



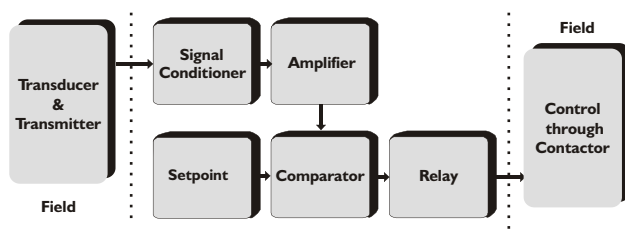
INTRODUCTION

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 €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. 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 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 corresponding to 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

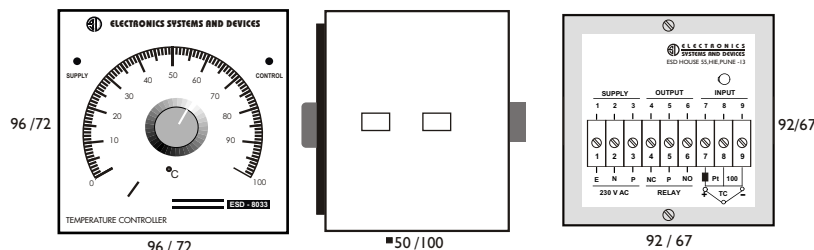
- ✓ Panel, wall and field mounting options
- ✓ Proven trouble free field performance
- ✓ Highly compact
- ✓ Dust and vermin proof enclosure with epoxy powder coating
- ✓ Fast response time
- ✓ Available in different DIN std. cutouts
- ✓ Designed for Pt-100, Thermocouples and 4 - 20 mA input
- ✓ Fail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

SPECIFICATIONS

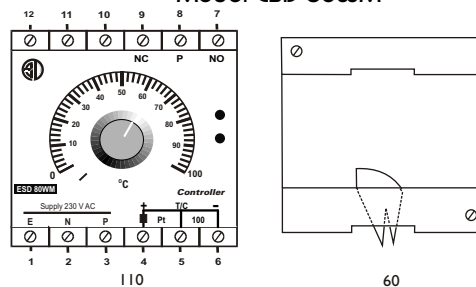
Model	: ESD 802 / ESD 803 / ESD 80WM	Control action	: ON / OFF
Ranges	: Std. as per chart below (other on demand)	Setpoint setting	: By dial
Input	: Pt - 100 / Thermocouple / 4 - 20 mA	Relay output	: One set of potential free relay changeover contact rated 5 Amp resistive at 230V AC
Set point accuracy	: +/- 0.5% of full scale	Relay logic	: 1. Actual temp. < setpoint - Relay ON for heating application (Factory set) 2. Actual temp. > setpoint - Relay ON for cooling application (On demand)
Power supply	: 230 V AC, +/- 10 %, 50 Hz with Earth	Relay ON indication	: 3mm RED LED
Relative humidity	: Less than 90 % non condensing	Power ON indication	: 3mm GREEN LED
Ambient temperature	: 0 to 55°C	Control sensitivity	: 0.25% of full scale (adjustable inside)
Amb. Temp. compensation	: Built in up to 55°C	Sensor break protection	: Relay 'Off' (relay 'On' on demand)
Accuracy deviation due to		Front facia	: ABS plastic suitable for IP 55
a) Temperature change	: +/- 0.002% /°C, ref at 25°C	Mounting	: Flush panel / DIN
b) Supply variation	: +/- 0.001% / V	Enclosure	: Mild steel CRCA sheet with powder coating
Input impedance	: < 10 Mohms, (only for T/C input)	Termination	: Screwed type suitable for 2.5mm ² wire
Recalibration (if reqd)	: By zero and span potentiometers inside	Weight	: 700 gram approximately
Power consumption	: 3 VA		
Setpoint	: I (Through single turn potentiometer)		
Setpoint dial scale length	: 100 / 140 / 35 mm		

INSTALLATION

Model ESD 803/ 802



Model ESD 80WM



Model	ESD 802	ESD 803	ESD 80WM
Mounting	Panel	Panel	Wall/Rail
Size	72 x 72	96 x 96	96 x 120

ORDERING INFORMATION

ESD 80	X1	X2	X3	X4	X5
	Panel Cutout 2 - 68 x 68 3 - 92 x 92 4 - DIN	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 - I C/O 5 Amp 2 - Other	Power Supply 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 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 - I C/O 5 Amp (1)
 Power Supply - 230 V AC (1)

ALSO SELECT
ESD ...

BACK END

- ✓ Pt - 100
- ✓ Thermocouple
- ✓ Thermowells
- ✓ Compensating Cables

SAME RANGE

- ✓ Single Setpoint Controllers
- ✓ Two Setpoint Controllers
- ✓ Multi Setpoint Controllers
- ✓ Dual Channel Controllers
- ✓ Multi Channel Controllers
- ✓ Supersize Controllers
- ✓ Flameproof Controllers

FRONT END

- ✓ Alarm Annunciators
- ✓ Automation Panels



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