

Process Analyzer

Version 1.0

Developed by: NUTRONICS

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Introduction

Process Analyzer (PA) is a comprehensive solution for recording & testing of process variations. It is very useful tools which record online data and store it for future analyses. It has interface to view old data and even export & printing of captured data. It has software and a micro controller based smart device. Which collects analog or digital signals, process them and transfer it to computer. It is fast, accurate and easy to operate.

The entire system has tow physical parts:

- ❖ Software
- ❖ Process Monitoring Devices
- ❖ Process Sensors

The screenshot displays the Process Analyzer software interface. At the top, there is a menu bar with options: File, Settings, Expot, Help, Fonts, Print, Exit, Manual Monitor, and Save Grid settings. Below the menu bar, there are control buttons for Start Device (green) and Stop Device (red), along with search fields for Find on (AREA) and Find Criteria. A status bar shows Total Records : 5. The main data table is as follows:

AREA	LOCATION	DEVICE_NO	CHENNEL_NUMBER	CHENNEL_NAME	HIGH_VAL	LOW_VAL	CUR_VAL
AREA2	LOC2	1	000	CH0	100	10	036.0
AREA1	LOC1	1	001	CH1	100	10	102.9
AREA1	LOC1	1	002	CH2	100	10	100.6
AREA1	LOC1	1	003	CH3	100	10	364.2
AREA1	LOC1	1	004	CH4	100	10	000.0

At the bottom, there is a status bar with keyboard shortcuts: [ENTER] - VIEW, [F2] NEW ITEM, [F6] DEL ITEM, and the file path C:\Documents and Settings\Wikram Singh\Desktop\data.mdb.

Figure 1 Software

This manual is applicable only for software installation, setup and operations.

Software

Software is an integral of the TA or you can say software is the brain of the entire system. This will not work without software. So, it is important to understand software.

The software manual is organized in following sections:

- ❖ Installation of the software
- ❖ Configuration of the software
- ❖ Operation on the software
- ❖ Export of software data to other software.

Installation

The process of loading the software on computer is called software installation. Before installing the software it is important to note that computer has following minimum requirements:

1. Computer with Pentium 4 processor, 1 GB RAM, 500 MB free space for software installation and 1 GB Free hard disk space for software running.
2. The software is perfectly tested on windows 2000 Profession and XP with service pack 2.0 and 3.0. Hence it is observed that it can be installed on windows 95 and other flavors of windows yes you need following extra components to be loaded on those computers:
 - a. MDAC 2.8
 - b. DCOM for Windows 95/98
 - c. Above software are free and can be downloaded from <http://www.microsoft.com>.
3. One DB9 RS232 Serial port free to connect the device.

Loading the software on the Computer is very easy. Just insert the CD into the CD Drive and locate either Setup.exe or Setup.MSI and double click on it. Just provide the information asked by the installation wizard and software is ready. Note: - if you don't understand just press next button on the screen would install the software to default location on your computer. Followings are the default location:

1. "C:\program files\TEMP" is the path where your software is installed.
2. "C:\program files\ TEMP\data" is the path where your data will be saved.
3. "C:\programfiles\ TEMP\Server.cfg" is the main file where all software settings are stored.
4. "C:\program files\ Loadana\data\data.mdb" is the default data file.
5. You can open the "C:\program files\TEMP\Server.cfg" using notepad windows standard program to update the data settings.
 - a. You will find DATA=data\data.mdb line by default.
 - b. You can change this to your desired location and file name.
 - c. Just make sure that the path you have changed is exists and data.mdb file is copied and renamed with name you have given.

Software Configuration

Just click on the start button and you will find on the FMS Icon. On click it software start running. If your computer does not have com1 it will give error that “Com1 is not found on the computer” and you will see following main window of the software.

Device Setup password = day X 2 month X 3 i.e. say today's date id 08/08/08 then pwd is 1624 and On next day pwd is 1824.

Start collecting data from device

AREA	LOCATION	DEVICE_NO	CHENNEL_NUMBER	CHENNEL_NAME	HIGH_VAL	LOW_VAL	CUR_VAL
AREA2	LOC2	1	000	CH0	100	10	036.0
AREA1	LOC1	1	001	CH1	100	10	102.9
AREA1	LOC1	1	002	CH2	100	10	100.6
AREA1	LOC1	1	003	CH3	100	10	364.2
AREA1	LOC1	1	004	CH4	100	10	000.0

[ENTER] - VIEW [F2] NEW ITEM [F6] DEL ITEM C:\Documents and Settings\Wikram Singh\Desktop\data.mdb

Device Setup password = day X 2 month X 3 i.e. say today's date id 08/08/08 then pwd is 1624 and On next day pwd is 1824.

Setting Device Settings

These device settings are controlling the behavior of Load Monitor device.

Com Port = number (1-99) DB9 connection number on the computer.

Pol delay = Milliseconds max value 31000. Request for data from device after given interval.

Re-Try Delay = Milliseconds max value 31000. Incase no response from device of a given command then send same command again.

Next CMD Delay = Milliseconds max value 31000. Delay between successful data receiving from one command to next command.

Max Tries = Max no(s) of tries software should made to device before declaring it communication failure.

Threshold value = Maximum Limit for detection of faulty sensor.

Display Fields = Select fields you wish to see on the Main screen.

Storage Frequency = No of time value would be stored within given scan interval.

Scan Interval = Duration of the channel to scanned.

Channels per Device = No of sensor attached to a device.

Factory Settings = Clear all user settings and re-store default Settings

Device Settings

Com Port	1
Device Count#	1
Pol Delay (Secs)	.2
Re-try Delay(Secs)	3
Max Tries#	3
Next CMD Delay(Secs)	.02
Scan Interval (Secs)	5
Storage Rate	1
Open Threshold Value	17500

Display Fields

- AREA
- LOCATION
- DEVICE_NO
- CHENNEL_NUMBER
- CHENNEL_NAME
- HIGH_VAL
- LOW_VAL

Chennals Per Device

5

Factory Settings

Save **Cancel**

Sensor Settings

The high value and low value limit is to set the alarm signal for that particular channel.

Chennal Settings

Area: AREA1

Location: LOC1

Device No: 1

Chennal Number: 011

Chennal Name: CH11

High Value: 100

Low Value: 10

OffSet Value: 0

< >

Save **Close**

Printing Report & Graph

Report and graphs can be printed by clicking on the print button on the main screen. When click on the print button you will get two option

Print Test Report

Print Graph

Report Printing

Report Title: TEMPRATURE MONITOR DATA

Company Name: NUTRONICS INDIA (P) LTD.

Company Address: TEST ADDRESS

Enter Chennal No: [] Enter Chennal Name: []

From Date & Time: 31/08/2008 08:08:17 To Date & Time: 31/08/2008 08:08:17

Preview

Print **Close**

Note:- If you see formatting issue, on report viewer Click on Format menu->Fonts->Courier New

Clicking on the print test report option would ask you to enter test no. input a valid test no would print open the report in a new window. There may chances that you will not get proper formatting of the report. To resolve this problem just do following:

Click on the Format->font Window. Select Font Name = "Courier New" press OK.

Printing can be done by select the print command or just press Ctrl+P to print the report.

Printing Graph can be done by selecting the print graph option. Input the test no and select a graph to print. You have option to view the graph before print.

Print Replot

Printer Name: []

Enter Chennal No: [] From Date: 21/08/2008 To Date: 23/08/2008

Preview

Print **Close**

Data Storage Location

Data storage is shown on the main screen on the upper left hand of the screen. You can change the storage location and file to the location of your preference. To change the data storage location, you have to click on the yellow strip of the current data storage location. Say you want to set data location to d:\loadmonitor\data_jan2008 then click on the current data location would open the browse location window, you have to locate the above location and give a file name of your choice would create the new data file and data storage location.

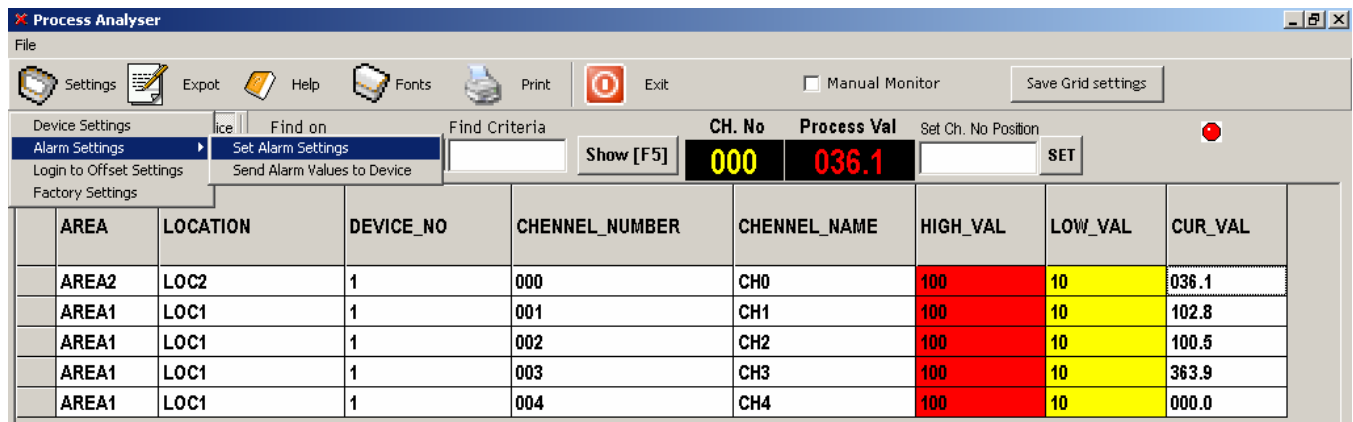
Data Export

You can Export data by clicking on the Export button on main window. You have option to export report data to text format or excel file format.

Alarm Settings

Alarm settings are high & low threshold values on crossing these values device would react. This action could be relay output or a plus. To set these values, just click on Settings->Alarm Settings->Set Alarm Settings would open a window where high and low values would input.

To transfer these setting to the device just select the Send alarm values to device.



The screenshot shows the 'Process Analyser' software interface. At the top, there is a menu bar with 'File', 'Settings', 'Export', 'Help', 'Fonts', 'Print', and 'Exit'. Below the menu bar, there are several buttons: 'Manual Monitor' (unchecked), 'Save Grid settings', 'Find on', 'Find Criteria', 'CH. No', 'Process Val', and 'Set Ch. No Position'. The 'Process Val' is displayed as '036.1'. Below this, there is a table with columns: AREA, LOCATION, DEVICE_NO, CHENNEL_NUMBER, CHENNEL_NAME, HIGH_VAL, LOW_VAL, and CUR_VAL. The table contains five rows of data.

AREA	LOCATION	DEVICE_NO	CHENNEL_NUMBER	CHENNEL_NAME	HIGH_VAL	LOW_VAL	CUR_VAL
AREA2	LOC2	1	000	CH0	100	10	036.1
AREA1	LOC1	1	001	CH1	100	10	102.8
AREA1	LOC1	1	002	CH2	100	10	100.5
AREA1	LOC1	1	003	CH3	100	10	363.9
AREA1	LOC1	1	004	CH4	100	10	000.0

Formatting of Device

Device has small amount of memory inside to store user settings. Clearing the memory of the device is called Factory settings of the device. This option is under settings tab select factory settings would start clearing the memory of each and every channel.

Please note: - This command would reset the device; it is possible that you yourself would not be able to set the device back to normal mode. Hence be careful to execute this option.

Integration with ERP

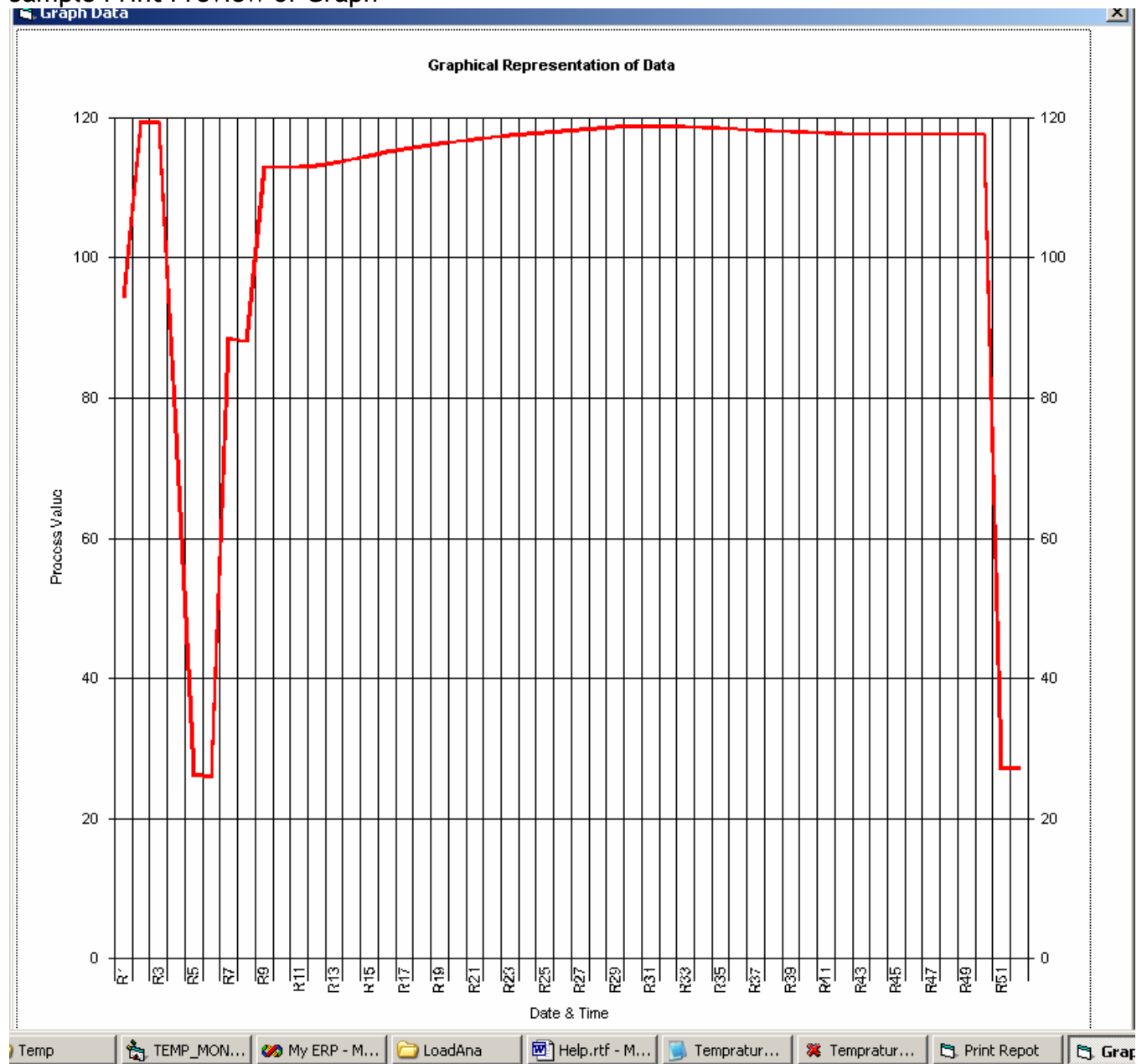
If you have any software you standard ERP system you can integrate this software directly to your system using its COM based SDK (Not free).

Support

Paid telephonic service can be obtained by 9:00-17:00 IST for the software. Email at support@nutronicsindia.com

Sample Graphs

Sample Print Preview of Graph



Sample Test Report

TEMPRATURE MONITOR DATA

NUTRONICS INDIA (P) LTD.
TEST ADDRESS

CHENNAL NO : 005
FROM DATE : 21/08/2008

TO DATE : 23/08/2008

SERIAL NO	CHANNEL NO	DATE & TIME	TEMPRATURE
1	005	22/08/2008 21:39:52	-025.9
2	005	22/08/2008 21:41:52	094.5
3	005	22/08/2008 21:43:48	119.3
4	005	22/08/2008 21:43:56	119.3
5	005	22/08/2008 21:47:17	075.1
6	005	22/08/2008 21:53:08	026.3
7	005	22/08/2008 21:53:16	026.0
8	005	22/08/2008 21:55:45	088.5
9	005	22/08/2008 21:55:53	088.1
10	005	22/08/2008 20:40:24	113.0
11	005	22/08/2008 20:40:26	112.9
12	005	22/08/2008 20:40:28	113.0
13	005	22/08/2008 20:40:30	113.2
14	005	22/08/2008 20:40:32	113.6
15	005	22/08/2008 20:40:34	114.1
16	005	22/08/2008 20:40:36	114.6
17	005	22/08/2008 20:40:38	115.1
18	005	22/08/2008 20:40:40	115.5
19	005	22/08/2008 20:40:42	115.9
20	005	22/08/2008 20:40:44	116.3
21	005	22/08/2008 20:40:46	116.6
22	005	22/08/2008 20:40:48	116.9
23	005	22/08/2008 20:40:50	117.2
24	005	22/08/2008 20:40:52	117.5
25	005	22/08/2008 20:40:54	117.7
26	005	22/08/2008 20:40:56	117.9
27	005	22/08/2008 20:40:58	118.1
28	005	22/08/2008 20:41:00	118.3
29	005	22/08/2008 20:41:02	118.5
30	005	22/08/2008 20:41:04	118.7
31	005	22/08/2008 20:41:06	118.7
32	005	22/08/2008 20:41:08	118.7
33	005	22/08/2008 20:41:10	118.7
34	005	22/08/2008 20:41:12	118.7
35	005	22/08/2008 20:41:14	118.6