

Additel 227, 227Ex Documenting Multifunction Process Calibrator

- Sourcing, Simulating and Measuring Pressure, Temperature and Electrical Signals
- Built-in Full Hart Communicator (ADT227-HART)
- Built-in Barometer
- Intrinsically Safe Models Available (Ex)
- Large Smartphone Like Touchscreen User Experience
- USB Type-C and Bluetooth Communications
- IP67 Rated
- High Voltage Measurement Capability (300V AC)
- True RMS Voltage Meter Capability
- Dual Channel Pressure Module Ports
- High Static Differential Pressure Measurement 0.002% FS
- ISO 17025-accredited Calibration w/data Included



OVERVIEW

Additel's new Multi-functional Documenting Process Calibrator series takes portability, functionality, and accuracy to a whole new level and packages it with an intuitive and easy to use color touchscreen display. This series includes an advanced documenting pressure calibrator (ADT227) and an advanced documentation process calibrator with a built-in HART communicator (ADT227Ex). Additionally, each calibrator has an ATEX certified intrinsically safe option (ADT227Ex) allowing you to perform calibration in the harshest of environments. We're confident these new tools will not only meet your calibration requirements but will make metrology simple for you!

Features

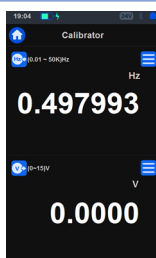
Easy-to-use Cellphone Like Interface

The ADT227 series brings an all new user interface to the world of process calibrators. With a menu driven interface and a small size/weight, the ADT227 is the industry's smallest advanced multifunctional process calibrator with an intrinsically safe version to boot (ADT227Ex). It adopts advanced human hand engineering design for the most convenient field handheld process calibrator available.

The ADT227 has been developed with a powerful embedded operating system which solves common problems of other designs including slow response, cumbersome key operation, high power consumption and overall slow processing.



Accuracy



Additel's new and improved ADT227 series provides much improved accuracies including an electrical accuracy of 0.005% RD + 0.005% FS, high-static differential pressure mode accuracy to 0.002% FS and across the board improvements in temperature measurement accuracies.



Metrology Made Simple

Features

Thermocouple Measurement Performance

The ADT227 series delivers highly improved thermocouple measurement capabilities by vastly improving the cold junction compensation(CJC) specifications and a much improved stabilization time.



Portable and Robust



The demands of remote calibration work can be challenging. The ADT227 series is lightweight and highly portable and utilizes an advanced color LCD screen to help ensure you can easily see, even in the (Ex) intrinsically safe versions.

All models in the ADT227 family have been designed with ruggedness and dependability in mind and meet IP67 standards with a 1-meter drop test, 4G vibration, xenon exposure and 130g steel ball drop testing of the display.

Other environmental conditions have also been considered, such as temperature and humidity. To combat these external elements, Additel has designed a unique internal circuit design and process technology to allow for the utmost confidence in your critical calibration and measurement work.

Intrinsically Safe Option

The Additel 227Ex series calibrators have passed the most stringent testing by certified organizations to acquire intrinsically safe certificates, ATEX, IECEx. The explosion-proof grade (Ex ia IIC T4 Ga), can be widely used in potentially explosive environments, such as oil and gas platforms, oil refineries, chemical and petrochemical plants, pharmaceutical industries, energy and gas processing industries.

Each intrinsically safe calibrator has an advance transfective color LCD display which has enhanced visibility when viewed in direct sunlight. No matter where your work takes you, these calibrators are up to the task.



Voltage Meter (RMS)



The Additel 227 non-Ex version is equipped with “true effective value” RMS measuring function, which can measure the RMS of various waveforms with no need to consider distortion or waveform parameters and other errors caused by various waveforms

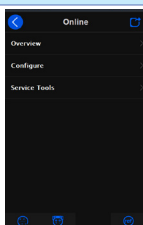
Automated Tasks for Paperless Calibration Management

Additel 227 Series Calibrators come with a powerful documenting calibration task application which provides a turnkey solution for automation and paperless calibration management.

Tasks are easily created for temperature, pressure, flow and loop instruments. Up to 10,000 documented tasks for ADT227 and up to 1,000 documented tasks for ADT227Ex can be stored in the extensive on-board memory. Many tasks, when executed, are fully automated in data collection and performance validation, such as pass/fail and hysteresis calculations. All information can be integrated into Additel's ACal software for additional calibration management.



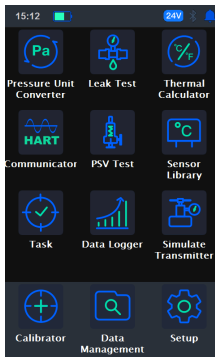
Full HART Communicator (For ADT227-HART only)



The built-in full HART communicator will work with most HART transmitters . The ADT227-HART contains an extensive DD library to meet the needs of your smart transmitter. Our DD library is updated on a regular basis and at no additional cost. The ADT227Ex-HART is integrated with the HART communication functions, permitting users to monitor, control, and calibrate HART instrumentations. It's an ideal device for calibrating, maintaining, and troubleshooting HART instrumentations

Features

Targeted application features



The onboard applications provide a useful selection of features including HART communicator, high static differential pressure mode, pressure leak test, safety valve test, analog transmitter calibration, unit converter, thermal calculator, and snapshots to name a few.

High static differential pressure mode uses two sensors, unique calculation technology to achieve a differential pressure measurement to 0.002% FS at high static pressures. The leak test will automatically calculate the pressure drop to determine a leak condition. The safety valve test is a specialized task which captures the exact pressure release point by taking 10 readings per second during a valve crack test.

You will find this and much more as we continue to develop new apps at Additel.

Data Logger (For ADT227 & ADT227-HART only)

The ADT227 calibrator can record pressure, temperature and electrical signals. Recorded values can be displayed numerically or graphically to identify trending. The ADT227 & ADT227-HART can store up to 500 results. each result can include up to 100,000 recordings and each recording can record a maximum of 7 channel values. These results can easily be exported to Additel's application software. Each log session is easily configured at a set interval and provides a date and time stamp with each reading.



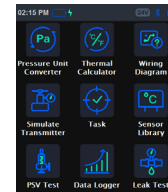
Connectivity & Battery



Users can remotely connect mobile devices to the ADT227 via Bluetooth with an unobstructed distance up to 20 meters. The included USB type-C comm port and cable provide a hard wired communication option as well as charging for the removeable Li-ion battery, which provides up to 12 hours of run time.

Time Saving Features

In addition to all the great features mentioned above, the ADT227 series is loaded with time saving features like our builtin pressure and temperature converter, thermal calculator, wiring diagram guide for assisting with electrical connections, a built-in diagnostic center including intelligent alarm messaging and a real time error report and comprehensive selftesting to help our customers get the very most out of their investment in Additel calibration tools.



SPECIFICATIONS

Electrical Specification

| Source Accuracy | | | | | | |
|-------------------------|-------------------------------|----------------|---------------------------|--------------------|----------------|---------------------------|
| Specifications | ADT227 | | | ADT227Ex | | |
| | Range | Resolution | Accuracy | Range | Resolution | Accuracy |
| Voltage DC | -150 to 150 mV ^[1] | 5 μ V | 0.005%RDG + 15 μ V | 0 to 10.5 V | 0.2 mV | 0.01%RDG + 0.5 mV |
| | -1.5 to 1.5 V ^[1] | 0.05 mV | 0.005%RDG + 0.15 mV | | | |
| | -15 to 15 V ^[1] | 0.5 mV | 0.005%RDG + 1.5 mV | | | |
| Current DC | 0 to 25 mA | 0.5 μ A | 0.01%RDG + 1.2 μ A | 0 to 25 mA | 0.5 μ A | 0.01%RDG + 1.2 μ A |
| Resistance | 0 to 400 Ω | 10 m Ω | 0.005%RDG + 20 m Ω | 0 to 400 Ω | 10 m Ω | 0.01%RDG + 20 m Ω |
| | 0 to 4000 Ω | 100 m Ω | 0.01%RDG + 200 m Ω | 0 to 4000 Ω | 100 m Ω | 0.01%RDG + 200 m Ω |
| Frequency (Square wave) | (0.01 ~ 5) Hz | 0.00001 Hz | 0.002%RDG + 0.00002 Hz | (0.01 ~ 5) Hz | 0.00001 Hz | 0.002%RDG + 0.00002 Hz |
| | (5 ~ 50) Hz | 0.0001 Hz | 0.002%RDG + 0.0002 Hz | (5 ~ 50) Hz | 0.0001 Hz | 0.002%RDG + 0.0002 Hz |
| | (50 ~ 500) Hz | 0.001 Hz | 0.002%RDG + 0.002 Hz | (50 ~ 500) Hz | 0.001 Hz | 0.002%RDG + 0.002 Hz |
| | (500 ~ 5000) Hz | 0.01 Hz | 0.002%RDG + 0.02 Hz | (500 ~ 5000) Hz | 0.01 Hz | 0.002%RDG + 0.02 Hz |
| | (5000 ~ 50000) Hz | 0.1 Hz | 0.002%RDG + 0.2 Hz | (5000 ~ 50000) Hz | 0.1 Hz | 0.002%RDG + 0.2 Hz |

SPECIFICATIONS

| Source Accuracy | | | | | | |
|---|---|------------|--------------------|--------------------------|------------|-------------------|
| Specifications | ADT227 | | | ADT227Ex | | |
| | Range | Resolution | Accuracy | Range | Resolution | Accuracy |
| Frequency (Sine wave & Triangular wave) ^[1] | (0.1~ 50) Hz | 0.001 Hz | 0.002 Hz | N/A | | |
| | (50 ~ 500) Hz | 0.01 Hz | 0.02 Hz | | | |
| | (500 ~ 5000) Hz | 0.1 Hz | 0.02 Hz | | | |
| | (5000 ~ 50000) Hz | 1Hz | 2 Hz | | | |
| Duty Cycle | (1%~99%)@ ≤10000Hz | 0.05% | 0.1%kHz+0.1% | Fixed 50%@(0.01~50000)Hz | | |
| | (5%~99%)@ ≤50000Hz | 0.5% | | | | |
| Voltage mV (TC) | -10 to 75 mV | 1.5 μV | 0.008%RDG + 3.0 μV | -10 to 75 mV | 1.5 μV | 0.01%RDG + 3.0 μV |
| Pulse | 0 to 9999999 | 1 | N/A | 0 to 9999999 | 1 | N/A |
| | Optional rising edge or falling edge, minimum threshold voltage: 2.5V | | | | | |
| Loop power (max 25mA) | 24 V | N/A | ±1 V | 22 V | N/A | ± 10% |

Note 1: When the environment temperature is (-10 ~ +10)°C and (30 ~ 50)°C , the temperature coefficient is:

Voltage, current, thermocouple, thermal resistance output: ± 5 ppm FS/°C (for Non-Ex version);

When the environment temperature is (-20 ~ -10)°C , the temperature coefficient is:

Voltage, current, thermocouple, thermal resistance output: ± 5 ppm FS/°C (for Ex version);

Note 2: Output features:

Voltage output : ±150 mV / ±1.5V / ± 15V, Maximum load current: 10 mA, (For Ex-version load current 5mA), load effect: 50 uV / mA;

Current output (0 ~ 25) mA: Maximum open circuit voltage: 24 V, driving capacity: 1 kΩ / 20 mA, maximum external voltage: 50 V;

(For Ex-version, Maximum open circuit voltage: 15 V, impedance: 400Ω, driving capacity: 6 V / 20 mA, maximum external voltage: 30 V)

Frequency output: square wave, adjustable duty cycle, square wave amplitude (0~15) V adjustable, amplitude accuracy ± 0.2%FS(for Non-Ex version);

Frequency output: square wave, 50% duty cycle, square wave amplitude (0~10.5) V adjustable, amplitude accuracy ± 0.2%FS(for Ex version);

maximum load current: 10mA (For Ex-version, 1mA);

Supported units: Hz, kHz, MHz, CPM, CPH, s, ms ;

Zero-crossing sine wave / triangular wave amplitude: (0.1 ~ 30) Vp-p adjustable(only for Non-Ex version),

Amplitude accuracy 3 % Vp-p + 75 mV, supporting display valid value. ^[1]

Thermocouple output: maximum load current: 5mA, load effect: < 5 uV / mA;

Thermal resistance output: maximum excitation current: $I_{ex} \times 400 < 1.6V(0 \sim 400) \Omega$, $I_{ex} \times R_{sim} < 1.6V(400 \sim 4000) \Omega$;

minimum excitation current: 0.2 mA@(0 ~ 400) Ω, 0.1 mA@(400 ~ 4000) Ω ;

support 1ms pulse excitation. (For Non-Ex version)

Thermal resistance output: Excitation current: (0.2~2) mA@(0 ~ 400) Ω, (0.1~0.3) mA@(400 ~ 4000) Ω ;

support 1ms pulse excitation. (For Ex version)

[1] Available per request

| Measurement Accuracy Cont. | | | | | | |
|----------------------------|---|---------------|----------------------------|--------------------|---------------|----------------------------|
| Specifications | ADT227 | | | ADT227Ex | | |
| | Range | Resolution | Accuracy | Range | Resolution | Accuracy |
| Voltage DC | -300 to 300 mV | 1 μ V | 0.005% RDG + 15 μ V | -300 to 300 mV | 1 μ V | 0.01% RDG + 15 μ V |
| | -30 to 30 V | 0.1 mV | 0.005% RDG + 1.5 mV | -30 to 30 V | 0.1 mV | 0.01% RDG + 1.5 mV |
| | Impedance: -300 mV to 300 mV = > 100 M Ω -30 V to 30 V = >1 M Ω | | | | | |
| DC High Voltage | -300 to 300 V | 10 mV | 0.05% RDG + 30 mV | N/A | | |
| | Maximum input voltage = 300 V, IEC61010 300V CATII | | | | | |
| | Common mode rejection: >100 dB (at 50 or 60 Hz) | | | | | |
| | Impedance: > 4 M Ω , DC coupling | | | | | |
| AC High Voltage | 300V (40 to 500 Hz) | 10 mV | 0.5% RDG + 150 mV | N/A | | |
| | Maximum input voltage = 300 V, IEC61010 300V CATII | | | | | |
| | 9% to 100% of range is suitable for the above accuracy indicators | | | | | |
| | Impedance: >4 M Ω , <100pF, AC coupling | | | | | |
| Current DC | -30 to 30 mA | 0.1 μ A | 0.01% RDG + 1.5 μ A | -30 to 30 mA | 0.1 μ A | 0.01% RDG + 1.2 μ A |
| Resistance (4-Wire) | 0 to 400 Ω | 1 m Ω | 0.005% RDG + 20 m Ω | 0 to 400 Ω | 1 m Ω | 0.01% RDG + 20 m Ω |
| | 0 to 4000 Ω | 10 m Ω | 0.01% RDG + 200 m Ω | 0 to 4000 Ω | 10 m Ω | 0.01% RDG + 200 m Ω |
| | 2-Wire + 50 m Ω , 3-wire+ 10 m Ω Excitation current: 0.2 mA | | | | | |
| Voltage mV (TC) | -10 to 75 mV | 0.1 μ V | 0.008% RDG + 3.0 μ V | -10 to 75 mV | 0.1 μ V | 0.01% RDG + 3.0 μ V |
| | Impedance: >100 M Ω | | | | | |
| Frequency | (0.01 ~ 5) Hz | 0.00001 Hz | 0.005%RDG + 0.00005 Hz | (0.01 ~ 5) Hz | 0.00001 Hz | 0.002%RDG + 0.00002 Hz |
| | (5 ~ 50) Hz | 0.0001 Hz | 0.005%RDG + 0.0005 Hz | (5 ~ 50) Hz | 0.0001 Hz | 0.002%RDG + 0.0002 Hz |
| | (50 ~ 500) Hz | 0.001 Hz | 0.005%RDG + 0.005 Hz | (50 ~ 500) Hz | 0.001 Hz | 0.002%RDG + 0.002 Hz |
| | (500 ~ 5000) Hz | 0.01 Hz | 0.005%RDG + 0.05 Hz | (500 ~ 5000) Hz | 0.01 Hz | 0.002%RDG + 0.02 Hz |
| | (5000 ~ 50000) Hz | 0.1 Hz | 0.005%RDG + 0.5 Hz | (5000 ~ 50000) Hz | 0.1 Hz | 0.002%RDG + 0.2 Hz |
| | Minimum threshold voltage: 2.5 V Supported units: Hz, kHz, MHz, CPM, CPH, s, ms, μ s | | | | | |
| Duty Cycle | (1%~99%)@ \leq 10000Hz | 0.01% | 0.1% kHz + 0.05% | N/A | | |
| | (5%~99%)@ \leq 50000Hz | 0.1% | | | | |
| Pulse | 0 to 9999999 | 1 | N/A | 0 to 9999999 | 1 | N/A |
| | Optional rising edge or falling edge, minimum threshold voltage: 2.5V | | | | | |
| Switch | Supports dry or wet switches. Voltage range of 3 to 30 V. Response speed < 10 ms | | | | | |

Note 1: When the environment temperature is (-10 ~ +10) $^{\circ}$ C and (30 ~ 50) $^{\circ}$ C , the temperature coefficient is:

Voltage, current, thermocouple, thermal resistance output: \pm 5 ppm FS/ $^{\circ}$ C (for Non-Ex version);

When the environment temperature is (-20 ~ -10) $^{\circ}$ C , the temperature coefficient is:

Voltage, current, thermocouple, thermal resistance output: \pm 5 ppm FS/ $^{\circ}$ C (for Ex version);

AC High Voltage TRMS measurement: \pm (250 ppmRDG + 25 ppmFS)/ $^{\circ}$ C ;

DC High Voltage measurement: \pm 25ppmFS/ $^{\circ}$ C .

Note 2: Output features:

Voltage range: (-300 ~ 300) mV, input impedance >100 M Ω ; (-30 ~ 30) V, input impedance >1M Ω ;

Current measurement: input impedance < 40 Ω ;

TC measurement: input impedance >100 M Ω ;

AC High Voltage TRMS measurement: input impedance: > 4M Ω , <100pF, AC coupling; Maximum input voltage: 300 V, IEC61010 300V CATII;

9% ~ 100% of the range is applicable to the accuracy index above.

DC High Voltage measurement: > 4 M Ω , DC coupling; Maximum input voltage: 300 V, IEC61010 300V CATII; Common-mode rejection:>100 dB (in 50 or 60 Hz)

Note 3: The thermal resistance measurement excitation power supply is 0.2mA. There are four wire system, three wire system and two wire system measurement modes at each gear position. The accuracy indicators are as follows:

The accuracy data given in the table is the accuracy data in 4-line system; 3-wire system accuracy is +10 m Ω on the basis of 4-wire system accuracy;

2-wire accuracy is +50 m Ω on the basis of 4-wire accuracy;

Note 4: Minimum threshold voltage for frequency and pulse measurement: 2.5V;

Note 5: Frequency measurement unit: Hz, kHz, MHz, CPM, CPH, s, ms, μ s;

Note 6: Optional rising edge or descending edge trigger mode for pulse measurement.

SPECIFICATIONS

General Specification

| Specifications | ADT227 | ADT227Ex |
|--|--|--|
| Operating Temperature | -10°C to 50°C | -20°C to 50°C |
| Specification guaranteed temperature range | 10°C to 30°C | 10°C to 30°C |
| Storage Temperature | -30°C to 70°C | -30°C to 70°C |
| Humidity | <95%, non-condensing | <95%, non-condensing |
| Power supply | 6600mAh, 23.8Wh lithium battery, charging time about 6 hours, battery pack can be charged independently | 4000mAh 14.4Wh Explosion-proof lithium battery pack charging time 6-8 hours, battery pack can be charged independently |
| User interface | Icon drive menus | Icon driven menus with navigation buttons |
| Ports protection voltage | 50V max (Only for the top ports) | 30V max |
| Display | 5.0 inch 480 x 800 mm TFT LCD capacitive screen | 4.4 inch 640 x 480 mm color display capacitive screen |
| Data logger | 500 results, each result x 100,000 recordings, each recording records a maximum of 7 channel values | N/A |
| Maximum altitude | 3000 meters | |
| European Compliance | CE Mark | |
| Electrical Connection | Ø4mm sockets and flat mini-jack thermocouple socket | |
| Size | 6.97" x 4.13" x 2.04" (177 mm x 105 mm x 52 mm) | |
| Weight | 1.6 lb (0.7 kg) | 1.65 lb (0.75Kg) |
| Battery | Rechargeable Li-ion battery (included) | |
| Battery Life | Typically 12 hours | Typically 35 hours |
| Battery Charge | 110V/220V external power adapter included. Battery can be charged external to the unit. Typically charge time is 6-8 hours. | |
| External pressure module | Dual channel Serial plug, can connect two digital pressure modules | |
| Warm-up time | Full specification performance is achieved after a 10 minute warm-up time. | |
| ROHS compliant | Rohs II Directive 2011/65/EU, EN50581:2012 | |
| Display rate | 3 readings per second | |
| Barometric Accuracy (Built-in barometer) | 55Pa | |
| IP protection level | IP67, 1 meter drop test | |
| Communication | Isolate USB-TYPEC (slave), Bluetooth BLE | |
| User Interface Localization | English, German, French, Italian, Spanish, Portuguese, Simplified Chinese, Traditional Chinese, Japanese, Russian, Czech, Slovak | English, Simplified Chinese, Traditional Chinese, Japanese |
| Calibration | ISO 17025 accredited calibration with data | |
| Warranty | 3 years | |

Pressure Specification

Pressure Specification (ADT227 & ADT227Ex)

The ADT161 and ADT161Ex series Intelligent Digital Pressure Modules are available for gauge, vacuum and absolute pressure from -15 psi to 60,000 psi (-1 bar to 4200 bar). Accuracy from 0.02% FS includes operation over 14°F to 122°F (-10°C to 50°C), one year stability and calibration uncertainty. For detailed specifications, please refer to the pressure modules datasheet.

SPECIFICATIONS

Metrology Made Simple
Temperature Specification

| Thermocouple Measurement and Source Accuracy | | | | | | | | |
|--|------------|------------------------|------------------|------|------------|------------------------|------------------|------|
| Type | Standard | ADT227 | | | Standard | ADT227Ex | | |
| | | Temperature Range (°C) | Accuracy (°C) | | | Temperature Range (°C) | Accuracy (°C) | |
| | | | Measure / Source | | | | Measure / Source | |
| S | IEC 584 | -50 to 1768 | -50~0 | 0.76 | IEC 584 | -50 to 1768 | -50~100 | 0.77 |
| | | | 0~100 | 0.56 | | | 100~1000 | 0.56 |
| | | | 100~1768 | 0.44 | | | 1000~1768 | 0.47 |
| R | IEC 584 | -50 to 1768 | -50~0 | 0.82 | IEC 584 | -50 to 1768 | -50~0 | 0.82 |
| | | | 0~200 | 0.57 | | | 0~200 | 0.57 |
| | | | 200~1768 | 0.38 | | | 200~1768 | 0.42 |
| B | IEC 584 | 0 to 1820 | 200~300 | 1.51 | IEC 584 | 0 to 1820 | 200~300 | 1.51 |
| | | | 300~500 | 1.00 | | | 300~500 | 1.00 |
| | | | 500~800 | 0.62 | | | 500~800 | 0.62 |
| | | | 800~1820 | 0.43 | | | 800~1820 | 0.43 |
| K | IEC 584 | -270 to 1372 | -250 to -200 | 0.72 | IEC 584 | -270 to 1372 | -250 to -200 | 0.75 |
| | | | -200 to -100 | 0.23 | | | -200 to -100 | 0.24 |
| | | | -100 to 600 | 0.12 | | | -100 to 600 | 0.13 |
| | | | 600 to 1372 | 0.22 | | | 600 to 1372 | 0.25 |
| N | IEC 584 | -270 to 1300 | -250 to -200 | 1.14 | IEC 584 | -270 to 1300 | -250 to -200 | 1.17 |
| | | | -200 to -100 | 0.33 | | | -200 to -100 | 0.34 |
| | | | -100 to 1300 | 0.19 | | | -100 to 1300 | 0.22 |
| E | IEC 584 | -270 to 1000 | -250~-200 | 0.39 | IEC 584 | -270 to 1000 | -250~-200 | 0.41 |
| | | | -200~-100 | 0.15 | | | -200~-100 | 0.15 |
| | | | -100~700 | 0.09 | | | -100~700 | 0.10 |
| | | | 700~1000 | 0.12 | | | 700~1000 | 0.14 |
| J | IEC 584 | -210~1200 | -210~-100 | 0.19 | IEC 584 | -210~1200 | -210~-100 | 0.20 |
| | | | -100~700 | 0.10 | | | -100~700 | 0.11 |
| | | | 700~1200 | 0.15 | | | 700~1200 | 0.17 |
| T | IEC 584 | -270 to 400 | -250~-100 | 0.55 | IEC 584 | -270 to 400 | -250~-100 | 0.57 |
| | | | -100~0 | 0.12 | | | -100~0 | 0.12 |
| | | | 0~400 | 0.08 | | | 0~400 | 0.08 |
| C | ASTM E988 | 0 to 2315 | 0 to 1000 | 0.24 | ASTM E988 | 0 to 2315 | 0 to 1000 | 0.26 |
| | | | 1000 to 1800 | 0.40 | | | 1000 to 1800 | 0.45 |
| | | | 1800 to 2315 | 0.65 | | | 1800 to 2315 | 0.73 |
| D | ASTM E988 | 0~2315 | 0~100 | 0.31 | ASTM E988 | 0~2315 | 0~100 | 0.31 |
| | | | 100~1200 | 0.25 | | | 100~1200 | 0.27 |
| | | | 1200~2000 | 0.42 | | | 1200~2000 | 0.47 |
| | | | 2000~2315 | 0.65 | | | 2000~2315 | 0.74 |
| G | ASTM E1751 | 0 to 2315 | 50~100 | 0.90 | ASTM E1751 | 0 to 2315 | 50~100 | 0.90 |
| | | | 100~200 | 0.57 | | | 100~200 | 0.57 |
| | | | 200~400 | 0.35 | | | 200~400 | 0.36 |
| | | | 400~1500 | 0.25 | | | 400~1500 | 0.27 |
| | | | 1500~2315 | 0.49 | | | 1500~2315 | 0.55 |
| L | DIN43710 | -200 to 900 | -200 to -100 | 0.11 | DIN43710 | -200 to 900 | -200 to -100 | 0.12 |
| | | | -100 to 400 | 0.08 | | | -100 to 400 | 0.09 |
| | | | 400 to 900 | 0.10 | | | 400 to 900 | 0.12 |
| U | DIN43710 | -200 to 600 | -200 to 0 | 0.21 | DIN43710 | -200 to 600 | -200 to 0 | 0.21 |
| | | | 0 to 600 | 0.08 | | | 0 to 600 | 0.09 |

Note: Internal CJC is $\pm 0.15^{\circ}\text{C}$ (-10°C to 50°C ambient temperature)
 Accuracy with external cold junction only, for internal cold junction add 0.15°C ($k=2$)

SPECIFICATIONS

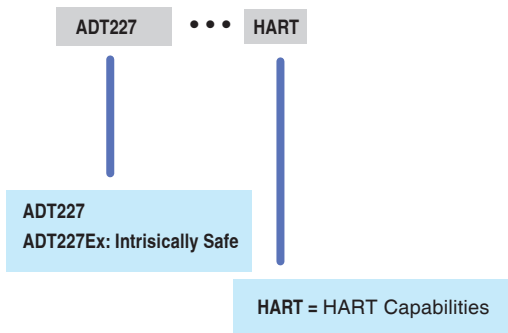
| <i>RTD Measurement and Source Accuracy</i> | | | | |
|--|------------------------|----------|---------------|----------|
| Measure and Simulate | Temperature Range (°C) | | Accuracy (°C) | |
| | | | ADT227 | ADT227Ex |
| PT10(385) | -200 to 850 | -200~200 | 0.57 | 0.59 |
| | | 200~600 | 0.67 | 0.72 |
| | | 600~850 | 0.75 | 0.82 |
| PT25(385) | -200 to 850 | -200~200 | 0.24 | 0.27 |
| | | 200~600 | 0.30 | 0.35 |
| | | 600~850 | 0.34 | 0.41 |
| PT50(3916) | -200 to 850 | -200~200 | 0.13 | 0.16 |
| | | 200~600 | 0.17 | 0.22 |
| | | 600~850 | 0.20 | 0.27 |
| PT100(385) PT100(391) PT100(3916) PT100(3926) | -200 to 850 | -200~200 | 0.08 | 0.10 |
| | | 200~600 | 0.11 | 0.16 |
| | | 600~850 | 0.14 | 0.20 |
| PT200(385) | -200 to 850 | -200~200 | 0.32 | 0.32 |
| | | 200~300 | 0.34 | 0.34 |
| | | 300~600 | 0.41 | 0.41 |
| | | 600~850 | 0.48 | 0.48 |
| PT400(385) | -200 to 850 | -200~0 | 0.15 | 0.15 |
| | | 0~200 | 0.18 | 0.18 |
| | | 200~600 | 0.25 | 0.25 |
| | | 600~850 | 0.30 | 0.30 |
| PT500(385) | -200 to 850 | -200~200 | 0.16 | 0.16 |
| | | 200~600 | 0.22 | 0.22 |
| | | 600~850 | 0.27 | 0.27 |
| PT1000(385) | -200 to 850 | -200~200 | 0.10 | 0.10 |
| | | 200~600 | 0.16 | 0.16 |
| | | 600~850 | 0.20 | 0.20 |
| Cu10(427) | -200~260 | -200~260 | 0.54 | 0.56 |
| Cu50(428) | -200~260 | -200~260 | 0.11 | 0.13 |
| Cu100(428) | -200~260 | -200~260 | 0.07 | 0.08 |
| Ni100(617) Ni100(618) | -60~180 | -60~0 | 0.05 | 0.06 |
| | | 0~180 | 0.05 | 0.05 |
| Ni120(672) | -80~260 | -80~260 | 0.04 | 0.05 |
| Ni1000 | -50~150 | -50~150 | 0.07 | 0.07 |

*Note: Ambient temperature of 20°C±10°C.

4-wire accuracy. For 2-wire add 50 mΩ, for 3-wire add 10 mΩ

ORDERING INFORMATION

Model Number



| Accessories (included) | | |
|------------------------|---|---------------|
| Model number | Description | QTY |
| 9811-X | 110V/220V external power adapter (Only for ADT227 & ADT227-HART) | 1 pc |
| 9811Ex-X | 110V/220V external power adapter (Only for ADT227Ex & ADT227Ex-HART) | 1 pc |
| 9704 | Chargeable Li-ion battery (Only for ADT227 & ADT227-HART) | 1 pc |
| 9704Ex | Chargeable Li-ion battery (Only for ADT227Ex & ADT227Ex-HART) | 1pc |
| 9023 | Test leads | 1 set (6 pcs) |
| 9027 | Right angle test leads (Non-Ex models only) | 1 set (2 pcs) |
| 9060 | Pressure module connection cable | 1 pc |
| 9052 | USB Cable type A to type C (Non-Ex models only) | 1 pc |
| 9052Ex | Ex USB Cable type A to type C (For Ex models only) | 1 pc |
| 9040 | Hanging strap with magnet | 1 pc |
| | ISO 17025 accredited calibration certificate | 1 pc |

| Optional Accessories | |
|----------------------|--|
| Model number | Description |
| ADT161 - XXX | Digital Pressure Modules |
| ADT161Ex - XXX | Intrinsically Safe Digital Pressure Modules |
| ADT129-X | Differential Pressure Manifold, -15 to 3,000 psi |
| 9061 | Current output cable (for ADT227 and ADT226 non-EX models) |
| 9062 | Connection adapter cable for Fluke style pressure modules to non-explosion-proof Additel readouts |
| 9063 | PA profibus, FF (Foundation fieldbus) communication module for ADT227-HART |
| AM1602-6FT | Class A, PT100/385 Industrial RTD, -40°C to 160°C, 3/16 (4.76 mm) inch x 2 inch (50 mm) with 6 foot (1.8 Meters) cable w/ banana jack connectors |
| 9080 | Cable kit (including TC plug, compensation cable, S,R,K,J,T,E,N) |
| 9081 | Universal TC easy-press adapter for ADT227 and ADT226 |
| 9082 | HART 250 ohm resistor adapter for ADT227 and ADT226 |
| 9704 | Battery, rechargeable Li-ion polymer battery for Additel Handheld Series |
| 9704Ex | Battery, rechargeable Li-ion polymer battery for Ex Additel Handheld Series |
| 9811-X | 110 V/220 V external power adapter for handheld models |
| 9811Ex-X | 110 V/220 V external power adapter for Ex handheld models |
| 9906A | Hard carrying case for handheld instrument with accessories |
| 9918-SC | Soft carrying case, with space for handheld instrument, test leads, and accessories |
| 9530-BASIC | Additel/Acal Task management software for multifunction calibrator |
| 9530-NET | Additel/Acal Automated calibration software with asset management, network version, Includes server installation and 1 user license |

* Additel/Land software can be downloaded for free at www.additel.com