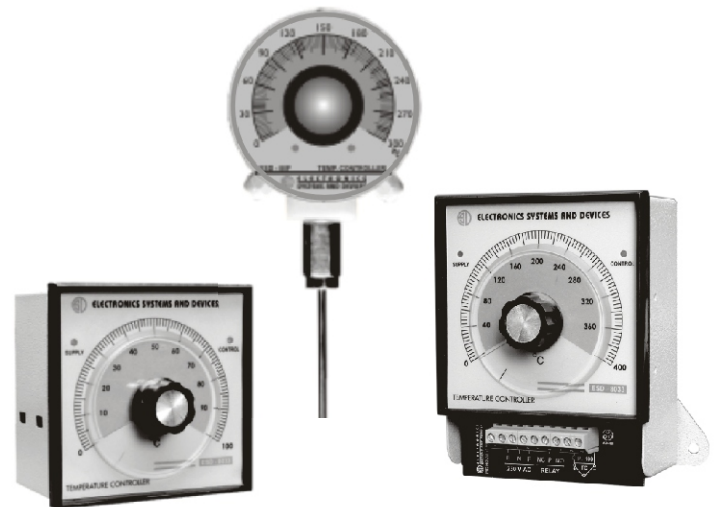




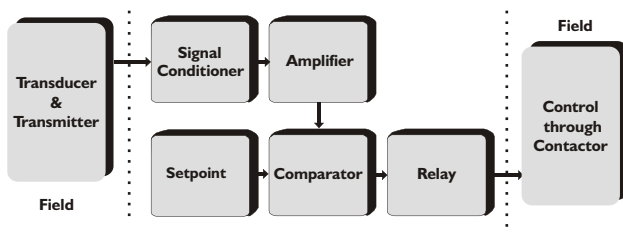
INTRODUCTION

Temperature Indicators / Controllers play an important part in any process industry. Quick and accurate measurement / 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 €SD 80 single setpoint series is a On / Off type Digital temperature indicator/controller designed for fast and accurate measurement / control. The instrument is designed using highly reliable electronic components. The process temperature is displayed in digits, which gives better resolution compared to analog indicator. The €SD 80 single setpoint series accepts all types of Pt - 100, Thermocouples, 0 - 20 mA as well as 4 - 20 mA as input. 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 lowest temperature coefficient ensure long and trouble free service. The instrument is tested for its performance under various climatic conditions. Wide ranges of measurements are available depending on the sensor used.

PRINCIPLE OF OPERATION



The €SD 80 single setpoint series is based on the principle high input impedance amplifier feeding a comparator followed by a relay and an ADC. The signal from 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 as well as to a comparator. The comparator compares the process value with the desired set value. Output of the comparator is given to the relay which switches ON or OFF depending upon the process value w.r.t. the setpoint. Linearisation of the transducer signal is done by hardware in the input circuit. This gives a standardized signal to the ADC which drives the LED display, indicating the temperature.

APPLICATION

The €SD 80 single setpoint series temperature controllers can be used in almost any industry, laboratory etc. where accurate temperature control is needed to be carried out.

FEATURES

- ✓ Panel, wall and field mounting options
- ✓ Proven troublefree field performance
- ✓ Highly compact
 - Dust and vermin proof enclosure with epoxy
- ✓ powder coating
- ✓ Fast response time
- ✓ Available in different DIN std. cutouts
- ✓ Designed for Pt-100, Thermocouples and 4 - 20 mA input
- ✓ Fail safe relay logic
- ✓ Maximum MTBF and minimum MTRR
- ✓ Feather touch push button
- ✓ Wide supply variation and environmental band

SPECIFICATIONS

Model	: ESD 803	ESD 802	Control action	: ON / OFF
	: ESD 80UM/	ESD 80F	Setpoint Setting	: By dial
Ranges	: Std. as per chart below		Relay Output	: One set of potential free Relay changeover contact 5 Amp resistive at 230V AC
	(other on demand)			
Input	: Pt - 100 / Thermocouple / 4 - 20 mA		Relay logic	: 1. Actual temp. < setpoint - Relay ON for heating application (Factory set)
Power supply	: 230 V AC, +/- 10 % , 50 Hz with Earth			2. Actual temp. > setpoint - Relay ON for cooling application (On demand)
Relative Humidity	: 90 % Non Condensing		DC Signal Output	: 1 mV or 10 mV / °C proportional to process value.
Ambient Temperature	: 0 to 55 °C		Relay ON indication	: By Red LED
Amb. Temp. compensation	: Built in upto 55 °C		Control Sensitivity	: 0.25% of fullscale (Adjustable inside)
Accuracy deviation due to			Sensor break protection	: Relay 'Off' (Relay 'On' on demand)
a) Temperature change	: +/- 0.002 % / °C , ref at 25 °C		Mounting	: Flush mounting / Wall
b) Supply Variation	: +/- 0.005 % / V		Enclosure	: IP 55 mild steel with power coating
Input impedance	: < 10 Mohms, (only for T/C input)		Termination	: PUT 2.5 mm ² /PBT
Recalibration (if reqd)	: By Zero and Span pots inside		Weight	: 700 grams
Power consumption	: 6 VA			
Setpoint	: One (through ten turns potentiometer)			
Setpoint Dial scale length	: 140 / 100 mm			

INSTALLATION

Model ESD 803

96

50

92

Model ESD 80UM

92

120

50

122

Mounting CTC - 108 x 108

Model ESD 80F

58 Dia

Model ESD 802

72

100

67

Model	ESD 802	ESD 803	ESD 80W	ESD 80F
Mounting	Panel	Panel	Wall/Rail	Field
Size	72 x 72	96 x 96	96 x 120	58 Dia

ORDERING INFORMATION

ESD 80 XM	X1	X2	X3	X4	X5	Input	Standard Ranges in °C																								
Mounting PM - Panel WM - Wall FM - Field	Panel Cutout 2 - 67 x 67 3 - 92 x 92	Input 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	Range 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	Relay Output 1 - 1 C/O 5 Amp 2 - 1 C/O 10 Amp 3 - 2 C/O 5 Amp 4 - Other	Power Supply 1 - 230 V AC 2 - 110 V AC 3 - 48 V AC 4 - 24 V AC 5 - 24 V DC 6 - Other	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>Pt-100</td> <td>-50 - 50</td> <td>0 - 100</td> <td>0 - 200</td> </tr> <tr> <td>J</td> <td>0 - 200</td> <td>0 - 400</td> <td>0 - 600</td> </tr> <tr> <td>K</td> <td>0 - 200</td> <td>0 - 400</td> <td>0 - 600</td> </tr> <tr> <td></td> <td>0 - 800</td> <td>0 - 1000</td> <td>0 - 1200</td> </tr> <tr> <td>R, S</td> <td colspan="3">800 - 1600</td> </tr> <tr> <td>mA / mV</td> <td colspan="3">0 to 100 % or process value</td> </tr> </table>	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 803 - 1011 Digital Temp. Controller ESD 80 Panel cutout - 92 x 92 mm (3) Input - Pt - 100 (1) Range - -50 °C to 50 °C (0) Relay output - 1 C/O 5 Amp (1) Power Supply - 230 V AC (1)
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																														

For field mounting please specify the dimensions of Pt - 100 sensor.

ALSO SELECT ESD ...

BACKEND

- ✓ Pt - 100
- ✓ Thermocouples
- ✓ Thermowells
- ✓ Compensating Cables

SAME RANGE

- ✓ Single Setpoint Controllers
- ✓ Two Setpoint Controllers
- ✓ Multi Setpoint Controllers
- ✓ Multi channel Controllers
- ✓ Supersize Controllers
- ✓ Field mounting Controllers

FRONT END

- ✓ Alarm Annunciators
- ✓ Automation Panels



**ELECTRONICS
SYSTEMS AND DEVICES**
Process Control Instrumentation

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