

ADT 761A

Automated Pressure Calibrator



- Automated and self-contained pressure generation and control from -0.9 bar to 70 bar (1,000) psi
- Standard accuracy to 0.02% of Span*
- Optional precision accuracy models up to 0.01% of Span
- Two removable internal pressure modules for multi-range selection
- Control stability to 0.003% of Span
- Portable, designed for use in the field and in the lab
- Ability to measure two external pressure modules
- Wi-Fi, Bluetooth, USB and Ethernet communication
- HART and profibus communication
- Data logging and task management
- Patented electric pump technology and improved speed



Overview

At Additel, innovation and continuous improvement are part of our company's culture and the products we introduce. When we set out to deliver the Additel 761A series calibrators, we knew we needed to provide breakthrough additional value to the existing line of calibrators (Additel 761 series).

The ADT761A has many improvements: increased pressure range to 70 bar (1,000 psi), removable internal pressure modules, optional precision models up to 0.01% of Span, increased speed to pressure, ability to read two external pressure modules, touch screen display, Wi-Fi, Bluetooth, and Ethernet communications, double the original battery life, and more! Just like the first generation, this second generation product is completely self-contained and automated with a built-in pump for pressure generation and precision control technology. Simply set the desired pressure and watch the calibrator do the work.

ADT761A-LLP

The Additel 761A-LLP is designed for low pressure calibration and comes with a ± 75 mbar (± 30 inH₂O) high range module and a low range module of your choice ranging from ± 50 to as low as ± 0.62 mbar (± 20 inH₂O to ± 0.25 inH₂O). This unit has an accuracy of 0.05% of Span with control stability better than 0.005% of Span. All measurements can be made in differential or gauge pressures.



ADT761A-D

The Additel 761A-D also provides differential and gauge measurement which covers the range of -0.95 to 2.5 bar (-13.5 to 35 psi). This unit comes with a CP35 module (-0.95 to 2.5 bar) and one low range module of your choice ranging as low as 25 mbar (± 10 inH₂O). Each ADT761A-D can be preconfigured with the modules that fit your need to give you the best precision at the pressures you perform calibrations.

ADT761A-500

The Additel 761A-500 will generate and control from vacuum pressures up to 35 barg (500 psig). Both gauge and absolute pressures can be realized due to a built-in barometer. Each unit comes with a CP500 module (-13 to 500 psig) for the high range and the low range can be preconfigured based on the variety of modules available down to 0.7 barg (10 psig).



ADT761A-1K

The Additel 761A-1K will quickly generate and control from vacuum pressures up to 70 barg (1,000 psig). Like the ADT761A-500, both gauge and absolute pressures can be realized due to a built-in barometer. Each unit comes with a CP1K module (-0.9 to 70 barg) for the high range and the low range can be preconfigured based on the variety of modules available down to 2 barg (30 psig).

ADT761A-APXR Precision Accuracy Options

The Additel 761A series includes a precision accuracy option which provides an accuracy of 0.01% of Span. This calibrator option includes a single non-removable sensor and can measure absolute and gauge pressures. Model configurations are available from 1 to 70 barg (15 to 1,000 psig)

ADT761A-BP

The Additel 761A-BP is designed for calibration of barometer sensors. With a range of 100 to 1200 hPa and an accuracy of 0.01% of Full Scale, this unit is ideal for calibration on the bench or in the field.



Pressure Specifications

Specification	761A-LLP	761A-D	761A-500	761A-1K	761A-APXR	761A-BP
Max Pressure Range	75 mbar (30 inH ₂ O)	2.5 bar (35 psi)	35 barg (500 psig)	70 barg (1,000 psig)	Dependent on APXR sensor	1,200 hPa
Min Pressure Range	-75 mbar (-30 inH ₂ O)	-0.95 bar (-13.5 psi)	-0.9 bar (-13 psi)	-0.9 bar (-13 psi)	Dependent on APXR sensor	100 hPa
Accuracy ⁽¹⁾	0.05% of Span	0.02% of Span	0.02% of Span ⁽²⁾	0.02% of Span ⁽²⁾	0.01% of Span	0.01% FS
Stability	0.003% of Span or 0.03 Pa	0.003% of Span	0.003% of Span	0.003% of Span	0.003% of Span	0.02 hPa
Pressure Type	Differential, (Gauge)	Differential, (Gauge)	Gauge, (Absolute)	Gauge, (Absolute)	Absolute, (Gauge)	Absolute
Over Range Indication	120%					
Resolution	6 digits					
Measurement Units	Pa, hPa, kPa, mPa, bar, mbar, psi, mmHg@0°C, cmHg@0°C, mHg@0°C, inHg@0°C, inH ₂ O@4°C, mmH ₂ O@4°C, cmH ₂ O@4°C, mH ₂ O@4°C, mmH ₂ O@20°C, cmH ₂ O@20°C, mH ₂ O@20°C, inH ₂ O@20°C, kg/m ² , mtorr, torr, lb/ft ² , tsi, custom					
Barometric Accuracy	N/A	N/A	60 Pa	60 Pa	60 Pa	N/A

[1] One year accuracy (including 1 year stability).
of Span specification applies to the span of the module range.

[2] Specification based on gauge measurement. An additional 60 pa uncertainty will need to be included when measuring in absolute mode. Applicable only for use with the ADT761A-500 and ADT761A-1K

* Additel 761A calibrators support 160A series intelligent digital pressure modules that are available for gauge, vacuum and absolute pressure from -1 bar to 4200 bar. (-15 psi to 60,000 psi). For detailed specifications refer to the 160A series pressure modules data sheet.

Electrical Specifications

Specification	Range	Resolution	Accuracy	Note
mA Measure	Auto-ranging ±25 or ±50 mA	0.1 µA	0.008%RD+0.004%FS	Impedance <10Ω
V Measure	±300 mV	0.1 µV	0.008%RD+0.002%FS	Impedance >1GΩ
	Auto-ranging ±5, ±12 or ±30 V	±5V:20 µV	0.008%RD+0.002%FS	Impedance >1MΩ
		±12V:100 µV		
		±30V:100 µV		
Loop Power Source	24V	N/A	±0.24 V	50 mA (Max Loading)
mA Source	0 to 2.5 mA or 2.5 to 25 mA	0-2.5 mA:0.05 µA	0-2.5 mA: 0.008%RD+0.1µA 0-25 mA: 0.008%RD+1.0µA	20 mA @ 1KΩ
		0-25 mA:0.5 µA		
Power Source	16 to 30 V	1 V	± 1V(24V: ±0.24V)	70 mA (Max Loading)
V Source	0 to 16 V	250 µV	0.008%RD+0.002%FS	
Pressure Switch	Mechanical Switch, Live Mechanical Switch, NPN Switch, PNP Switch	N/A	N/A	Response time<10 ms. If the switch is live, voltage range will be (3-30) V
Temperature Compensation	5°C to 35°C			
Temperature Coefficient	Outside of 5°C to 35°C: <±0.0005%RD+0.0001%FS/°C			
Misuse Protection	Up to 30 V on any two sockets			

Internal Module Specification and Compatibility

Model	Range		Media	Accuracy (% of Span) ^[1]	Burst Pressure	761A- LLP	761A- D	761A-500	761A- 1K
	mbar	inH ² O							
ADT155-20-DP025	± 0.62	± 0.25	Gas	± 0.2 ^[2]	100x	•			
ADT155-10-DP050	± 1.25	± 0.5	Gas	± 0.1 ^[3]	100x	•			
ADT155-05-DP1	± 2.5	± 1	Gas	± 0.05 ^[4]	100x	•			
ADT155-05-DP2	± 5	± 2	Gas	± 0.05 ^[4]	100x	•			
ADT155-05-DP5	± 10	± 5	Gas	± 0.05 ^[4]	50x	•			
ADT155-05-DP10	± 25	± 10	Gas	± 0.05 ^[4]	20x	•	•		
ADT155-05-DP20	± 50	± 20	Gas	± 0.05	20x	•	•		
ADT155-05-DP30	± 75	± 30	Gas	± 0.05	20x	•	•		
ADT155-05-DP50	± 125	± 50	Gas	± 0.05	3x		•		
ADT155-02--DP100	± 250	± 100	Gas	± 0.02	3x		•		
ADT155-02-DP150	± 350	± 150	Gas	± 0.02	3x		•		
ADT155-02-DP300	± 700	± 300	Gas	± 0.02	3x		•		
ADT155-02-DP400	-950 to 1K	-380 to 400	Gas	± 0.02	3x		•		
ADT155-02-DP800	-950 to 2K	-380 to 800	Gas	± 0.02	3x		•		
ADT155-02-DP1K	-950 to 2.5K	-380 to 1K	Gas	± 0.02	3x		•		
Gauge Pressure	barg	psig							
ADT155-02-CP10	± 0.7	± 10	Gas	± 0.02 ^[5]	3x		•	•	
ADT155-02-CP15	-0.95 to 1	-13.5 to 15	Gas	± 0.02 ^[5]	3x		•	•	
ADT155-02-CP30	-0.95 to 2	-13.5 to 30	Gas	± 0.02 ^[5]	3x		•	•	•
ADT155-02-CP35	-0.95 to 2.5	-13.5 to 35	Gas	± 0.02 ^[5]	3x		•	•	•
ADT155-02-CP50	-0.95 to 3.5	-13.5 to 50	Gas	± 0.02 ^[5]	3x			•	•
ADT155-02-CP100	-0.95 to 7	-13.5 to 100	Gas	± 0.02 ^[5]	3x			•	•
ADT155-02-CP150	-0.95 to 10	-13.5 to 150	Gas	± 0.02 ^[5]	3x			•	•
ADT155-02-CP200	-0.95 to 14	-13.5 to 200	Gas	± 0.02 ^[5]	3x			•	•
ADT155-02-CP300	-0.95 to 20	-13.5 to 300	Gas	± 0.02 ^[5]	3x			•	•
ADT155-02-CP500	-0.95 to 35	-13.5 to 500	Gas	± 0.02 ^[5]	3x			•	•
ADT155-02-CP600	-0.95 to 40	-13.5 to 600	Gas	± 0.02 ^[5]	3x				•
ADT155-02-CP1K	-0.95 to 70	-13.5 to 1K	Gas	± 0.02 ^[5]	3x				•

[1] of Span specification applies to the span of the module range.

Accuracy includes one-year stability, except for DP025 to DP10 modules.

[2] Accuracy is a 6 months spec, 1-year long-term drift is 0.2% of Span

[3] Accuracy is a 6 months spec, 1-year long-term drift is 0.1% of Span

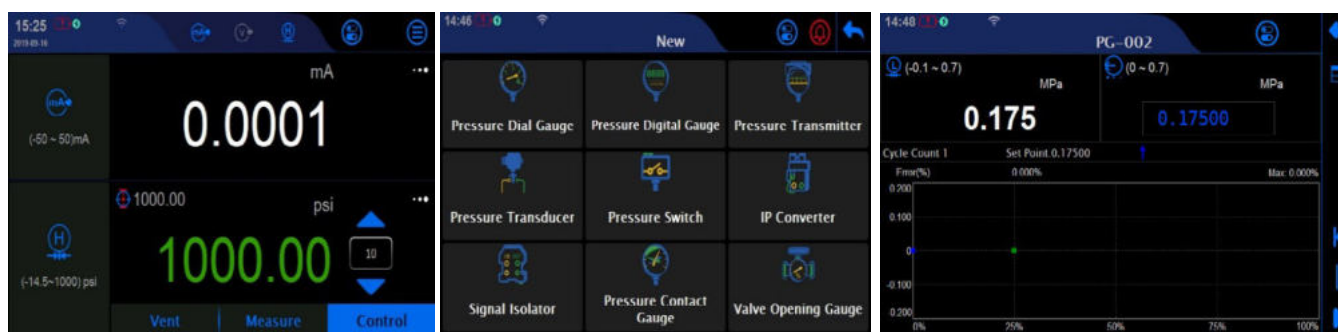
[4] Accuracy is a 6 months spec, 1-year long-term drift is 0.05% of Span

[5] Specification based on gauge measurement. An additional 55 pa uncertainty will need to be included when measuring in absolute mode.

Applicable only for use with the ADT761A-500 and ADT761A-1K

General Specifications

Specification	Description
User Interface	Color touch screen and/or keypad operation
Channels	Four total: one electrical, high or low internal pressure module, two external pressure modules
Enclosure IP Rating	IP31
Battery	Rechargeable Li-Ion battery, typically 12 hours of operation, recharges in less than 4 hours
Power	Rechargeable Li-Ion battery, external power: 110/220V power adapter 27V
Display	7" TFT touch screen 800 x 480 color
Communications	USB-B, LAN, Bluetooth, Wi-Fi, (USB-A not for customer usable)
Weight	<7.95 KG (17.52 lb)
Size	299 x 193 x 192 mm (11.77 x 7.60 x 7.56 in)
Certification	ISO17025 accredited certificate of calibration with NIST-traceable data
Data Storage	6 GB
Data Logging	Up to 1,000,000 readings (data and time stamped)
Task Documentation	Up to 1000 tasks can be stored with data
Automation Functions	Switch test, auto step, leak test
Multi Lingual Interface	English, German, French, Italian, Spanish, Portuguese, Chinese, Japanese and Russian
Pump Life	> 100,000 cycles
Environment Specifications	Operating temperature: 0°C to 50°C (32 °F to 122 °F)
	Compensated temperature: 0°C to 50°C (32 °F to 122 °F)
	Storage temperature: -20°C to 60°C (-4 °F to 120 °F)
	Humidity: <90%, non-condensing
Vibration and Shock	Vibration: 20 to 2,000 Hz (4g) Shock: 8g, 1 meter drop test
Compliance	CE
Software Compatibility	ACal, Additel Land and Additel Link for access via mobile application
Warranty	1 year



Pressure gauge / transmitter / switch calibration

Task Menu

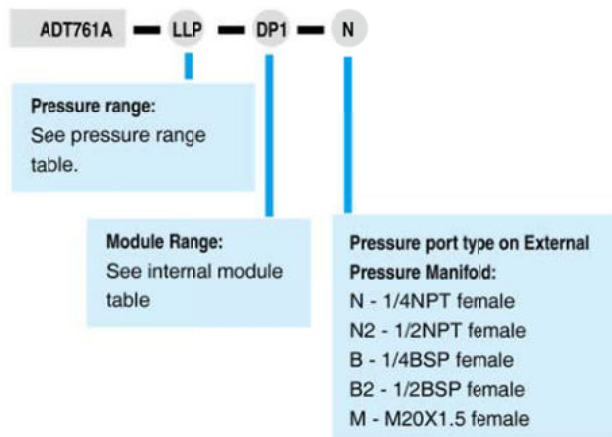
High Pressure Automated Calibration

Pressure Range











Type	Model	Pressure Range	High-Range Pressure Module		Low-Range Pressure Module	
			Range	Accuracy	Range	Accuracy
Low/ Differential Pressure	ADT761A-LLP-DPX	-75 to 75 mbar (-30 to 30 inH ₂ O)	DP30: -75 to 75 mbar (-30 to 30 inH ₂ O)	0.05% of Span	User selectable from DP20 to DP025	See Internal Module Table
	ADT761A-D-DPXX-X	-0.95 to 2.5 bar (-13.5 to 35 psi)	CP35: -0.95 to 2.5 bar (-13.5 to 35 psi)	0.02% of Span	User selectable from DP10 to CP30)	See Internal Module Table
Standard Accuracy Gauge/ Absolute Pressure	ADT761A-500-CPXX-X	-0.9 to 35 bar (-13 to 500 psi)	CP500: -0.9 to 35 bar (-13 to 500 psi)	0.02% of Span	User selectable from CP10 to CP300	See Internal Module Table
	ADT761A-1K-CPXX-X	-0.9 to 70 bar (-13 to 1000 psi)	CP1K: -0.9 to 70 bar (-13 to 1000 psi)	0.02% of Span	User selectable from CP30 to CP600	See Internal Module Table
Precision Accuracy Absolute / (Gauge) Pressure	ADT761A-AP30R-X	0.05 to 2 bar a (1 to 30 psi a)	AP30R: 0.05 to 2 bar a (1 to 30 psi a)	0.01% of Span	Single sensor only	
	ADT761A-AP50R-X	0.05 to 3.5 bar a (1 to 50 psi a)	AP50R: 0.05 to 3.5 bara (1 to 50 psi) a	0.01% of Span	Single sensor only	
	ADT761A-AP100R-X#	0.05 to 7 bar a (1 to 100 psi a)	AP100R: 0.05 to 7 bara (1 to 100 psi a)	0.01% of Span	Single sensor only	
	ADT761A-AP300R-X	0.1 to 20 bar a (1.5 to 300 psi a)	AP300R: 0.1 to 20 bara (1.5 to 300 psi a)	0.01% of Span	Single sensor only	
	ADT761A-AP500R-X	0.1 to 35 bar a (1.5to 500 psi a)	AP500R: 0.1 to 35 bara (1.5 to 500 psi a)	0.01% of Span	Single sensor only	
	ADT761A-AP1KR-X	0.1 to 70 bar a (1.5 to 1000 psi a)	AP1KR: 0.1 to 70 bara (1.5 to 1000 psi a)	0.01% of Span	Single sensor only	

Ordering information





Model Number



Accessories (included)

<p>ADT106A-X External Pressure Manifold (Excl ADT761A-LLP)</p>	<p>1 pc</p>	
<p>9818 110V/220V external Power adapter</p>	<p>1 pc</p>	
<p>9725 Chargeable Li-ion battery</p>	<p>1 pc</p>	
<p>9240 DP gauge holder, rubber (Only for ADT761A-LLP)</p>	<p>1 pc</p>	
<p>9060 (Pressure module connection cable)</p>	<p>1 pc</p>	
<p>ADT100-761A-X Hose Test Kit, 5 feet flexible hose (excl ADT761A-LLP)</p>	<p>1 pc + 1 pc adapter</p>	
<p>9022 Test Leads for calibrator</p>	<p>2 sets (4 pcs)</p>	
<p>9907 Carrying case for 761A calibrator and accessory</p>	<p>1 pc</p>	
<p>O-rings</p>	<p>20 pcs</p>	
<p>Manual</p>	<p>1pc</p>	
<p>Pressure Hoses (Only for ADT761A-LLP/D)</p>	<p>2 pcs (1 pc. blue, 1pc.yellow)</p>	
<p>ISO17025 accredited calibration certificate</p>	<p>1pc</p>	
<p>ADT100-761Hose (Only for ADT761A-500/1K/APXR)</p>	<p>1 pc</p>	
<p>USB Cable</p>	<p>1pc</p>	
<p>Silicone Tube</p>	<p>1 meter each (2 pcs for ADT761A-LLP) (1 pc for ADT761A-BP)</p>	

Optional accessories

Model Number	Description	Picture
ADT160A	See ADT160A data sheet for more info; connection cable sold separately	
9060	Pressure module connection cable	
9530	Additel/ACal Automated Calibration Software	
ADT100-761Hose	ADT761 hose, 5 feet	
ADT106A-X	External Pressure Model (Excl ADT761A-LLP)	
ADT100-761A-X	Hose Test Kit, 5 feet flexible hose)	

Selection Guide

Model Features	761A-LLP	761A-D	761A-500	761A-1K	761A-APXR	761A-BP
Pressure Range	-75 to 75mbar (30 inH2O)	-0.95 to 2.5 barg (-13.5 to 35 psig)	-0.90 to 35 barg (-13 to 500 psig)	-0.90 to 70 barg (-13 to 1000 psig)	-0.90 to 70 barg (-13 to 1000 psig)	100 to 1,200 hPa
Control Stability	<0.005% o.S. or 0.05Pa	<0.005% o.S.	<0.005% o.S.	<0.005% o.S.	<0.003% o.S.	<0.02 hPa
Number of Internal modules	2	2	2	2	1	1
Removable internal modules	•	•	•	•		
Differential Pressure	•	•				
Gauge Pressure	•	•	•	•	•	
Absolute Pressure			•	•	•	•
Barometric Pressure			•	•	•	•
Two external Pressure Modules	•	•	•	•	•	•
Built-in Electric pump	•	•	•	•	•	•
Source/Simulate mA	•	•	•	•	•	•
Measure mA or V	•	•	•	•	•	•
24V Loop Power	•	•	•	•	•	•
Pressure Switch Test	•	•	•	•	•	•
HART/Profibus Communication	•	•	•	•	•	•
Task Documentation	•	•	•	•	•	•
Data Logging	•	•	•	•	•	•

