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Additel 793
Pressure Controller/Generator



- **Maximum pressure control range to 15,000 psi (1,035 Bar)**
- **Interchangeable pressure module**
- **Oil and water versions available**
- **Accuracy of 0.02%FS, 0.01%FS or 0.01%RD**
- **Dual-range from -14.5~3,000 psi (-1~200 Bar) to 0~15,000 psi (0~1,035) Bar**
- Control stability 0.005%FS
- Ultra-High speed pressure generation and control
- No external pressure source required
- Control using internal or external pressure modules
- Contamination Prevention System (CPS) (ADT793 optional)
- LAN, USB, RS232, and Ethernet communication
- External reservoir support
- Easy maintenance
- Emulation mode

OVERVIEW

The Additel 793 pressure controller combines the latest control/measure technology, modular design and easy to use/maintenance features into a single users friendly device. The Additel 793 provides pressure control up to 15,000 psi (1,035 Bar). For users who require automated production, test, and calibration, Additel has the workload covered with this pressure controller. The ADT793 accepts one ADT151 dual-range pressure module in addition to a barometric pressure module. This allows user to quickly cover a wide range of pressures.



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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. Simply open the upper edge of the cabin to open. As the door opens, the controller will automatically release pressure, providing the safe removal and installation of the ADT151 modules. Additel offers five different pressure ranges for the ADT793 controller. Select between 1035 bar (15000 psi), 700 bar (10000 psi), 420 bar (6000 psi), 350 bar (5000 psi) or 200 bar (3000 psi) with the variety of accuracies to meet application requirements.



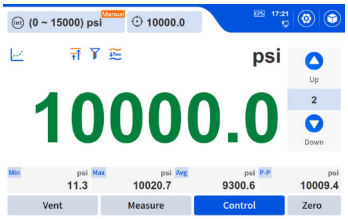
A Singular Pressure Module Design with a Wide Range of Capabilities

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.



20% Pressure Step within 30 Seconds

In the process of efficient and fast-paced production line testing, verification and calibration, users have strict requirements on the speed of pressure controllers. ADT793 adopts professional control technology to effectively improve control rate and stability: control response time (typical) ≤30 seconds, control stability (typical) ≤±(0.003~0.005)%FS, see specifications for more details.



External Reservoir Support

High volume high pressure calibration work can quickly consume working media which can increase hands-on time and can be a hassle for laboratory personnel. The ADT793 supports switching between internal and external liquid storage tanks, allowing users to quickly connect the large capacity external liquid reservoir saving time and labor.



Contamination Prevention System (CPS) Prolongs 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 ADT793W 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 allows for purges between pressure cycles to further reduce the possibility of introducing contaminates into the system.



Load Volumn Expander Expands the Loading Volume to 250ml

ADT793 supports reciprocating pressurization through a load volume expander to expand the loading volume to 250ml, which can meet the needs of production line users to test multiple UUTs at the same time.



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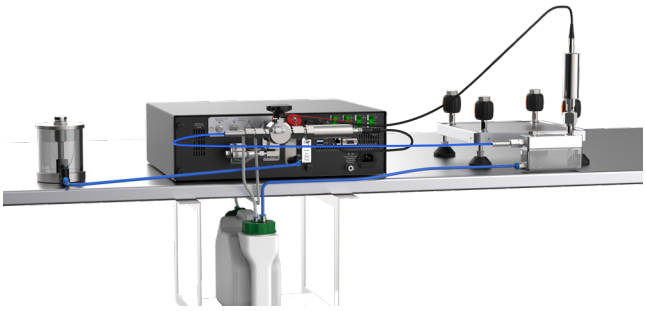
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Pressure Specifications

Model / Specification	ADT793
Pressure Range	0 to 15,000 psi (1,035 Bar)
Precision[1]	0.008%RD or 0.007%FS or 0.004%FS
Accuracy[2]	0.01%RD or 0.01%FS or or 0.02%FS
Control Stability[3]	＜ 0.005%FS, typically 0.003%FS
Control Response Time[4]	＜ 30 Seconds
Pressure Type[5]	Gauge, absolute
Internal Pressure Control Modules	1
External Pressure Control Modules	1
ADT151 Pressure Module (Max Pressure range)	0~15,000 psi (0~1,035 Bar)
ADT151 Pressure Module (Min Pressure range)	-14.5~3,000 psi (-1~200 Bar)
Min Range of External Module	-14.5~1,000 psi (-1~70 Bar)
Range Switching Mode[6]	Fixed, auto
Pump Source Type[7]	Built-in hydraulic pump, no external pressure source required.
Control Mode	Fast, standard, custom
Maximum Overshoot	＜ 1%FS
Maximum Load Volume	<10,000 psi: Max: 80 ml, 50 mL recommend 10,000~15,000 psi: Max: 60 ml, 35 mL recommend
Contamination Prevention System (CPS)	Optional
Pressure Port	1/4 BSP M
Built-in Reservoir Volume	800 mL
External Reservoir Extension	Optional
Port Filter[8]	Support
Media	Diethylhexyl Sebacate （Only for ADT793); Deionized water, Distilled water and Pure water (For ADT793W)

[1] Precision: the error components include linearity, hysteresis, repeatability, resolution, and temperature compensation.
[2] Accuracy: the error components include linearity, hysteresis, repeatability, resolution, reference standard measurement uncertainty, annual drift, temperature compensation, K=2.
[3] In order to achieve 0.003% FS control stability, some additional stabilization time at the desired pressure may be needed depending on the configuration and pressure level.
[4] The hydraulic pressure is tested under an external load volume 10 ml, 20% step, and the time to reach 0.005% FS stability.
[5] Absolute pressure measurements require the optional barometer pressure module (ADT151-BP) to be installed.
[6] Does not support automatic range switching between the internal control pressure module and the external control pressure module.
[7] Liquid refers to Diethylhexyl Sebacate or deionized water.
[8] All pressure ports are installed with 40~100 μm filters.



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General Specifications

Specification	Description
Power Requirements	Power supply: AC 100~240 V, 50/60 Hz
	Fuse: T3.15A 250V AC
	Maximum Power consumption: 150 W
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: 20.7 kg
	Pressure module weight: 0.5 kg
Environment	Operating Ambient: 10 ℃ ~50 ℃
	Storage Temperature: 5℃ ~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
	Bare 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 control module port	5 pin standard Lemo plug
	Connect external pressure control module （ADT161）
Internal pressure control module port	Opening the cabin door will automatically release the pressure for safe removal of modules
	Inside of cabin: For ADT793/793W, 2 bays, from left to right, including a pressure module bay, and a barometric 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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Internal Module Specifications

The following tables provide information regarding our ADT151 modular pressure sensors that are designed to easily mount in the front bays of the ADT793 Pressure controller. Our gauge pressure (GP) and Compound pressure (CP) module accuracy specifications include linearity, hysteresis, repeatability, temperature effects and annual drift, precision specifications include linearity, hysteresis, repeatability, resolution, and temperature effects. Both the GP and CP 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.

Model / Range	Compound Gauge pressure		Precision[2] (%FS)	Accuracy[3][4] (% FS)
	1st range[1]	2nd range		
ADT151-XX-GP15K	(0~15000) psi/ (0~1035) bar	(0~6000) psi/ (0~420) bar	0.004 (0.007)	0.01 (0.02)
ADT151-XX-GP10K	(0~10000) psi/ (0~700) bar	(0~5000) psi/ (0~350) bar	0.004 (0.007)	0.01 (0.02)
ADT151-XX-CP6K	(-14.5~6000) psi/ (-1~420) bar	(-14.5~3000) psi/ (-1~200) bar	0.004 (0.007)	0.01 (0.02)
ADT151-XX-CP5K	(-14.5~5000) psi/ (-1~350) bar	(-14.5~3000) psi/ (-1~200) bar	0.004 (0.007)	0.01 (0.02)

[1] The overload pressure of all pressure modules is 110%FS, and the burst pressure is 200%FS,the burst pressure of GP15K is 130%FS
[2] Precision: the error components include linearity, hysteresis, repeatability, resolution, and temperature effects.
[3] FS specification applies to the span of the range.
[4] Accuracy: the error components include linearity, hysteresis, repeatability, resolution, reference standard measurement uncertainty, annual drift, temperature effects, K=2.

High-precision Compound Gauge Pressure Module Specification				
Model	Gauge pressure range[1]	Absolute Pressure Range[2]	Precision[3]	Accuracy[4]
ADT151-01RD-GP15KM	(0 ~15000) psi (0~1035) bar	(15~15015) psi (1~1036) bar	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater
ADT151-01RD-GP10KM	(0 ~10000) psi (0~700) bar	(15~10015) psi (1~701) bar	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater
ADT151-01RD-CP6KM	(-14.5~6000) psi (-1~420) bar	(0~6015) psi (0~421) bar	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater
ADT151-01RD-CP5KM	(-14.5~5000) psi (-1~350) bar	(0~5015) psi (0~351) bar	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater
ADT151-01RD-CP3KM	(-14.5~3000) psi (-1~200) bar	(0~3015) psi (0~201) bar	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater

[1] The overload pressure of all pressure modules is 110%FS, and the burst pressure is 200%FS, among which the burst pressure of GP15KM is 130%FS.
[2] Absolute pressure is realized by calculating the gauge pressure and the optional barometric module.
[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.

Barometric Specifications

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

[1] A barometric pressure module is optional. 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

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ORDERING INFORMATION

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Model Number (Base Unit Only - No Pressure Modules)

ADT793 — **Model:**
ADT793
ADT793W



Model Number (Pressure Modules)

ADT151 — **01** — **GP15K**

Accuracy:
01 = 0.01% of full span
01RD = 0.01% of reading
02 = 0.02% of full span

See internal module specification table



ADT151-01-GP15K

ADT151 — **BP**

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



ADT151-BP

Note: The ADT793 has two bays for pressure modules. One bay is designated for a BP modules only and the other bay is for CP and CP modules.

Accessories (included)

Item	Quantity	Picture
AC power cord (10A 250V)	1 pc	
Green terminal plug (For switch test)	2 pcs	
O-ring 3.5*1.5 NBR70 (For ADT151)	10 pcs	
Drain switch valve assembly (Switch valve + 0.5m × 6mm tube)	1 set	
9241 Replacement gas filled accumulator for ADT762 and ADT793	1 pc	
9241W Replacement gas filled accumulator for ADT762W and ADT793W	1 pc	
Pressure hose for accumulator inflation 5 feet (polyamide, 2,390 psi burst)	1 pc	
ADT100-BSPM4-FNG for connecting with DUT	1 pc	
5 feet flexible hose, 15000 psi, 1/4BSP female to 1/4BSP female (ADT100-HTK-15K-BSPF4-BSPF4)	1 pc	
O-ring 4*2 NBR70 (For ADT100-HTK-15K-BSPF4-BSPF4)	10 pcs	
Sebacate oil (500ml)	1 pc	
Adapter, 1/4NPT male to 1/4BSP female (ADT100-NPTM4-BSPF4)	1 pc	
O-ring 5*1.5 NBR70 (For ADT100-NPTM4-BSPF4)	10 pcs	
Adapter, 1/4NPT male to 1/4BSP male (ADT100-NPTM4-BSPM4)	1 pc	
Ball-end hex wrench (2mm) for disassembling accumulator	1 pc	
Ball-end hex wrench (5mm) for disassembling ADT151	1 pc	
ADT109-KIT (only for ADT793W) Contamination Prevention System	1 pc	
9084 (only for ADT793W) External reservior connection components (Includes 2 pcs 1.5m × 6mm hoses)	1 pc	
Filter Filter for IN port when use External Reservoir	1 pc	
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 cable	
9054	Calibration fixture for ADT151 (Including adapter base w/ 1/4BSP male fitting, RS232/power supply cable, 9V adapter, calibration software)	
9245	Rack mount assembly	
9055	Green terminal plug (Drive valve, for I/O)	
ADT161	Pressure modules. External connection with ADT793 can be used as controlling module. Selectable range is 1K~15K. See ADT161 tables for module ranges and types.	
9060	ADT161 pressure modules connection cable	
9241	Replacement gas filled accumulator for ADT762 and ADT793	
9241W	Replacement gas filled accumulator for ADT762W and ADT793W	
9065	High-Precision electrical measurement module	
9029	Pressure switch testing lead kit – for use with 7xx pressure controllers	
9201	Oil, Diethylhexyl Sebacate,1liter (1 quart)	
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	

Note: For more optional accessories, please refer to next page.

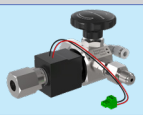
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Output pressure connections (Optional)		
Model number	**Description**	**Picture**
9057	Load Volume Expander	
ADT123	Hydraulic manifold 4 ports, 15,000 psi (1,000 bar), with high pressure hose	
ADT109-KIT	Contamination Prevention System	

External Liquid Connections (Optional)		
Model number	**Description**	**Picture**
9084	External reservior connection components (Includes 2 pcs 1.5m × 6mm hoses)	
9230	Liquid level indicator (For observe the level and refill)	

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