

SPECIFICATIONS
Electrical Specification
Metrology Made Simple

Source Accuracy						
Specifications	ADT226			ADT226Ex		
	Range	Resolution	Accuracy	Range	Resolution	Accuracy
Voltage DC	0 to 15 V	0.25 mV	0.015%RDG + 0.75 mV	0 to 10.5 V	0.2 mV	0.02%RDG + 0.5 mV
Current DC	0 to 25 mA	0.5 uA	0.015%RDG + 1.2 uA	0 to 25 mA	0.5 uA	0.02%RDG + 1.2 uA
Resistance	0 to 400 Ω	10 mΩ	0.015%RDG + 20 mΩ	0 to 400 Ω	10 mΩ	0.02%RDG + 20 mΩ
	0 to 4000 Ω	100 mΩ	0.015%RDG + 200 mΩ	0 to 4000 Ω	100 mΩ	0.02%RDG + 200 mΩ
Frequency	0.01 to 5 Hz	Auto range, 6-digit	0.005% RD + 0.00005 Hz	0.01 to 5 Hz	Auto range, 6-digit	0.005% RD + 0.00005 Hz
	5 to 50 Hz		0.005% RD + 0.0005 Hz	5 to 50 Hz		0.005% RD + 0.0005 Hz
	50 to 500 Hz		0.005% RD + 0.005 Hz	50 to 500 Hz		0.005% RD + 0.005 Hz
	500 to 5000 Hz		0.005% RD + 0.05 Hz	500 to 5000 Hz		0.005% RD + 0.05 Hz
	5000 to 50000 Hz		0.005% RD + 0.5 Hz	5000 to 50000 Hz		0.005% RD + 0.5 Hz
Voltage mV (TC)	-10 to 75 mV	1.5 uV	0.015%RDG + 4.0 uV	-10 to 75 mV	1.5 uV	0.02%RDG + 4.0 uV
Pulse	0 to 9999999	1	N/A	0 to 9999999	1	N/A
	Optional rising edge and falling edge, minimum threshold voltage: 2.5V					
Loop power (max 25mA)	24 V	N/A	±1 V	20 V	N/A	± 10%

Measurement Accuracy Cont.

Specifications	ADT226			ADT226Ex		
	Range	Resolution	Accuracy	Range	Resolution	Accuracy
Voltage DC	-300 to 300 mV	1 uV	0.015% RDG + 15 uV	-300 to 300 mV	1uV	0.02% RDG + 15uV
	-30 to 30 V	0.1 mV	0.015%RDG + 1.5mV	-30 to 30 V	0.1 mV	0.02% RDG + 1.5mV
	Temperature Coefficient: ±5 ppm FS/°C (-10°C to 10°C and 30°C to 50°C) Impedance: -300 mV to 300 mV = > 100 MΩ -30 V to 30 V = >1 MΩ			Temperature Coefficient: ±5ppm FS/°C (-20°C to -10°C)		
DC High Voltage	-3 to 3 V	10 mV	0.05% RDG + 0.3 mV	N/A	N/A	N/A
	-30 to 30 V		0.05% RDG + 3 mV			
	-300 to 300 V		0.05% RDG + 30 mV			
	Temperature coefficient: ±0.0025% FS/°C (-10°C to 10°C and 30°C to 50°C)					
	The highest input voltage is 300 V, IEC61010 300V CATII					
	Common mode rejection: >100 dB (at 50 or 60 Hz)					
Impedance: > 4 MΩ, DC coupling						
AC High Voltage	3V (40 to 500 Hz)	10 mV	0.5% RDG + 1.5 mV	N/A	N/A	N/A
	30V (40 to 500Hz)		0.5% RDG + 15 mV			
	300V (40 to 500 Hz)		0.5% RDG + 150 mV			
	Temperature coefficient: ± (0.025% RD + 0.0025% FS) /°C (-10°C to 10°C and 30°C to 50°C)					
	The highest input voltage is 300 V, IEC61010 300V CATII					
	9% to 100% of range is suitable for the above accuracy indicators					
Impedance: >4 MΩ, <100pF, AC coupling						
Current DC	-30 to 30 mA	0.1 uA	0.015% RDG + 1.5 uA	-30 to 30 mA	0.1 uA	0.02% RDG + 1.5uA
	Temperature Coefficient: ±5ppm FS/°C (-10°C to 10°C and 30°C to 50°C), Impedance: < 40 Ω					
Resistance (4-Wire)	0 to 400 Ω	1 mΩ	0.015% RDG + 20 mΩ	0 to 400 Ω	1 mΩ	0.02% RD + 20 mΩ
	0 to 4000 Ω	1 mΩ	0.015% RDG + 200 mΩ	0 to 4000 Ω	10 mΩ	0.02% RD + 200 mΩ
	Temperature Coefficient: ±5ppm FS/°C (-10°C to 10°C and 30°C to 50°C)			Temperature Coefficient: ±5ppm FS/°C (-20°C to -10°C)		
	2-Wire + 50 mΩ, 3-wire + 10 mΩ					
	Excitation current: 0.2 mA					

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Measurement Accuracy Cont.						
Specifications	ADT226			ADT226Ex		
	Range	Resolution	Accuracy	Range	Resolution	Accuracy
Voltage mV (TC)	-10 to 75 mV	0.1uV	0.015% RDG + 4.0 μ V	-10 to 75 mV	0.1uV	0.02% RD + 4.0 μ V
	Temperature Coefficient: \pm 5ppm FS/ $^{\circ}$ C (-10 $^{\circ}$ C to 10 $^{\circ}$ C and 30 $^{\circ}$ C to 50 $^{\circ}$ C) Impedance: >100 M Ω			Temperature Coefficient: \pm 5ppm FS/ $^{\circ}$ C (-20 $^{\circ}$ C to -10 $^{\circ}$ C)		
Frequency	0.01 to 5 Hz	Auto range, 6-digit	0.005% RD + 0.00005 Hz	0.01 to 5 Hz	Auto range, 6-digit	0.005% RD + 0.00005 Hz
	5 to 50 Hz		0.005% RD + 0.0005 Hz	5 to 50 Hz		0.005% RD + 0.0005 Hz
	50 to 500 Hz		0.005% RD + 0.005 Hz	50 to 500 Hz		0.005% RD + 0.005 Hz
	500 to 5000 Hz		0.005% RD + 0.05 Hz	500 to 5000 Hz		0.005% RD + 0.05 Hz
	5000 to 50000 Hz		0.005% RD + 0.5 Hz	5000 to 50000 Hz		0.005% RD + 0.5 Hz
Minimum threshold voltage: 2.5 V						
Supported units: Hz, kHz, MHz, CPM, CPH, s, ms, μ s						
Pulse	0 to 9999999	1	N/A	0 to 9999999	1	N/A
	Optional rising edge and falling edge, minimum threshold voltage: 2.5V					
Switch	Support for dry or wet switch, voltage range of 3 to 30 V, response speed of < 10 ms					

General Specification

Specifications	ADT226	ADT226Ex
Operating Temperature	-10 $^{\circ}$ C to 50 $^{\circ}$ C	-20 $^{\circ}$ C to 50 $^{\circ}$ C
Specification guaranteed temperature range	10 $^{\circ}$ C to 30 $^{\circ}$ C	-10 $^{\circ}$ C to 50 $^{\circ}$ C
Storage Temperature	-30 $^{\circ}$ C to 70 $^{\circ}$ C	-30 $^{\circ}$ C to 70 $^{\circ}$ C
Humidity	<95%, non-condensing	<95%, non-condensing
Power supply	6600mAh, 23.8Wh lithium battery, charging time 4~6 hours, battery pack can be charged independently	4000mAh 14.4Wh Explosion-proof lithium battery pack charging time 6~8 hours, battery pack can be charged independently
User interface	Icon drive menus	Icon driven menus with navigation buttons
Ports protection voltage	50V max (Only for the top ports)	30V max
Display	5.0 inch 480 x 800 mm TFT LCD capacitive screen	4.4 inch 640 x 480 mm color display capacitive screen
Maximum altitude	3000 meters	
European Compliance	CE, UKCA	CE
Electrical Connection	\varnothing 4mm sockets and flat mini-jack thermocouple socket	
Size	6.97" x 4.13" x 2.04" (177 mm x 105 mm x 52 mm)	
Weight	1.6 lb (0.7 kg)	1.65 lb (0.75Kg)
Battery	Rechargeable Li-ion battery (included)	
Battery Life	Typically 16 hours	Typically 35 hours
Battery Charge	110V/220V external power adapter included. Battery can be charged external to the unit. Typically charge time is 6-8 hours.	
External pressure module	Dual channel aerial plug, can connect two digital pressure modules	
Warm-up time	Full specification performance is achieved after a 10 minute warm-up time.	
ROHS compliant	Rohs II Directive 2011/65/EU, EN50581:2012	
Display rate	3 readings per second	
Barometric Accuracy (Built-in barometer)	55Pa	
IP protection level	IP67, 1 meter drop test	
Communication	Isolate USB-TYPEC (slave), Bluetooth BLE	
User Interface Localization	English, German, French, Italian, Spanish, Portuguese, Simplified Chinese, Traditional Chinese, Japanese, Russian, Czech, Slovak	English, Simplified Chinese, Traditional Chinese, Japanese
Calibration	ISO 17025 accredited calibration with data	
Warranty	3 years	

Pressure Specification

Pressure Specification(ADT226 & ADT226Ex)

The 161 series Intelligent Digital Pressure Modules are available for gauge, vacuum and absolute pressure from -15 psi to 60,000 psi (-1 bar to 4200 bar). Accuracy from 0.02% FS includes operation over 14°F to 122°F (-10°C to 50°C), one year stability and calibration uncertainty. For detailed specifications, please refer to the pressure modules datasheet.

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Temperature Specification

Thermocouple Measurement and Source Accuracy								
Type	Standard	ADT226			ADT226Ex			
		Temperature Range (°C)	Accuracy (°C)		Standard	Temperature Range (°C)	Accuracy (°C)	
			Measure / Source				Measure / Source	
S	IEC 584	-50 to 1768	-50~0	0.96	IEC 584	-50 to 1768	-50~100	0.96
			0~100	0.69			100~1000	0.69
			100~1768	0.64			1000~1768	0.73
R	IEC 584	-50 to 1768	-50~0	1.02	IEC 584	-50 to 1768	-50~0	1.03
			0~200	0.71			0~200	0.71
			200~1768	0.56			200~1768	0.65
B	IEC 584	0 to 1820	200~300	1.89	IEC 584	0 to 1820	200~300	1.90
			300~500	1.25			300~500	1.26
			500~800	0.78			500~800	0.79
			800~1820	0.55			800~1820	0.57
K	IEC 584	-270 to 1372	-250 to -200	0.97	IEC 584	-270 to 1372	-250 to -200	1.04
			-200 to -100	0.30			-200 to -100	0.32
			-100 to 600	0.18			-100 to 600	0.21
			600 to 1372	0.35			600 to 1372	0.43
N	IEC 584	-270 to 1300	-250 to -200	1.50	IEC 584	-270 to 1300	-250 to -200	1.58
			-200 to -100	0.44			-200 to -100	0.46
			-100 to 1300	0.30			-100 to 1300	0.37
E	IEC 584	-270 to 1000	-250~-200	0.54	IEC 584	-270 to 1000	-250~-200	0.59
			-200~-100	0.20			-200~-100	0.22
			-100~700	0.15			-100~700	0.18
			700~1000	0.20			700~1000	0.25
J	IEC 584	-210~1200	-210~-100	0.26	IEC 584	-210~1200	-210~-100	0.28
			-100~700	0.15			-100~700	0.19
			700~1200	0.25			700~1200	0.31
T	IEC 584	-270 to 400	-250~-100	0.74	IEC 584	-270 to 400	-250~-100	0.79
			-100~0	0.15			-100~0	0.16
			0~400	0.11			0~400	0.13
C	ASTM E988	0 to 2315	0 to 1000	0.35	ASTM E988	0 to 2315	0 to 1000	0.40
			1000 to 1800	0.62			1000 to 1800	0.73
			1800 to 2315	1.02			1800 to 2315	1.22
D	ASTM E988	0~2315	0~100	0.39	ASTM E988	0~2315	0~100	0.39
			100~1200	0.37			100~1200	0.43
			1200~2000	0.65			1200~2000	0.77
			2000~2315	1.03			2000~2315	1.24
G	ASTM E1751	0 to 2315	50~100	1.12	ASTM E1751	0 to 2315	50~100	1.12
			100~200	0.72			100~200	0.72
			200~400	0.45			200~400	0.46
			400~1500	0.37			400~1500	0.43
L	DIN43710	-200 to 900	1500~2315	0.77	DIN43710	-200 to 900	1500~2315	0.92
			-200 to -100	0.15			-200 to -100	0.16
			-100 to 400	0.13			-100 to 400	0.14
			400 to 900	0.17			400 to 900	0.20
U	DIN43710	-200 to 600	-200 to 0	0.28	DIN43710	-200 to 600	-200 to 0	0.29
			0 to 600	0.13			0 to 600	0.15

Note: Internal CJC is $\pm 0.15^{\circ}\text{C}$ (-10°C to 50°C ambient temperature)
Accuracy with external cold junction only, for internal cold junction add 0.15 °C (k=2)

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RTD Measurement and Source Accuracy				
Measure and Simulate	Temperature Range (°C)		Accuracy (°C)	
			ADT226	ADT226Ex
PT10(385)	-200 to 850	-200~200	0.62	0.64
		200~600	0.77	0.82
		600~850	0.88	0.95
PT25(385)	-200 to 850	-200~200	0.29	0.31
		200~600	0.40	0.44
		600~850	0.47	0.54
PT50(3916)	-200 to 850	-200~200	0.18	0.20
		200~600	0.27	0.32
		600~850	0.34	0.40
PT100(385) PT100(391) PT100(3916) PT100(3926)	-200 to 850	-200~200	0.13	0.15
		200~600	0.21	0.26
		600~850	0.27	0.34
PT200(385)	-200 to 850	-200~200	0.34	0.37
		200~300	0.37	0.40
		300~600	0.46	0.51
		600~850	0.54	0.61
PT400(385)	-200 to 850	-200~0	0.17	0.18
		0~200	0.21	0.23
		200~600	0.30	0.35
		600~850	0.37	0.44
PT500(385)	-200 to 850	-200~200	0.18	0.20
		200~600	0.27	0.32
		600~850	0.34	0.40
PT1000(385)	-200 to 850	-200~200	0.13	0.15
		200~600	0.21	0.26
		600~850	0.27	0.34
Cu10(427)	-200~260	-200~260	0.59	0.61
Cu50(428)	--200~260	-200~260	0.15	0.17
Cu100(428)	-200~260	-200~260	0.10	0.12
Ni100(617) Ni100(618)	-60~180	-60~0	0.06	0.07
		0~180	0.06	0.08
Ni120(672)	--80~260	-80~260	0.06	0.07
Ni1000	-50~150	-50~150	0.08	0.09

*Note: Ambient temperature of 20°C±10°C.

4-wire accuracy. For 2-wire add 50 mΩ, for 3-wire add 10 mΩ

ORDERING INFORMATION

■ Model Number

ADT226

ADT226

ADT226Ex: Intrinsically Safe

<i>Accessories (included)</i>		
Model number	Description	QTY
9811-X	110V/220V external power adapter (Only for ADT226)	1 pc
9811Ex-X	110V/220V external power adapter (Only for ADT226Ex)	1 pc
9704	Chargeable Li-ion battery (Only for ADT226)	1 pc
9704Ex	Chargeable Li-ion battery (Only for ADT226Ex)	1pc
9023	Test leads	1 set (6 pcs)
9027	Right angle test leads (Non-Ex models only)	1 set (2 pcs)
9060	Pressure module connection cable	1 pc
9052	USB Cable type A to type C (Non-Ex models only)	1 pc
9052Ex	Ex USB Cable type A to type C (For Ex models only)	1 pc
9040	Hanging strap with magnet	1 pc
	ISO 17025 accredited calibration certificate	1 pc

<i>Optional Accessories</i>	
Model number	Description
ADT161 - XXX	Digital Pressure Modules
ADT161Ex - XXX	Intrinsically Safe Digital Pressure Modules
ADT129-X	Differential Pressure Manifold, -15 to 3,000 psi
9062	Connection adapter cable for Fluke style pressure modules to non-explosion-proof Additel readouts
AM1602-6FT	Class A, PT100/385 Industrial RTD, -40°C to 160°C, 3/16 (4.76 mm) inch x 2 inch (50 mm) with 6 foot (1.8 Meters) cable w/ banana jack connectors
9080	Cable kit (including TC plug, compensation cable, S,R,K,J,T,E,N)
9704	Spare chargeable Li-ion battery for multifunction calibrator ADT226
9704Ex	Spare chargeable Li-ion battery for multifunction calibrator ADT226Ex
9811-X	110 V/220 V external power adapter for handheld models
9811Ex-X	110 V/220 V external power adapter for Ex handheld models
9906A	Hard carrying case for handheld instrument with accessories
9918-SC	Soft carrying case, with space for handheld instrument, test leads, and accessories
9530-BASIC	Additel/Acal Task management software for multifunction calibrator
9530-NET	Additel/Acal Automated calibration software with asset management, network version, Includes server installation and 1 user license

* Additel/Land software can be downloaded for free at www.additel.com