



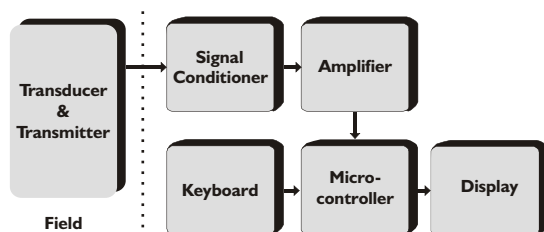
INTRODUCTION

Process indicators play an important part in any process industry. Quick and accurate measurement of a process parameter will improve the final product quality, reliability and reduce rejection. Process indication is therefore one of the prime considerations in any process industry. The Sleek 90 series is microcontroller based programmable process indicator designed for fast and accurate measurement. The instrument is designed using highly reliable electronic components. The process parameter is displayed in digits, which gives better resolution compared to analog indicator. The ESD Sleek 90 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

PRINCIPLE OF OPERATION



The Sleek 90 series is based on the principle of high input impedance amplifier feeding 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. The microprocessor then converts the signal into the range selected by the user and displays the value of the process parameter accordingly.

APPLICATION

The Sleek 90 series process indicators can be used in almost any industry, laboratory etc. where accurate process value measurement 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
- ✓ Programmable range
- ✓ Decimal selection facility
- ✓ Maximum MTBF and minimum MTTR
- ✓ Feather touch push button
- ✓ Wide supply variation and environmental band
- ✓ User friendly programming

SPECIFICATIONS

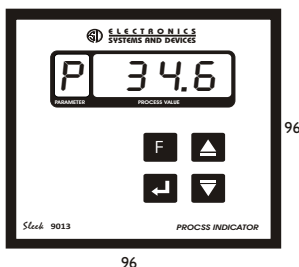
Model : Sleek 9013 / Sleek 9012
Ranges : Refer chart below (other on demand)
Input : PT 100 / Thermocouple / 4 - 20 mA
Indication : 9 9 . 9 12.5 mm RED LED display
Indication accuracy : +/- 0.25 % of full scale +/- 1 digit
Least count : Refer chart below (other on demand)
Power supply : 230 V AC, +/- 10 % , 50 Hz with earth
Relative humidity : Less than 90 % non condensing
Ambient temperature : 0 to 55°C
Accuracy deviation due to
 a) Temperature change : +/- 0.002 % /°C, ref at 25°C
 b) Supply variation : +/- 0.001 % / V
Sensor break indication : OPEN
Input impedance : < 10 Mohms, (only for T/C input)
Recalibration (if reqd) : By software using keypad
Programming : Using 4 keys membrane keypad.
 Default password is 134
Power consumption : 5 VA
Transmitter supply : 24 V DC @ 30mA (only for 4-20mA)
Front facia : ABS plastic suitable for IP 55
 Having size 96 x 96mm

Cutout : 92 x 92mm
Mounting : Flush panel
Enclosure : Mild steel CRCA sheet with powder coating
Termination : Screwed type suitable for 2.5mm² wire
Weight : 700 grams approximately
Optional
 A) Retransmission o/p : Isolated 4 to 20mA proportional to process value
 Resolution : 10 bit (0.016 mA step change)
 Load resistance : Maximum 500 ohms
 B) Serial interface : Isolated RS 485(2 wire)/ RS 232
Protocol : Modbus RTU
Chart :

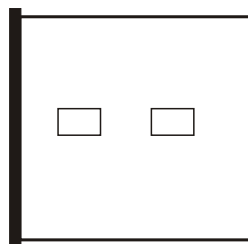
Input	Std. Ranges in °C	Least count
Pt-100	-100 to 200 0 to 400	0.1°C
J	0 to 600	1°C
K	0 to 1200	
R, S	0 to 1600	
mA / mV	Programmable from -999 to 9999	Settable

INSTALLATION

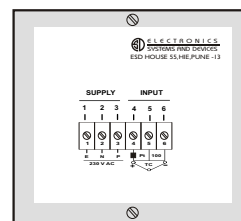
Model Sleek 9013 / Sleek 9012



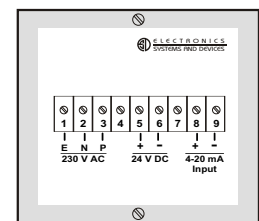
96



105/125



PT 100 / TC



4 - 20 mA

ORDERING INFORMATION

Sleek 90

X1

X2

X3

X4

X5

Inputs
1 - One

Panel Cutout
0 - 92 x 45
2 - 68 x 68
3 - 92 x 92
8 - 45 x 45

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 - Pt - 1000
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

Power Supply
1 - 230 V AC
2 - 110 V AC
3 - 24 V AC
4 - 24 V DC
5 - Other

Ordering eg. Sleek 9013 - 111
Digital Temp. Controller Sleek 90
Input - One (1)
Panel cutout - 92 x 92 mm (3)
Input - Pt - 100 (1)
Range - 0°C to 400°C (1)
Power Supply - 230 V AC (1)

ALSO SELECT
ESD ...

BACK END

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

SAME RANGE

- ✓ Dual Channel Indicators
- ✓ Supersize Indicators
- ✓ Loop Powered Indicators
- ✓ Portable Indicators
- ✓ Field Mounting Indicators
- ✓ Flameproof Indicators
- ✓ Auto Manual Station

FRONT END

- ✓ ON OFF Controllers
- ✓ PI Controllers
- ✓ Process Scanners
- ✓ Automation Panels



**ELECTRONICS
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Process Control Instrumentation

ESD HOUSE,
55, Hadapsar Indl. Estate,
Pune - 411013 (INDIA).

Phone : (020) 26819611 to 15

E-mail : sales@esd-india.com

Web : www.esd-india.com

