PROCESS CALIBRATOR
TechChek 830

Accuracy to 0.025% of full scale

Source & Read mA, mV & V
Simulate & Measure T/Cs & RTDs
Generate & Count Hz & CPM
Reads Pressure & AC Volts
Checks Continuity
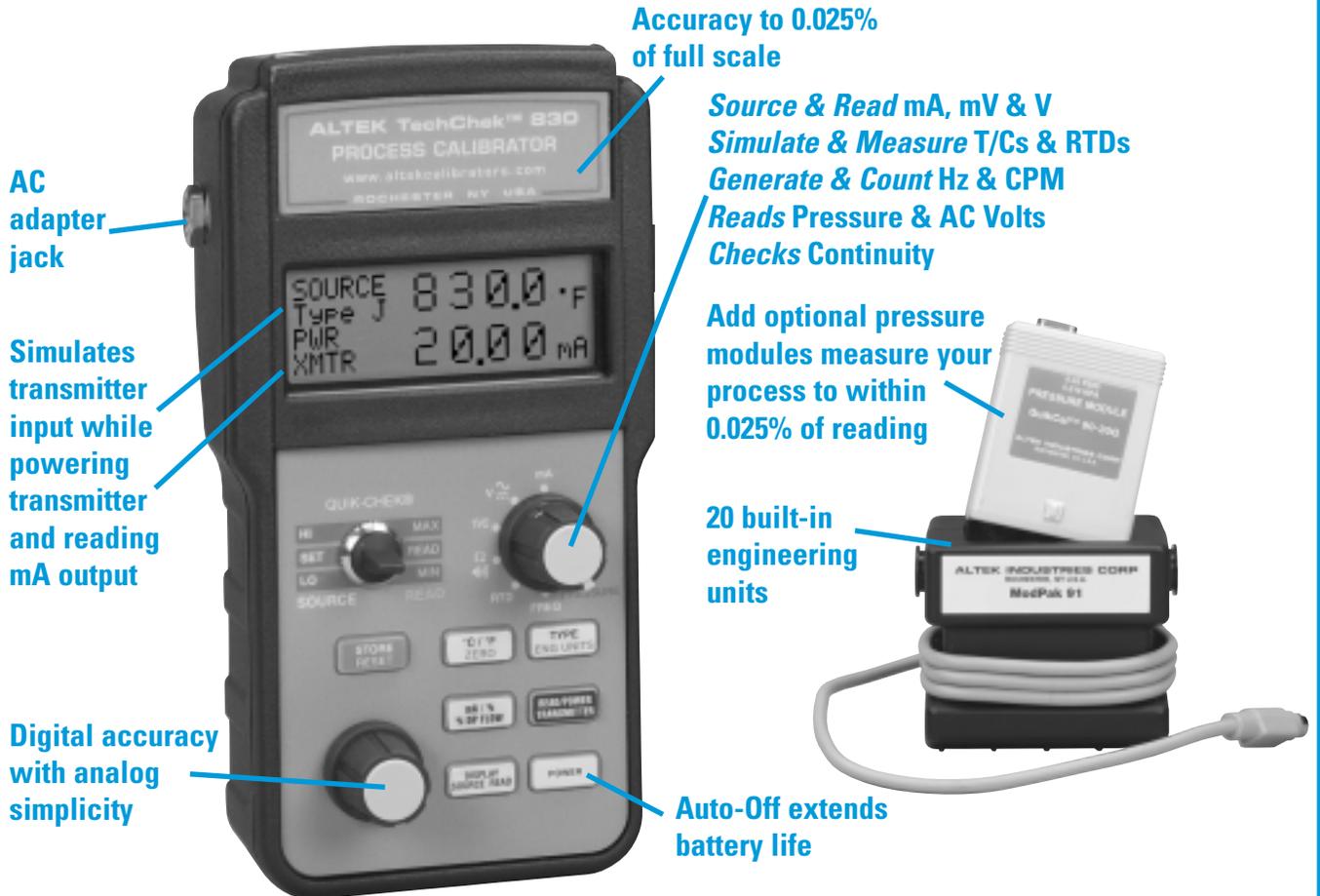
AC adapter jack

Simulates transmitter input while powering transmitter and reading mA output

Add optional pressure modules measure your process to within 0.025% of reading

20 built-in engineering units

Digital accuracy with analog simplicity

Auto-Off extends battery life

Do What You Gotta Do

Lighten your load…take the TechChek 830 to every site. It's like bringing a cartload of test equipment from the shop to the control room or the field. The TechChek 830 sources and reads DC like a milliamp or voltage calibrator, simulates and measures T/Cs & RTDs like a temperature calibrator, generates and counts frequency and Counts-Per-Minute like a frequency calibrator and displays pressure like a precision test gauge. Troubleshooting? It checks continuity with a beeper and measures AC line voltage like a multimeter!

Calibrate Milliamp Inputs

Calibrate controllers, recorders and other devices in 4 to 20 or 0 to 20 mA loops. Source and read 0.00 to 24.00 mA, or Simulate a 2-Wire Transmitter.

Calibrate 2-Wire Transmitters

Easily calibrate a 2-Wire Transmitter by connecting the TechChek 830 to both the input and output of the transmitter. The TechChek 830 will simultaneously indicate the input and output of the transmitter on the graphical display.

Voltage Calibration

Calibrate all your DC millivolt and voltage instrumentation. Source from 0.00 to 110.00 mV and 0.00 to 10.25 V. Read up to 110.00 mV, 11.00 V and 200.0 VDC.

Temperature Calibration

Source and Read directly in °C and °F for T/C types J, K, T, E, R, S & N and four Pt 100 Ohm, Ni 120 Ohm and Cu 10 Ohm RTDs. Cold junction compensation tracks temperature changes.

Calibrate Pressure Systems

Read pressure with extreme accuracy using a QuikCal pressure module in a ModPak module holder. Attach the module directly to the pressure connection for the best accuracy or with optional tubing for tight spots. Accurate to 0.025% of reading in psi, pa, Kpa, Mpa, BAR, mBar, Atm, Kgf plus torr, inches and mm of mercury or water at a variety of temperatures. Each module is characterized for temperature to give you laboratory accuracy in the shop, control room or field.

Frequency Calibration

Generate zero crossing square waves from 1 to 1000 Hz, 0.01 to 10.00 kHz and from 1 to 1000 CPM (Counts-Per-Minute). Built-in frequency counter measures Hz, kHz & CPM.

Measure AC Voltage

Check line voltage or mains from 0.0 to 250.0 volts AC. Great for troubleshooting power problems.

Check Continuity

Locate pairs of wires, open connections and shorts with the built-in beeper.

- **Compact Multifunction Calibrator**
  Source and Read Milliamps, Volts, Millivolts, Six RTD Types, Seven Thermocouple Types, Resistance and Frequency
- **Built-InTransmitter Power Supply**
  Simulates transmitter input while simultaneously powering 2-Wire transmitters and displaying milliamp output on the dual display
- **Accuracy of ±(0.025% of Full Scale + 1 LSD) Typical**
  Accurate to 0.02 mA, V, or Hz, 1°C & 0.3 Ohms
- **Laboratory Accuracy Pressure Measurement**
  QuikCal™ pressure modules display in 20 engineering units. Match your process within 0.025% of Reading
- **Troubleshoot Loops**
  AC Voltmeter (True rms) and Continuity Beeper built-in
- **Standard "AA" Alkaline Batteries**
  Over 20 hours of full 20 mA output. Auto-Off saves batteries. Optional AC adaptor for full time bench use.
- **User Settable "QUIK-CHEKS©"**
  Store HI, SET & LO for instant recall
- **Digital Accuracy with Analog Simplicity**
  Speed sensitive digital pot for fast output adjustment Easy-to-Read Large Character LCD with backlighting
- **Deluxe Accessories Set Included**
  Carrying case with neck strap for hands-free viewing plus detachable leads, alligator clips, test probes & spade lugs

TYPICAL HOOKUPS

SOURCE mA, mVDC, VDC, Hz or CPM

The TechChek 830 sources a wide variety of process control signals. You can store any three output values and use the QUIK-CHEK switch to *instantly* recall them.

Outputs are 4 to 20mA, 0 to 100% of 4 to 20 mA, 1 to 5 Volts, 0 to 100 mV plus square waves in Hz or CPM.

Milliamp Receiver Input
Controller
Transmitter
Computer
Logger
I/P
DCS
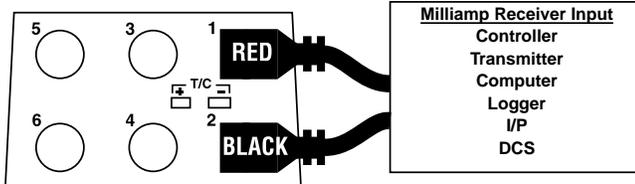
READ to 250.0 VAC
Read VDC to 200.0V, Hz or CPM to 250 Vpeak

Check AC power (mains) to your panels without a voltmeter. Also measure power supplies, loop voltages & high amplitude frequency signals.

AC Voltage Signal
Mains
Line Voltage
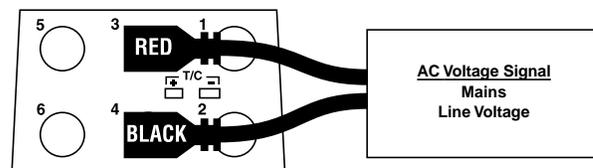
CALIBRATE 2-WIRE TEMPERATURE OR FREQUENCY TRANSMITTERS

Use the TechChek 830 to simultaneously supply power to a 2-Wire transmitter, simulate the input to the transmitter and display the 4 to 20 mA output of the transmitter.
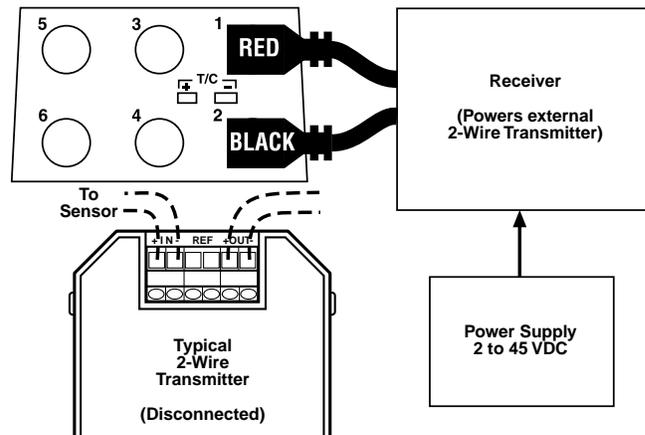
The 830 supplies a nominal 25 VDC and supports loads up to 1200 Ohms.

(T/C / mA Shown)

**Typical
2-Wire
Transmitter**
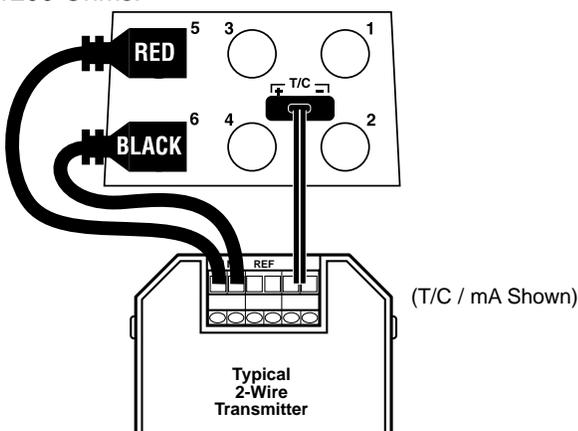
SIMULATE 2-WIRE TRANSMITTERS

Simulate a 2-Wire Transmitter output from 1.00 to 24.00 mA or from -18.8 to 125.0% of 4 to 20 mA. Operates in loops with power supply voltages from 3 to 45 VDC.

Substitute the 830 for any transmitter to check all the other devices in the loop. Or use to temporarily replace a faulty transmitter and keep the process going.

Receiver

**(Powers external
2-Wire Transmitter)**

To
Sensor

**Typical
2-Wire
Transmitter**

(Disconnected)

**Power Supply
2 to 45 VDC**

TYPICAL HOOKUPS

SOURCE or READ Ohms and 2-Wire RTDs

Simulate resistance to 400 Ohms or 2-Wire Platinum 100 Ohm RTDs. Read Pt 100 Ohm RTDs and resistance to 1000 Ohms.

Receiver Input
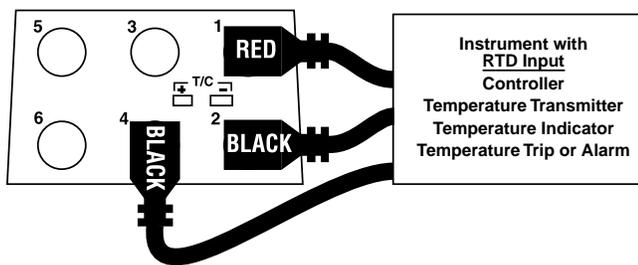**Ohms or 2-Wire RTD**
Controller
Transmitter
Computer
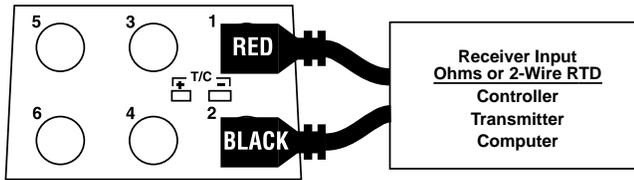
READ MILLIAMPS

Put the TechChek 830 in series with the loop to measure 4 to 20 mA. Flip the QUIK-CHEK switch to recall the minimum and maximum readings.

Milliamp Output Signal
Controller
Transmitter
P/I
DCS
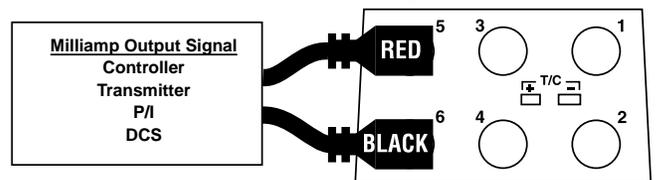
SIMULATE AN RTD SENSOR

Simulate Platinum 100 Ohm, Nickel 120 Ohm and Copper 10 Ohm RTD sensors directly in °C or °F. Three test leads and spade lugs are included with the 830 for easy hookups.

Eliminates holding a bulky decade box while reading RTD vs. resistance tables.

Instrument with
RTD Input
Controller
Temperature Transmitter
Temperature Indicator
Temperature Trip or Alarm

READ 3-WIRE RTDs

Measure Platinum 100 Ohm, Nickel 120 Ohm and Copper 10 Ohm RTD sensors directly in °C or °F.. Three wire hookup lets you read typical process control sensors including ones with long cable runs. Minimum and maximum temperatures let you track temperatures to find control drift.
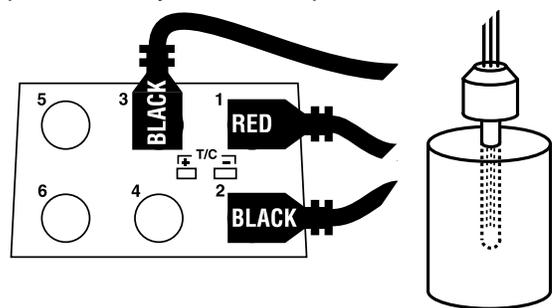
SIMULATE A THERMOCOUPLE

Dial in any temperature to simulate the output of a Type J, K, T, E, N, R or S thermocouple. Store three values for each thermocouple type on the QUIK-CHEK switch to instantly output any temperature in °C or °F.

Cold junction compensation automatically adjusts the millivolt output as the ambient temperature changes.

Instrument with
Thermocouple Input
Controller
Temperature Indicator
Temperature Trip or Alarm
Temperature Transmitter
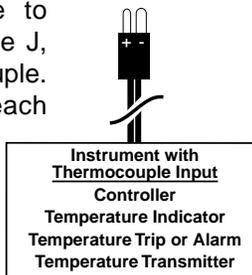
READ A THERMOCOUPLE

Connect any J, K, T, E, N, R or S thermocouple and read directly in °C or °F.
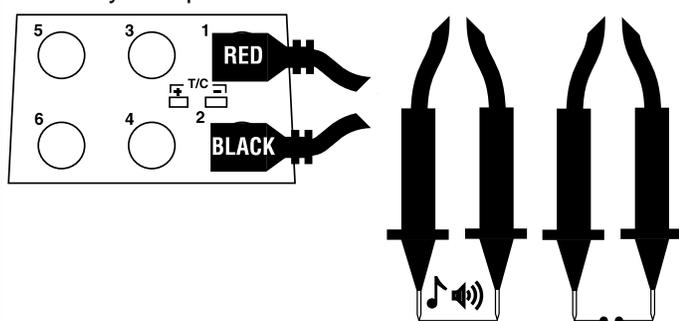
Flip the QUIK-CHEK switch to indicate the minimum and maximum temperatures the 830 has measured. Monitor an independent sensor to tune the deadband adjustment of controllers.
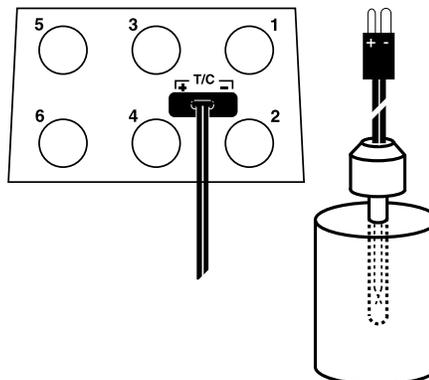
CHECK CONTINUITY

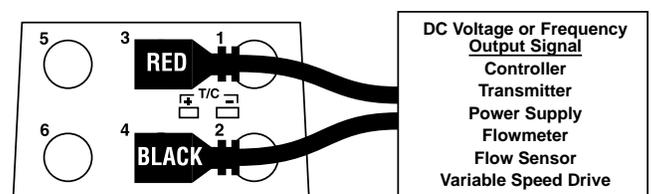A tone sounds when the resistance between the terminals is less than approximately 100 Ohms.

Continuity is useful to find open connections, shorts or to identify wire pairs.

READ to 110.00 mVDC, 10.25 VDC
READ kHz, Hz or CPM to 10.25 Vpeak

Easily measure process DC signals. Flip the QUIK-CHEK switch to recall the minimum and maximum readings.

Use the TechChek 830 to measure batteries and loop power supplies or across receiver inputs to measure the 1 to 5 volt signal. Read flow meter signals in Hz or CPM.

DC Voltage or Frequency
Output Signal
Controller
Transmitter
Power Supply
Flowmeter
Flow Sensor
Variable Speed Drive

TYPICAL HOOKUPS

READ PRESSURE

Select one of the QuikCal 90 Pressure Modules and place it into a ModPak 91 Module Holder. Connect the ModPak 91 to the TechChek 830 using the attached interface cable.

Connect the QuikCal 90 Pressure Module directly to the field fitting or with tubing to any pressure source.
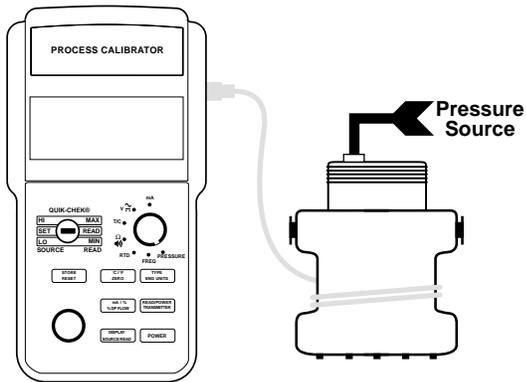
CALIBRATE 2-WIRE PRESSURE TRANSMITTERS

Use the TechChek 830 to simultaneously supply power to a 2-Wire transmitter, read the input pressure to the transmitter and display the 4 to 20 mA output of the transmitter.

The 830 supplies a nominal 25 VDC and supports loads up to 1200 Ohms.
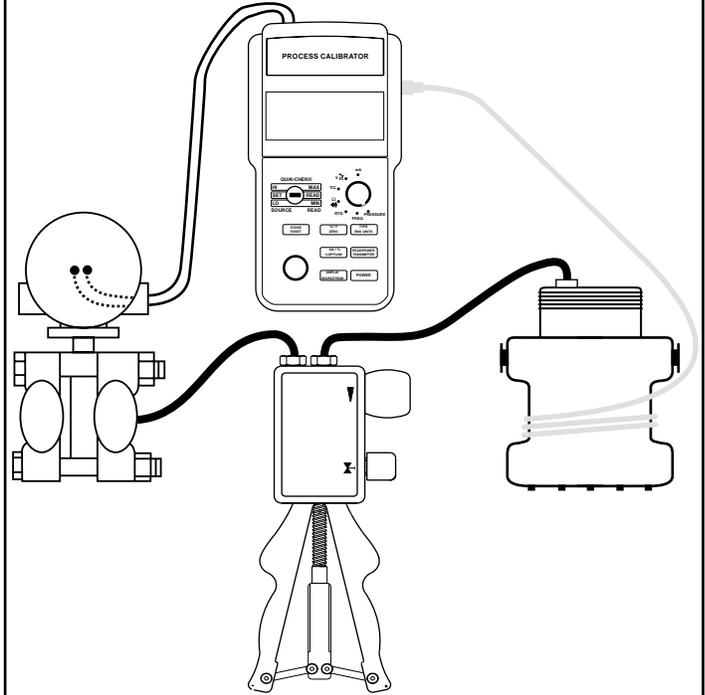
TechChek 830 with optional QuikCal Pressure Module and ModPak Module Holder

Modules

QuikCal 90-5G   0 to 5 psi
QuikCal 90-10G*   0 to 10 psi
QuikCal 90-30G*   0 to 30 psi
QuikCal 90-100G*   0 to 100 psi
QuikCal 90-300G*   0 to 300 psi
QuikCal 90-500G*   0 to 500 psi
QuikCal 90-1000G *   0 to 1000 psi
QuikCal 90-2500G   0 to 2500 psi

Module Accuracy

90-5G ±(0.025% of rdg +0.0005 psi)
90-10G ±(0.025% of rdg +0.001 psi)
90-30G ±(0.025% of rdg +0.003 psi)
90-100G ±(0.025% of rdg +0.009 psi)
90-300G ±(0.025% of rdg +0.027 psi)
90-500G ±(0.025% of rdg +0.035 psi)
90-1000G ±(0.025% of rdg +0.01 psi)
90-2500G ±(0.025% of rdg +0.25 psi)

*Modules Available in March 1998

Optional QuikCal Pressure Module and ModPak Module Holder

QuikCal 90 PRESSURE MODULE RANGES & RESOLUTION

Engineering Units	0 to 5 PSI		0 to 10 PSI		0 to 30 PSI		0 to 100 PSI	
	Max Rdg	Resolution	Max Rdg	Resolution	Max Rdg	Resolution	Max Rdg	Resolution
PSI	5.0000	.0001	10.000	.001	30.000	.001	100.00	.01
pa	34474	1	68948	1	99999	1	99999	1
Kpa	34.474	.001	68.948	.001	206.84	.01	689.48	.01
Mpa	0.0344	.0001	0.0689	.0001	0.2068	.0001	0.6894	.0001
Bar	0.3447	.0001	0.6894	.0001	2.068	.0001	6.8948	.0001
mBar	344.74	.01	689.48	.01	2068.4	.1	6894.8	.1
Atm	0.3402	.0001	0.6804	.0001	2.0414	.0001	6.8046	.0001
Kgf/cm2	0.3515	.0001	0.7030	.0001	2.1092	.0001	7.0307	.0001
torr	258.57	.01	517.15	.01	999.99	.01	5171.5	.1
mm Hg @ 0°C/32°F	258.27	.01	517.15	.01	999.99	.01	5171.5	.1
in Hg @0°C/32°F	10.180	.001	20.360	.001	61.081	.001	203.60	.01
in Hg @15°C/60°F	10.208	.001	20.418	.001	61.253	.001	204.18	.01
in H2O @ 4°C/39.2°F	138.40	.01	276.80	.01	830.40	.01	2768.0	.1
in H2O @ 15°C/60°F	138.53	.01	277.07	.01	831.22	.01	2770.7	.1
in H2O @ 20°C/68°F	138.64	.01	277.30	.01	831.89	.01	2773.0	.1
in H2O @ 23°C/73.4°F	138.74	.01	277.48	.01	832.45	.01	2774.8	.1
mm H2O @ 4°C/39.2°F	3515.3	.1	7030.7	.1	21092	1	70307	1
mm H2O @ 23°C/73.4°F	3524.0	.1	7048.1	.1	21144	1	70481	1
cm H2O @ 4°C/39.2°F	351.53	.01	703.07	.01	2109.2	.1	7030.7	.1
cm H2O @ 23°C/73.4°F	352.40	.01	704.81	.01	2114.4	.1	7048.1	.1

Engineering Units	0 to 300 PSI		0 to 500 PSI		0 to 1000 PSI		0 to 2500 PSI	
	Max Rdg	Resolution	Max Rdg	Resolution	Max Rdg	Resolution	Max Rdg	Resolution
PSI	300.00	.01	500.00	.01	999.99	.01	2500.0	.1
pa	99990	10	99990	10	99900	100	99900	100
Kpa	2068.4	.1	3447.4	.1	6894.8	.1	9999.9	.1
Mpa	2.0684	.0001	3.4474	.0001	6.8948	.0001	17.236	.001
Bar	20.684	.001	34.474	.001	68.948	.001	172.36	.001
mBar	20684	1	34474	1	68948	1	99999	1
Atm	20.414	.001	34.023	.001	68.046	.001	170.11	.01
Kgf/cm2	21.092	.001	35.153	.001	70.307	.001	175.76	.01
torr	9999.9	.1	25857	1	51715	1	99999	1
mm Hg @ 0°C/32°F	9999.9	.1	25857	1	51715	1	99999	1
in Hg @0°C/32°F	610.81	.01	999.99	.01	2036.0	.01	5090.1	.1
in Hg @15°C/60°F	612.53	.01	999.99	.01	2041.8	.1	5104.4	.1
in H2O @ 4°C/39.2°F	8304.0	.1	9999.9	.1	27680	1	69200	1
in H2O @ 15°C/60°F	8312.2	.1	9999.9	.1	27707	1	69268	1
in H2O @ 20°C/68°F	8318.9	.1	9999.9	.1	27730	1	69324	1
in H2O @ 23°C/73.4°F	8324.5	.1	9999.9	.1	27748	1	69371	1
mm H2O @ 4°C/39.2°F	99999	1	99999	1	99990	10	99990	10
mm H2O @ 23°C/73.4°F	99999	1	99999	1	99990	10	99990	10
cm H2O @ 4°C/39.2°F	21092	1	35153	1	70307	1	99999	1
cm H2O @ 23°C/73.4°F	21144	1	35240	1	70481	1	99999	1

THERMOCOUPLE RANGES & ACCURACIES

T/C TYPE	°C RANGE	ACCURACY	°F RANGE	ACCURACY
J	100 to 1200	±1.7	212 to 2192	±2.3
	-50 to 99	±1.8	-58 to 211	±2.5
	-150 to -49	±2.2	-238 to -57	±3.2
	-200 to -149	±2.8	-328 to -237	±4.3
K	1100 to 1372	±2.2	2012 to 2500	±3.1
	0 to 1099	±2.0	32 to 2011	±2.9
	-100 to -1	±2.3	-148 to 31	±3.3
	-200 to -99	±3.6	-328 to -147	±5.7
T	200 to 400	±1.7	392 to 752	±2.4
	0 to 199	±1.9	32 to 391	±2.7
	-100 to -1	±2.4	-148 to 31	±3.5
	-200 to -99	±3.5	-328 to -147	±5.6
E	250 to 1000	±1.5	482 to 1832	±2.0
	50 to 249	±1.6	122 to 481	±2.1
	-100 to 49	±1.9	-148 to 121	±2.6
	-200 to -99	±2.6	-328 to -147	±3.9

T/C TYPE	°C RANGE	ACCURACY	°F RANGE	ACCURACY
N	300 to 1300	±2.1	572 to 2372	±3.0
	100 to 299	±2.3	212 to 571	±3.3
	-50 to 99	±2.6	-58 to 211	±4.0
	-200 to -49	±5.0	-328 to -57	±8.2
R	1750 to 1768	±4.2	3182 to 3214	±6.9
	950 to 1749	±4.0	1742 to 3181	±6.5
	650 to 949	±4.4	1202 to 1741	±7.2
	300 to 649	±5.1	572 to 1201	±8.4
S	1700 to 1768	±4.9	3092 to 3214	±8.0
	1050 to 1699	±4.4	1922 to 3091	±7.1
	700 to 1049	±4.8	1292 to 1921	±7.8
	300 to 699	±5.4	572 to 1291	±8.9

Note: Thermocouple accuracies are based on an 80.00 mV Span
T/C Accuracy for °C is ±(0.05% of 80.00 mV + 1°C)
T/C Accuracy for °F is ±(0.05% of 80.00 mV + 1°F)

Source resolution is 1 °C or °F. Read resolution is 0.1 °C or °F.

RTD RANGES & ACCURACIES

RTD TYPE	ALPHA	°C RANGE	ACCURACY	°F RANGE	ACCURACY
Pt 100Ω (DIN/IEC/JIS 1989)	1.3850	-100 to 850	±1	-148 to 1562	±2
Pt 100Ω (Burns)	1.3902	-100 to 648	±1	-148 to 1200	±2
Pt 100Ω (Old JIS 1981)	1.3916	-100 to 648	±1	-148 to 1200	±2
Pt 100Ω (US Lab)	1.3926	-100 to 862	±1	-148 to 1584	±2
Ni 120Ω	1.6720	-80 to 273	±1	-112 to 524	±2
Cu 10Ω	1.4274	-200 to 260	±8	-328 to 500	±14

RTD resolution is 1 °C or °F.

SPECIFICATIONS

(Unless otherwise indicated, specifications are for 1 year in ±% of Span @ 23°C)

GENERAL

TYPICAL 90 DAY ACCURACY: ±(0.025% of Full Scale + 1 LSD)[1]
1 YEAR ACCURACY: ±(0.05% of Full Scale + 1 LSD)
WARM UP TIME: 10 seconds to specified accuracy, 2 minutes to maximum accuracy
TEMPERATURE EFFECT: ±0.01%/°C based on 23°±25°C
BATTERIES: Six "AA", (R6) batteries (Alkaline supplied and recommended)
BATTERY LIFE:
   MILLIAMP SOURCE & 2-WIRE MODES: Nominal 12 hours at 20 mA with 250 Ohm load; OTHER FUNCTIONS: Nominal 30 hours
Note: Battery life is reduced when LCD backlighting is on
LOW BATTERY INDICATION: "BAT" indication on the display at approximately 4 hours left
OVERLOAD PROTECTION: 3 fuses,125 mA, Fast Blow
NOISE: ±1 LSD at frequencies less than 10 Hz
NORMAL MODE REJECTION RATIO: 50 dB @ 50/60 Hz
OPERATING TEMPERATURE RANGE: -5 to +130 °F (-20 to +55°C)
STORAGE TEMPERATURE RANGE: -13 to +130°F (-25 to +55°C)
RELATIVE HUMIDITY: 10 to 90%, non-condensing for 24 hours from 0 to 35°C
OVERALL SIZE: 158.1 x 83.1 x 49.3 mm (6.23 x 3.27 x 1.94 inches)
WEIGHT: 0.6 kg (1 lb, 5 oz)

MILLIAMP SOURCE

RANGES: 0.00 to 24.00 mA; -25.0 to 125.0 % of 4 to 20 mA; % DP Flow
ACCURACY: ±(0.05% of 24 mA Span + 0.01 mA) = 0.02mA
TYPICAL DRIVE CAPABILITY: 1200 Ohms @ 20.00 mA
COMPLIANCE VOLTAGE: nominal 25 V @ 20 mA

POWER & MEASURE 2-WIRE TRANSMITTERS

RANGES & ACCURACY: Same as for MILLIAMP SOURCE
OUTPUT CURRENT: up to 24.00 mA
TYPICAL DRIVE CAPABILITY:1200 Ohms @ 20.00 mA
COMPLIANCE VOLTAGE: nominal 25 VDC @ 20 mA
COMMON MODE ERROR: 0.01% Full Scale/Common Mode Volt

2-WIRE TRANSMITTER SIMULATOR

RANGES: 1.00 to 24.00 mA; -18.8 to 125.0% of 4 to 20 mA; % DP Flow
ACCURACY: Same as for MILLIAMP SOURCE
LOOP VOLTAGE LIMITS: Mininum, 3 V; Maximum 45 VDC
OVERLOAD PROTECTION: Current limited to 25 mA nominal
COMMON MODE ERROR: 0.01% Full Scale/Common Mode Volt

MILLIAMP READ

RANGES: 0.00 to 24.00 mA; -25.0 to 125.0 % of 4 to 20 mA; % DP Flow
ACCURACY: Same as for MILLIAMP SOURCE
OVERLOAD PROTECTION: Current limited to 25 mA nominal
VOLTAGE BURDEN: 0.9V at 4 mA, 1.2V at 20 mA, 1.9V at 24 mA

DC VOLTAGE SOURCE

RANGES: 0.00 to 110.00 mV; 0.00 to 10.25V
ACCURACY:
   ±(0.05% of 110 mV+ 0.01mV) = ±0.07 mV
   ±(0.05% of 10.25 V + 0.01V) = ±0.02V
SOURCE CURRENT: >20 mA
SINK CURRENT: >20 mA
OUTPUT IMPEDANCE: <0.3 Ohms
SHORT CIRCUIT DURATION: Infinite

MEASURE DC VOLTS

RANGES: 0.00 to 110.00 mV; 0.00 to 10.25 V; 0.0 to 200.0 V
ACCURACY:
   ±(0.05% of 110 mV+ 0.01mV) = ±0.07 mV
   ±(0.05% of 10.25 V + 0.01V) = ±0.02V
   ±(2% of 200.0 V + 0.1V) = ±4.1 V
INPUT RESISTANCE: >1 Meg Ohm to 10.25V, >5 Meg Ohm to 200V
SOURCE RESISTANCE EFFECT: 0.01% per 100 Ohms

MEASURE AC VOLTS

RANGE: 0.0 to 250.0 V True RMS
ACCURACY: From 10 to 250 VAC ±(2% of 250.0 VAC + 0.1 VAC) = ±5.1 VAC
MAXIMUM CREST FACTOR: < 3
FREQUENCY RANGE: 45 to 800 Hz

[1]Typical 90 day accuracy can be estimated by dividing the 1 year % of full scale accuracy by 2. Additions to the specification, such as + 1 LSD, remain constant.

SOURCE THERMOCOUPLES

THERMOCOUPLE TYPES: J, K, T, E, N, R & S
RESOLUTION: 1 °C or °F.
ACCURACY °C: ±(0.05% of 80.00 mV + 1°C); **°F:** ±(0.05% of 80.00 mV + 1°F)
COLD JUNCTION ACCURACY: ±1°C
COLD JUNCTION EFFECT: within 0.05°C per °C change
OUTPUT IMPEDANCE: <0.3 Ohms
SOURCE CURRENT:>10 mA

READ THERMOCOUPLES

THERMOCOUPLE TYPES & ACCURACIES: Same as for Source T/C
RESOLUTION: 0.1 °C or °F.
COLD JUNCTION ACCURACY: ±1°C
COLD JUNCTION EFFECT: within 0.05°C per °C change
INPUT IMPEDANCE: > 1 Meg Ohm
OPEN THERMOCOUPLE DETECTION: 450 millisecond pulse. Nominal threshold, 10 K Ohms.

SOURCE RTD & OHMS

RTD TYPES:
   Pt 100Ω for 1.3850 (DIN/IEC 751 & New JIS), 1.3902 (Burns),
   1.3926 (US Lab) & 1.3916 (Old JIS 1604C-1981)
   Ni 120Ω & Cu 10Ω
RTD RESOLUTION: 1°C or °F.
RANGE OHMS: 0.0 to 400.0 Ohms
ACCURACY: ±0.05% of Full Scale + 0.075 mV/mA Excitation Current)
ACCURACY OHMS: ±(0.05% of 400.0 Ohms + 0.1 Ohm) = ±0.3 Ohms (at 1 mA Excitation Current)
TEMPERATURE EFFECT: ±((0.035 mV/°C)*(1/mA Excitation Current))
ALLOWABLE EXCITATION CURRENT: 0.125 to 2.0 mA continuous DC

READ RTD

RTD TYPES & RESOLUTION: Same as for Source RTD
RTD RANGE (IN OHMS): 0.0 to 400.0 Ohms
RTD ACCURACY (IN OHMS): ±(0.05% of 400.0 Ohms + 0.1 Ohm) = ±0.3 Ohms
EXCITATION CURRENT SUPPLIED: 1 mA, nominal

READ OHMS

RANGE OHMS: 0.0 to 1000.0 Ohms
ACCURACY: ±(0.05% of 1000.0 Ohms + 0.1 Ohm) = ±0.6 Ohms
EXCITATION CURRENT SUPPLIED: 1 mA, nominal

FREQUENCY SOURCE

RANGES: 1 to 1000 CPM (Count-Per-Minute); 1 to 1000 Hz, 0.01 to 10.00 kHz
ACCURACY: ±(0.05% of 1000 CPM + 1 CPM) = ±2 CPM;
         ±(0.05% of 1000 Hz +1 Hz)= ±2 Hz;
         ±(0.05% of 10.00 kHz + 0.01 kHz) = ±0.02 kHz
OUTPUT WAVEFORM: Square Wave, Zero Crossing, -1V to +5V ±10%
RISETIME: Hz <5 microseconds; CPM <100 microseconds
OUTPUT IMPEDANCE: <100 Ohms
SOURCE CURRENT: >1 mA at 10 kHz
SHORT CIRCUIT DURATION: Infinite

MEASURE FREQUENCY

RANGES & ACCURACY: Same as FREQUENCY SOURCE
TRIGGER LEVEL: 1 V RMS, DC coupled to 10.25 V;
         7 V RMS, DC coupled to 250 V
INPUT IMPEDANCE: >1Meg Ohm + 60 pF

CONTINUITY CHECKING

TEST CURRENT: Nominal 1 mA
THRESHOLD: 100 Ohm ±20%
INDICATION: Steady tone & Symbol on LCD plus Ohm Reading

OPTIONAL PRESSURE MODULE

OPERATING TEMPERATURE: -10°C TO 50°C (13°F TO 122°F)
STORAGE TEMPERATURE: -40°C TO 85°C (-40°F TO 185°F)
WEIGHT: 0.4 kg (14.5 oz)
TEMPERATURE EFFECT: None (Compensated over full range)
CONNECTION: 1/8" NPT FEMALE
MEDIA COMPATIBILITY: Any liquid or gas compatible with 316 stainless steel

NEW PRODUCT SPECIFICATIONS

These specifications are for a new product and are subject to change without notice

ORDERING INFORMATION	Part No.

830 TechChek
Process Calibrator 830

Included with each Model 830 are:
Deluxe Carrying Case with hands free shoulder
strap and zippered pocket for lead kits (09-3786)
Test Lead Kit (Part No. WIRE KIT-9)
NIST Traceable Certificate and Three Year Warranty

OPTIONAL ACCESSORIES	Part No.

Thermocouple Wire Kit WIRE KIT-1
Contains T/C wires for types J, K, T & E
1 Meter long, terminated at one end with
a minature T/C connector

91 ModPak Pressure Module Holder 91-ModPak
ModPak 91 allows any QuikCal 90 Pressure
Module to be attached to the TechChek 830. The
ModPak 91 has 1 meter (3') of cable that plugs
into the TechChek 830. A rubber strap restrains
the cable or is used to hang the ModPak from a
pipe or rail.

OPTIONAL ACCESSORIES	Part No.

90 QuikCal Pressure Module 90-_____
Choose any QuikCal Pressure Module from the
following list. Please ask for information on
additional module ranges.

QuikCal 90-5G	0 to 5 psi
QuikCal 90-10G*	0 to 10 psi
QuikCal 90-30G*	0 to 30 psi
QuikCal 90-100G*	0 to 100 psi
QuikCal 90-300G*	0 to 300 psi
QuikCal 90-500G*	0 to 500 psi
QuikCal 90-1000G*	0 to 1000 psi
QuikCal 90-2500G	0 to 2500 psi

* MODULES AVAILABLE IN MARCH 1999

Replacement 830 Lead Kit WIRE KIT-9
Contains Pair of Red & Black leads with
right angle & straight sheathed banana plugs
Pair of safety insulated alligator clips, uninsulated
alligator clips, test probes and spade lugs
Extra Black lead and spade lug for 3-Wire
RTD connections.
Second pair of Red & Black leads with right angle
sheathed banana plugs and alligator clips for mA
Read & Power Transmitter functions

ADDITIONAL INFORMATION

OTHER PRODUCTS

Altek designs and manufacturers fast, accurate instruments for measurement, generation and simulation of virtually every process control signal. Consult our factory directly or contact your local stocking representative to order precise, low cost Milliamp Calibrators, Voltage Sources, Thermocouple Sources, RTD Simulators, Frequency Calibrators and Pressure Pumps, Indicators & Calibrators. Altek also produces calibrators for custom ranges and unique applications. New models are frequently added to the Altek family to meet all of your critical calibration requirements. Altek products are made in the USA.

THREE YEAR WARRANTY

Our equipment is guaranteed against defective material and workmanship (excluding batteries, leads, module over pressure and module contamination with incompatible materials) for a period of three years from date of shipment. Claims under guarantee can be made by returning the equipment prepaid to our factory. The equipment will be replaced, repaired or adjusted at our option. The liability of Altek is restricted to that given under our guarantee. No responsibility is accepted for damage, loss or other expense incurred through sale or use of our equipment. Under no condition shall Altek be held liable for any special, incidental or consequential damage.

RECALIBRATION

Altek recommends annual recalibration of the TechChek 830 and the QuikCal 90 Pressure Modules. To send a TechChek 830 back for recalibration, please call Altek for a Return Materials Authorization (RMA) number. Altek can also provide a field calibration procedure to any qualified calibration laboratory.

The QuikCal Pressure Modules must be sent back to Altek if temperature characterized recalibration is desired. This type of recalibration is required to guarantee the specifications of the pressure module across the entire operating temperature range. Recalibration at a single temperature may be performed at any qualified calibration laboratory provided they have a Transmation QuikCal 190 Pressure Calibrator. A verification of pressure accuracy, without adjustment, may be accomplished using a deadweight tester.

AVAILABLE FROM