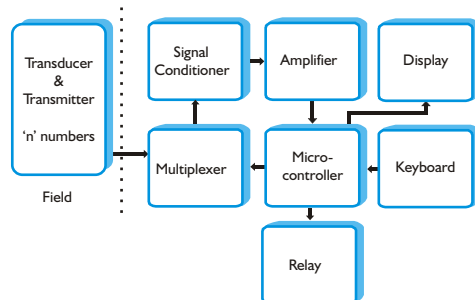# SCANNER

SMART C104

INTRODUCTION

Temperature Indicators and Controllers play an important part in any process industry. Quick and accurate measurement and control of a process temperature will help to 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 **ESD** Process Scanner With Controller series is based on microcontroller and is designed for fast and accurate measurement and control of temperature. The instrument is designed using highly reliable electronic components. The process temperature is displayed directly in digits, which gives better resolution .

ESD offers different application oriented models

PRINCIPLE OF OPERATION

The **ESD** Process Scanner With Controller series is based on the principle of high input impedance amplifier feeding an analog to digital convertor. The input signal generated by 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 CPU through ADC.

The linearization of the input signal from the transducer is done by software. This linearized signal is directly displayed on the display and compared with the set value by processor. Depending upon the status of input w.r.t. set point output to the relay driver is activated.

The processor scans all the inputs at a very fast rate and stores it in the memory. This stored data and programmed set values are displayed automatically as per the preset scan times.

like only scanner, scanner with common alarm, scanner with group alarm, scanner with controller. All above models are available in different DIN standard cutouts suitable for 8 and 16 channels.

This series accepts all types of Thermocouples, Pt - 100, 0 to 20 mA as well as 4 - 20 mA as input . Wide ranges of measurements are available depending on the sensor used.

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 low temperature coefficient ensure long and trouble free service. The instrument is tested for its performance under various climatic conditions.
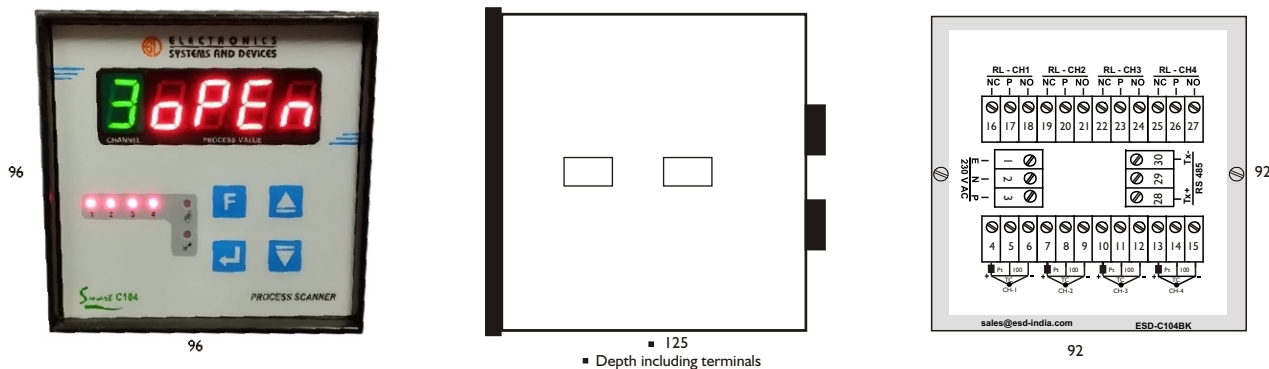
FEATURES

✓ Proven troublefree 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

✓ Maximum MTBF and minimum MTTR

✓ Feather touch push button

✓ Wide supply variation and environmental band

✓ User friendly programming

ELECTRONICS SYSTEMS AND DEVICES

SPECIFICATIONS

Model	: Smart C104
No. of Inputs	: 04
Ranges	: Refer chart below (other on demand)
Input	: Pt - 100 / Thermocouple / 4 - 20 mA
Indication	:999.9 12.5 mm RED LED display
Number of digits	: 5 (1 for channel number, 4 for process value)
Indication accuracy	: +/- 0.25 % of full scale +/- 1 digit
Least count	: Refer chart below (other on demand)
LED indication	: 4 nos of 3 mm RED LEDs for setpoint status
Power supply	: 230 V AC, +/- 10 % , 50 Hz with earth
Relative humidity	: Less than 90 % non condensing
Ambient temperature	: 0 to 55°C
Amb temp compensation	: Built in up 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. To be done on channel 1 only
Programming	: Using 4 keys membrane keypad. Default password is 134
Power consumption	: 6 VA
Channel skip	: By setting scan time as zero
Display response time	: 0.5 seconds/channel

Scan time	: Individually adjustable from 0- 99 seconds
Setpoint	: One nos. per channel individually settable
Relay logic	: User selectable high or low
Output	: 1 nos. potential free relay contacts rated 5 amp resistive at 230 V AC per setpoint
Number of outputs	: 4
Front facia	: ABS plastic having size 96 x 96 mm
Panel cutout	: 92 x 92 mm
Mounting	: Flush panel
Enclosure	: Mild steel CRCA sheet with powder coating
Termination	: Screwed type suitable for 2.5mm^2 wire
Weight	: 1 kg approximately
Optional	
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	
K	0 to1200	1°C
R, S	0 to1600	
mA / mV	Programmable from -999 to 9999	Settable

INSTALLATION

96

96

125
Depth including terminals

92

ORDERING INFORMATION

Smart C 104

X1	X2	X3	X4	X5	
Panel Cutout 1 - 92 x 92	**No. of Inputs** 04 - Four	**Input** 1 - Pt - 100 2 - J type T/C 3 - K type T/C 4 - R type T/C 7 - 4 to 20 mA 9 - Other	**Range** 0 - -100 to 200°C 1 - 0 to 400°C 2 - 0 to 600°C 3 - 0 to 1200°C 4 - 0 to 1600°C 5 - Other	**Power Supply** 1 - 230 V AC 2 - 110 V AC 3 - 24 V AC 4 - 24 V DC 5 - Other	Ordering eg. Smart C104 - 111 Digital Temp. Scanner Smart C104 Panel cutout - 92 x 92 mm (1) No of inputs - Four (04) Input - Pt - 100 (1) Range - 0°C to 400°C (1) Power Supply - 230 V AC (1)

ALSO SELECT esd ...

BACK END	SAME RANGE		FRONT END
✓ Pt - 100	✓ Dual Channel Indicators	✓ Field Mounting Indicators	✓ ON OFF Controllers
✓ Thermocouples	✓ Supersize Indicators	✓ Flameproof Indicators	✓ PI Controllers
✓ Thermowells	✓ Loop Powered Indicators	✓ Auto Manual Station	✓ Process Scanners
✓ Compensating Cables	✓ Portable Indicators		✓ Automation Panels

"Cell phones, mobile e-mail, and all the other cool and slick gadgets can cause massive losses in our creative output and overall productivity....."

Robin Sharma

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Dimensions are in mm. Photos not to the scale. Due to continuous development above details are likely to change.