

Thermal Buffer Bottle Kit

Thermal Buffer



Automation Components
a DwyerOmega brand

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 67 ml (2 oz) Glycol bottle includes a PG7 Cable Gland with Neoprene Gasket (Seal) that will fit 4.76 mm (3/16 in) to 6.35 mm (1/4 in) probe sizes. The 67 ml (2 oz) Glass beads Thermal Buffer bottle includes a 316 stainless steel compression fitting that will fit 4.76 mm (3/16 in) diameter sensing probes only. The 250 ml (8.5 oz) bottle will fit 4.76 mm (3/16 in) 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)

Warranty

The ACI Thermal Buffer 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 website, workaci.com.

Specifications

2 oz Thermal Buffer Bottle Glycol

Thermal Media: Glycol

Bottle Material/Cap Material: Nalgene (HDPE) / Polypropylene

Fluid Capacity: 67 ml (2 oz)

Bottle Dimensions (Height x Diameter): 86 mm x 39 mm (3.386 in x 1.535 in)

Cable Gland Material / Gland Material: Polyamide 6 / Neoprene

Cable Gland Torque Rating: 1.66 Nm (14.7 lb-in)

Probe Size Accepted: 2.49 mm to 6.50 mm (0.098 in to 0.256 in)

Operating Temperature Range: -40 °C to 120 °C (-40 °F to 248 °F)

2 oz Thermal Buffer Bottle Glass Bead

Thermal Media: Glass Beads

Bottle Material/Cap Material: Nalgene (HDPE) / Polypropylene

Fluid Capacity: 67 ml (2 oz)



8.5 oz bottle



2 oz bottle

Bottle Dimensions (Height x Diameter): 86 mm x 39 mm (3.386 in x 1.535 in)

Compression Fitting Material: 316 Stainless Steel

Probe Size Accepted: 4.762 mm (0.1875 in)

Operating Temperature Range: -100 °C to 120 °C (-148 °F to 248 °F)

8.5 oz Thermal Buffer Bottle

Thermal Media: Glycol or Glass Beads

Bottle Material/Cap Material: Nalgene (HDPE) / Polypropylene w/ PTFE Foam Liner

Fluid Capacity: 250 ml (8.5 oz)

Bottle Dimensions (Height x Diameter): 102.62 mm x 55.37 mm (4.04 in x 2.18 in)

Thermowell Material (3PT only): 316 SS Steel

Probe Size Accepted: 4.762 mm (0.1875 in)

Operating Temp Range – Glycol: -40 °C to 120 °C (-40 °F to 248 °F)

Operating Temp Range – Glass Bead: -100 °C to 120 °C (-148 °F to 248 °F)

Bracket

Bracket Material: 304 Stainless Steel

Bracket Size(H x W x D)

2 oz Bottle: 64.54 mm x 38.1 mm x 44.71 mm (2.541 in x 1.5 in x 1.760 in)

8.5 oz Bottle: 85.49 mm x 66.8 mm x 76.2 mm (3.366 in x 2.63 in x 3 in)

Mounting Screws / Material: #10-16 Thread x 12.7 mm (1/2 in) / 410 Stainless steel

Thermal Buffer Media

Glycol Properties / Glycol Freezing Point: Food Grade USP (Propylene Glycol); Non-Toxic | -59 °C (-74.2 °F)

Glass Bead Properties / Glass Freezing Point: Soda Lime Glass / NA

General Specs

Chemical Resistance: Resistant to most acids, bases, and alcohols

Bottle Sterility: Lab Quality, Non-Sterile

Storage Temperature Range: -40 °C to 85 °C (-40 °F to 185 °F)

Operating Humidity Range: 10 % to 100 % RH, condensing

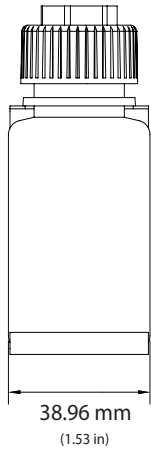
Agency Approvals: RoHS2, WEEE



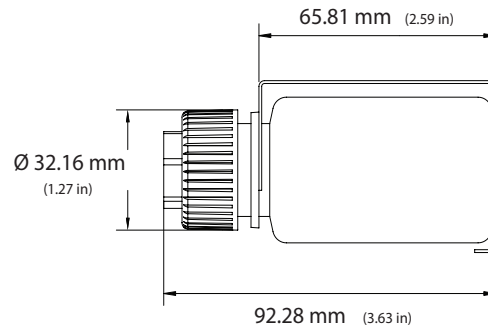
Automation Components
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Dimensions and Weight

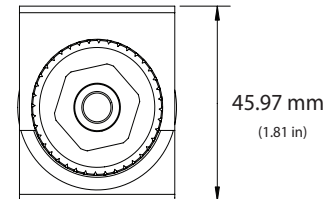
2 oz Bottle



Front View



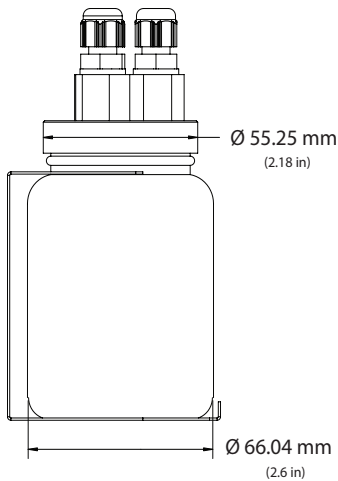
Right View



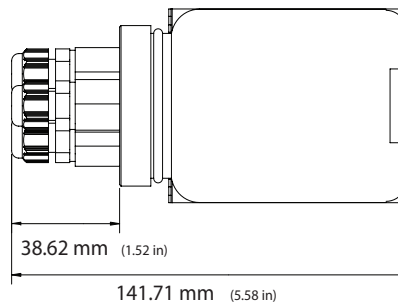
Top View

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

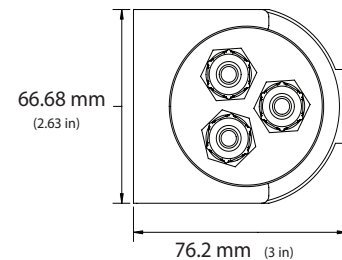
8.5 oz Bottle



Front View



Right View



Top View

ACI Model #	Weight
A/TB-8.5-1-GLA	0.544 kg (1.2 lb)
A/TB-8.5-1-GLY	0.404 kg (0.892 lb)
A/TB-8.5-1-XX	0.143 kg (0.314 lb)
A/TB-8.5-3-GLA	0.621 kg (1.37 lb)
A/TB-8.5-3-GLY	0.484 kg (1.066 lb)
A/TB-8.5-3-XXX	0.221 kg (0.488 lb)



Standard Ordering

Model #	Item #	Description
A/TB-2.0-GLA	147220	Thermal Buffer, 67 ml (2 oz) Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads, Rated to -100 °C
A/TB-2.0-GLY	147221	Thermal Buffer, 67 ml (2 oz) Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol, Rated to -40 °C
A/TB-2.0-XXY	147222	Empty 67 ml (2 oz) Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Polyamide Fitting, Rated to -40 °C
A/TB-2.0-XXA	147653	Empty 67 ml (2 oz) Nalgene Bottle, 1 Sensing Point, Mounting Bracket, SS Fitting, Rated to -100 °C
A/TB-8.5-1-GLA	147223	Thermal Buffer, 250 ml (8.5 oz) Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads, Rated to -100 °C
A/TB-8.5-1-GLY	147225	Thermal Buffer, 250 ml (8.5 oz) Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol, Rated to -40 °C
A/TB-8.5-1-XXX	147226	Empty 250 ml (8.5 oz) Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Rated to -100 °C
A/TB-8.5-3-GLA	147227	Thermal Buffer, 250 ml (8.5 oz) Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Glass Beads, Rated to -100 °C
A/TB-8.5-3-GLY	147228	Thermal Buffer, 250 ml (8.5 oz) Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Food Grade Glycol, Rated to -40 °C
A/TB-8.5-3-XXX	147229	Empty 250 ml (8.5 oz) Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Rated to -100 °C
A/GLYCOL 250ML	144021	Glycol Filled Bottle (250 ml)
A/GLA 250ML	147328	Glass Bead Filled Bottle (250 ml)

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

Note: 2.0 67 ml (2 oz) 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 67 mL (2 oz)

Model #	Item #	Description
A/1K-3W-PO-4"-20'CL2P-HS	147719	1 kΩ RTD, Three Wires, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection
A/100-3W-PO-4"-20'CL2P-HS	147720	100 Ω RTD, Three Wires, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable w/ Additional Moisture Protection
A/1K-NI-PO-4"-20'CL2P-HS	147721	1 kΩ Nickel RTD, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection
A/CP-PO-4"-20'CL2P-HS	144077	10 kΩ (Type II) Thermistor, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection
A/AN-PO-4"-20'CL2P-HS	147723	10 kΩ (Type III) Thermistor, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection
A/CSI-PO-4"-20'CL2P-HS	147724	10 kΩ (CSI) Thermistor, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection
A/1.8K-PO-4"-20'CL2P-HS	147725	1.8 kΩ Thermistor, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection
A/3K-PO-4"-20'CL2P-HS	142215	3 kΩ Thermistor, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection
A/AN-BC-PO-4"-20'CL2P-HS	147726	10 kΩ Thermistor w/ 11K Shunt, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection
A/10KS-PO-4"-20'CL2P-HS	147727	10 kΩ Thermistor, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection



A/20K-PO-4"-20'CL2P-HS	147728	20 kΩ Thermistor, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection
A/100KS-PO-4"-20'CL2P-HS	147729	100 kΩ Thermistor, Probe Only, 101.6 mm (4 in), 6.1 m (20 ft) Plenum Cable, w/ Additional Moisture Protection

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

Accessories Ordering, For Use with Glycol or Glass Beads (Any Size)

Model #	Item #	Description
A/100-LTS-30'	126443	100 Ω RTD, 50.8 mm (2 in) Probe, Freezer Sensor, 9.14 m (30 ft) Leads
A/1K-LTS-30'	125214	1 kΩ RTD, 50.8 mm (2 in) Probe, Freezer Sensor, 9.14 m (30 ft) Leads

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

Accessories

Sensor Probes for Refrigerator/Freezer Applications

See Data Sheet: Refrigerator/Freezer Thermistors
<https://www.workaci.com/media/1933/download>

See Data Sheet: Freezer RTDs (100-LTS and 1,000-LTS ohm platinum RTD)
<https://www.workaci.com/media/1931/download>

See Data Sheet: Freezer Transmitters (TT100-LTS, TT1K-LTS, TTM100-LTS, TTM1K-LTS)
<https://www.workaci.com/media/1934/download>

