# SC METROMAT SRL

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Additel
*Precision under pressure*

# Manometru digital, ADT 681

- Pressure ranges to 40,000 psi (2,800 bar)
- 0.02%, 0.05%, 0.1%, 0.2% FS or 0.1%RD accuracy
- % pressure indication with fan-shaped graph scale for visual reference
- Fully temperature compensated accuracy
- Panel mount gauges are available
- Intrinsically safe version (681IS)
- Data logging option
- IP67 rated (681IS)



Gauge pressure Differential pressure

## 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. At Additel, 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 ADT681IS comes with an IP67 rating meaning it is dust resistant and water proof, submersible in 1 meter of water.

**Designed to fit your need**

Additel pressure gauges give you the widest variety of sensor choices on the market. Whether you require low inches of water measurement or very high pressure measurement, we have a gauge that will meet your need. We offer sensors which are ±1 in$H_2O$ (±2.5 mbar) to 40K psi (2,800 bar) and everything in between.

Do your applications require you to measure both positive and vacuum pressure? Our compound gauges do not compromise accuracy and provides you with the same high accuracy specification on both positive and vacuum pressures. We offer a wide variety up to 300 psi (20 bar). If you need a higher range, just contact us and we can likely customize one to meet your need. We also offer absolute pressure sensors to 5K psi (350 bar) and a full range of differential pressure sensors from ±1 in$H_2O$ (±2.5 mbar) to ±300 in$H_2O$ (±700 mbar). Are you looking for a pressure gauge to use in hazardous areas? Our ATEX-certified intrinsically safe models (681IS) are designed for pressure measurement in hazardous areas.

If you need to panel mount our sensors, we offer the option (see ordering information) for a back-mounted pressure port and gauge housing designed to fit in a panel. And most recently, we've added the option to do stand-alone data logging with the 681. Now you can record more than 21,000 records internal to the 681 series. Each record includes date, time, pressure and temperature readings. Download the logged data with our free Additel/Land software or you can purchase our Additel/Log II for real-time logging and data analysis. The 681 series digital pressure gauges are unmatched in performance and reliability. Best of all, they are very affordable.

## FEATURES

- Pressure ranges to 40,000 psi (2,800 bar)
- 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 14°F to 122°F (-10°C to 50°C)
- 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**
  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
  (For detailed accuracy, please see pressure range table)

- **Gauge Types**
  Gauge pressure — Compound pressure
  Absolute pressure — Differential pressure
  Barometric 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/cm$^2$, in$H_2O$@4°C mm$H_2O$@4°C, inHg@0°C, mmHg@0°C

- **Environmental**
  Compensated Temperature: 14°F to 122°F (-10°C to 50°C)
  Operating Temperature: 14°F to 122°F (-10°C to 50°C)
  Storage Temperature: -4°F to 158°F (-20°C to 70°C)
  Humidity: <95%

- **Pressure Port**
  1/4NPT male, 1/2NPT male, 1/4BSP male, 1/2BSP male, M20×1.5 male (≤15,000 psi)
  1/4HP female or 1/4HP male( >15,000 PSI)
  *1/4HP female: Autoclave F-250-C, 9/16" - 18 UNF-2B
  *1/4HP male: Autoclave M-250-C, 9/16" - 18 UNF-2A
  0.236 inch (Ø6 mm) test hose (for differential pressure)
  Other connections available per request

- **Power**
  Battery: One 9V alkaline battery (included)
  Battery life:
  1. High power mode: 320 hours
  2. Low power mode: 300 hours (10 readings/s), 600 hours (3 reading/s), or 4000 hours (1 reading/10s)
  Power auto-off: 60 minutes power auto-off. Auto-off may be disable
  External power: 110/220V external power adapter (optional)

- **Enclosure**
  Case material: Aluminum alloy
  Wetted parts: 316L SS
  Dimension: Ø110mm X 35mm depth X 176mm height (panel mount gauge: Ø140mm X 86mm depth)
  Weight: 0.6kg

- **Compliance**
  Protection Level: IP67(available for 681IS GP15-40K)
  Vibration: 5g (20-2000 Hz)
  Shock Resistance: 100g/11ms

- **Data Logging**
  Data storage: 21,843 records (each record includes 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)
  Ex 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 [2] | Accuracy | | Burst Pressure |
|---|---|---|---|---|---|---|
| | (psi) | (bar) | | %FS | %RD | |
| V15 | -15 | -1.0 | G | 0.02 (0.05, 0.1, 0.2) | N/A | 3× |
| GP2 | 2 | 0.16 | G | 0.05 (0.1, 0.2) | N/A | 3× |
| GP5 | 5 | 0.35 | G | 0.05 (0.1, 0.2) | 0.1 | 3× |
| GP10 | 10 | 0.7 | G | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP15 | 15 | 1.0 | G, L[3] | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP30 | 30 | 2.0 | G, L[3] | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP50 | 50 | 3.5 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP100 | 100 | 7.0 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP150 | 150 | 10 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP300 | 300 | 20 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP500 | 500 | 35 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP600 | 600 | 40 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP1K | 1,000 | 70 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP2K | 2,000 | 140 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP3K | 3,000 | 200 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP5K | 5,000 | 350 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP10K | 10,000 | 700 | G, L | 0.02 (0.05, 0.1, 0.2) | 0.1 | 3× |
| GP15K | 15,000 | 1,000 | G, L | 0.05 (0.1,0.2) | 0.1 | 2× |
| GP20K | 20,000 | 1,400 | G, L | 0.05 (0.1,0.2) | N/A | 1.5× |
| GP25K | 25,000 | 1,600 | G, L | 0.1 (0.2) | N/A | 1.5× |
| GP30K | 30,000 | 2,000 | G, L | 0.1 (0.2) | N/A | 1.5× |
| GP36K | 36,000 | 2,500 | G, L | 0.1 (0.2) | N/A | 1.5× |
| GP40K | 40,000 | 2,800 | G, L | 0.1 (0.2) | N/A | 1.1× |

[1] Sealed gauge pressure for above 1,000 psi
[2] G=Gas, L=Liquid
[3] 0.02% FS for gas media only

# Additel 681 Digital Pressure Gauges

| *Absolute Pressure* | | | | | |
|---|---|---|---|---|---|
| P/N | Pressure Range | | Media [1] | Accuracy(%FS) | Burst Pressure |
| | (psi) | (bar) | | | |
| AP5 | 5 | 0.35 | G | 0.1 (0.2) | 3× |
| AP10 | 10 | 0.7 | G | 0.1 (0.2) | 3× |
| AP15 | 15 | 1.0 | G | 0.1 (0.2) | 3× |
| AP30 | 30 | 2.0 | G | 0.1 (0.2) | 3× |
| AP50 | 50 | 3.5 | G | 0.1 (0.2) | 3× |
| AP100 | 100 | 7.0 | G, L | 0.05 (0.1, 0.2) | 3× |
| AP300 | 300 | 20 | G, L | 0.05 (0.1, 0.2) | 3× |
| AP500 | 500 | 35 | G, L | 0.05 (0.1, 0.2) | 3× |
| AP1K | 1,000 | 70 | G, L | 0.05 (0.1, 0.2) | 3× |
| AP3K | 3,000 | 200 | G, L | 0.05 (0.1, 0.2) | 3× |
| AP5K | 5,000 | 350 | G, L | 0.05 (0.1, 0.2) | 3× |

[1] G=Gas, L=Liquid

| *Differential Pressure* | | | | | | |
|---|---|---|---|---|---|---|
| P/N | Pressure Range | | Media | Accuracy (%FS)[1] | Burst Pressure | Static Pressure Range |
| | ($inH_2O$) | (mbar) | | | | |
| DP1 | ±1 | ±2.5 | G | 0.05[2] | 100× | ±10 psi |
| DP2 | ±2 | ±5.0 | G | 0.05[2] | 100× | ±10 psi |
| DP5 | ±5 | ±10 | G | 0.05[2] | 50× | ±10 psi |
| DP10 | ±10 | ±25 | G | 0.05[2] | 20× | ±10 psi |
| DP20 | ±20 | ±50 | G | 0.05 | 20× | ±10 psi |
| DP30 | ±30 | ±75 | G | 0.05 | 20× | ±10 psi |
| DP50 | ±50 | ±160 | G | 0.05 | 3× | ±10 psi |
| DP150 | ±150 | ±350 | G | 0.02 (0.05) | 3× | 50 psi |
| DP300 | ±300 | ±700 | G | 0.02 (0.05) | 3× | 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 [2] | Accuracy | | Burst Pressure |
| | (psi) | (bar) | | %FS[3] | %RD | |
| CP2 | ±2 | ±0.16 | G | 0.05 (0.1,0.2) | N/A | 3× |
| CP5 | ±5 | ±0.35 | G | 0.02 (0.05,0.1,0.2) | 0.1 | 3× |
| CP10 | ±10 | ±0.7 | G | 0.02 (0.05,0.1,0.2) | 0.1 | 3× |
| CP15 | ±15 | ±1 | G | 0.02 (0.05,0.1,0.2) | 0.1 | 3× |
| CP30 | -15 to 30 | -1 to 2 | G | 0.02 (0.05,0.1,0.2) | 0.1 | 3× |
| CP100 | -15 to 100 | -1 to 7 | G, L | 0.02 (0.05,0.1,0.2) | 0.1 | 3× |
| CP300 | -15 to 300 | -1 to 20 | G, L | 0.02 (0.05,0.1,0.2) | 0.1 | 3× |

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

[2] G=Gas, L=Liquid

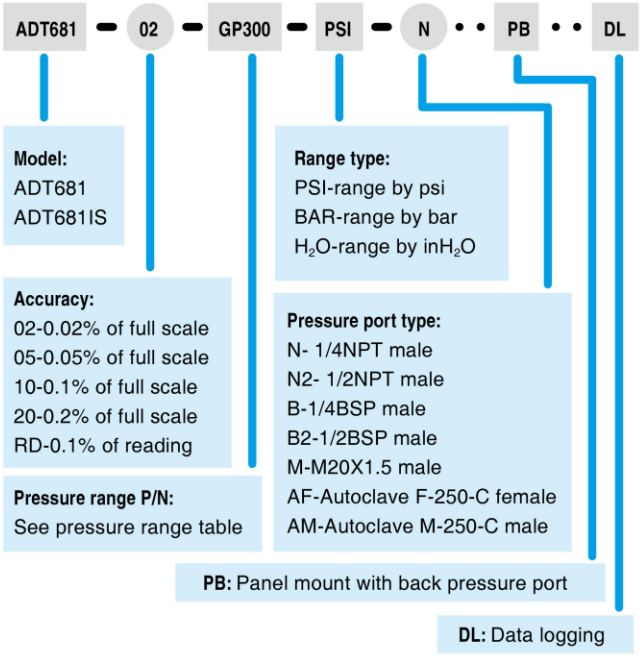
[3] FS specification applies to the span of the range.

| *Barometric Pressure* | | | | | |
|---|---|---|---|---|---|
| P/N | Pressure Range | | Media | Accuracy | Burst Pressure |
| | Low | High | | | |
| BP | 60 kPa | 110 kPa | G | 40 Pa | 3× |

## ORDERING INFORMATION



### Model Number




### Accessories included

Rubber boot (Except panel mount)
9V alkaline battery (1 pc)
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 |
| 9050-EXT | RS 232 (DB9/M) extension cable, 9 feet |
| 9900-681 | Carrying Case for one 681 digital pressure gauge |
| 9251 | Rubber boot for ADT681 |

Note: For oil-free applications contact Additel.

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