



Bydrain Freeze Protection Liquid Expansion Trap

Description

The Spirax Sarco bydrain freeze protection liquid expansion trap is made of stainless steel. It has been specifically designed for protecting condensate systems from frost damage. This fixed temperature discharge trap continuously monitors the temperature in the pipes; the trap is firmly closed at 45°F, but as the temperature of the liquid cools to 36°F the trap opens, discharging any liquid in the pipe.

Standards

This product fully complies with the requirements of the European Pressure Equipment Directive 97/23/EC.

Certification

This product is available with certification to EN 10204 3.1.B.

Note: All certification /inspection requirements must be stated at the time of order placement.

Sizes and pipe connections

½" NPT

Limiting conditions

Body design conditions	PN50, Class 300 to ANSI B 16.34
PMA - Maximum allowable pressure	600 psig (41.4 bar g)
TMA - Maximum allowable temperature	842°F (450°C)
PMO - Maximum operating pressure	145 psig (10 bar g)
TMO - Maximum operating temperature	158°F (70°C)

Minimum operating pressure for satisfactory operation is 1psig

No backpressure for correct operation must free drain.

Designed for a maximum cold hydraulic test pressure of 62 bar g

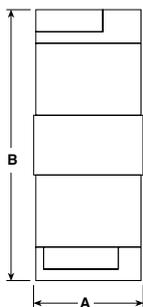
Note: The trap seat is completely open at a water circuit temperature of 36°F and closed at 45°F.

Materials

No.	Part	Material
1	Body	Stainless steel AISI 316L
2	Thermostat	Brass
3	Valve head	PTFE
	Internal parts	Stainless steel

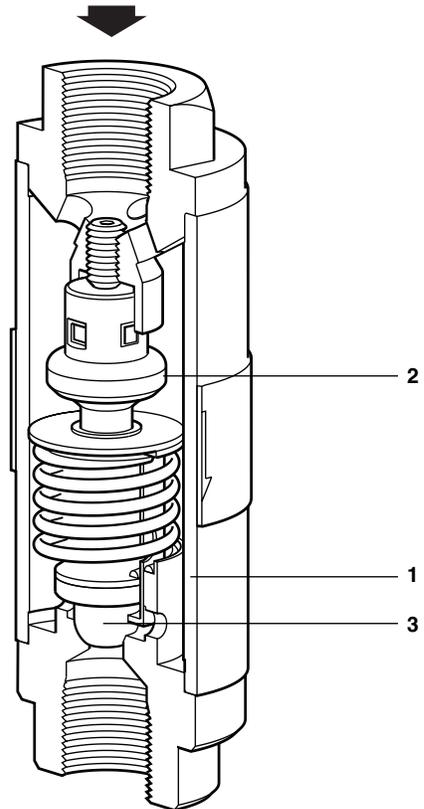
Dimensions/weights (approximate) in inches and lbs.

Size	Connections	A	B	Weight
½"	NPT	1.7	4.3	1.4



Typical Applications

Freeze protection for float & thermostatic steam traps, coils, tanks, water lines on docks, eyewash stations, safety showers, tracing condensate manifolds, tracing steam manifolds, condensate return lines, pressure powered pumps, electric pumps, and flash tanks.



Capacities

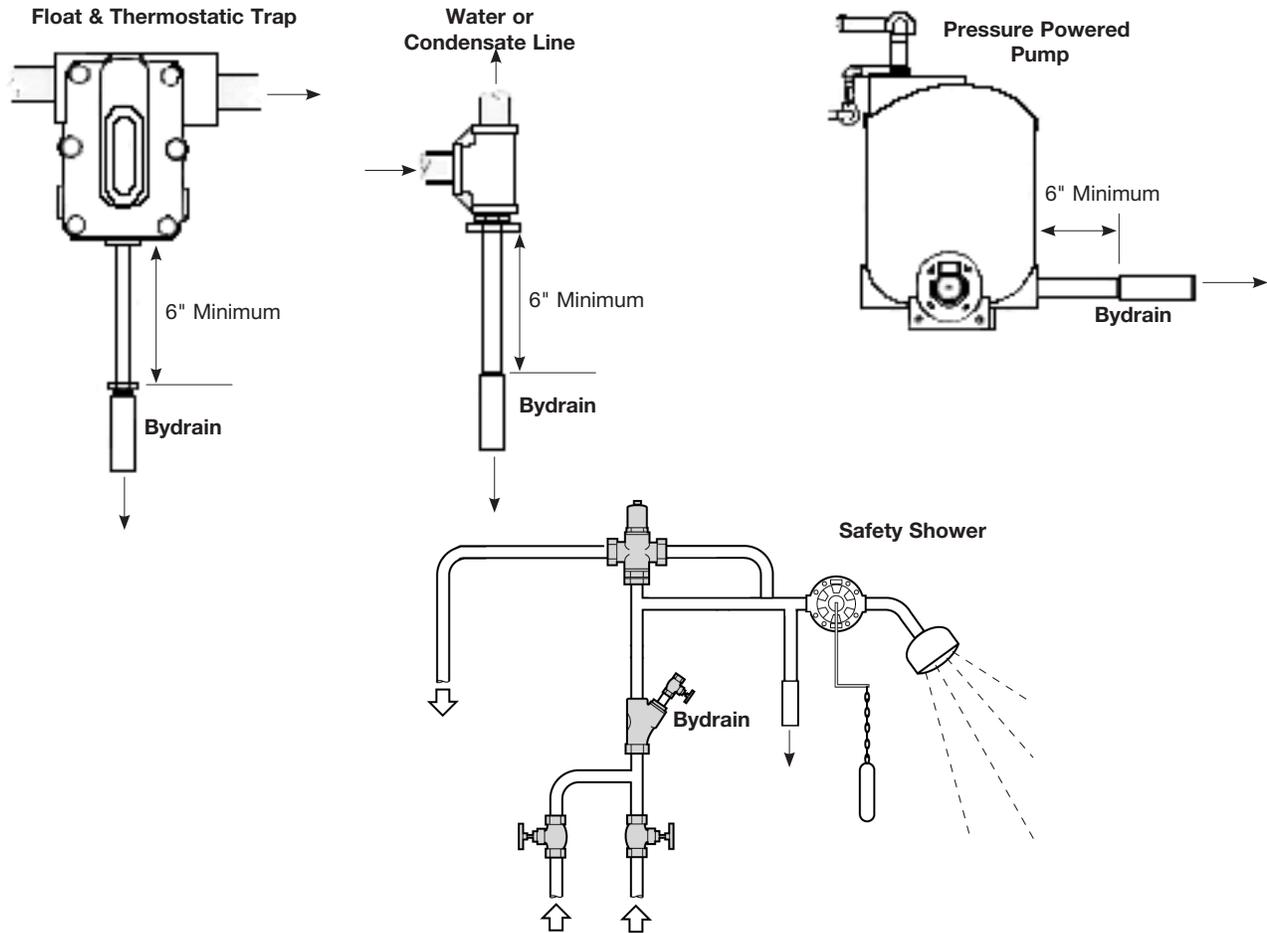
Pressure (psig)	GPM	#/hr
1	1.2	587
2	1.5	766
5	2.2	1090
10	2.8	1423
25	4.0	2024
50	5.3	2643
100	6.9	3451
145	8.0	3981

Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only.

In the interests of development and improvement of the product, we reserve the right to change the specification.

TI-P670-02-US 3.14

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Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P670-01) supplied with the product.

How to order

Example: 1 off Spirax Sarco ½" bydrain freeze protection liquid expansion trap with screwed NPT end connections.

Sample Specification

Temperature actuated drain trap shall have a stainless steel body with brass thermostatic actuator, which will operate in a vertical or horizontal position. Thermostatic actuator to be tamper proof and a sealed encapsulated unit. Thermostatic actuator to crack open at 36°F and be closed tight at 45°F. Drain trap to operate from 0 to 145 psig pressure range.

Operation

The Bydrain should be used for any application where flow to replenish temperature is required to prevent freezing of water or condensate lines or to drain a vessel which is prone to freezing due to ambient conditions. The normal failure mode is in the open position unless plugged by debris.

Installation

The marking on the trap indicates the flow direction if placed on water line, condensate line, tank, etc. An isolation valve should be placed ahead of trap to allow for removal of trap without draining the system. When used on steam trap isolation valves should be on the steam itself so no isolation is required ahead of the Bydrain. Discharge must go to zero atmospheric pressure only, to avoid damage to the thermostat. The pipe connections should never be welded. Vertical is the preferred position where space is available. When used in a horizontal position pitch piping toward the trap. When used on steam service or hot condensate the trap must be at least 6" or more from the device. Discharge into large diameter drain or ditch. Never create an "ICE PATCH" hazard by discharging on to slab or walkway.

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