

# AZEL TECHNOLOGIES INC.

## Digital Differential Solar Heating Controls DST-932



DST-932E

The DST-932 differential temperature controller is designed for the Solar Heating Systems. The DST-932 switches on a pump in order to transfer heat from solar collector to a storage tank. The controller reads the temperatures of the storage tank (T1) and of the collector (T2), when this differential temperature (T2-T1) is higher than a set value (dt), it will switch on the pump. It is possible to limit the maximum temperature of the storage tank and also activate a freeze protection function. By switching to manual mode it allows the test of the heating system by turning the pump ON or OFF. A universal sensor P-01 or P-02 (higher temperature range) is supplied with the control. This solid state temperature sensor probe can be extended up to 500 feet.

DST-932 is designed to handle most differential temperature control functions for operation of solar heating, swimming pool heating, domestic water heating, and sophisticated space heating and cooling etc.

### FEATURES:

- Reliable Digital Electronic Accuracy
- LED indicates output relay status
- Easy-to-Read Digital Display which displays sensor and functional status. It also allows precise differential temperature settings
- Simple programming of differential setpoint temperature and (hysteresis) differential. Setpoint can be adjusted easily without going into programming mode.
- A tighter differential can be achieved (eg. 1F or 1C) than conventional electromechanical controls
- Anti-Freeze protection
- Over Heat Protection
- Anti-Short Cycle Delay to ensure the output relay remains off for up to 254 secs. This would avoid unnecessary hard start and equipment wear
- User selectable Celsius or Fahrenheit scales
- Lockout switch to prevent tampering by unauthorized personnel
- Two universal sensors P-01/P-02 are supplied with the control. This solid state temperature sensor probe can be extended up to 500 feet.
- Easy installation



DST-932PR

## SPECIFICATIONS

**DISPLAY:** 3 digit, 13.2 mm, high intensity green;

**INPUTS:** two NTC sensors or two PTC sensors;

**MEASURING RANGE:** -55 ... +302 °F for PTC probe;  
-39 ... +248 °F for NTC probe;

**ACCURACY AT 25°C:** ±1 °F + 1 digit;

**RESOLUTION:** 0.2 or 2 °F;

**OUTPUTS:** 1 spdt 250Vac 16A max resistive (1hp);

**POWER SUPPLY:** 115 Vac ±10% 50/60Hz;

- Differential Setpoint range: 0.8 to 50°F
- Differential Setpoint Hysteresis(differential): 0.8 to 17.9°F
- Anti-Cycling Delay: 0 to 254 sec.
- Anti-Freeze protection: 0.3 to 50.0°F
- Anti-Freeze hysteresis(differential): 0.8 to 17.9°F
- Over Heat Protection: 32.1 to 228°F
- Over Heat Hysteresis(differential): 0.8 to 17.9°F
- Output: 1 on a SPDT 16A 250 Vac relay
- Resolution: 1°C (1°F)
- Accuracy: ±1°F
- Display: LED, 3 digits, 12.5 mm high
- Data storing: on EEPROM non-volatile memory
- Operating temperature: 23 to 149 °F (-5 to +65 °C)
- Relative humidity: 20 to 85 % (not condensing)
- Housing: self-extinguish UL94V0 ABS plastics, white colour
- Size: frontal 45 x 71 mm; depth 58 mm (4 DIN modules)
- Mounting: DIN rail for panel boards
- Power supply: 110VAC, 50/60Hz

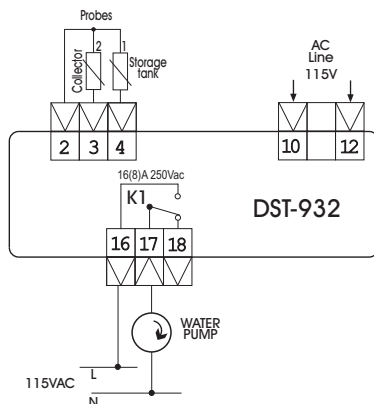
### ENVIRONMENTAL CONDITIONS:

- operating temperature: -5 ... +50 °C;
- storage temperature: -20 ... +70 °C;
- relative humidity: 30 ... 90 % non condensing;
- no shocks or vibrations;

### MECHANICAL DATA:

- plastic housing self extinguishing type UL94V0;
- connections through terminal block for 2.5mm<sup>2</sup> gauge wire;
- protection degree: IP64 for the frontal panel (enclosure Ip31).

## WIRING DIAGRAM



## UNIVERSAL SENSOR PROBE (NTC THERMISTOR) Model: P-01



The Azel Sensor Probe is engineered to ensure long life and rapid response. It is designed to strap on a pipe or insert into a temperature well. P-01 is specially designed for use with DST series setpoint controllers and other controls that require 10K ohm thermistors.

### SPECIFICATIONS:

- Sheath: Copper
- Lead: 10" of 20 AWG heat resistance wire
- Dimension: 3/8" OD x 13/16" length (9.5mm OD x 20.6mm)
- Weight: 0.02lb (10g)
- Operating range: -39 to 248°F
- Sensor: 10K ohm @ 77°F (25°C ± 1%) thermistor

## UNIVERSAL SENSOR PROBE (PTC THERMISTOR) Model: P-02



P-02 offer higher temperature range of up to 302°F. 6 x 30 mm stainless steel sensor housing, PVC cable 6.5 ft. long Range

MODEL	DESCRIPTION
DST-932PR	Single stage setpoint control with sensor probe P-01 and DIN rail
DST-932PR2	Single stage setpoint control with sensor probe P-02 and DIN rail
DST-932E	DST-932PR in aluminum enclosure. Sensor probe P-01 included.
DST-932E2	DST-932PR in aluminum enclosure. Sensor probe P-02 included.

**AZEL TECHNOLOGIES INC.**

www.azeltec.com

P.O. Box 53138  
10 Royal Orchard Blvd.  
Thornhill, Ontario, Canada L3T 7R9  
Ph: 905-223-5567 Fax: 905-223-3778  
Email: info@azeltec.com