

# Differential Temperature Controller ESD - 9226D



## Introduction

Temperature Indicators and Controllers play an important part in any process industry. Quick and accurate measurement and control of a process temperature will improve the final product quality, reliability and reduce rejection. Temperature indication and control is therefore one of the prime considerations in any process industry.

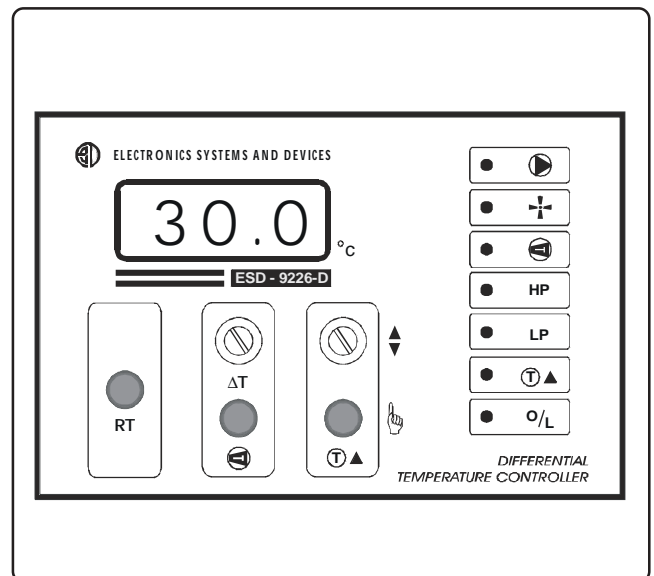
The ESD 9226D is a On / Off type Digital Differential Temperature Controller designed for fast and accurate measurement and control. The instrument is designed using highly reliable electronic components. Process temperature is displayed directly in digits, giving better resolution compared to analog indicator.

The ESD 9226D accepts 2 Pt - 100 sensors (3 Wire) as the Inputs. Room, Oil and Differential Temperatures can be monitored with the help of Press Switches on the front panel. The Differential Temperature and Oil Temperature can be set using respective potentiometers provided on the front panel.

The instrument is immune to mechanical vibrations. Even the mounting position will not affect the measurement accuracy. The large bright red LED seven segment display allows long distance readability. Use of highly reliable electronic components with low tempco ensure long and trouble free service. The instrument is tested for its performance under various climatic conditions. n will not affect the measurement accuracy. The large bright red LED seven segment display allows long distance readability. Use of highly reliable electronic components with low tempco ensure long and trouble free service. The instrument is tested for its performance under various climatic conditions.

## Principle of operation :

The ESD 9226D is based on the principle high input impedance amplifier feeding a comparator followed by a relay and an analog to digital convertor. The input signals namely the reference and variable generated by the transducers are fed to a sensor compensation circuit where lead resistance



compensation in case of Pt-100 is achieved. Duly compensated signal is fed to a signal conditioning amplifier, output of which is given to digital display as well as to a Difference Amplifier.

This Amplifier generates a differential signal i.e. variable minus reference. This signal is further fed to a comparator which compares the differential value with the desired value (Set point).

Output of the comparator is given to the relay which switches ON or OFF depending upon the differential value as compared to the setpoint. The linearisation of the input signal from the transducer is done by hardware in the input circuit. This gives a standardized signal to the analog to digital convertor which drives the LED display, indicating the temperature directly.

## Features :

- Differential Control
- Fail safe relay logic
- Proven field performance
- Fast response time
- LED display gives better readability at long range
- Highly compact
- Dust and vermin proof enclosure with epoxy powder coating.
- Maximum MTBF and minimum MTTR●
- Fail safe relay logic

## Specifications

Model	: ESD - 9226D
Control action	: On / Off
Ranges	: T1 = Process Temperature : 0 to 100 °C RT = Room Temperature : 0 to 50 °C $\Delta T = T1 - RT$ : -10 to 10 °C
Input	: Two Pt - 100 sensors (3 wire sys)
Indication accuracy	: +/- 0.5 % of FS +/- 1 digit
Resolution	: 0.1 °C
Accuracy deviation	
a) Temperature change	: +/- 0.01 % / °C , ref at 25 °C
b) Supply Variation	: +/- 0.005 % / V
Set point	: Two (through multi turn potentiometers) One (internally fixed at 20 Deg. C as an safety interlock for compressor)
Set point Read & Adjust	: By pressing respective switches and simultaneously turning respective potentiometer on front panel
Outputs	: Two sets of potential free Relay change over contacts 5Amp. resistive at 230 V AC
Relay logic	: 1. Actual temp. < set point - Relay ON for heating application (Factory set) 2. Actual temp. > set point - Relay on for cooling application (On demand)
Relay ON indication	: By respective Red LED's on front panel
Control Sensitivity	: 0.25% of FS
Fault Indication	: Through 5 number LED's (Pump,Fan,High Pressure ,Low Pressure,OverLoad)
Display	: 3 & 1/2 digit 7 segment 12.5 mm Red LED display
Power supply	: 230 V AC, +/- 10 % , 50 Hz (other on demand)
Ambient Temp. range	: 0 to 55 °C
Sensor break indication	: Up scale [i ___] (Down scale on demand )
Sensor break protection	: Relay 'Off'
Relativite Humidity	: 90 % Noncondensing
Power consumption	: 6 VA
Mounting	: Flush Panel
Termination	: PUT 2.5 mm <sup>2</sup>
Dimensions (mm) :	

Panel Cut out	Front Facia	Depth
138 x 92	144 x 96	120

For more details on other products please contact our customer support division

ESD reserves the right to change the specifications and other designs without prior notice for the betterment of it's products.

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