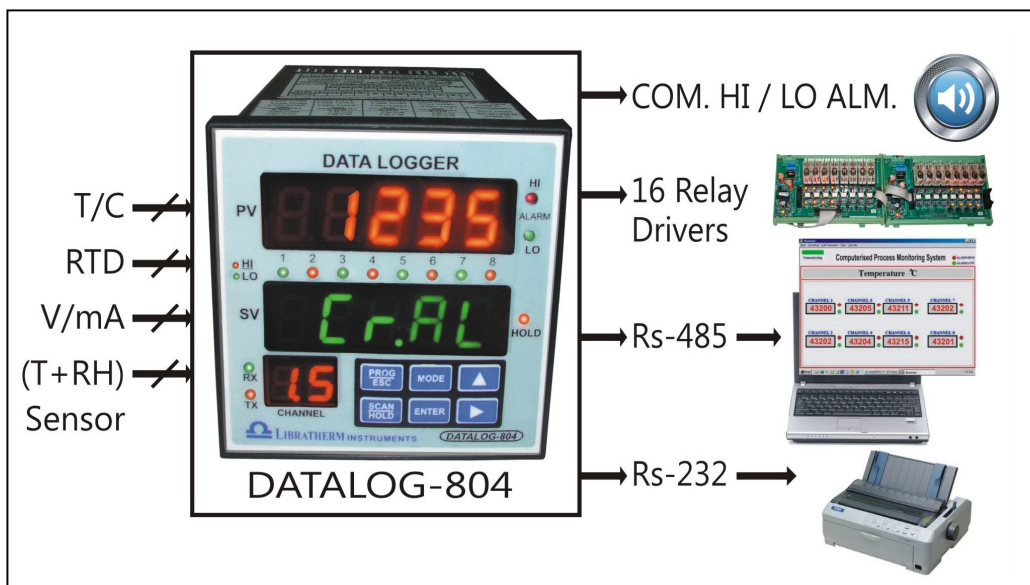


Microcontroller Based 8 CHANNEL Temperature/Process DATA LOGGER (Product Code 8.7 to 8.9)



Model Wise Description:

Sr. No	Model	Product Description (X = No. of channel)	Size (WxHxD) (mm.)
8.7	DATALOG -804-F-X	4 or 8 Channel Temperature/Process Data logger with user defined Fixed input / 2 common relay outputs and 8 or 16 independent relay drivers/ Real time clock/ Data storage and RS 485 serial interface (X=4 or 8)	96 X 96 X 160
8.8	DATALOG -804-U1-X	4 or 8 Channel Temperature/Process Data logger with user selectable Thermocouple and other process input / 2 common relay outputs and 8 or 16 independent relay drivers / Real time clock/ Data storage and RS 485 serial interface. (X=4 or 8)	96 X 96 X 160
8.9	DATALOG -804-U2-X	4 or 8 Channel Temperature/Process Data logger with user selectable Pt-100 and other process input / 2 common relay outputs and 8 or 16 independent relay drivers /Real time clock/ Data storage and RS 485 serial interface. (X=4 or 8)	96 X 96 X 160

Description :

Libratherm offers Microcontroller based Temperature / Process Data logger Model DATALOG-804 which is designed for continuous, simultaneous and very accurate monitoring and logging of temperature or process values at maximum 8 different locations. The logged datas are stored in the internal memory with real time and date. The logged datas can also be monitored in the on- line mode on to the PC screen and can also be down loaded to the PC in the off - line mode. Facility is

also available through additional serial port to directly print the logged or stored data with real time/date at the programmable PRINT INTERVAL on EPSON or equivalent serial dot matrix printer.

The Model accepts universal input of standard thermocouples or RTD(Pt-100)/3 wire sensors and voltage or current signals. The type of input for each channel is user selectable from the keyboard, i.e. all 8 channels can be selected for different type of inputs. MSI-804 incorporates 16 bit ADC and offers 5 digit display having the range of 0 to 20000 counts or -10000 to +10000 counts. Such wide display range makes it possible to display the temperature or process value with the highest degree of accuracy and resolution. For example, using R type thermocouple the temperature can be displayed with 0.1oC resolution from 0.0 to 1768.0°C. Similarly, any other process value can be precisely displayed with desired resolution within the specified range.

Other hardware features includes, 2 nos. of common for all channels high or low relay outputs, 16 nos. of transistor drivers – available to the user on 20 pin FRC connector and cable. FRC compatible 8 channel relay cards are also available. The respective front panel dual colour LEDs shows the status of each channel – whether it is High (Red) or Low (green), when compared to their respective set values.

Standard features include programmable display SCAN time, channel SKIP and HOLD facility with manual increment of the channel number using front panel membrane keyboard.

Technical specifications:

No. Of channels	4 or 8
Universal Input	J, K, R, S, B, RTD(Pt-100)/2 or 3 wire, (4-20)mA, (0-1)V, (0-5)V etc. (user configurable or factory fixed - as specified)
Input Selection	Factory set for each channel or User selectable for each channel (Model dependent)
Range	0 to 20000 or -10000 to +10000 UOM – Subject to the specified input (Refer the Input and range selection table given below)
Accuracy	Better than $\pm 0.1\text{ }^{\circ}\text{C}$, $\pm 1\text{ }^{\circ}\text{C}$ (Software linearized for temperature)
Display	5 digit each 0.5" 7-segment Red /Green LED to indicate Process, Alarm values and Real Time Clock and 2 digit 0.3" 7-segment Red LED for channel no.
Scan Rate	1 to 99 sec (programmable through front panel keyboard)
Data Storage Interval	1 to 99 minutes (user programmable).
Data Storage	8000 records. (512KB).
Print Interval	1 to 99 minutes (User programmable)
Skip/Hold Facility	Available through key board in configuration mode
High / Low Alarm	Common or individual Settable using key pad
Common Relay output	2 nos. potential free change over contacts (1 each for high and low output but common for all the channels)
Alarms Outputs	8 x 2 open collector outputs to drive external relay cards.
LED Indication	8 dual colour LED's in the front indicating status of each alarm output.
Serial Interface	RS485 MODBUS RTU protocol in slave mode for PC interface or RS232 serial port for dot matrix printer interface (any one is useable at a time)
Supply	90V - 260VAC / 110 VAC $\pm 10\%$ (10VA), 50/60Hz or 24VDC @ 200mA

Enclosure	Plastic or Metallic with ABS bezel and polycarbonate front.
Size	96 x 96 x 160 mm .
No. of Back Panel Terminals	Total 37 terminals.

Data storage table with reference to storage interval :

Data Storage Interval	No. of Channels	Total Storage Duration	No. of Channels	Total Storage Duration
1 min	4	9 days	8	5 days
5 min	4	45 days	8	28 days
10 min	4	90 days	8	56 days
15 min	4	136 days	8	84 days
30 min	4	273 days	8	168 days
60 min	4	546 days	8	336 days

Input and Range Selection Table:

Code	Input	Range
A1	Factory set to 8 universal inputs marked (*) below : A3,A4,A5,A6,A7,A16,A17 & A18 (U1)	As given below
A2	Factory set to 4 user selectable inputs marked (^) below : A14,A16,A17 & A18 (U2)	As given below
A3	J type : Fe/Con thermocouple (*)	0 to 760 °C
A4	K type : Cr/Al thermocouple (*)	0 to 1372 °C
A5	R type : Pt/PtRh13% thermocouple (*)	0 to 1768 °C
A6	S type : Pt/PtRh10% - thermocouple (*)	0 to 1768 °C
A7	B type : Pt30%Rh/Pt6%Rh thermocouple (*)	200 to 1820 °C
A8	T type : Cu/Con thermocouple	0 to 350 °C
A9	E type : NiCr/CuNi thermocouple	0 to 900 °C
A10	C type : W5%Re/W26%Re thermocouple	0 to 2300 °C
A11	D type : W3%Re/W25%Re thermocouple	0 to 2300 °C
A12	G type : W/W26%Re thermocouple	0 to 2000 °C
A13	N type : Ni-Cr-Si/Ni-Si-Mg	0 to 1300 °C
A14	Pt-100 (Alpha = 0.00385) DIN 43760 (*) (^)	0.0 to 400.0 °C
A15	Pt-100 (Alpha = 0.00385) DIN 43760	-100.0 to 200.0 °C
A16	4-20mA (*) (^)	-9999 to +9999 uom
A17	0-1VDC (^)	-9999 to +9999 uom
A18	0-5VDC (*) (^)	-9999 to +9999 uom

Restrictions on Input selection : If the input channel is specified for thermocouple then the same can not be used for Pt-100 input and vice versa. But in either case it can be used for voltage or current input. For both thermocouple and Pt-100 inputs, in single instrument - please select DATALOG-804-F.

Ordering Information for Model DATALOG-804-F:

Model	No. of channels	A- Channel Input (Use above table)	B- EXTERNAL RELAY CARD	C – Serial Interface
DATALOG - 804-F	4 8	CH-1- (To Select from A3 to A18) CH-2- (To Select from A3 to A18) CH-3- (To Select from A3 to A18) CH-4- (To Select from A3 to A18) CH-5- (To Select from A3 to A18) CH-6- (To Select from A3 to A18) CH-7- (To Select from A3 to A18) CH-8- (To Select from A3 to A18)	B1- 8 CHANNEL RELAY CARD (4 HI + 4 LOW) B2- 16 CHANNEL RELAY CARD (8 HI + 8 LOW) B3- NONE	C1 – RS 485 C2 – RS 232 C3 – Both

Ordering Information for Model DATALOG -804-U1:

Model	No. of channels	A- Channel Input (Use above table)	B- EXTERNAL RELAY CARD	C – Serial Interface
DATALOG - 804-U1	4 8	CH-1- (Pre selected A3,A4,A5,A6,A7,A16,A17,A18) CH-2- (Pre selected A3,A4,A5,A6,A7,A16,A17,A18) CH-3- (Pre selected A3,A4,A5,A6,A7,A16,A17,A18) CH-4- (Pre selected A3,A4,A5,A6,A7,A16,A17,A18) CH-5- (Pre selected A3,A4,A5,A6,A7,A16,A17,A18) CH-6- (Pre selected A3,A4,A5,A6,A7,A16,A17,A18) CH-7- (Pre selected A3,A4,A5,A6,A7,A16,A17,A18) CH-8- (Pre selected A3,A4,A5,A6,A7,A16,A17,A18)	B1- 8 CHANNEL RELAY CARD (4 HI + 4 LOW) B2- 16 CHANNEL RELAY CARD (8 HI + 8 LOW) B3- NONE	C1 – RS 485 C2 – RS 232 C3 – Both

Ordering Information for Model DATALOG -804-U2:

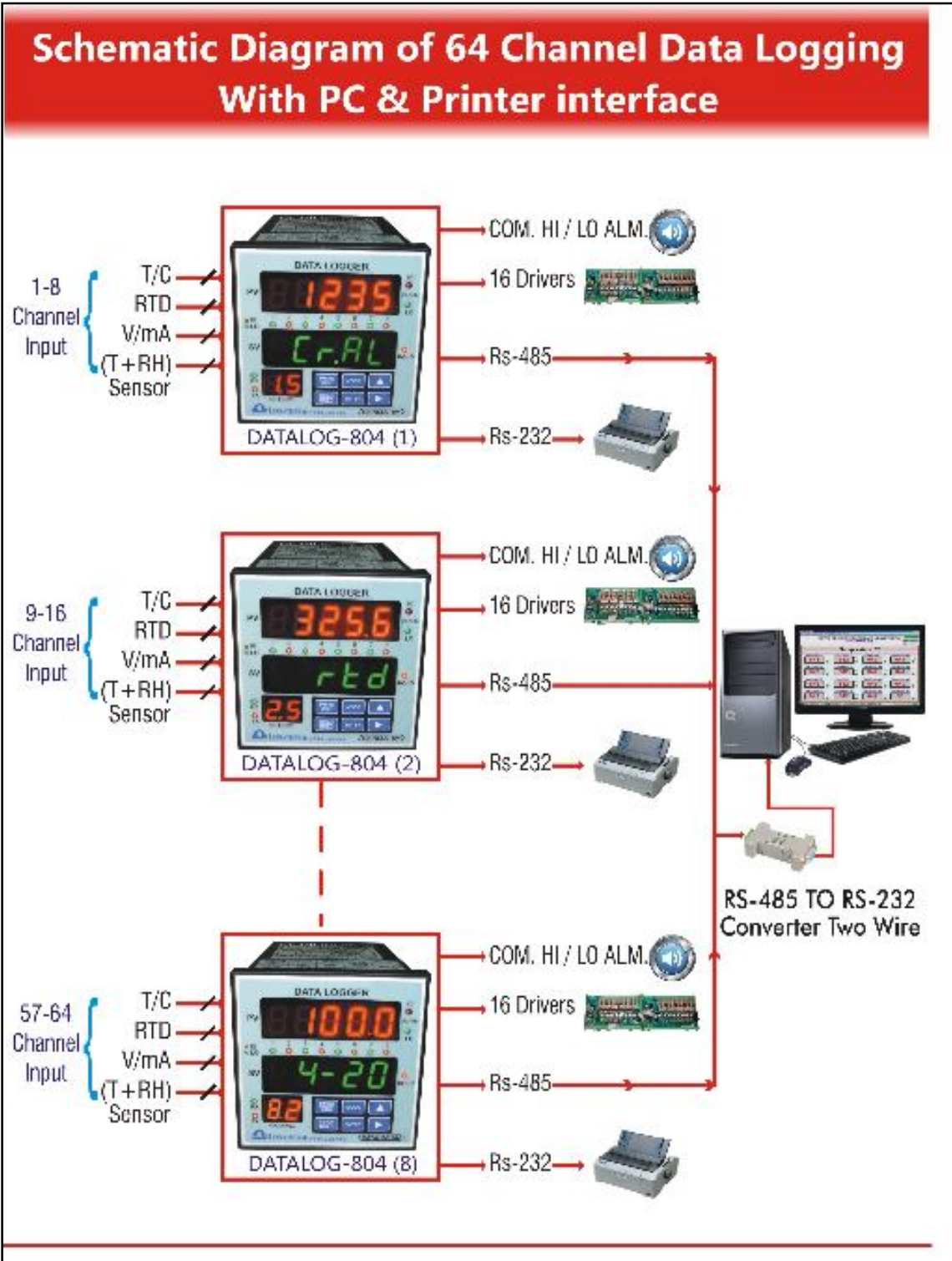
Model	No. of channels	A- Channel Input (Use above table)	B- EXTERNAL RELAY CARD	C – Serial Interface
DATALOG - 804-U2	4 8	CH-1- (Pre selected A14,A16,A17,A18) CH-2- (Pre selected A14,A16,A17,A18) CH-3- (Pre selected A14,A16,A17,A18) CH-4- (Pre selected A14,A16,A17,A18) CH-5- (Pre selected A14,A16,A17,A18) CH-6- (Pre selected A14,A16,A17,A18) CH-7- (Pre selected A14,A16,A17,A18) CH-8- (Pre selected A14,A16,A17,A18)	B1- 8 CHANNEL RELAY CARD (4 HI + 4 LOW) B2- 16 CHANNEL RELAY CARD (8 HI + 8 LOW) B3- NONE	C1 – RS 485 C2 – RS 232 C3 – Both

Examples:

Model	No. of channel	A- Channel Input	B- EXTERNAL RELAY CARD	C – SERIAL INTERFACE
DATALOG-804-F	4	CH-1- (A3) CH-2- (A4) CH-3- (A14) CH-4- (A16)	B1- 8 CHANNEL RELAY CARD (4 HI + 4 LOW)	C2 – RS 232
DATALOG -804-U1	8	CH-1- (A3) CH-2- (A3) CH-3- (A4) CH-4- (A4) CH-5- (A17) CH-6- (A17) CH-7- (A18) CH-8- (A18)	B2- 16 CHANNEL RELAY CARD (8 HI + 8 LOW)	C1 – RS 485
DATALOG -804-U2	8	CH-1- (A14) CH-2- (A14) CH-3- (A16) CH-4- (A16) CH-5- (A17) CH-6- (A17) CH-7- (A18) CH-8- (A18)	B2- 16 CHANNEL RELAY CARD (8 HI + 8 LOW)	C3 – Both

Meaning:

Example	Ordering Code	Description
1	DATALOG-804-F-4 -CH-1- (A3) -B1-C2 CH-2- (A4) CH-3- (A14) CH-4- (A16)	This is 4 channel scanner with factory fixed inputs J, K, Pt-100 and 4-20mA and 8 channel relay card with serial printer interface
2	DATALOG -804-U1-8-CH-1-(A3)-B2 -C1 CH-2-(A3) CH-3-(A4) CH-4-(A4) CH-5-(A17) CH-6-(A17) CH-7-(A18) CH-8-(A18)	This is 8 channel scanner with user selectable input for thermocouple and Voltage, current and 8 x 2 = 16 channel relay cards with serial PC interface
3	DATALOG -804-U2-8-CH-1-(A14)-B2 -C1 CH-2-(A14) CH-3-(A16) CH-4-(A16) CH-5-(A17) CH-6-(A17) CH-7-(A18) CH-8-(A18)	This is 8 channel scanner with user selectable input for Pt-100 and Voltage, Current and 8 x 2 = 16 channel relay card with both RS232 and RS485 interface



SALIENT FEATURES OF STANDARD PC SOFTWARE

- 1) The PC software version EDATALOG-804 is available on single CD. This software is to be loaded on to the computer hard disk, and it allows interfacing of DATALOG-804 to the computer.
- 2) The interfacing with computer is made either on serial com port or on USB port.
- 3) The front panel screen GUI (Graphical User Interface), in general, allows user to configure
 - a) the COM port settings
 - b) the DATALOG-804 input selection
 - c) setting of log interval
 - d) setting of security passwords
 - e) viewing of current data and historical data in the tabular and graphical format.
- 4) The datas of all 8 channels are stored in the computer hard-disk, by start date and start time wise continuously at the rate of programmed log interval.
- 5) Print out of the report and graph can be taken for the selected channel, with real time and date.
- 6) The x and y co-ordinate of the graph is automatically adjusted based on the process value, so that the pattern is visible on the center of the screen. This is called auto scaling and which applies to all the channel.
- 7) Customer or user can enter their own desired alpha / numeric field, such as co. name, operator name, channel nomenclature, unit of measurement, process name etc...to customize the software as per requirement, while generating the report or graph on screen on hard copy.
- 8) Any other software facility can be customized as per the requirement.

