

# Additel 681A

## Digital Pressure Gauges



- Pressure ranges to 60,000 psi (4,200 bar)
- 0.02%, 0.05% FS or 0.1% RD accuracy
- Measures gauge or absolute pressure
- % pressure indication with fan-shaped graphic
- Fully temperature compensated accuracy (-10~50°C)
- Bluetooth communication
- Communication with Additel's Link Mobile App
- Large easy-to-read display
- Intrinsically safe version (681AEx)
- Data logging (up to 10,000,000 records)
- IP67 rated



### OVERVIEW

Additel's 681A Series Digital Pressure Gauges are designed to be your favorite tool for a wide range of pressure measurement and calibration applications. With features such as datalogging and Bluetooth technology included, you will find these gauges to be high in value at a reasonable cost. These durable IP67 rated gauges have been built with outdoor elements in mind and are the perfect fit for field work as well as in the laboratory. If you are working in an intrinsically sensitive area, look to our Ex-versions of this amazing digital pressure gauge to provide that extra level of safety in sensitive areas.

#### Durable:

The model ADT681A has been built with the finest materials to ensure that it can hold up the elements. Everything from the stainless steel outer shell to the innermost sensor design have been optimized to ensure that this gauge will keep you informed with on-demand and logged pressure readings for years to come. The IP67 rating ensures that dusty and wet environments won't hamper this gauges ability to perform while the shock and vibration resistance (5g vibration 10g shock) coupled with the corrosion resistant wetted parts help to protect the inner workings of these durable Additel gauges.

#### Easy to use:

Technicians often have tight schedules and heavy workloads, which leaves little extra time for correcting mistakes or doing rework. The ADT681A solves this problem with carefully designed button functions and menus that are smooth and easy to use which saves on valuable time. The display is clear in bright sunlight, and the backlight can be turned on with a one-button press for use in low light situations. The pressure value can be displayed in large fonts and can be read from a few meters away, making this gauge the perfect device for no-nonsense measurement, calibration and verification work.




#### Easy to maintain:

The ADT681A is designed with membrane buttons, making them easy to clean and maintain over time, which can simply be wiped clean for quick and simple cleaning. Coupled with the extra-long battery life of these easy-to-use gauges, you will find that maintenance is minimal and infrequent.



## SPECIFICATIONS

Metrology Made Simple

Model	ADT681A	ADT681AEx
Description	Digital Pressure Gauge	Intrinsically Safe Digital Pressure Gauge
Intrinsic Safety & European Compliance	CE marked	CE CE marked
		 EU: II 1G EX ia IIC T4 Ga T4 at -20~50°C
		North America: CLASS I, Division 1, Groups A, B, C and D, T4  CLASS I, Zone 0, AEx ia IIC T4 Ga T4 at -20~50°C
		 International: EX ia IIC T4 Ga T4 at -20~50°C
Accuracy (For detailed accuracy, please see pressure range table)	681A(Ex)-02: 0.02% of full span	
	681A(Ex)-05: 0.05% of full span	
	681A(Ex)-RD: 0% to 20% of range: $\pm$ (0.02% of full span) 20% to 110% of range: $\pm$ (0.1% of reading) vacuum: $\pm$ (0.25% of FS), FS=-14.5psi	
	Built-in barometer: $\pm$ 55 Pa	
Gauge Types	Gauge pressure, compound pressure, absolute pressure (calculated by gauge pressure and barometric pressure), differential pressure and barometric pressure	
Multifunction Fan-shaped section	Atmospheric pressure, ambient temperature, peak-peak values (max, min), TARE, leak test, pressure percentage display, time display, data logging status	
Display	Wide viewing angle FSTN segment code LCD, three partition design	
	White backlight, backlight time: ON, 15 seconds, 30 seconds, 45 seconds, 60 seconds, the default is 15 seconds	
	5~6 digit display can be switched, character height 14.8mm(0.58"), main display + unit display + fan-shaped section	
Pressure Units	Pa, kPa, MPa, psi, mbar, bar, kgf/cm <sup>2</sup> , %, mmH <sub>2</sub> O(4°C), mmHg(0°C), InH <sub>2</sub> O(4°C), InHg(0°C)	
	6 engineering water column units: inH <sub>2</sub> O(20°C), inH <sub>2</sub> O(60°F), mmH <sub>2</sub> O(20°C), mmH <sub>2</sub> O(15°C), ftH <sub>2</sub> O(60°F), ftH <sub>2</sub> O(4°C)	
	1 custom unit: identified by the USER code, and the conversion coefficient can be set through Additel -Link	
Environmental	Compensated Temperature: 14°F to 122°F (-10°C to 50°C)	
	Operating Temperature: -4°F to 122°F (-20°C to 50°C)	
	Storage Temperature: -40°F to 167°F (-40°C to 75°C)	
	Humidity: 5%RH~95%RH, no condensing	
Pressure Port	$\leq$ 15,000 psi: 1/4NPT male, 1/2NPT male, 1/4BSP male, 1/2BSP male, M20x1.5 male	
	$>$ 15,000 psi: 1/4HP female or 1/4HP male	
	*1/4HP female: Autoclave F-250-C, 9/16" - 18 UNF-2B	
	*1/4HP male: Autoclave M-250-C, 9/16" - 18 UNF-2A	
	Differential Pressure: barb fitting	
Other connections available per request		
Power	Battery: 3 AA alkaline batteries	
	Battery life:	
	1. Super stable mode <sup>[1]</sup> : 4000 hours (3 reading/s, default), 1000 hours (10 reading/s)	
	2. Low power mode <sup>[2]</sup> : 5000 hours (2 reading/s), 9000 hours (1 reading/s), 18000 hours (1 reading/10s)	
Power auto-off: 120, 90, 60, 45, 30, 15 minute auto-off options or never		
External power: power supply through USB (optional)		
Enclosure	Case material: 304 SS; Front panel material: anti-static PET; Rubber boot material (optional): anti-static TPU	
	Wetted parts: 316L SS	
	Dimension: $\varnothing$ 4.65" x 1.65" depth x 7" height ( $\varnothing$ 118 mm x 42 mm depth x 178 mm height)	
	Weight: 1.5 lbs (0.68 kg)	
Compliance	Protection Level: IP67 (against 1 meter water immersion for 30 mins)	
	Vibration: 5 g; Shock Resistance: 10 g	
	1 meter drop test (without rubber boot)	
Data Logging (Optional)	Data storage: 10,000,000 records (time and pressure) or 5,000,000 records (time, pressure and temperature)	
	Rate: user-selectable from 0.1 to 99,999 second intervals	
Communication	Bluetooth (BLE4.2), USB-C, RS232 *(Do not use the USB-C or RS-232 connector in a hazardous area)	
Calibration	ISO 17025 Accredited Calibration Certificate with data	
Warranty	1 year	

Note:

[1] The pressure sensor has been powered continuously when the gauge is on, to improve the measurement resolution and reduce the impact of ambient humidity.

[2] The pressure sensor will be powered off after each sampling, to improve the continuous working hours.

## PRESSURE RANGE

Gauge Pressure <sup>[1]</sup>						
P/N	Pressure Range		Media <sup>[3]</sup>	Annual Accuracy		Burst Pressure
	(psi)	(bar)		%FS	%RD <sup>[4]</sup>	
V15 <sup>[2]</sup>	-15	-1.0	G	0.02	N/A	3x
V15 <sup>[2]</sup>	-15	-1.0	G, L	0.05	N/A	3x
GP2	2	0.16	G	0.05	N/A	3x
GP5	5	0.35	G, L	0.05	0.1	3x
GP10	10	0.7	G, L	0.02,0.05	0.1	3x
GP15	15	1.0	G, L	0.02,0.05	0.1	3x
GP30	30	2.0	G, L	0.02,0.05	0.1	3x
GP50	50	3.5	G, L	0.02,0.05	0.1	3x
GP100	100	7.0	G, L	0.02,0.05	0.1	3x
GP150	150	10	G, L	0.02,0.05	0.1	3x
GP300	300	20	G, L	0.02,0.05	0.1	3x
GP500	500	35	G, L	0.02,0.05	0.1	3x
GP600	600	40	G, L	0.02,0.05	0.1	3x
GP1K	1,000	70	G, L	0.02,0.05	0.1	3x
GP1.5K	1,500	100	G, L	0.02,0.05	0.1	3x
GP2K	2,000	140	G, L	0.02,0.05	0.1	3x
GP3K	3,000	200	G, L	0.02,0.05	0.1	3x
GP5K	5,000	350	G, L	0.02,0.05	0.1	3x
GP10K	10,000	700	G, L	0.02,0.05	0.1	1.5x
GP15K	15,000	1,000	G, L	0.05 (0.1)	0.1	1.5x
GP20K	20,000	1,400	G, L	0.05 (0.1)	N/A	1.5x
GP25K	25,000	1,600	G, L	0.05 (0.1)	N/A	1.5x
GP30K	30,000	2,000	G, L	0.05 (0.1)	N/A	1.5x
GP36K	36,000	2,500	G, L	0.05 (0.1)	N/A	1.5x
GP40K	40,000	2,800	G, L	0.05 (0.1)	N/A	1.35x
GP50K	50,000	3,500	G, L	0.1 (0.2)	N/A	1.2x
GP60K	60,000	4,200	G, L	0.1 (0.2)	N/A	1.1x

[1] Sealed gauge pressure for above 1,000 psi

[2] Vacuum range is (-15-0) psi

[3] G=Gas, L=Liquid

[4] %RD accuracy: 0% to 20% of range:  $\pm$  (0.02% of full span), 20% to 110% of range:  $\pm$  (0.1% of reading)  
vacuum:  $\pm$  (0.25% of FS), FS=-14.5psi

Barometric Pressure					
P/N	Pressure Range		Media <sup>[1]</sup>	Annual Accuracy	Burst Pressure
	Low	High			
BP	60 kPa	110 kPa	G	$\pm$ 55Pa	3x
BPH	60 kPa	110 kPa	G	$\pm$ 22Pa	3x

[1] G=Gas



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Compound Pressure						
P/N	Pressure Range		Media <sup>[1]</sup>	Accuracy		Burst Pressure
	(psi)	(bar)		%FS <sup>[3]</sup>	%RD <sup>[4]</sup>	
CP2	±2	±0.16	G	0.05	N/A	3x
CP5	±5	±0.35	G, L <sup>[2]</sup>	0.02,0.05	0.1	3x
CP10	±10	±0.7	G, L <sup>[2]</sup>	0.02,0.05	0.1	3x
CP15	±15	±1.0	G, L <sup>[2]</sup>	0.02,0.05	0.1	3x
CP30	-15~30	-1~2.0	G, L <sup>[2]</sup>	0.02,0.05	0.1	3x
CP50	-15~50	-1~3.5	G, L	0.02,0.05	0.1	3x
CP100	-15~100	-1~7.0	G, L	0.02,0.05	0.1	3x
CP150	-15~150	-1~10	G, L	0.02,0.05	0.1	3x
CP300	-15~300	-1~20	G, L	0.02,0.05	0.1	3x
CP500	-15~500	-1~35	G, L	0.02,0.05	N/A	3x
CP600	-15~600	-1~40	G, L	0.02,0.05	N/A	3x
CP1K	-15~1000	-1~70	G, L	0.02,0.05	N/A	3x

[1] G=Gas, L=Liquid

[2] 0.02%FS for gas media only

[3] FS = upper limit of range - lower limit of range

[4] %RD accuracy: 0% to 20% of range: ± (0.02% of full span)  
 20% to 110% of range: ± (0.1% of reading)  
 vacuum: ± (0.25% of FS), FS=-14.5psi



IP67 Rated

Differential Pressure						
P/N	Pressure Range		Media <sup>[1]</sup>	Accuracy (%FS) <sup>[3]</sup>	Burst Pressure	Static Pressure Range (mbar)
	(inH <sub>2</sub> O)	(mbar)				
DP1	±1	±2.5	G	0.05 <sup>[2]</sup>	50X	±250
DP2	±2	±5.0	G	0.05 <sup>[2]</sup>	25X	±250
DP5	±5	±10	G	0.05	10X	±250
DP10	±10	±25	G	0.05	5X	±250
DP20	±20	±50	G	0.05	25X	±2,500
DP30	±30	±75	G	0.05	15X	±2,500
DP50	±50	±125	G	0.05	10X	±2,500
DP100	±100	±250	G	0.02	5X	±2,500
DP150	±150	±350	G	0.02	10X	±7,000
DP300	±300	±700	G	0.02	5X	±7,000

[1] G=gas

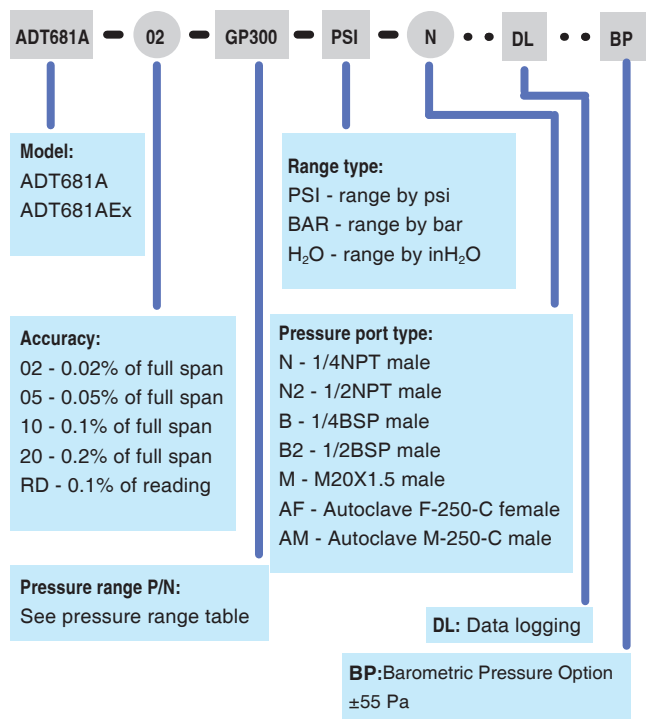
[2] Calibration interval: 180 days

[3] FS = upper limit of range - lower limit of range



## ORDERING INFORMATION

### Model Number



### Accessories Included

Rubber boot
AA alkaline batteries (3 pcs)
USB-C cable
Silicone tube - 1 meter each (2 pcs for DP models only)
ISO 17025 accredited calibration certificate

### Optional Accessories

Model number	Description
9040	Hanging strap with magnet
9257	Field rain cover
9810	USB power adaptor
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
9502	Additel Log II data logging software (PC)
9050-EXT	RS 232 (DB9/M) extension cable, 9 feet
9902	Carrying case for four gauges
9903	Carrying case for one gauge