MEIRI 2680C – USB
Version 1.23

USER MANUAL

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SAFETY INSTRUCTIONS

PLEASE READ THIS MANUAL BEFORE PROCEEDING ANY HANDLING

WARNING
Keep this manual in a safe place for further usage.

PRECAUTIONS
Always follow the basic precautions listed below to avoid accidents such as electric shock, short circuit, fire and other damage.
These precautions given below are not exhaustive.

ELECTRICAL WIRINGS
Only use the approved power source. This information is located on the nameplate of the manufacturer. Be sure that the mains voltage is the same as the one written on the rear of the device.
The electric line must contain a switch with two poles. The equipment must be able to be disconnected easily. The device must be installed so that the mains plug remains accessible.
The manufacturer declines all responsibility in case of improper use of the device. Periodically check the state of the plug. Only use the included power cord. Do not leave the power cord near heat sources as radiators or heating installations. Avoid overbending the cable, damaging it or placing it under heavy objects. Never open the device, do not remove or modify internal parts. The user can only remove or insert cards on the front, no intervention on internal parts of the device is required. If the measuring instrument is malfunctioning, turn power off immediately and give it to a MEIRI qualified technician for inspection.

PRECAUTIONS ON THE LOCATION
Using this measuring device in the following locations can lead to a malfunction: right in the sun, hot or very humid places, dusty or dirty areas, places subject to strong vibrations or near magnetic fields. Avoid leaving the device in the rain or damp places. Do not place liquid containers on it. Never touch an electric plug with wet hands. If the power cord is damaged or if you detect unusual smell or smoke, immediately turn off the switch, remove the plug from the outlet, and give the measuring device to a MEIRI qualified technician for revision.

GROUNDING THE EQUIPMENT
Always connect the three-pole plug to a **properly grounded** power supply. The electrical safety of this equipment is only assured if it is properly connected to an installation of grounding standards for electrical safety. It is essential to check whether this basic requirement of security is met. During installation, there should be a two-pole switch with at least 3 mm contact opening.

OTHER PRECAUTIONS
Disconnect **all connected cables** before moving the measuring device. Do not disassemble this device without removing all the cables from the rear panel, including the power cord. The disassembly by a person not authorized by MEIRI would cancel the warranty. Do not place objects in front of the air vents of the measurement unit, that would prevent adequate ventilation of the internal components and cause overheating. Before connecting the measuring device to other electronic components,turn off the power. Do not insert objects in paper, metal or other into the cover's slots. If this happens, immediately turn off and unplug the power cord from the mains. Then have the instrument inspected by a qualified person. Do not use excessive force on the buttons, switches and connectors

LITHIUM BATTERY
The measuring device has a lithium battery (CR1220BE), calendar data (date and time) are kept even if you unplug the device.However, if the battery if completely discharged, date and time would be lost.The accuracy of measurements would not be affected.Don’t throw flat batteries away, bring them to appropriate collection places.

CLEANING
Before any cleaning or maintenance, disconnect the unit by disconnecting the plug or turning off the switch of the electrical installation. When the device is dirty, clean it with a clean dry cloth. Do not use liquid cleaning products such as benzene or thinner, or flammable products. Never use paint thinners, solvents, cleaning products or cleaning pads impregnated with chemicals. MEIRI is not responsible for damages caused by improper use of the device or by changes made by the user and cannot cover data loss or destruction.

WARRANTY
Measuring devices are guaranteed 1 year by MEIRI, parts and labor, return to factory, except special provisions. Exchanges or repairs under guarantee cannot extend the term. In order to apply the warranty, the user must contact the MEIRI distributor who sold the device. No compensation is owed in case of stopping of the unit for repair under warranty. The warranty will not work in the following cases: If the unit has been started on a voltage other than indicated on the nameplate. If the delivered equipment is misused or abused or changed. If the user causes damage through negligence, inadequate maintenance, lack of experience or use of harmful products. Warranty repairs are performed in our laboratories, the unit must be returned in packing ensuring its safety during transport. The user is responsible for shipping and packaging for the return of the unit at the factory. MEIRI or its distributor covers freight and packing charges when returning the device repaired, but only in continental France.

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INTRODUCTION

Thanks for buying the MEIRI 2680C Measurement Conditioner. In order to keep it safe for a long time, please read this manual carefully.
Every time you find one of these symbols on the device, please read this manual in order to know what you have to do.

Potential Danger:  Warning! Risk of electric shock

Keep this handbook in a safe place for further usage.

PRESENTATION

2680C is a device meant to measure physical parameters such as force, torque, pressure, position, voltage, current, temperature, frequency...
It has been carefully designed to work with all kinds of sensors.

2680C has a configuration flexibility according to function/sensor application.
It offers 4,8 or 16 measurement channels for every kind of sensors.
Since it was made from ME26xx or ME26Cxx cards, each channel can be used for different kinds of sensors :

Metallic strain gauge
Piezo resistive strain gauge
LVDT
Potentiometer
Frequency to Voltage converter
Voltage to Frequency converter
Piezo electric
Voltage/Current: AC, DC or effective
Temperature PT100, Thermocouple
…

2680C MULTI-CHANNEL MULTI-FUNCTION MEASUREMENT CONDITIONER

- 1, 4, 8 or 16 channels
- Flexible configuration according to the application
- For all kinds of sensors or signals
- Drop-down menus
- Direct tuning of sensibility and measurement extent of the sensor
- Backlit alphanumeric display (2 lines and 16 characters)
- Analog Output ±10V/Channel
- RS232C Output
- USB2 Connection
- Power supply 84V to 264 Vac – 47/63Hz
- 12 or 24 VDC Power supply for embedded systems (Option)
- Galvanic Input-Output Isolation, Input-Power supply (Option)

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OPERATING PRINCIPLE

The electronics allows to supply and amplify the sensor plugged in its input. The display processor calculates and scales up in real time the exact value of the measured physical parameter.The unit displays the result on a sreen of 2 lines of 16 characters. The first line gives the value of the input voltage (± 10V or ± 5V), the second line indicates the value of the measured physical parameter and scaled up according to the sensor used.
Depending on the type of cards used in the device, you can get the value in real time or the peak value.The electronics acquires data at a high speed and makes a moving average that allows to "capture" a momentary signal with a great accuracy. Threshold relays are available on the rear panel (option).

The measurement device 2680C is a system that allows the conditioning of 4 to 16 sensors. The type of sensor can change according to the channel. It is digital-designed. It allows to configurate measurement channels and to set digitally the gains and zero of the sensors while having a purely analog amplification chain.
The USB2 connection (option) also allows to set the device remotely via a computer and to acquire data directly. The results can be operated in Microsoft Excel for example.

The great advantage of this system is that it guarantees purity of the measured signals.The amplified signal is never digitally processed (except for cards that need a mathematical calculation, such as the card for incremental encoder for example)
All the settings made with potentiometers are delete, the system sets the ME26CXX conditioner amplifiers.

Important Note:

This system remains wholly compatible with the ME26XX cards (analog amplifiers with gains and zero settings by potentiometer).
You only have to remove some connections of the 26-pin connector of the card in order to make it compatible. (see "compatibility")

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GENERAL FEATURES

LCD Display	2 lines of 16 characters	RS232C Output	DB9 female
Microprocessor	RISC 20MHz	Mains filter Power supply	Schaffner 84V to 264 Vac – 47/63Hz – 1A
A/D converter	16 bits	Fuses	2 delayed fuses 1A 5x20mm
Analog Output	± 10V	Consumption	22W not loaded 60W fully loaded
Inputs/Outputs	Wago/Wago or Amp/BNC	Europa Chassis	19' or ¾ or ½ 19' 3U
Limit contacts output	Wago/Wago	Weight with measurement cards, mains cable and connectors	19' 8.5Kg ¾ 19' 6.7Kg ½ 19' 5.6 Kg
USB2 Connection (option)	For data configurations and acquisitions	Installed depth	305mm+60mm for connectors
		Clock backup	1 CR1220BE lithium battery
		Operating temperature	0 to 50°C

ELECTRONIC FUNCTIONS

Analog Part: It is made from an input/output bus that is compatible with every MEIRI Conditioner amplifier of the ME26XX range (analog amplifiers) and the ME26CXX range (analog amplifiers with digital settings)

Digital Part: A 20MHz RISC processor is in the heart of the conditioning system. It offers limited instructions that run in 1 or 2 clock cycles and allows then a very flexible and speed signals processing. The digital part converts 16 bits-measurements and displays the result in real physical quantify. It also eliminates interfering signals, handles RS 232C output and USB2 connection with a computer.

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STARTING

Positioning of electronic cards:

Each card can go anywhere, regardless of its function.

The 2680C must be switched off or the bus not powered before inserting or removing cards (Press "*shift+on/off*")

In order to insert or remove a card from the device, uncrew the two screws at the front, open it and pull the card. Be sure that the second part of the card is not stuck in the unit.

Before inserting a card, be sure that all its connector's pins are in the right position.

Do not use force to insert a card

Connect the unit to the power supply

Concerning connectics, see the "connection" paragraph for power supply, sensors and/or inputs signals connection and amplifiers outputs connection.

NB: Each card has its own manual with its settings and connections menu.

WARNING
Do not force cards during conection

Check the card's position on the backplane connector. An insertion shift could damage the device.

PLEASE NOTE:

The main power supply is equipped with a monitoring and safety system.
If an inserted card is faulty (short-circuit or overconsumption), an error message will be displayed.
If the fault continues more than 3 seconds, then the power supply bus of the cards will be automatically cut and a default message will appear. The « Default alarm» relay falls. The contacts of this relay are available on the rear panel (« Default alarm » plug)
In order to put back cards' power supply, press "*shift+on/off*" after removing the faulty card. The same message can appear if a sensor on the rear is faulty.

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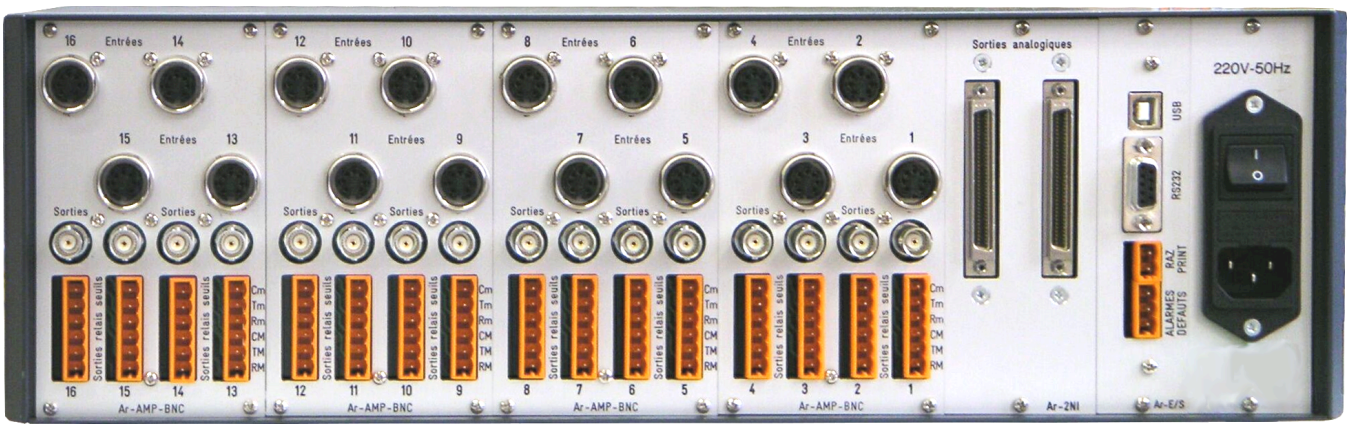
REAR AND FRONT PRESENTATION

Front

1. 2 lines of 16 Characters Display
2. Escape/RST/Print Key
3. « prog and *Setup* » Key
4. « prog et *Menu* » Key
5. « Next Channel » Key
6. « Back Channel » Key
7. « param. and *d.p.* » Key
8. « param. and *d.p.* » Key
9. « *Shift*. » Key
10. Input / Output connectors
11. Analog Output compatible with National Instruments acquisition cards *
12. Input/Output : RS232, USB, Alarms, Reset and Print
13. Mains Power supply Input, On/Off, Fuses

* PCI6023E, 6024E …

Rear



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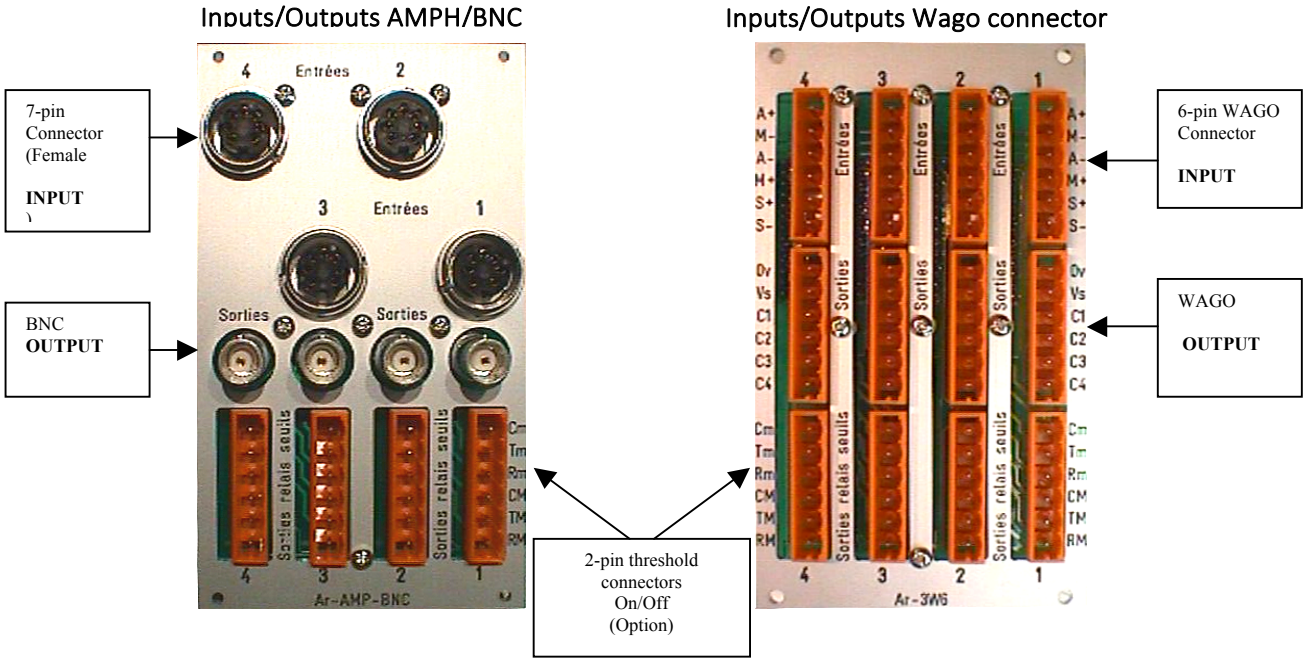

SETTINGS OF ME26CXX CARDS

ME 26Cxx is a programmable amplifier with digital setting

Each card of the ME26Cxx range has its own menu which depends on the type of card.
The description of this menu is at the end of this manual, depending on the cards installed in the measurement unit.

The cards of the ME26Cxx range (Amplifiers / Conditioners with programmable digital control) have no setting.
The processor of the measurement unit and the processor of the card itself deal with all the analog settings of the card (gain, zero, units, extent of measurements …)

Note : on those amplifiers, the signal remains totally analog from the input to the output.

MENU OF DIGITAL SETTINGS CARDS

Press simultaneously « *shift+Menu* »

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The system automatically recognizes the conditioner ampliers of the ME26Cxx range (programmable with digital settings control). It adjusts automatically the configuration menu. Each card has its own menu. Refer to specific menus of the cards installed in the measurement device at the end of this manual.

CONNECTIONS

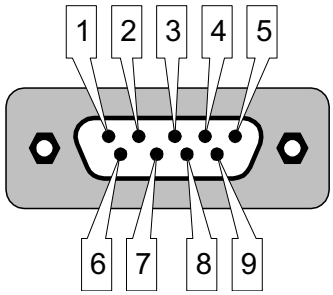
REAR connection

Main power supply	"Schaffner" Standard socket
Sensor	7-Pin female connector (Lumberg) Or Wago 6-Pin connector (male)
Analog output	BNC or Wago 6-pin connector (male)
Default alarms	Wago 3-Pin connector (male)
RAZ/Print	Wago 2-Pin connector (male)
RS232C	DB 9-Pin connector (female)
USB 2	USB connector on the rear

Note : The cable shielding must be connected to the connector housings side box

RS 232 C connector:

1	N. C.
2	RX
3	TX
4	N.C.
5	GND
6	N.C.
7	N.C.
8	N.C.
9	N.C.



You can print the values of each measurement thanks to the RS232 C output. All you need is to connect a male/female extension cord between the DB9 plug of the measurement conditioner and your printer or your computer. Then adjust the RS 232C parameters in the « setup » menu. Pushing the « RST/print » button will print the measured values with the time and the date.
It is also possible to have these data continuously.
Example on a 16-channel measurement unit (*a line includes 16 measurement channels*)

RS232C's speed	Number of lines during 100 seconds
2400	35
4800	44
9600	51
19200	56

This RS232C socket allows to send to your computer the same information.

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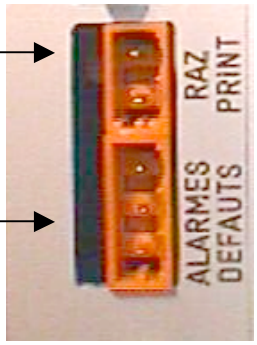
In option, the USB2 connection allows to program the system remotely and to keep the measurements.

RAZ/print Connector

PRINT	1
GND	2

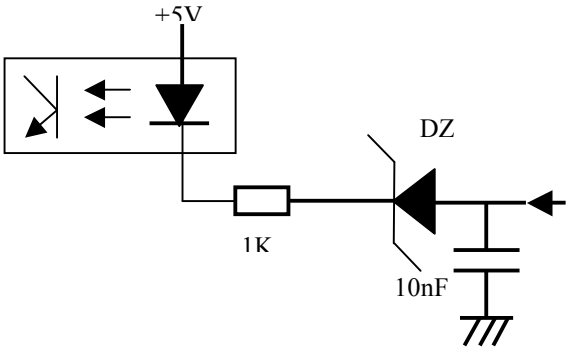
« Default Alarms » Connector

Common contact	1
No Contact - “off”	2
Contact - “on”	3



EQUIVALENT SCHEMAS OF INPUTS/OUTPUTS

RAZ/ Print Input



RAZ, PRINT

Connect to ground to activate. Maximum current is 4mA

Or TTL active at 0

DEFAULT ALARM RELAY’S OUTPUT

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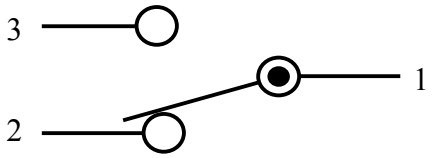
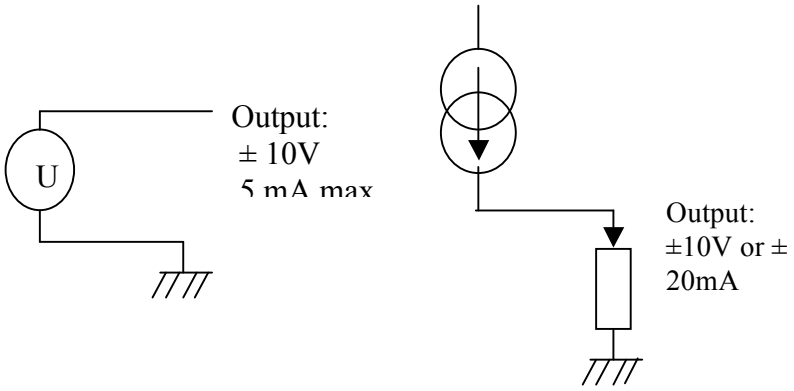


Warning! The relay is bonded in normal operation

ANALOG OUTPUT (OPTION)

(Option)



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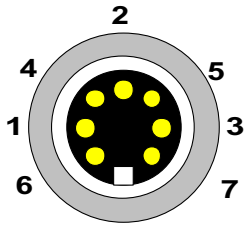
SENSORS INPUTS

Sensor Input: 7-Pin connector (female)

	Amphenol 7-Pin	
6	A+	Excitation +
4	A-	Excitation -
1	M-	Signal -
2	M+	Signal +
5	S+	Sense +
3	S-	Sense -
7	0v	0V (GND)
Conditioner's Case = 0V (GND)		



7-Pin(male): Lumberg SV71M

Wago 6-Pin Input connector (female)

Wago Input/Output connector

A+	Excitation +
M-	Signal -
A-	Excitation -
M+	Signal +
S+	Sense supply +
S-	Sense supply -

0V	Analog GND
VS	Analog Output
C1	According to card
C2	According to card
C3	According to card
C4	According to card

Input connector

Output connector

WARNING:

In order to connect a sensor to the measurement unit, you have to read the conditioner amplifier card's own manual.

The connections above are just an example. Only the names of theses connections are common to every conditioner amplifier card, but their function depends on the type of card used.

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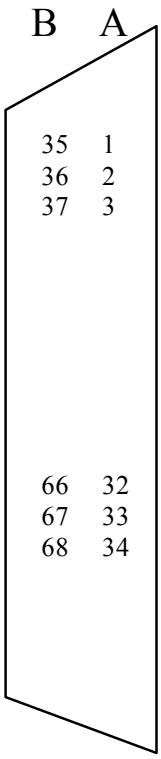
2NI OPTION ANALOG
OUTPUTS CONNECTIONS

68-PIN CONNECTOR FOR PCI CARD:
PCI6023E, PCI6024E … (rear view)

	B	A	
*	35	1	*
*	36	2	*
*	37	3	*
*	38	4	*
*	39	5	*
*	40	6	*
*	41	7	*
*	42	8	*
*	43	9	*
*	44	10	*
*	45	11	*
*	46	12	*
*	47	13	*
*	48	14	*
*	49	15	*
*	50	16	*
*	51	17	*
*	52	18	*
*	53	19	*
*	54	20	*
*	55	21	*
*	56	22	*
ACH7 (chanel 8 of 2680)	57	23	(chanel 16 of 2680) ACH15
ACH14 (chanel 15 of 2680)	58	24	*
AIGND (GND)	59	25	(chanel 7 of 2680) ACH6
ACH5 (chanel 6 of 2680)	60	26	(chanel 14 of 2680) ACH13
ACH12 (chanel 13 of 2680)	61	27	*
*	62	28	(chanel 5 of 2680) ACH4
ACH11 (chanel 12 of 2680)	63	29	(GND) AIGND
AIGND (GND)	64	30	(chanel 4 of 2680) ACH3
ACH2 (chanel 3 of 2680)	65	31	(chanel 11 of 2680) ACH10
ACH9 (chanel 10 of 2680)	66	32	(GND) AIGND
*	67	33	(chanel 2 of 2680) ACH1
ACH0 (chanel 1 of 2680)	68	34	(chanel 9 of 2680) ACH8



IMPORTANT:
Only pins number: 29, 32, 59 and 64 are connected to the 0V (measurement GND) of the 2680C

Note: Check compatibility of your card with the connector's pins above

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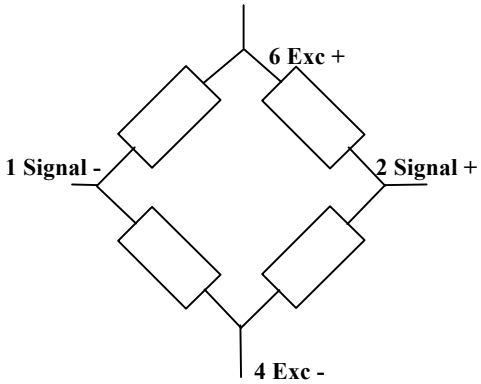
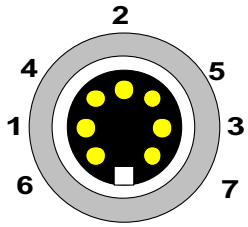
SOME CONNECTIONS EXAMPLES

4-wire strain gauge sensors inputs on 7-Pin connector (female)

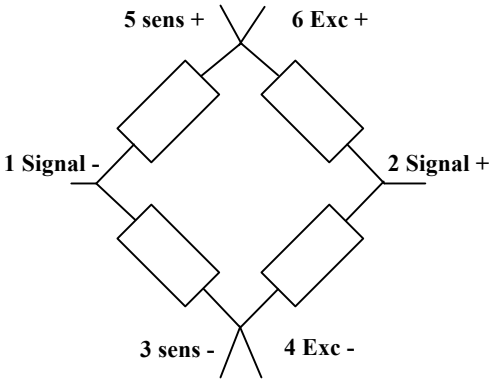


FULL BRIDGE		
6	A+	Excitation +
4	A-	Excitation -
1	M-	Signal -
2	M+	Signal +
5	S+	Don't connect anything
3	S-	Don't connect anything
7	0v	0V (GND)
Conditioner = 0V (GND)		

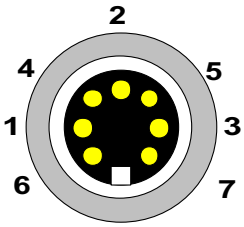


Fiche male 7 Pin: Lumberg SV71M

6-wire strain gauge sensors inputs on 7-Pin connector (female)



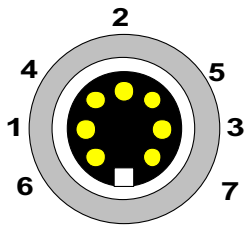
FULL BRIDGE		
6	A+	Excitation +
4	A-	Excitation -
1	M-	Signal -
2	M+	Signal +
5	S+	Supply direction +
3	S-	Supply direction -
7	0v	0V (GND)
Conditioner = 0V (GND)		



7-Pin connector (male) : Lumberg SV71M

Voltage output sensors'input on 7-Pin connector (female)

FULL BRIDGE	
6	Power supply(+) Sensor
4	Power supply(-) Sensor "GND"
1	Signal -
2	Signal +
5	Don't connect anything
3	Don't connect anything
7	0V (GND)
Conditioner = 0V (GND)	



7-Pin connector (male) : Lumberg SV71M

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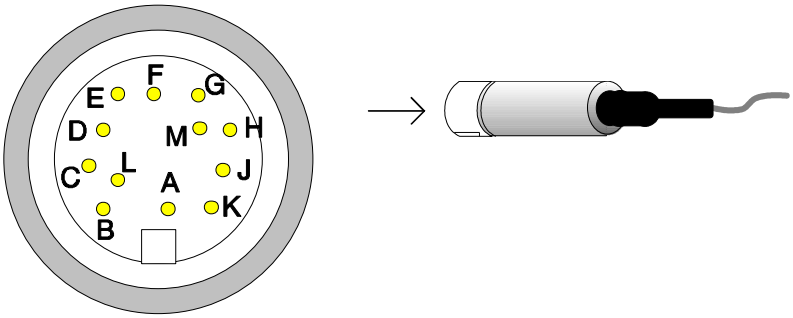
OPTION FOR TORQUE AND ANGLE MEASUREMENT

Wiring of the 170 torque sensor :

A	Don't connect anything	E	**GND supply (A-)**	J	Don't connect anything
B	Don't connect anything	F	**Power supply +12 100mA max (A+)**	K	Don't connect anything
C	**±5V Torque Input (M+)**	G	Don't connect anything	L	Don't connect anything
D	**GND Output (M-)**	H	Don't connect anything	M	**Sensor armor**

12-Pin amphenol Torque sensor Input connector: Lumberg SV120M



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2680C SETUP

« *SETUP* » general parameters

1) Turn 2680C on
2) Press « ***shift+setup*** » at the same time
3) Set general parameters

« Prog. » keys allow to navigate through the main menu.
« Param. »keys allow to modify parameters' values.

The first line indicates the menu and the second line the parameters

LANGUAGE
English
English, french, (german, spanish, or other languages on request)

RS232 PARAMETERS
9600, pair, 7
From 2400 to 19200 bauds, even, odd or without parity, 7 or 8 bits.
You have to choose the combination that corresponds to you computer or printer among all the scrolling combinations

PRINT
By BP RST
«RST/Print » button or CONTINUOUSLY

By pressing «RST » : Sends data to the RS232C output when pressing the « RST/print » button on the front keyboard or giving a TTL impulse (level "0") or a short-circuit on the « RAZ/Print » rear input.

Continuously: Sends data continuously to the RS232C output, « RST/Print » buttons of the front keyboard and the rear input are inactive.

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PRINT FORMAT:
IN COLUMN or LINE

Column: 2003-11-26 14:46:36
01: +00.089 daN
02: -01.130 KN
03: -02.989 mm
04: -04.777 Kgf
05: -06.765 bar
06:-08.447 mm/s
07:-09.877 V
08:-10.000 mA

1st line: year - month - day / hours : minutes : seconds
2nd line: Channel number : measured physical value / unit
Nth line: Channel number : measured physical value / unit Line:
2003-11-26 14:53:12 01: +00.089 daN 02: -00.578 KN 03: -01.013 mm 04: -01
.926 Kgf 05:-02.847 bar 06:-03.744 mm/s 07:-04.265 V 08:-04.659 mA

All the data are on the same line:
Year-month-day Hour: minutes: seconds Channel number: measured physical value / unit
Channel number: measured physical value / unit Channel number: measured physical value / unit…

The measurement lines that are printed are those of channels that have the “yes” parameter in their “print” menu (see ME26 cards’ MENU)

DATE
26-11-2003 Press « param.» for date setup

TIME
14 : 59 : 55 Press « param.» for time setup

Press « RST/print » to exit « *setup* » mode and get back to measurement mode

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SOFTWARE INSTALLATION FOR THE MEIRI 2680C RACK

In order to get the software, create your profile on our website : **http://celians.com/inscriptionST.html**

Advised configuration : PC with USB plugs, 1Ghz processor minimum, 50Mo DD available, 512Mo RAM.

Thanks to the USB plugs on the 2680C unit, it is possible to program remotely a measurement channel from a casual computer. The program on PC allows to make measurement acquisitions directly on the PC. The acquisition speed can reach 10 000 meas/second according to the type of PC and the operating system used.
You don't need to set an acquisition card in the PC anymore.

When MEIRI 2680C-USB is connected to the USB input of the PC, it detects it and the display indicates "**USB cable connected**"

1 – USB driver installation

Under Win98 and ME

- Switch the rack on
- Plug the USB cable of the PC
- Windows detects a new hardware.
- Indicate the path on the file « Install MEIRI 2680C » to find the directory DRIVERS W2000 or XP according to the operating system of your PC.

Under Win2000 and XP

- Start CDM 2.02.04.exe from « Install MEIRI 2680C » : \ Drivers du Rack\Win 2000 & XP.
- Switch the rack on
- Plug the USB cable of the PC
- Windows detects and recognizes the new hardware.

2 - Installation of the software

- Start « setup.exe » in « Install MEIRI 2680C ».

Leave ***absolutely*** all the default path options, then finish the installation.

Note : In order to update the software with more recent versions, you must deinstall the MEIRI box by restarting « **setup.exe** ».
Then install the new version by starting « setup.exe » again.

3 – Copy of configuration files and creation of directories.

- Start **« confmap.bat** » in « Install MEIRI 2680C ».

The installation is over, the « MEIRI » directory has been created in « program files ». This directory contains the configuration files of the conditioner amplifier cards used as well as work directories.

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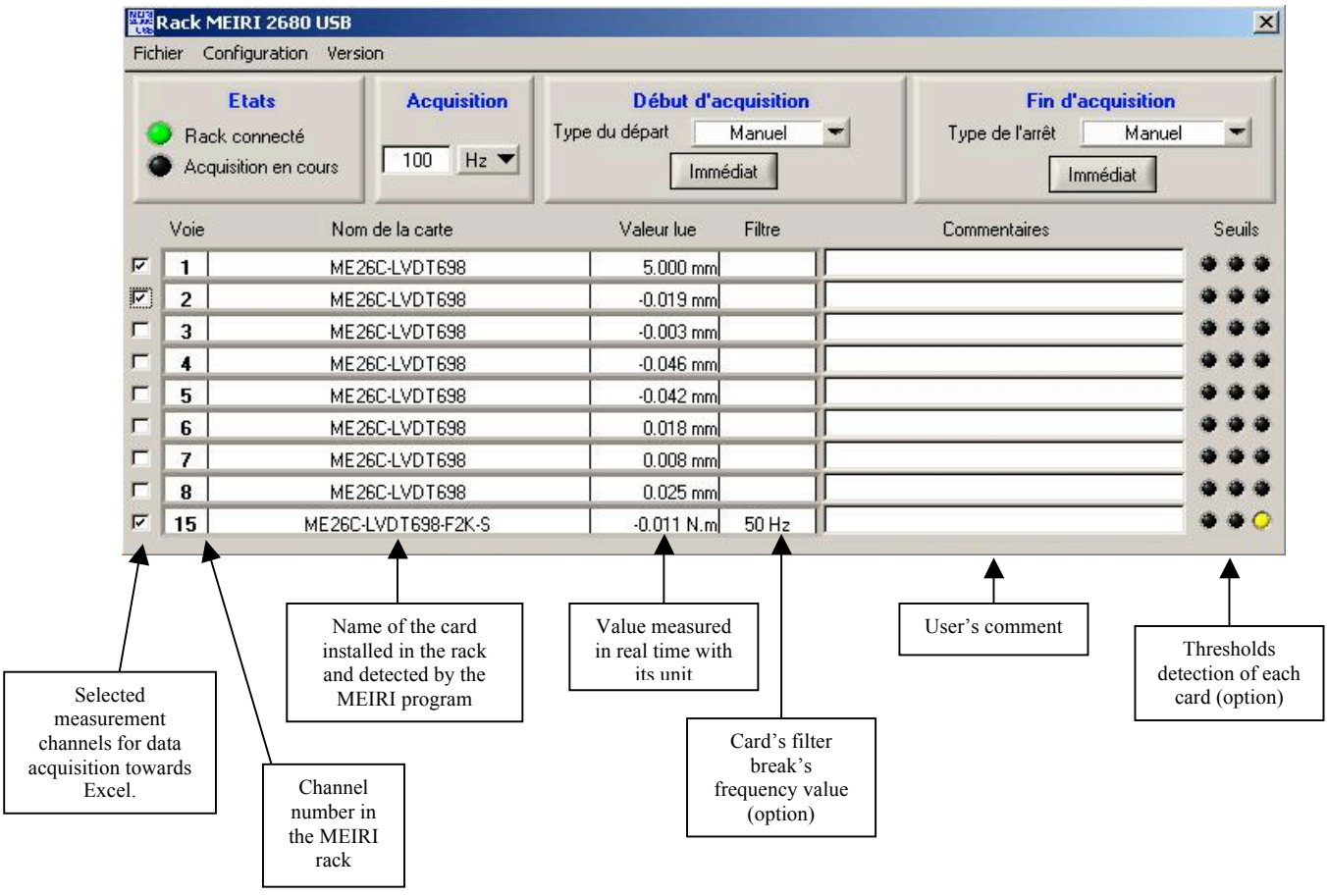
USER GUIDE OF THE « MEIRI 2680C-USB » PROGRAM

Start the program « meiri.exe » that is in « program files\meiri\meiri.exe.

The window below appears.
The program detects automatically all the measurement channels present in the MEIRI rack.
The green LED (at the top left) comes on, it indicates that the rack is connected to the computer.

CONTROL BOARD OF THE « MEIRI 2680C-USB » PROGRAM



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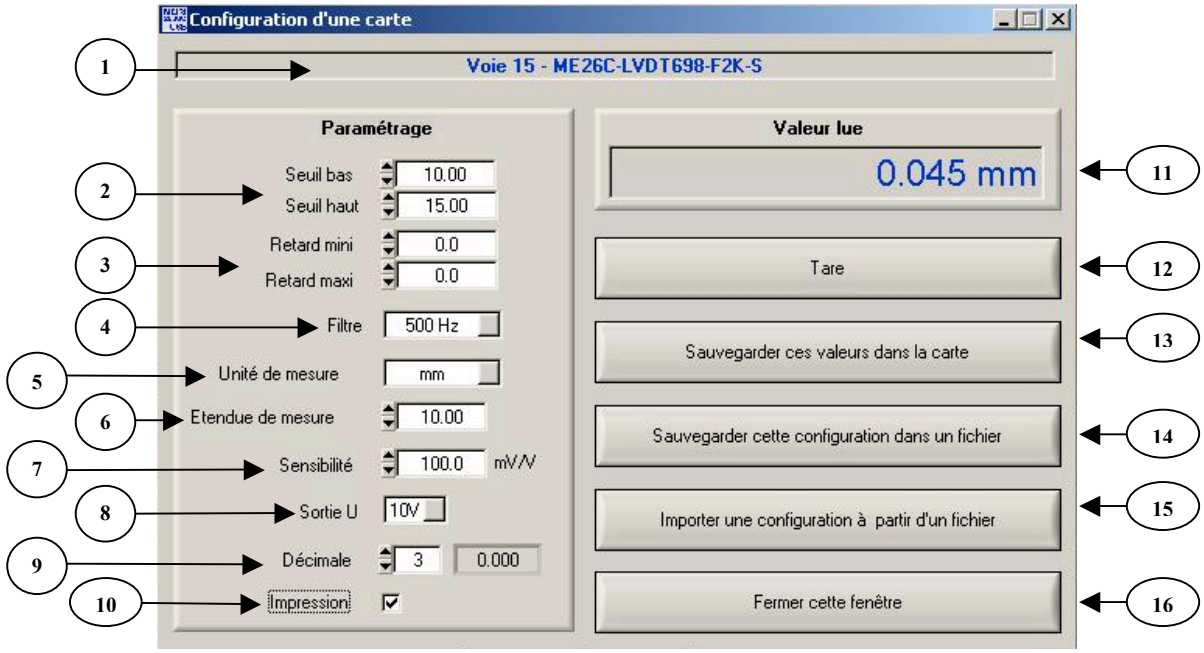
CONDITIONER AMPLIFIER CARDS CONFIGURATION

To configurate a measurement channel, you only have to double-click on the channel or to right-click with the mouse.
A window opens with a pull-down menu specific to each measurement channel.
Configuration values are bounded. If you enter a wrong value, it will be automatically corrected and replaced by the maximum or minimum value enabled by the system.



Values can be directly entered with your keyboard or by clicking on the arrows on the left of some windows.
Concerning the other parameters, the button on the right of each little window allows to choose predetermined values that depend on the type of conditioning amplifier card.

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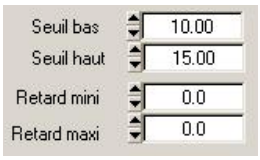
DESCRIPTION OF WINDOWS AND PARAMETERS

* See references on previous page.
* For more information about menus, see the "specific menu " of used cards at the end of this manual.

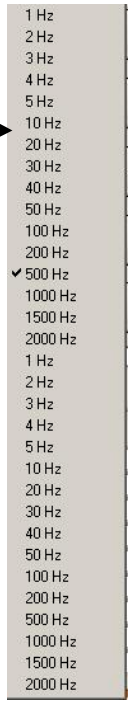
1) Number of the physical channel of the measurement unit where the card is installed, followed by its name.
« F2K» means that the option "programmable 24db filter" (1 Hz to 2KHz) is installed on this card.
« S » means that the threshold option is installed on this card.

2) Thresholds' values adjustable from 0 to ± full scale. (option)

3) Delay of threshold relays programmable from 0 to 9.9 seconds.



4) Value of the programmable filter from 1 to 2000 Hz.



5) List of units specific to each card.

6) Sensor's measuring range programmable from 0.1000 to 9999.
This value is not applied to the analog output, it only allows a display in real physical size.

7) Sensor's sensibility. It depends on the type of card used.
This value is directly applied to the analog output.

8) Value of the analog output for the sensibility chosen.
This value is directly applied to the analog output.

9) Masking of the useless decimals with automatic round calculations.

10) Printing of this channel's measurements toward RS232 output.

11) Value of the measurement in real time

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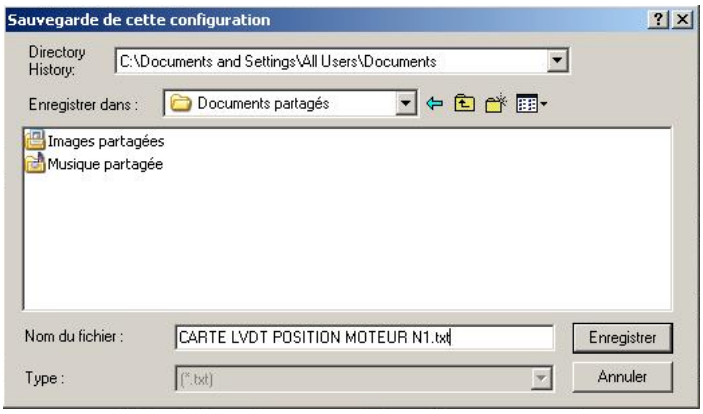
12) The "TARE" button allows to reset the analog output and the display. From the 200-512-190 version, a little button at the right of the "TARE" button allows to cancel the tare and to get back to the real electronical zero.

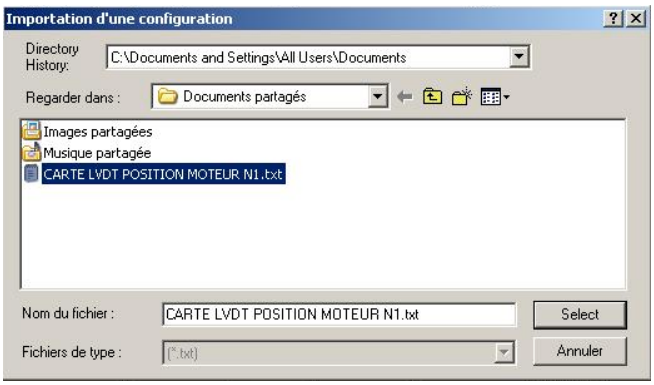
13) Once programmation and parameters' settings are done, you must backup in the internal memory of the conditioner amplifier card by clicking on the button "BACKUP THESE VALUES IN THE CARD". These parameters are stored in the card even when it is moved into the rack or into another box. A window indicates the end of the backup.

14) It is also possible to backup a card's configuration in a file in order to use it for another card of the same kind. Click on the button "Backup the configuration in a file". A window opens, then you have to indicate backup's path and name.



15) In order to program several channels identically, it is possible to recall a configuration that has been backup (see 14).

Click on the button " IMPORT A CONFIGURATION FROM A FILE"



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16) Close the window to go back to the general control board of the card.

If the backup has not been made, a message appears to encourage you to make it.

If you don't backup the parameters, they will still be used after closing this window, but you would lose them if the measurement device is turned off or if cards' bus power supply is cut.

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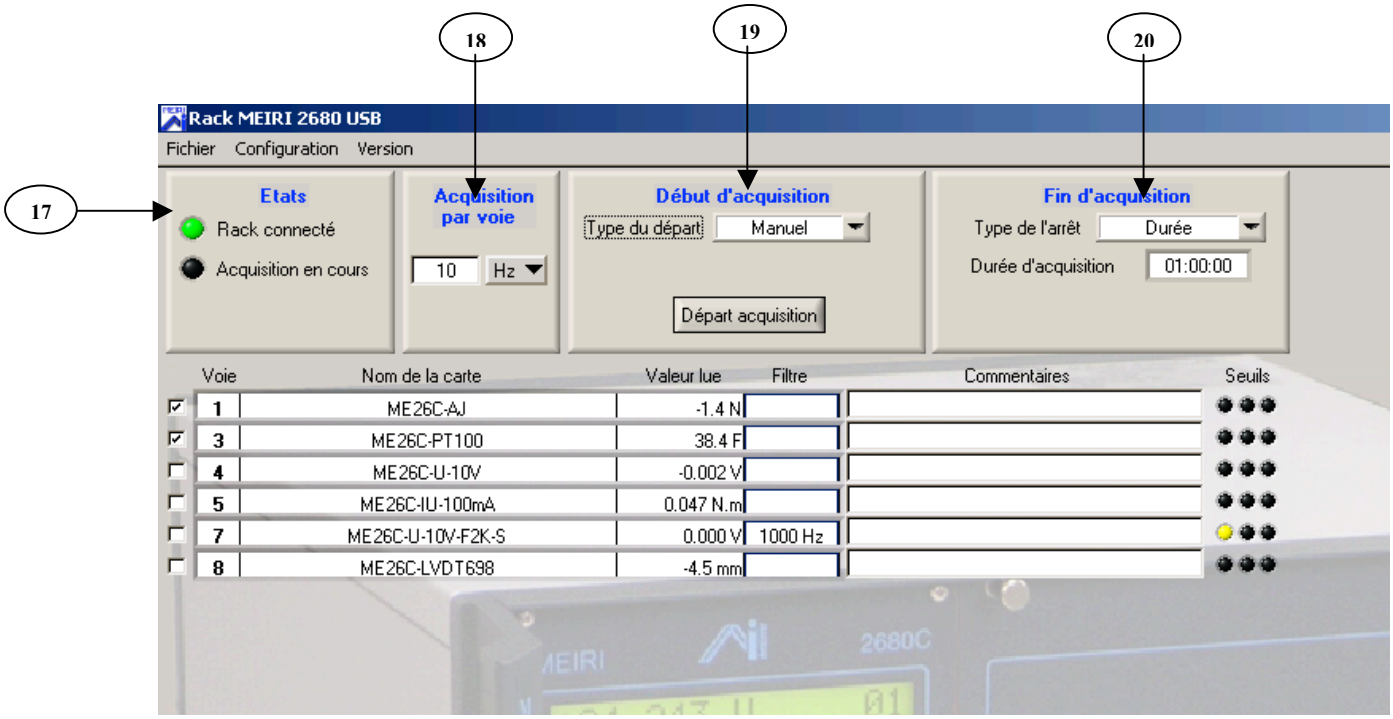
DATA ACQUISITION



17) "Ongoing acquisition": The green LED lights up when the data acquisition begins.

18) "Acquisition per channel" (speed or frequency of the acquisition / channel)

This button allows to choose a speed of acquisition in Hz for fast acquisitions or in seconds for slow acquisitions. The maximum speed of the system is 10,000 measurements per second for a measurement channel and 100,000 seconds for the maximum speed (an acquisition of all the channels at the same time (dt 45 µs) every 27h46'). If you are asking for a too fast acquisition, the system calculates the best speed for the selected channels.

The speed displayed is the number of measurements per second of all the channels at the same time (dt between channels= around 45 µs)

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19) “Beginning of the acquisition”

This button allows to choose the start mode of the data acquisition.

Manual mode: Immediate start by clicking on the “acquisition start” button.

“Given Time” mode: indicate a beginning time (hour, minute, second). This time is calculated according to the operating system’s clock of “Windows”.

Trigger Mode: Give a **threshold**, a **direction** for the measurement start (> or <) and a **depth to the memory buffer** that is identical to the pre and post triggers.

20) “End of acquisition”

Several acquisition’s end modes are possible.

Manual Mode: Dead halt by clicking on this button

“Given time” Mode: Stop at a given time (hour, minute, second). This time is calculated according to the operating system’s clock of “Windows”.

Duration Mode: After a time programmed by the user (hour, minute, second)

Trigger Mode: Give a **threshold**, a **direction** for the measurement stop (> or <) and a **depth to the memory buffer** that is identical to the pre and post triggers.

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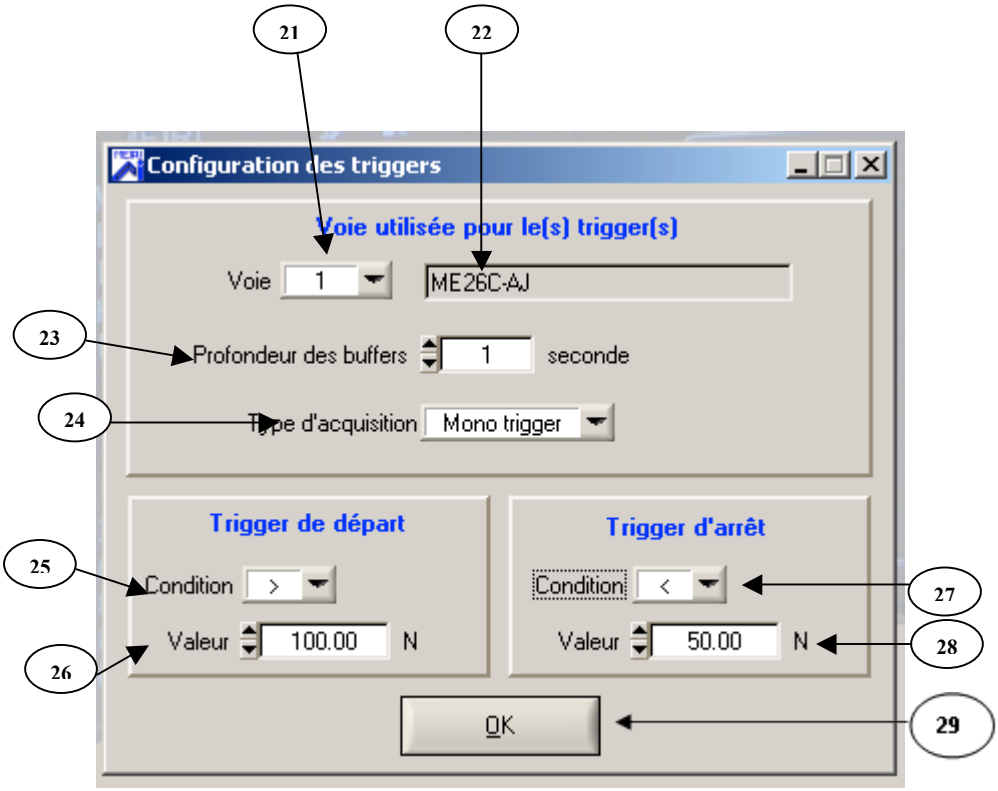
TRIGGERS' SETTINGS

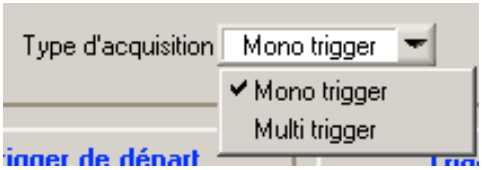


21) " N channel": Channel on which triggers are active

22) "Internal Card": Name of the card on which triggers are active

23) "Depth of the buffers": duration in seconds of pre- and post trigger

24) "Kind of acquisition":
Mono Trigger: triggers only one time
Multi Trigger: triggers every time conditions are required and creates automatically a new file whose name increments (ex: Test1.csv, Test2.csv, etc…)



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25) **“Condition”:** Triggering signal of the channel > or < at the value of the next point (26)

26) **“Value”:** Reference value for the acquisition’s triggering

27) “**Condition”:** Stop signal of the trigger channel > or < at the value of the next point (28)

28) **“Value”:** Reference value to stop the acquisition.

29) CONFIGURATION’S BACKUP: the last configuration is stored, including all the parameters of the paragraphs 17 to 28 of the chapter “Data acquisition”.

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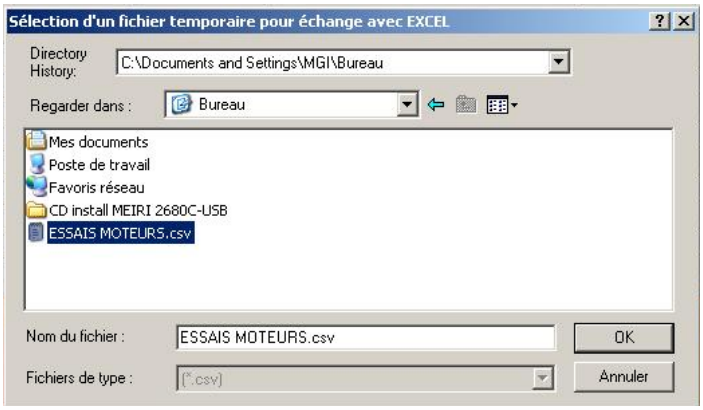
DATA ACQUISITIONS FILE

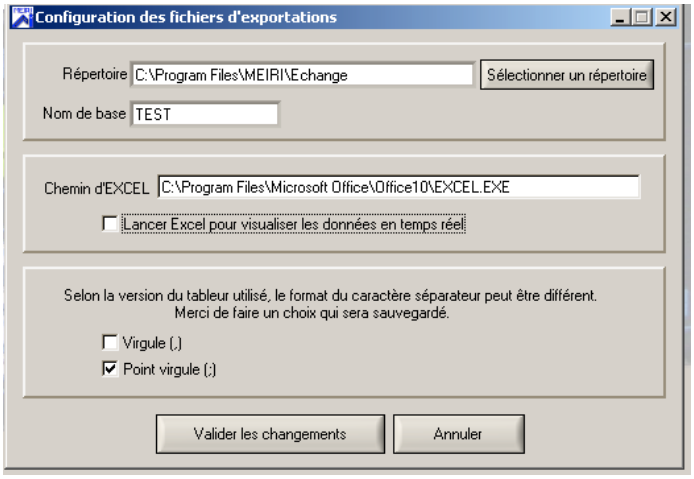
Directory and Basic name:

During the first data acquisition, the system asks for the path and the name that you want to give to the file that will start. Click on “Select a directory and give a basic file name”. This name will increment if you choose a multi-file record mode.



Note: The expansion of this name is of the “.csv” type, then compatible with “Windows Excel”

EXCEL Path: write the path to find Excel, for example C:\Program Files\Microsoft Office\Office10\EXCEL.EXE
Check: *Start Excel to display data in real time*
The software starts as soon as a data acquisition begins, then values are viewable and drawn under Excel.Acquisition frequency is limited to 10Hz per channel.



You must also indicate the type of separator used by your “Windows Excel”. Open the window “configuration of export files”, then choose “;” or “,”.
It depends on the version of Windows Excel that you use.

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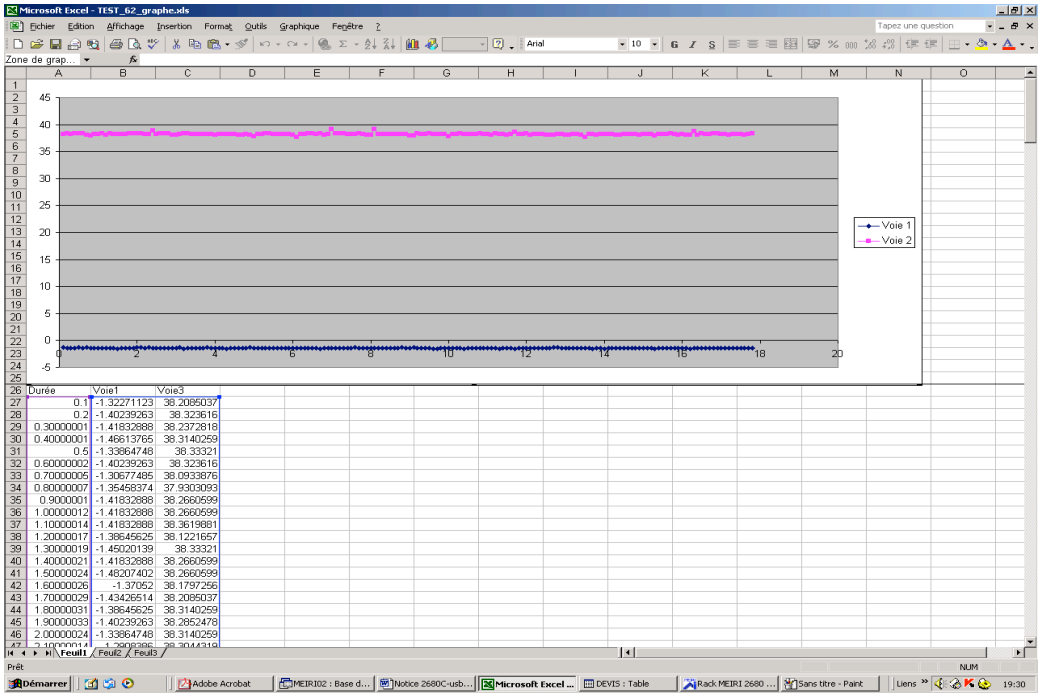
When the acquisition is over, go to the directory where all the files are stored and double click on one of them. Windows Excel opens and you can make use of the results, plot curves, calculate averages…
Note: The number of lines in Windows Excel is limited to 65536.

	ME26C-LVDT698	ME26C-LVDT698	ME26C-LVDT698-F2K-S
Period (s)	Channel 01 (mm)	Channel 02 (mm)	Channel 15 (mm)
0.0100	5.003	-0.022	0.000
0.0200	5.000	-0.025	0.000
0.0300	5.003	-0.024	0.003
0.0400	5.001	-0.023	0.003
0.0500	5.002	-0.025	0.003
0.0600	5.003	-0.023	0.004
0.0700	5.005	-0.022	0.002
0.0800	5.000	-0.021	0.002
0.0900	4.998	-0.025	0.001
0.1000	4.999	-0.024	0.002

Here is an example of what you get under Excel (Acquisitions and plots in real time):



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CHARACTERISTICS

DIGITAL PART		
Micro-controller	RISC	
Clock	32	MHz
Acquisition frequency	100 KHz	According to menu
Analog/Digital converter	16 Bits	Input converter
Input range for +/- Full scale	+/- 32768	Points

ANALOG OUTPUTS	
For voltage output cards	± 10 V
For current output cards	0 ± 10 mA or 0 ± 20 mA
Resolution	Infinite

REAR CONTROL INPUTS		
RAZ/ print	By potential free contact or TTL	ACTIVE: Close or "0"

RS232C SERIAL OUTPUT		
Direction	Emission	
Speed	2400, 4800, 9600, 19200	Bauds
Bits	7, 8 (1 STOP bit)	
Parity	Even, odd or « no parity »	
RS232 Output's Format	Depends on « setup »	

USB CONNECTION (option)	
USB Interface	Type USB 2

MAINS POWER SUPPLY		
Voltage	84V to 264 Vac	47 to 63Hz
Fuses	2 delayed fuses of 1 A on rear panel	Type 5x20 mm
Sector filter	Schaffner	
DEFAULT ALARM RELAY'S OUTPUTS		
CONTACTS	Off/On 0,5A	220V max
Power	Depends on the number of channels and the type of card.	60 W max

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