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Additel 273Ex
Handheld Pressure Calibrator

- 0.02%, 0.05% FS Accuracy
- Intrinsically Safe
- Field Switchable Pressure Module
- Dual Digital Pressure Module Inputs
- Color Touchscreen Display
- Built-in Quick Test Task Feature
- Built-in Barometer
- Intuitive Smartphone Like Interface
- Bluetooth and USB Communication
- Optional HART Communication
- Communicates with Additel's Link Mobile App

Additel 273Ex with ADT158Ex module

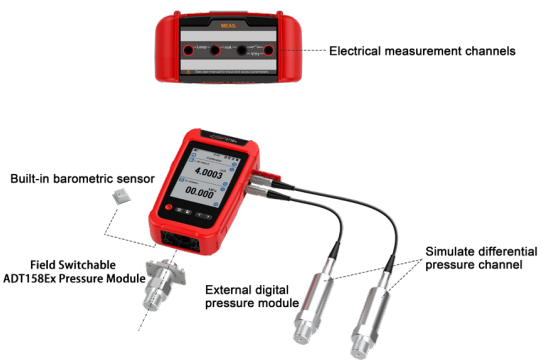
OVERVIEW

Additel's 273Ex is an Intrinsically safe handheld multifunctional pressure calibrator with a color touchscreen, smartphone like interface, built-in quick test tasks and optional HART communications capability. This innovative Additel product drastically improves explosion-proof field testing and calibration. The Additel 273Ex has a built-in atmospheric pressure sensor, so that absolute pressure and the gauge pressure are easily facilitated. With three pressure module inputs, one switchable at the bottom and two digital inputs on the side, the user can configure the setup accordingly and easily meet the needs of pressure calibration and testing in virtually any environment.

Intrinsically Safe :
ADT273Ex has passed the most stringent ATEX, IECEX intrinsic safety certifications from authoritative organizations. The explosion-proof level is Ex ia IIC T4 Ga. It 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. Each intrinsically safe calibrator has an advance transflective 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.

A Modern User Experience:
Additel has gone above and beyond to provide our customers with the best possible experience when using this new and revolutionary calibrator. The color touchscreen display provides a refreshing and intuitive experience compared to other calibrators on the market. With an easy to navigate menu structure and fast touchscreen response, you will find the ADT273Ex calibrator simple yet powerful to use. The easy-to-read display isn't just fun to use, but it's built rugged to handle the demands of a busy technician in the field or the laboratory.

Optional HART Communication:
With support for HART communication protocols, the ADT273Ex Handheld Pressure Calibrator provides a pressure calibration solution for transmitters over a wide pressure range. The ADT273Ex is a highly portable device and can measure pressure precisely with a field switchable pressure sensor, as well as read the current or mV produced by a transducer. It can even supply an excitation voltage (loop power) to power sensors or transmitters during calibration.



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FUNCTIONAL FEATURES

Functional Features	Details
Scaling	User can convert measured current, voltage and frequency values into pressure, temperature and flow values. Three conversion functions available: linearity, square and square root
Filtering	Average sliding filter (sampling number: 1 ~ 50) First-order linear filter (First-order coefficient: 0.01 ~ 1)
Switch	The measurement value will be automatically displayed at the moment the switch change of 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 Auto power off

Specifications

General Specifications	
Input Channels	Top: 1 electrical signal measurement channel, ϕ4mm banana jacks
	Right side: 2 channels for external digital pressure modules, 5-core dedicated aviation plug
	Bottom: embedded digital pressure module (model ADT158Ex), field switchable.
	Internal: 1 embedded atmospheric pressure sensor
Barometric Accuracy	± 55 Pa
Measurement Rate	mV, V, mA & frequency: 3 times/sec
	Pressure module: 1~10 times/sec selectable (3 times/sec as default)
	Barometer: 1 time/sec
Power	4000mAh, 14.4Wh explosion-proof intelligent lithium battery, charging time about 6 hours, battery can be charged independently Typical working time 100 hours (measurement mode)
Environmental	Guaranteed temperature range of technical specifications: (-10 ~ 50)°C *Temperature coefficient: ±5 ppm FS/°C (-20 to -10)°C
	Operating temperature: (-20 ~ 50)°C
	Storage temperature: (-30 ~ 70)°C
	Humidity: 0% to 95% RH, non-condensing
	Altitude: 3000 meters
Warm-up Time	10 min to fully meet technical specifications
Port Protection Voltage	30 V max
Explosion-proof Grade	ATEX & IECEX: Ex ia IIC T4 Ga (Ta = -20°C to + 50°C)
	Ta = -20°C to + 50°C Ex ia IIC T4 Ga
CE Certification	TUV IEC61326, IEC61010
Rohs Compliance	Rohs II Directive 2011/65/EU, EN50581:2012
Protection Level	IP67, 1 meter drop test
Communication	Isolate USB-Type C (slave), Bluetooth
Display	4.4-inch color display capacitive screen, transflective, with LED backlight
Size	6.97" x 4.13" x 2.04" (177 x 105 x 52 mm) which doesn't include bottom ADT158Ex.
Weight	1.65 lbs (0.75 kg)
Warranty Time	1 year

Electrical Specifications

Specification	Range	Accuracy	Resolution	Note
Voltage Measurement	±300 mV	0.015%RDG + 15 μV	1 uV	Impedance: >100 MΩ
	±30 V	0.015%RDG + 1.5 mV	0.1 mV	Impedance: >1 MΩ
Current Measurement	±30 mA	0.015%RDG + 1.5 μV	0.1 uA	Impedance: < 40 Ω
Frequency Measurement	0.01~50000 Hz (auto range)	0.005% RDG + 2 last digit	6-digit auto-resolution	Min threshold voltage: 2.5 V
	Units: Hz, kHz, MHz, CPM, CPH, s, ms, us			
Switch On-Off Measurement	Inspection voltage: (3 ~ 30)V Response speed: < 10 ms, supports wet and dry switch			
Pulse Count	0 ~ 9999999, optional rising edge and falling edge Min threshold voltage: 2.5 V			
Loop Power	22 V ± 10%, max output impedance: 320 Ω, max load current: 25 mA			

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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 ADT158Ex datasheet. External digital pressure module: ADT161Ex,for more detailed information, please see ADT161Ex 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; Typical Differential pressure accuracy of 0.002%FS or 0.02%RD, whichever is greater when using two 0.02%FS external modules. 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 RANGE

Gauge Pressure [1]

P/N	Pressure Range		Media [2]	Accuracy (%FS)	Burst Pressure
	(psi)	(bar)			
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

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

Compound Pressure

P/N	Pressure Range		Media	Accuracy	Pressure Rating	
	psi	bar			Burst	Over Pressure
CP2	±2	±0.16	G	0.05% FS	3x	1.2x
CP5	±5	±0.35	G	0.02% FS	3x	1.2x
CP10	±10	±0.7	G	0.02% FS	3x	1.2x
CP15	±15	±1.0	G	0.02% FS	3x	1.2x
CP30	-15 to 30	-1 to 2.0	G	0.02% FS	3x	1.2x
CP50	-15 to 50	-1 to 3.5	G	0.02% FS	3x	1.2x
CP100	-15 to 100	-1 to 7.0	G,L	0.02% FS	3x	1.2x
CP300	-15 to 300	-1 to 20	G,L	0.02% FS	3x	1.2x
CP500	-15 to 500	-1 to 35	G,L	0.02% FS	3x	1.2x
CP600	-15 to 600	-1 to 40	G,L	0.02% FS	3x	1.2x
CP1K	-15 to 1,000	-1 to 70	G,L	0.02% FS	3x	1.2x
CP2K	-15 to 2,000	-1 to 140	G,L	0.02% FS	3x	1.2x
CP3K	-15 to 3,000	-1 to 200	G,L	0.02% FS	3x	1.2x
CP5K	-15 to 5,000	-1 to 350	G,L	0.02% FS	3x	1.2x
CP10K	-15 to 10,000	-1 to 700	G,L	0.02% FS	2x	1.2x

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ORDERING INFORMATION

Model Number

ADT273Ex — GP300 — PSI — N • • HART

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

HART Communication (Optional)

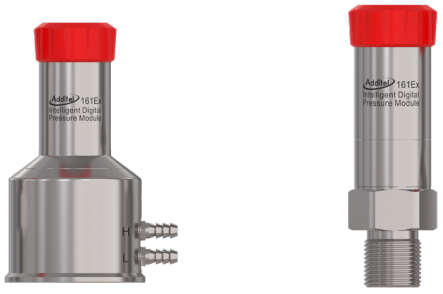
Note: The ADT273Ex can be purchased without the ADT158Ex module If needed using the following part numbers.
ADT273Ex-NO
ADT273Ex-NO-HART (includes HART Communication)

Accessories (included)

Model number	Description	QTY
9811Ex-X	110V/220V external power adapter	1 pc
9704Ex	Chargeable Li-ion battery	1pc
9025	Test leads	1 set (3 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)
9060	Pressure module connection cable
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 Automated calibration software with asset management, basic version
9530-NET	Additel/Acal Automated calibration software with asset management, network version, includes server installation and 1 user license



ADT161Ex pressure modules - See ADT161 Datasheet for more info

ADT158Ex pressure module - For use with ADT273Ex (bottom mount)

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