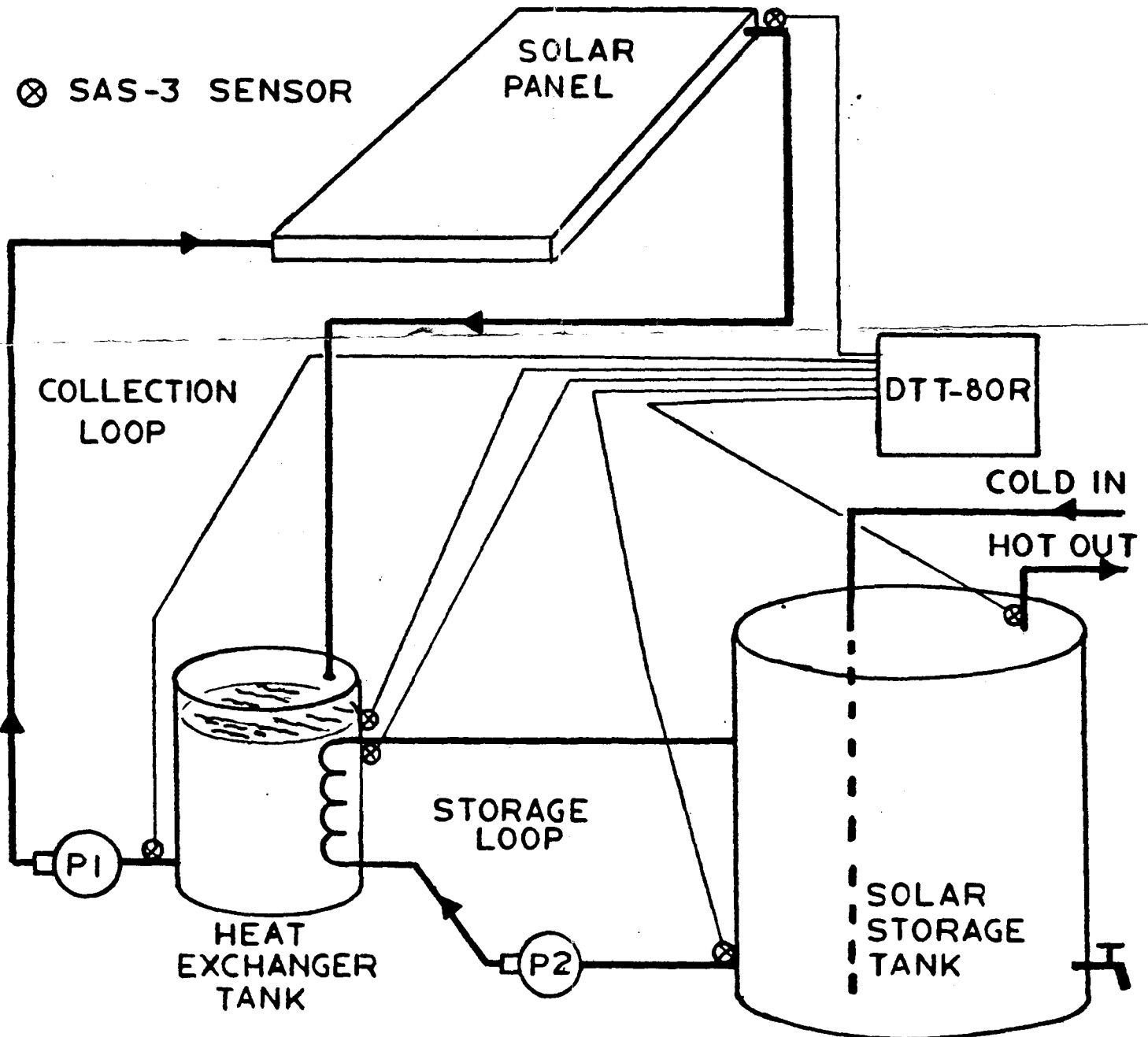


DTT-80R SERIES INSTRUCTION ADDENDUM

Description

The DTT-80R series of Delta-T® controls are hardwired units designed for drain-back solar systems employing two circulation pumps under control of separate differential circuits. The collector loop differential is 20°F on and 4°F off with high limit (optional) fixed at 200°F. The storage loop differential is 10°F on and 5°F off with an adjustable high limit from 115°F to 200°F.

All DTT-80R series controls come standard with 5 SAS-3 sensors. An additional sensor (SAS-3) must be ordered if it is desired to provide high limit cut off for the drainback tank (at 200°F).



Control Installation

Power Wiring

1. Connect the ground wire to the green wire inside the box.
2. Connect white wire (neutral power in) to neutral wire from each pump and to the transformer white wire.
3. Connect one black wire and one blue wire from respective relays (PC board) to incoming power (black wire) and to black wire from the transformer.
4. Connect the other black wire from the PC board relay to power out to the storage loop pump.
5. Connect the other blue wire from the relay to power out to the collector pump.

High Limit Adjustment (Storage loop)

Using a small flat blade screwdriver gently adjust the storage high limit cutoff. The reading is perpendicular to the face of the screwdriver blade. The adjustment range is from 115°-200°F.

Sensor Placement

Up to 3 sensors are attached to or near the drainback tank.

1. The lower temperature sensor for the collector to drainback differential comparison may be attached to the pipe which supplies the collector pump with a hose clamp or attached to the side of the tank near the bottom.
2. The higher temperature sensor for the drainback to storage differential may be attached to the heat exchanger outlet pipe or outside wall of the tank below the water level.
3. The drainback high limit sensor (optional) may be attached to the heat exchanger outlet pipe or to the side of the drainback tank below the lowest water level.

All sensors must be properly attached, waterproofed and insulated. See the section on "Protection of Sensors and Sensor wiring" in the DTT-80 instruction sheet.

Connecting Sensors to the Control

There are 6 pairs of sensor input leads from the DTT-80R series controller.

Make connections as follows:

1. White leads to the collector array exit sensor.
2. Orange leads to sensor at the bottom of the drainback tank or the pipe supplying the collector pump.
3. Grey leads to the drainback tank high limit sensor (optional).
4. White leads with black stripe to the heat exchanger outlet sensor or drainback tank wall sensor (heat source).
5. Orange leads with black stripe to sensor at storage tank bottom (heat sink).
6. Grey leads with black stripe to storage high limit sensor on the storage tank top.

Troubleshooting

The basic function test and differential test are performed in a similar fashion to the DTT-80 tests. (See DTT-80 installation guide.) Each section is tested in turn. The white, orange and grey input lines and blue relay wires are for the collector loop control section. The white with black stripe, orange with black stripe and grey with black stripe and black relay wires are for the storage loop control section.

Because of the high limit ranges the "High Limit Test" detailed in the DTT-80 installation guide does not apply to this control.