



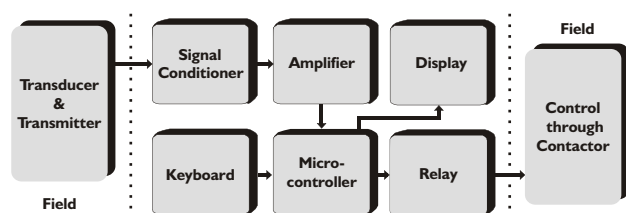
## INTRODUCTION

Process Indicators / Controllers play an important part in any process industry. Quick and accurate measurement / control of a process parameter will improve the final product quality, reliability and reduce rejection. Process indication and control is therefore one of the prime considerations in any process industry. The Sleek 90 series is microcontroller based programmable process indicator/controller designed for fast and accurate measurement/control. 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 Sleek 90 series accepts 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 90 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. The linearisation of the transducer signal is done by software. The microcontroller also drives the LED display, indicating the temperature.

## APPLICATION

The Sleek 90 series process indicators can be used in almost any industry, where accurate process value indication with long distance visibility is required.

## FEATURES

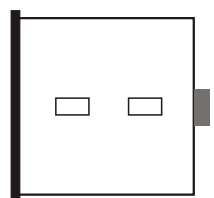
- ✓ Proven trouble free field performance
- ✓ Highly compact
- ✓ Dust and vermin proof enclosure with epoxy powder coating
- ✓ Fast response time
- ✓ Highly accurate
- ✓ Designed for Pt-100, Thermocouples and 4 - 20 mA input
- ✓ Maximum MTBF and minimum MTTR
- ✓ Feather touch push button
- ✓ Wide supply variation and environmental band
- ✓ User friendly programming

## SPECIFICATIONS

Model	: Sleek 901A/ Sleek 901B/ Sleek 901C Sleek 901D/ Sleek 901E/ Sleek 901G	Power consumption	: 6 VA
Ranges	: As per chart below (other on demand)	Transmitter supply	: 24 V DC, @ 30mA (only for 4-20mA)
Input	: Pt - 100 / Thermocouple / 4 - 20 mA	Mounting	: Hanging type
Indication	: 9 9 9 . 9 7 segment RED LED display	Enclosure	: Mild steel CRCA sheet with powder coating
Indication accuracy	: +/- 0.25 % of full scale +/- 1 digit	Termination	: Screwed type suitable for 2.5mm <sup>2</sup> wire
Least count	: Refer chart below (other on demand)	Optional	
Power supply	: 230 V AC, +/- 10 % ,50 Hz with earth	A) Retransmission o/p	: Isolated 4 to 20 mA proportional to process value
Relative humidity	: Less than 90 % non condensing	Resolution	: 10 bit (0.016 mA step change)
Ambient temperature	: 0 to 55°C	Load resistance	: Maximum 500 ohms
Amb. Temp compensation	: Built in up to 55°C	B) Serial interface	: Isolated RS 485 / RS 232
Accuracy deviation due to		Protocol	: Modbus RTU
a) Temperature change	: +/- 0.002 % /°C, ref at 25°C	Chart	
b) Supply variation	: +/- 0.001 % / V		
Sensor break indication	: $\square$ P E N		
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		

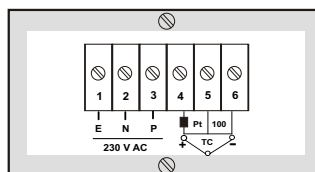
Input	Std. Ranges in °C	Least count
Pt-100	-100 to 200 0 to 400	0.1°C
J	0 to 600	1°C
K	0 to 1200	
R, S	0 to 1600	
mA / mV	Programmable from -999 to 9999	Settable

## INSTALLATION

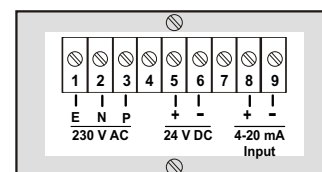


■ 100

■ Depth including terminals



PT 100 / TC



4 - 20 mA

Model	Display height (mm)	Facia (W x H)	Cutout (w x h)	■ Depth (D)
<b>Sleek 901A</b>	25	192 x 96	186 x 92	105
<b>Sleek 901B</b>	50	288 x 144	282 x 138	105
<b>Sleek 901C</b>	100	<b>418x178</b>	410 x 170	70
<b>Sleek 901D</b>	150	468 x 216	—	70
<b>Sleek 901E</b>	200	610 x 272	—	70
<b>Sleek 901G</b>	300	984 x 408	—	105

## ORDERING INFORMATION

### Sleek 90 X1

**Input**  
1 - One

### X2

**Display Height**  
A - 25 mm  
B - 50 mm  
**C - 100 mm**  
D - 150 mm  
E - 200 mm  
G - 300 mm

### X3

**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

### X4

**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

### X5

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

### Ordering eg. Sleek 901C - III

Process Indicator Sleek 90

Input - One (I)  
Display Height - 100 mm (C)  
Input - Pt - 100 (I)  
Range - 0°C to 400°C (I)  
Power Supply - 230 V AC (I)

### ALSO SELECT ESD ..

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

### BACK END

### SAME RANGE

- ✓ Temperature Indicators
- ✓ Dual Channel 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



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**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

