Additel 761A
Series Automated Pressure Calibrators

Additel
Metrology Made Simple



- Automated and self-contained pressure generation and control to 1,000 psi (70 bar)
- Standard accuracy to 0.02%FS
- Optional precision accuracy models to 0.01%FS
- Two removable internal pressure modules for multi-range selection
- Control stability to 0.003%FS
- 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
- Full HART field communicator
- 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 improvements and additional value to the existing line of calibrators (Additel 761 series). The ADT761A has many improvements: increased pressure range to 1,000 psi (70 bar), removable internal pressure modules, optional precision models to 0.01%FS, 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.

Phone: 714-998-6899 Fax: 714-998-6999 Email: sales@additel.com

Rev # 20200826

Corporate Headquarters
2900 Saturn St #B
Brea, CA 92821, USA

Salt Lake City Office
1364 West State Rd. Suite 101
Pleasant Grove, UT 84062, USA

Additel
Metrology Made Simple

ADT761A-LLP

The Additel 761A-LLP is designed for low pressure calibration and comes with a ±30 inH2O (±75 mbar) high range module and a low range module of your choice ranging from ±20 inH2O to as low as ±0.25 inH2O (±50 to ±0.62 mbar). This unit has an accuracy of 0.05%FS with control stability better than 0.005%FS. 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 -13.5 to 35 psi (-0.95 to 2.5 bar). This unit comes with a CP35 module (-13.5 to 35 psi) and one low range module of your choice ranging as low as ±10 inH2O (25 mbar). 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 500 psig (35 bar.g). 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 10 psig (0.7 bar.g).



ADT761A-1K

The Additel 761A-1K will generate and control from vacuum pressures up to 1,000 psig (70 bar.g). This unit can typically achieve 1,000 psi in less than 45 seconds. 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 (-13 to 1,000 psig) for the high range and the low range can be preconfigured based on the variety of modules available down to 30 psig (2 bar.g).

ADT761A-APXR Precision Accuracy Options

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



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%FS, this unit is ideal for calibration on the bench or in the field.

Phone: 714-998-6899 Fax: 714-998-6999 Email: sales@additel.com

Corporate Headquarters
2900 Saturn St #B
Brea, CA 92821, USA

Salt Lake City Office
1364 West State Rd. Suite 101
Pleasant Grove, UT 84062, USA

Rev # 20200826

Additel
Metrology Made Simple

Pressure Specifications

Model / Specification	761A-LLP	761A-D	761A-500	761A-1K	761A-APXR	761A-BP
Max Pressure Range	30 inH2O (75 mbar)	35 psi (2.5 bar)	500 psig (35 bar.g)	1,000 psig (70 bar.g)	Dependent on APXR sensor	1,200 hPa
Min Pressure Range	-30 inH2O (-75 mbar)	-13.5 psi (-0.95 bar)	-13 psi (-0.9 bar)	-13 psi (-0.9 bar)	Dependent on APXR sensor	100 hPa
Accuracy[1]	0.05%FS	0.02%FS	0.02%FS[2]	0.02%FS[2]	0.01%FS	0.01%FS
Stability	0.003%FS or 0.03 Pa	0.003%FS	0.003%FS	0.003%FS	0.003%FS	0.02 hPa
Pressure Type	Differential, Gauge	Differential, Gauge	Gauge, Absolute	Gauge, Absolute	Gauge, Absolute	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, inH2O@4°C, mmH2O@4°C, cmH2O@4°C, mH2O@4°C, mmH2O@20°C, cmH2O@20°C, mH2O@20°C, inH2O@20°C, inH2O@68°F, kgf/cm2, mtorr, torr, lb/ft2, tsi, custom					
Barometric Accuracy	N/A	N/A	60 Pa	60 Pa	60 Pa	N/A

[1] One year accuracy (including 1 year stability). FS 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 -15 psi to 60,000 psi (-1 bar to 4200 bar). For detailed specifications refer to the 160A series pressure modules data sheet.

Electrical Specifications

Model / 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	1 µV	0.008%RD+0.002%FS	Impedance >1 GΩ
	Auto-ranging ±5, ±12 or ±30 V	±5 V:20 µV ±12 V:100 µV ±30 V:100 µV	0.008%RD+0.002%FS	Impedance >1 MΩ
Loop Power Source	24 V	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: 0.05µA 0-25 mA:0.5µA	0-2.5 mA: 0.008%RD+0.1 µA 0-25 mA: 0.008%RD+1.0 µA	20 mA @ 1 KΩ
Power Source	16 to 30 V	1 V	±1 V(24 V: ±0.24 V)	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			

Phone: 714-998-6899 Fax: 714-998-6999 Email: sales@additel.com
Rev # 20200826

Corporate Headquarters
2900 Saturn St #B
Brea, CA 92821, USA

Salt Lake City Office
1364 West State Rd. Suite 101
Pleasant Grove, UT 84062, USA

Additel
Metrology Made Simple

Internal Module Specification and Compatibility

Model / Range	inH2O[6]	mbar[6]	Media	Accuracy (%FS)[1]	Burst Pressure	761A-LLP	761A-D	761A-500	761A-1K
ADT155-20-DP025	±0.25	±0.62	G	0.2 [2]	100x	●			
ADT155-10-DP050	±0.5	±1.25	G	0.1[3]	100x	●			
ADT155-05-DP1	±1	±2.5	G	0.05[4]	100x	●			
ADT155-05-DP2	±2	±5	G	0.05[4]	100x	●			
ADT155-05-DP5	±5	±10	G	0.05[4]	50x	●			
ADT155-05-DP10	±10	±25	G	0.05[4]	20x	●	●		
ADT155-05-DP20	±20	±50	G	0.05	20x	●	●		
ADT155-05-DP30	±30	±75	G	0.05	20x	●	●		
ADT155-05-DP50	±50	±125	G	0.05	3x		●		
ADT155-02-DP100	±100	±250	G	0.02	3x		●		
ADT155-02-DP150	±150	±350	G	0.02	3x		●		
ADT155-02-DP300	±300	±700	G	0.02	3x		●		
ADT155-02-DP400	-380 to 400	-950 to 1K	G	0.02	3x		●		
ADT155-02-DP800	-380 to 800	-950 to 2K	G	0.02	3x		●		
ADT155-02-DP1K	-380 to 1K	-950 to 2.5K	G	0.02	3x		●		
Gauge Pressure	*psig*	*bar.g*							
ADT155-02-CP10	±10	±0.7	G	0.02[5]	3x		●	●	
ADT155-02-CP15	-13.5 to 15	-0.95 to 1	G	0.02[5]	3x		●	●	
ADT155-02-CP30	-13.5 to 30	-0.95 to 2	G	0.02[5]	3x		●	●	●
ADT155-02-CP35	-13.5 to 35	-0.95 to 2.5	G	0.02[5]	3x		●	●	●
ADT155-02-CP50	-13.5 to 50	-0.95 to 3.5	G	0.02[5]	3x			●	●
ADT155-02-CP100	-13.5 to 100	-0.95 to 7	G	0.02[5]	3x			●	●
ADT155-02-CP150	-13.5 to 150	-0.95 to 10	G	0.02[5]	3x			●	●
ADT155-02-CP200	-13.5 to 200	-0.95 to 14	G	0.02[5]	3x			●	●
ADT155-02-CP300	-13.5 to 300	-0.95 to 20	G	0.02[5]	3x			●	●
ADT155-02-CP500	-13.5 to 500	-0.95 to 35	G	0.02[5]	3x			●	●
ADT155-02-CP600	-13.5 to 600	-0.95 to 40	G	0.02[5]	3x				●
ADT155-02-CP1K	-13.5 to 1K	-0.95 to 70	G	0.02[5]	3x				●

[1] FS 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%FS.
[3] Accuracy is a 6 months spec, 1-year long-term drift is 0.1%FS.
[4] Accuracy is a 6 months spec, 1-year long-term drift is 0.05%FS.
[5] Specification based on gauge measurement. An additional 60 Pa uncertainty will need to be included when measuring in absolute mode.
[6] The low module pressure range may be outside the pressure range of the calibrator
Applicable only for use with the ADT761A-500 and ADT761A-1K
* ADT155 Pressure modules are calibrated in psi & inH2O

Phone: 714-998-6899 Fax: 714-998-6999 Email: sales@additel.com

Rev # 20200826

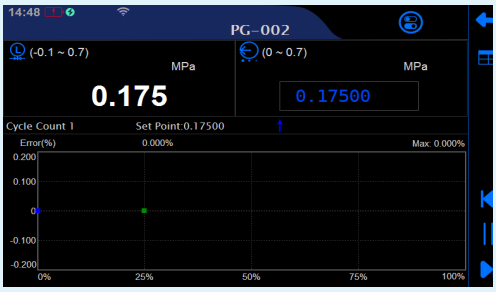
Corporate Headquarters
2900 Saturn St #B
Brea, CA 92821, USA

Salt Lake City Office
1364 West State Rd. Suite 101
Pleasant Grove, UT 84062, USA

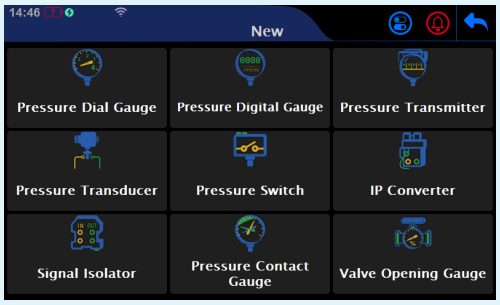
Additel
Metrology Made Simple

General Specifications

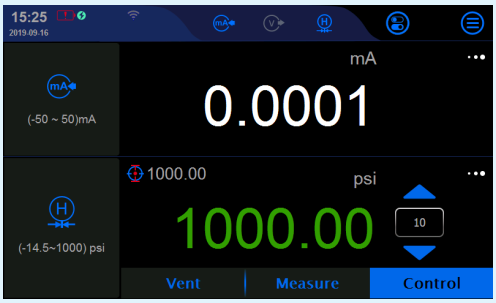
Specification	*Description*
User Interface	Color touch screen and/or keypad operation
Channels	Four total: one electrical, high or low internal pressure module, two external pressure modules
Enclosure IP Rating	IP31
Battery	Rechargeable Li-Ion battery, typically 12 hours of operation, recharges in less than 5 hours.
Power	Rechargeable Li-Ion battery, external power 110/220 V power adapter 27 V
Display	7" TFT touch screen 800 x 480 color
Communications	USB, LAN, Bluetooth, Wi-Fi
Weight	<17.52 lb (7.95 KG)
Size	11.77 x 7.60 x 7.56 in (299 x 193 x 192 mm)
Certification	ISO 17025 accredited certificate of calibration with NIST-traceable data
Data Storage	6 GB
Data Logging	Up to 1,000,000 readings (data and time stamped)
HART Communicator	Read, configure and calibrate HART devices - DD files updated periodically
Task documentation	Up to 1000 tasks can be stored with data
Automation Functions	Switch test, auto step, leak test
User Interface Localization	English, German, French, Italian, Spanish, Portuguese, Chinese, Japanese, and Russian
Pump life	>1,000,000 cycles
Environmental Specifications	Operating temperature: 32°F to 122°F(0°C to 50°C)
	Compensated temperature: 32°F to 122°F(0°C to 50°C)
	Storage temperature: -20°C to 60°C (-4°F to 120°F)
	Humidity: <90%, non-condensing
Vibration and Shock	Vibration: 4 g (20 to 2,000 Hz) Shock: 8 g, 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 inH2O)	DP30: -75 to 75 mbar (-30 to 30 inH2O)	0.05%FS	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%FS	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%FS	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%FS	User selectable from CP30 to CP600	See Internal Module Table

Phone: 714-998-6899 Fax: 714-998-6999 Email: sales@additel.com

Rev # 20200826

Corporate Headquarters
2900 Saturn St #B
Brea, CA 92821, USA

Salt Lake City Office
1364 West State Rd. Suite 101
Pleasant Grove, UT 84062, USA

Additel
Metrology Made Simple

Pressure Range

Type	Model	Pressure Range	High-Range Pressure Module		Low-Range Pressure Module	
			Range	Accuracy	Range	Accuracy
Precision Accuracy Gauge/Absolute Pressure	ADT761A-AP30R-X	-0.95 to 1 bar (-13.5 to 15 psi)	AP30R: -0.95 to 1 bar (-13.5 to 15 psi)	0.01%FS	Single sensor only	
	ADT761A-AP50R-X	-0.95 to 2.5 bar (-13.5 to 35 psi)	AP50R: -0.95 to 2.5 bar (-13.5 to 35 psi)	0.01%FS	Single sensor only	
	ADT761A-AP100R-X	-0.95 to 7 bar (-13.5 to 100 psi)	AP100R: -0.95 to 7 bar (-13.5 to 100 psi)	0.01%FS	Single sensor only	
	ADT761A-AP300R-X	-0.9 to 21 bar (-13 to 300 psi)	AP300R: -0.9 to 21 bar (-13 to 300 psi)	0.01%FS	Single sensor only	
	ADT761A-AP500R-X	-0.9 to 35 bar (-13 to 500 psi)	AP500R: -0.9 to 35 bar (-13 to 500 psi)	0.01%FS	Single sensor only	
	ADT761A-AP1KR-X	-0.9 to 70 bar (-13 to 1000 psi)	AP1KR: -0.9 to 70 bar (-13 to 1000 psi)	0.01%FS	Single sensor only	

ORDERING INFORMATION

Model Number

ADT761A — LLP — DP1 — N

Pressure range:
See pressure range table.

Module Range:
See internal module table

Pressure port type on External Pressure Manifold:
N - 1/4NPT female
N2 - 1/2NPT female
B - 1/4BSP female
B2 - 1/2BSP female
M - M20X1.5 female

Accessories (included)		
ADT106A-X External Pressure Manifold (Excl ADT761A-LLP)	1 pc	
9818 110V/220V external Power adapter	1 pc	
9725 Chargeable Li-ion battery	1 pc	
9240 DP gauge holder, rubber (Only for ADT761A-LLP)	1 pc	
9060 (Pressure module connection cable)	1 pc	
ADT100-761A-X Hose Test Kit, 5 feet flexible hose (excl ADT761A-LLP)	1 pc + 1 pc adapter	
1220211206 Adapter, quick female to barb (Only for ADT761A-D)	1 pc	

Accessories (included)		
9022 Test Leads for calibrator	2 sets (4 pcs)	
9907 Carrying case for 761A calibrator and accessory	1 pc	
O-rings	20 pcs	
Manual	1 pc	
Pressure Hose	1 pc for the ADT761A-D 1 pc for the ADT761A-BP	
ISO17025 accredited calibration certificate	1 pc	
ADT100-761Hose (Only for ADT761A-500/1K/ APXR)	1 pc (polyamide, 2,390 psi burst)	
Threaded plug	1 pc	
USB Cable	1 pc	
Barb Fittng	1 pc	
Silicone Tube	1 Meter each 2 pcs for the ADT761A-LLP 1 pc for the ADT761A-D	

Optional Accessories		
ADT160A	See pg. 27 for more info; connection cable sold separately	
9060	Pressure module connection cable	
9530	Additel/ACal Automated Calibration Software	
ADT100-761Hose	ADT761 hose, 5 feet (polyamide, 2,390 psi burst)	
ADT106A-X	External Pressure Manifold (Excl ADT761A-LLP)	
ADT100-761A-X	Hose Test Kit, 5 feet flexible hose	

Phone: 714-998-6899 Fax: 714-998-6999 Email: sales@additel.com

Rev # 20200826

Corporate Headquarters
2900 Saturn St #B
Brea, CA 92821, USA

Salt Lake City Office
1364 West State Rd. Suite 101
Pleasant Grove, UT 84062, USA