



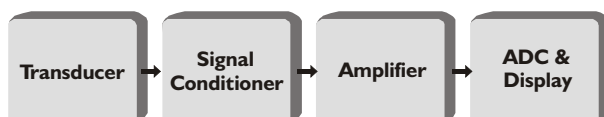
INTRODUCTION

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 901 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 901 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 901 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 901 series temperature indicator can be used in almost any industry, laboratory etc. where accurate temperature indication is needed to be carried out.

FEATURES

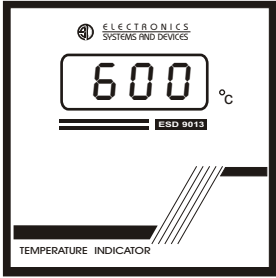
- ✓ Proven trouble free field performance
- ✓ Highly compact
- ✓ Dust and vermin proof enclosure with epoxy powder coating
- ✓ LED display gives better readability at long range
- ✓ Fast response time
- ✓ Available in different DIN std. cutouts
- ✓ Designed for Pt-100, Thermocouples and 4 - 20 mA input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

SPECIFICATIONS

Model	: ESD 9013 / ESD 9012 / ESD 9010	Accuracy deviation due to
Ranges	: Std. as per chart below (other on demand)	a) Temperature change : +/- 0.002 % / °C , ref at 25°C
Input	: Pt - 100 / Thermocouple / 4 - 20 mA	b) Supply variation : +/- 0.001 % / V
Indication	: 1 9 9 . 9 7 segment 12.5 mm RED LED display	Sensor break indication : Up scale [1 _ _ _] (Down on demand)
Indication accuracy	: +/- 0.5 % of full scale +/- 1 digit	Input impedance : < 10 Mohms, (only for T/C input)
Least count	: 0.1°C up to 200°C, 1°C above 200°C	Power consumption : 3 VA
Power supply	: 230 V AC, +/- 10 % , 50 Hz with earth	Front facia : ABS plastic suitable for IP 55
Relative humidity	: Less than 90 % non condensing	Mounting : Flush panel
Ambient temperature	: 0 to 55°C	Enclosure : Mild steel CRCA sheet with powder coating
Amb. temp. Compensation	: Built in up to 55°C	Termination : Screwed type suitable for 2.5mm ² wire
Recalibration (if reqd)	: By zero and span potentiometers inside	Weight : 600 grams approximately
		Optional : 4 - 20 mA retransmission output

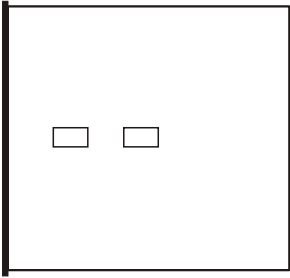
INSTALLATION

Model ESD 9013 / 9012

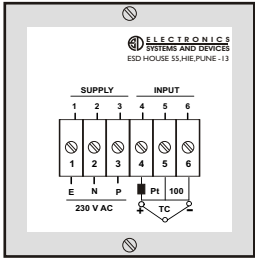


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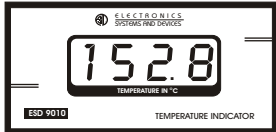


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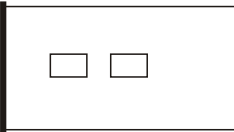
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Model ESD 9010

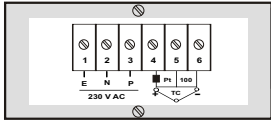


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Model	Facia	Cutout	Depth
ESD 9013	96 x 96	92 x 92	75
ESD 9012	72 x 72	68 x 68	125
ESD 9010	96 x 48	92 x 45	105

■ Depth Including Terminals

ORDERING INFORMATION

ESD 90	X1	X2	X3	X4	X5
Input	1 - One	Panel cutout	Input	Range	Power supply
		0 - 92 x 45 1 - 45 x 92 2 - 67 x 67 3 - 92 x 92 4 - 138 x 67	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	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	1 - 230 V AC 2 - 110 V AC 3 - 24 V AC 4 - 24 V DC 5 - 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
	0 - 800	0 - 1000	0 - 1200
R, S	800 - 1600		
mA / mV	0 to 100 % or process value		

Ordering eg. ESD 9013 - 101
 Digital Temp. Indicator ESD 90
 No of inputs - One (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)

<p>ALSO SELECT ESD ...</p> <p style="text-align: center;">BACK END</p> <ul style="list-style-type: none"> ✓ Pt - 100 ✓ Thermocouples ✓ Thermowells ✓ Compensating Cables 	<p style="text-align: center;">SAME RANGE</p> <ul style="list-style-type: none"> ✓ Multi Input Indicators ✓ Supersize Display Indicators ✓ Multi Channel Indicators ✓ Flameproof Indicators ✓ Portable Indicators ✓ Field Mounting Indicators 	<p style="text-align: center;">FRONT END</p> <ul style="list-style-type: none"> ✓ Automation Panel
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ELECTRONICS SYSTEMS AND DEVICES
Process Control Instrumentation

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