

III. Basic Theory of Operation

- 1 Basic Operation
- 2 Freeze Protection
- 3 Overheat Protection – a.k.a Steamback
- 4 Air Removal

3. Overheat Protection

Schuco High Limit Temperature Protection

1. Under stagnation fluid temperature rises
 - **Stagnation temp = 381°F**
2. Water boils before heat transfer fluid becomes corrosive and flashes steam
 - **High limit temp ~ 250°F (1 bar ~ 15 psi)**
3. Water vapor forces glycol from collectors down toward expansion tank
4. Only water vapor remains in collector
5. When collectors cool down water vapor returns to liquid state

Note: This is true for Schuco Tyfocor solar fluid only. Tyfocor fluid is mandatory inside Schuco systems.

3. Overheat Protection

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Requirements

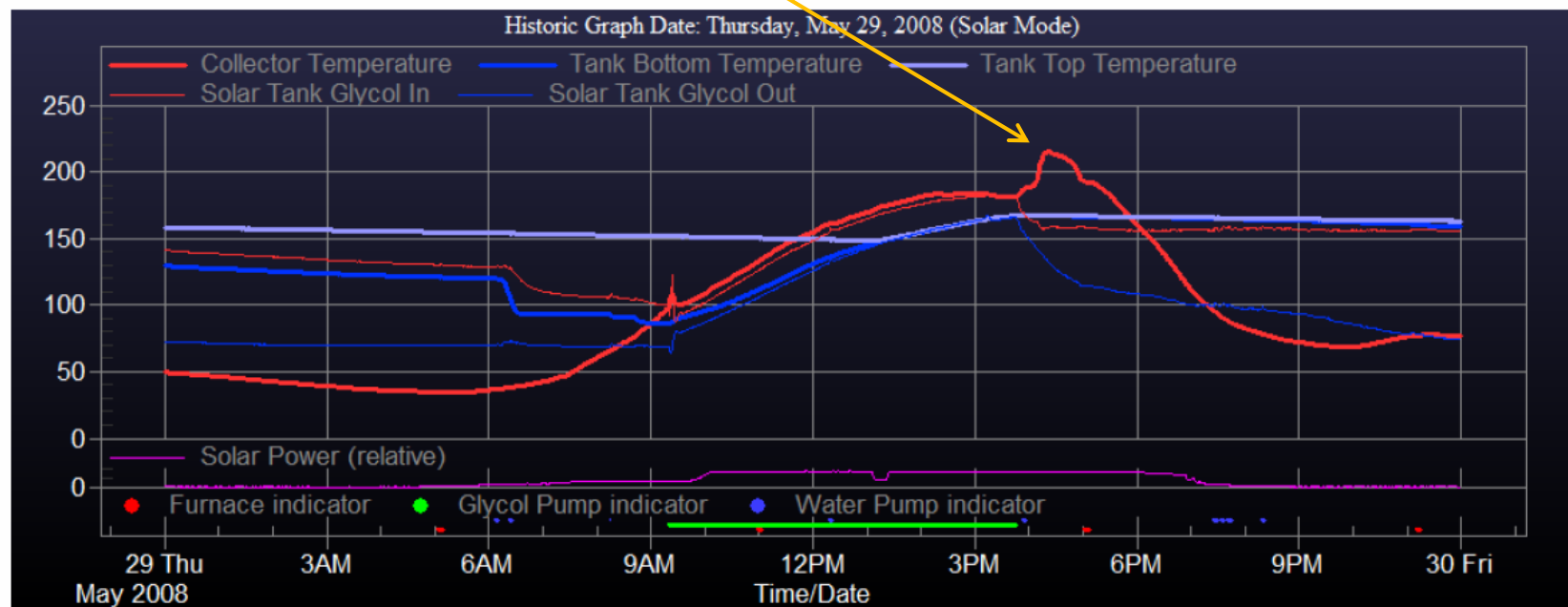
- Serpentine Collectors
- Knowledge of Antifreeze Chemical Make-Up
- Larger Expansion Tank

Note: This is pre-configured in all Schuco kits

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Schuco High Limit Temperature Protection

Steamback Illustrated



3. Overheat Protection

Schuco High Limit Temperature Protection

Benefits

1. Higher maximum operating temperature
2. No new oxygen introduced to oxidize inhibitors
3. Corrosion significantly reduced
4. Typical interval for fluid change: 12-15 years (should check annually)
5. No call backs or problems when customers are away or power goes out