



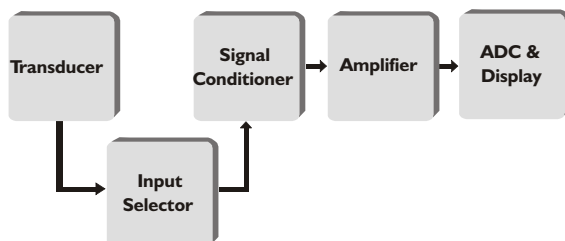
## INTRODUCTION

Temperature Indicators in temperature measurement play an important part in any process industry. Quick and accurate measurement of process temperature will improve the final product quality, reliability and reduce rejection. Temperature indication is therefore one of the prime considerations in any process industry. The ESD 90 multi input series Digital temperature indicators are designed for fast and accurate temperature measurement. The instrument is designed using highly reliable electronic components. The process temperature is displayed directly in digits, which gives better resolution compared to analog indicator. The ESD 90 multi input series accepts all types of Thermocouples, Pt-100, 0-20 mA as well as 4-20 mA as input. Wide ranges of measurements are available depending on the sensor used. 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 temperature coefficients ensure long and trouble free service. The instrument is tested for its performance under various climatic conditions.

## PRINCIPLE OF OPERATION



The ESD 90 multi input series is based on the principle of a high input impedance amplifier feeding an analog to digital convertor. The input signal generated by the transducer is fed to a sensor compensation circuit, where automatic ambient compensation in case of thermocouple & 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. 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 seven segment LED display, indicating the temperature directly.

## APPLICATION

The ESD 90 multi input series temperature indicator can be used in almost any industry, laboratory etc. where accurate temperature indication is needed to be carried out.

## FEATURES

- ✓ Proven troublefree field performance
- ✓ Highly compact
- ✓ Dust and vermin proof enclosure with epoxy powder coating
- ✓ LED display gives better readability at long range
- ✓ Fast response time
- ✓ Available in different DIN std. cutouts
- ✓ Designed for Pt-100, Thermocouples and 4-20 mA input
- ✓ Maximum MTBF and minimum MTTR
- ✓ Wide supply variation and environmental band

## SPECIFICATIONS

Model	: ESD 9020 / ESD 9043 / ESD 9066	Amb. Temp. compensation	: Built in upto 55 °C
Ranges	: Std. as per chart below (other on demand)	Accuracy deviation due to	
Input	: Pt - 100 / Thermocouple / 4 - 20 mA	a) Temperature change	: +/- 0.002 % / °C , ref at 25 °C
No of Inputs	: 2 / 6 / 12	b) Supply Variation	: +/- 0.005 % / V
Input Selection	: By gold plated selector switch	Sensor break indication	: Up scale[! _ _ _] (Down on demand)
Indication	: 199.9 12.5 mm Red LED display	Input impedance	: < 10 Mohms, (only for T/C input)
Indication accuracy	: +/- 0.5 % of fullscale +/- 1 digit	Recalibration (if reqd)	: By Zero and Span pots inside
Least count	: 0.1 °C upto 200 °C, 1°C above 200 °C	Power consumption	: 5 VA
Power supply	: 230 V AC, +/- 10 % , 50 Hz with Earth	Mounting	: Flush mounting
Relative Humidity	: 90 % Non Condensing	Enclosure	: IP 55 mild steel with power coating
Ambient Temperature	: 0 to 55 °C	Termination	: PBT 2.5 mm <sup>2</sup>
		Weight	: 700 grams

## INSTALLATION

**Model ESD 9020**

48  
96  
80

**Model ESD 9043**

96  
80  
92

96  
192  
80

185  
92

Model	Facia	Cutout	Depth
ESD 9020	96 x 48	92 x 45	80
ESD 9043	96 x 96	92 x 92	80
ESD 9066	192 x 96	186 x 92	80

■ Add 25 for terminals

## ORDERING INFORMATION

ESD 90	X1	X2	X3	X4	X5
<b>No of inputs</b>	2 -- Two 3 -- Three 4 -- Six 5 -- Eight 6 -- Twelve	<b>Panel Cutout</b> 0 -- 92 x 45 3 -- 92 x 92 4 -- 138 x 67 5 -- 67 x 138 6 -- 186 x 92	<b>Input</b> 1 -- Pt - 100 2 -- J type T/C 3 -- K type T/C 4 -- R type T/C 5 -- S type T/C 6 -- 0 to 20 mA 7 -- 4 to 20 mA 8 -- 0 to 2V DC 9 -- Other	<b>Range</b> 0 -- -50 to 50 °C 1 -- 0 to 100 °C 2 -- 0 to 200 °C 3 -- 0 to 100 % 4 -- 0 to 400 °C 5 -- 0 to 600 °C 6 -- 0 to 800 °C 7 -- 0 to 1000 °C 8 -- 0 to 1200 °C 9 -- Other	<b>Power Supply</b> 1 -- 230 V AC 2 -- 110 V AC 3 -- 48 V AC 4 -- 24 V AC 5 -- 24 V DC 6 -- Other

Input	Standard Ranges in °C		
Pt-100	-50 - 50	0 - 100	0 - 200
J	0 - 200	0 - 400	0 - 600
K	0 - 200	0 - 400	0 - 600
R, S	800 - 1600		
mA / mV	0 to 100 % or process value		

**Ordering eg. ESD 9043 - 101**

Digital Temp. Indicator ESD 90

No of inputs -- Six (1)

Panel cutout -- 92 x 92 mm (3)

Input -- Pt - 100 (1)

Range -- -50 °C to 50 °C (0)

Power Supply -- 230 V AC (1)

## ADDITIONAL CHOICE

- ✓ Multi Input Indicators
- ✓ Multi Channel Indicators
- ✓ Microprocessor based Scanners
- ✓ Portable Indicators
- ✓ Field mounting Indicators
- ✓ Peak hold Indicators
- ✓ Supersize display Indicators
- ✓ Flameproof Indicators