

# Additel 686

## Advanced Digital Pressure Gauges



- Pressure ranges up to 60,000 psi (4,200 bar)
- 0.02%, 0.05% FS or 0.1% RD Accuracy
- Color Touchscreen Display
- Every model measures Gauge or Absolute Pressure
- Built-in Barometer
- Intuitive Smartphone Like Interface
- Wi-Fi (optional)
- Bluetooth and USB communication
- Data logging (optional)
- Communicates with Additel's Link Mobile App
- IP67 Rated



Additel 686

### OVERVIEW

Additel's 686 Advanced Digital Pressure Gauges will redefine the way you want to measure pressure! With wireless remote connectivity, microprocessor technology, state-of-the-art silicon pressure sensors and optional onboard storage capacity, these attractive and fully temperature compensated gauges will provide the performance, durability and reliability you've come to expect from genuine Additel products. The all new modern menu structure and control interface bring a new and refreshing experience to pressure calibration work. This completely new way of interfacing with our gauges makes the ADT686 a real pleasure to use. The handy Additel Link app gives users the ability to remotely monitor these gauges from the convenience of a personal device or cell phone. With an abundance of options to choose from, you can configure these pressure gauges to precisely fit your specific pressure calibration and measurement needs. With an IP67 rating, you will find that these amazing pressure gauges can be used in the field or laboratory to meet the most demanding pressure calibration needs.

#### A Modern User Experience:

Additel has gone above and beyond to provide our customers with the best possible experience when using these new and revolutionary gauges. The 3.4 inch color touchscreen display comes with a protective replaceable tempered glass screen and is a refreshing update to the traditional push button or blister pad interface. With an easy to navigate menu structure and fast touchscreen response, you will find these ADT686 gauges simple yet powerful to use. The easy to read display isn't just fun to use, but it's built rugged to handle the demands of a busy technician in the field or the laboratory.

#### Every model measures Gauge or Absolute Pressure:

The Additel 686 Digital Pressure Gauges contain a built-in barometer sensor which allows for the pressure reading to display in gauge pressure or absolute pressure with a simple menu selection. The built-in barometer is calibrated and certified to an accuracy of 50 Pa. With this unique feature, the ADT685 can be a solution for three common applications: gauge pressure measurement, absolute pressure measurement, and barometric or atmosphere pressure measurement. Having an Additel as your gauge will always give you the ability to do more with one instrument!



## SPECIFICATIONS

| Model   | ADT686   |
|---|--|
| <b>Description</b>  | Advanced Digital Pressure Gauge  |
| <b>Accuracy</b><br>(For detailed accuracy, please see pressure range table) | 686-02: 0.02% of full span   |
|   | 686-05: 0.05% of full span   |
|   | 686-RD: 0% to 20% of range: 0.02% of full span<br>20% to 110% of range: 0.1% of reading<br>Vacuum: 0.25% of full span <sup>[1][2]</sup>              |
|   | Built-in barometer: 55 Pa  |
| <b>Gauge Types</b>  | Gauge pressure, compound pressure, absolute pressure, differential pressure and barometric pressure<br>Color Touchscreen (capacitive)                |
| <b>Display</b>  | Screen protector: tempered glass film (replaceable)  |
|   | Display rate: 3 readings per second (Default setting).<br>Adjustable from 10 readings per second to 1 reading every 20 seconds                       |
|   | Resolution: 4, 5 or 6 digits (user selectable)   |
| <b>Pressure Units</b>   | Pa, kPa, MPa, psi, bar, mbar, kgf/cm <sup>2</sup> , inH <sub>2</sub> O@4°C, mmH <sub>2</sub> O@4°C, inHg@0°C, mmHg@0°C and 5 customizable units      |
| <b>Environmental</b>  | Compensated Temp.: 14°F to 122°F (-10°C to 50°C)   |
|   | Operating Temp.: 14°F to 122°F (-10°C to 50°C)   |
|   | Storage Temp.: -4°F to 158°F (-20°C to 70°C)   |
|   | Humidity: 0 - 95%, Non-condensing  |
| <b>Pressure Port</b>  | ≤ 15,000 psi: 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<br>*1/4HP female: Autoclave F-250-C, 9/16" - 18 UNF-2B<br>*1/4HP male: Autoclave M-250-C, 9/16" - 18 UNF-2A |
|   | Differential Pressure: barb fitting  |
|   | Other connections available per request  |
| <b>Power</b>  | Battery: rechargeable Li-ion battery   |
|   | Li-Battery life: 16 hours typically  |
|   | Recharge time: 4 hours typically   |
|   | External power: 110 V/220 V power adapter (5 VDC)  |
| <b>Enclosure</b>  | Case material: 304 SS  |
|   | Wetted parts: 316 SS <sup>[3]</sup>  |
|   | Size: 4.65" × 1.77" 7.01"(118mm × 42mm × 178mm)  |
|   | Weight: 1.50 lb (0.68 kg)  |
| <b>Compliance</b>   | Protection Level: IP67   |
|   | Vibration: 5 g (10-500 Hz)   |
|   | Shock Resistance: 8 g/11 ms  |
|   | CE   |
| <b>Data Logging (Available on data logging option ADT686-...-DL)</b>        | Data storage: 8GB (100M+ records)<br>Rate: user-selectable from 0.1 to 9999.9 second intervals   |
| <b>Communication</b>  | USB Type-C and Bluetooth included, RS232 or WiFi (optional)  |
| <b>Warranty</b>   | 1 year   |

[1] FS = -14.5 psi

[2] Applicable to ADT686-RD-CPX

[3] Wetted parts material types may vary by pressure range.

Please refer to the manual or contact us for more information.



## PRESSURE RANGE

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| Gauge Pressure <sup>[1]</sup> |                |       |                      |             |     |                |
|-------------------------------|----------------|-------|----------------------|-------------|-----|----------------|
| P/N                           | Pressure Range |       | Media <sup>[2]</sup> | Accuracy    |     | Burst Pressure |
|                               | (psi)          | (bar) |                      | %FS         | %RD |                |
| V15                           | -15            | -1.0  | G                    | 0.02 (0.05) | N/A | 3x             |
| GP2                           | 2              | 0.16  | G, L                 | 0.05        | N/A | 3x             |
| GP5                           | 5              | 0.35  | G, L                 | 0.05        | 0.1 | 3x             |
| GP10                          | 10             | 0.7   | G, L <sup>[3]</sup>  | 0.02 (0.05) | 0.1 | 3x             |
| GP15                          | 15             | 1.0   | G, L <sup>[3]</sup>  | 0.02 (0.05) | 0.1 | 3x             |
| GP30                          | 30             | 2.0   | G, L <sup>[3]</sup>  | 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] G=Gas, L=Liquid

[3] 0.02% FS for gas media only

| Compound Pressure |                |          |       |                    |     |                |
|-------------------|----------------|----------|-------|--------------------|-----|----------------|
| P/N               | Pressure Range |          | Media | Accuracy           |     | Burst Pressure |
|                   | (psi)          | (bar)    |       | %FS <sup>[1]</sup> | %RD |                |
| CP2               | ±2             | ±0.16    | G     | 0.05               | N/A | 3x             |
| CP5               | ±5             | ±0.35    | G     | 0.02 (0.05)        | 0.1 | 3x             |
| CP10              | ±10            | ±0.7     | G     | 0.02 (0.05)        | 0.1 | 3x             |
| CP15              | ±15            | ±1       | G     | 0.02 (0.05)        | 0.1 | 3x             |
| CP30              | -15 to 30      | -1 to 2  | G     | 0.02 (0.05)        | 0.1 | 3x             |
| CP100             | -15 to 100     | -1 to 7  | G, L  | 0.02 (0.05)        | 0.1 | 3x             |
| CP300             | -15 to 300     | -1 to 20 | G, L  | 0.02 (0.05)        | 0.1 | 3x             |
| CP500             | -15 to 500     | -1 to 35 | G, L  | 0.02 (0.05)        | 0.1 | 3x             |
| CP600             | -15 to 600     | -1 to 40 | G, L  | 0.02 (0.05)        | 0.1 | 3x             |
| CP1K              | -15 to 1000    | -1 to 70 | G, L  | 0.02 (0.05)        | 0.1 | 3x             |

**PRESSURE RANGE**

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

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

| Barometric Pressure |                |         |       |          |                |
|---------------------|----------------|---------|-------|----------|----------------|
| P/N                 | Pressure Range |         | Media | Accuracy | Burst Pressure |
|                     | Low            | High    |       |          |                |
| BP                  | 60 kPa         | 110 kPa | G     | 55 Pa    | 3x             |

| Communication Types Supported |        |          |        |        |
|-------------------------------|--------|----------|--------|--------|
| Comm \ Model                  | ADT685 | ADT685Ex | ADT686 | ADT673 |
| RS232                         | ○      | ○        | ○      | ○      |
| RS485                         | ○      |          |        |        |
| WiFi                          |        |          | ○      | ○      |
| USB                           | ●      | ●        | ●      | ●      |
| Bluetooth(BLE)                | ●      | ●        | ●      | ●      |

● Included    ○ Optional

| Additel Software Compatibility Matrix |                  |                  |                  |      |               |       |      |                  |
|---------------------------------------|------------------|------------------|------------------|------|---------------|-------|------|------------------|
| Comm \ Model                          | ADT685/ADT685Ex  |                  |                  |      | ADT686/ADT673 |       |      |                  |
|                                       | ACal             | LogII            | Land             | Link | ACal          | LogII | Land | Link             |
| RS232                                 | ●                | ●                | ●                |      | ●             | ●     | ●    |                  |
| RS485 only for ADT685                 | ● <sup>[2]</sup> | ● <sup>[2]</sup> | ● <sup>[2]</sup> |      |               |       |      |                  |
| WiFi                                  |                  |                  |                  |      | ●             | ●     | ●    | ● <sup>[1]</sup> |
| USB                                   | ●                | ●                | ●                |      | ●             | ●     | ●    |                  |
| Bluetooth(BLE)                        |                  |                  |                  | ●    |               |       |      | ●                |

● Supported    ○ Non Ex models only

[1] This configuration requires that the device be connected to ACloud via Wi-Fi to utilize the Additel Link app.

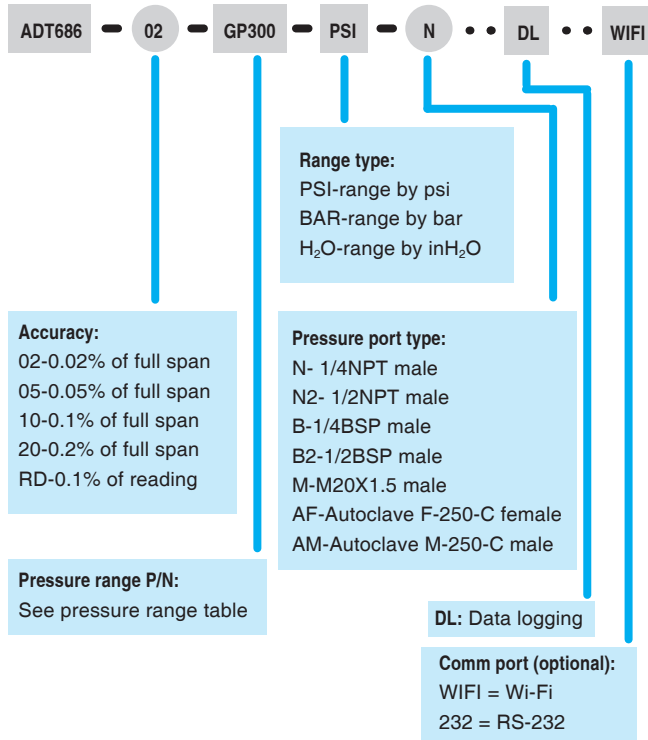
[2] 4-20mA output and RS-485 not available in ADT685Ex models.

# ADT686

## Advanced Digital Pressure Gauges

### ORDERING INFORMATION

#### Model Number



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#### Accessories Included

|   |
|---|
| Rubber boot   |
| Rechargeable Lion battery (1 pc)                        |
| USB cable type-C  |
| Power adapter   |
| Silicone tube - 1 meter each (2 pcs for DP models only) |
| ISO 17025 Accredited Calibration Certificate            |

#### Optional Accessories

| Model number | Description   |
|--------------|---|
| 9903         | Carrying case for (1) digital pressure gauge  |
| 9502         | Additel/Log II real time data logging and graphical software  |
| 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 |
| 9050-EXT     | RS 232 (DB9/M) extension cable, 9 feet  |
| 1520000359   | Screen protector kit  |
| 9040         | Hanging strap with magnet   |

Note: For oil-free applications contact us.