



## FP-35 and FP-45 Dole Freeze Protection Valve

### Protect Solar Collectors and Exposed Piping from Freezing



**Actual Size:  
5" High**

#### Design Features:

- Easily installed on existing systems
- 150 PSI maximum operating pressure
- Corrosion resistant design
- FDA and NSF listed materials
- LA testing and IAPMO listed
- Anti-siphon and alternate discharge port
- Discharge port for  $\frac{1}{4}$ " plastic pipe or  $\frac{5}{8}$ " ID hose
- $\frac{1}{2}$ " brass male pipe thread inlet port for positive seal
- Tamper resistant design
- Nominal start to open temperature of FP-35 is 38°F and FP-45 is 43°F
- Completely mechanical operating principle
- High temperature UV stabilized body material
- Ideal for backup freeze protection

The Invensys FP-35 and FP-45 Freeze Protection Valves utilize a reliable self-contained Dole Power Element which is sensitive to temperature and operates without any electrical power or sensors. Typically in solar applications, the valve port opens on descending temperatures allowing the near freezing water in the solar panel to be discharged and replaced with warmer supply water. When the warmer water reaches the FP-35 or FP-45, the valve port closes and water discharge stops.

This cycle will repeat as often as necessary to help prevent freezing. The amount of water dispensed depends mainly on ambient air temperature, make up water temperature, the duration of the cold spell and the number and size of collectors. The system is functioning properly when water is being discharged from the valve during near freezing conditions. For water to be discharged at the time of operation, system water pressure must be maintained.

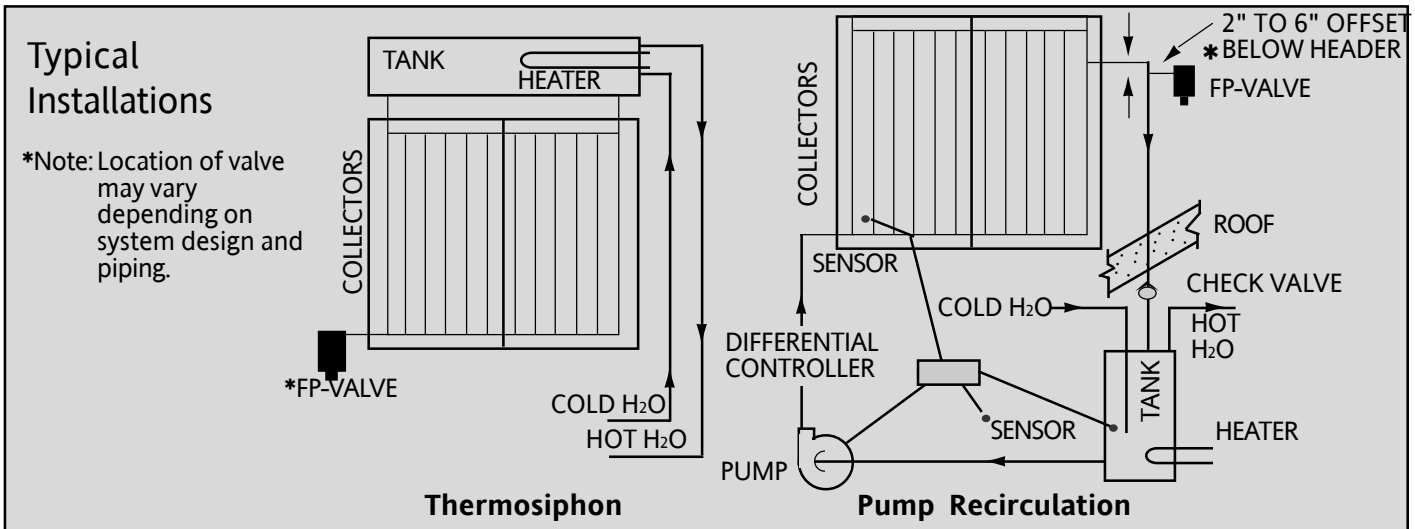
#### Limited Warranty

Dole/Invensys Energy Control Products are warranted by the manufacturer to be free from defects in material and workmanship for a period of one year from the date of installation, when properly installed and used in accordance with the installation instructions.

Invensys' obligation is limited to the repair or exchange of the defective parts and does not include reimbursement for any removal or installation expenses.

To make a claim under this warranty, please return the Dole/Invensys FP-35 or FP-45 Valve (transportation prepaid) with proof of purchase, to the Laundry and Specialty Systems Division of Invensys Appliance Controls, Carol Stream, IL. This warranty is in lieu of all warranties expressed or implied, including warranties of merchantability and fitness for a particular purchase.

**NOTE:** During cold weather, it is normal for the valve to dispense water from its discharge port even when ambient air temperatures are several degrees above freezing.



## Freeze Protection Valve Application Considerations

1. The Invensys "Freeze Protection Valve(s)" functions properly provided the valve is installed in a location, where during operation, the warmer supply water first passes through the collectors and/or pipe to be protected and then through the valve. The "Freeze Protection Valve(s)" should be located in a position to allow good water distribution through the solar panel so that when the valve opens, water flows as evenly as possible through all the collector tubes. Location of the valve may vary depending on the system design and piping.
2. Select a mounting position where the valve will sense the coldest anticipated ambient temperature. When used in conjunction with active systems, the valve should also be located within close proximity of the collector outlet with 2"-6" offset below the collector header (see illustration). Do *not* mount in a position where the valve will be exposed to an unnatural heat source (i.e. poorly insulated roof, dryer or furnace vents, etc.).
3. The system must be subjected to normal operating pressures of between 20 and 125 PSI at all times for the valve to operate properly. Do *not* shut off water supply to the collectors or isolate the collectors from the city water supply.
4. When the valves are required, be sure they are operating and installed in a proper location with respect to the "Freeze Protection Valve(s)." Water flow must be prevented from "bypassing" the collector. If the check valves leak, water flow may be bypassed through the check valve rather than through the collector.
5. Do not insulate the "Freeze Protection Valve(s)" or exposed pipe between the collector and the "Freeze Protection Valve(s)." Sections of exposed pipe where no water flow exists during valve operation should be heavily insulated. The valve(s) should be mounted close to the collector to minimize the length of exposed pipe.
6. Install by applying torque with a wrench to the square metal inlet flange. Do not apply torque to the plastic body.
7. For proper utilization of the anti-siphon port, the "Freeze Protection Valve(s)" should be installed in a vertical position with discharge port down.
8. To enhance customer satisfaction of this product, we recommend a plastic discharge tube be connected to the 1/4" pipe threads or the 5/8" barbs, then routed to a safe, non-objectionable location where the discharged water will drain.
9. If a discharge tube is used, make sure it will drain freely and is installed in accordance to local codes. Avoid water traps in the discharge tube that could freeze and prevent drainage. The valve has an alternate path for discharge water flow should the discharge tube become impaired.
10. Do not attempt to disassemble the top cover. The inlet retention flange can be removed to inspect the screen for periodic cleaning and replacement.

Information subject to change without notice.

7/99

### Invensys Appliance Controls

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