ADT 273Ex
Handheld Pressure Calibrator

Additel 273Ex with ADT158Ex module

- **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**

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.
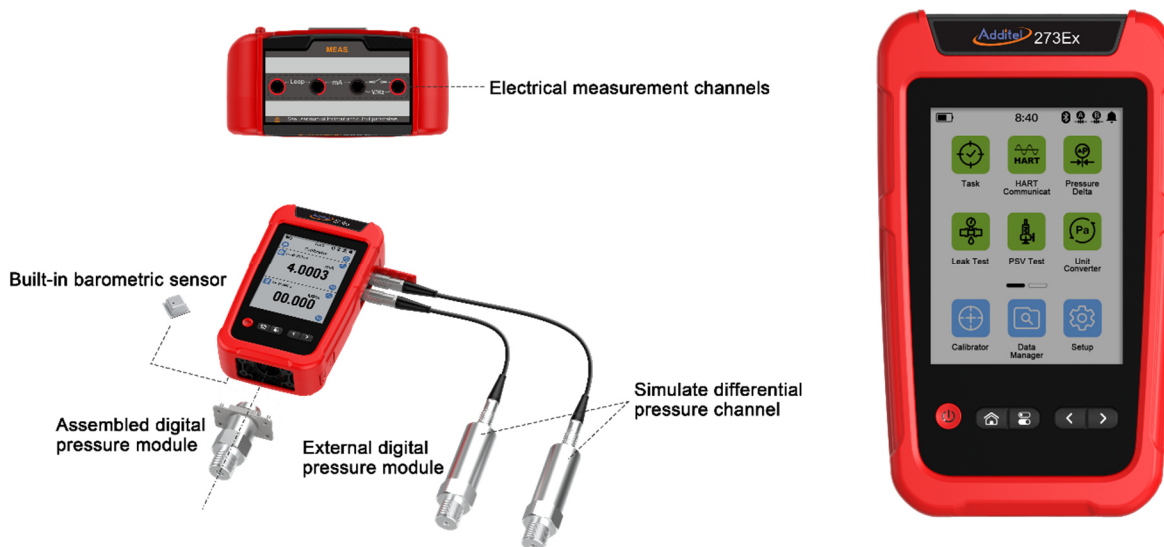
Intrinsically Safe:

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 ADT273 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.

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, ø4mm 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	30V 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 mm x 105 mm 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	±300mV	0.015%RDG + 15µV	1µV	Impedance: >100MΩ
	±30V	0.015%RDG + 1.5 µV	0.1mV	Impedance: >1MΩ
Current Measurement	±30mA	0.015%RDG + 1.5 µV	0.1µA	Impedance: < 40Ω
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 Response speed: < 10ms, supports wet and dry switch			
Pulse Count	0 ~ 9999999, optional rising edge and falling edge Min threshold voltage: 2.5V			
Loop Power	20V ± 10%, max output impedance: 320Ω, max load current: 25mA			

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/
Temperature Compensation	-10°C~50 °C
Pressure Module Type	Built-in digital pressure module: ADT158Ex, for more detailed information, please see ADT 158Ex datasheet. 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	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**	**Accuracy (%FS)**	**Burst Pressure**
	(psi)	**(bar)**			
V15	-15	-1.0	Gas	0.02	3×
GP2	2	0.16	Gas	0.05	3×
GP5	5	0.35	Gas	0.05	3×
GP10	10	0.7	Gas	0.02	3×
GP15	15	1.0	Gas	0.02	3×
GP30	30	2.0	Gas	0.02	3×
GP50	50	3.5	Gas, Liquid	0.02	3×
GP100	100	7.0	Gas, Liquid	0.02	3×
GP150	150	10	Gas, Liquid	0.02	3×
GP300	300	20	Gas, Liquid	0.02	3×
GP500	500	35	Gas, Liquid	0.02	3×
GP600	600	40	Gas, Liquid	0.02	3×
GP1K	1,000	70	Gas, Liquid	0.02	3×
GP1.5K	1,500	100	Gas, Liquid	0.02	3×
GP2K	2,000	140	Gas, Liquid	0.02	3×
GP3K	3,000	200	Gas, Liquid	0.02	3×
GP5K	5,000	350	Gas, Liquid	0.02	3×
GP10K	10,000	700	Gas, Liquid	0.02	2×
GP15K	15,000	1,000	Gas, Liquid	0.05	2x
GP20K	20,000	1,400	Gas, Liquid	0.05	1.5x
GP25K	25,000	1,600	Gas, Liquid	0.05	1.5x
GP30K	30,000	2,000	Gas, Liquid	0.05	1.5x
GP36K	36,000	2,500	Gas, Liquid	0.05	1.5x
GP40K	40,000	2,800	Gas, Liquid	0.05	1.35x
GP50K	50,000	3,500	Gas, Liquid	0.1	1.2x
GP60K	60,000	4,200	Gas, Liquid	0.1	1.1x

[1] Sealed gauge pressure for above 70 bar (1000 psi)

Pressure Range

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

Ordering Information

Model Number

ADT 273Ex	GP300	PSI	N	HART
	Pressure Range:	**Range type:**	**Pressure port type:**	
	See pressure range table	PSI - range by psi	N - 1/4NPT male	
		BAR - range by bar	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

Accessories (included)		
Model	**Description**	**Qty**
9811Ex-X	110/V220V external power adapter	1 pc
9704Ex	Chargeable Li-ion battery	1 pc
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)	1pc
	ISO 17025 accredited calibration certificate	1pc

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

ADT 161Ex pressure modules
See ADT161 Data sheet for more info

ADT 158Ex pressure module –
for use with ADT 273Ex
(bottom mount)

Your Notes