

ADT 681 Digital Pressure Gauges



Gauge Pressure



Differential Pressure

- Pressure ranges up to 4200 bar (60,000 psi)
- Accuracy: 0.02%, 0.05%, 0.1%, 0.2% FS or 0.1% of reading
- % pressure indication with fan-shaped graph scale for visual reference
- Fully temperature compensated accuracy
- Panel mount gauges are available
- Intrinsically safe version (ADT681IS)
- Data logging option
- IP67 rated (ADT681IS)

By DAkkS according to DIN EN ISO / IEC 17025: 2005 accredited laboratory.
The accreditation is valid only for the certificate system D-K-15055-01-00
listed accreditation scope.



Deutsche
Akkreditierungsstelle
D-K-15055-01-00



Overview

With advanced microprocessor technology and state-of-the-art silicon pressure sensors, the 681 series digital pressure gauges provide an accurate, reliable, and economic solution for a wide range of pressure applications. They are loaded with functionality and remarkably easy to use. To reach the best performance, every silicon pressure sensor in our gauges is specially aged, tested and screened before assembly. Fully temperature compensated accuracy means every sensor is pressure tested at several environmental temperatures from -10°C to 50°C. With this test data individual coefficients are generated and stored in the gauge characterizing its performance over the full temperature compensated range. And now the ADT 681IS comes with an IP67 rating meaning it is dust resistant and water proof, submersible in 1 meter of water. The 681 series digital pressure gauges are unmatched in performance and reliability. Best of all, they are very affordable.

Features

- **Pressure ranges**
up to 4200 bar (60,000 psi)
- **Accuracy**
0.02% full scale accuracy (681-02)
0.05% full scale accuracy (681-05)
0.1% full scale accuracy (681-10)
0.2% full scale accuracy (681-20)
0.1% reading scale accuracy (681-RD)
- IP67 rated: Submersible in 1 meter of water (681IS)
- Fully temperature compensated accuracy
from -10°C to 50°C (14°F to 122°F)
- Up to eleven selectable pressure units
- Large, easy to read display with 5-digit resolution
- Backlit display
- % pressure indication with fan-shaped graph scale for visual reference
- Display flash warning when pressure over 120% of FS
- Bottom mount or panel mount
- ATEX certified intrinsically safe (Model 681IS)
- NIST traceable calibration with data (included)
- 9V battery power or AC adapter (optional)
- Data logging to 21,843 records (includes date, time, pressure and temperature)

Specifications

- **Model**

ADT681: Regular gauge
ADT681IS: ATEX certified intrinsically safe

- **Accuracy** (For detailed accuracy, please see pressure range table)

681(IS)-02: 0.02% of full scale
681(IS)-05: 0.05% of full scale
681(IS)-10: 0.1% of full scale
681(IS)-20: 0.2% of full scale
681(IS)-RD: 0% to 20% of Range: 0.02% of full scale
20% to 110% of Range: 0.1% of reading
Vacuum: 0.25% of full scale ⁽¹⁾⁽²⁾

⁽¹⁾ FS = -14.5 psi

⁽²⁾ Applicable ADT681-RD-CPX

- **Gauge Types**

Gauge pressure
Compound pressure
Absolute pressure
Differential pressure

- **Fan-shaped Graph Scale**

Similar to analog dials, including pressure swing, % indication with fan-shaped graph scale for visual reference, low/high alarm.

- **Display**

Description: 5 full digit FSTN LCD
Display rate: 3 readings per second (Default setting).
Adjustable from 10 readings per second to 1 reading every ten seconds
Numeral display height: 16.5mm (0.65")

- **Pressure Units**

Pa, kPa, MPa, psi, bar, mbar, kgf/cm², inH₂O@4°C mmH₂O@4°C, inHg@0°C, mmHg@0°C

- **Environmental**

Compensated Temperature: -10°C to 50°C
Operating Temperature*: -10°C to 50°C
Storage Temperature: -20°C to 70°C
Humidity: <95%

- **Pressure Port**


up to 1000 bar: 1/4NPT male, 1/2NPT male, 1/4BSP male, 1/2BSP male, M20x1,5 male
over 1000 bar: 1/4HP female: Autoclave F-250-C, 9/16" -18UNF-2B
or 1/4HP male : Autoclave M-250-C, 9/16" -18UNF-2A ab 1000 bar
Ø 6 mm Testpipe for Compound pressure other connections available on request

- **Power**

Battery: One 9V alkaline battery (included)
Battery life: 300 hours (10 readings/sec.) 600 hours (3 readings/sec.) or 6000 hours (1 reading/10sec.)
Power auto-off: 60 minutes power auto-off, Auto-off may be disabled
External power: 110/220V external power adapter (optional)

- **Enclosure**

Case material: Aluminum alloy
Wetted parts: 316L SS
Dimension: ∅ 110 mm x 35 mm depth x 176 mm height
(panel mount gauge: ∅ 140 mm x 86 mm depth)
Weight: 0.6 kg

- **Compliance**
Protection Level: IP67 (available for ADT681IS GP15-40K)
Vibration: 5g (20-2000Hz)
Shock Resistance: 100g/11ms
- **Data Logging**
Data storage: 21,843 records (each record incl. date, time, pressure and temperature)
Rate: user-selectable from 1 to 99,999 second intervals
- **Intrinsic Safety and European Compliance**
CE- marked
ATEX certified intrinsically safe (ADT681IS)
 II 1G EX ia IIC T4 Ga
- **Communication**
RS232
(Do not use the RS-232 connector in a hazardous atmosphere)
- **Warranty**
1 Year



Pressure Ranges

Gauge pressure ⁽¹⁾						
P/N	Pressure range		Media	Accuracy		Burst pressure
	psi	bar		% FS	% RD	
V15	-15	-1.0	Gas	0.025 (0.05, 0.1, 0.2)	N/A	3x
GP2	2	0.16	Gas	0.05 (0.1, 0.2)	N/A	3x
GP5	5	0.35	Gas	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP10	10	0.7	Gas	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP15	15	1.0	Gas / Liquid ⁽²⁾	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP30	30	2.0	Gas / Liquid ⁽²⁾	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP50	50	3.5	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP100	100	7.0	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP300	300	20	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP500	500	35	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP600	600	40	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP1K	1000	70	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP2K	2000	140	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP3K	3000	200	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP5K	5000	350	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP10K	10000	700	Gas / Liquid	0.025 (0.05, 0.1, 0.2)	0.1	3x
GP15K	15000	1000	Gas / Liquid	0.05 (0.1, 0.2)	0.1	2x
GP20K	20000	1400	Gas / Liquid	0.05 (0.1, 0.2)	N/A	1.5x
GP25K	25000	1600	Gas / Liquid	0.1(0.2)	N/A	1.5x
GP30K	30000	2000	Gas / Liquid	0.1(0.2)	N/A	1.5x
GP36K	36000	2500	Gas / Liquid	0.1(0.2)	N/A	1.5x
GP40K	40000	2800	Gas / Liquid	0.1(0.2)	N/A	1.1x
GP50K	50000	3500	Gas / Liquid	0.1(0.2)	N/A	1.1x
GP60K	60000	4200	Gas / Liquid	0.1(0.2)	N/A	1.1x

(1) sealed for pressure ranges exceeding 70 bar (1000 psi)

(2) 0.025% FS only for gas devices

Absolute Pressure					
P/N	Pressure range		Media	Accuracy (% FS)	Burst pressure
	psi	bar			
AP5	5	0.35	Gas	0.1 (0.2)	3x
AP10	10	0.7	Gas	0.1 (0.2)	3x
AP15	15	1.0	Gas	0.1 (0.2)	3x
AP30	30	2.0	Gas	0.1 (0.2)	3x
AP50	50	3.5	Gas	0.1 (0.2)	3x
AP100	100	7.0	Gas / Liquid	0.05 (0.1, 0.2)	3x
AP300	300	20	Gas / Liquid	0.05 (0.1, 0.2)	3x
AP500	500	35	Gas / Liquid	0.05 (0.1, 0.2)	3x
AP1K	1000	70	Gas / Liquid	0.05 (0.1, 0.2)	3x
AP3K	3000	200	Gas / Liquid	0.05 (0.1, 0.2)	3x
AP5K	5000	350	Gas / Liquid	0.05 (0.1, 0.2)	3x
BP	60 – 110 kPa		Gas / Liquid	0.1	3x

Differential pressure						
P/N	Pressure range		Media	Accuracy (% FS) ⁽¹⁾	Burst pressure	Static Pressure Range
	inH2O	mbar				
DP1	±1	±2.5	Gas	0.05 ⁽²⁾	100x	±10 psi
DP2	±2	±5.0	Gas	0.05 ⁽²⁾	100x	±10 psi
DP5	±5	±10	Gas	0.05 ⁽²⁾	50x	±10 psi
DP10	±10	±25	Gas	0.05 ⁽²⁾	20x	±10 psi
DP20	±20	±50	Gas	0.05	20x	±10 psi
DP30	±30	±75	Gas	0.05	20x	±10 psi
DP50	±50	±160	Gas	0.05	3x	±10 psi
DP150	±150	±350	Gas	0.02 (0.05)	3x	50 psi
DP300	±300	±700	Gas	0.02 (0.05)	3x	50 psi

⁽¹⁾ FS specification applies to the span of the range: accuracy includes one year stability.

⁽²⁾ 0.05% FS accuracy (incl. 6 months stability). One year accuracy is 0.05%FS calibration accuracy combined with 0.05%FS one year stability.

Compound Pressure ⁽¹⁾						
P/N	Pressure range		Media	Accuracy		Burst pressure
	psi	bar		%FS ⁽²⁾	%RD	
CP2	±2	±0.16	Gas	0.05 (0.1,0.2)	N/A	3x
CP5	±5	±0.35	Gas	0.025(0.05,0.1,0.2)	0.1	3x
CP10	±10	±0.7	Gas	0.025(0.05,0.1,0.2)	0.1	3x
CP15	±15	±1	Gas	0.025(0.05,0.1,0.2)	0.1	3x
CP30	-15 to 30	-1 to 2	Gas	0.025(0.05,0.1,0.2)	0.1	3x
CP100	-15 to 100	-1 to 7	Gas, Liquid	0.025(0.05,0.1,0.2)	0.1	3x
CP300	-15 to 300	-1 to 20	Gas, Liquid	0.025(0.05,0.1,0.2)	0.1	3x

⁽¹⁾ sealed for pressure ranges exceeding 70 bar (1000 psi)

⁽²⁾ FS specification applies to the span of the range: accuracy includes one year stability.

Accessories included

- ADT 681
- 9V alkaline battery (1 pc)
- Rubber boot (Except panel mount gauges)
- Manual
- NIST traceable calibration certificate

Optional accessories	
Model number	Description
9812	110V/220V external power adapter (DC 9V) for 681 digital pressure gauge.
9502	Additel/Log II real time data logging and graphical software for 681 and 672.
9506	Additel/PCal pressure calibration software
9050	USB to RS232 (DB9/M) Adapter
9900-681	Carrying Case for one 681 digital pressure gauge
9251	Rubber boot for ADT 681