inH$_2$O	1/4" NPT F			✓	✓		✓		✓	✓	PKII Series
Pressure Range	Specifications						Functions									Model*

With installed adapter to 1/4 tube fitting. Not included with dual column or 0.015% accuracy. These units are supplied with bench top column mounting plate and tubing.

* CPF connections are available for all deadweight tester models.

We provide the world's only ball-type deadweight testers, where the ball and weights float on a thin film of air, which is virtually frictionless. This design eliminates the necessity to rotate the weights during testing, and allows the user to concentrate on the instrument itself. Our testers are engineered to offer user-friendly, safe operation, in the field, or in a lab. Both pneumatic and hydraulic testers are available.



From laboratory multi-channel scanners to handheld field instruments, we have the tools for your process measurement needs.

Process

The ASM Series and mAcal.

The ASC-400 is our latest multifunction process calibrator, which includes an easy-to-use, advanced simplicity user interface. Read and source RTD, thermocouple, current, voltage, frequency, and resistance to calibrate or verify your process sensors. Or, combine with the APM CPF pressure modules to calibrate pressure, or a dry-block to calibrate temperature.

If you don't need the advanced features found in our multifunction calibrator, our single task instruments, including the mAcal and ASM Series make calibrating instruments like pressure transmitters and temperature sensors fast and easy.

The ASC-400 and APM CPF Series pressure module.

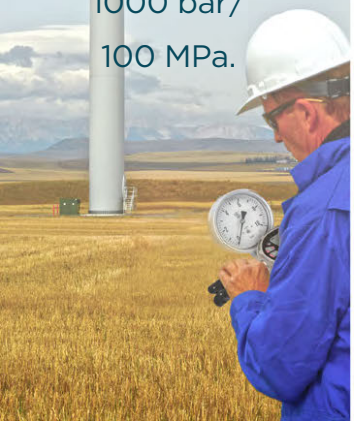
RTD	Thermocouple	Current	Voltage	Frequency	Resistance	Pulse	Reference Thermometer	With APM	24 VDC Power Supply	Model
R/S	R/S	R/S	R/S	R/S	R/S	R/S	✓	✓	✓	ASC-400
R/S	R/S	R/S	R/S	—	R/S	—	✓		✓	ASM Series
—	—	R/S	R	—	—	—			✓	mAcal
Specifications							Functions			Model

R = Read S = Source R/S = Both

AMETEK®
SENSORS, TEST & CALIBRATION

Pumps & Fittings

Our pressure generation products include everything from small pneumatic hand pumps to a precision hydraulic pressure comparator capable of generating up to 15 000 psi/ 1000 bar/ 100 MPa.



CPF Fittings

Crystal Pressure Fittings (CPF) are a new line of quick-test pressure fittings for calibration and test applications, designed with an emphasis on safety. They feature leak-free performance up to 15 000 psi /1000 bar, and include a safety weep hole to alert you before you accidently disconnect from a pressurized system. The weep hole can also be used as a bleed point. CPF fittings seal two ways: use fingers for an o-ring seal or use a wrench for a metal to metal cone seal (good to -40°C).

Our pressure hand pumps, comparators, and fittings & hoses are the perfect complement to our popular pressure gauges and calibrators. Each is available as a stand-alone pump or part of a complete system with the indicator included. From pneumatic and hydraulic hand pumps, to pressure comparators capable of controlling pressure up to 15 000 psi / 1000 bar, to the safest, most reliable pressure fitting and hose system available, we have the pressure generation equipment to make your job easier.

The GaugeCalHP Pressure Comparator.

Pressure Range	Pneumatic/ Hydraulic	Hand Pump/ Bench Top	CPF Hose and Fittings	Model
-26 inHg to 0 psi	P	H		T-810
0 psi to 200 psi	P	H		T-811
0 psi to 30 psi	P	H	✓	T-960-CPF
-25 inHg to 30 psi	P	H	✓	T-965-CPF
0 psi to 580 psi	P	H	✓	T-970-CPF
-27 inHg to 580 psi	P	H	✓	T-975-CPF
0 psi to 3000 psi	H	H	✓	T-620-CPF
0 psi to 5000 psi	H	H	✓	T-620H-CPF
0 psi to 5000 psi	H	B	✓	P-018-CPF
0 psi to 10 000 psi	H	B		P014
0 psi to 15 000 psi	H	B	✓	T-1-CPF
0 psi to 15 000 psi	H	B	✓	GaugeCalHP

Crystal pressure / M & G calibration / JOFRA calibration / AMETEK

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