Additel 875 Series Dry Well Calibrators





- Three models ranging from -40°C to 660°C
- Portable, rugged, and quick to temperature
- Metrology-level performance in stability, uniformity, accuracy and loading effect
- Dual-zone control
- Process calibrator option provides a multi-channel readout for a reference thermometer, RTDs and TCs, task documentation, and HART communication
- Color touch screen display
- Choose your own range option
- Set point control by reference
- Self-calibration feature

OVERVIEW

If you are serious about portable temperature calibration tools, then you know a good dry well calibrator is more than just a stable heat source. The Additel 875 Series Dry Well Calibrators combine excellent performance in stability, radial and axial uniformity, and loading with speed, ruggedness and portability. But we don't stop there! The Process Calibrator option adds the capabilities of a three-channel thermometer readout and a documenting process calibrator. We've also incorporated a unique option to select your own temperature range within the range of the model selected. We're calling this the CYOR option or Choose Your Own Range option. When you purchase the CYOR option, you pick the upper and lower temperature range needed and we calibrate and optimize the dry well's performance over your selected range. Each unit has a color touch screen display, dual-zone control, and much more. You are just going to love these new dry wells!



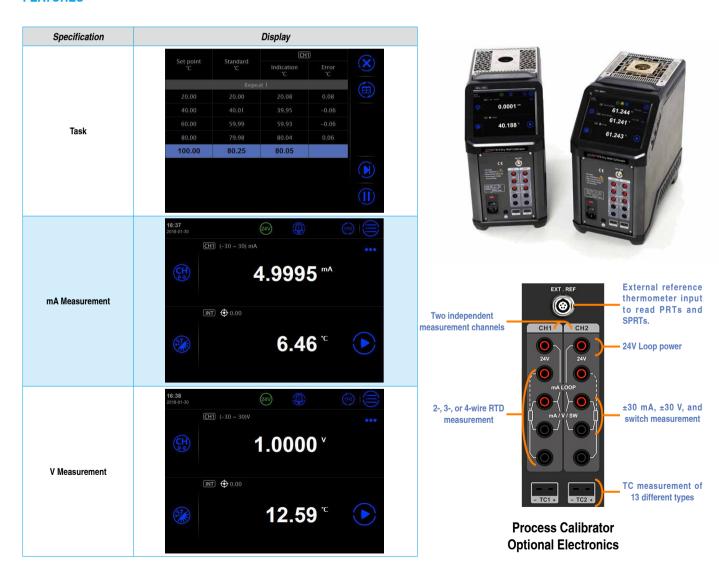
Process Calibrator Option

Each model offer has a Process Calibrator (PC) option. This process calibrator option combines the many features found in a HART documenting process calibrator with the temperature dry well. This option includes the ability to measure a reference PRT and two device under test channels which can measure, mA, voltage, switch, RTD or thermocouple. In addition to these measurement functions, this calibrator has full documenting capability of creating tasks, saving as found and as left results, and HART communication. The snap shot feature allows you to capture all information displayed on the screen with the push of a button. This unit also allow for data logging of all channels on an auto step function and a ramp function. By utilizing the reference PRT, you can select to control to the dry well set point using the internal sensor or the external reference PRT.

Self Calibration

We believe using an external reference probe as your standard is the best way to perform your temperature calibration. But we also recognize this method is not always necessary or convenient and depending on the application, using the internal control sensor would be preferred. Traditionally, the internal control sensor has a wide accuracy which can largely be contributed to its long-term drift. We've built-in a self calibration feature allowing you to run an automated calibration of the internal control sensor using your external reference. With literally a few selections the calibration will run automatically giving you a fresh, traceable calibration of the control sensor which will improve its accuracy as you will not have to account for its long term drift when used as the reference.

FEATURES



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FEATURES

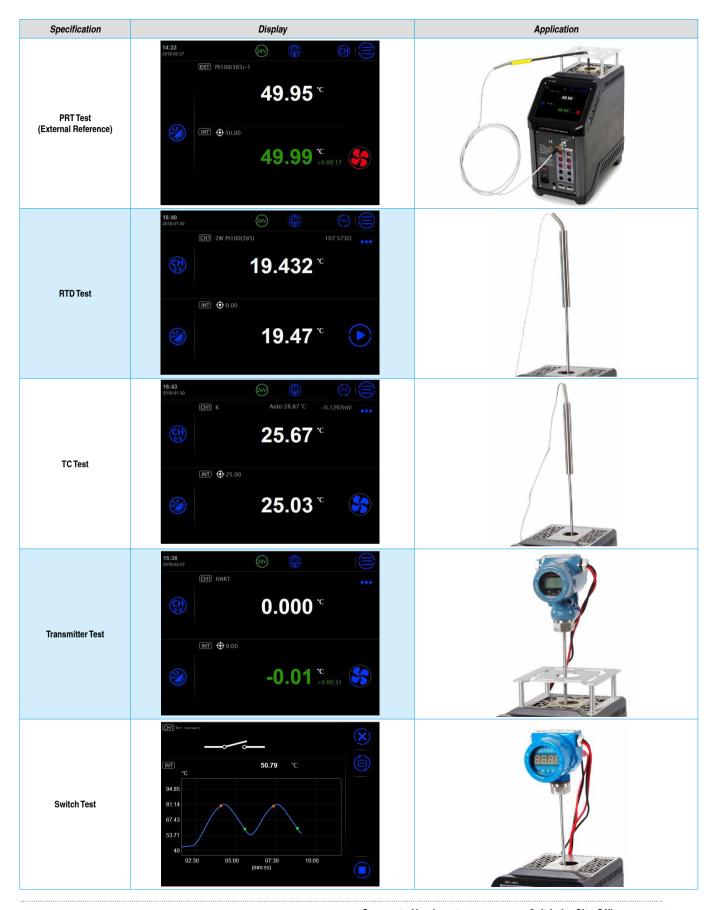




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APPLICATIONS





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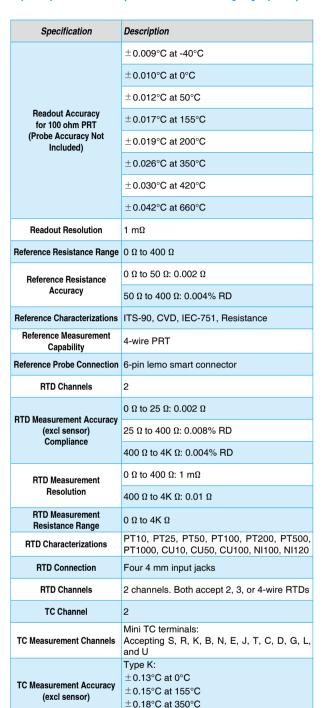
SPECIFICATIONS



Base Unit Dry Well Specifications

Specification	875-155 875-350 875-660				
Temperature Range at 23°C	-40°C to 155°C	33°C to 350°C	33°C to 660°C		
			±0.3°C at 33°C		
Display Accuracy	±0.18°C at Full Range	\pm 0.2°C at Full Range	±0.3°C at 420°C		
	-	·	± 0.5°C at 660°C		
			± 0.02°C at 33°C		
			±0.03°C at 50°C		
Stability (30 min)	\pm 0.01°C at Full Range	\pm 0.02°C at Full Range	±0.04°C at 420°C		
			±0.04°C at 660°C		
		±0.04°C at 33°C	±0.05°C at 33°C		
Axial Uniformity at 60 mm (2.4 in)	\pm 0.07°C at Full Range	±0.1°C at 200°C	± 0.3°C at 420°C		
at 00 mm (2.4 m)		\pm 0.2°C at 350°C	±0.5°C at 660°C		
		±0.01°C at 33°C	±0.02°C at 33°C		
Radial Uniformity	±0.01°C at Full Range	±0.015°C at 200°C	±0.05°C at 420°C		
		±0.02°C at 350°C	±0.1°C at 660°C		
	±0.1°C (Display Sensor)	\pm 0.15°C (Display Sensor)	±0.15°C (Display Sensor)		
Loading Effect	±0.02°C (External Sensor)	\pm 0.015°C (External Sensor)	\pm 0.025°C (External Sensor)		
Hysteresis (Display Sensor)	0.025°C	0.03°C	0.1°C		
Environmental Conditions	8°C to 38°C guaranteed accuracy				
Environmental Conditions	0°C to 50°C, 0% to 90% RH non-condens	sing, 3000 M altitude for normal operation			
Storage Conditions		-20°C to 60°C			
IP Rating	IP20				
Immersion Depth		150 mm (5.9 in)			
Insert OD	25.8 mm (1.02 in)	24.8 mm	(0.98 in)		
	13 min: -40°C to 155°C				
Heating Time	5 min: -40°C to 23°C	5 min: 33°C to 350°C	15 min: 33°C to 660°C		
	8 min: 23°C to 155°C				
	28 min: 155°C to -40°C	15 min: 350°C to 100°C	23 min: 660°C to 100°C		
Cooling Time	8 min: 155°C to 23°C	10 min: 100°C to 50°C	12 min: 100°C to 50°C		
	20 min: 23°C to -40°C	10 min: 50°C to 33°C	12 min: 50°C to 33°C		
Typical Time to Stability		10 min			
Resolution	0.01°C				
Units	°C, °F, and K				
Display	6.5 in (165 mm) color touch screen				
Size (H x W x D)	320 x 170 x 330 mm (12.6 x 6.7 x 13.0 in)				
Weight	9.9 kg (21.8 lbs)	8.2 kg (18.1 lbs)		
Power Requirements	90-254 VAC, 45-65 Hz, 580 W	90-254 VAC, 45	i-65 Hz, 1200 W		
	Vibration: 2 g (10-500 Hz), 30 min for 2 sides				
Mechanical Testing	Impact: 4 g three times				
		Drop test: 500 mm (19.6 in)			
Communication	USB A, USB B, RJ45, WiFi, Bluetooth				
	English, Chinese, Japanese, Russian, German, French, Italian, and Spanish				

Input Specifications (Process Calibrator [PC] Option)



±0.24°C at 660°C

-100 mV to 100 mV

 $0.02\% \text{ RD} + 5 \,\mu\text{V}$

-30 mA to 30 mA

 $0.02\% \text{ RD} + 2 \mu\text{A}$

Phone: 714-998-6899 Fax: 714-998-6999 Email: sales@additel.com

0.001 mV, Input Impedance <1 $M\Omega$

±0.35°C (ambient from 0 °C to 50 °C)

0.001 mA, Input Impedance: $< 10\Omega$

TC Range

TC Resolution

TC Voltage Accuracy

Internal CJC Accuracy

Current Range Current Accuracy

Current Resolution



Specification	Description	
Voltage Range	–30 V to 30 V	
Voltage Accuracy	±0.02% RD + 2 mV	
Voltage Resolution	0.001V; Input impedance: < 1MΩ	
Switch Test	Mechanical or Electrical	
DC 24V Output	24 V ±1 V, MAX60 mA	
Hart Communication	Optional (ADT875PC Model)	
Documentation	Up to 1,000 tasks which store up to 10 results each containing as found and as left data. Snap shot feature allows for screen captures. Records auto step and ramp functions.	
	ADT875(PC)-155: ±0.005 °C/°C	
	ADT875(PC)-350/660: ±0.01 °C/°C	
	Ref Readout: ±1 ppm FS/°C	
Temperature Coefficient 0°C to 8°C and 38°C to 50°C	RTD Readouts: ±2 ppm FS/°C	
	TC Readouts: ±5 ppm FS/°C	
	Current: ±10 ppm FS/°C	
	Voltage: ±10 ppm FS/°C	

TC Measurement Specification and Calculation (Process Calibrator [PC] Option)

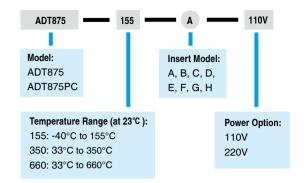
	remperature (C)	Error (°C)	ТСТуре	Temperature (°C)	Error (°C)[1]
В	250	±2		-40	±0.1
	350	±1.44		0	±0.1
	660	±0.84	L	155	±0.12
	0	±0.38		350	±0.16
С	155	±0.34		660	±0.21
·	350	±0.33		-40	±0.2
	660	±0.38		0	±0.2
	0	±0.52	N	155	±0.19
D	155	±0.37		350	±0.2
ט	350	±0.33		660	±0.24
	660	±0.36		-40	±1.23
	-40	±0.09		0	±0.95
	0	±0.09	R	155	±0.63
E	155	±0.1		350	±0.56
	350	±0.13		660	±0.54
	660	±0.19		-40	±1.16
	0	±3.85		0	±0.93
G	155	±0.71	S	155	±0.65
u	350	±0.43		350	±0.6
	660	±0.36		660	±0.6
	-40	±0.1		-40	±0.14
	0	±0.1		0	±0.13
J	155	±0.12	Т	155	±0.13
	350	±0.16		350	±0.15
	660	±0.21		400	±0.15
	-40	±0.13		-40	±0.14
	0	±0.13		0	±0.13
K	155	±0.16	U	155	±0.13
	350	±0.19		350	±0.14
	660	±0.25		600	±0.17

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Ordering Information

Model Number



CYOR Option (Choose Your Own Range)

Optional Accessories					
Model	Description	Picture			
9875-155-CYOR	Range selection for ADT875- 155 Dry Well Calibrator, Customize Range				
9875-350-CYOR	Range selection for ADT875- 350 Dry Well Calibrator, Customize Range				
9875-660-CYOR	Range selection for ADT875- 660 Dry Well Calibrator, Customize Range				

Accessories

Standard Accessories					
Model	Quantity	Picture			
Dry well and selected insert	1 pc.				
Power adapter	1 pc.				
USB Cable	1 pc.				
Insert removal tool	1 pc.				
Thermal Shield (ADT875/PC-350/660 only)	1 pc.	TO			
Silica gel plug (ADT875/PC-155 only)	1 set (3 pcs.)				
Insulation plug (ADT875/PC-155 only)	1 pc.				
Test leads (ADT875PC only)	2 sets (6 pcs.)				
Certificate of calibration	1 pc.				
CD Manual	1 pc.				

Optional Accessories					
Model	Description	Picture			
9918-875	Carry case for ADT875 with wheels				
ADT110-875-X- INSERT-X	Insert for ADT875, see insert ordering information on the next page				
AM17XX-12-ADT	Secondary PRT with dry well connector, see PRT information on the next page				
AM17XX-BEND- ADT	Bend Secondary PRT with dry well connector, see PRT information on the next page				
9070	Smart connector for reference PRT used with ADT875 Dry Well Calibrator				
9071	Connector Adapter from smart connector to 4-wire with gold- plated spades for ADT875 Dry Well Calibrator	100			
9072	Smart connector with clamps for reference PRT used with ADT875 Dry Well Calibrator	M			
9080	CJC Cable Kit (includes TC to Plug, TC to TC, TC to Banana, and B,E,J,K,N,R,S,T,U cables)				

Insert Information

Insert Information					
Insert Information					
Model	Specification	Model	Specification		
Α	High Temp 1/4 in 3/8 in A 1/4 in 3/16 in 1/8 in Low Temp	F	High Temp 6.5 mm 10 mm JF 8 mm 6.5 mm		
В	High Temp 1/4 in B 3/8 in 3/16 in Low Temp	G	High Temp		
С	High Temp 1/4 in C 1/4 in 1/4 in Low Temp	Н	High Temp 1/4 in 4 mm 4 mm 6 mm Low Tem		
D	High Temp	Z	High Temp Low Tem		
E	High Temp 14 in 10 mm E 8 mm 4 mm 6 mm Low Temp		ated insert information at additel.com		

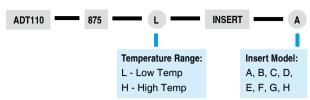
Corporate Headquarters 2900 Saturn Street #B

Brea, CA 92821, USA

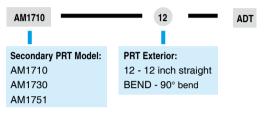
Salt Lake City Office 1364 West State Rd. Suite 101 Pleasant Grove, UT 84062, USA







Secondary PRT Ordering Information







Secondary PRT Information

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AM17XX-BEND-ADT

Specification	AM1710 Series	AM1730 Series	AM1751 Series		
Temperature Range	-60°C to 160°C	-200°C to 420°C	-200°C to 670°C		
Resistance at 0°C	Nominal 100 Ω				
Temperature Coefficient		0.003925 Ω / Ω / °C			
Accuracy	±0.025°C at -40°C ±0.015°C at 0.01°C ±0.025°C at 160°C	\pm 0.025°C at -196°C \pm 0.015°C at 0.01°C \pm 0.035°C at 420°C	±0.025°C at -196°C ±0.015°C at 0.01°C ±0.035°C at 420°C ±0.05°C at 661°C		
Drift	\pm 0.01°C at TPW after 100 hours at 160°C	\pm 0.01°C at TPW after 100 hours at 420°C	\pm 0.01°C at TPW after 100 hours at 661°C		
Short Term Stability		±0.007°C			
Thermal Shock	±0.005°C after 10	times thermal cycles from minimum to max	imum temperatures		
Hysteresis	<=0.005°C				
Self-heating	50 mW/°C				
Response Time	9 seconds for 63% response to step change in water moving at 3 feet per second				
Measurement Current	0.5 mA or 1 mA				
Sensor Length	32 mm				
Sensor Location	5 mm from tip				
Insulation Resistance		>1000 $M\Omega$ at room temperature			
Sheath Material	Stainless Steel	Inco	nel tm		
	AM1710-12-ADT 0.25 in dia X 12 in (6.35 mm X 305 mm)	AM1730-12-ADT 0.25 in dia X 12 in (6.35 mm X 305 mm)	AM1751-12-ADT 0.25 in dia X 12 in (6.35 mm X 305 mm)		
Dimension	AM1710-BEND-ADT 0.25 in dia X 12 in (6.35 mm X 305 mm), 90° bend at 7.4 inch (190 mm) from probe end	AM1730-BEND-ADT 0.25 in dia X 12 in (6.35 mm X 305 mm), 90° bend at 9.6 inch (245 mm) from probe end	AM1751-BEND-ADT 0.25 in dia X 12 in (6.35 mm X 305 mm), 90° bend at 9.6 inch (245 mm) from probe end		
External Leads	Teflon tm –insulated copper wire, 4 leads, 2.5 meters				
Handle Dimension	15 mm (OD) x 65 mm (L)				
Handle Temperature Range ^[1]	-50°C to 160°C	-50°C to 180°C			
Optional Calibration	NIST traceable calibration and data available per request				

^[1] Handle temperature outside this range will cause damage to the probe.

Phone: 714-998-6899 Fax: 714-998-6999 Email: sales@additel.com

^{*} PRT Information from www.accumac.com