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Incubating Shaker
ISHD16HDG
ISHD23HDG
ISHD23CDG
Instruction Manual

Table of Contents

1. INTRODUCTION

This manual contains installation, operation and maintenance instructions for the Ohaus shakers. Please read the manual completely before using.

1.1. Safety Information

Safety notes are marked with signal words and warning symbols. These show safety issues and warnings. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results.

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.

Warning Symbols


General hazard


Caution, hot surface


Electrical shock hazard

Safety Precautions

Please read the entire instruction manual before operating the Incubating Orbital Shaker.

WARNING: DO NOT use the Incubating Orbital Shaker in a hazardous atmosphere or with hazardous materials for which the unit was not designed. In addition, the user should be aware that the protection provided by the equipment might be impaired if used with accessories not provided or recommended by the manufacturer, or used in a manner not specified by the manufacturer.

Always operate unit on a level surface for best performance and maximum safety.

DO NOT lift unit by the tray, front bezel or lid.

CAUTION! To avoid electrical shock, completely cut off power to the unit by disconnecting the power cord from the unit or unplug from the wall outlet. Disconnect unit from the power supply prior to maintenance and servicing.

Spills should be removed promptly.

DO NOT immerse the unit for cleaning.

DO NOT operate the unit if it shows signs of electrical or mechanical damage.

CAUTION! The caution hot indicator light warns that the temperature of the air in the chamber is above 40°C. The light will illuminate and remain lit when the temperature of the air in the chamber reaches approximately 40°C. When the heat is turned off, the caution hot indicator light will stay lit until the temperature of the air in the chamber is less than 40°C.

Earth Ground – Protective Conductor Terminal.

Alternating Current

1.2. Intended Use

The Ohaus shaker is intended for general laboratory use. Safety cannot be guaranteed if used outside of the intended use.

1.3. Package Contents

- Incubating Orbital Shaker
- Non-skid rubber mat
- Power cord
- Instruction manual

1.4. Installation

Upon receiving the Ohaus Incubating Orbital Shaker, check to ensure that no damage has occurred during shipment. It is important that any damage that occurred in transport is detected at the time of unpacking. If you do find such damage the carrier must be notified immediately.

After unpacking, it requires at least two (2) people to lift the Incubating Orbital Shaker, from the bottom, to place on a level bench or table, away from explosive vapors. It is preferable to use a hydraulic lift or other appropriate equipment when handling the unit.
Do not lift unit by the front bezel. Ensure that the surface on which the unit is placed will withstand typical heat produced by the unit. Always place the unit on a sturdy work surface.

The Incubating Orbital Shaker is supplied with a power cord that is inserted into the IEC connector on the back or side of the unit first, then it can be plugged into a properly grounded outlet. The 120V unit plugs into a 120 volt, 50/60 Hz source. The 230V unit plugs into a 230 volt, 50/60 Hz source.

This device complies with Part 15 rules.

1.5. Overview

Figure 1-1 ISHD16HDG

Model:	ISHD16HDG
Controls:	see section 1.6
Overall dimensions (L x W x H):	25.5 x 14 x 16” (64.8 x 35.6 x 40.6cm)
Interior dimensions (L x W x H):	13.4 x 12 x 9.5” (34 x 30.5 x 24.1cm)
Tray dimensions (L x W):	13 x 11” (33 x 27.9cm)
Power:	120V, 50/60 Hz / 230V 50/60 Hz
Power consumption:	450 watts
Fuses:	5mm x 20mm, 5 amp quick acting
Temperature range:	ambient +5°C to 65°C
Temperature uniformity:	±0.5°C at 37°C
Speed range:	15 to 500rpm
Speed accuracy:	above 100rpm: ±1% of set speed / below 100rpm: ±1rpm
Timer:	1 second to 9999 minutes (increased in 1 second increments)
Orbit:	0.75” (19mm)
Net Weight:	79 lbs (35.9 kg)
Ship weight:	83lbs (37.7kg)
Capacity:	~35lbs (16kg) @ 75rpm / ~5lbs (2.3kg) @ 500rpm

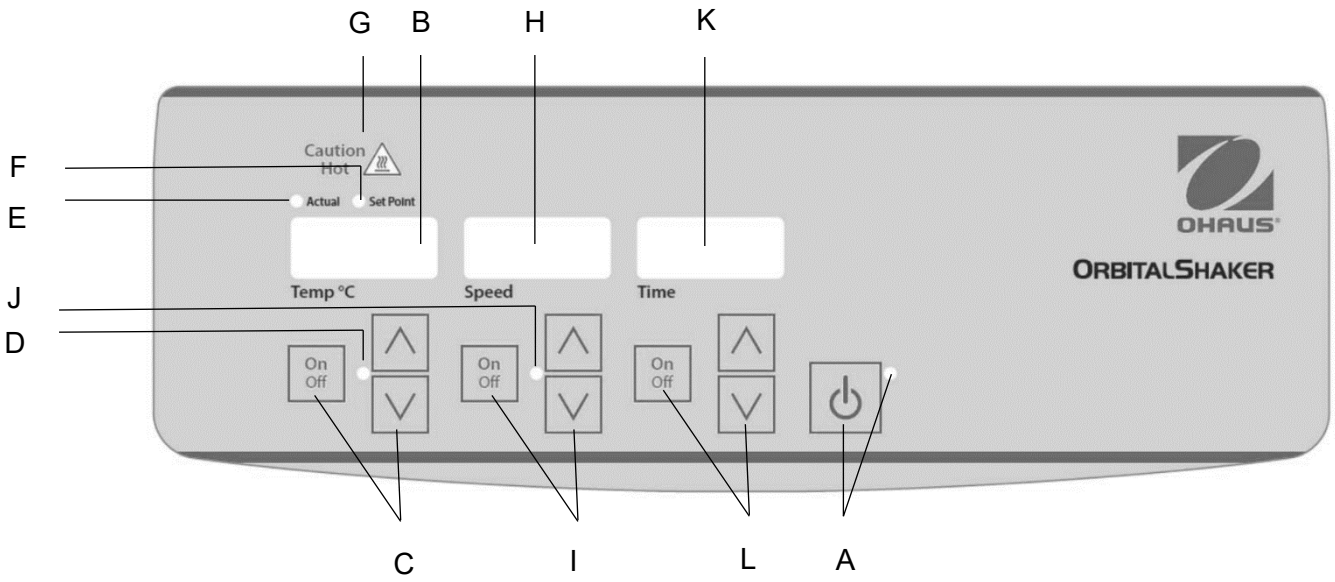
Figure 1-2 ISHD23HDG

Model:	ISHD23HDG
Controls:	see section 1.6
Overall dimensions (L x W x H):	32.1 x 26.6 x 23.5” (81.5 x 67.6 x 59.7cm)
Interior dimensions (L x W x H):	20.6 x 24.8 x 17” (52.3 x 63 x 43.2cm)
Tray dimensions (L x W):	18 x 18” (45.7 x 45.7cm)
Power:	120V 50/60Hz / 230V 50/60Hz
Power consumption:	800 watts
Fuses:	5mm x 20mm, 8 amp quick acting
Temperature range:	ambient +5°C to 65°C
Temperature uniformity:	±0.5°C at 37°C
Speed range:	15 to 500rpm
Speed accuracy:	above 100rpm: ±1% of set speed / below 100rpm: ±1rpm
Timer:	1 second to 9999 minutes (increased in 1 second increments)
Orbit:	1” (25mm)
Net Weight:	224 lbs (101.6 kg)
Ship weight:	228lbs (103.4kg)
Capacity:	~50lbs (22.7kg) @ 125rpm / ~10lbs (4.53kg) @ 500rpm
Communication:	RS232 Interface

Figure 1-2 ISHD23CDG

Model:	ISHD23CDG
Controls:	see section 1.6
Overall dimensions (L x W x H):	41.1 x 26.6 x 23.5” (104.4 x 67.6 x 59.7cm)
Interior dimensions (L x W x H):	20.6 x 24.8 x 17” (52.3 x 63 x 43.2cm)
Tray dimensions (L x W):	18 x 18” (45.7 x 45.7cm)
Power:	120V 50/60Hz / 230V 50/60Hz
Power consumption:	800 watts
Fuses:	5mm x 20mm, 10 amp quick acting
Refrigerant:	R404A, 7.1oz. by weight
Temperature range:	ambient -15°C to 65°C
Temperature uniformity:	±0.5°C at 37°C
Speed range:	15 to 500rpm
Speed accuracy:	above 100rpm: ±1% of set speed / below 100rpm: ±1rpm
Timer:	1 second to 9999 minutes (increased in 1 second increments)
Orbit:	1” (25mm)
Net Weight:	290 lbs (131.7kg)
Ship weight:	295lbs (133.8kg)
Capacity:	~50lbs (22.7kg) @ 125rpm / ~10lbs (4.53kg) @ 500rpm
Communication:	RS232 Interface

1.6. Control Panel



The front panel of the Incubating Orbital Shaker contains all the controls and displays needed to operate the unit

A. **Standby button/standby indicator light:** The standby indicator light will illuminate when the unit is plugged in. The unit will be in standby mode. Press the standby button to activate the temperature, speed and time functions. The standby indicator light will shut off and the temperature, speed and time displays will illuminate. Press the standby button again and the unit will once again be in standby mode.

B. **Temperature display:** Displays the actual/set-point temperatures in conjunction with the actual/set-point indicator lights.

C. Up/down arrows for set-point control. On/off button starts/stops the heating function.

D. The heat indicator light will be illuminated when the unit is heating.

E. **Actual indicator light:** Illuminates when the temperature displayed is the actual temperature of the air in the chamber.

F. **Set-point indicator light:** Illuminates when the set-point temperature is displayed.

G. **Caution hot indicator light:** Illuminates when the air temperature of the chamber is above 40°C (104°F).

H. **Speed display:** Displays the speed of the shaker.

I. Up/down arrows for set-point control. On/off button starts/stops shaking function.

J. The speed indicator light will be illuminated when the unit is shaking.

K. **Time display:** Displays accumulated time (continuous mode) or how much time is remaining (timed mode). The display range is from 0 to 9,999 minutes in one (1) second increments. The display will indicate minutes and seconds until the timer reaches 99 minutes and 59 seconds (99:59), then the display will automatically display minutes up to 9,999.

L. Up/down arrows for set-point control. On/off button starts/stops the time function.

2 OPERATION

2.1 Operation Instruction

The Incubating Orbital Shaker has been designed for the temperature, speed and time functions to work independently of one another. The temperature and speed can be reset without resetting the timer and the timer can be stopped and started without interrupting the heating and shaking functions.

1. **Getting ready:**
   a) Plug the power cord into a properly grounded outlet. The standby indicator light will illuminate, verifying power to the unit.
   b) Press the standby button to move the unit from standby mode. The standby indicator light will turn off and the temperature, speed and time displays will illuminate, displaying the previously used settings.

NOTE: ISHD23CDG units have a toggle switch on the left side. This switch must be in the "on" position (depress "I") for the unit to function properly.

2. **Setting temperature:**
   a) Press the up/down arrows below the temperature display until you reach the desired temperature. When you release the button, the display will blink off and then on indicating the new set temperature has been accepted.
   b) Press the on/off button to start the heating function. The indicator light below the temperature display will illuminate to indicate the heating function is in use and remain lit until heating has ceased.
   c) Temperature adjustments can be made without interrupting heating by using the up/down arrows below the temperature display. After the change has been made and you release the button, the display will blink off and then on indicating the new set temperature has been accepted.
   d) To stop the heating function, press the on/off button below the temperature display. The heat indicator light will turn off.

CAUTION HOT indicator:

The caution hot indicator light warns that the temperature of the air in the chamber is above 40°C (104°F). The light will illuminate and remain lit when the temperature of the air in the chamber reaches approximately 40°C (104°F). When the heat is turned off, the caution hot indicator light will stay lit until the temperature of the air in the chamber is less than 40°C (104°F).

3. **Setting speed:**
   a) Press the up/down arrows below the speed display until you reach the desired speed. When you release the button, the display will blink off and then on indicating the new set speed has been accepted.
   b) Press the on/off button to start the shaking function. The indicator light below the speed display will illuminate and blink until the set-point is reached. Once the set-point is reached the light will stop blinking and remain lit until shaking has ceased. The microprocessor controlled ramping feature slowly increases speed until the set-point is reached which helps to avoid splashing, and provides excellent low end control.
   c) Speed adjustments can be made without interrupting shaking by using the up/down arrows below the speed display. After the change has been made and you release the button, the display will blink off and then on indicating the new set speed has been accepted.
   d) To stop the shaking function, press the on/off button below the speed display. The speed indicator light will turn off.

4. **Setting time to zero (0:00) and continuous mode:** Accumulated time.
   a) Press and hold the on/off button below the time display. After three (3) seconds the display will indicate the previous set time.

b) Simultaneously press both the up and the down arrows, the display will indicate zero (0:00). The unit time is now set to zero (0:00) minutes. Alternately, you can use the up/down arrows to get to zero (0:00).
c) Press the on/off button below the time display. The display will indicate accumulated time. The up/down arrows will become inactive. To stop timer, press the on/off button again.
IMPORTANT: This will **NOT** interrupt the shaking or heating functions. Press the on/off button below the speed or temp displays to interrupt that function.
d) To reset, press and hold the on/off button below the time display. After three (3) seconds the display will indicate the previous set time, which was zero (0:00).

5. **Setting timed mode:** Programmed time.
a) Press the up/down arrows below the time display until you reach the desired time.
b) Start this function by pressing the on/off button below the time display. The unit will run for the selected time, the up/down arrows will become inactive while the timer is running. The unit will stop shaking/heating when time display reaches zero (0:00). Four (4) audible beeps will indicate the count down function is complete. The time display will default back to the set time. To repeat for the same time, simply press the on/off button again.
c) To interrupt an automatic timing cycle before it is completed, press the on/off button below the time display. The display will flash off and on to indicate the time function is on “hold”.
IMPORTANT: This will **NOT** interrupt the shaking/heating functions. Press the on/off button below the speed or temp displays to interrupt these functions. Restart the timer by pressing the on/off button below the time display. Unit will continue counting down to zero (0:00). When the display reaches zero (0:00), you will hear the four (4) audible beeps that indicate the count down function is complete and the shaking/heating function will cease.

6. **Turning unit off:**
To turn the unit off, press the standby button. The temperature, speed and time displays will be blank, the standby indicator light will illuminate. The Incubating Orbital Shaker should be kept in standby mode when not in use. To completely cut off power to the unit, disconnect the power cord from the unit or unplug from the wall outlet.

Operating tips

- Opening the lid on the Incubating Orbital Shaker will cause the unit to pause shaking and/or heating. Close the lid and the unit will resume shaking and/or heating at current settings.
- Centering your sample and even weight distribution on the tray helps with balance and stability.
- When possible, samples should be covered to prevent excess condensation inside the incubation chamber. Should condensation occur, the use of a desiccant is recommended.
- As a safety feature, a built-in program will shut power off to the motor if the tray is prevented from rotating, or the unit is overloaded beyond its recommended weight capacity.
- The shaker will automatically restart after a power interruption. Built-in memory maintains the last used temperature, speed and time settings during a power interruption.

2.2 Load Sensing Function

The Incubating Orbital Shaker is equipped with a load sensing function that can be activated by the user. This function provides protection against improper positioning of load and maximum load being exceeded. When activated, the unit will automatically sense improper load conditions and slow to a safe running speed, then display that speed followed by an E04 error message on the speed display. The unit will also beep three (3) times every 60 seconds until the error is reset by pressing the speed on/off button.

To activate the load sensing function use the following steps:
1 Place the unit in standby mode.
2 Press and hold the speed on/off button and then press and release the standby button. The unit will beep two (2) times, confirming the function is enabled.
3 To restore normal operation, remove AC power to the unit for ten (10) seconds and then restore.

If the E04 error occurs, be sure the load is within the maximum specification and properly balanced (centered on tray) and/or reduce sample size/speed before restarting the unit. If the E04 error occurs due to acceptable sample vibration or another vibration source, the vibration sensing function can be disabled as described above.

2.2.1 Beeper Preference (Muting Audible Alarm)

To silence beeper operation (except for error codes), with the unit in standby mode, press and hold the time on/off button and press the standby button. Release the standby button first, and then release the on/off button. To restore normal beeper operation, remove AC power to unit for ten (10) seconds and then restore.

2.2.2 Temperature Calibration Procedure (Single Point)

This procedure is used to fine tune and calibrate the Incubating Orbital Shaker at a specific temperature setting. This process may be repeated for up to three (3) separate set-points. If a fourth calibration set-point is entered, the first set-point entered will be overwritten.

1 Turn unit on.
2 Set desired temperature.
3 Stabilize one (1) hour or more, measuring the temperature with a temperature probe/thermometer centrally located in the chamber.
4 Press and hold standby button, then press the temperature up arrow once. The unit will beep two (2) times, confirming calibration mode. The display will now be flashing.
5 Press the temperature up/down arrows until the display on the unit matches the external temperature probe/thermometer. (Example: Desired temperature is 37ºC. Set unit at 37ºC per step 2. Follow steps 3 & 4. Display reads 37ºC and the external temperature probe/thermometer reads higher at 39ºC. Push the temperature up arrow so the display will match the external temperature device and also read 39ºC. By doing this a biased offset for 37ºC will be used when unit is set to 37ºC.)
6 Press standby button to exit calibration mode and return to normal heating.
This process may be repeated at the same set-point, multiple times for fine tuning if desired.
The unit will now use the biased offset for that specific temperature setting and increase or decrease temperature accordingly to bring the chamber temperature to set-point. The decimal point of the display will flash to indicate a biased offset is being used. All other temperature settings will use the standard internal calibration. This offset will be stored in memory and retained until reset.

2.2.3 To restore unit to factory setting

Press and hold the standby button while pressing the temperature down arrow once. The reset will be confirmed with two (2) audible beeps. Press the standby button to exit calibration mode and return to normal heating.

2.2.4 Speed Calibration Procedure

This procedure is used to self calibrate the symphony™ Orbital Shakers. The tray should be free of any samples, vessels, and accessories prior to calibrating.

1 Turn unit on. Speed and time displays will be illuminated.
2 Press and hold the standby button and momentarily press the speed on/off button. The speed display should read. “CAL”.
3 The unit will run for approximately one (1) minute and automatically calibrate.

2.2.5 RS-232 Serial Port

The RS-232 serial port provides two-way communications for data logging and unit control. If you need additional details, please contact your Ohaus representative for support.
NOTE: To comply with EMI/EMC requirements, the length of the external cable shall not exceed 3 meters.

2.3 ISHD23CDG Upper Ambient Control Limit

Please follow the procedure below if setting the ISHD23CDG unit’s temperature at/near the room’s ambient temperature. For optimum temperature control in the chamber of the ISHD23CDG unit, the upper ambient control limit is to be set a minimum of 3ºC above the measured room temperature.
Example: Measured (ambient) temperature is 22ºC; the upper ambient control limit should be set at a minimum of 25ºC.

With the unit at the heat/cool setting as described below, and in cool mode (“cool” on time display), a temperature setting is displayed in the temperature window. The default temperature setting of the ISHD23CDG is 28ºC. This is the factory set upper ambient control limit. This setting can be adjusted between 20ºC and 32ºC by the user.

- Any unit set point above the upper limit setting will heat only.
- Any unit set point below 20ºC will cool only.
- Any set point between 20ºC and the selected upper limit setting, up to 32ºC, the chiller and heater will both control chamber temperature.

2.3.1 Heat/Cool Setting Procedure to Adjust Upper Ambient Control Limit

1 Put unit in standby mode.
2 Press and hold the temperature down, speed down and time down arrows simultaneously, now press the standby button. Release all standby button and then release all 3 of the down arrows simultaneously.
3 Time display will now read “cool” and the temperature display will read 28°C. If the time display reads “heat” press the time up/down arrow until the word “cool” appears in the display.
4 Now you can set the upper ambient control limit. Using the temperature up/down arrows adjust this temperature to be 3°C above the measured ambient temperature.
5 Once the desired temperature is selected, press the standby button to return to normal operation.
6 This procedure does not require recalibrating the unit.

2.3.2 Additional ISHD23CDG Notes:

- ISHD23CDG units have a toggle switch on the left side. This switch must be in the “on” position (depress “I”) for the unit to function properly.
- For ISHD23CDG units, make sure the chiller’s hose is positioned to drain freely (into a sink when possible).
- Do not allow the end of the chiller hose to become submerged.
- If chiller hose is positioned in a drain container, the container should have a volume of at least 2 gallons if the unit will be unattended for 48 hours.
- There are two strips of adhesive on the bottom of the rubber mat. To prevent the mat from sliding on the tray during operation, remove the plastic film to expose the adhesive and firmly press the mat down onto the tray to secure.

3 MAINTENANCE

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The Incubating Orbital Shaker is built for long, trouble-free, dependable service. No lubrication or other technical user maintenance is required. However at least every three (3) months you should:

- Unplug the unit.
- Remove any accumulated dirt from the base and tray.
- Check all accessible items to make sure they are properly tightened.

The unit should be given the care normally required for any electrical appliance. Avoid wetting or unnecessary exposure to fumes. Spills should be removed promptly.

Do not use a cleaning agent or solvent on the front panel or lid, which is abrasive or harmful to plastics, nor one which is flammable. Always ensure the power is disconnected from the unit prior to any cleaning. If the unit ever requires service, contact your Ohaus representative.

3.1 Troubleshooting

The following table lists common problems and possible causes and remedies. If the problem persists, contact OHAUS or your authorized dealer.

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Problem	Cause	Solution
Unit fails to power on	Missing or blown fuse	Check and replace fuse if necessary. If problem persists, please contact your Ohaus representative for repair.
Unit is excessively noisy	Rattling or ticking sounds may indicate a loose screw on the tray	Ensure the tray is secured tightly. If problem persists, please contact your Ohaus representative for repair.
Unit not shaking at proper speed	-	Perform speed calibration. If problem persists, please contact your Ohaus representative for repair.
Unit not heating to proper temperature	-	Perform single point calibration. If problem persists, please contact your Ohaus representative for repair.
E1	RTD open or ±1°C temperature deviation from set-point (after unit has stabilized)	This error cannot be fixed by the end users. If problem persists, please contact your Ohaus representative for repair.
E2	RTD shorted or temperature below 0°C	This error cannot be fixed by the end users. If problem persists, please contact your Ohaus representative for repair.
E3	Mechanical obstruction Drive system failure Ceased bearing Drive belt broken	Remove mechanical obstruction. If problem persists, the reason may be the drive system. Please contact your Ohaus representative for repair.
E4	Improper positioning of load or Maximum load exceeded	Ensure the load is evenly distributed and does not exceed the maximum load capacity for the unit. See “Load Sensing Function” section. Verify load has not exceeded the maximum allowable weight. Reduce load if necessary. If error code resumes, contact your Ohaus representative for repair.
E6	Over temperature error	This error cannot be fixed by the end user. Please contact your Ohaus representative for repair.

3.2 Service Information

If the troubleshooting section does not resolve or describe your problem, contact your authorized OHAUS service agent. For service assistance or technical support in the United States call toll-free 1-800-672-7722 ext. 7852 between 8:00 AM and 5:00 PM EST. An OHAUS product service specialist will be available to provide assistance. Outside the USA, please visit our website, www.ohaus.com to locate the Ohaus office nearest you.

Serial Number: _____

Date of Purchase: _____

Supplier: _____

4 TECHNICAL DATA

Operating Conditions: Indoor use only.

Temperature: 15 to 32°C (59 to 90°F)

Humidity: maximum 80% relative humidity, non-condensing

Altitude: 0 to 6,562 ft (2000 M) above sea level

Non-Operating Storage:

Temperature: -20 to 65°C (-4 to 149°F)

Humidity: maximum 80% relative humidity, non-condensing

Installation Category II and Pollution Degree 2 in accordance with IEC 664

5 COMPLIANCE

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

Mark	Standard
CE	This product complies with the applicable harmonized standards of EU Directives 2011/65/EU (RoHS), 2014/30/EU (EMC) and 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 of 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.
	EN 61326-1
TÜV SÜD C US	CAN/CSA-C22.2 No. 61010-1, CAN/CSA-C22.2 No. 61010-2-010, CAN/CSA-C22.2 No. 61010-2-051 UL 61010-1, UL 61010-2-010, UL 61010-2-051

ISED Canada Compliance Statement
This Class A digital apparatus complies with Canadian ICES-003.

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

FCC Supplier Declaration of Conformity

Unintentional Radiator per 47CFR Part B

Trade Name: OHAUS CORPORATION
Model or Family identification: ISHD16HDG / ISHD23HDG / ISHD23CDG

Party issuing Supplier's Declaration of Conformity:

Ohaus Instruments (Changzhou) Co., Ltd.
2F, 22 Block, 538 West Hehai Road, Xinbei District, Changzhou
Jiangsu 213022,
China
Phone: +86 519 85287270

Responsible Party – U.S. Contact Information:

Ohaus Corporation
7 Campus Drive, Suite 310
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.

LIMITED WARRANTY

OHAUS products are warranted against defects in materials and workmanship from the date of delivery through the duration of the warranty period. During the warranty period OHAUS will repair, or, at its option, replace any component(s) that proves to be defective at no charge, provided that the product is returned, freight prepaid, to OHAUS.

This warranty does not apply if the product has been damaged by accident or misuse, exposed to radioactive or corrosive materials, has foreign material penetrating to the inside of the product, or as a result of service or modification by other than OHAUS. In lieu of a properly returned warranty registration card, the warranty period shall begin on the date of shipment to the authorized dealer. No other express or implied warranty is given by OHAUS Corporation. OHAUS Corporation shall not be liable for any consequential damages.

As warranty legislation differs from state to state and country to country, please contact OHAUS or your local OHAUS dealer for further details.