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# Additel 260Ex
# Handheld Multichannel Reference Recorder

- **Up to 8 measurement channels**
- **Intrinsically safe**
- **Field Switchable Pressure Module**
- Data logging with Real-time Graphical Trending
- Supports Hydrostatic Testing
- Color Touchscreen Display
- Built-in Barometer
- Optional RTD Probes Available
- Bluetooth and USB Communication
- Communicates with Additel's Link Mobile App

**Additel 260Ex with ADT158Ex module**

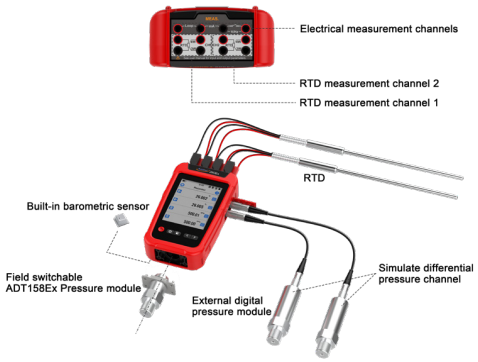
## OVERVIEW

Additel's 260Ex is an intrinsically safe handheld multichannel reference recorder with 8 different channel configurations. Armed with Additel's most versatile and capable handheld, technicians are now able to measure and collect data for pressure, temperature (RTD probes available), barometric pressure and electrical measurement all in one highly portable device. The powerful logging capability and high-level of intrinsic safety make the ADT260Ex the perfect companion for use in the pipeline industry by supporting hydrostatic pressure testing, air leak testing, inlet and outlet pressure testing at pump stations, safety valve and ex-proof membrane testing, wellhead pressure testing, pipeline filter testing, differential pressure transmitter/flow computing testing, as well as routine calibration of pressure devices.

**Intrinsically Safe:**
The ADT260Ex has passed the most stringent ATEX, IECEX intrinsic safety certifications. Each unit complies with a certification level of Ex ia IIC T4 Ga. This highly qualified reference recorder can be widely used in potentially explosive gas environments, such as oil and gas platforms, refineries, chemical and petrochemical plants, pharmaceutical industry, energy and gas processing industry.

**Datalogging Capabilities:**
The Additel 260Ex includes a sizable built-in automatic recording capability which supports multi parameter logging, trend curve display, local curve observation and statistical feedback. The logged results are stored onboard and can be viewed locally. The data storage capacity is up to 10 million readings (single channel) with a logging interval that is configurable from 0.1s ~ 9999s.

**8 Channel Combinations:**
Channel 1: Built-in digital pressure module, field switchable
Channel 2: Built-in barometer, which can be calibrated by the user
Channels 3 and 4: External digital pressure module inputs
Channel 5: Simulated differential pressure channel synthesized using channels 3 and 4
Channels 6 and 7: Temperature measurement channels supporting resistance sensors with 2, 3 or 4 wires
Channel 8: Measures current, voltage, frequency, pulse or switch testing. Built-in loop power included.



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## FUNCTIONAL FEATURES

| Functional Features | Details |
|---|---|
| **RTD Measurement** | 2, 3, or 4 wire (user selectable). Unit measurement as °C, °F, K or ohms. |
| **Filtering** | Average sliding filter (sample 1-50)<br>first-order linear filter (coefficient 0.01-1) |
| **Switch** | The measurement value will be automatically displayed at the moment the switch changes state. The latest 8 state changes will be stored in the memory. |
| **Pressure Tare** | Tare value is set through the user interface |
| **Pressure stability indicator** | Stability time and criteria is selectable |
| **Power management** | Backlight auto off<br>Auto power off |

## SPECIFICATIONS

| General Specification | |
|---|---|
| **Input Channel** | Top: 2 channels RTD measurement, 1 channel electric signal measurement, ϕ4mm banana jacks |
| | Right side: 2 channels for external digital pressure module, Lemo style connection |
| | Bottom: embedded digital pressure module (model ADT158Ex) field switchable. |
| | Internal: 1 embedded atmospheric pressure sensor |
| **Barometric Accuracy** | ±55Pa |
| **Measurement Rate** | mV, V, mA & frequency and RTD: 3 times/ sec |
| | Pressure module: 1~10 times/sec selectable (3 as default) |
| | Barometric: 1 times/ sec |
| **Data Storage** | Logging interval: from 0.1~9999 seconds, log up to 10 million readings (single channel) |
| **Power** | 4000mAh, 14.4Wh explosion-proof intelligent lithium battery, charging time is 6~8 hours, the battery can be charged independently<br>Typical working time 100 hours (measurement mode) |
| **Environmental** | Guaranteed temperature range of technical specifications: (-10 ~ 50)°C<br>*Temperature coefficient: ±5 ppm FS/°C (-20 to -10)°C |
| | Operating temperature: (-20 ~ 50)°C |
| | Storage temperature range: (-30 ~ 70)°C |
| | Humidity: 0% to 95% RH, non-condensing |
| | Altitude: 3000 meters |
| **Warm Up Time** | 10 minutes to fully meet technical specifications |
| **Port Protection Voltage** | 30V max |
| **Explosion-proof Grade** | ATEX & IECEX: Ex ia IIC T4 Ga (Ta = -20°C to +50°C) |
| **CE Certification** | TUV IEC61326, IEC61010 |
| **Rohs Compliance** | Rohs II Directive 2011/65/EU,EN50581:2012 |
| **Protection Level** | IP67, 1 meter drop test |
| **Communication** | IIsolate USB-TYPEC (slave), Bluetooth |
| **Display** | 4.4-inch color display capacitive screen, transflective, with LED backlight |
| **Size** | 6.97" x 4.13" x 2.04" (177 mm x 105 mm x 52 mm) which does not include the bottom mount ADT158Ex if installed. |
| **Weight** | 1.65 lb (0.75 kg) |
| **Warranty Time** | 1 year |



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## Electrical Specifications

| Specification | Range | Accuracy | Resolution | Note |
|---|---|---|---|---|
| RTD Measurement Accuracy | 0~400 Ω | 0.01%RDG + 20 mΩ[1] | 1 mΩ | Excitation current: 1 mA |
| Voltage Measurement | ±300 mV | 0.015%RDG + 1.5 mV | 1 uV | Impedance: >100 MΩ |
| | ±30 V | 0.015%RDG + 1.5 μA | 0.1 mV | Impedance: >1 MΩ |
| Current Measurement | ±30 mA | 0.015%RDG + 1.5 μA | 0.1 uA | Impedance: < 40 Ω |
| Frequency Measurement | 0.01~50000Hz (auto range) | 0.005% RDG + 2 last digit | 6-digit auto-resolution | Min threshold voltage: 2.5V |
| | Units: Hz, kHz, MHz, CPM, CPH, s, ms, us | | | |
| Switch On-Off Measurement | Inspection voltage: (3 ~ 30)V<br>Response speed: < 10ms, supports wet and dry switch | | | |
| Pulse Count | 0 ~ 9999999, optional rising edge and falling edge<br>Min threshold voltage: 2.5 V | | | |
| Loop Power | 22 V ± 10%, max output impedance: 320 Ω, max load current: 25 mA | | | |

Note [1]: Accuracy applies to 4-wire probes. For 3-wire probes add 10 mΩ, for 2-wire probes add 50 mΩ

## PRESSURE TECHNICAL SPECIFICATIONS

| Specifications | |
|---|---|
| Pressure resolution | 4, 5, or 6 digit resolution (user selectable) |
| Measurement Units[1] | kPa, Pa, GPa, MPa, mPa, uPa, hPa, bar, mbar, torr, mtorr, atm, psi, psia, psig, gf/cm2, kgf/cm2, inH2O@4°C, inH2O@68°F, mmH2O@4°C, mmH2O@20°C, ftH2O@4°C, ftH2O@68°F, inHg@0°C, mmHg@0°C, lb/ft2, tsi, psf, inH2O@60°F, ftH2O@60°F, cmH2O@4°C, mH2O@4°C, cmHg@0°C, mHg@0°C, kgf/m2 |
| Temperature Compensation | -10°C~50 °C |
| Pressure Module Type | Built-in digital pressure module: ADT158Ex, for more detailed information, please see ADT 158Ex datasheet.<br>External digital pressure module: ADT161Ex,for more detailed information, please see ADT 161Ex datasheet. |
| Specifications | Refer to the technical specification of the ADT158Ex and ADT161Ex. |
| High Static Pressure and Differential Pressure Synthesis Index[2] | Two modules must be with the same range;<br>Typical Differential pressure accuracy of 0.002%FS or 0.02%RD, whichever is greater when using two 0.02%FS external modules.<br>Typical Differential pressure accuracy of 0.002%FS or 0.05%RD, whichever is greater when using two 0.05%FS external modules. |

[1] Available units are dependent on the overall pressure range.
[2] For more explanation, please reference application note "Achieving High Accuracy for High Static Differential Pressure Measurements".

## Pressure Ranges

**Gauge Pressure [1]**

| P/N | Pressure Range (psi) | Pressure Range (bar) | Media [2] | Accuracy (%FS) | Burst Pressure |
|---|---|---|---|---|---|
| V15 | -15 | -1.0 | G | 0.02 | 3× |
| GP2 | 2 | 0.16 | G | 0.05 | 3× |
| GP5 | 5 | 0.35 | G | 0.05 | 3× |
| GP10 | 10 | 0.7 | G | 0.02 | 3× |
| GP15 | 15 | 1.0 | G | 0.02 | 3× |
| GP30 | 30 | 2.0 | G | 0.02 | 3× |
| GP50 | 50 | 3.5 | G , L | 0.02 | 3× |
| GP100 | 100 | 7.0 | G , L | 0.02 | 3× |
| GP150 | 150 | 10 | G , L | 0.02 | 3× |
| GP300 | 300 | 20 | G , L | 0.02 | 3× |
| GP500 | 500 | 35 | G , L | 0.02 | 3× |
| GP600 | 600 | 40 | G , L | 0.02 | 3× |
| GP1K | 1,000 | 70 | G , L | 0.02 | 3× |
| GP1.5K | 1,500 | 100 | G , L | 0.02 | 3× |
| GP2K | 2,000 | 140 | G , L | 0.02 | 3× |
| GP3K | 3,000 | 200 | G , L | 0.02 | 3× |
| GP5K | 5,000 | 350 | G , L | 0.02 | 3× |
| GP10K | 10,000 | 700 | G , L | 0.02 | 2× |
| GP15K | 15,000 | 1,000 | G , L | 0.05 | 2x |
| GP20K | 20,000 | 1,400 | G , L | 0.05 | 1.5x |
| GP25K | 25,000 | 1,600 | G , L | 0.05 | 1.5x |
| GP30K | 30,000 | 2,000 | G , L | 0.05 | 1.5x |
| GP36K | 36,000 | 2,500 | G , L | 0.05 | 1.5x |
| GP40K | 40,000 | 2,800 | G , L | 0.05 | 1.35x |
| GP50K | 50,000 | 3,500 | G , L | 0.1 | 1.2x |
| GP60K | 60,000 | 4,200 | G , L | 0.1 | 1.1x |

**Compound Pressure**

| P/N | Pressure Range psi | Pressure Range bar | Media | Accuracy | Burst Pressure |
|---|---|---|---|---|---|
| CP2 | ±2 | ±0.16 | G | 0.05% FS | 3x |
| CP5 | ±5 | ±0.35 | G | 0.02% FS | 3x |
| CP10 | ±10 | ±0.7 | G | 0.02% FS | 3x |
| CP15 | ±15 | ±1.0 | G | 0.02% FS | 3x |
| CP30 | -15 to 30 | -1 to 2.0 | G | 0.02% FS | 3x |
| CP50 | -15 to 50 | -1 to 3.5 | G | 0.02% FS | 3x |
| CP100 | -15 to 100 | -1 to 7.0 | G,L | 0.02% FS | 3x |
| CP300 | -15 to 300 | -1 to 20 | G,L | 0.02% FS | 3x |
| CP500 | -15 to 500 | -1 to 35 | G,L | 0.02% FS | 3x |
| CP600 | -15 to 600 | -1 to 40 | G,L | 0.02% FS | 3x |
| CP1K | -15 to 1,000 | -1 to 70 | G,L | 0.02% FS | 3x |
| CP2K | -15 to 2,000 | -1 to 140 | G,L | 0.02% FS | 3x |
| CP3K | -15 to 3,000 | -1 to 200 | G,L | 0.02% FS | 3x |
| CP5K | -15 to 5,000 | -1 to 350 | G,L | 0.02% FS | 3x |
| CP10K | -15 to 10,000 | -1 to 700 | G,L | 0.02% FS | 2x |

[1] Sealed gauge pressure for above 1000 psi
[2] G=Gas, L=Liquid



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## ORDERING INFORMATION

### Model Number

ADT260EX — GP300 — PSI — N

**Pressure range P/N:**
See pressure range tables above

**Range type:**
PSI-range by psi
BAR-range by bar

**Pressure port type:**
N- 1/4NPT male
N2- 1/2NPT male
B-1/4BSP male
B2-1/2BSP male
M-M20X1.5 male
AF-Autoclave F-250-C female
AM-Autoclave M-250-C male

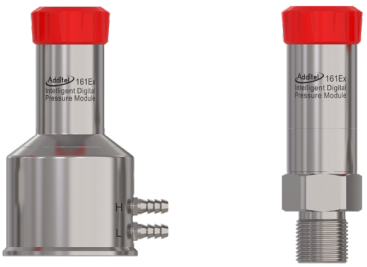
**Note:** The ADT260Ex can be purchased without the ADT158Ex module
If needed using the following part numner:
ADT260EX-NO

ADT260Ex with AM1602 temperature probe

| *Accessories (included)* | | |
|---|---|---|
| **Model number** | **Description** | **QTY** |
| 9811Ex-X | 110V/220V external power adapter | 1 pc |
| 9704Ex | Chargeable Li-ion battery | 1 pc |
| 9021 | Test leads | 5 sets (10 pcs) |
| 9040 | Hanging strap with magnet | 1 pc |
| 9052Ex | Ex USB Cable type A to type C (For Ex models only) | 1 pc |
| | ISO 17025 accredited calibration certificate | 1 pc |

| *Optional Accessories* | |
|---|---|
| **Model number** | **Description** |
| ADT158Ex | Built-in digital pressure module (see ADT158Ex datasheet) |
| ADT161Ex | External digital pressure module (see ADT161 datasheet) |
| 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 |
| AM1602-15FT | Class A, PT100/385 Industrial RTD, -40°C to 160°C, 3/16 (4.76 mm) inch x 2 inch (50 mm) with 15 foot (4.5 Meters) cable w/ banana jack connectors |
| AM1602-30FT | Class A, PT100/385 Industrial RTD, -40°C to 160°C, 3/16 (4.76 mm) inch x 2 inch (50 mm) with 30 foot (9 Meters) cable w/ banana jack connectors |
| AM1602-60FT | Class A, PT100/385 Industrial RTD, -40°C to 160°C, 3/16 (4.76 mm) inch x 2 inch (50 mm) with 60 foot (18.2 meters) cable w/ banana jack connectors |
| AM1602-100FT[1] | Class A, PT100/385 Industrial RTD, -40°C to 160°C, 3/16 (4.76 mm) inch x 2 inch (50 mm) with 100 foot (30.5 meters) cable w/ banana jack connectors |
| 9060 | Pressure module connection cable |
| 9905 | Hard carrying case for handheld calibrators and readouts with space for two RTDs |
| 9918-SC | Soft carrying case, with space for handheld instrument, test leads, and accessories |
| 9530-BASIC | Additel/Acal Automated calibration software with asset management, basic version |
| 9073 | Lemo connector, male, non-programmable (for use with 9083 and ADT260EX for temp probe) |
| 9083 | Adapter from Lemo to banana jacks for ADT260EX temp measurement |
| 9530-NET | Additel/Acal Automated calibration software with asset management, network version, Includes server installation and 1 user license |

Note:
[1] For custom RTD cable lengths over 100 feet (30 meters), which will adhere to Class B, please contact Additel.



"ADT161Ex pressure modules - See ADT161 Datasheet for more info"

"ADT158Ex pressure module - for use with ADT260Ex (bottom mount)"



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