

ADT 151

Digital Pressure Module



ADT151 Module

- Pressure ranges to 1,000 bar (15,000 psi)
- Accuracy to 0.02% FS, 0.01%FS of 0.01%RD
- Fully temperature compensated accuracy
- Two pressure ranges per module
- Advanced temperature compensation
- ISO 17025 accredited calibration and data included
- Optional calibration fixture with software

Overview

Additel's 151 pressure modules have been designed with flexibility and efficiency in mind and can easily be swapped out as needed to meet changing needs and workloads. Higher pressure ADT151 modules cover two separate pressure ranges and come with individual calibrations for each range. This allows for each module to accurately cover a wide range of pressure workloads. Also, each ADT151 is available in (3) different accuracy levels (0.02% FS, 0.01% FS and 0.01% of reading) to meet the demanding needs of our customers. Additel's 151 pressure modules provide users with the flexibility and dependability end users have come to expect.

Pressure Range

The following tables mainly describe the range, accuracy, and precision of the ADT151 pressure module. For pressure modules of gauge pressure (GP) and differential pressure (DP) and compound pressure (CP), the zero drift can be eliminated by regular zeroing of the device. The specifications are valid at ambient temperatures from 15°C~35°C. We recommend that these pressure models should be calibrated annually. ADT151 module provides single-range and dual-range, users can choose according to needs.

Precision: The error components include linearity, hysteresis, repeatability, resolution and temperature compensation.

Accuracy: The error components include linearity, hysteresis, repeatability, resolution, reference standard measurement uncertainty, annual drift, temperature compensation,

Barometric Measurement Specifications

Barometer Type ^[1]	Absolute Pressure Range	Max Allowable Error
ADT151-BP	(60~110) kPa	±22 Pa
ADT151-BPH	(60~110) kPa	±10 Pa

[1] A barometric pressure module is optional for ADT773/ADT783/ADT793. After inserting the barometric pressure module, the controller can be toggled to and from gauge and absolute pressure units.



CP Pressure Module with Calibration Fixture



BP Pressure Module with Calibration Fixture

Specifications

Model Range	Compound Gauge pressure		Measurement Type	Media	Accuracy ^{[1] [4]} (%FS)	Precision ^[3] (%FS)	Pressure Rating		Suggested Controller Compatibility
	1st range	2nd range					Burst-Pressure	Over-Pressure	
GP15K	(0~1000) bar (0~15000) psi	(0~400) bar (0~6000) psi	Sealed gauge	G,L	0.01 (0.02)	0.007 (0.01)	1.3x	1.1x	ADT793
GP10K	(0~700) bar (0~10000) psi	(0~350) bar (0~5000) psi	Sealed gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT793
CP6K	(-1~400) bar (-15~6000) psi	(-1~200) bar (-15~3000) psi	Sealed gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT793
CP5K	(-1~350) bar (-15~5000) psi	(-1~200) bar (-15~3000) psi	Sealed gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT793
CP3.6K	(-1~250) bar (-15~3600) psi	(-1~100) bar (-15~1500) psi	Sealed gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-3.6K
CP3K	(-1~200) bar (-15~3000) psi	(-1~100) bar (-15~1500) psi	Sealed gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-3.6K
CP2K	(-1~140) bar (-15~2000) psi	(-1~70) bar (-15~1000) psi	Sealed gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-3.6K
CP1K	(-1~70) bar (-15~1000) psi	(-1~35) bar (-15~500) psi	Gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-1K ADT783-3.6K
CP500	(-15~500) psi (-1~35) bar	(-1~20) bar (-15~300) psi	Gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-1K ADT783-3.6K
CP300	(-1~20) bar (-15~300) psi	(-1~10) bar (-15~150) psi	Gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-1K ADT783-3.6K
CP150	(-1~10) bar (-15~150) psi	(-1~4) bar (-15~60) psi	Gauge	G,L	0.01 (0.02)	0.007 (0.01)	1.3x	1.1x	ADT783-1K
CP100	(-1~7) bar (-15~100) psi	(-1~3.5) bar (-15~50) psi	Gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-1K
CP50	(-1~3.5) bar (-15~50) psi	(-1~2) bar (-15~30) psi	Gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-1K
CP35	(-1~2.5) bar (-15~35) psi	(-1~1) bar (-15~15) psi	Gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-1K
CP30	(-1~2) bar (-15~30) psi	(-1~1) bar (-15~15) psi	Gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-1K
CP15	(-1~1) bar (-15~15) psi	(-0.7~0.7) bar[2] (-10~10) psi	Gauge	G,L	0.01 (0.02)	0.007 (0.01)	2x	1.1x	ADT783-1K

[1] For the full-scale accuracy, FS refers to the upper limit of the range - the lower limit of the range.

[2] The second range (-10~10) psi accuracy is 0.02%FS, the precision is 0.01%FS.

[3] Precision: the error components include linearity, hysteresis, repeatability, resolution, and temperature compensation.

[4] Accuracy: the error components include linearity, hysteresis, repeatability, resolution, reference standard measurement uncertainty, annual drift, temperature compensation, K=2

Model Range ^[3]	Differential pressure		Measurement Type	Media	Precision ^[4] (%FS)	Accuracy ^{[1][5]} (%FS)	Pressure Rating		Suggested Controller Compatibility
	1st range	2nd range					Burst-Pressure	Over-Pressure	
DP1K	(-400~1000) inH2O (-1000~2500) mbar	(-400~400) inH2O (-1000~1000) mbar	DP	G	0.015	0.02	10000 mbar	1.5x	ADT783-D
DP800	(-400~800) inH2O (-1000~2000) mbar	(-400~400) inH2O (-1000~1000) mbar	DP	G	0.015	0.02	10000 mbar	1.5x	ADT783-D
DP400	(-400~400) inH2O (-1000~1000) mbar	(-200~200) inH2O (-500~500) mbar	DP	G	0.015	0.02	4000 mbar	1.5x	ADT783-D ADT773
DP300	(-300~300) inH2O (-700~700) mbar	(-150~150) inH2O (-350~350) mbar	DP	G	0.015	0.02	4000 mbar	1.5x	ADT783-D ADT773
DP200	(-200~200) inH2O (-500~500) mbar	(-100~100) inH2O (-250~250) mbar	DP	G	0.015	0.02	4000 mbar	1.5x	ADT783-D ADT773
DP150	(-150~150) inH2O (-350~350) mbar	(-100~100) inH2O (-250~250) mbar	DP	G	0.015	0.02	4000 mbar	1.5x	ADT783-D ADT773
DP100	(-100~100) inH2O (-250~250) mbar	(-50~50) inH2O (-125~125) mbar	DP	G	0.015	0.02	1000 mbar	1.5x	ADT783-D ADT773
DP50	(-50~50) inH2O (-125~125) mbar	(-30~30) inH2O (-75~75) mbar	DP	G	0.015	0.02	1000 mbar	1.5x	ADT783-D ADT773
DP30	(-30~30) inH2O (-75~75) mbar	(-20~20) inH2O (-50~50) mbar	DP	G	0.015	0.02	1000 mbar	1.5x	ADT783-D ADT773
DP20^[2]	(-20~20) inH2O (-50~50) mbar	(-10~10) inH2O (-25~25) mbar	DP	G	0.015	0.02	100 mbar	1.5x	ADT783-D ADT773
DP10^[2]	(-10~10) inH2O (-25~25) mbar	(-5~5) inH2O (-10~10) mbar	DP	G	0.015	0.02	100 mbar	1.5x	ADT773
DP5^[2]	(-5~5) inH2O (-10~10) mbar	(-2~2) inH2O (-5~5) mbar	DP	G	0.025	0.05	100 mbar	1.5x	ADT773
DP2^[2]	(-2~2) inH2O (-5~5) mbar	(-1~1) inH2O (-2.5~2.5) mbar	DP	G	0.025	0.05	100 mbar	1.5x	ADT773

[1] FS means upper range - lower range.

[2] Recommended calibration cycle 180 days.

[3] DP300 to DP1000 provides positive range, accuracy and precision specifications continue to apply;
 DP10 to DP150 provides a positive range with accuracy and precision specifications of 0.02%FS and 0.015%FS, respectively;
 DP2 to DP5 provides a positive range, with accuracy and precision specifications of 0.05%FS and 0.025%FS, respectively.

[4] Precision: the error components include linearity, hysteresis, repeatability, resolution, and temperature compensation.

[5] Accuracy: the error components include linearity, hysteresis, repeatability, resolution, reference standard measurement uncertainty, annual drift, temperature compensation, K=2

High-precision Gauge Pressure Module Specification									
Model	Gauge pressure range	Absolute Pressure Range [1]	Measurement Type	Media	Precision[3][4]	Accuracy[2][5]	Pressure Rating		Suggested Controller Compatibility
							Burst	Over Pressure	
GP15KM	0~1000 bar (0~15000) psi	1~1001 bar (15~15015) psi	Sealed gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	1.3x	1.1x	ADT793
GP10KM	0~700 bar (0~10000) psi	1~701 bar (15~10015) psi	Sealed gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT793
CP6KM	-1~400 bar (-15~6000) psi	0~401 bar (0~6015) psi	Sealed gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT793
CP5KM	-1~350 bar (-15~5000) psi	-1~351 bar (0~5015) psi	Sealed gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT793
CP3.6KM	-1~250 bar (-15~3600) psi	0~251 bar (0~3615) psi	Sealed gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT793 ADT783-3.6
CP3KM	-1~200 bar (-15~3000) psi	0~201 bar (0~3015) psi	Sealed gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT793 ADT783-3.6
CP2KM	-1~140 bar (-15~2000) psi	0~141 bar (0~2015) psi	Sealed gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT783-3.6
CP1.5KM	-1~100 bar (-15~1500) psi	0~101 bar (0~1515) psi	Gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	1.3x	1.1x	ADT783-3.6
CP1KM	-1~70 bar (-15~1000) psi	0~71 bar (0~1015) psi	Gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT783-1K ADT783-3.6
CP500M	-1~35 bar (-15~500) psi	0~36 bar (0~515) psi	Gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT783-1K ADT783-3.6
CP300M	-1~20 bar (-15~300) psi	0~21 bar (0~315) psi	Gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT783-1K ADT783-3.6
CP150M	-1~10 bar (-15~150) psi	0~11 bar (0~165) psi	Gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	1.3x	1.1x	ADT783-1K ADT783-3.6
CP100M	-1~7 bar (-15~100) psi	0~8 bar (0~115) psi	Gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT783-1K
CP50M	-1~3.5 bar (-15~50) psi	0~4.5 bar (0~65) psi	Gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT783-1K
CP35M	-1~2.5 bar (-15~35) psi	0~3.5bar (0~50) psi	Gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT783-1K
CP30M	-1~2 bar (-15~30) psi	0~3bar (0~45) psi	Gauge	G,L	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater	2x	1.1x	ADT783-1K

[1] Absolute pressure is achieved through the synthesis of the basic gauge pressure module and the optional atmospheric pressure module.

[2] The accuracy of the negative pressure part is equal to the accuracy of the positive pressure part, such as the maximum error of -15 psi is equal to the maximum allowable error of 15 psi.

[3] FS refers to the positive range, and the accuracy of the negative pressure part is equal to that of the positive pressure part.

[4] Precision: the error components include linearity, hysteresis, repeatability, resolution, and temperature compensation.

[5] Accuracy: the error components include linearity, hysteresis, repeatability, resolution, reference standard measurement uncertainty, annual drift, temperature compensation, K=2

General Specifications

	Standard Precision			High-Precision
	CPXX	DPXX	GPXX	CPXM
Operating temperature	0.01%FS accuracy: 15 °C to 35 °C (59 °F to 95 °F) Other accuracy: -10 °C to 50 °C (14 °F to 122 °F)			
Storage temperature	-30°C to 70°C (-22°F to 158°F)			
Relative humidity	10% to 95% RH, non-condensing			
Pressure connection(for external use only)	6 mm (O-ring,3*1.5-NBR70)			
Enclosure (for external use only)	Aluminum			
Dimensions (Dia x H)	30 mm x 80 mm x 91mm (1.18" x 3.15" x 3.58")			
Weight	0.5 kg (1.1 lb)			
Warranty	1 Year			

Ordering Information

■ Model Number



Accuracy:

- 01 - 0.01% of full span
- 02 - 0.02% of full span
- 05 - 0.05% of full span

Pressure range P/N:
See pressure range table



Additel 783 with ADT151 Pressure Modules

▪ **Accessories included**

ISO 17025 accredited Calibration Certificate

▪ **Optional Accessories**

Model number	Description	Picture
9054	Calibration fixture for ADT151 (including adapter base w/1/4BSP male fitting, RS232/ power supply cable, 9V adapter, calibration software)	

