



# THERMAL BUFFER BOTTLE KIT

## Thermal Buffer



ACI Thermal Buffers counter rapid temperature fluctuations typically caused by doors opening in a walk-in freezer or cooler. The ACI Thermal Buffer Bottle comes with all the items needed to add a buffer to any new or existing sensor installation. All the parts include the food grade Glycol or Glass beads buffer, 304 series stainless steel Mounting bracket, stainless steel screws, Nalgene Bottle, and probe fitting. The 2oz Glycol bottle includes a PG7 Cable Gland with Neoprene Gasket (Seal) that will fit 3/16" to 1/4" probe sizes. The 2oz Glass beads Thermal Buffer bottle includes a 316 stainless steel compression fitting that will fit 3/16" diameter sensing probes only. The 8.5oz bottle will fit 3/16" diameter sensing probes only.

ACI's Glycol buffer should be used in freezer/fridge applications, rated down to -40°C (-40°F). ACI's Glass Bead Buffer should be used in extreme low temperature applications, rated down to -100°C (-148°F).

The "-3PT" Triple Point Thermal buffer should be used in pharmaceutical or critical applications where multiple sensor redundancy is required with the 3rd sensing opening available for insertion of your NIST Certified standard or reference.

For more information regarding the Glycol or Glass Bead Thermal Buffer Bottles and Accessories, or to discuss your application in more detail, please contact ACI.

**Applications:** Monitor Freezer and Refrigerator Temperatures, Cryogenic Temperatures, Pharmaceuticals, Meat Packing Plants, Cold Storage Facilities, Thermal Buffer (Slows Response Times)

**The ACI Thermal Buffer Bottles and Accessories Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site.**

### PRODUCT SPECIFICATIONS

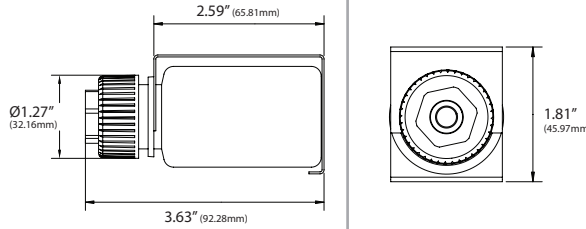
2 oz Thermal Buffer Bottle Glycol	<b>Thermal Media:</b>	Glycol
	<b>Bottle Material/Cap Material:</b>	Nalgene (HDPE) / Polypropylene
	<b>Fluid Capacity:</b>	67 ml (2 oz)
	<b>Bottle Dimensions: (Height x Diameter)</b>	3.386" (86.00 mm) x 1.535" (39.00 mm)
	<b>Cable Gland Material / Gland Material</b>	Polyamide 6 / Neoprene
	<b>Cable Gland Torque Rating</b>	1.66 Nm (14.7 lb. inch)
	<b>Probe Size Accepted:</b>	0.098" to 0.256" (2.49mm to 6.50mm)
	<b>Operating Temperature Range:</b>	-40 to 120°C (-40 to 248°F)
2 oz Thermal Buffer Bottle Glass Bead	<b>Thermal Media:</b>	Glass Beads
	<b>Bottle Material/Cap Material:</b>	Nalgene (HDPE) / Polypropylene
	<b>Fluid Capacity:</b>	67 ml (2 oz)
	<b>Bottle Dimensions: (Height x Diameter)</b>	3.386" (86.00 mm) x 1.535" (39.00 mm)
	<b>Compression Fitting Material:</b>	316 Stainless Steel
	<b>Probe Size Accepted:</b>	0.1875" (4.762 mm)
	<b>Operating Temperature Range:</b>	-100 to 120°C (-148 to 248°F)
8.5 oz Thermal Buffer Bottle	<b>Thermal Media:</b>	Glycol or Glass Beads
	<b>Bottle Material/Cap Material:</b>	Nalgene (HDPE) / Polypropylene w/ PTFE Foam Liner
	<b>Fluid Capacity:</b>	250 ml (8.5 oz)
	<b>Bottle Dimensions: (Height x Diameter)</b>	4.04" (102.62 mm) x 2.18" (55.37 mm)
	<b>Thermowell Material (3PT only):</b>	316 SS Steel
	<b>Probe Size Accepted:</b>	0.1875" (4.762 mm)
	<b>Operating Temp Range – Glycol:</b>	-40 to 120°C (-40 to 248°F)
	<b>Operating Temp Range – Glass Bead:</b>	-100 to 120°C (-148 to 248°F)
Bracket	<b>Bracket Material:</b>	304 Stainless Steel
	<b>Bracket Size( H x W x D):</b>	2 oz Bottle: 2.541" (64.54 mm) x 1.500" (38.10 mm) x 1.760" (44.71 mm) 8.5 oz Bottle: 3.366" (85.49 mm) x 2.630" (66.80 mm) x 3.00" (76.20 mm)
	<b>Mounting Screws / Material:</b>	#10-16 Thread x 1/2" (12.7mm) / 410 Stainless steel
Thermal Buffer Media	<b>Glycol Properties / Glycol Freezing Point:</b>	Food Grade USP (Propylene Glycol); Non-Toxic   -59°C (-74.2°F)
	<b>Glass Bead Properties / Glass Freezing Point:</b>	Soda Lime Glass / NA
General Specs	<b>Chemical Resistance:</b>	Resistant to most acids, bases, and alcohols
	<b>Bottle Sterility:</b>	Lab Quality, Non-Sterile
	<b>Storage Temperature Range:</b>	-40 to 85°C (-40 to 185°F)
	<b>Operating Humidity Range:</b>	10 to 100% RH, condensing
	<b>Agency Approvals:</b>	RoHS2, WEEE





**DIMENSIONAL DRAWING, WEIGHTS**

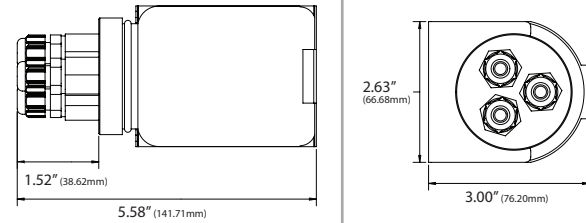
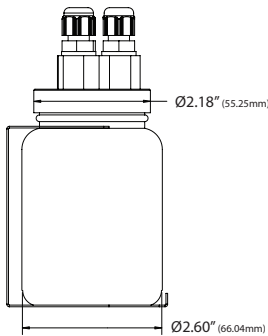
**2.0 oz Bottle**



**2.0 oz Bottle Weights**

ACI Model #	Weight
A/TB-2.0-GLA	0.5 lbs (0.227 kg)
A/TB-2.0-GLY	0.2 lbs (0.091 kg)
A/TB-2.0-XXX	0.14 lbs (0.064 kg)

**8.5 oz Bottle**



**8.5 oz Bottle Weights**

ACI Model #	Weight
A/TB-8.5-1-GLA	1.20 lbs (0.544 kg)
A/TB-8.5-1-GLY	0.892 lbs (0.404 kg)
A/TB-8.5-1-XX	0.314 lbs (0.143 kg)
A/TB-8.5-3-GLA	1.37 lbs (0.621 kg)
A/TB-8.5-3-GLY	1.066 lbs (0.484 kg)
A/TB-8.5-3-XXX	0.488 lbs (0.221 kg)

Front View

Right View

Top View

**STANDARD ORDERING**

Model # Example: **A/TB-2.0-GLA** -OR- **147220**

Model #	Item #	Description
<b>A/TB-2.0-GLA</b>	147220	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads, <b>Rated to -100°C</b>
<b>A/TB-2.0-GLY</b>	147221	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol, <b>Rated to -40°C</b>
<b>A/TB-2.0-XXY</b>	147222	Empty 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Polyamide Fitting, <b>Rated to -40°C</b>
<b>A/TB-2.0-XXA</b>	147653	Empty 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, SS Fitting, <b>Rated to -100°C</b>
<b>A/TB-8.5-1-GLA</b>	147223	Thermal Buffer, 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads, <b>Rated to -100°C</b>
<b>A/TB-8.5-1-GLY</b>	147225	Thermal Buffer, 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol, <b>Rated to -40°C</b>
<b>A/TB-8.5-1-XXX</b>	147226	Empty 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, <b>Rated to -100°C</b>
<b>A/TB-8.5-3-GLA</b>	147227	Thermal Buffer, 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Glass Beads, <b>Rated to -100°C</b>
<b>A/TB-8.5-3-GLY</b>	147228	Thermal Buffer, 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Food Grade Glycol, <b>Rated to -40°C</b>
<b>A/TB-8.5-3-XXX</b>	147229	Empty 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, <b>Rated to -100°C</b>
<b>A/GLYCOL 250ML</b>	144021	Glycol Filled Bottle (250 ML)
<b>A/GLA 250ML</b>	147328	Glass Bead Filled Bottle (250 ML)

**Note:** 2.0 (2oz) models are shipped with the original lid in place along with an additional lid drilled out with the sensor cord grip.





ACCESSORIES ORDERING. FOR USE WITH GLYCOL (2 OZ)

Model # Example: A/1K-3W-PO-4"-20'CL2P-HS -OR- 147719

Model #	Item #	Description
A/1K-3W-PO-4"-20'CL2P-HS	147719	1K Ohm RTD, Three Wires, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/100-3W-PO-4"-20'CL2P-HS	147720	100 Ohm RTD, Three Wires, Probe Only, 4", 20' Plenum Cable w/ Additional Moisture Protection
A/1K-NI-PO-4"-20'CL2P-HS	147721	1K Ohm Nickel RTD, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/CP-PO-4"-20'CL2P-HS	144077	10K Ohm (Type II) Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/AN-PO-4"-20'CL2P-HS	147723	10K Ohm (Type III) Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/CSI-PO-4"-20'CL2P-HS	147724	10K Ohm (CSI) Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/1.8K-PO-4"-20'CL2P-HS	147725	1.8K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/3K-PO-4"-20'CL2P-HS	142215	3K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/AN-BC-PO-4"-20'CL2P-HS	147726	10K Thermistor w/ 11K Shunt, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/10KS-PO-4"-20'CL2P-HS	147727	10K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/20K-PO-4"-20'CL2P-HS	147728	20K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/100KS-PO-4"-20'CL2P-HS	147729	100K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection

ACCESSORIES ORDERING. FOR USE WITH GLYCOL OR GLASS BEADS (ANY SIZE)

Model # Example: A/100-LTS-30' -OR- 126443

Model #	Item #	Description
A/100-LTS-30'	126443	100 Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads
A/1K-LTS-30'	125214	1K Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads

ACCESSORIES

Sensor Probes for Refrigerator/Freezer Applications

See Data Sheet: Refrigerator/Freezer Thermistors  
<https://www.workaci.com/sites/default/files/category-files/Thermistors%20Freezer.pdf>

See Data Sheet: Freezer RTDs (100-LTS and 1,000-LTS ohm platinum RTD)  
[https://www.workaci.com/sites/default/files/product\\_cutsheet/Platinum%20RTDs%20Freezer.pdf](https://www.workaci.com/sites/default/files/product_cutsheet/Platinum%20RTDs%20Freezer.pdf)

See Data Sheet: Freezer Transmitters (TT100-LTS, TT1K-LTS, TTM100-LTS, TTM1K-LTS)  
<https://www.workaci.com/sites/default/files/category-files/Transmitter%20Freezer.pdf>

