

# Additel 226, 226Ex Multifunction Process Calibrator

- Sourcing, Simulating and Measuring Pressure, Temperature and Electrical Signals
- 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 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. The ADT226 is a powerful yet cost effective process calibrator, which has an ATEX certified intrinsically safe option - ADT226Ex allowing you to perform calibration work 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

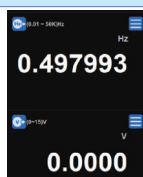
### Easy-to-use Cellphone Like Interface

The ADT226 series brings an all new user interface to the world of process calibrators. With a menu driven interface and small size/weight, the ADT226 is the industry's smallest multifunctional process calibrator with an intrinsically safe version to boot (ADT226Ex).

It adopts advanced human hand engineering design for the most convenient field handheld process calibrator available. The ADT226 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.



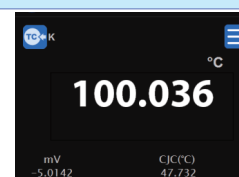
### Accuracy



Additel's new and improved ADT226 series provides much improved accuracies including an electrical accuracy of 0.015% RD + 0.005% FS, high-static differential pressure mode accuracy to 0.002% FS and across the board improvements in temperature measurement accuracies.

### Thermocouple Measurement Performance

The ADT226 series delivers highly improved thermocouple measurement capabilities by vastly improving the cold junction compensation(CJC) specifications and a much improved stabilization time.



## Features

### Time Saving Features



In addition to all the great features mentioned above, the ADT226 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.

### Portable and Robust



The demands of remote calibration work can be challenging. The ADT226 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 ADT226 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 226Ex 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 advanced transreflective 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)



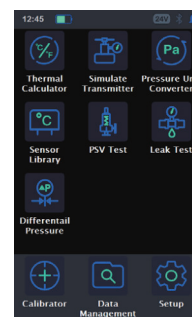
The Additel 226 non-Ex version is equipped with "true effective value" RMS measuring function, which can measure the RMS of various waveforms with no need to consider distortion or waveform parameters and other errors caused by various waveforms

### Targeted Application Features

The onboard applications provide a useful selection of features including 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.



### Connectivity & Battery



Users can remotely connect mobile devices to the ADT226 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.

**SPECIFICATIONS**
**Electrical Specification**

| Source Accuracy                               |                                                                        |                |                            |                          |               |                           |
|-----------------------------------------------|------------------------------------------------------------------------|----------------|----------------------------|--------------------------|---------------|---------------------------|
| Specifications                                | ADT226                                                                 |                |                            | ADT226Ex                 |               |                           |
|                                               | Range                                                                  | Resolution     | Accuracy                   | Range                    | Resolution    | Accuracy                  |
| Voltage DC                                    | -150 to 150 mV                                                         | 5 $\mu$ V      | 0.015%RDG + 15 $\mu$ V     | 0 to 10.5 V              | 0.2 mV        | 0.02%RDG + 0.5 mV         |
|                                               | -1.5 to 1.5 V                                                          | 0.05 mV        | 0.015%RDG + 0.15 mV        |                          |               |                           |
|                                               | -15 to 15 V                                                            | 0.5 mV         | 0.015%RDG + 1.5 mV         |                          |               |                           |
| Current DC                                    | 0 to 25 mA                                                             | 0.5 $\mu$ A    | 0.015%RDG + 1.2 $\mu$ A    | 0 to 25 mA               | 0.5 $\mu$ A   | 0.02%RDG + 1.2 $\mu$ A    |
| Resistance                                    | 0 to 400 $\Omega$                                                      | 10 m $\Omega$  | 0.015%RDG + 20 m $\Omega$  | 0 to 400 $\Omega$        | 10 m $\Omega$ | 0.02%RDG + 20 m $\Omega$  |
|                                               | 0 to 4000 $\Omega$                                                     | 100 m $\Omega$ | 0.015%RDG + 200 m $\Omega$ | 0 to 4000 $\Omega$       | 100m $\Omega$ | 0.02%RDG + 200 m $\Omega$ |
| Frequency<br>(Square wave)                    | (0.01 ~ 5) Hz                                                          | 0.00001 Hz     | 0.005%RDG + 0.00005 Hz     | (0.01 ~ 5) Hz            | 0.00001 Hz    | 0.005%RDG + 0.00005 Hz    |
|                                               | (5 ~ 50) Hz                                                            | 0.0001 Hz      | 0.005%RDG + 0.0005 Hz      | (5 ~ 50) Hz              | 0.0001 Hz     | 0.005%RDG + 0.0005 Hz     |
|                                               | (50 ~ 500) Hz                                                          | 0.001 Hz       | 0.005%RDG + 0.005 Hz       | (50 ~ 500) Hz            | 0.001 Hz      | 0.005%RDG + 0.005 Hz      |
|                                               | (500 ~ 5000) Hz                                                        | 0.01 Hz        | 0.005%RDG + 0.05 Hz        | (500 ~ 5000) Hz          | 0.01 Hz       | 0.005%RDG + 0.05 Hz       |
|                                               | (5000 ~ 50000) Hz                                                      | 0.1 Hz         | 0.005%RDG + 0.5 Hz         | (5000 ~ 50000) Hz        | 0.1 Hz        | 0.005%RDG + 0.5 Hz        |
| Frequency<br>(Sine wave &<br>Triangular wave) | (0.1 ~ 50) Hz                                                          | 0.001 Hz       | 0.004 Hz                   | N/A                      |               |                           |
|                                               | (50 ~ 500) Hz                                                          | 0.01 Hz        | 0.04 Hz                    |                          |               |                           |
|                                               | (500 ~ 5000) Hz                                                        | 0.1 Hz         | 0.4 Hz                     |                          |               |                           |
|                                               | (5000 ~ 50000) Hz                                                      | 1Hz            | 4 Hz                       |                          |               |                           |
| Duty Cycle                                    | (1%~99%)@ $\leq$ 10000Hz                                               | 0.05%          | 0.1% / kHz + 0.1%          | Fixed 50%@(0.01~50000)Hz |               |                           |
|                                               | (5%~99%)@ $\leq$ 50000Hz                                               | 0.5%           |                            |                          |               |                           |
| Voltage mV (TC)                               | -10 to 75 mV                                                           | 1.5 $\mu$ V    | 0.015%RDG + 4.0 $\mu$ V    | -10 to 75 mV             | 1.5 $\mu$ V   | 0.02%RDG + 4.0 $\mu$ V    |
| Pulse                                         | 0 to 9999999                                                           | 1              | N/A                        | 0 to 9999999             | 1             | N/A                       |
|                                               | Optional rising edge and falling edge, minimum threshold voltage: 2.5V |                |                            |                          |               |                           |
| Loop power (max 25mA)                         | 24 V                                                                   | N/A            | $\pm$ 1 V                  | 22 V                     | N/A           | $\pm$ 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:  $\pm$  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:  $\pm$  5 ppm FS/°C (for Ex version);

Note 2: Output features:

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

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

(For Ex-version,Maximum open circuit voltage: 15 V, impedance: 400 $\Omega$ , 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  $\pm$  0.2%FS(for Non-Ex version);

Frequency output: square wave, 50% duty cycle, square wave amplitude (0~10.5) V adjustable, amplitude accuracy  $\pm$  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. <sup>[1]</sup>

Thermocouple output: maximum load current: 5mA, load effect: < 5  $\mu$ V / mA;

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

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

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

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

support 1ms pulse excitation. (For Ex version)

**SPECIFICATIONS**

| Measurement Accuracy Cont. |                                                                                      |               |                             |                    |               |                            |
|----------------------------|--------------------------------------------------------------------------------------|---------------|-----------------------------|--------------------|---------------|----------------------------|
| Specifications             | ADT226                                                                               |               |                             | ADT226Ex           |               |                            |
|                            | Range                                                                                | Resolution    | Accuracy                    | Range              | Resolution    | Accuracy                   |
| Voltage DC                 | -300 to 300 mV                                                                       | 1 $\mu$ V     | 0.015% RDG + 15 $\mu$ V     | -300 to 300 mV     | 1 $\mu$ V     | 0.02% RDG + 15 $\mu$ V     |
|                            | -30 to 30 V                                                                          | 0.1 mV        | 0.015%RDG + 1.5 mV          | -30 to 30 V        | 0.1 mV        | 0.02% RDG + 1.5 mV         |
|                            | Impedance: -300 mV to 300 mV = > 100 M $\Omega$<br>-30 V to 30 V = >1 M $\Omega$     |               |                             |                    |               |                            |
| DC High Voltage            | -300 to 300 V                                                                        | 10 mV         | 0.05% RDG + 30 mV           | N/A                |               |                            |
|                            | The highest input voltage is 300 V, IEC61010 300V CATII                              |               |                             |                    |               |                            |
|                            | Common mode rejection: >100 dB (at 50 or 60 Hz)                                      |               |                             |                    |               |                            |
|                            | Impedance: > 4 M $\Omega$ , DC coupling                                              |               |                             |                    |               |                            |
| AC High Voltage            | 300V (40 to 500 Hz)                                                                  | 10 mV         | 0.5% RDG + 150 mV           | N/A                |               |                            |
|                            | The highest input voltage is 300 V, IEC61010 300V CATII                              |               |                             |                    |               |                            |
|                            | 9% to 100% of range is suitable for the above accuracy indicators                    |               |                             |                    |               |                            |
|                            | Impedance: >4 M $\Omega$ , <100pF, AC coupling                                       |               |                             |                    |               |                            |
| Current DC                 | -30 to 30 mA                                                                         | 0.1 $\mu$ A   | 0.015% RDG + 1.5 $\mu$ A    | -30 to 30 mA       | 0.1 $\mu$ A   | 0.02% RDG + 1.5 $\mu$ A    |
| Resistance (4-Wire)        | 0 to 400 $\Omega$                                                                    | 1 m $\Omega$  | 0.015% RDG + 20 m $\Omega$  | 0 to 400 $\Omega$  | 1 m $\Omega$  | 0.02% RDG + 20 m $\Omega$  |
|                            | 0 to 4000 $\Omega$                                                                   | 10 m $\Omega$ | 0.015% RDG + 200 m $\Omega$ | 0 to 4000 $\Omega$ | 10 m $\Omega$ | 0.02% RDG + 200 m $\Omega$ |
|                            | 2-Wire + 50 m $\Omega$ , 3-wire + 10 m $\Omega$<br>Excitation current: 0.2 mA        |               |                             |                    |               |                            |
| Voltage mV (TC)            | -10 to 75 mV                                                                         | 0.1uV         | 0.015% RDG + 4.0 $\mu$ V    | -10 to 75 mV       | 0.1uV         | 0.02% RDG + 4.0 $\mu$ V    |
|                            | Impedance: >100 M $\Omega$                                                           |               |                             |                    |               |                            |
| Frequency                  | (0.01 ~ 5) Hz                                                                        | 0.00001 Hz    | 0.005%RDG + 0.00005 Hz      | (0.01 ~ 5) Hz      | 0.00001 Hz    | 0.005%RDG + 0.00005 Hz     |
|                            | (5 ~ 50) Hz                                                                          | 0.0001 Hz     | 0.005%RDG + 0.0005 Hz       | (5 ~ 50) Hz        | 0.0001 Hz     | 0.005%RDG + 0.0005 Hz      |
|                            | (50 ~ 500) Hz                                                                        | 0.001 Hz      | 0.005%RDG + 0.005 Hz        | (50 ~ 500) Hz      | 0.001 Hz      | 0.005%RDG + 0.005 Hz       |
|                            | (500 ~ 5000) Hz                                                                      | 0.01 Hz       | 0.005%RDG + 0.05 Hz         | (500 ~ 5000) Hz    | 0.01 Hz       | 0.005%RDG + 0.05 Hz        |
|                            | (5000 ~ 50000) Hz                                                                    | 0.1 Hz        | 0.005%RDG + 0.5 Hz          | (5000 ~ 50000) Hz  | 0.1 Hz        | 0.005%RDG + 0.5 Hz         |
|                            | Minimum threshold voltage: 2.5 V                                                     |               |                             |                    |               |                            |
|                            | Supported units: Hz, kHz, MHz, CPM, CPH, s, ms, $\mu$ 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 and falling edge, minimum threshold voltage: 2.5V               |               |                             |                    |               |                            |
| Switch                     | Support for dry or wet switch, voltage range of 3 to 30 V, response speed of < 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: Input features:

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

Current measurement: input impedance < 40  $\Omega$ ;

TC measurement: input impedance >100 M $\Omega$ ;

AC High Voltage TRMS measurement: input impedance: > 4M $\Omega$  , <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 $\Omega$ , 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 $\Omega$  on the basis of 4-wire system accuracy;

2-wire accuracy is +50 m $\Omega$  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,  $\mu$ s;

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

## General Specification

| Specifications                              | ADT226                                                                                                                           | ADT226Ex                                                                                                                   |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature                       | -10°C to 50°C                                                                                                                    | -20°C to 50°C                                                                                                              |
| Specification guaranteed temperature range  | 10°C to 30°C                                                                                                                     | -10°C to 50°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 about 6 hours, battery pack can be charged independently |
| User interface                              | Icon drive menus                                                                                                                 | Icon driven menus with navigation buttons                                                                                  |
| Ports protection voltage                    | 50V max<br>(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                                                                      |
|                                             |                                                                                                                                  | Screen protector: tempered glass film (replaceable)                                                                        |
| 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.                                          |                                                                                                                            |
| 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<br>(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( ADT226 & ADT226Ex)

The 161 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

### Temperature Specification

| Thermocouple Measurement and Source Accuracy |            |                        |              |                  |            |                        |              |                  |
|----------------------------------------------|------------|------------------------|--------------|------------------|------------|------------------------|--------------|------------------|
|                                              | ADT226     |                        |              |                  | ADT226Ex   |                        |              |                  |
| Type                                         | Standard   | Temperature Range (°C) |              | Accuracy (°C)    | Standard   | Temperature Range (°C) |              | Accuracy (°C)    |
|                                              |            |                        |              | Measure / Source |            |                        |              | Measure / Source |
| S                                            | IEC 584    | -50 to 1768            | -50~0        | 0.96             | IEC 584    | -50 to 1768            | -50~100      | 0.96             |
|                                              |            |                        | 0~100        | 0.69             |            |                        | 100~1000     | 0.69             |
|                                              |            |                        | 100~1768     | 0.64             |            |                        | 1000~1768    | 0.73             |
| R                                            | IEC 584    | -50 to 1768            | -50~0        | 1.02             | IEC 584    | -50 to 1768            | -50~0        | 1.03             |
|                                              |            |                        | 0~200        | 0.71             |            |                        | 0~200        | 0.71             |
|                                              |            |                        | 200~1768     | 0.56             |            |                        | 200~1768     | 0.65             |
| B                                            | IEC 584    | 0 to 1820              | 200~300      | 1.89             | IEC 584    | 0 to 1820              | 200~300      | 1.90             |
|                                              |            |                        | 300~500      | 1.25             |            |                        | 300~500      | 1.26             |
|                                              |            |                        | 500~800      | 0.78             |            |                        | 500~800      | 0.79             |
|                                              |            |                        | 800~1820     | 0.55             |            |                        | 800~1820     | 0.57             |
| K                                            | IEC 584    | -270 to 1372           | -250 to -200 | 0.97             | IEC 584    | -270 to 1372           | -250 to -200 | 1.04             |
|                                              |            |                        | -200 to -100 | 0.30             |            |                        | -200 to -100 | 0.32             |
|                                              |            |                        | -100 to 600  | 0.18             |            |                        | -100 to 600  | 0.21             |
|                                              |            |                        | 600 to 1372  | 0.35             |            |                        | 600 to 1372  | 0.43             |
| N                                            | IEC 584    | -270 to 1300           | -250 to -200 | 1.50             | IEC 584    | -270 to 1300           | -250 to -200 | 1.58             |
|                                              |            |                        | -200 to -100 | 0.44             |            |                        | -200 to -100 | 0.46             |
|                                              |            |                        | -100 to 1300 | 0.30             |            |                        | -100 to 1300 | 0.37             |
| E                                            | IEC 584    | -270 to 1000           | -250~-200    | 0.54             | IEC 584    | -270 to 1000           | -250~-200    | 0.59             |
|                                              |            |                        | -200~-100    | 0.20             |            |                        | -200~-100    | 0.22             |
|                                              |            |                        | -100~700     | 0.15             |            |                        | -100~700     | 0.18             |
|                                              |            |                        | 700~1000     | 0.20             |            |                        | 700~1000     | 0.25             |
| J                                            | IEC 584    | -210~1200              | -210~-100    | 0.26             | IEC 584    | -210~1200              | -210~-100    | 0.28             |
|                                              |            |                        | -100~700     | 0.15             |            |                        | -100~700     | 0.19             |
|                                              |            |                        | 700~1200     | 0.25             |            |                        | 700~1200     | 0.31             |
| T                                            | IEC 584    | -270 to 400            | -250~-100    | 0.74             | IEC 584    | -270 to 400            | -250~-100    | 0.79             |
|                                              |            |                        | -100~0       | 0.15             |            |                        | -100~0       | 0.16             |
|                                              |            |                        | 0~400        | 0.11             |            |                        | 0~400        | 0.13             |
| C                                            | ASTM E988  | 0 to 2315              | 0 to 1000    | 0.35             | ASTM E988  | 0 to 2315              | 0 to 1000    | 0.40             |
|                                              |            |                        | 1000 to 1800 | 0.62             |            |                        | 1000 to 1800 | 0.73             |
|                                              |            |                        | 1800 to 2315 | 1.02             |            |                        | 1800 to 2315 | 1.22             |
| D                                            | ASTM E988  | 0~2315                 | 0~100        | 0.39             | ASTM E988  | 0~2315                 | 0~100        | 0.39             |
|                                              |            |                        | 100~1200     | 0.37             |            |                        | 100~1200     | 0.43             |
|                                              |            |                        | 1200~2000    | 0.65             |            |                        | 1200~2000    | 0.77             |
|                                              |            |                        | 2000~2315    | 1.03             |            |                        | 2000~2315    | 1.24             |
| G                                            | ASTM E1751 | 0 to 2315              | 50~100       | 1.12             | ASTM E1751 | 0 to 2315              | 50~100       | 1.12             |
|                                              |            |                        | 100~200      | 0.72             |            |                        | 100~200      | 0.72             |
|                                              |            |                        | 200~400      | 0.45             |            |                        | 200~400      | 0.46             |
|                                              |            |                        | 400~1500     | 0.37             |            |                        | 400~1500     | 0.43             |
|                                              |            |                        | 1500~2315    | 0.77             |            |                        | 1500~2315    | 0.92             |
| L                                            | DIN43710   | -200 to 900            | -200 to -100 | 0.15             | DIN43710   | -200 to 900            | -200 to -100 | 0.16             |
|                                              |            |                        | -100 to 400  | 0.13             |            |                        | -100 to 400  | 0.14             |
|                                              |            |                        | 400 to 900   | 0.17             |            |                        | 400 to 900   | 0.20             |
| U                                            | DIN43710   | -200 to 600            | -200 to 0    | 0.28             | DIN43710   | -200 to 600            | -200 to 0    | 0.29             |
|                                              |            |                        | 0 to 600     | 0.13             |            |                        | 0 to 600     | 0.15             |

Note: Internal CJC is  $\pm 0.2^{\circ}\text{C}$  (-10°C to 50°C ambient temperature)

Accuracy with external cold junction only, for internal cold junction add 0.2°C (k=2)



**SPECIFICATIONS**

| RTD Measurement and Source Accuracy                    |                        |          |               |          |
|--------------------------------------------------------|------------------------|----------|---------------|----------|
| Measure and Simulate                                   | Temperature Range (°C) |          | Accuracy (°C) |          |
|                                                        |                        |          | ADT226        | ADT226Ex |
| PT10(385)                                              | -200 to 850            | -200~200 | 0.62          | 0.64     |
|                                                        |                        | 200~600  | 0.77          | 0.82     |
|                                                        |                        | 600~850  | 0.88          | 0.95     |
| PT25(385)                                              | -200 to 850            | -200~200 | 0.29          | 0.31     |
|                                                        |                        | 200~600  | 0.40          | 0.44     |
|                                                        |                        | 600~850  | 0.47          | 0.54     |
| PT50(3916)                                             | -200 to 850            | -200~200 | 0.18          | 0.20     |
|                                                        |                        | 200~600  | 0.27          | 0.32     |
|                                                        |                        | 600~850  | 0.34          | 0.40     |
| PT100(385)<br>PT100(391)<br>PT100(3916)<br>PT100(3926) | -200 to 850            | -200~200 | 0.13          | 0.15     |
|                                                        |                        | 200~600  | 0.21          | 0.26     |
|                                                        |                        | 600~850  | 0.27          | 0.34     |
| PT200(385)                                             | -200 to 850            | -200~200 | 0.34          | 0.37     |
|                                                        |                        | 200~300  | 0.37          | 0.40     |
|                                                        |                        | 300~600  | 0.46          | 0.51     |
|                                                        |                        | 600~850  | 0.54          | 0.61     |
| PT400(385)                                             | -200 to 850            | -200~0   | 0.17          | 0.18     |
|                                                        |                        | 0~200    | 0.21          | 0.23     |
|                                                        |                        | 200~600  | 0.30          | 0.35     |
|                                                        |                        | 600~850  | 0.37          | 0.44     |
| PT500(385)                                             | -200 to 850            | -200~200 | 0.18          | 0.20     |
|                                                        |                        | 200~600  | 0.27          | 0.32     |
|                                                        |                        | 600~850  | 0.34          | 0.40     |
| PT1000(385)                                            | -200 to 850            | -200~200 | 0.13          | 0.15     |
|                                                        |                        | 200~600  | 0.21          | 0.26     |
|                                                        |                        | 600~850  | 0.27          | 0.34     |
| Cu10(427)                                              | -200~260               | -200~260 | 0.59          | 0.61     |
| Cu50(428)                                              | --200~260              | -200~260 | 0.15          | 0.17     |
| Cu100(428)                                             | -200~260               | -200~260 | 0.10          | 0.12     |
| Ni100(617)<br>Ni100(618)                               | -60~180                | -60~0    | 0.06          | 0.07     |
|                                                        |                        | 0~180    | 0.06          | 0.08     |
| Ni120(672)                                             | --80~260               | -80~260  | 0.06          | 0.07     |
| Ni1000                                                 | -50~150                | -50~150  | 0.08          | 0.09     |

\*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

**ADT226**
**ADT226**  
**ADT226Ex: Intrinsically Safe**  
**ADT226P: Panel Mount**

**Panel Mount Version**  
 (See note [1])

| Accessories (included) |                                                          |                  |         |
|------------------------|----------------------------------------------------------|------------------|---------|
| Model number           | Description                                              | QTY              | Picture |
| 9811-X                 | 110V/220V external power adapter<br>(Only for ADT226)    | 1 pc             |         |
| 9811Ex-X               | 110V/220V external power adapter<br>(Only for ADT226Ex ) | 1 pc             |         |
| 9704                   | Chargeable Li-ion battery<br>(Only for ADT226)           | 1 pc             |         |
| 9704Ex                 | Chargeable Li-ion battery<br>(Only for ADT226Ex )        | 1 pc             |         |
| 9023                   | Test leads                                               | 1 set<br>(6 pcs) |         |
| 9027                   | Right angle test leads<br>(Non-Ex models only)           | 1 set<br>(2 pcs) |         |
| 9060                   | Pressure module connection cable                         | 1 pc             |         |
| 9052                   | USB Cable type A to type C<br>(Non-Ex models only)       | 1 pc             |         |
| 9052Ex                 | Ex USB Cable type A to type C<br>(For Ex models only)    | 1 pc             |         |
| 9040                   | Hanging strap with magnet                                | 1 pc             |         |
| 9028                   | Multimeter Test Hook, Flexible Electronic<br>Probe       | 1 set<br>(2 pcs) |         |
| 9031                   | Small Multimeter Test Hooks                              | 1 set<br>(2 pcs) |         |
|                        | ISO 17025 accredited calibration certificate             | 1 pc             |         |

### Optional Accessories

| Model number   | Description                                                                                                                                                  | Picture | Model number | Description                                                                                                                                  | Picture |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------|
| ADT161 - XXX   | Digital Pressure Modules                                                                                                                                     |         | 9082         | HART 250 ohm resistor adapter for<br>ADT226, 226P and ADT227, 227P                                                                           |         |
| ADT161Ex - XXX | Intrinsically Safe Digital Pressure<br>Modules                                                                                                               |         | 9704         | Battery, rechargeable Li-ion polymer<br>battery for Additel Handheld Series                                                                  |         |
| ADT129-X       | Differential Pressure Manifold, -15 to<br>3,000 psi                                                                                                          |         | 9704Ex       | Battery, rechargeable Li-ion polymer<br>battery for Ex Additel Handheld Series                                                               |         |
| 9061           | Current output cable (for ADT226,<br>226P and ADT227, 227P)                                                                                                  |         | 9811-X       | 110 V/220 V external power adapter<br>for handheld models                                                                                    |         |
| 9062           | Connection adapter cable for Fluke<br>style pressure modules to non-<br>explosion-proof Additel readouts                                                     |         | 9811Ex-X     | 110 V/220 V external power adapter<br>for Ex handheld models                                                                                 |         |
| AM1602-6FT     | Class A, PT100/385 Industrial RTD,<br>-40°C to 160°C, 3/16 (4.76 mm)<br>inch x 2 inch (50 mm) with 6 foot<br>(1.8 Meters) cable w/ banana jack<br>connectors |         | 9906A        | Hard carrying case for handheld<br>instrument with accessories                                                                               |         |
| 9080           | Cable kit (including TC plug,<br>compensation cable, S,R,K,J,T,E,N)                                                                                          |         | 9919EX       | Carrying case for one gauge for<br>ADT226Ex, 227Ex, 260Ex, 273Ex<br>handhelds                                                                |         |
| 9081           | Universal TC easy-press adapter for<br>ADT226, 226P and ADT227, 227P                                                                                         |         | 9918-SC      | Soft carrying case, with space for<br>handheld instrument, test leads, and<br>accessories                                                    |         |
| 9079-X         | Thermocouple connection wire, mini<br>male to alligator clips (X = type K, N,<br>J, T, E)                                                                    |         | 9530-BASIC   | Additel/Acal Task management<br>software for multifunction calibrator                                                                        |         |
| 9071-BJ        | Connector Adapter from smart<br>connector female to 4-wire with<br>banana plugs for AM17XX-ADT<br>PRTs                                                       |         | 9530-NET     | Additel/Acal Automated calibration<br>software with asset management,<br>network version, Includes server<br>installation and 1 user license |         |

\* Additel/Land software can be downloaded for free at [www.additel.com](http://www.additel.com)

[1] Included accessories for the panel mount version differ – please call with questions