Additel 773
Pressure Controllers/Generators

Metrology Made Simple



- **Pressure ranges from -380 inH2O (-0.95 bar) to 2,800 inH2O (7 bar)**
- **Two removable internal pressure modules with multi-range selection**
- **0.02%FS accuracy**
- **Control stability of 0.003%FS**
- **Ultra-High speed pressure generation and control**
- **Optional barometric pressure module**
- Built-in differential pressure pump
- Large 7" color touch screen display
- Modular design for easy maintenance, greatly reducing on-site downtime
- Emulation mode



OVERVIEW

These modular pressure controllers combine speed, cutting-edge control/measurement technology, modular design, and user-friendly features. The Additel 773 controllers are optimized for low pressure work by utilizing Additel's proven low-pressure pump technology in combination with control capabilities that revolutionized the industry as seen in the well-known handheld model ADT760A. For users who require automated production, test, and calibration, Additel has the workload covered with these pressure controllers. The ADT773 series can be quickly outfitted with two controlling modules and one reference barometric module to cover a wide pressure range.

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Quick Change Pressure Modules (30 seconds)

Additel's 151 pressure control modules can be installed or replaced within 30 seconds or less. The upper edge of the cabin is simple to open. As the door opens, the controller will automatically release pressure, providing the safe removal and installation of the ADT151 modules. Additel offers various different pressure ranges for the ADT773 controllers by utilizing these easy to swap pressure modules. Select from Differential Pressure Module Table.



20% Pressure Step within 10 seconds

In the process of efficient and fast-paced end-of-line testing, verification and calibration, companies have strict requirements on the speed of pressure controllers. ADT773 series adopt professional pressure control technology to effectively improve control speed and control stability. Air pressure controller: control response time (typical) ≤10S, control stability ＜ 0.003%FS, see specifications for more details.



Built-in pump

The Additel 773 series come with an integrated internal low-pressure pump which provides users with a turnkey solution for pressure calibration work. Additel pump designs are well known and dependable. Not only are the fast, but they also offer the best control and stability in their class. In fact, the automated pumps in other Additel models have revolutionized the industry.

External Drive Valve Control

The ADT773 Controllers provide valve control for up to 3 external valves. One of the channels is designated for controlling contamination prevention system (CPS), which helps to prevent media contamination. The remaining two channels can be used to control external vacuum pumps or external isolation valves for greater flexibility and compatibility for individual situations.



Contamination Prevention System (CPS) Extends the Maintenance Interval of the Controller

Calibration of DUT's (devices under test) often introduces contaminates to a calibration system. Contaminates can cause restrictions in valves, lines and filters. Additel has included a turn-key solution with the ADT773 controllers to help reduce these concerns and improve durability and dependability when calibrating customers devices. The use of an automatic contamination prevention system and integration firmware to allow for purges between pressure cycles to further reduce the possibility of introducing contaminates into the system.



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Pressure Specifications

Specification \ Model	ADT773-LLP	ADT773-D
Max Pressure Range[1]	400 inH2O (14.5 psi, 1 bar)	2,800 inH2O (100 psi, 7 bar)
Min Pressure Range	-380 inH2O (-13.5 psi, -0.95 bar)	
Precison[2]	0.004%FS or 0.007%FS selectable 0.01%FS for DP10 0.02%FS for DP2,DP5 0.05%FS for DP1	0.004%FS or 0.007%FS selectable
Accuracy[3]	0.01%FS or 0.02%FS selectable 0.02%FS for DP10 0.05%FS for DP1, DP2, DP5	0.01%FS or 0.02%FS selectable
Control Stability[4]	< 0.003%FS	
Control Response Time[5]	< 10 Seconds	
Pressure Type	Low Differential Pressure	
Internchangeable Pressure Module Bays	2	
ADT151 Pressure Module (High Pressure bay)	DP40~DP400	DP100-DP2.8K
ADT151 Pressure Module (Low Pressure bay)	DP2-DP400	DP100-DP2.8K
Range Switching Mode	Fixed or Auto	
Supply Source	Built-in air pump	
Control Mode	Fast, standard or custom	
Maximum Overshoot	< 1%FS	
Maximum Load Volume	500 mL	
Contamination Prevention System (CPS)	Optional	
Pressure Port	1/4 BSP M	1/4 BSP M
Port Filter[6]	Support	

[1] The minimum negative pressure limit is given based on the atmospheric pressure value of 1 bar.
[2] Precision: the error components includes linearity, hysteresis, repeatability, resolution, and temperature effects.
[3] Accuracy: the error components includ linearity, hysteresis, repeatability, resolution, reference standard measurement uncertainty, annual drift, temperature effects, K=2.
[4] The control stability is 0.003%FS or 0.05Pa, which is greater.
[5] The air pressure is tested under the condition of external load volume 50 mL, 20% step, and the time to reach 0.005% FS stability.
[6] All pressure ports are installed with 40~100μm filters.

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Internal Module Specification

The following tables provide information regarding our ADT151 modular pressure sensors that are designed to easily mount in the front bays of the ADT773 Pressure controllers. Our differential pressure (DP) module accuracy specifications include linearity, hysteresis, repeatability, temperature effects, resolution, reference standard measurement uncertainty, annual drift and K=2, precision specifications include linearity, hysteresis, repeatability, resolution, and temperature effects. The DP style gauges can be zeroed by the controller from time to time to mitigate the effect of zero drift. The specifications are valid from -10°C~50°C. We recommend that these pressure modules be calibration annually.

Differential Pressure Module for ADT773 Series

Model	Differential Pressure		Measurement Type	Media	Precision [3] (%FS)	Accuracy [2][4] (% FS)	Burst Pressure	Static Pressure Range	Suggested Controller Compatibility
	1st range [1]	2nd range							
ADT151-XX-DP2.8K	(-400~2800) inH2O (-1000~7000) mbar	(-400~1500) inH2O (-1000~3500) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	10000 mbar	1MPa	ADT773-D
ADT151-XX-DP2K	(-400~2000) inH2O (-1000~5000) mbar	(-400~1500) inH2O (-1000~3500) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	10000 mbar	1MPa	ADT773-D
ADT151-XX-DP1K	(-400~1000) inH2O (-1000~2500) mbar	(-400~400) inH2O (-1000~1000) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	10000 mbar	1MPa	ADT773-D
ADT151-XX-DP800	(-400~800) inH2O (-1000~2000) mbar	(-400~400) inH2O (-1000~1000) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	10000 mbar	1MPa	ADT773-D
ADT151-XX-DP400	(-400~400) inH2O (-1000~1000) mbar	(-200~200) inH2O (-500~500) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	4000 mbar	1MPa	ADT773-LLP ADT773-D
ADT151-XX-DP300	(-300~300) inH2O (-700~700) mbar	(-150~150) inH2O (-350~350) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	4000 mbar	400kPa	ADT773-LLP ADT773-D
ADT151-XX-DP200	(-200~200) inH2O (-500~500) mbar	(-150~150) inH2O (-350~350) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	4000 mbar	400kPa	ADT773-LLP ADT773-D
ADT151-XX-DP150	(-150~150) inH2O (-350~350) mbar	(-100~100) inH2O (-250~250) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	4000 mbar	400kPa	ADT773-LLP ADT773-D
ADT151-XX-DP100	(-100~100) inH2O (-250~250) mbar	(-60~60) inH2O (-150~150) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	1000 mbar	100kPa	ADT773-LLP ADT773-D
ADT151-XX-DP40	(-40~40) inH2O (-100~100) mbar	(-30~30) inH2O (-75~75) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	1000 mbar	100kPa	ADT773-LLP
ADT151-XX-DP30	(-30~30) inH2O (-75~75) mbar	(-20~20) inH2O (-50~50) mbar	DP	G	0.004 (0.007)	0.01 (0.02)	1000 mbar	100kPa	ADT773-LLP
ADT151-XX-DP20 [5]	(-20~20)inH2O (-50~50)mbar	(-10~10) inH2O (-25~25)mbar	DP	G	0.004 (0.007)	0.01 (0.02)	100 mbar	60kPa	ADT773-LLP
ADT151-XX-DP10 [5]	(-10~10) inH2O (-25~25) mbar	N/A	DP	G	0.01	0.02	100 mbar	60kPa	ADT773-LLP
ADT151-XX-DP5 [5]	(-5~5) inH2O (-10~10) mbar	N/A	DP	G	0.02	0.05	100 mbar	60kPa	ADT773-LLP
ADT151-XX-DP2 [5]	(-2~2) inH2O (-5~5) mbar	N/A	DP	G	0.02	0.05	100 mbar	60kPa	ADT773-LLP
ADT151-XX-DP1 [5]	(-1~1) inH2O (-2.5~2.5) mbar	N/A	DP	G	0.05	0.05	100 mbar	60kPa	ADT773-LLP

[1] The overload pressure of all pressure modules is 150%FS.
[2] FS specification applies to the span of the range.
[3] Precision: the error components include linearity, hysteresis, repeatability, resolution, and temperature effects.
[4] Accuracy: the error components include linearity, hysteresis, repeatability, resolution, reference standard measurement uncertainty, annual drift, temperature effects, K=2.
[5] Recommended calibration period 180 days.

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Barometric Specifications

Model[1]	Absolute Pressure Range	Accuracy
ADT151-BP	(60~110) kPa	±22 Pa
ADT151-BPH	(60~110) kPa	±10 Pa

[1] Additel 773 controllers can be equipped with an barometric pressure module. After inserting the barometric pressure module, the controller can be toggled to and from gauge and absolute pressure units.

General Specifications

Specification	*Description*
Power Requirements	Power supply: AC100~240 V, 50/60 Hz
	Fuse: T3.15A 250V AC
	Maximum power consumption: 150W
Size /Weight	Chassis size: 17.32 × 5.23 × 14.96 in (440(W) × 133(H) × 380(D) mm)
	Rack mount dimensions: 3U-19" rack, Horizontal Direction
	Chassis weight: 17.6 kg
	Pressure module weight: 0.5 kg
Environment	Operating ambient: 10℃ ~50℃
	Storage temperature: -20℃ ~70℃
	Operating humidity: 5%RH~95%RH, non-condensing
	Altitude (Operation): <2000 m
	Ingress protection: IP20, Indoor use only
	Vibration level: 2 G
	Impact intensity: 4 G
	Warmup time: 15 minutes
	Machine drop height: 250 mm
Conformity	CE
Communications	RS232, USB-A*2, LAN
	WIFI, Bluetooth, GPIB, mouse, keyboard and other peripheral components can be expanded based on the USB port.
	SCPI Command set is compatible with ADT780, PACE5000/6000, DRUCK DPI520, FLUKE 6270A/8270A/8370A, FLUKE 7250, mensor CPC4000/60000/8000, WIKA-SCPI, user customizable
External drive valve port	3-channel external drive valves, green terminal connector with lock
	Maximum driving ability 24 V / 12 W, 30 V max
	One channel fixed to the CPS pollution prevention device, the remaining 2 channels can be used to control the external vacuum pump and external isolation valve.
I/O Alarm port	3-channel, green terminal connector with a lock
	Volt-Free No/Nc relay, the maximum current-carrying capacity: 24 V / 0.5 A, 30 V max
Pressure switch test port	One channel, green terminal connector with lock
	Maximum load 24 V / 0.1 A 30 V max
	Support mechanical switch, electronic switch testing
Display	7-inch capacitive touch screen, 1280 * 800 resolution, reflective panels, black, white background can be user selectable.
	Communication update speed: 10 times per second
	Display refresh rate: 5 times per second
	Pressure value maximum displays: + 9999999, display digits is adjustable
External pressure module	Measurement only
Internal pressure control module port	Opening the cabin door will automatically release the pressure for safe removal of modules
	Inside of cabin, 3 pressure module bays, from left to right including a high pressure module bay, a low pressure module bay, and a barometric pressure module bay
Warranty	1 year
Hose & Filter End of Life	The estimated End of Life (EOL) expectancy for all accessory hoses and filters (pneumatic and hydraulic) is approximately 10 years and should be replaced at the first sign of wear or damage.

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ORDERING INFORMATION

Model Number (Base Unit Only - No Pressure Modules)

ADT773

Model
ADT773-D
ADT773-LLP



ADT151 Module Configuration Details		
	ADT773-LLP	**ADT773-D**
ADT151 Pressure Modules for High Module Bay	ADT151-XX-DP30 ~ DP400 At least one module within the range of DP30 to DP400 must be installed in the high side module bay.	ADT151-XX-DP100 ~ DP2.8K At least one module within the range of DP100 to DP2.8K must be installed in the high side module bay.
ADT151 Pressure Modules for Low Module Bay	ADT151-XX-DP2 ~ DP400 The low module bay can be left empty, but when a low-pressure module is installed, the range must be lower than the installed high pressure module.	ADT151-XX-DP100 ~ DP2.8K The low module bay can be left empty, but when a low-pressure module is installed, the range cann't be higher than the installed high pressure module.
ADT151 Barometer Modules for Barometer Module Bay	ADT151-BP/ADT151-BPH See ADT151 barometric specifications table for details.	

ADT151 — 01 — DP2

Accuracy:
01 = 0.01% of full span
02 = 0.02% of full span
05 = 0.05% of full span

See internal module specification table

ADT151 — BP

Model:
ADT151-BP (±22 Pa)
ADT151-BPH (±10 Pa)



ADT151-XX-DP2



ADT151-BP

Output pressure connections of ADT773 controllers (Optional)			
Model number		**Description**	**Picture**
9240A		DP gauge holder with a built-in 80 ml chamber	
ADT121-X		External Manifold	
Need this 2 parts on Vent or Exhaust ports to drain the internal liquid to external container	1650700087	Quick connetcor (6 mm)	
	1650800039	Polyurethane tube (6 mm× 1.5 m)	
ADT108-KIT (only for 3.6K psi and below)		Contamination Prevention System (Including ERP#:1650800039 polyurethane hose 700 kPA Max 1.5m length, and adaptor, 6mm Festo to 1/4BSP F)	

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Accessories (included)		
Model number	**Quantity**	**Picture**
AC power cord (10A 250V)	1 pc	
Green terminal plug （For switch detection）	2 pcs	
O-ring 3.5*1.5 （For ADT151）	10 pcs	
1/4BSP plug (for output port)	1 pc	
O-ring 4*2 （For 1/4 BSP plug）	10 pcs	
ADT151 reference port plug	1pc	
5 feet fexible hose, 4500 psi, 1/4BSP female to 1/4BSP female ADT100-HTK-4.5K-BSPF4-BSPF4	1pc	
Adapter, 1/4NPT male to 1/4BSP female (ADT100-NPTM4-BSPF4)	1pc	
O-ring 5*1.5 （For ADT100-NPTM4-BSPF4 ）	10 pcs	
Adapter, 1/4NPT male to 1/4BSP male (ADT100-NPTM4-BSPM4 ）	1 pc	
Ball-end hex wrench (4mm) for disassembling quick connector	1 pc	
Ball-end hex wrench (5mm) for disassembling ADT151	1 pc	
ADT100-BSPF4-BARB	2 pcs	
ADT100-BSPM8-BSPM4-780	1 pc	
Silicone Tube	2 pcs	
ISO17025 accredited calibration certificate	1 pc	

General Optional Accessories		
Model number	**Description**	**Picture**
9050	USB to 232 cable	
9055-1	USB to Bluetooth module	
9055-2	USB to WIFI module	
9053	USB to GPIB adapter	
9050-EXT	RS232 communication line	
9245	Rack Flange Assembly	
9055	Green terminal plug	
9054	Calibration fixture for ADT151 (Including adapter base w/ 1/4BSP male fitting, RS232/power supply cable, 9V adapter, calibration software)	
9065	High-Precision electrical measurement module	
9029	Pressure switch testing lead kit – for use with 7xx pressure controllers	
9530-PRO	Additel/Acal Automated calibration software with asset management, professional version for single PC	
9530-NET	Additel/Acal Automated calibration software with asset management, network version, Includes server installation and 1 user license	

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