



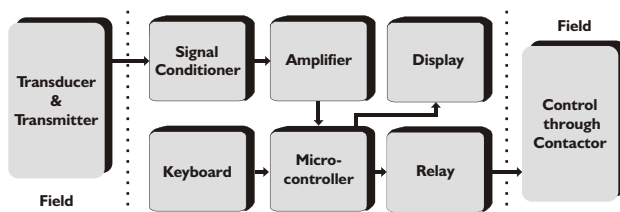
INTRODUCTION

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 Sleek 92 series is microcontroller based programmable 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 Sleek 92 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 Sleek 92 series is based on the principle of a high input impedance amplifier feeding a microcontroller followed by a relay and an inbuilt 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 the 12 bit analog to digital convertor which is inbuilt the microcontroller. This microcontroller then switches the relay ON or OFF depending upon the process value with respect to the setpoint. Linearisation of the transducer signal is done by software. The microcontroller also drives the LED display, indicating the temperature.

APPLICATION

The Sleek 92 series temperature controllers can be used in almost any industry, laboratory etc. where accurate temperature control 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
- ✓ Highly accurate
- ✓ 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
- ✓ Minimum overshoot undershoot
- ✓ User friendly programming

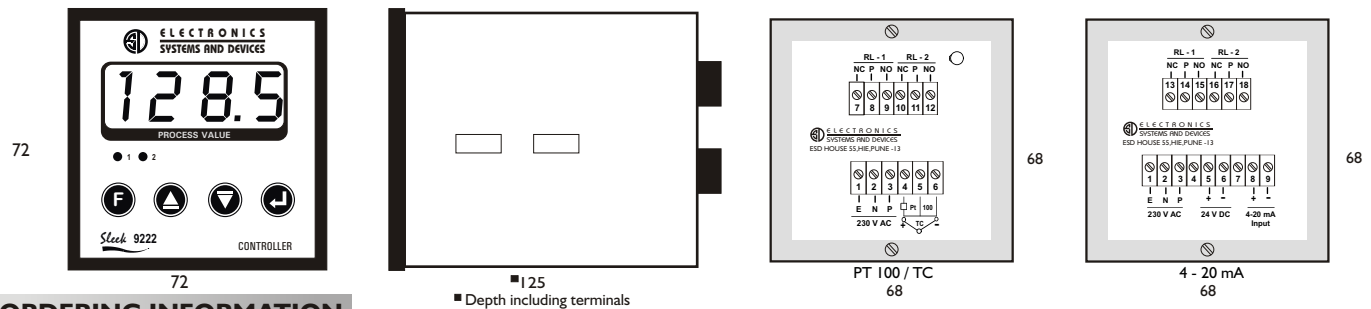
SPECIFICATIONS

Model	: Sleek 9222	changeover contact rated 5 Amp resistive at 230V AC per setpoint
Ranges	: Refer chart below (other on demand)	
Input	: Pt - 100 / Thermocouple / 4 - 20 mA	Relay logic : User selectable high or low
Indication	: 4 digit 12.5 mm RED LED display	Relay ON indication : 3mm RED LED
Indication accuracy	: +/- 0.25 % of full scale +/- 1 digit	Sensor break protection : Relay 'Off' (Relay 'On' on demand)
Least count	: Refer chart below (other on demand)	Front facia : ABS plastic suitable for IP 55 having size 72 x 72 mm
Power supply	: 230 V AC, +/- 10 % , 50 Hz with earth	Panel cutout : 68 x 68 mm
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 2.5 mm ² wire
Accuracy deviation due to		Weight : 700 grams
a) Temperature change	: +/- 0.002 % /°C, ref at 25°C	Optional
b) Supply variation	: +/- 0.001 % / V	Retransmission o/p : Isolated 4-20mA proportional to process value
Sensor break indication	: O P E N	Resolution : 10 bit (0.016 mA step change)
Input impedance	: < 10 Mohms, (only for T/C input)	Load resistance : Max 500 ohms
Recalibration (if reqd)	: By software using keypad	Chart :
Programming	: Using 4 keys membrane keypad. Default password is 134	
Power consumption	: 6 VA	
Transmitter supply	: 24 V DC @ 30mA (only for 4-20mA)	
Setpoints	: 2	
Control action	: ON/OFF	
Set point Adjust	: Using 4 keys membrane keypad	
On / Off differential	: From 1 to 99°C (for LC = 1°C) From 0.1 to 9.9°C (for LC = 0.1°C)	
On / Off delay time	: From 0 to 240 seconds	
Relay output	: One set of potential free relay	

Input	Std. Ranges in °C	Least count
Pt-100	-100 to 200 0 to 400	0.1°C
J	0 to 600	1°C
K	0 to 1200	
R, S	0 to 1600	Settable
mA / mV	Programmable from -999 to 9999	

INSTALLATION

Model Sleek 9222



ORDERING INFORMATION

Sleek 92	X1	X2	X3	X4	X5	X6
	Setpoints 2 - Two 4 - Four	Panel Cutout 0 - 92 x 45 2 - 68 x 68 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 - -100 to 200°C 1 - 0 to 400°C 2 - 0 to 100% 3 - 0 to 600°C 4 - 0 to 1200°C 5 - 0 to 1600°C 6 - 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 - 24 V AC 4 - 24 V DC 5 - Other
						Ordering eg. Sleek 9222 - 1111 Digital Temp. Controller Sleek 92 Setpoint - Two (2) Panel cutout - 68 x 68 mm (2) Input - Pt - 100 (1) Range - 0°C to 400°C (1) Relay output - 1 C/O 5 Amp (1) Power Supply - 230 V AC (1)

ALSO SELECT ESD ...	BACK END	SAME RANGE	FRONT END
	<ul style="list-style-type: none"> ✓ Pt - 100 ✓ Thermocouples ✓ Thermowells ✓ Compensating Cables 	<ul style="list-style-type: none"> ✓ Dual Channel Controllers ✓ Supersize controllers ✓ PI Controllers 	<ul style="list-style-type: none"> ✓ Field Mounting Controllers ✓ Profile Controllers ✓ Alarm Annunciators ✓ Automation Panels



ELECTRONICS SYSTEMS AND DEVICES
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