



## INTRODUCTION

In any Process Control system when the distance between the sensor location and the control room (where the Instrument is actually located) is too large then the transmission of mV or Resistance signal may not be technically and economically viable. In such circumstances temperature transmitters play a very crucial role.

In case a user desires to use a single sensor output for multiple instruments like recorders, controllers, indicators etc. then a transmitter can be employed for this purpose.

The transmitter converts a low level input signal from field sensor to a proportional 4-20 mA current signal which is ideal for driving indicators / controllers / scanners / recorders or any other instrument in series.

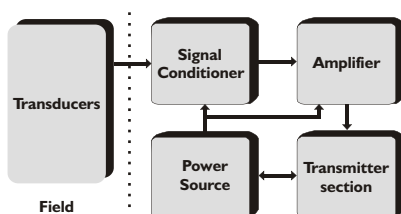
The ESD 211 is a non-isolated 2 Wire Transmitter which provides a 4-20 mA signal proportional to



the sensor type. It accepts commonly used Thermocouples and Pt-100 as input. Wide applications are possible depending on the sensor used.

The unit is housed in a Nylon enclosure with two potentiometers provided for span and zero adjustment under the top cover. The instrument is immune to mechanical vibrations. Even the mounting position will not affect the measurement accuracy. Use of highly reliable electronic components ensures long and trouble free service. The instrument is tested for its performance under various climatic conditions.

## PRINCIPLE OF OPERATION



The ESD 211 is based on the principle high input impedance amplifier feeding current transmitter section. 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 current transmitter section. Linearisation of the transducer signal is done by hardware in the input circuit. This gives a standardized signal corresponding to the temperature.

## APPLICATION

The ESD 211 is used in applications where the input signal is to be transmitted over long distances in noisy environments. Also, used in applications wherein the same output is to be given to multiple devices.

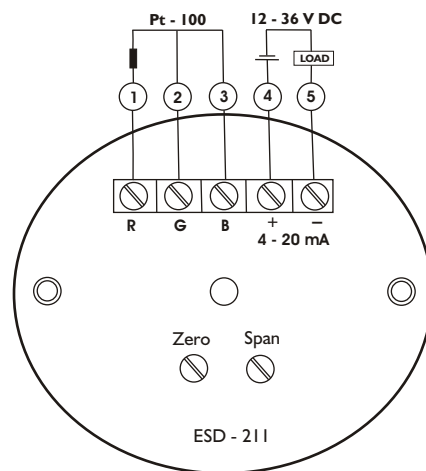
## FEATURES

- ✓ Proven trouble free field performance
- ✓ Highly compact
- ✓ Highly Stable output
- ✓ Dust and vermin proof enclosure with epoxy powder coating
- ✓ Fast response time
- ✓ Designed for Pt-100 and thermocouple input
- ✓ Maximum MTBF and minimum MTTR
- ✓ Wide supply variation and environmental band

## SPECIFICATIONS

Model	: ESD 211	Accuracy deviation due to	
Input type	: Pt-100, Thermocouple	Temperature change	: +/- 0.002%/°C, ref at 25°C
Ranges	: Refer chart below (other on demand)	Input impedance	: < 10 Mohms, (only for T/C inputs)
Accuracy	: +/- 0.5 % of full scale	Mounting	: Sensor head
Output	: 4 - 20 mA	Enclosure	: ABS plastic
Max. Load	: 500 ohms	Termination	: Screwed type suitable for 2.5 mm <sup>2</sup> wire
Power supply	: 12 - 36 V DC	Mounting CTC	: 34 mm
Relative humidity	: Less than 90% non condensing	Diameter	: 43 mm
Ambient temperature	: 0 to 55°C	Height	: 22 mm w/o termination 36 mm with termination
Amb. Temp. Compensation	: Built in up to 55°C	Weight	: 40 grams approximately
Recalibration	: By zero and span potentiometers		

## INSTALLATION



## ORDERING INFORMATION

**ESD 21 X1**

Mounting
1 - Head
2 - DIN Rail

**X2**

Input
1 - Pt - 100
2 - J type T/C
3 - K type T/C
4 - R type T/C
5 - S type T/C
9 - Other

**X3**

Range
0 - -50 to 50°C
1 - 0 to 100°C
2 - 0 to 200°C
4 - 0 to 400°C
5 - 0 to 600°C
6 - 0 to 800°C
7 - 0 to 1000°C
8 - 0 to 1200°C
9 - Other

Input	Standard Ranges in °C		
Pt-100	-50 - 50	0 - 100	0 - 200
J	0 - 200	0 - 400	0 - 600
K	0 - 200	0 - 400	0 - 600
R, S	800 - 1600		
mA / mV	0 to 100 % or process value		

**Ordering eg. ESD 211 - 10**

Temperature Transmitter ESD 211

Mounting	- Head	(1)
Input	- Pt - 100	(1)
Range	- -50°C to 50°C	(0)

ALSO SELECT ESD ...	BACK END	SAME RANGE	FRONT END
	<ul style="list-style-type: none"> <li>✓ Pt - 100</li> <li>✓ Thermocouples</li> <li>✓ Thermowells</li> <li>✓ Compensating Cables</li> </ul>	<ul style="list-style-type: none"> <li>✓ 4 wire Transmitters</li> <li>✓ Signal Isolators</li> <li>✓ Loop Powered Indicators</li> </ul>	<ul style="list-style-type: none"> <li>✓ One Setpoint Controllers</li> <li>✓ Multi Setpoint Controllers</li> <li>✓ Multi channel Controllers</li> <li>✓ Blind Controllers</li> <li>✓ Supersize Controllers</li> <li>✓ Field mounting Controllers</li> </ul>



**ELECTRONICS  
SYSTEMS AND DEVICES**  
Process Control Instrumentation

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