

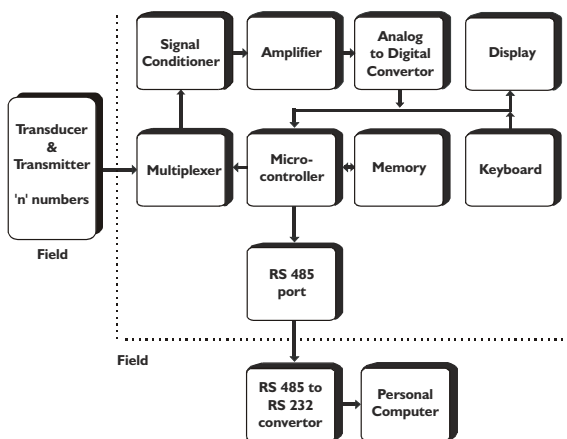


## INTRODUCTION

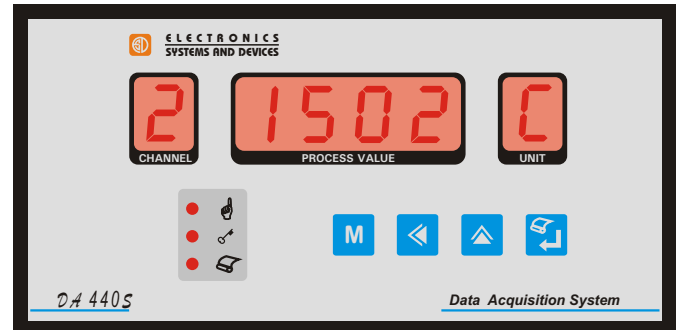
Temperature Indicators / Controllers play an important part in any process industry. Quick and accurate measurement / control of a process temperature will improve the final product quality, reliability and reduce rejection. Temperature indication and control is therefore one of the prime considerations in any process industry.

When the process is complex and critical, the measurement locations are many and they have inter-relationship between one another which needs to be recorded, analysed and stored. In such a situation Data Acquisition System becomes a necessity. The Intelligent series serves this purpose very effectively.

## PRINCIPLE OF OPERATION



The **ESD** Intelligent series is based on the principle high input impedance amplifier feeding an analog to digital converter inbuilt inside an embedded microcontroller. 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 by the microcontroller. The processor scans all the inputs at a very fast rate and stores it in the memory. This stored data is displayed automatically as per the preset scan times.



## APPLICATION

The **ESD** Intelligent series data acquisition system can be used in almost any industry, laboratory etc. where accurate temperature monitoring and process verification is needed to be carried out.

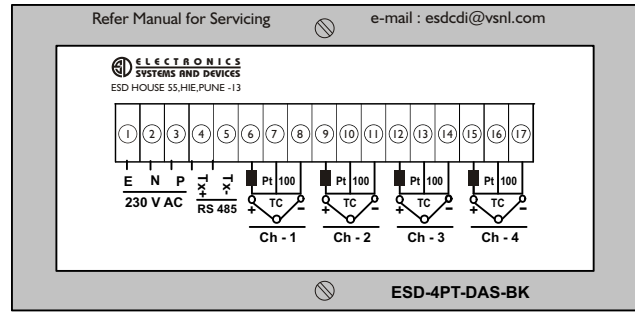
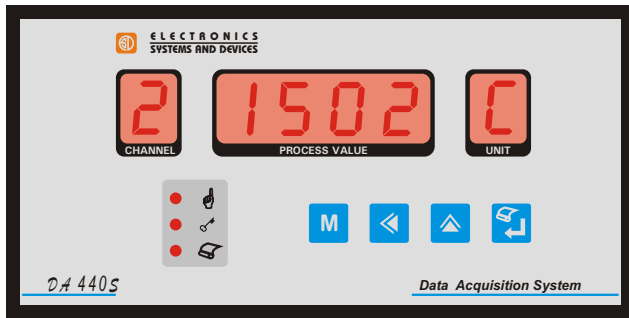
## FEATURES

- ✓ Proven troublefree field performance
- ✓ Highly compact and better accuracy
- ✓ User friendly PC end software with Graphs and Reports for better analysis
- ✓ PC Software PC Operating System independent
- ✓ User friendly programming
- ✓ Password Protection for program mode
- ✓ RS 485/RS232C communication
- ✓ Dust and vermin proof enclosure with epoxy powder coating
- ✓ LED display gives better readability at long range
- ✓ Fast response time
- ✓ 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
- ✓ Individual channel Sensor error compensation
- ✓ USB Interface

## SPECIFICATIONS

Model	: DA 440S	Memory	: 10000 Sample Records
No of channels	: 4	Memory storage interval:	0 to 99 mins.
Inputs	: T/C, Pt100, 4-20 mA	Memory store indication;	Blinking LED
Range / Least count	: 0 to 400.0 °C / 0.1 °C and 0 to 1600 °C / 1 °C	Memory full indication	: Steady LED
Indication accuracy	: +/- 0.25 % of FS +/- 1 digit	Display time	: 0 (skip) to 99 secs.
Accuracy deviation	: +/- 0.02%/°C at 25 °C (Temp. Variation)	Battery backup	: Built in
	: +/- 0.01 %/V (Supply Variation)	Power supply	: 230 V AC, +/- 10% , 50 Hz
Operating modes	: Auto, Manual, Program	Ambient Temp. range	: 0 to 55 °C
Programming Keyboard	: 4 Keys membrane	Sensor break indication	: Open
Display	: Six digit, 12.5 mm seven segment Red LED	Ambient Compensation	: Built in (for thermocouple inputs only)
	1 for channel no, 4 for parameter value and 1 for unit.	Relative Humidity	: 90 % Non Condensing
		Power consumption	: 4 VA
		Dimensions	: 144 x 72 x 160 mm (D)
		Cutout	: 138 x 68 mm
		Communication	: RS 485 ( 2 wire )

## INSTALLATION



68

138

## ORDERING INFORMATION

<b>DA</b>	<b>X1</b>	<b>X2</b>	<b>X3</b>	<b>X4</b>	<b>X5</b>	<table border="1"> <thead> <tr> <th>Input</th> <th colspan="2">Standard Ranges in °C</th> </tr> </thead> <tbody> <tr> <td>Pt-100</td> <td>-100 - 200</td> <td>0 - 400</td> </tr> <tr> <td>J</td> <td>0 - 400</td> <td>0 - 600</td> </tr> <tr> <td>K</td> <td>0 - 400</td> <td>0 - 1200</td> </tr> <tr> <td>R, S</td> <td colspan="2">0 - 1600</td> </tr> <tr> <td>mA / mV</td> <td colspan="2">0 to 100 % or process value</td> </tr> </tbody> </table>	Input	Standard Ranges in °C		Pt-100	-100 - 200	0 - 400	J	0 - 400	0 - 600	K	0 - 400	0 - 1200	R, S	0 - 1600		mA / mV	0 to 100 % or process value	
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<b>Panel Cutout</b> 2 - 186 x 92 4 - 138 x 68	<b>No. of Inputs</b> 4 - Four 8 - Eight 16 - Sixteen	<b>Input</b> 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	<b>Range</b> 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	<b>Power Supply</b> 1 - 230 V AC 2 - 110 V AC 3 - 48 V AC 4 - 24 V AC 5 - 24 V DC 6 - Other																				

**Ordering eg. DA - 440S 111**  
Data Acquisition System DA 440S  
Panel cutout - 138 x 68 mm (4)  
No of inputs - Four (4)  
Input - Pt - 100 (1)  
Range - 0 °C to 400 °C (1)  
Power Supply - 230 V AC (1)

<b>ALSO SELECT ESD ...</b>	<b>BACKEND</b>	<b>SAME RANGE</b>	<b>FRONT END</b>
	✓ Pt - 100	✓ Scanners	✓ Alarm Annunciators
	✓ Thermocouples		✓ Automation Panels
	✓ Thermowells		
	✓ Compensating Cables		



**ELECTRONICS  
SYSTEMS AND DEVICES**  
Process Control Instrumentation

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