USER MANUAL

ATEQ CDF60

Version 1.0

www.ateq.com

Reference: UM-23900B-U

REVISION OF THE CDF60 USER MANUAL

Edition/ Revision	**Reference**	**Date** (week/year)	**Chapters updated**
First edition	UM-23900A-U	35/2007	-----

Recommendations for leak testing instruments

Precautions for the test environment

- Keep the test area as clean as possible.

Precautions for the operators

- **ATEQ** recommends that the operators using the instruments should have a suitable qualification and training with respect to the work bench requirements.

General precautions

- Read the user manual before using the instrument,
- all electrical connections to the instrument must be equipped with a safety system (fuse, circuit breaker…) appropriate to its needs and complying with the standards,
- to avoid electromagnetic interference, the cable connections to the instrument should be less than two meters in length,
- it is essential that the electrical main is earthed,
- disconnect the electrical connections to the equipment before maintenance,
- cut the air supply for any kinds of operation on the pneumatic assembly,
- do not open the instrument when it is powered up,
- avoid water spillage near of the instrument,
- **ATEQ** is at your disposal for any further information concerning the use of the instrument under maximum safety conditions.

We would like to bring to your attention that ATEQ will not be held responsible for any accident connected to the improper use of the instrument, to the work bench or to the lack of compliance with safety rules.

ATEQ Company is free from any responsibility for any adjustment of its instrument which would not have been done by its own technicians.

The ATEQ cannot be held responsible if the instrument (program, mechanics or electronics) has been modified without prior written consent.

ATEQ, THE ASSURANCE OF A COMPETENT AFTER SALES SERVICE

■ THE ATEQ AFTER SALES SERVICE IS :

- a team of qualified technicians,
- a permanent telephone assistance,
- agencies close to you for faster reaction,
- a stock of spare parts available immediately,
- a car fleet for rapid intervention,
- a commitment to quality ...

■ THE OVERHAUL

ATEQ carries out the overhaul of your instruments at interesting prices.
The overhaul corresponds to the maintenance of the instrument (checking, cleaning, replacing of used parts) as part of preventive maintenance.
Preventive maintenance is the best way to guarantee reliability and efficiency. It allows the maintenance of a group of instruments in good operational order and prevent eventual break-downs.

■ MAINTENANCE KITS

The ATEQ After Sales Service proposes, two kits destined for the preventive maintenance of the pneumatic circuits of instruments.

■ CALIBRATION

This may be carried out on site or in our offices.
ATEQ is attached to the COFRAC and delivers a certificate following a calibration.

■ TRAINING COURSES

In the framework of partnership with our customers, ATEQ offers two types of training in order to optimise the usage and knowledge of our instruments. They are aimed at different levels of technician:

- method / control training,
- maintenance / upkeep training.

■ A TARGETED TECHNICAL DOCUMENTATION

A number of technical documents are at your disposal to allow you to intervene rapidly in the event minor breakdowns:

- problem sheets describing and offering solutions to the main pneumatic and electronic problems,
- several maintenance manuals.

■ A QUALITY GUARANTEE

The instruments are guaranteed for parts and labour in our offices:

- 2 years for leak detection equipment,
- 1 year for electrical tests to norms instruments,
- 1 year for the accessories.

Our After Sales Service is capable of rapidly answering all your needs and queries.

We strongly recommend to send the instrument back to ATEQ once a year for re-calibration

PREFACE

Dear Customer,

You have just purchased an **ATEQ** instrument, we thank you for the trust you have placed on our brand. This instrument has been designed to ensure a long and unparalleled life expectancy, and we are convinced that it will give you complete satisfaction during many long years of operation.

In order to maximise the life expectancy and reliability of your **ATEQ** instrument, we recommend that you install this instrument on a secured workbench and advise you to consult this manual in order to familiarise yourself with the functions and capabilities of the instrument.

Our **ATEQ** After Sales Service centre can give you recommendations based on your specific operation requirements.

ATEQ

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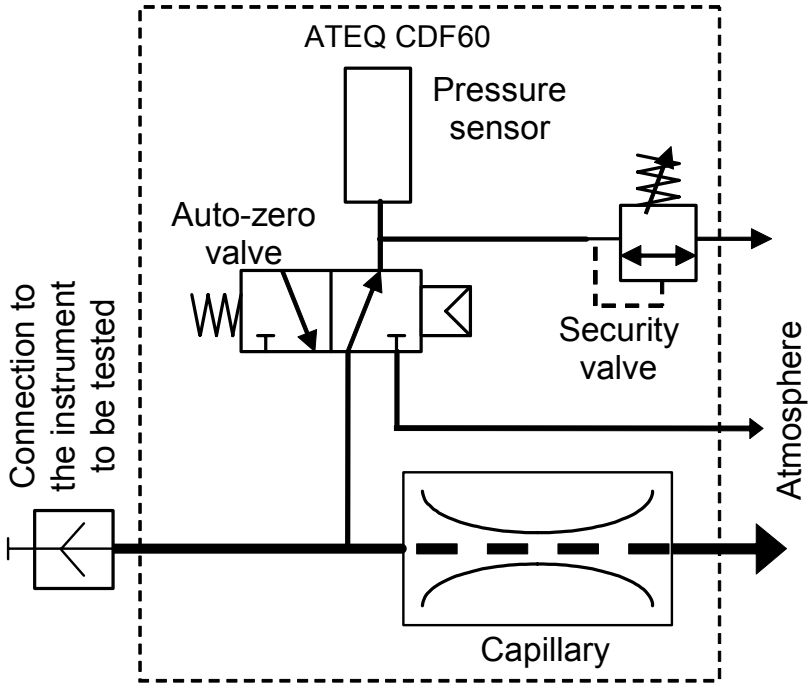
PREAMBLE

1. ATEQ CDF60 DEFINITION



The **ATEQ Leak/flow calibrator** is a flow meter destined for checking leak instruments and in particular those of **ATEQ**. It measures a loss of charge using a pressure sensor placed on a calibrated flow tube. It can also be used for checking a leak flow or a calibrated jet.

2. MEASUREMENTS CHARACTERISTICS

2.1. FLOW MEASUREMENT RANGES

	Flow ranges	Standard	Option (*)	Maximum resolution
Accuracy in conditions defined as ambient No linearity + Hysteresis + Repeatability + T° drift + Long time drift (90 days)	4 ml/min	2% RV + 0,01 ml/min	1% RV + 0,01 ml/min	0,001 ml/min
	40 ml/min	2% RV + 0,1 ml/min	1% RV + 0,1 ml/min	0,01 ml/min
Accuracy in conditions defined as standard (1013 hPa - 20°C) No linearity + Hysteresis + Repeatability + T° drift + Long time drift (90 days)	4 ml/min	2,5% RV + 0,01 ml/min	2% RV + 0,01 ml/min	0,001 ml/min
	40 ml/min	2,5% RV + 0,1 ml/min	2% RV + 0,1 ml/min	0,01 ml/min

RV = Read value.

(*) Instrument adjusted in our metrology laboratory with COFRAC agreement.

2.2. ATMOSPHERIC PRESSURE AND TEMPERATURE INDICATORS

	Minimum	Maximum	Accuracy (20°C)
Atmospheric pressure	850 hPa	1050 hPa	+/- 200 Pa
Temperature (internal)	0° C	50° C	+/- 1,5%

***Note**: the zero offset linked to the temperature or the position can be take over by an auto-zero. It is however advised to make an auto-zero before a measurement.*

Recommendation of use: according to some use's conditions, the instrument can put to two hours of time of heating before complete stabilization.

Chapter 1
INTRUMENT INSTALLATION

Before the first use of the instrument, make a complete battery charging, wait until the CHARGE light is off.

1. PRESENTATION OF THE ATEQ CDF60

The **ATEQ CDF60** is according a portable case.

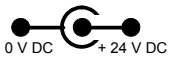
The instrument has a pneumatic quick connector (Staublï kind) for the connection to the flow to be measured.

The instrument has three electrics connectors:

- 1 connector for the battery charge, the instrument run with lithium-ion batteries under 12 V DC voltage and it supplies with a specific supply transformer to charge the batteries.
- 1 RS232 connector.
- 1 USB connector.

2. ATEQ CDF60 INSTALLATION

2.1. SUPPLY CONNECTOR 24 V DC

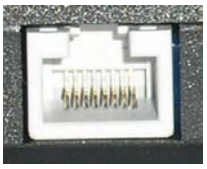


Connector for the 24 V DC supply. For the battery charging. (Jack connector).

2.2. USB CONNECTOR

Allows the connection to a PC. (Type B USB connector).

2.3. RS232 CONNECTOR



Allows the connection to a printer with a RS232 connection. RJ45 type connector. For further information see chapter 7, paragraph 1.2 "RS232 connection".

2.4. PNEUMATIC CONNECTOR (FIRST INPUT)

Allows the connection to the flow to be measured (quick connector "Staublï" RBE03 female type).

Chapter 2
USER INTERFACES

1. KEYS

1.1. "START / INFORMATION" KEY

KEY	FUNCTION
	**Switched off instrument**: this key switch on the instrument. **Switched on instrument**: allows the displaying of: ➢ the program **version**, the flow **range** and the **battery** level. Press and hold the key to display the battery level. ➢ **Switching off** the instrument, the press and lengthy hold this key is switching off the instrument (more than 3 seconds).

1.2. "CANCEL" KEY

KEY	FUNCTION
	**Cancel** he edition or the modification of the parameters. **Return** to the previous menu.

1.3. "HOLD" KEY

KEY	FUNCTION
	To **freeze** or **unfreeze** the measurement display.

1.4. "ENTER" KEY

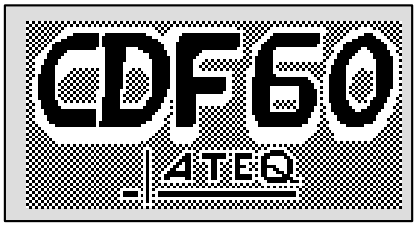
KEY	FUNCTION
	**ENTER:** menus access, parameter edition, parameter validation. Menus access: its exists two modes: **1st mode, short press** (< 1 second) : allows acceding to the "special cycles" menu, **2nd mode, press and hold** (> 3 seconds) allows acceding to the "parameters" menu.

1.5. NAVIGATION KEYS

KEY	FUNCTION
	**Scroll up** or **increase** numeric values. Swing from the **single** "Flow" or **extended** "Flow /temperature / Atmospheric pressure" displays.
	**Scroll down** or **decrease** numeric values. Swing from the **single** "Flow" or **extended** "Flow /temperature / Atmospheric pressure" displays.

2. OTHERS ITEMS

2.1. LCD DISPLAY



Allows the measurements and parameters displaying.

2.2. LIGHTS

Three DEL indicate the instrument state.

LOW BAT	**Battery level**: when this is on, the battery level becoming too low for reliable operation, indicating that the battery must be recharged before further use.
CHARGE	**Charge light**: this light is glowing red while the battery is being charged. When charging is finished, the light turns off.
TX	Not used.

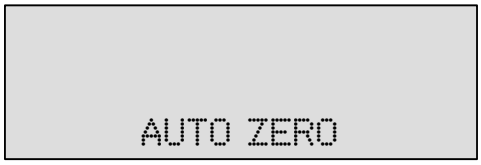
Chapter 3

START UP ADJUST AND MEASURES

1. STARTING THE ATEQ CDF60

The **CDF60** can run with the power supply or with the internal battery.

Check the pneumatics and electrics connections before the start up of the **CDF60**.

 Switches on the instrument. When this is on, the battery level becoming too low for reliable operation, the "**LOW BAT**" light will light on.	
The instrument starts the auto-zero cycle.	
At the end of the auto-zero cycle, the instrument indicates the current flow measured and is ready for measurement.	

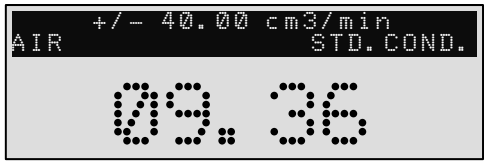
***Note**: it's important to make regularly an auto-zero cycle.*

2. MEASURES DISPLAY

The instrument displays continuously the current flow. There's no measurement start cycle.

There are two display modes:

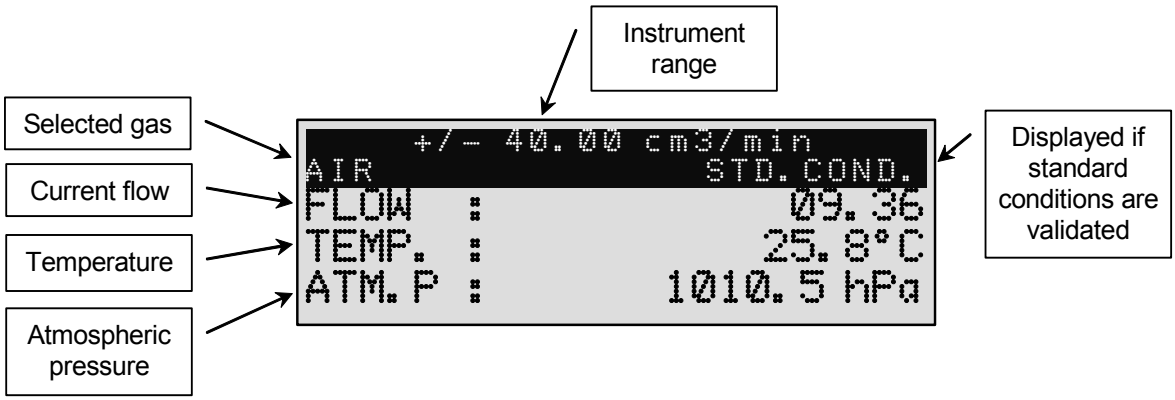
- The **simple** mode where only the current flow is displayed.



- The **extended** mode where all the measures are displayed: flow, internal instrument temperature and atmospheric pressure.

To switch from the simple mode to the extended mode, press the **UP**  or the **DOWN**  keys.

<u>Display description (extended mode):</u>



***Note**: the data sending on the RS232 frame is different according to the display mode selected, in simple mode, only the current flow is sent, in extended mode, the three measures are sent.*

3. PARAMETERS ADJUST

It's existing three adjusted parameters.

3.1. FILTER

It can be adjusted from 0.1 to 9.9 seconds by 0.1 second of step. It allows making a mean on the measurement time, making easier the measurement reading.

Enter into the parameters menu, by pressing and old the **ENTER** ↵ during 3 seconds.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa
The **PARAMETER** menu is displayed. By using the **UP** ▲ and **DOWN** ▼ key select **FILTER** parameter.	PARAMETER >FILTER : 0.5 s FLOW UNIT.: cm3/min STD.COND.: YES
Then press the **ENTER** ↵ key to modify the parameter (the cursor moves on the right).	PARAMETER FILTER : 0.5 s < FLOW UNIT.: cm3/min STD.COND.: YES
By using the **UP** ▲ and **DOWN** ▼ key modify the parameter to the hoped value.	PARAMETER FILTER : 1.0 s < FLOW UNIT.: cm3/min STD.COND.: YES
Validate with the **ENTER** ↵ key.	PARAMETER >FILTER : 1.0 s FLOW UNIT.: cm3/min STD.COND.: YES
To return to the measurement mode, press **CANCEL** C.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa

3.2. FLOW UNIT

This parameter selects the flow unit displayed during the measurements.

Enter into the parameters menu, by pressing and old the **ENTER** ↵ during 3 seconds.	+/- 40.00 cm3/min AIR STD. COND. FLOW : 09.36 TEMP. : 25.8°C ATM. P : 1010.5 hPa
The **PARAMETER** menu is displayed. By using the **UP** ▲ and **DOWN** ▼ key select **PRESS. UNIT** parameter.	PARAMETER FILTER : 1.0 s >FLOW UNIT.: cm3/min STD. COND.: YES
Then press the **ENTER** ↵ key to modify the parameter (the cursor moves on the right).	PARAMETER FILTER : 1.0 s FLOW UNIT.: cm3/min< STD. COND.: YES
By using the **UP** ▲ and **DOWN** ▼ key choose the unit to be displayed.	UNIT >l/h cm3/min cm3/s
Validate with the **ENTER** ↵ key.	PARAMETER FILTER : 1.0 s FLOW UNIT.: cm3/h < STD. COND.: YES
To return to the measurement mode, press **CANCEL** C.	+/- 2400 cm3/h AIR STD. COND. FLOW : 09:36 TEMP. : 25.8°C ATM. P : 1010.5 hPa

3.3. STANDARD CONDITIONS (STD COND)

This parameter allows displaying the measurements values corrected to the standards conditions values, atmospheric pressure and temperature, to the user preferences.

Enter into the parameters menu, by pressing and old the **ENTER** ↵ during 3 seconds.	+/- 40.00 cm3/min AIR FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa
The **PARAMETER** menu is displayed. By using the **UP** ▲ and **DOWN** ▼ key select **STAND. COND** parameter.	PARAMETER FILTER : 1.0 s FLOW UNIT.: cm3/min >STD.COND.: NO
Then press the **ENTER** ↵ key to modify the parameter (the cursor moves on the right).	PARAMETER FILTER : 1.0 s FLOW UNIT.: cm3/min STD.COND.: NO <
By using the **UP** ▲ and **DOWN** ▼ key validate the function by **YES**. Validate with the **ENTER** ↵ key.	PARAMETER FILTER : 1.0 s FLOW UNIT.: cm3/min STD.COND.: YES <
The standards temperature and atmospheric pressure values are displayed, it's possible to modify following the user preferences. Default values: 20° C and 1013.2 hPa.	STANDARD CONDITION >TEMP. : 20.0°C PRESS. : 1013.2hPa
To return to the measurement mode, press twice **CANCEL** C. The measurements values displayed are corrected following standards conditions.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa

3.4. GAS

This parameter allows calculating the flow measurement for a other gas, default gas: air.

The avalaible parameters are for the following gas:

- Helium (He),
- Nitrogen (N_2),
- Other (the parameter had to be indicated, consult us).

Enter into the parameters menu, by pressing and old the **ENTER** ↵ during 3 seconds.	+/- 40.00 cm3/min AIR STD. COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa
The **PARAMETER** menu is displayed. By using the **UP** ▲ and **DOWN** ▼ key select **GAZ** parameter.	PARAMETER FLOW UNIT.: cm3/min STD.COND.: NO >GAZ : AIR
Then press the **ENTER** ↵ key to modify the parameter available the gas list is displayed. By using the **UP** ▲ and **DOWN** ▼ key choose the gas to be measured.	GAZ >AIR HELIUM NITROGEN
It's possible to configure a different gas than those available, for that select the **OTHER** option, then configure the applied coefficient. For further information, contact ATEQ company.	GAZ HELIUM NITROGEN >OTHER
Validate with the **ENTER** ↵ key.	GAZ >AIR HELIUM NITROGEN
To return to the measurement mode, press **CANCEL** C.	+/- 40.00 cm3/min AIR STD. COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa

3.5. TEMPERATURE UNIT

This parameter selects the temperature unit displayed during the measurements.

Enter into the parameters menu, by pressing and old the **ENTER** ↵ during 3 seconds.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa
The **PARAMETER** menu is displayed. By using the **UP** ▲ and **DOWN** ▼ key select **TEMP. UNIT** parameter.	PARAMETER STD.COND. : YES GAZ : AIR >TEMP.UNIT.: CELSIUS
Then press the **ENTER** ↵ key to modify the parameter (the cursor moves on the right).	PARAMETER FILTER : 0.5 s PRESS.UNIT.: Pa >TEMP.UNIT.: CELSIUS
By using the **UP** ▲ and **DOWN** ▼ key choose the unit to be displayed.	UNIT CELSIUS FAHRENHEIT >KELVIN
Validate with the **ENTER** ↵ key.	PARAMETER STD.COND. : YES GAZ : AIR >TEMP.UNIT.: KELVIN
To return to the measurement mode, press **CANCEL** C.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa

3.6. BACK LIGHT

The brightness of the backlighting can be set so as to suit the backlighting to the ambient lighting or your personal preferences.

The screen backlighting is programmable and can be altered.

Backlighting of low brightness will save battery power. Specify a setting that suits the way you use the instrument.

Enter into the parameters menu, by pressing and old the **ENTER** ↵ during 3 seconds.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa
The **PARAMETER** menu is displayed. By using the **UP** ▲ and **DOWN** ▼ key select **BACK LIGHT** parameter.	PARAMETER PRESS.UNIT.: Pa >BACK LIGHT: 100 % AUTO OFF: 05 min
Then press the **ENTER** ↵ key to modify the parameter (the cursor moves on the right).	PARAMETER PRESS.UNIT.: Pa BACK LIGHT: 100 % < AUTO OFF: 05 min
By using the **UP** ▲ and **DOWN** ▼ key modify the backlight value between 0 % (switched off) and 100 % (maximum).	PARAMETER PRESS.UNIT.: Pa BACK LIGHT: 050 % < AUTO OFF: 07 min
Validate with the **ENTER** ↵ key.	PARAMETER PRESS.UNIT.: Pa >BACK LIGHT: 050 % AUTO OFF: 07 min
To return to the measurement mode, press **CANCEL** C.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa

3.7. AUTOMATIC POWER OFF (AUTO OFF)

This feature conserve battery life by automatically turning the instrument off after a user-defined period of time within there has been no key activity.

Enter into the parameters menu, by pressing and old the **ENTER** ↵ during 3 seconds.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa
The **PARAMETER** menu is displayed. By using the **UP** ▲ and **DOWN** ▼ key select **AUTO OFF** parameter.	PARAMETER GAZ : AIR TEMP.UNIT.: CELSIUS >AUTO OFF: 05 min
Then press the **ENTER** ↵ key to modify the parameter (the cursor moves on the right).	PARAMETER GAZ : AIR TEMP.UNIT.: CELSIUS AUTO OFF: 05 min <
By using the **UP** ▲ and **DOWN** ▼ key to modify the switch off delay value.	PARAMETER GAZ : AIR TEMP.UNIT.: CELSIUS AUTO OFF: 07 min <
Validate with the **ENTER** ↵ key.	PARAMETER GAZ : AIR TEMP.UNIT.: CELSIUS >AUTO OFF: 07 min
To return to the measurement mode, press **CANCEL** C.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa
It's possible to disable the **AUTO OFF** function and leave continuously the instrument on, for that by using the **DOWN** ▼ key go the minimum (inferior to 1 minute) then appears "**DISABLE**" Validate with the **ENTER** ↵ key. The instrument will be power on continuously.	PARAMETER GAZ : AIR TEMP.UNIT.: CELSIUS >AUTO OFF: DISABLE

3.8. RS232

This parameter is configuring the RS232 port.

Enter into the parameters menu, by pressing and old the **ENTER** ↵ during 3 seconds.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa
The **PARAMETER** menu is displayed. By using the **UP** ▲ and **DOWN** ▼ key select **RS232** parameter.	PARAMETER TEMP.UNIT.: CELSIUS AUTO OFF: 05 min >RS232
Then press the **ENTER** ↵ key to enter into the RS232 links parameters configuration menu.	RS232 >BAUDRATE : 57600 BITS COUNT : 8 PARITY : NONE
Select and adjust each parameter: **BAUDRATE**, **BITS COUNT**, **PARITY**, **HANDSHAKE** by using the **UP** ▲ and **DOWN** ▼ key and validate with the **ENTER** ↵ key.	RS232 BAUDRATE : 19200 < BITS COUNT : 8 PARITY : NONE
To return to the measurement mode, press **CANCEL** C.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 09.36 TEMP. : 25.8°C ATM.P : 1010.5 hPa

Chapter 4
CDF60 FUNCTIONS

1. MENUS STRUCTURE

Extended menu, access by press and hold > 3 seconds

PARAMETER	> FILTER	> 0,1 to 9,9 s		
	V			
	Flow unit	> l/h > cm^3/min > cm^3/s > cm^3/h > in^3/min > in^3/s > in^3/h >		
	V			
	Standard conditions	> Yes	> Temperature	
	V		Atmospheric pressure	
	V			
	Gas	Air		
	V	Helium		
	V	Nitrogen		
	V	Other		
	V			
	Temp. Unit	> Celsius		
	V	Fahrenheit		
	V	Kelvin		
	V			
	Back light	> 0 % > 100 %		
	V			
	Auto off	> Disable > 99 min		
	V			
	RS232	> Baud rate	> 2400 > 4800 > 9600 > 19200 > 38400 > 57600 >	
		V		
		Bits count	> 7	
		V	8	
		V		
		Parity	> None > Even > Odd	
		V		
		Handshake	> No / Yes	

Simple menu, access by press < 1 second

SPECIAL CYCLE	> Auto-zero	
	Print	
	Sensor display	

2. SPECIALS CYCLES

The specials cycles allows doing commands on the instrument.

2.1. AUTO-ZERO

This special cycle make a zero sensor according to the atmospheric pressure.

Enter into the parameters menu by short press on the **ENTER** key.	+/- 40.00 cm3/min AIR STD.COND. 17.61
Select the **AUTO ZERO** function by using the **UP** and **DOWN** keys validate with the **ENTER** key.	SPECIAL CYCLE >AUTO ZERO PRINT SENSOR DISPLAY
The instrument is doing its **AUTO ZERO** and return to the measurement mode when the special cycle is finished.	AUTO ZERO

***Note**: this cycle allows taking over an offset linked to the temperature, position, etc…*

2.2. MEASUREMENTS PRINT (PRINT)

This special cycle send on the USB or RS232 port the measures displayed on the screen.

Enter into the parameters menu by short press on the **ENTER** key.	+/- 40.00 cm3/min AIR STD.COND. 09.36
Select the **PRINT** function by using the **UP** and **DOWN** keys.	SPECIAL CYCLE AUTO ZERO >PRINT SENSOR DISPLAY

<u>Frame format sent on the USB or RS232 port:</u>

Simple mode display:

FLOW : 17.61 cm3/min

Extended mode display:

FLOW : 15.26 cm3/min

TEMP. : 23.3oC

ATM.P : 1004.9 hPa

2.3. SENSORS DISPLAY

This special cycle displays the raw values of the all sensors. This is to help the after sales service diagnostic.

Enter into the parameters menu by short press on the **ENTER** key.	+/- 40.00 cm3/min AIR STD.COND. FLOW : 15.26 TEMP. : 23.3°C ATM.P : 1004.9 hPa
Select the **SENSOR DISPLAY** function by using the **UP** and **DOWN** keys validate with the **ENTER** key.	SPECIAL CYCLE AUTO ZERO PRINT >SENSOR DISPLAY
The instrument displays the sensors points.	U : 042727 FLOW : 040713 TEMP. : 016719 ATM.P : 037189
To return to the measurement mode, press **CANCEL** .	+/- 40.00 cm3/min AIR STD.COND. FLOW : 15.26 TEMP. : 23.3°C ATM.P : 1004.9 hPa

Chapter 5
ACCESSORIES, SECURITY AND RECYCLING

1. ACCESSORIES

1.1. POWER SUPPLY

The power supply of the **CDP60** converts a network voltage (120 to 240 V AC) into a 24 V DC low voltage supply. It has no power switch and works as soon as it is plugged in.

It is protected against surges and short circuits via a thermal fuse (Do not use any other type of fuse).

Moreover, this supply can be plugged on all types of electrical plugs using different removable pins.

The instrument is not designed to work during the battery charge.

1.2. SOFT CASE

The soft case is to put away the instrument when out of use.

1.3. USB WIRE

To connect the instrument to a PC.

1.4. TEST TUBE

To make the pneumatic connection between the instrument and the flow source to control.

1.5. PROTECTION COVER (OPTION)

This cover in rubber material allows protect the **CDF60** and absorb impacts (option).

1.6. HARD CASE (OPTION)

Hard case to put away the **CDP60** instrument and its accessories.

1.7. NEEDLE VALVE (OPTION)

Needle valves are used to set the leak.

Different needle valves are available, contact the ATEQ company who communicate you the best model adapted to your application.

They must be handled with care especially when they are tightened.

2. SAFETY INFORMATIONS

Your device and its enhancements may contain small part. Keep them out of the reach of small children.

Operating environment

Remember to follow any special regulations in force in any area, and always switch off your device when its use is prohibited or when it may cause interference or danger.

Use the device only in its normal operating positions.

About Charging

Use only the charger supplied with your device. Use of another type of charger will result in malfunction and/or danger.

Use a specified battery in the equipment.

About the Charger

Do not use the charger in a high moisture environment. Never touch the charger when your hands or feet are wet.

Allow adequate ventilation around the charger when using it to operate the device or charge the battery. Do not cover the charger with paper or other objects that will reduce cooling. Do not use the charger while it is inside a carrying case.

Connect the charger to a proper power source. The voltage requirements are found on the product case and/or packaging.

Do not use the charger if the cord becomes damaged.

Do not attempt to service the unit. There are no serviceable parts inside. Replace the unit if it is damaged or exposed to excess moisture.

About the Battery

***CAUTION**: This unit contains an internal Lithium Ion battery, it is replaceable only by the competent ATEQ personnel. The battery can burst or explode, releasing hazardous chemicals. To reduce the risk of fire or burns, do not disassemble, crush, puncture, or dispose of the battery or the instrument in fire or water, do not short-circuit or connect the contacts with a metal object.*

Use a specified charger approved by the ATEQ manufacturer.

Important instructions (for service personnel only)

***CAUTION**: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.*

Replace only with the same or equivalent type recommended by the manufacturer.

Use the battery only in the specified equipment.

The battery must be recycled or disposed of properly.

3. RECYCLING

Do not dispose of the rechargeable Lithium-Ion battery or the tool to the dustbin.

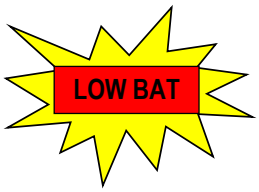
These components must be collected and recycled.

The crossed-out wheeled dustbin means that within the EU the product must be taken to separate collection at the product end-of life. This applies to your tool but also to any enhancements marked with this symbol. Do not dispose of these products as unsorted municipal waste. For further information, please contact ATEQ.

Chapter 6
ERROR MESSAGES

1. ERROR MESSAGES

The **CDF60** can display the following error messages:

The applied flow is too high. Reduce the flow and press on the **CANCEL**  key.	FLOW OUT OF RANGE Over Flow..... Press [C] to return AUTO ZERO
The applied negative flow is too high. Reduce the negative flow and press on the **CANCEL**  key.	FLOW OUT OF RANGE Under Flow..... Press [C] to return AUTO ZERO
The "**LOW BAT**" light flashes, the battery level is too low for reliable operation. When this light is on the instrument will be quickly turned off automatically. **Charge the instrument.**	

Chapter 7
PC INSTALLATION

1. PROGRAM AND DRIVERS INSTALLATION

For this device, the connections for update can be carried out by two ways, USB or RS232 following the user preferences.

1.1. USB CONNECTION

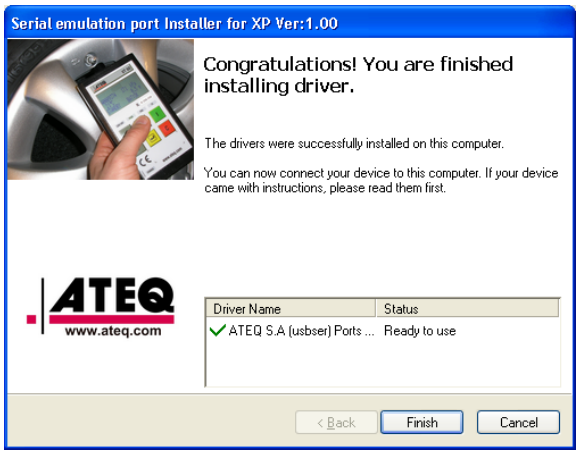
1.1.1. Windows© XP installation

1) Start the installation program: **USB_VIRTUAL_232_XP.EXE**, the opposite window appears.

2) Click on "**Next >**".

3) The "**Serial emulation port**" drivers will be installed, at the end, the opposite window appears.

4) Click on "**Finish**".

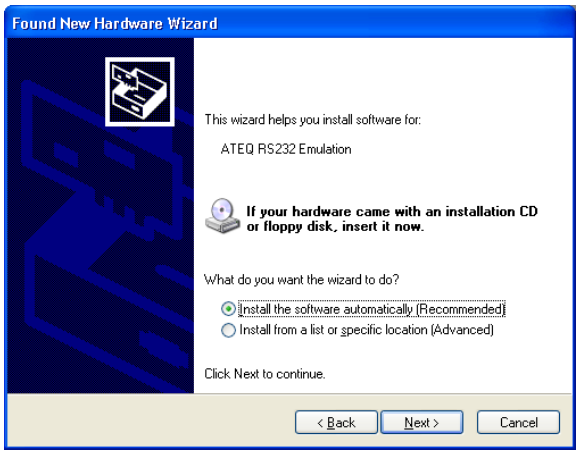


5) Connect the USB wire on the USB port of your PC and on the **CDF60** device.

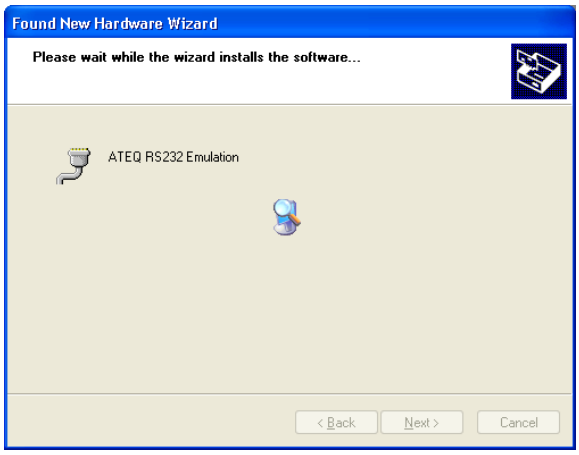
6) Switch on the **CDF60** device.

7) When the **CDF60** device is detected, its installation begins. The opposite window appears select "**No, not this time**" and click on "**Next >**".

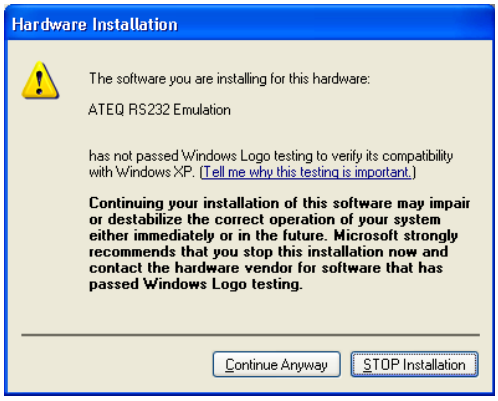
8) Select the "**Install the software automatically (recommended)**" option and click on "**Next >**".



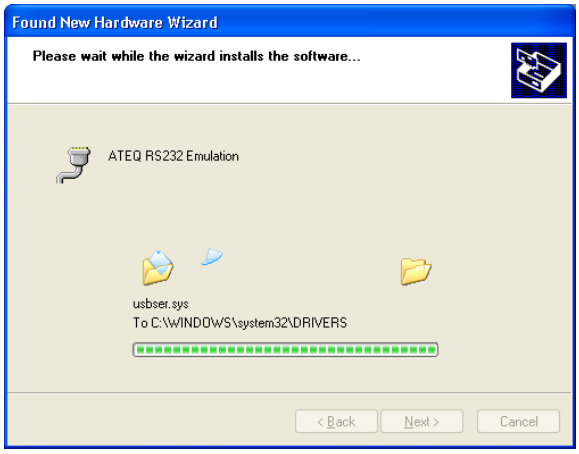
9) The installation begins…



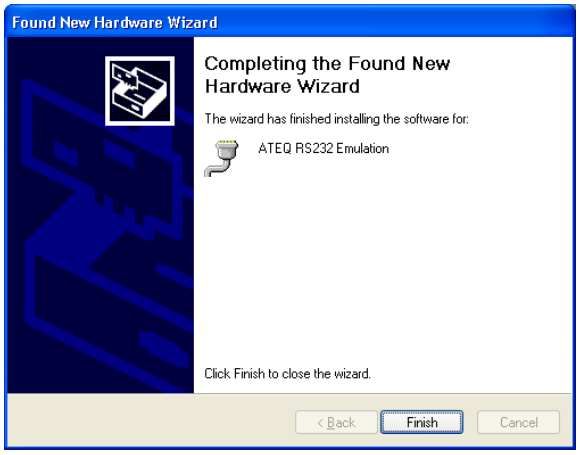
10) When this window appears, click on "**Continue Anyway**".



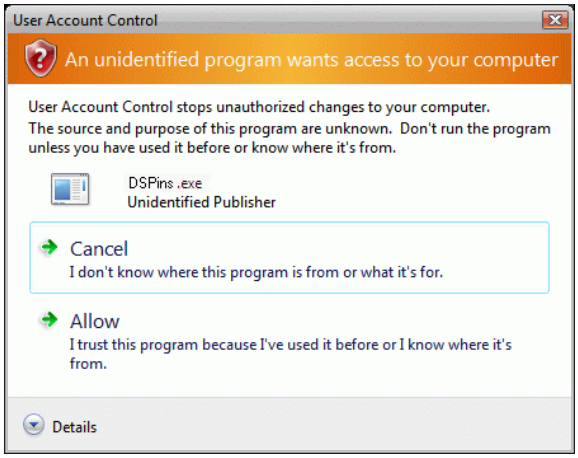
11) The drivers are installed.



12) The "**ATEQ RS232 Emulation**" communication port is created; this port will be used for each communication between the **CDF60** device and the PC through an USB connector. Click on "**Finish**".



1.1.2. Windows© Vista installation



1) Start the: **USB_VIRTUAL_232_VISTA.EXE**, program the opposite window appears.

2) Click on "**Allow**", to start the installation.

3) The opposite window appears.

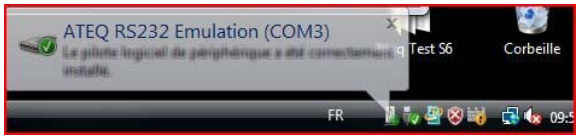
4) Cliquer sur "**Suivant >**".

5) The "**Serial emulation port**" drivers will be installed, at the end, the opposite window appears.

6) Click on "**Finish**".

7) Connect the USB cable on the PC USB port and on the **CDF60** device.

8) Switch on the **CDF60** device the drivers will automatically installed.



9) The message at the right bottom corner of the screen "**ATEQ RS232 Emulation**" appears, to confirm the correct **CDF60** device driver's installation.

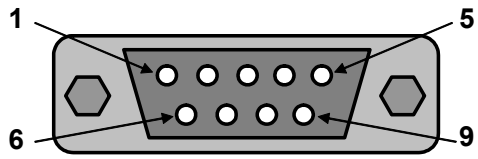
1.2. RS232 CONNECTION

1) To connect the **CDF60** to the RS232 port (PC com1 or com2) it needs the RJ45 wire and the SubD adapter.

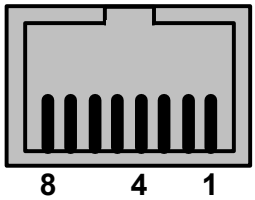
2) Adjust on the **CDF60** and in the PC the same RS parameters on each side. For example:

- Baud rate: 19200.
- Bits count: 8.
- Parity: even.

1.3. RS232 CABLE DIAGRAM

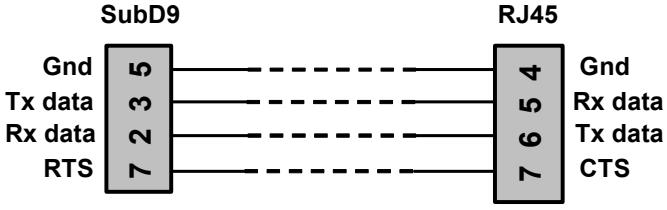


SubD (9 pins)



RJ45 (8 pins)

Pin 1	Not used	Pin 1	Not used
Pin 2	RXD Data reception	Pin 2	Not used
Pin 3	TXD Data emission	Pin 3	Not used
Pin 4	Not used	Pin 4	Ground
Pin 5	Ground	Pin 5	RXD Data reception
Pin 6	Not used	Pin 6	TXD Data emission
Pin 7	RTS request to send	Pin 7	CTS clear to send
Pin 8	Not used	Pin 8	Not used
Pin 9	Not used		



Appendix
ATEQ CDF60

1. TECHNICALS CHARACTERISTICS

	CDF60
Dimensions H x L x P (mm) :	152 x 83 x 36
Battery:	Lithium ion, 12.6 V DC*
Autonomy:	About 24 hours
Electrical connexions:	Power supply: concentric Jack Communication : USB and RJ45 (RS232)
Pneumatics connexions:	Principal connector: quick connector Staublï RBE03 female type.
Display:	LCD 4 lines 60 mm x 32 mm
Weight:	About 470 g
Temperatures:	
Use:	+ 0°C to + 50°C
Stock:	-10°C to + 70 °C

* See the security and recycling instructions about this battery type.

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