



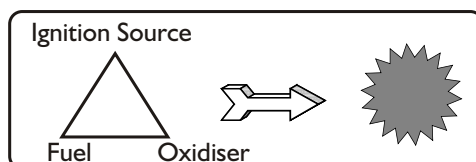
INTRODUCTION

Temperature indicators / scanners play an important part in any process industry. Quick and accurate measurement of process temperature will improve the final product quality, reliability and reduce rejection.

Temperature indicators / scanners may be installed in a variety of surroundings. However installation of electrical / electronic equipments in hazardous locations needs special considerations.

A hazardous location may be defined as one where combustible gases, vapours, fumes or dust particles are present in explosive proportions. On such locations the condition that may lead to fire or explosion is the presence of the following at the same time :

- 1) Flammable liquid, vapour, gas, dust or fibre in an ignitable concentration.
- 2) Oxidizing Media.
- 3) Source of ignition.



It is for such applications that ESD offers The ESD Process Scanner series mounted in Explosion proof housings. However it may be noted that the specific precautions vary with the degree of hazard and the probability of it's presence.

The ESD Process Scanner 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.

Our explosion proof enclosures are certified by CMRI Dhanbad and are suitable for Class I / II and group A, B.

Class I : Combustible material in the form of gas or vapour

Class II : Combustible material in the form of dust

Group A : Acetylene.



Group B: Hydrogen or similar hazardous gases. 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

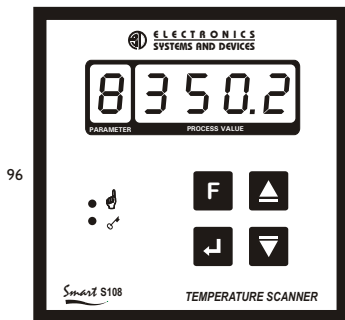
- ✓ Proven troublefree field performance
- ✓ Highly compact
- ✓ Dust and vermin proof enclosure with epoxy powder coating
- ✓ LED display gives better readability at long range
- ✓ Fast response time
- ✓ Highly accurate
- ✓ Designed for Pt-100, Thermocouples and 4 - 20 mA input
- ✓ Maximum MTBF and minimum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

SPECIFICATIONS

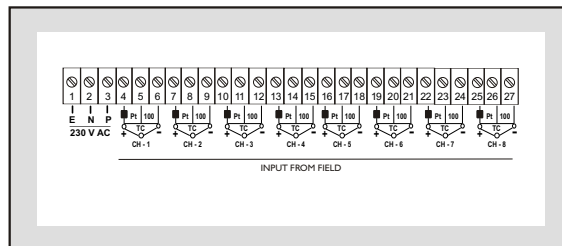
Model	: Smart S108 Exp	Scan time	: Individually adjustable from 0 - 99 seconds
No of inputs	: Four / Eight	Display response time	: 0.5 seconds / channel
Ranges	: Refer chart below (other on demand)	Mounting	: Wall
Input	: Pt - 100 / Thermocouple / 4 - 20 mA	Enclosure	: IP 65 CMRI certified in die cast aluminium suitable for flameproof classification Group II A, II B temperature type B
Indication	: 9 9 9 . 9 12.5 mm RED LED display	Termination	: Screwed type suitable for 2.5 mm ² wire
Number of digits	: 5 (1 for channel number and 4 for process value)	Weight	: 4 kg approximately
Indication accuracy	: +/- 0.25 % of full scale +/- 1 digit	Dimensions (mm)	: 420 (H) x 235 (W) x 190 (D)
Least count	: Refer chart below (other on demand)	Cable glands	: 5 / 9 nos. of double compression 1/2" NPT flameproof glands
Power supply	: 230 V AC, +/- 10 % , 50 Hz with earth	Optional	
Relative humidity	: Less than 90 % non condensing	A) Retransmission o/p	: Isolated 4-20 mA proportional to average value of all inputs
Ambient temperature	: 0 to 55°C	Resolution	: 10 bit (0.016 mA step change)
Amb. Temp. compensation	: Built in up to 55°C	Load resistance	: Max 500 ohms
Accuracy deviation due to		B) Serial interface	: Isolated RS 485 (2 wire) / RS 232
a) Temperature change	: +/- 0.002 % / °C, ref at 25°C	Protocol	: Modbus RTU
b) Supply variation	: +/- 0.001 % / V	Chart	
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 external push buttons. Default password is 134		
Power consumption	: 6 VA		
Channel skip	: By setting scan time as zero seconds		

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



96



ORDERING INFORMATION

Smart S108 Exp

X1	X2	X3	X4	Ordering eg. Smart S108 Exp- 111
No. of Inputs 04 - Four 08 - Eight	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 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	Digital Temp. Scanner Smart Exp S108 No of inputs - Eight (08) 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

- ✓ Scanners With Alarm
- ✓ Scanners With Controllers
- ✓ Data Acquisition System

FRONT END

- ✓ Automation Panels
- ✓ PLC



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