User Manual

JOFRALOG

ASM Data Acquisition Software for JOFRA ASM-800 Multiplexer Calibrator

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1 INTRODUCTION

This manual contains installation and operating instructions for:

JOFRA windows data acquisition

JOFRALOG

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1.1 General information

The JOFRALOG program is designed for use with the JOFRA ASM-800 series to log data multiple sensor devices at once. JOFRALOG allows the user to configure up to 24 input channels (depending on the number of ASM-800's connected) with various input devices, with varying output units.

JOFRALOG uses RS232 communication ports.

The software comes on a CD-ROM with update downloads available from the AMETEK home page.

Knowledge of the JOFRA equipment and system to be tested is essential in order to obtain the maximum benefit from this program. Knowledge of Windows® programs in general is an advantage.

- **Warranty**
  Use of the product remains the full responsibility of the user, and AMETEK Denmark A/S offers no warranty and is under no obligation in relation to this product. In addition, AMETEK Denmark A/S cannot be held responsible for any damage, which may occur in connection with the use of this product, including loss of earnings, loss of profit, loss of data or recovery of lost data, loss of goodwill and other similar incidental or consequential damage or loss.

- **Technical assistance**
  Please contact the distributor, should you require technical assistance.

1.2 Hardware requirements

JOFRALOG has the following requirements

1.2.1 PCs, minimum hardware requirements:

- Intel® Pentium® II 1.4 GHz processor.
- 32MB RAM (64MB recommended)
- 40MB free disk space on hard disk (80MB recommended) prior to installation
- Standard VGA 1024x768, 256 colours).
- CD-ROM drive for installation of program
- 1 free RS-232 serial ports

1.2.2 PCs, minimum software requirements:

- Microsoft Windows® 98,Microsoft Windows® NT 4.0, Microsoft Windows® 2000, Microsoft Windows® ME, Microsoft Windows® XP, Windows Vista.
- System fonts: MS Sans Serif and Arial

1.3 Installing JOFRALOG

The JOFRALOG program is supplied on a CD-ROM and comes complete with its own installation program.

Program can be downloaded from AMETEK www.jofra.com.

☞ Simply insert the CD and follow the instructions on screen.

By default, JOFRALOG is installed in the directory: *Default program folder*\ JOFRALOG and an icon automatically appears on the Program's menu.

If you want to install the program manually, the CD also contains a SETUP.EXE file.

☞ **NOTE**: when installing on Microsoft Windows NT®, Microsoft Windows® 2000 Professional and Vista, you must have Administrator's privileges. If not please contact your local System Administrator.

1.3 Reinstalling JOFRALOG

The installation program detects whether JOFRALOG is already installed on the PC. If already installed you will have the option to repair the current installation or remove it.
Repairing the installation will overwrite the installation program files.
Uninstalling (remove option) JOFRALOG will only delete the program files.
Configuration and result files are not deleted and only the two default configuration files are overwritten if reinstalled to the same location. If a complete reinstallation is required including databases, the old installation folder must be deleted manually or reinstalled to another location.

1.4 Connecting JOFRALOG to a JOFRA device

JOFRALOG can be connected to a JOFRA ASM-800 multiplexer using a serial connection (RS232). The device should be connected to a free serial port on the PC - please refer to the PC manual for further information regarding the location and appearance of serial ports. Use the serial cable supplied with the device.

IMPORTANT!

- The JOFRA device must be switched off when connecting the cable from the PC.
- The JOFRA device and the PC must be earthed to avoid noise interference and damage to the equipment.
- You are advised not to switch the calibrator on until JOFRALOG has been started.

1.5 Starting the JOFRALOG program

Windows98/2000/NT/ME/XP,Vista®

- Click *Start*.
- Select *Programs*.
- Select JOFRALOG.
- Select JOFRALOG *logging software*.

1.6 Uninstalling JOFRALOG

JOFRALOG is removed from the PC as follows:

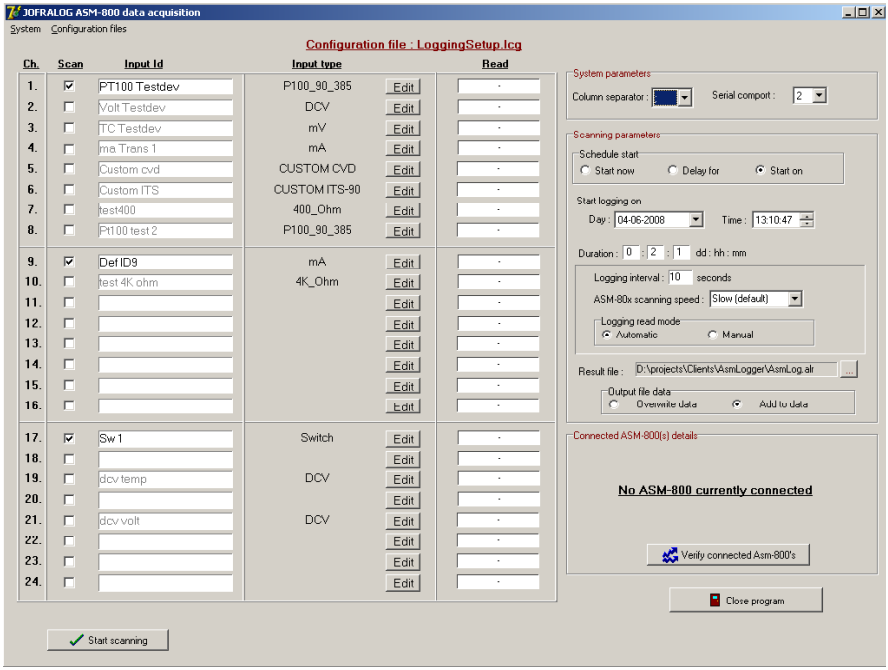
Open Control Panel
Open Add/Remove Programs
Select JOFRALOG
Press Add/Remove button and follow instructions on screens

All personal files (configuration files) will be retained in the JOFRALOG folder during the uninstall process. These can be used for subsequent installations of the JOFRALOG software.

2 PROGRAM STRUCTURE FOR JOFRALOG

Like other Windows® programs, JOFRALOG controls consist of menus, buttons, dialog boxes, lists etc, to navigate and configure the software.

Software consists of a main interface and 2 minor dialogs used for system configuration and channel definition.



2.1 The main screen is divided up into 4 areas:

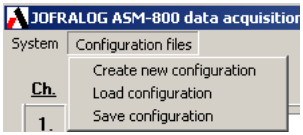
- Summary of the channel configuration.
- System parameters.
- Scanning parameters.
- Details of the connected ASM-800's.

2.2 Menu system.

Menu system consists of 2 main menus

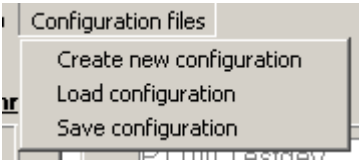
2.2.1 System configuration

Configure the system parameters.
See 6 System configuration..



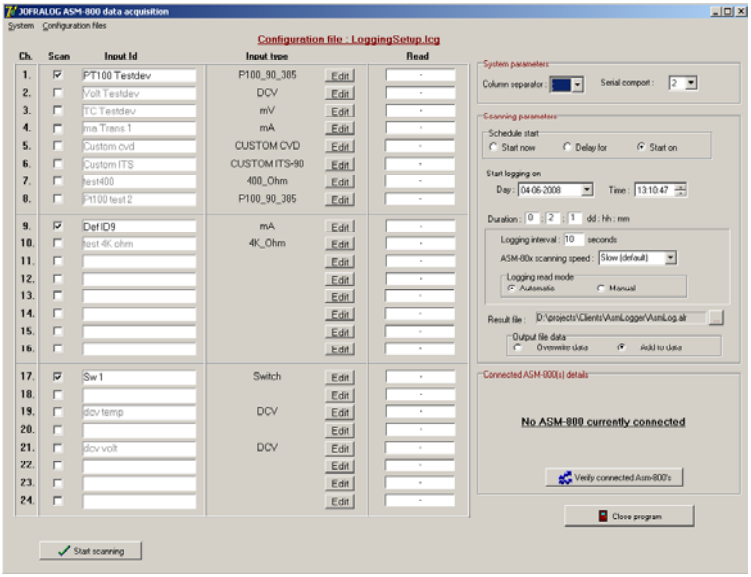
2.2.2 Configuration files.

These menus allow the user to save the current channel configuration to a file or load an existing configuration from a file.
See ***8 CONFIGURATION FILES.*** (*.LCG)***.***



3 PROGRAM MAIN INTERFACE.

Program main interface.



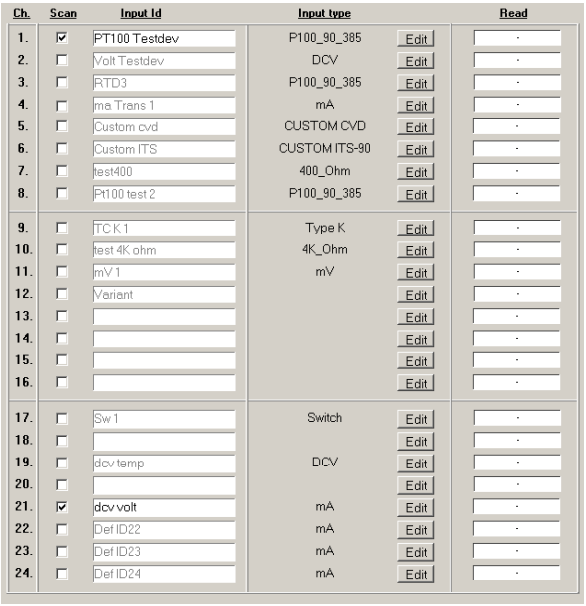
☞ When started JOFRALOG loads the configuration file last used by the program.

The currently loaded configuration file is displayed at the top.

Main interface consists four areas of information.

- Summary of the channel configuration.
- System parameters.
- Scanning parameters.
- Details of the connected ASM-800's.

3.1 Channel configuration summary.



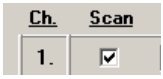
Ch.	Scan	Input Id	Input type		Read
1.	☑	PT100 Testdev	P100_90_385	Edit	
2.	☐	Volt Testdev	DCV	Edit	
3.	☐	RTD3	P100_90_385	Edit	
4.	☐	ma Trans 1	mA	Edit	
5.	☐	Custom cvd	CUSTOM CVD	Edit	
6.	☐	Custom ITS	CUSTOM ITS-90	Edit	
7.	☐	test400	400_Ohm	Edit	
8.	☐	Pt100 test 2	P100_90_385	Edit	
9.	☐	TC K 1	Type K	Edit	
10.	☐	test 4K ohm	4K_Ohm	Edit	
11.	☐	mV 1	mV	Edit	
12.	☐	Variant		Edit	
13.	☐			Edit	
14.	☐			Edit	
15.	☐			Edit	
16.	☐			Edit	
17.	☐	Sw 1	Switch	Edit	
18.	☐			Edit	
19.	☐	dcv temp	DCV	Edit	
20.	☐			Edit	
21.	☑	dcv volt	mA	Edit	
22.	☐	Def ID22	mA	Edit	
23.	☐	Def ID23	mA	Edit	
24.	☐	Def ID24	mA	Edit	

Depending on the number of connected ASM-800's the user can configure up to 24 channels for data logging. Example, if only a single ASM-800B model is available then only channels 1-8 will be relevant.

☞ To check the connected ASM-800's are connected and functioning, test the connection by clicking this button.

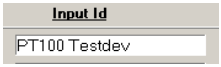
The channel summary includes the following information and controls.

3.1.1 Channel activation



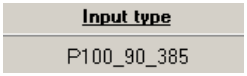
To activate a channel for scanning select the checkbox control for the particular channel.

3.1.2 Input ID



Enter the identification or serial number of the test device. This field must contain text to enable editing of the channels properties.

3.1.3 Input type



Displays the sensor type of the test device.

3.1.4 Edit input properties.

Select the 

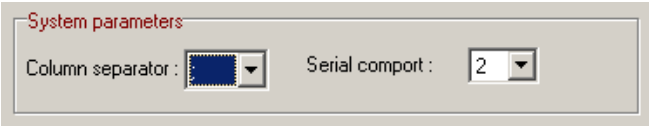
button to define the method and input types of the respective channels.

3.1.5 Logging results.

While data logging is in progress the results for each of the active channels is displayed in the read 

control.

3.2 System parameters.



These two controls are apart of the system configuration but placed on the main interface for easy access and information.

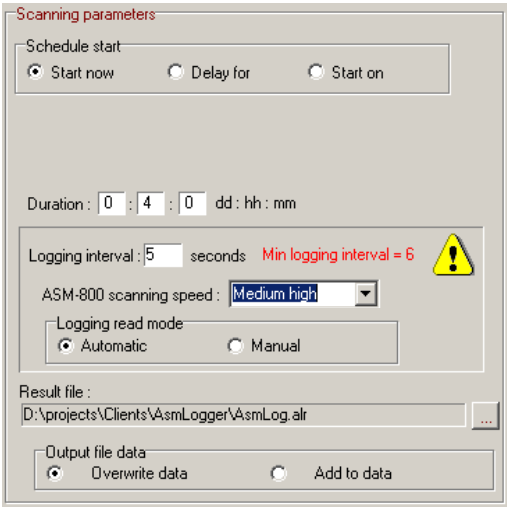
3.2.1 Column separator:

Select the character (Tabulator or semicolon) used to separate fields in the output file.

3.2.2 Serial comport:

Select the port used by the ASM-800 from the available serial ports on the PC.

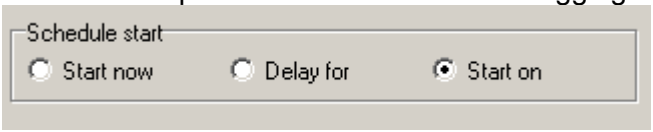
3.3 Scanning parameters.

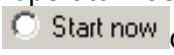


The scanning parameters determine the scheduling, duration and scanning rate of the logging process. The user can also determine if logging method and output file.

3.3.1 Schedule time of start:

There are 3 options to define the start of logging.



The operator has the option to begin logging immediately by selecting the 

option or one of the options to schedule the logging.

3.3.2 Scheduling methods:

Using the 

option for scheduling displays the following controls to define the start in days, hours and minutes.

Alternatively the 

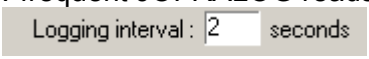
button allows the operator to schedule the start by calendar (time and date parameters).

3.3.3 Duration:

The 

control is used to define the length of the logging procedure and consists of a days (‘dd’), hours (‘hh’) and minute (‘mm’) parameters.

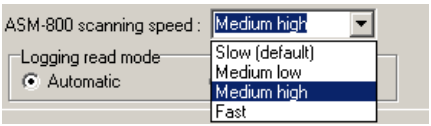
3.3.4 Logging interval:

How frequent JOFRALOG reads data from the ASM-800 is defined by the 

control. Here the control is set to log data once every 2 seconds.

3.3.5 ASM-800 scanning speed:

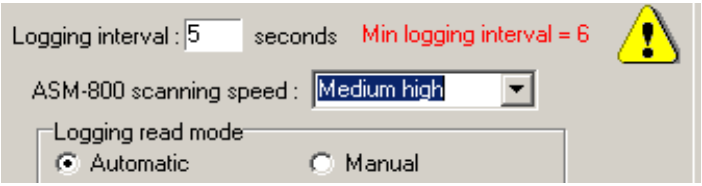
The ASM-800 has 4 scanning speed settings, which are defined in the scanning speed control.



☞ **WARNING**. The number and types of sensors used in a procedure should be considered when selecting the scanning speed.

3.3.6 Interval – scanspeed relation.

The speed of which the ASM-800 can complete a scan of all the active channels depends upon the number and types of sensors defined in the procedure. There is a risk the defined “Logging interval” is less than the time taken to scan all the channels, resulting in the same readings being logged more than once. JOFRALOG performs ongoing calculations during configuration based on the active channels, the defined logging interval and scanning speed variables. Any risk of duplication of readings occurring, the following warning will be displayed.



When this warning appears the user should either increase the Logging interval or the scanning speed.

☞ **NOTE**: This warning does not apply where manual logging is applied.

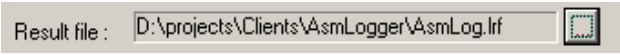
3.3.7 Logging read mode:

The operator can choose automatic logging by the software or log manually by the user. Here the control is set to log data once every 2 seconds.

☞ **NOTE**. The **logging interval** parameter has no effect when manual logging is selected. Data logging is determined by user input.

3.3.8 Result file:

Logging results are saved continually in the file name displayed in the result file control.

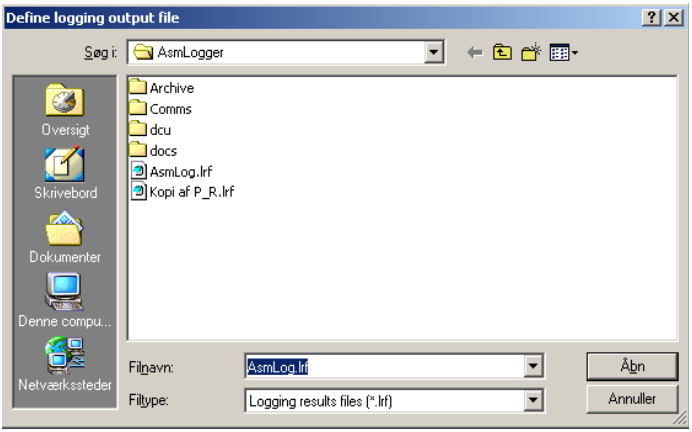


Logging output files contain by default a **'.LRF'** **L**og **R**esults **F**ile) file extension in the name.

Define the name and location by clicking the  button.

This displays a file dialog to define the output file.

Output file dialog



3.3.9 Overwrite existing file:

If the output file exists the current contents are either retained with the new data simply added to the file or the old data is overwritten and therefore lost.

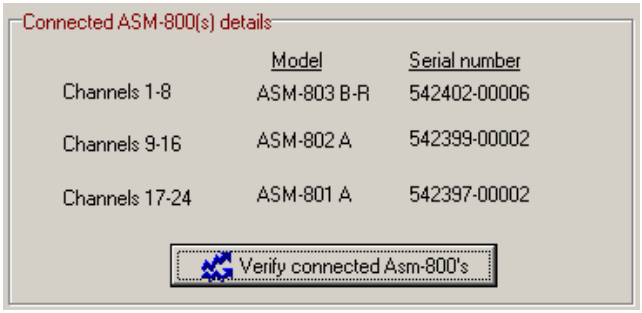
Here the user has requested the old data in the field is to be overwritten and discarded.

3.4 Connected ASM-800 details.

At any time the operator can request details of any connected ASM-800's.

By selecting the 

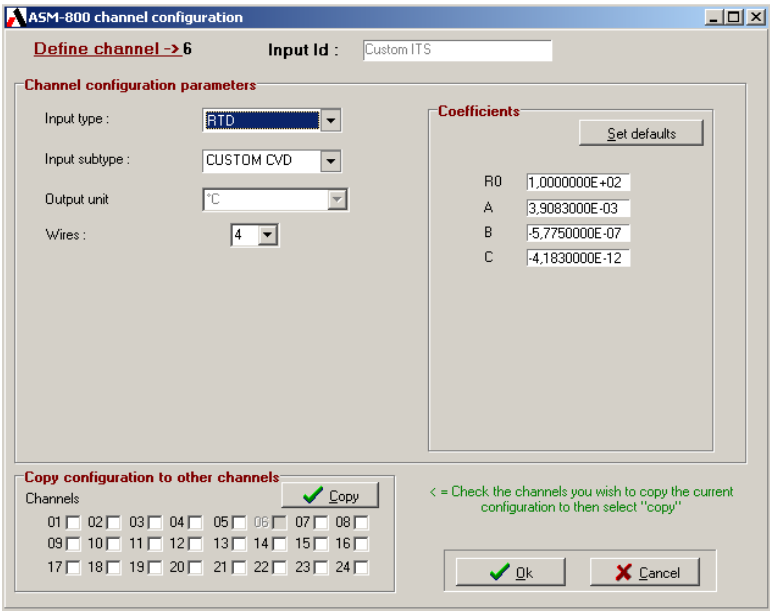
button JOFRALOG attempts to open communications to the connected ASM-800's and retrieves the relevant details.



4 CHANNEL CONFIGURATION DIALOG

This dialog allows the operator to configure each channel by define the device properties and parameters relating to the interpretation of the input/output data.

Edit channel-logging properties

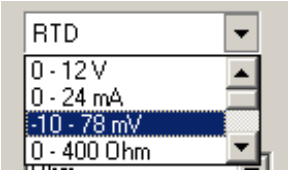


The edit dialog contains the following parameters.

- Input type.
- Input Subtype (applies to RTD, TC types only)
- Output unit
- Wires (RTD only)
- Scaling
- Coefficients

4.1 Input type

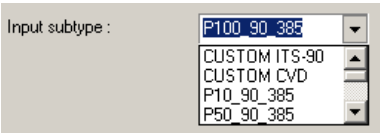
Select the instrument type from the list box.



Available types are

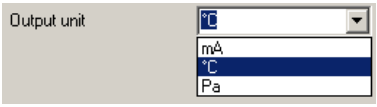
- DCV (0 - 12V)
- mA (0 - 24mA)
- mV (-10 - 78mV)
- 0 - 400ohm
- 0-4000ohm
- RTD
- TC
- Switch

4.2 Input subtype



The subtype list box is only active for TC and RTD type devices.
The contents of the list box depend on the device type.
If RTD is selected then it contains a list of standard resistance sensors.
IF TC is selected it contains a list of standard thermocouple sensors.

4.3 Output subtype



The output control determines the unit of measurement however type and subtype selections determine the contents of the list box and whether it is active.

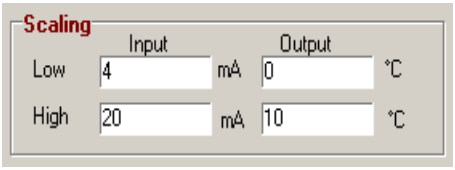
Here is a summary of available output options under the various type and subtypes.

Type	Subtype	Output options.
DCV	N/A	volt, Pressure unit, Temperature unit
mA	N/A	mA, Pressure unit, Temperature unit
MV	N/A	MV
400 ohm	N/A	ohm
4000 ohm	N/A	ohm
RTD	Rtd sensors	Ohm, Temperature unit
	Custom Cvd, ITS-90	Temperature unit
TC	TC sensors	MV, Temperature unit
Switch	N/A	On/Off

4.4 Wires

Select the number of wires the device contains. 2,3 or 4.
Applies to Resistance sensors, types RTD, 400Ohm and 4000 ohm.

4.5 Scaling



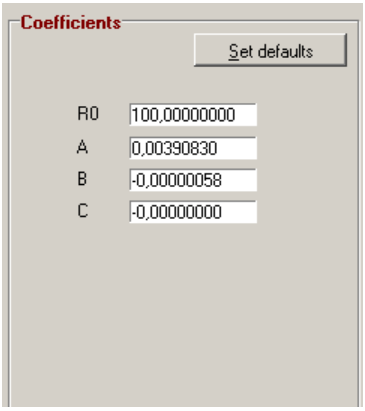
Applies to DCV and mA sensors, types and is visible/activated when the operator requests conversion by selecting a temperature or pressure unit as the desired output reading unit.

4.6 Coefficients – Custom Cvd & custom ITS-90

The coefficients component applies to the subtypes Custom Cvd & custom ITS-90. The parameters differ.

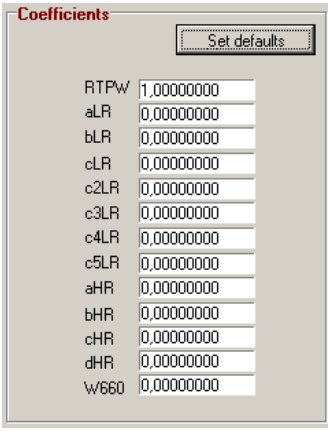
4.6.1 Custom Cvd coefficients.

Consists of 4 parameters, which are loaded down to the respective channel.



4.6.2 Custom ITS-90 coefficients.

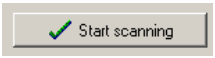
Consists of 13 parameters, which are loaded down to the respective channel.



☞ **NOTE**. The 

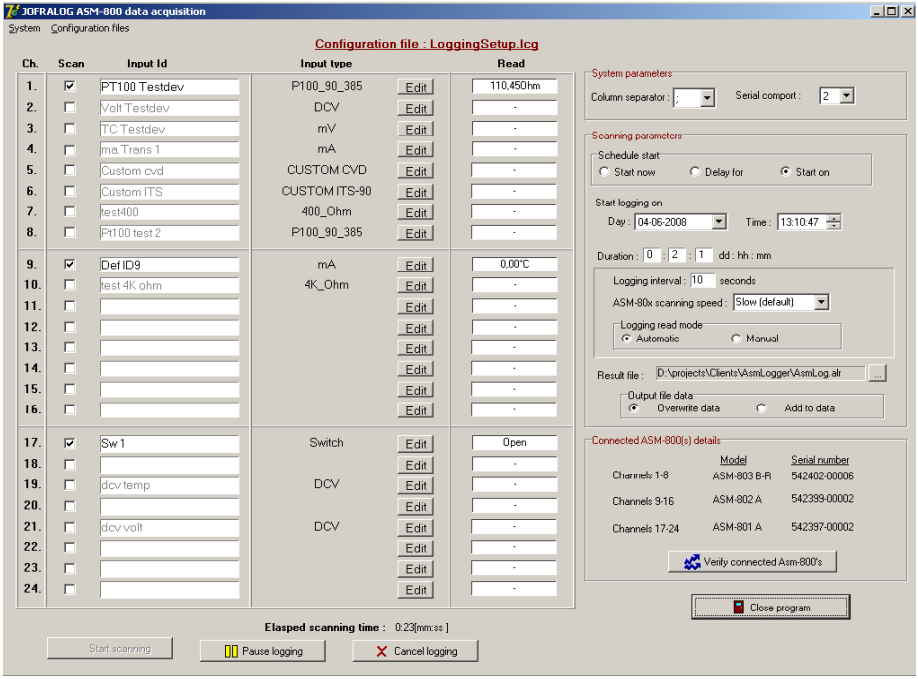
button overwrites the existing values with the standard default values.

5 DATA LOGGING

To start the logging process click on the 

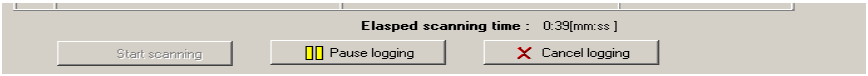
button. JOFRALOG will then start communication, configure the channels and begin logging data.

Logging in progress- data read appearing in the read column



5.1 Logging control buttons.

When logging is in progress several new buttons appear at the bottom of the screen.



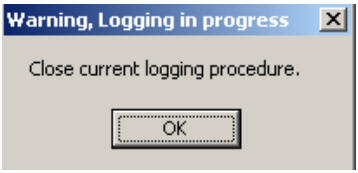
The pause and Cancel buttons enable the operator to pause logging or cancel it totally.

☞

NOTE. The 

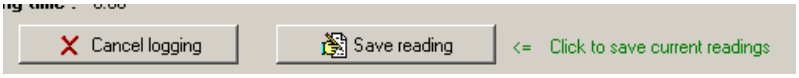
buttons are the only buttons, which are active during logging.

If the user attempts to close the program during logging, he will be asked to cancel communications before closing JOFRALOG.



5.2 Manual logging.

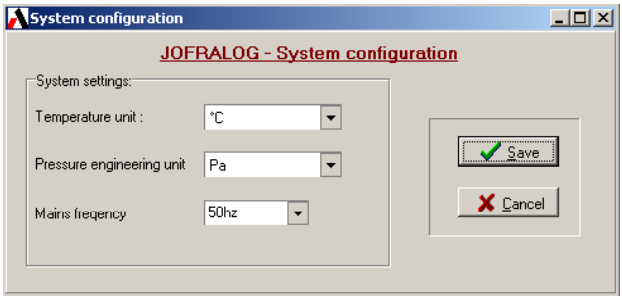
If the operator has selected Manual logging then an extra button appears at the bottom of the screen, which enables the user to save the current readings from the ASM-800 to the results file.



6 SYSTEM CONFIGURATION.

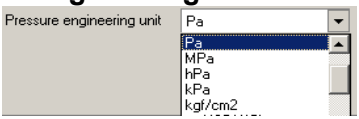
System configuration dialog contains system settings that are normally configured after installation and rarely need adjusting.

System configuration dialog box



6.1 Temperature unit: Celcius or Fahrenheit.

6.2 Pressure engineering unit: All standard pressure units.



6.3 Mains frequency: 50hz or 60hz.

7 RESULTS OUTPUT FILE.

The resulting output file contains all data regarding the channel setup, test device properties, details regarding the connected ASM-800's and the logged data for every active channel.

7.1 Output file layout.

ASM data & scanning parameters
Primary ASM -> serial no, model;
Secondary ASM(s) serial no, model.

Channel data
Ch 1; Id,Type,[subtype],[OutputUnit],[wires], [Scaling],[constants],[CJ],[cjvalue]
Ch 2; ; Id,Type,[subtype],[OutputUnit],[wires], [Scaling],[constants],[CJ],[cjvalue]
Ch10; Id,Type,[subtype],[OutputUnit],[wires], [Scaling],[constants],[CJ],[cjvalue]

Results

	Ch1/unit	Ch2/unit	Ch3/unit	Ch4/unit.
Time	Read1	Read1	Read1	Read1
Time	Read2	Read2	Read2	Read2
Time	Read3	Read3	Read3	Read3

The first column contains the time of reading and the next 24 columns relate to the 24 possible channels. Columns representing inactive channels contain the '–' character.

Example of output file.

```
Connected ASM800s
Primary ASM-B model: ;542402-00006;ASM-803 B-R;Secondary ASM-A model: ;ASM-802 A;542399-00002;Secondary ASM-A model: ;542397-00002;ASM-801 A
Channel 3;ID: RTD 4K Ohm;RTD;P100_90_385;Wires :4;No conversion
Channel 4;ID: 400 Ohm a;400 Ohm;400_Ohm;Wires :4
Channel 6;ID: Custom ITS;RTD;CUSTOM CVD;Wires :4;Conversion to Temperature;CvD coefficients  ;CvDR0= 1,0000000E+02,CvDa= 3,9083000E-03,CvDb=
Channel 10;ID: TC k mV;TC;Type K;CJ Automatic compensation : ;No conversion
Channel 11;ID: TC K a;TC;Type K;CJ Manual compensation : 25,00°C;Conversion to Temperature
Channel 17;ID: Switch;Switch;Switch
Channel 18;ID: Def ID18;DCV;DCVDCV;Scaling to Temperature;Input low= 0,00;Input high= 12,00;Output low= 0,00;Output high= 100,00
Channel 19;ID: dcv temp;DCV;DCVDCV;Scaling to Temperature;Input low= 0,00;Input high= 12,00;Output low= 0,00;Output high= 100,00
Channel 21;ID: dcv volt;DCV;DCVDCV;No conversion
Channels/unit -;-;3; Ohm;4;Ohm;-;6;°C;-;-;-;10; mV;11;°C;-;-;-;-;-;17; SW;18;°C;19;°C;-;21; V;-;-;-;
20-06-2008 14:26;-;-;;;-;;-;-;-;;;-;-;-;-;-;;;;-;-;-;-;-;
20-06-2008 14:26;-;-;-183,5532;;-;28,609;-;-;-;2,360;23,648;-;-;-;-;-;;6,208;1,330;-;-;-;-;-;
20-06-2008 14:26;-;-;-180,8014;;-;28,540;-;-;-;2,848;23,648;-;-;-;-;-;;6,694;1,532;-;0,0421;-;-;-;
20-06-2008 14:26;-;-;-180,3634;;-;28,545;-;-;-;3,396;23,644;-;-;-;-;-;;6,772;1,566;-;0,0438;-;-;-;
20-06-2008 14:27;-;-;-180,4604;;-;28,544;-;-;-;2,691;23,645;-;-;-;-;-;;6,774;1,568;-;0,0440;-;-;-;
20-06-2008 14:27;-;-;-180,4604;;-;28,542;-;-;-;2,428;23,638;-;-;-;-;-;;6,771;1,568;-;0,0440;-;-;-;
20-06-2008 14:27;-;-;-180,5519;;-;28,614;-;-;-;1,894;23,633;-;-;-;-;-;;6,781;1,568;-;0,0443;-;-;-;
20-06-2008 14:27;-;-;-180,4598;;-;28,536;-;-;-;1,456;23,628;-;-;-;-;-;;6,775;1,569;-;0,0441;-;-;-;
20-06-2008 14:27;-;-;-180,5431;;-;28,536;-;-;-;2,957;23,632;-;-;-;-;-;;6,778;1,570;-;0,0440;-;-;-;
```

Example output with 3 connected ASM-800s, reading channels 3,4,6,9,11,18,19 and 21 in their respective units.

7.2 Excel software

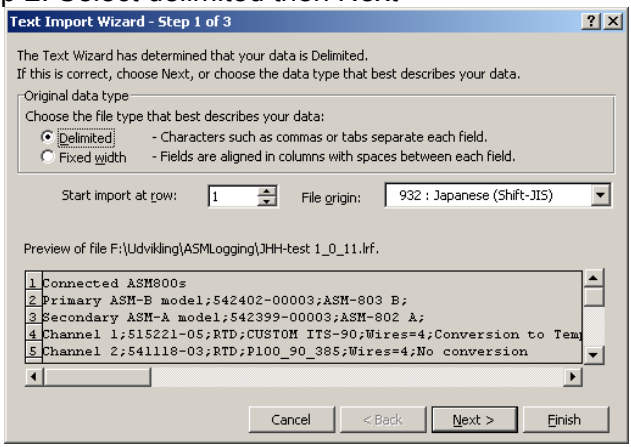
The resulting output file can be imported into Microsoft excel for further analysis. The separation character, defined under ”System parameters” in the main interface of JOFRALOG, separates the columns.

7.2 Importing to Excel

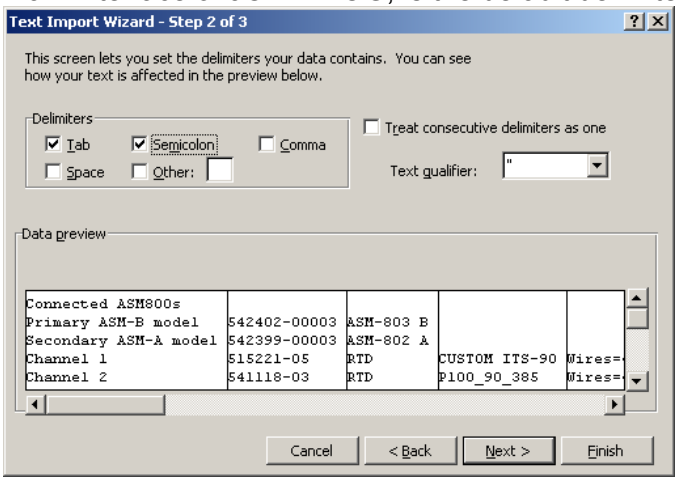
The resulting output file can be imported into Microsoft excel for further analysis.

Step 1. Open the output file “*.alr” from within the Excel program.

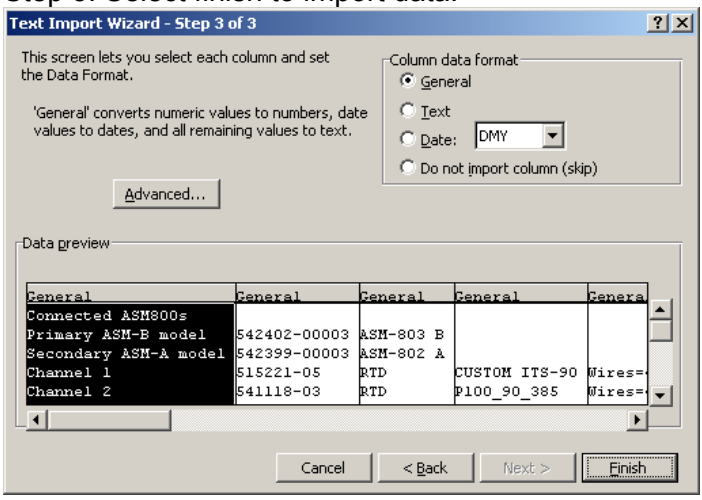
Step 2. Select delimited then Next



Step 2. Select semicolon then Next
The separation character, defined under ”System parameters” in the main interface of JOFRALOG, is the default delimiter.



Step 3. Select finish to import data.



8 CONFIGURATION FILES. (*.LCG)

The setup parameters for any logging procedure can be saved and retrieved in the JOFRALOG configuration files.

Configuration files contain the following data:

- Duration and scheduling variables
- Summary of the ASM-800(s) used
- Complete setup data for all channels.