

Automated Pressure Calibrator ADT 761



- **Fully automated pressure calibrator with built-in pressure generator/ controller to as high as 40 bar (600 psi) or as low as 0.01 Pa (0.00004 inH₂O)**
- **Accuracy 0.02% FS**
- **Dual pressure modules**
- **Built-in filter and liquid trap with venting system prevents contamination of the calibrator**
- **Portable**

Overview

With a built-in high performance electronic pump and precision pressure controller, the 761 series portable automated pressure calibrators provide a turn-key solution for calibration of gauges, transmitters, and switches both in the field and in the laboratory. In a portable package, this calibrator can automatically generate pressures from 90% vacuum to 600 psi (40 bar) with 0.005% FS pressure control stability and 0.02% FS accuracy. To improve the calibrator accuracy, two pressure modules with differing ranges are built-in and integrated with the internal pump and controller.

The 761-LLP is specially designed for low pressure calibration, and pressures as low as 0.01 Pa (0.00004 inH₂O) can be automatically generated and controlled.

The 761-BP is designed for barometric gauge calibration. With a quartz pressure sensor, the accuracy of 761-BP can achieve 0.01%FS accuracy.

With optional external pressure modules (160 series), the 761 can measure pressures up to 10,000 psi (700 bar) with 0.025%FS accuracy. In addition to the pressure generation, control, and measurement capabilities, the 761 also features HART communication capability, supplies 24V loop power, and reads the current or voltage produced by the pressure transducers. The 761 is a state of the art automated pressure calibrator which brings automated pressure calibration to the field.

Features

- **Pressure Range**
Pressure generated by built-in pump and controlled automatically from 90% vacuum to 600 psi (40 bar)
Pressure measured with external pressure modules (160 series) to 10,000 psi (700 bar)
- **Accuracy (Fully temperature compensated)**
0.02%FS
0.05%FS (ADT761-LLP)
0.01%FS (ADT761-BP)
- **Control Stability**
<0.005%FS
ADT761-LLP: < 0.05 Pa (0.0002 inH₂O)
- **Contamination prevention system**
Built-in filter and liquid trap with venting system prevent contamination of the calibrator
Solid particles can be blocked by built-in filter
A small amount of Liquid can be collected by the built-in liquid trap
Both solid particles and liquid can be blown out through the venting system
- **Automation and Test Program**
Fully Automated pressure calibration
Task preset and auto run
Auto step
- **Easy to Use**
User friendly interface
Intuitive icon driven menu structure
- **Sourcing and Measuring electrical signals**
Measure mA or V with 0.01% RD + 0.005%FS accuracy
Source/sink 0 to 22mA current
24 VDC loop power supplied to pressure transmitter during test
Automated switch test

- **Misuse Protection**
Up to 30V misuse protection on any two sockets
- **Display**
7" LCD color screen (800X480)
- **Documenting and data logging**
Task management capability
Internal memory stores 200 tasks
Download tasks and upload results
- **HART Communication capability**
Support HART instrumentation
- **Rechargeable battery**
Rechargeable battery with up to 8 hours operation between charges
- **Leak testing**
Apply leak test to an external pressure system to determine the magnitude of pressure variations due to leaks
- **Pipeline Protection**
Special design the pipeline layout to avoid possible blockage and leakage
- **Portable**
Only 6 kg
- **Multi Lingual Interface**
English, German, French, Italian, Spanish, Portuguese, Simplified Chinese (Traditional Chinese, Japanese and Russian are available per request)
- **NIST Traceable**
NIST traceable calibration with data (included)

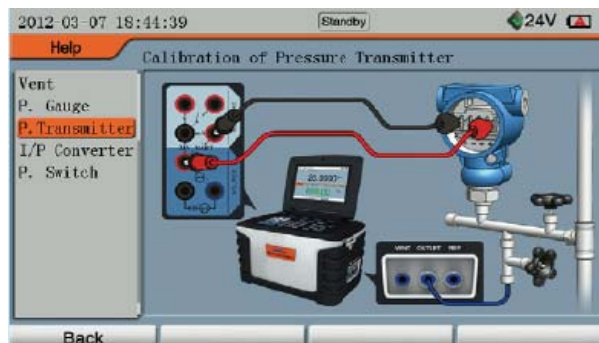


Specifications

- Control Stability**
 <0.005%FS;
 ADT761-LLP: < 0.05 Pa (0.0002 inH₂O)
- Pressure Connections**
 G1/8 Female on calibrator
 Two 1/4NPT(or 1/2NPT, 1/4BSP, M20×1.5)
 female hand-tight connectors on the
 external pressure manifold (included)
- External Pressure Module Connection**
 External pressure module connector
- Electrical Connection**
 4mm (0.156 inch) banana sockets
- Documenting and data logging**
 Task management capability
 Internal memory stores 200 tasks
 Download tasks and upload results
- Display**
 7" LCD color screen (800×480)
 Display rate: 5 readings per second

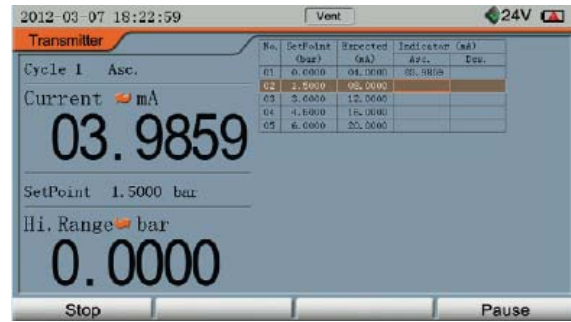


Task manual

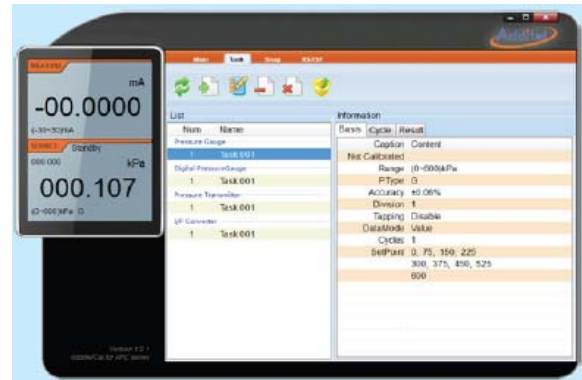


Built-in user manual

- Pressure Units**
 Pa, kPa, MPa, psi, bar, mbar, inH₂O@4°C, mmH₂O@4°C, inH₂O@20°C, mmH₂O@20°C, inHg@0°C, mmHg@0°C, kgf/cm², and hPa (ADT761- BP)
- Power**
 Battery: Rechargeable Li-ion Polymer battery (included)
 Li-Battery working time: ~8 hours
 Recharge time: ~3 hours
 External Power: 110/220V Power adapter (DC 27 V) (Included)
- Environmental Specification**
 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
 Humidity: <90%, non-condensing
- European Compliance**
 CE Marked
- Communication**
 RS232 (DB9/F, environmentally sealed)
 Baud rate: 2400, 4800, 9600, 19200, 38400, 57600, 115200
 Data length: 7 Bits, 8 Bits
 Stop bit: 1 Bit, 2 Bits
 Address: from 1 to 121
- Dimension**
 296mm X186mm X180mm
 (11.65" X 7.32" X 7.09")
 Weight: 5.6 kg (12.4 lb)
- Warranty**
 18 months



Pressure gauge / transmitter / switch calibration



Documenting

Pressure ranges

accredited by

Type	Model	Pressure range	Pressure module 1		Pressure module 2	
			Range	Accuracy	Range	Accuracy
Low/ Differential pressure	ADT761-LLP	-25 to 25 mbar (-10 to 10 inH ₂ O)	-2.5 to 2.5 mbar (-1 to 1 inH ₂ O)	0.05% FS	-25 to 25 mbar (-10 to 10 inH ₂ O)	0.05% FS
	ADT761-D	-0.95 to 1 bar (-13.5 to 15 psi)	-25 to 25 mbar (-10 to 10 inH ₂ O)	0.05% FS	-0.95 to 1 bar (-13.5 to 15 psi)	0.02% FS
Gauge pressure	ADT761-L	-0.95 to 7 bar (-13.5 to 100 psi)	-0.95 to 2.5 bar (-13.5 to 35 psi)	0.02% FS	0 to 7 bar (0 to 100 psi)	0.02% FS
	ADT761-M	-0.90 to 25 bar (-13 to 375 psi)	-0.9 to 2.5 bar (-13 to 35 psi)	0.02% FS	0 to 25 bar (0 to 375 psi)	0.02% FS
	ADT761-H	-0.90 to 40 bar (-13 to 600 psi)	-0.9 to 2.5 bar (-13 to 35 psi)	0.02% FS	0 to 40 bar (0 to 600 psi)	0.02% FS
Gauge/ Absolute Pressure	ADT761-LA	-0.95 to 7 bar (-13.5 to 100 psi)	-0.95 to 2.5 bar (-13.5 to 35 psi)	0.02% FS	-0.95 to 7 bar (-13.5 to 100 psi)	0.02% FS
		0.05 to 8 bar.a (1.2 to 115 psi.a)	0.05 to 3.5 bar.a (1.2 to 50 psi.a)	0.03% FS	0.05 to 8 bar.a (1.2 to 115 psi.a)	0.025% FS
	ADT761-MA	-0.90 to 25 bar (-13 to 375 psi)	-0.9 to 2.5 bar (-13 to 35 psi)	0.02% FS	-0.9 to 25 bar (-13 to 375 psi)	0.02% FS
		0.1 to 26 bar.a (1.7 to 390 psi.a)	0.1 to 3.5 bar.a (1.7 to 50 psi.a)	0.03% FS	0.1 to 26 bar.a (1.7 to 390 psi.a)	0.025% FS
	ADT761-HA	-0.90 to 40 bar (-13 to 600 psi)	-0.9 to 2.5 bar (-13 to 35 psi)	0.02% FS	-0.9 to 40 bar (-13 to 600 psi)	0.02% FS
		0.1 to 41 bar.a (1.7 to 615 psi.a)	0.1 to 3.5 bar.a (1.7 to 50 psi.a)	0.03% FS	0.1 to 41 bar.a (1.7 to 615 psi.a)	0.025% FS
Barometric pressure	ADT761-BP	100 to 1200 hPa	100 to 1200 hPa	0.01% FS	N/A	N/A

* One year accuracy (including yearly stability) except ADT761-LLP which is 0.05%FS calibration accuracy and 0.05%FS yearly stability.

** Additel 761 calibrators support 160 series intelligent digital pressure modules that are available for gauge, vacuum and absolute pressure from -1 bar to 700 bar (15 psi to 10,000 psi). Accuracy from 0.025%FS includes operation over -10°C to 50°C (14°F to 122°F), one year stability and calibration uncertainty. For detailed specification refer to 160 series pressure modules datasheet.

Electrical Measurement and Source Accuracy

	Range	Resolution	Accuracy
Voltage measurement	±30,000 V	0,1mV	±(0,01% RD + 0,005% FS)
Current measurement	±30,000 mA	0,1uA	±(0,01% RD + 0,005% FS)
Current source	0,000 to 22,000 mA	1uA	±(0,02% RD + 0,01% FS)
Switch test	If the switch has detective voltage, the range is from 3V to 24V.		
DC 24V output	24V ± 0.5V, 50mA		

Ordering information








ADT761 — L — N

Pressure range D/L/M:
See pressure range table.

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



Accessories (included)

External Pressure Manifold (ADT106) (Except 761-LLP)	1x	
9818 110V/220V external Power adapter	1x	
9722 Chargeable Li-ion battery	1x	
9022 Test Leads for calibrator	2 set (4 pieces)	
9020 Short circuit cable	1 set (2 pieces)	
9907 Carrying case for 761 calibrator and accessory	1x	
9060 Pressure module connection cable	1x	
O-rings(Except 761-LLP)	20x	
Manual	1x	
Tools	1x	
Hose	2x	
NIST traceable calibration certificate	1x	

* Additel/Land software could be downloaded for free at www.additel.com

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7 / 9

Optional accessories

Model number	Description	Picture
ADT100-761-4N	Hose Test Kit, 5 feet flexible hose, 0.156" (4mm) tube to 1/4NPT hand-tight quick connector	
ADT100-761-4B	Hose Test Kit, 5 feet flexible hose, 0.156" (4mm) tube to 1/4BSP hand-tight quick connector	
ADT106-N	External Pressure Manifold (with two 1/4NPT hand-tight quick connectors)	
ADT106-B	External Pressure Manifold (with two 1/4BSP hand-tight quick connectors)	
ADT106-M	External Pressure Manifold (with two M20X1.5 hand-tight quick connectors)	
ADT160	Pressure modules (please check Additel 160 datasheet)	
9060	Pressure module connection cable	

Selection guide for ADT 761

Automated pressure calibrator (controller)



Model Features	761-LLP	761-D	761-L	761-LA	761-M	761-MA	761-H	761-HA	761-BP
Pressure Range	-25 to 25 mbar (-10 to 10 inH2O)	-0.95 to 1 bar (-13.5 to 15 psi)	-0.95 to 7 bar (-13.5 to 100 psi)	0.05 to 8 bar.a (1.2 to 115 psi.a)	-0.90 to 25 bar (-13 to 375 psi)	0.1 to 26 bar.a (1.7 to 390 psi.a)	-0.90 to 40 bar (-13 to 600 psi)	0.1 to 41 bar.a (1.7 to 615 psi.a)	100 to 1200 hPa
Pressure Module 1	-2.5 to 2.5 mbar (-1 to 1 inH2O)	-25 to 25 mbar (-10 to 10 inH2O)	-0.95 to 2.5 bar (-13.5 to 35 psi)	0.05 to 3.5 bar.a (1.2 to 50 psi.a)	-0.9 to 2.5 bar (-13 to 35 psi)	0.1 to 3.5 bar.a (1.7 to 50 psi.a)	-0.9 to 2.5 bar (-13 to 35 psi)	0.1 to 3.5 bar.a (1.7 to 50 psi.a)	100 to 1200 hPa
Pressure Module 2	-25 to 25 mbar (-10 to 10 inH2O)	-0.95 to 1 bar (-13.5 to 15 psi)	0 to 7 bar (0 to 100 psi)	0.05 to 8 bar.a (1.2 to 115 psi.a)	0 to 25 bar (0 to 375 psi)	0.1 to 26 bar.a (1.7 to 390 psi.a)	0 to 40 bar (0 to 600 psi)	0.1 to 41 bar.a (1.7 to 615 psi.a)	NA
Differential Pressure	•	•							
Gauge Pressure	•	•	•	•	•	•	•	•	
Absolute Pressure				•		•		•	•
Barometric Pressure				•		•		•	•
Temperature Compensated	•	•	•	•	•	•	•	•	•
Built-in Electrical Pump	•	•	•	•	•	•	•	•	•
Built-in Filter	•	•	•	•	•	•	•	•	•
Built-in Liquid Trap	•	•	•	•	•	•	•	•	•
Source 0 to 22mA	•	•	•	•	•	•	•	•	•
Measure mA or V	•	•	•	•	•	•	•	•	•
Measure external pressure module	•	•	•	•	•	•	•	•	•
24V Loop power	•	•	•	•	•	•	•	•	•
Pressure switch test	•	•	•	•	•	•	•	•	•
HART Communication	•	•	•	•	•	•	•	•	•
Documenting	•	•	•	•	•	•	•	•	•