



Instruction Manual

MB92 Moisture Analyzer

Quick Style Guide



Version History

Date	Version	Description
2024/6/10	A	• Initial Release
2024/11/22	B	• Update UKCA compliance content • Fixed errors related to SOC options

Contents

- 1. Safety Information..... 1**
- 2. Installation and Initial Setup..... 5**
 - 2.1. Unpacking.....5
 - 2.2. Assemble the Instrument..... 5
 - 2.3. Connecting to a Power Supply..... 6
- 3. Structure and Functions..... 7**
 - 3.1. MB92 Product Structure.....7
 - 3.2. MB92 Control Panel..... 8
 - 3.3. MB92 Displays and Light Indication.....9
 - 3.4. MB92 Screen Navigation and Interaction.....10
- 4. Operation..... 10**
 - 4.1. Start a Simple Measurement with MB92.....10
- 5. Settings..... 11**
 - 5.1. Enter the Settings.....11
 - 5.2. Menu Map..... 12
- 6. Maintenance..... 13**
 - 6.1. Cleaning.....13
 - 6.2. Replacing Power Line Fuse..... 13
 - 6.3. Technical Support Information.....14
- 7. Technical Data.....14**
- 8. Compliance..... 15**
 - 8.1. FCC Supplier Declaration of Conformity..... 16

1. Safety Information

Definition of Signal Warnings and Symbols

WARNING	For a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided.
CAUTION	For a hazardous situation with low risk, resulting in damage to the device or the property or in loss of data, or minor or medium injuries if not avoided.
Attention	For important information about the product. May lead to equipment damage if not avoided.
Note	For useful information about the product.



General hazard



Explosion Hazard



Electrical shock



Caution, hot surface



Alternating Current



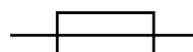
Fire or explosion



Warning Poisoning



Warning corrosion



Fuse
For parameters, please refer to [Technical Data \(on page 14\)](#)



Protective earth (ground)

General Safety Information

Your instrument meets the state of the art technology and complies with all recognized safety rules, however, certain hazards may arise in extraneous circumstances. Do not open the housing of the instrument: It does not contain any parts which can be maintained, repaired or replaced by the user. If you ever have problems with your instrument, contact your authorized OHAUS dealer or service representative.

Always operate and use your instrument only in accordance with the instructions contained in this manual. The instructions for setting up your new instrument must be strictly observed.

If the instrument is not used according to these Operating Instructions, protection of the instrument may be impaired and OHAUS assumes no liability.

Staff Safety

The Moisture Analyzer may be operated only by trained personnel who are familiar with the properties of the samples used and with the handling of the instrument. In order to use the instrument, you must have read and understood the operating instructions. Keep the operating instructions for further reference.



CAUTION:

Never make any modifications to the instrument and use only original spare parts and optional equipment from OHAUS.

Protective Clothing

It is advisable to wear protective clothing in the laboratory when working with the instrument.



A lab coat should be worn.



A suitable eye protection such as goggles should be worn.



Use appropriate gloves when handling chemicals or hazardous substances, checking their integrity before use.

Safety Precautions



CAUTION: Read all safety warnings before installing, making connections, or servicing this equipment. Failure to comply with these warnings could result in personal injury and/or property damage. Retain all instructions for future reference.

- Before connecting power, verify that the product or its AC adapter input voltage range and plug type are compatible with the local AC mains power supply.
- Do not position the equipment such that it is difficult to reach the power connection.
- Only connect the power cord to a compatible grounded electrical outlet.
- Only use a power cord with a rating that exceeds the specifications on the equipment label.
- Make sure that the power cord does not pose a potential obstacle or tripping hazard.
- Operate the equipment only under ambient conditions specified in the user instructions.

- This equipment is for indoor use only.
- Do not operate the equipment in wet, hazardous or unstable environments.
- Do not allow liquids to enter the equipment.
- Do not place the equipment upside down on the platform.
- Use only approved accessories and peripherals.
- Disconnect the equipment from mains power before cleaning or servicing.
- Service should only be performed by authorized personnel.



WARNING: Never work in an environment subject to explosion hazards! The housing of the instrument is not gas tight. (explosion hazard due to spark formation, corrosion caused by the ingress of gases)



WARNING: Electrical shock hazards exist within the housing. The housing should only be opened by authorized and qualified personnel. Remove all power connections to the unit before opening.



WARNING! Substances contain toxic or caustic components
Toxic gases produced during drying could cause irritations (eyes, Skin, breathing), illness or death.

- Such substances may be dried only in a fume cupboard.

CAUTION! Corrosion!



Substances evolve corrosive vapors when heated (e.g. acids).

- Work with small amounts of samples as the vapor can condense on cooler housing parts and cause corrosion.

CAUTION! The Moisture Analyzer works with heat!

- Ensure sufficient free space around the instrument to avoid heat accumulation and overheating (approx. 1 m free space above the heating module).
- The vent over the sample must never be covered, plugged, taped over or tampered with in any other way.
- Do not place any combustible materials on, under or next to the instrument since the area around the heating module may be hot.
- Exercise caution when removing the sample. The sample itself, the sample chamber, the draft shield and any sample vessels used may still be very hot.
- During operation, you should never open the heating module itself as the ring-shaped heating reflector or its protective glass can reach 400 °C! If you have to open the heating module e.g. for maintenance, disconnect the instrument from the power supply and wait until the heating module has cooled down completely.
- No modifications must be made within the heating module. It is particularly dangerous to bend any components or remove them or to make any other changes.

**CAUTION!** Fire or Explosion

- Flammable or explosive substances.
- Substances containing solvents.
- Substances which evolve flammable or explosive gases or vapors when heated.
 - a. In cases of doubt, perform a careful risk analysis.
 - b. Work at a drying temperature that is low enough to prevent the formation of flames or an explosion.
 - c. Wear protective goggles.
 - d. Work with small amounts of sample.
 - e. Never leave the instrument unattended!



It is not permitted to use the instrument in explosive atmosphere of gases, steam, fog, dust and flammable dust (hazardous environments).

Intended Use

This instrument is intended for use in laboratories, pharmacies, schools, businesses and light industry. It must only be used for measuring the parameters described in these operating instructions. Any other type of use and operation beyond the limits of technical specifications, without written consent from OHAUS, is considered as not intended.

This instrument complies with current industry standards and the recognized safety regulations; however, it can constitute a hazard in use.

If the instrument is not used according to these operating instructions, the intended protection provided by the instrument may be impaired.

2. Installation and Initial Setup

This section introduces the unpacking, installation and initial setup instructions of preparing the Moisture Analyzer for operation.

2.1. Unpacking

Unpack the instrument and the accessories. Check the completeness of the delivery.

The following accessories are part of the standard equipment of your new Moisture Analyzer.

- 1 x Box, Aluminum sample pans
- 1 x Pan Holder
- 5 x Glass Fiber Pad
- 1 x Tray Pan
- 1 x Power Cable
- 1 x Pan Handle
- 1 x Quick Guide

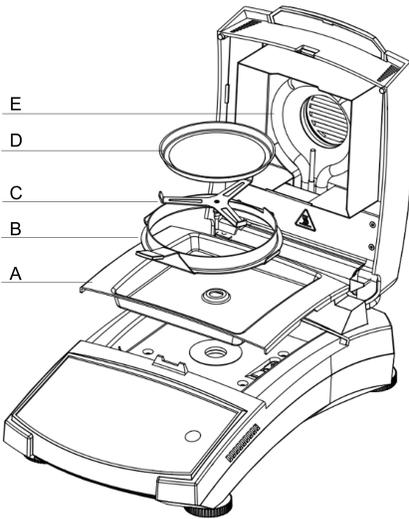
Remove packing material from the instrument.

Check the instrument for transport damage. Immediately inform your Ohaus dealer if you have complaints or parts are missing.

Store all parts of the packaging. This packaging guarantees the best possible protection for the transport of your instrument.

2.2. Assemble the Instrument

1. Lift the cover straight up and Install the Tray Pan (A) in the base of the heating chamber.
2. Install the Pan Holder (C) into position. Turn the Pan Holder until it engages. In the locked position, the arm of the Pan Holder points directly towards the Heating Unit (E).
3. Place the Sample Pan (D) onto the Pan Holder using the Pan Handler (B).
The Pan Handler is integrated with draft shield for optimal measuring performance.



2.3. Connecting to a Power Supply

Warning! Risk of Electric Shock



- Use only the 3-pin power cord with equipment grounding connector which was supplied with your instrument. Only connect the power cord to a 3-pin ground outlet.
- Only extension cords which meet the relevant standards and also have an equipment grounding conductor may be used.

! Attention:

- Before connecting power, verify that the product or its AC adapter input voltage range and plug type are compatible with the local AC mains power supply.
- The dryer unit is designed to operate at a specific line voltage (110V AC or 240V AC). The dryer unit is installed at the factory and is matched to the particular line voltage of the country of destination.
- Connection to a line voltage that is too high can lead to burning out the heater, whereas, a supply voltage that is too low will prolong the drying process and the instrument may not operate properly.

Connect to Power

Connect the power cord to the power supply socket located at the rear of the Moisture Analyzer and to the power supply outlet. The Moisture Analyzer becomes operational as soon as power is applied. The display will remain off until the On/Off button is pressed.



Note:

Place the Moisture Analyzer in the room where it will be used for at least 4 hours to adapt itself to ambient conditions. Turn on the moisture analyzer for at least 30 mins to warm up.

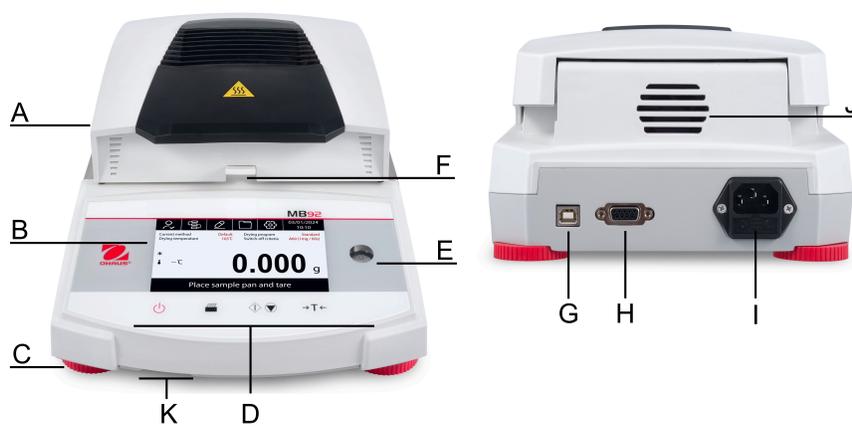
Attention:

If the power cable supplied is not long enough, use only a proper 3-pin extension cable with an equipment grounding connector.

3. Structure and Functions

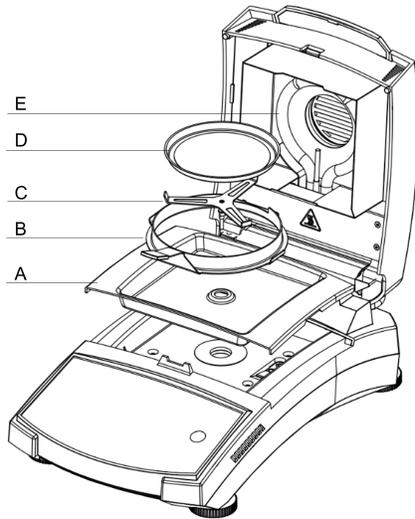
3.1. MB92 Product Structure

Exterior Structure



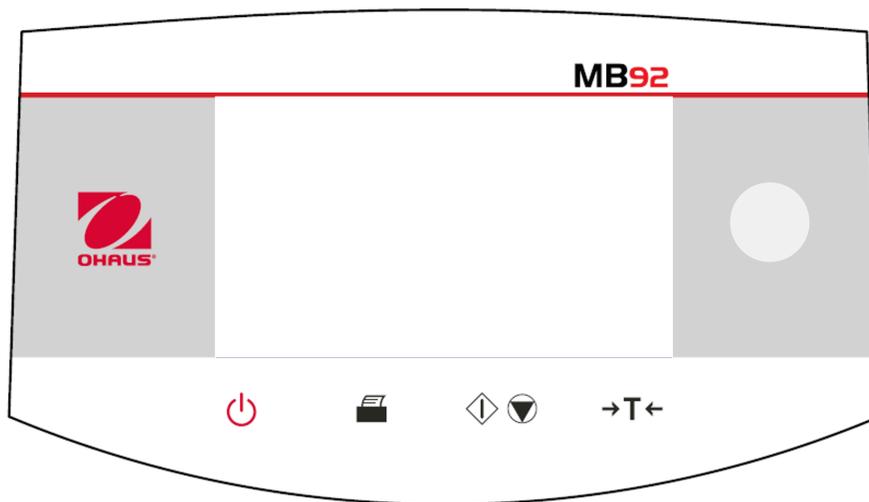
#	Structure	#	Structure
A	Top cover	B	Screen
C	Levelling feet	D	Controls
E	Levelling indicator	F	Sample pan handler with draft shield
G	USB Type B interface	H	RS232 Interface
I	Power supply connection and Power line fuse	J	Fan
K	USB Type A Interface	--	--

Interior Structure



#	Description
A	Tray Pan
B	Pan Handler with Draft Shield
C	Pan Holder
D	Sample Pan
E	Heating Unit

3.2. MB92 Control Panel



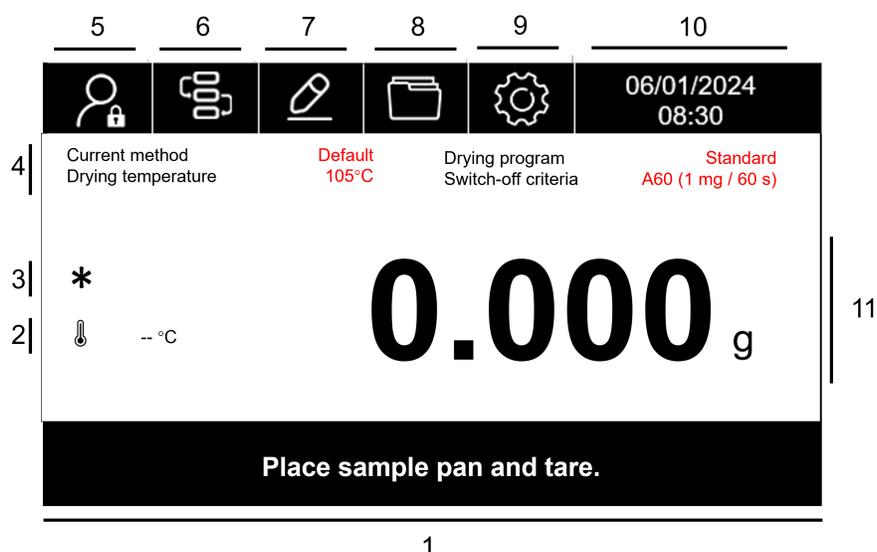
Button functions

Button	Functions in general	Functions during the drying process
	Short press	Short press
	Switch ON or OFF the Moisture Analyzer.	--
	Print measure or adjustment results.	--

Button	Functions in general	Functions during the drying process
	Short press	Short press
	Start drying and analyzing.	Abort drying.
	In Home screen: Tare	--

3.3. MB92 Displays and Light Indication

Screen Display



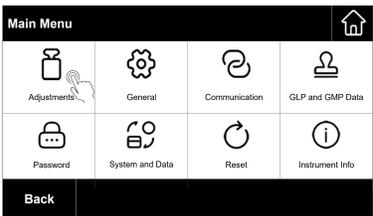
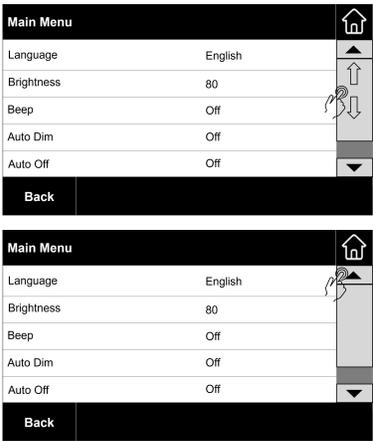
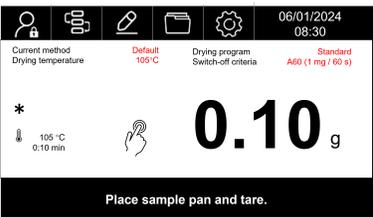
#	Field Name	#	Field Name
1	Instructional Messages	2	Temperature
3	Stable weight	4	Current Method
5	User Login	6	Method Library
7	Application Setting	8	Result
9	Main Menu	10	Time
11	Main Display field	12	--

Light Indication

Light Color	Description
Green	Test Completed.
Orange	Test is on-going, and the heater is on.

Light Color	Description
Yellow	Blinking - High temperature warning (above 60 °C)
Red	Blinking - An error has occurred.

3.4. MB92 Screen Navigation and Interaction

Action	Illustration	Function
Tapping		Tap on button to enter a menu or make a selection.
Scrolling		<ul style="list-style-type: none"> • Drag the right bar to scroll up or down • Tap on the arrow to scroll up or down
Tapping		Tap to switch display mode during the test or in the test result.

4. Operation

4.1. Start a Simple Measurement with MB92

1. Switch on the instrument by pressing .
2. Configure testing parameters

- a. Tap on  icon to enter the Method menu
- b. To edit an existed method, tap on a method > **Edit**.

Or you can create a new method by tapping on **New** > Name the method > **Save**

- c. Select a Drying Program.
- d. Set drying temperature. The temperature range is 40 -200 °C.
- e. Set Switch-off criterion
 - Auto: Shut off drying if the weight fluctuation is less than 1mg in required seconds, e.g. A60 means "in 60 seconds".
 - Manual: Shut off drying manually by pressing  .
 - Timed: Shut off drying after the preset drying time is elapsed.

 **Note:**

After a new method is created, the method will not be selected for testing automatically. To select this new method, tapping on  > **the new Method > Load.**

3. Place sample pan and close the lid to tare. Tare is performed automatically when the lid is closed.
4. Open the lid and add sample.
5. Close the lid to start drying.

 **Note:**

Drying will start automatically when the lid is closed. To disable auto-drying, navigate to  > **Your Method > Edit > Starting mode > Manual.**

 **Note:**

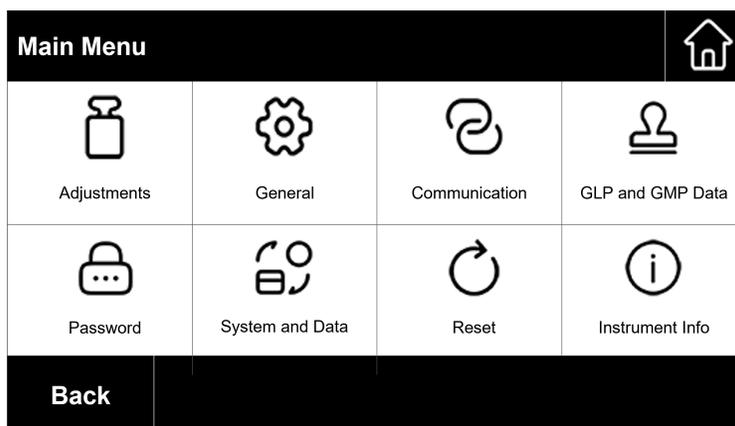
Drying will stop when meeting the switch-off criterion. To stop drying manually, tap on the .

6. Read the result. Tap on the screen to switch the display unit.
7. Press Tare to complete the test.

5. Settings

5.1. Enter the Settings

1. Tap on the **Setting** icon  to enter the settings.
2. Tap on the icon to enter the related menu.



5.2. Menu Map

Menu	Sub-menus
Adjustment	<ul style="list-style-type: none"> • Weight Adjustment • Temp adjust-Mechanical kit • History-weight adjust • History-temp adjust • End
General	<ul style="list-style-type: none"> • Language • Brightness • Beep • Auto dim • Auto off • Status light
Communication	<ul style="list-style-type: none"> • RS232 • USB
GLP and GMP Data	<ul style="list-style-type: none"> • Project name • Company name • Department name • Instrument ID
Password	<ul style="list-style-type: none"> • Reset Password
System and Data	<ul style="list-style-type: none"> • Date • Time • Export settings and methods • Import settings and methods • Clear methods • Clear results
Reset	<ul style="list-style-type: none"> • Reset General • Reset GLP/GMP • Reset Communication • Factory reset

Menu	Sub-menus
Instrument information	<ul style="list-style-type: none"> • Instrument information • Level Assist • Service Mode

6. Maintenance

6.1. Cleaning



WARNING: Electric Shock Hazard. Disconnect the equipment from the power supply before cleaning. Make sure that no liquid enters the interior of the instrument.



Attention: Do not use solvents, harsh chemicals, ammonia or abrasive cleaning agents.

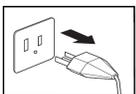
The housing may be cleaned with a cloth dampened with a mild detergent if necessary.

6.2. Replacing Power Line Fuse

If the instrument display fails to light after switching it on, check the power outlet first. If power is available, and the instrument fails to operate, the power fuse may be open (blown).

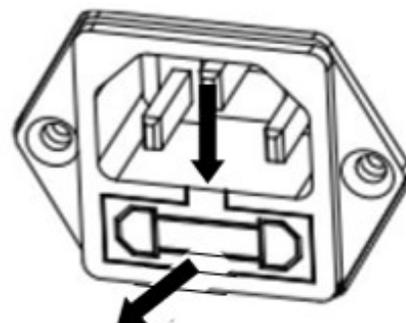


WARNING: Electric Shock Hazard. Disconnect the equipment from the power supply before replacing the fuse.



Steps to Replace Power Fuse Line

1. Use a screwdriver to take out the fuse holder.
2. Check the condition of the fuse. Replace blown fuse by those of the same type with the same rated value (6.3A 250VAC for 100-120VAC power supply or 2.5A 250VAC for 200-240VAC power supply according to the heating element).





Attention: If the fuse is good and power is available at the outlet, the cord or instrument may be defective. Try a new cord. If this does not work, the instrument should be sent back for servicing. The use of a fuse of a different type or with a different value, or bridging or shunting the fuse is not allowed and can possibly cause a hazard to your safety and lead to instrument damage!

6.3. Technical Support Information

For technical issues, please speak to an Authorized Ohaus Service Agent. Please visit our website www.ohaus.com to find the Ohaus office nearest you.

7. Technical Data

Conditions

The technical data is valid under the following conditions:

Indoor Use Only

Altitude: Up to 2000m

Operating temperature: 5 °C to 40 °C.

Humidity: Maximum relative humidity 80% for temperatures up to 31 °C decreasing linearly to 50% relative humidity at 40°C.

Electrical Supply: 100 - 120V~, 5A or 200 - 240V~, 2.5A (depending on region)

Mains supply voltage fluctuations: Up to ±10 % of the nominal voltage

Overvoltage category (Installation Category): II

Pollution Degree: 2

Power line fuse: 6.3A 250 VAC for 100V-120VAC power supply
2.5A 250VAC for 200V-240VAC power supply

Specifications

Model	MB92
Capacity	90
Readability	0.01%/0.001g
Repeatability (Std Dev) (g)	0.08% (3g sample)
	0.015% (10g sample)

Model	MB92
Moisture range	0.01% to 100% (0.01% to 1000% for regain mode)
Heating Element	Carbon fiber heater
Drying Programs	Standard, Fast, Ramp, Step
Temp range	40°C - 200°C
Switch-off Criteria	Timed, Auto (10, 30, 60, 90, 150 seconds), free (mg / s), manual
Adjustment	External adjustment mass - 50g
Power	100V – 120 VAC 5A 50/60 Hz or 200V – 240 VAC 2.5A 50/60 Hz (depending on region)
Operating temperature range	41° to 104°F / 5° to 40°C
Display type	4.3", QVGA, TFT touch screen
Display results	%moisture, %solids, %regain, time, temperature, weight, method name, drying curve and statistics
Pan size (mm)	90
Interface	RS232, USB host, USB device
Adjustable Feet and Level	Yes
Dimensions (WxHxD) (cm)	21x18x30
Net wt. (kg)	4.5
Shipping wt. (kg)	7

8. Compliance

Compliance to the following standards is indicated by the corresponding mark on the product.

Mark	Standard
	This product complies with the EU Directives 2011/65/EU (RoHS), 2014/30/EU (EMC), 2014/35/EU (LVD). The EU Declaration of Conformity is available online at www.ohaus.com/ce .
	This product complies with the EU Directive 2012/19/EU (WEEE). Please dispose this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. For disposal instructions in Europe, refer to www.ohaus.com/weee .

Mark	Standard
	EN 61326-1
 C US MC 173467	CAN/CSA-C22.2 No. 61010-1, CAN/CSA-C22.2 No. 61010-2-010 UL 61010-1, UL 61010-2-010

ISED Canada Compliance Statement:

CAN ICES-003(A) / NMB-003(A)

ISO 9001 Registration

The management system governing the production of this product is ISO 9001 certified.

8.1. FCC Supplier Declaration of Conformity**Unintentional Radiator per 47CFR Part B**

Trade Name: OHAUS CORPORATION

Model: MB92

Party issuing Supplier's Declaration of Conformity:

Ohaus Instruments (Changzhou) Co., Ltd.

C Block, 6 Zhengqiang Road, Xinbei District, Changzhou

Jiangsu 213022,

China

Phone: +86 519 85287270

Responsible Party – U.S. Contact Information:

Ohaus Corporation

8 Campus Drive, Suite 105

Parsippany, NJ 07054

United States

Phone: +1 973 377 9000

Web: www.ohaus.com

FCC Compliance Statement:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.