Model 26-2 Frisker User's Manual

Ludlum Measurements

March 2025

Serial Number: PF002406 and Succeeding

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LUDLUM MEASUREMENTS, INC
501 OAK STREET, P.O. BOX 810
SWEETWATER, TEXAS 79556
325-235-5494, FAX: 325-235-4672

STATEMENT OF WARRANTY

Ludlum Measurements, Inc. warrants the products covered in this manual to be free of defects due to workmanship, material, and design for a period of twelve months from the date of delivery. The calibration of a product is warranted to be within its specified accuracy limits at the time of shipment. In the event of instrument failure, notify Ludlum Measurements to determine if repair, recalibration, or replacement is required.

This warranty excludes the replacement of photomultiplier tubes, G-M and proportional tubes, and scintillation crystals which are broken due to excessive physical abuse or used for purposes other than intended.

There are no warranties, express or implied, including without limitation any implied warranty of merchantability or fitness, which extend beyond the description of the face there of. If the product does not perform as warranted herein, purchaser's sole remedy shall be repair or replacement, at the option of Ludlum Measurements. In no event will Ludlum Measurements be liable for damages, lost revenue, lost wages, or any other incidental or consequential damages, arising from the purchase, use, or inability to use product.

RETURN OF GOODS TO MANUFACTURER

If equipment needs to be returned to Ludlum Measurements, Inc. for repair or calibration, please send to the address below. All shipments should include documentation containing return shipping address, customer name, telephone number, description of service requested, and all other necessary information. Your cooperation will expedite the return of your equipment.

LUDLUM MEASUREMENTS, INC.
ATTN: REPAIR DEPARTMENT
501 OAK STREET
SWEETWATER, TX 79556

800-622-0828 325-235-5494
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CHAPTER 1

INTRODUCTION

The Model 26-2 is an ergonomic, lightweight instrument, which utilizes a standard 15.5 cm^2 (2.4 in^2) Geiger-Mueller "pancake" detector intended for alpha/beta contamination frisking or for measuring gamma exposure or dose radiation. The instrument features a large backlit LCD (liquid crystal display), a piercing audio warning, and easy, intuitive use in a single-handed platform. A comfortable wrist strap and lanyard are also included for keeping the instrument close and secure.

The unit body is made of lightweight but durable plastic. It is intended for outdoor use and can resist splashing water. There is also a headphone option available (not included). The instrument can be modified to include a standard 1/8 inch headphone jack (part number 4498-538).

Caution is needed with handling the instrument because of the thin radiation detector's window.

Three modes of operation are available for the Model 26-2 ; RATE, MAX, and TIMED FRISK. RATE mode operation measures contamination from background levels up to 1.99 kcps or 100.0 kcpm. MAX mode is used to capture the highest count rate detected – useful for finding peak contamination rate, or frisking when the display is not visible. TIMED FRISK mode allows the user to perform a contamination frisk for a predetermined time. The display will be automatically backlit if light levels are low. The display backlight can also be configured for 'Continuous On' operation. RATE and MAX modes can be silent or may utilize a 'click' audio; the 'click' audio is always on during TIMED FRISK mode. RATE and TIMED FRISK modes feature non-latching continuous tone alarms for count rates above alarm levels. The continuous tone alarms in MAX mode will latch with the captured highest count rate, and will clear when the MAX count is acknowledged and then reset. The RATE, MAX, and TIMED FRISK modes can also be disabled, simplifying the unit even further

The Model 26-2 allows up to three count rate alarm settings, which are automatically evaluated from lowest to highest values. Four LEDs show the current alarm status; a green LED for no alarm, and three red LEDs, which work in combination to signify the alarm level.

Setup of the instrument is accomplished through the front-panel buttons. The advanced user can set response time, auto-response rate (Fast or Slow), up to three Count Rate alarm levels, frisk time, and available operational modes. Setup can be disabled via the internal

switch on the Model 26-2 in order to protect settings.

The unit is operated with two AA batteries for operation from -40 to 65 °C (-40 to 150 °F) . Battery life should be approximately approximately 250 hours of operation (less if the backlight is configured for continuous on) with a low-battery indicator on the LCD warning when less than 16 hours of battery life remain.

CHAPTER 2

GETTING STARTED

2.1 Unpacking and Repacking

Remove the calibration certificate and place it in a secure location. Remove the instrument and ensure that all of the items listed on the packing list are in the carton. Check individual item serial numbers and ensure calibration certificates match between instruments and detectors (if applicable). The Model 26-2 serial number is located on a label on the front side of the unit.

To return an instrument for repair or calibration, provide sufficient packing material to prevent damage to the instrument during shipment. Every returned instrument must be accompanied by an Instrument Return Form, which can be downloaded from the Ludlum website at `www.ludlums.com`. Find the form by clicking the “Support” tab and selecting “Service Department” from the drop-down menu. Then choose the appropriate form located under the "Returned Goods Form" heading.

2.2 Battery Installation

A low-battery indicator appears at the bottom of the LCD when less than 16 hours of battery life remain. When this indicator is present, follow these steps to replace the four standard AA batteries:

1. Grab the ring on the screw.
2. Turn the ring one quarter turn counter-clockwise.
3. Release and remove the battery cover
4. Replace the two AA batteries.
5. Firmly insert the barb of the battery cover completely into the body of the Model 26.
6. Replace the cover and turn ring one quarter of a turn clockwise to secure.

If the battery installation procedure is not followed correctly, and the barb is not inserted into the body of the instrument correctly, the barb may break off.

2.3 Instrument Operational Test

Turn the instrument ON by pressing the ON/ACK button for about a second, and then releasing. The instrument should activate all the LCD segments and the audio, and cycle through the LEDs. Observe the device during this time. If any LCD segments are missing, or if audio or any LEDs fail to work, the device is in need of repair. Please refer to the figure below.

Figure 2.1: Startup display for the Model 26-2, with all LCD segments shown.

It then displays the firmware version number before displaying the current count rate, starting at 0 cpm (or 0.0 cps). Ensure that the low-battery indicator is not present. If the low-battery indicator is present, replace the batteries as soon as possible. Under extremely low-battery conditions, be aware that the unit may not even turn on or may turn itself off abruptly.

A reference reading with a check source, 1 µCi (37 kBq) of ^{137}Cs for example, should be obtained at the time the instrument is received in the field. Small check sources of radiation are available from Ludlum Measurements. While exempt from many regulations because of their small size, these sources are large enough to produce a response on this instrument. The detector's position is indicated by the circular screen on the back of the Model 26-2: the seam between the enclosure halves indicates the approximate center of the detector. If this procedure is done routinely with the same radiation source, instrument malfunction may be detected when anomalous readings are observed. If at any time the instrument fails to read within 20% of the reference reading when using the same check source, it should be sent to a calibration facility for recalibration and/or repair.

Example of log reading:

Check Source #_____ Count Rate_____

Once this procedure has been completed, the instrument is ready for use.

2.4 Detector Failure Diagnostic

Note that the Model 26-2 has its own diagnostic tests to ensure that the detector is functioning correctly. The Model 26-2 can detect when the radiation detector is malfunctioning and will flash the display to indicate a fault. If the detector stops detecting radiation for 60 seconds, normally through a puncture of the thin mica window, the Model 26-2 will flash a zero reading for the currently selected units. If this indication is observed, remove the unit from service and have it evaluated by a qualified repair and calibration technician.

Figure 2.2: Detector Failure display (shown for cpm); will also flash.

2.5 Detector Over Range

If the unit has an internal malfunction that causes it to count high or excessively, the unit flashes the maximum rate for the currently selected units as a warning. The user should ensure whether this is being caused by a high radiation field or by internal malfunction.

Figure 2.3: Detector Over Range (shown for cpm); will also flash.

2.6 Instrument Use And Controls

With only two front-panel buttons, the Ludlum Model 26-2 is simple and easy to use with minimal training required. Default operation is RATE mode, and the display shows the current count rate. Pressing the MODE button will switch the instrument to MAX mode, which will display the highest count rate detected. Pressing the MODE button again will switch it to TIMED FRISK mode, which will display the Frisk timer. Note that RATE, MAX, and TIMED FRISK modes can be locked out in the setup process.

See the Model 26-2 front-panel drawing at the beginning of this manual to reference the following controls:

ON/ACK Button: Used to power the Model Model 26-2 ON and OFF, silence click audio, reset MAX mode, start/reset the TIMED FRISK, and acknowledge audio alarms.

- Power On: Press for approximately one second and release (all LCD segments will activate, and firmware version will be shown).
- Power Off: Press for approximately five seconds (audio will beep and LCD will clear).
- Normal Operation: Will silence 'click' audio in RATE, MAX and TIMED FRISK modes, reset MAX mode display, start Frisk Timer in TIMED FRISK mode, and acknowledge/silence audio alarms in all modes of operation.

Mode Button: Used to advance between the three operating modes: RATE, MAX, and TIMED FRISK. Will reset an active frisk in TIMED FRISK mode. Note that RATE, MAX and/or TIMED FRISK modes may be disabled from use by the administrator or calibrator.

ALARM STATUS LEDs: Used to indicate the current non-alarm/alarm status, also used to signify TIMED FRISK status.

Green LED: Flashes at a medium pace during non-alarm conditions in RATE and MAX modes, and while a frisk is active in TIMED FRISK mode; will be steady on when a frisk is not active in TIMED FRISK mode; will turn off during the first four seconds of operation to signify the window for Setup Entry.

Red LEDs: Flashes in patterns to indicate the alarm level in all modes.

- Lowest Alarm Level (Active if two or more alarms enabled)

- Middle Alarm Level (Active if all three alarms enabled)

- Highlest Alarm Level (Active if one or more alarms enabled)

2.7 RATE Mode Operation

In RATE mode the current count rate will be displayed.

Under a non-alarm condition, the green LED will be flashing; pressing the On/ACK button will turn the 'click' audio on/off.

If an alarm condition is present, pressing the On/ACK button will acknowledge and turn off the continuous tone alarm audio. A change from a lower-level alarm condition to a higher-level alarm condition will re-trigger the continuous tone alarm. Under an alarm condition,

the ALARM display indicator will remain on, and the appropriate red Alarm Status LEDs will be active. Alarms are non-latching in RATE mode.

If other operational modes are available, pressing the MODE button will move to the next available operational mode.

Figure 2.4: RATE mode display showing typical background radiation rate and the low-battery icon. Green LED will be flashing.

2.8 MAX Mode Operation

While in MAX mode, the highest detected count rate (since the last reset) is displayed. The word MAX will be displayed when in MAX mode.

Under a non-alarm condition, the green LED will be flashing; pressing the On/ACK button will turn the 'click' audio on/off. Pressing the On/ACK button a second time will reset the display and enable the 'click' audio. If an alarm condition is present, pressing the On/ACK button once will acknowledge and turn off the continuous tone alarm audio (The 'click' audio will remain as selected under non-alarm conditions). Pressing the On/ACK button a second time will reset the display and clear the alarm condition. A change from a lower-level alarm condition to a higher-level alarm condition will re-trigger the continuous tone alarm. Under an alarm condition, the ALARM display indicator will remain on, and the appropriate red Alarm Status LEDs will be active. Alarms in MAX mode latch with the display.

If other operational modes are available, pressing the MODE button will move to the next available operational mode.

Figure 2.5: MAX mode operation display with ALARM indicators for Lowest Alarm Level. A single red LED will be flashing.

2.9 TIMED FRISK Mode

In TIMED FRISK mode, operation depends on the current state of the Frisk Timer.

When the Frisk Timer is not actively counting down:

- The display will alternate between showing the Frisk Time for four seconds and the current count rate for one second. The green LED will be steady ON.
- Under a non-alarm condition, pressing the On/ACK button starts the Timed Frisk.
- If an alarm condition is present, pressing the On/ACK button will acknowledge and turn off the continuous tone alarm audio. A change from a lower-level alarm condition to a higher-level alarm condition will re-trigger the continuous tone alarm. Under an alarm condition, the ALARM display indicator will remain on, and the appropriate red Alarm Status LEDs will be active. Alarms are non-latching in TIMED FRISK mode.
- If other operational modes are availalble, pressing the MODE button will move to the next available opeartional mode.

When the Frisk Timer is acive:

- The display will alternate between showing the current count rate for four seconds and the Frisk Time remaining for one second. The green LED will alternate between ON and OFF.
- Under a non-alarm condition, pressing the On/ACK button will turn the ‘click’ audio on/off.
- If an alarm condition is present, pressing the On/ACK button will acknowledge and turn off the continuous tone alarm audio. A change from a lower-level alarm condition to a higher-level alarm condition will re-trigger the continuous tone alarm. Under an alarm condition, the ALARM display indicator will remain on, and the appropriate red Alarm Status LEDs will be active. Alarms are non-latching in TIMED FRISK mode.

- Pressing the MODE button will cancel the current Timed Frisk and reset the Frisk Timer. If a Timed Frisk is canceled, a long audio tone will sound.
- Completion of a Timed Frisk will be indicated with two short audio beeps.

Figure 2.6: TIMED FRISK mode operation showing Frisk Timer of 3 minutes. Green LED will be steady ON.

CHAPTER 3

SPECIFICATIONS

Detector: pancake GM (Geiger-Mueller) detector, stainless steel screen

Linearity: ±10%

Window Area: Active: 15.51 cm^2 (2.4 in^2); Open: 12.26 cm^2 (1.9 in^2)

Window Protective Screen: 79% open

Efficiency (4pi) Surface Plane:

- **Alpha:** 11% for ^{239}Pu
- **Beta:** 14% for ^{99}Tc; 32% for ^{32}P; 2% for ^{14}C; 22% ^{90}Sr/Y; 0.2% for ^{125}I
- **Gamma:** 3300 cpm/mR/h or 5.5 cps/µSv/h (^{137}Cs); ≤ 1% for ^{99m}Tc

Resolving Time: approximately 110 µs as defined by IEC 60325

Alarms: up to three count rate alarm setpoints, adjustable over the display range.

Alarms: count rate and scaler alarm setpoints adjustable over the display range

Overload: high rate saturation protection, indicated by flashing display and audio alarm, prevents false display of lower count rates

Loss of Count Protection: after 60 seconds of no pulses from detector, unit will flash a zero reading and the alarm audio will be triggered

LCD Display: 3½ digit LCD with large 12.7 mm (0.5 in.) digits, (k)cps, (k)cpm, low-battery indicator, MAX, ALARM

Display Range:

- 0.1 cps to 1.99 kcps
- 1 cpm to 100.0 kcpm

Backlight: built-in ambient light sensor automatically activates low-power LED backlight, unless internal dip switch 1 is set to continuous-on

User Controls:

- ON/OFF/Quiet - press to turn ON, tap to alternate between 'click' audio and QUIET, hold for OFF; press to start Timed Frisk
- MODE - alternates between RATE (count rate), MAX (captures peak rate), and TIMED FRISK (preset frisk time) mode; press to stop a Timed Frisk

Count Time Range: 1 second to 20 minutes, or "0" enables continuous counting until stopped by user

Response Time: user-selectable from 1 to 60 seconds, or Auto-Response Rate FAST or SLOW

Click Audio: greater than 60 dB at 0.6 m (2 ft); approximately 4.5 kHz

Power: two "AA" batteries

Battery Life: approximately 250 hours of operation (less with backlight configured for continuous on), 16-hour low-battery warning

Battery Life: approximately 1000 hours of operation (as low as 500 hours with backlight configured for continuous on), 16-hour low-battery warning

Construction: high-impact plastic with water-resistant rubber seals and separate battery compartment

Environmental Rating: NEMA (National Electrical Manufacturers Association) rating of 3 or IP (Ingress Protection) rating of 53

Distance from Surface Plane to Grill: 0.32 cm (one-eighth inch)

Size: 4.6 x 6.9 x 27.2 cm (1.8 x 2.7 x 10.7 in.) (H x W x L)

Weight: 0.45 kg (1.0 lb)

CHAPTER 4

SETUP MODE

Only advanced users or administrators should consider changing any of the parameters in the following section. Incorrect settings could jeopardize the safety of users depending on this instrument.

4.1 Setup Overview

Your instrument has been shipped from Ludlum Measurements only after passing electronic checkout, a 30-hour burn-in process, and a careful calibration process. Calibration papers are supplied with each instrument shipped from Ludlum Measurements.

Recalibration should be accomplished after a predetermined calibration frequency (Ludlum Measurements, Inc. recommends no more than a one-year interval), or when the operation of the instrument is suspect or maintenance has been performed on the instrument. Recalibration is not normally required following instrument cleaning or battery replacement.

Ludlum Measurements offers a full-service repair and calibration department. Not only do we repair and calibrate our own instruments, we also service most other manufacturers' instruments. Calibration procedures are available upon request for customers who choose to calibrate their own instruments.

Ludlum Measurements, Inc. recommends recalibration at intervals no greater than one year, assuming that regular operational checks are performed. Check the appropriate local, state, and federal regulations to determine required recalibration intervals.

4.2 Default Setup Values

Setup Parameter	Default Value	Notes
Count Rate Units	cpm	Counts per minute
Response Time	0	Enable Auto Response
Auto-Response Rate	F	Fast Auto Response
Count Rate Alarm Point 1	0	Disabled
Count Rate Alarm Point 2	0	Disabled
Count Rate Alarm Point 3	0	Disabled
Frisk Time	3:00	Three Minutes
Operational Modes	0	All Modes Available
Low Light Threshold	55	

4.3 Entering Setup Mode

To enter setup mode, power down the Model 26-2 , then turn the unit back ON. When "0.0 cps" (or "0 cpm") appears on the LCD, press the MODE button three times (within four seconds) to enter Setup mode. The green LED will remain off during the four-second window for entry to Setup mode, and will resume normal operation when the window has closed. Entry to Setup mode can be confirmed when the numeric portion of the display is off and only the rate units (either cps or cpm) are displayed. If you simply wish to view the parameters, you may do so by not pressing any other buttons. The parameters will change every four seconds when no buttons are pressed. The unit will return automatically to normal mode after the last parameter is presented.

SETUP PROTECT: The Model 26-2 parameters can be protected from unauthorized changes via the internal switch located on the Model 26-2 circuit board. To change the switch, open the battery compartment and remove the batteries from the Model 26-2 . Next, loosen the four captive Phillips head screws which fasten the detector cover.

Now turn the Model 26-2 over so that the detector is facing up. Gently remove the plastic case that covers the back of the instrument, paying careful attention not to lose the protective screen that covers the detector itself. Remove the protective screen, and remove the GM pancake detector with a gentle pull upwards of the detector stem. The DIP (dual inline position) switch should now be visible below the detector retainer.

To protect the Model 26-2 from changes in Setup mode, slide DIP Switch 2 (closest to the battery compartment) to the ON (right) position. If DIP Switch 2 is in the OFF (left) position, changes are allowed in Setup mode. Once the DIP Switch is set as desired, gently replace the detector in the detector retainer, and be sure the detector stem is solidly in place in the detector stem clip. Place the detector screen over the detector, and fit the plastic case on the back of the instrument. Turn the instrument over and tighten the four Phillips head screws. Install the batteries, and replace the battery cover. Note that with the DIP Switch 2 in the ON position. Setup mode may be entered and parameters viewed, but changes cannot be made.

DISPLAY BACKLIGHT 'Continuous On': The Model 26-2 display backlight can be set to re-

main on continuously during operation. Follow the steps above for **SETUP PROTECT**, but use DIP Switch 1 for display backlight selection. Setting DIP Switch 1 to the ON (right) position will configure the display backlight to remain on during operation. Set DIP Switch 1 to the OFF (left) position, and the display will be backlit only when light levels are low.

Setting the display backlight for continuous-on operation can result in reduced battery life.

4.4 Setup Mode Operation

Once the Model 26-2 is in Setup mode, the count rate units will be displayed on the LCD, and the units will be blinking, indicating it as the selected item. Use the MODE button to adjust the value for the selected item. When the appropriate value is selected for that item, press the ON/ACK button to move to the next item. When the desired value is displayed, simply wait for four seconds. The MModel 26-2 will then switch to the next parameter. When SETUP is in PROTECT mode, the Setup parameters will cycle through to display the set values, but changes are not possible.

The order of Setup parameters for the Model 26-2 is as follows:

Count Rate Units (Default cpm) - Use MODE to select cps or cpm.

Reponse Time (Default 0) - Use ON/ACK to select the value to be adjusted and MODE to adjust the value. Setting Response Time to 0 will enable Auto-Response mode for the Model 26-2 . Available values are:

- Ones Place (0-9)
- Tens Place (0-6, 6 forces max Response Time of 60)

Auto-Response Rate (Default F) - Use MODE to select Fast (F) or Slow (S).

When operating in Auto-Response mode, the Model 26-2 will vary the Response Time based on the Auto-Response Rate selected (Fast or Slow) and the current Count Rate. The Auto-Response Rate selection is:

Count Rate	Auto Resonse Time - Fast (Seconds)	Auto Response Time - Slow (Seconds)
Less than 3 kcpm (50 cps)	5	10
Between 3 kcpm and 4 kcpm (67 cps)	4	8
Between 4 kcpm and 6 kcpm (100 cps)	3	6
Between 6 kcpm and 12 kcpm (200 cps)	2	4
More than 12 kcpm	1	2

The Model 26-2 also utilizes a Step function in Auto Response mode, which enables faster response to a significant increase or decrease in Count Rate. When the instrument detects a sudden change in count rate from the detector, the response time is reduced to 1 second to quickly show the new value.

Count Rate Alarm Point 1 (Default 0)

Count Rate Alarm Point 2 (Default 0

Count Rate Alarm Point 3 (Default 0)

Use ON/ACK to select the value to adjust, and MODE to adjust the value. All Count Rate Alarm Point units will be the same as selected earlier with Count Rate Units. Setting a Count Rate Alarm Point to 0 disables that Alarm Point. Red LEDs will light as indicated above to distinguish which Alarm Point is being shown. Available values are:

- Ones Place (**0-9**)
- Tens Place (**0-9**)
- Hundreds Place (**0-9**)
- Thousands Place (**1** on or off)
- Number of Decimal Places (0, 1, or 2 - only available if k selected)
- Range (k on or off)

Frisk Time (Default 3 minutes) - Use ON/ACK to select the value to adjust, and MODE to adjust the value. Setting Frisk Time to 0 enables continuous count until reset. If 19 minutes are selected, then the maximum seconds value is 60; otherwise, the maximum seconds value is 59. Available values are:

- Ones Place (**0-9**)
- Tens Place (**0-6, 6** only available if minutes value is 19)
- Hundreds Place (**0-9**)
- Thousands Place (**1** on or off)

Operational Modes (Default 0) - Use MODE to adjust the value. Available values are:

0 - RATE, MAX, and TIMED FRISK Modes

1 - RATE and MAX Modes

2 - RATE and TIMED FRISK Modes

3 - MAX and TIMED FRISK Modes

4 - RATE Mode Only

5 - MAX Mode only

6 - TIMED FRISK Mode only

Low Light Threshold (Default 55) - Use ON/ACK to select the value to adjust, and MODE to adjust the value. Available values are:

- Ones Place (**0-9**)
- Tens Place (**0-9**)
- Hundreds Place (**0-9**)

If no buttons are pressed for four seconds, the Model 26-2 will switch to the next parameter, and if on the last parameter, will save the parameters and exit Setup mode, returning to RATE mode operation.

CHAPTER 5

SAFETY CONSIDERATIONS

5.1 Environmental Conditions for Normal Use

Indoor or outdoor use (While rain resistant, user is cautioned to avoid getting water through detector opening.)

Temperature range of -40 to 65 °C (-40 to 150 °F)

Maximum relative humidity of less than 95% (non-condensing)

Pollution Degree 3 (as defined by IEC 664): (Occurs when conductive pollution or dry nonconductive pollution becomes conductive due to condensation. This is typical of industrial or construction sites.)

Not certified for use in an explosive atmosphere

5.2 Warning Markings and Symbols

The operator or responsible body is cautioned that the protection provided by the equipment may be impaired if the equipment is used in a manner not specified by Ludlum Measurements, Inc.

The GM tube face can rupture above 8000 feet in altitude. When transporting this detector by air, use an airtight container in order to avoid sudden atmospheric changes resulting in tube failure.

The Model 26-2 Survey meter is marked with the following symbols:

The “crossed-out wheelie bin” symbol notifies the consumer that the product is not to be mixed with unsorted municipal waste when discarding. Each material must be separated. The symbol is placed on the label located on the side panel. See section 10, “Recycling,” for further information.

The “CE” mark is used to identify this instrument as being acceptable for use within the European Union. This symbol is located on the label on the side panel.

CAUTION (per ISO 3864, No. B.3.1): designates hazardous live voltage and risk of electric shock. During normal use, internal components are hazardous live. This instrument must be isolated or disconnected from the hazardous live voltage before accessing the internal components. This symbol appears on the label on the side panel. Be sure to take the precautions noted in the next section whenever necessary.

5.3 Cleaning and Maintenance Precautions

The Model 26-2 may be cleaned externally with a damp cloth, using only water as the wetting agent. Observe the following precautions when cleaning or performing maintenance on the instrument:

- Turn the instrument OFF and remove the batteries.
- Allow the instrument to sit for one minute before cleaning the exterior or accessing any internal components for maintenance.

CHAPTER 6

REVISION HISTORY

This section of the manual will be updated with each revision of the Model 26-2 in order to document changes over time. Ludlum Measurements' policy is to provide for free, the latest firmware release for an instrument for the life of that instrument. Note that not all new firmware features will be available for older instruments due to hardware design changes. If this is the case, it will be noted in the manual.

January 2013: New manual.

February 2013: Changed NORMAL mode to RATE mode throughout manual. Added operational descriptions for RATE, MAX, and TIMED FRISK modes to Chapter 2. Corrected non-latching/latching alarm wording (Page 1). Corrected instructions for battery lid removal in Chapter 2 Battery Installation. Corrected Scaler Time to Frisk Time in Chapter 4.

November 2013: Added Battery Installation section with more detailed procedure in Chapter 2.

December 2013: Corrected battery reference to AA. Deleted Surface Emissions Rate in Specifications Chapter 3.

March 2014: Added Window Protective Screen to Specifications, updated Window Area numbers in Specifications.

August 2016: Added description of headphone option in Introduction. Added information about Instrument Return Form to Chapter 2.

October 2016: Added Low Light Threshold to Chapter 4 above the bottom note.

December 2016: Added Linearity to Specifications, Chapter 3.

July 2022: In Chapter 5 Safety Considerations, deleted "No maximum altitude" under Environmental Conditions for Normal Use and added a second Caution note under Warning Markings and Symbols about the GM tube face rupturing above 8000 feet.

May 2024: In Chapter 3 Specifications for Efficiency, changed the ^{99}Tc efficiency to 14%.

September 2024: In Chapter 1, corrected the size of the detector to 15.5 cm^2 (2.4 in^2).

March 2025: Added Chapter 8 Maintenance and Spare Parts.

CHAPTER 7

RECYCLING

Ludlum Measurements, Inc. supports the recycling of the electronics products it produces for the purpose of protecting the environment and to comply with all regional, national, and international agencies that promote economically and environmentally sustainable recycling systems. To this end, Ludlum Measurements, Inc. strives to supply the consumer of its goods with information regarding reuse and recycling of the many different types of materials used in its products. With many different agencies – public and private – involved in this pursuit, it becomes evident that a myriad of methods can be used in the process of recycling. Therefore, Ludlum Measurements, Inc. does not suggest one particular method over another, but simply desires to inform its consumers of the range of recyclable materials present in its products, so that the user will have flexibility in following all local and federal laws.

The following types of recyclable materials are present in Ludlum Measurements, Inc. electronics products, and should be recycled separately. The list is not all-inclusive, nor does it suggest that all materials are present in each piece of equipment:

Batteries	Glass	Aluminum and Stainless Steel
Circuit Boards	Plastics	Liquid Crystal Display (LCD)

Ludlum Measurements, Inc. products that have been placed on the market after August 13, 2005, have been labeled with a symbol recognized internationally as the “crossed-out wheelie bin,” which notifies the consumer that the product is not to be mixed with unsorted municipal waste when discarding. Each material must be separated. On the instrument, the symbol will be placed on the serial number label located on the side of the instrument.

The symbol appears as such:

CHAPTER 8

MAINTENANCE AND SPARE PARTS

8.1 Maintenance

For external cleaning of the instrument, scrub with a dampened, soapy clot. This is the only regular maintenance required.

8.2 Spare Parts

Following is a list of spare parts for the Model 26-2 :

Description	Part Number
AA Batteries	14-5240
Model 26-2 Main Board	5498-401
GM Pancake Tube	01-5008-26
Detector Screen	7241-008
Battery Cover Hook	7498-319

8.3 Options

Following is a list of optional items (not supplied) that could enhance the use of the Model 26-2.

Description	Part Number
Protective Cover with Tether	4519-041
Standard 1/8 inch Jack	4498-538
Canvas Holster	2312577
Model 180-28 Sample Holder	47-3948
Calibration Cable	8303-1044
Extendable Pole	4519-077
Transport and Storage Case for Model 26-2 and Extendable Pole	2311064