Additel
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Additel 793
Pressure Controller/Generator

- **Maximum pressure control range to 15,000 psi (1,000 Bar)**
- **Interchangeable pressure module**
- **Oil and water versions available**
- **Accuracy of 0.02%FS, 0.01%FS or 0.01%RD**
- **Dual-range from -15~3,000 psi (-1~200 Bar) to 0~15,000 psi (0~1,000) 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 (1,000 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)

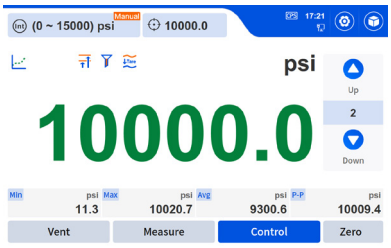
Additel's 151 pressure control modules can be installed or replaced within 30 seconds or less. Simply open the upper edge of the cabin to open. As the door opens, the controller will automatically release pressure, providing the safe removal and installation of the ADT151 modules. Additel offers five different pressure ranges for the ADT793 controller. Select between 1000 bar (15000 psi), 700 bar (10000 psi), 400 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 ADT793 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.

Vent Valve Control Module

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Pressure Specifications

Model / Specification	ADT793
Pressure Range	0 to 15,000 psi (1,000 Bar)
Precision[1]	0.008%RD or 0.007%FS or 0.01%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
Max Pressure Range of Internal Module	0~15,000 psi (0~1,000 Bar)
Min Pressure Range of Internal Module	-15~3,000 psi (-1~200 Bar)
Min Range of External Module	-15~1,000 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 or deionized water

[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: 2G
	Impact intensity: 4G
	Warmup Time: 15 minutes
	Bare Machine drop height: 250 mm
Conformity	CE, UKCA
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, 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, 3 bays, from left to right, including an accumulator inflation bay , a pressure control module bay, and a barometric module bay. For ADT793W, 2 bays, from left to right, including a pressure control module bay, and a barometric module bay.
Warranty	1 year
Hose & Filter End of Life	The estimated End of Life (EOL) expectancy for all 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 compensation and annual drift, precision specifications include linearity, hysteresis, repeatability, resolution, and temperature compensation. 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 15°C~35°C. We recommend that these pressure models be calibration annually.

Model / Range	Compound Gauge pressure		Measurement Type	Precision[2] (%FS)	Accuracy[3][4] (% FS)
	1st range[1]	2nd range			
ADT151-XX-GP15K	(0~15000) psi/ (0~1000) bar	(0~6000) psi/ (0~400) bar	Sealed gauge pressure	0.007 (0.01)	0.01 (0.02)
ADT151-XX-GP10K	(0~10000) psi/ (0~700) bar	(0~5000) psi/ (0~350) bar	Sealed gauge pressure	0.007 (0.01)	0.01 (0.02)
ADT151-XX-CP6K	(-15~6000) psi/ (-1~400) bar	(-15~3000) psi/ (-1~200) bar	Sealed gauge pressure	0.007 (0.01)	0.01 (0.02)
ADT151-XX-CP5K	(-15~5000) psi/ (-1~350) bar	(-15~3000) psi/ (-1~200) bar	Sealed gauge pressure	0.007 (0.01)	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 compensation.
[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 compensation, K=2.

High-precision Compound Gauge Pressure Module Specification					
Model	Gauge pressure range[1]	Absolute Pressure Range[2]	Measurement Type	Precision[3]	Accuracy[4]
ADT151-XX-GP15KM	(0 ~15000) psi	(15~15015) psi	Sealed gauge pressure	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater
ADT151-XX-GP10KM	(0 ~10000) psi	(15~10015) psi	Sealed gauge pressure	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater
ADT151-XX-CP6KM	(-15~6000) psi	(0~6015) psi	Sealed gauge	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater
ADT151-XX-CP5KM	(-15~5000) psi	(0~5015) psi	Sealed gauge pressure	0.008% rdg or 0.004% FS whichever is greater	0.01% rdg or 0.005% FS whichever is greater
ADT151-XX-CP3KM	(-15~3000) psi	(0~3015) psi	Sealed gauge pressure	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 compensation.
[4] Accuracy: the error components include linearity, hysteresis, repeatability, resolution, reference standard measurement uncertainty, annual drift, temperature compensation, 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

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)

Model number	Quantity	Picture
AC power cord (10A 250V)	1 pc	
ISO17025 accredited calibration certificate	1 pc	
Green terminal plug (For switch test)	2 pcs	
O-ring 3.5 × 1.5 (For sealing pressure module)	10 pcs	
Drain switch valve assembly (Switch valve + 0.5m × 6mm tube)	1 set	
Accumulator inflation assembly (Adapter + 1.5m tube for gas inflation), oil media units only	1 set	

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 cable	
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	

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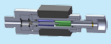
Output pressure connections (Optional)		
Model number	**Description**	**Picture**
Load volume expander	Can expand the load volume to 250ml from 80ml max.	
ADT123	Hydraulic manifold (4 ports, 700 bar, with high pressure hose)	
ADT109-KIT	Contamination Prevention System	

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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