

1. Overview

The MP-902 PG2 is a smart, wireless outdoor curtain PIR detector with anti-masking. It is supported by the PowerMaster alarm system and uses PowerG two-way communication protocol.

The detector has the following features:

- Two channel Pyro (patented)
- Microprocessor-controlled temperature compensation
- White light protection
- Adjustable pet immunity selector (no pet / pet < 9 kg / pet < 18 kg)
- Adjustable detection sensitivity up to 8 meters (26.2 ft)
- Advanced Obsidian Black Mirror™ optics (patented)
- Target Specific Imaging™ (TSI) technology (used for distinction between humans and pets weighing up to 18 kg / 40 lb)
- True Motion Recognition™ algorithm (patented) distinguishes between the true motion of an intruder and any other disturbances which may cause false alarms
- Cross-direction detection (both directions, left to right, right to left)
- Smart anti-masking distinguishes between masking spray and rain
- No vertical adjustment needed
- Very low current consumption
- Front and back tamper protection (patented)
- Supports temperature and light level reports according to the PowerG panel version

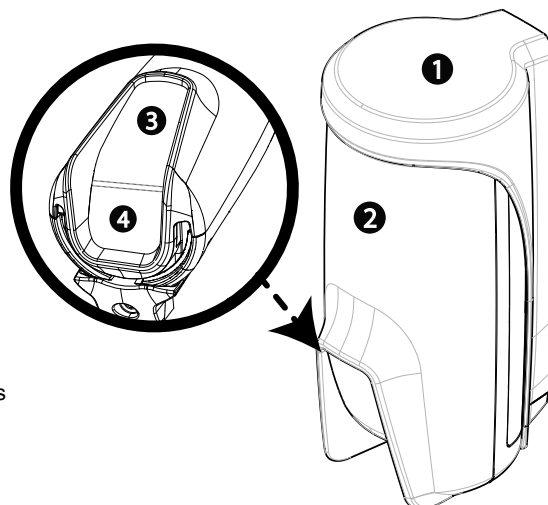


Figure 1 - MP-902 PG2

1. Bracket
2. Device
3. Indication LED
4. PIR optical window

Note: For UL installations, the detector is for use with UL listed control units only

2. Installing the MP-902 PG2

Warning! Do not partially or completely obscure the detector's field of view. Do not install the device close to tree branches as weather conditions can cause movement.

Note: Alarms triggered by conditions such as weather, blowing leaves and branches, or any related environmental conditions, must be considered when installing the detector.

Warning! To comply with FCC and ISED Canada RF exposure compliance requirements, locate the PIR detector at a distance of at least 20 cm from all persons during normal operation. The antennas used for this product must not be co-located or operated in conjunction with any other antenna or transmitter.

Note: Install and use the MP-902 PG2 wireless outdoor curtain PIR detector with anti-masking within an environment that provides pollution degree max 2 and overvoltages category II in NON HAZARDOUS LOCATIONS. The equipment is designed to be installed by qualified service persons only.

Note: Install the MP-902 PG2 in accordance with the Standard for Installation and Classification of Burglar and Holdup Alarm Systems, UL 681.

3. Mounting the MP-902 PG2

To mount the MP-902 PG2, complete the following steps:

1. Mark and drill at least two holes in the mounting bracket (see figure 2 and 3).
Note: To install tamper protection on the detector, mark and drill one hole for the tamper protection (hole number 3, figure 2) and two holes in the other available slots (number 1 and 2, figure 2).
2. Fasten the bracket to the wall surface with the screws (see figure 4).
3. Insert the batteries (see '6. Inserting or replacing the batteries') and close the battery cover.
4. Position the detector in order to cover the protected area by inserting the top of the detector into the preferred slot (see figure 5 and 6).
Note: This will start the tamper self-calibrating procedure, which can be seen by a yellow blinking LED.
Note: When the device is inserted into the bracket, it can be rotated again to a more exact position (see figure 7, number 1).
5. While the LED is blinking, fasten the detector to the bracket by tightening the bottom screw (see figure 7, number 2).
Note: If the yellow LED stops blinking before the screw is tightened adequately, remove the detector from the bracket and wait three seconds. Now repeat the self-calibrating procedure in step 4.

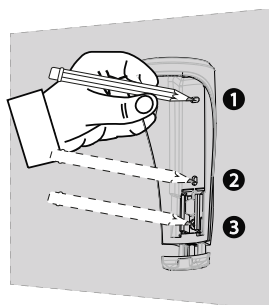


Figure 2 -
Marking screw holes

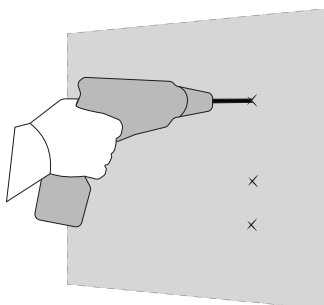


Figure 3 -
Drilling screw holes

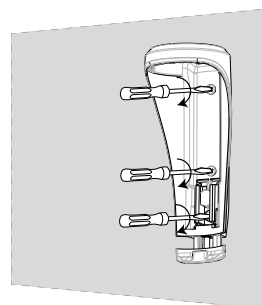


Figure 4 -
Fastening the bracket

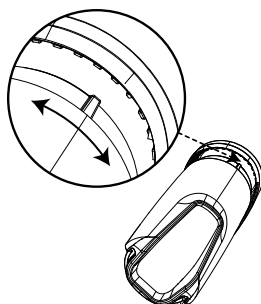


Figure 5 -
Rotation slot

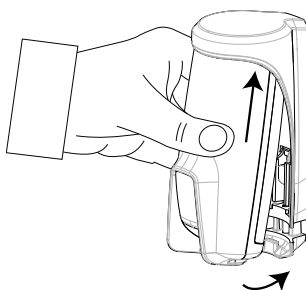


Figure 6 - Slotting into device

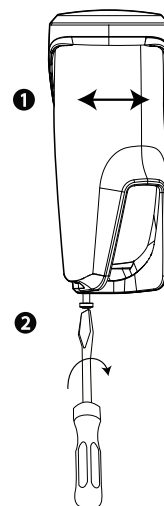


Figure 7 -
Closing the bracket

4. Enrolling the MP-902 PG2

Refer to the PowerMaster panel installer guide and follow the procedure under the "02:ZONES/DEVICES" option of the installer menu.

Note: For UL/ULC listed installations use only in conjunction with UL/ULC listed control panels.

Note: When enrolling the MP-902 PG2 detector to PowerMaster panels with version 19.4 or lower, the detector will be enrolled as outdoor PIR motion detector (ID 130-xxxx) and labeled 'Motion Outd.' in the panel.

To enroll the device, enter the installation menu and complete the following steps:

Step 1	Step 2	Step 3	Step 4
Enter the Installer menu and select "02:ZONES/DEVICES"	Select "ADD NEW DEVICE" See Note 1	Pull the enrollment tab / insert the batteries to power on the device and begin the auto-enrollment process (or enter the device ID).	Select a detector number for the new detector
02:ZONES/DEVICES	⇒ ADD NEW DEVICES ↓ MODIFY DEVICES	⇒ ENROLL NOW or ENTR ID:XXX-XXXX	⇒ Z0x: OutCurtain ID No. 129-XXXX ⇒
Step 5	Step 6	Step 7	
Configure Location, Zone Type & Chime parameters	Enter PARTITIONS . See Note 2	Assign partitions to the detector by pressing the 1 , 2 and/or 3 buttons on the panel	
Z0x.LOCATION Z0x.ZONE TYPE Z0x.SET CHIME	⇒ Z0x/PARTITIONS	⇒ Z0x:P1■-- P2P3■ ⇒	

⇒ means scroll ►► and select **OK**.

Table 1 - Enrolling the MP-902 PG2

Note: If the detector is already enrolled you can configure the detector parameters and assign partitions as in '5. Configuring the detector parameters'.

Note: **PARTITIONS** will appear only if **PARTITIONING** was previously enabled in a panel that supports the Partitioning feature (for further details, see 'Partitioning' in the PowerMaster Installer Guide).

5. Configuring the detector parameters

5.1. Modifying the device

Enter the **DEVICE SETTINGS** menu and follow the configuration instructions for the MP-902 PG2 detector as described in the table.

Option	Configuring instructions
Alarm LED	Define whether or not the alarm LED indication will be activated. Optional settings: LED ON (default) and LED OFF .
PIR range	Select one of the three ranges, according to the type of installation. See 'Setting the detector range'
Outdoor anti-mask	Enable or disable the outdoor anti-masking feature. Optional settings: Disabled (default) and Enabled .
Alarm hours	Define whether motion alarms are always enabled or only when dark (at night). Optional settings: Day and night (default) and Night only . Note: For UL/ULC installation, the alarm hours feature when enabled for night protection should only be used as supplemental protection to the protection covering the protected area.
Alarm direction	Define the detection direction. Note: Available in PowerMaster panels Version V20.2 and higher only. Note: The alarm direction function can reduce the probability of false alarms by more than half when the detector is installed alongside a door or gate as the device can differentiate between property inhabitants exiting and potential intruders entering the premises. Optional settings: Both (default), Left to right , Right to left . Note: See figure 8 for alarm direction diagram. 1. Right to left 2. Left to right Note: The right and left directions refer to the installer's point of view while observing the detector in its fixed position. Figure 8 - Direction detection
VERY HOT > 35 °C [>95 °F]	Define whether or not the control panel will report a "very hot" alert when the temperature rises above the "Threshold" value (default 35 °C / 95 °F) for at least the duration specified in the "Wait before alert" value (default 10 minutes). Alert restore will occur when the temperature drops 1 °C / 1.8 °F below "Threshold" for at least the duration of "Wait before restore" (default 10 minutes). Optional settings: See table 3
COLD < 19 °C [<66 °F] *	Define whether or not the control panel will report a "cold" alert when the temperature drops below the "Threshold" value (default 19 °C / 66 °F) for at least the duration specified in the "Wait before alert" value (default 10 minutes). Alert restore will occur when the temperature rises 1 °C / 1.8 °F above "Threshold" for at least the duration of "Wait before restore" (default 10 minutes). Optional settings: See table 3
FREEZING < 7 °C [<45 °F]*	Define whether or not the control panel will report a "freezing" alert when the temperature drop below the "Threshold" value (default 7 °C / 45 °F) for at least the duration specified in the "Wait before alert" value (default 10 minutes). Alert restore will occur when the temperature rises 1 °C / 1.8 °F above "Threshold" for at least the duration of "Wait before restore" (default 10 minutes). Optional settings: See table 3
FREEZER > -10 °C [<14 °F]*	Define whether or not the control panel will report a "freezer" alert when the temperature rises above the "Threshold" value (default -10 °C / 14 °F) for at least the duration specified in the "Wait before alert" value (default 30 minutes). Alert restore will occur when the temperature drops 1 °C / 1.8 °F below "Threshold" for at least the duration of "Wait before restore" (default 30 minutes). Optional settings: See table 3
Disarm activity	Define whether or not to set the activity time during disarm. Optional settings: NOT Active (default) YES – no delay, YES + 5 second delay, YES + 15 s delay, YES + 30 s delay, YES + 1 minute delay, YES + 2 m delay, YES + 5 m delay, YES + 10 m delay, YES + 20 m delay, YES + 60 m delay

Table 2 - Modifying the device

Note: The temperature must pass beyond the threshold for the required duration in order to generate an alarm or restore transmission.

Note: The user can give access to the installer remotely enable or disable the indication LED.

Each of the four temperature alerts (Very Hot, Cold, Freezing, and Freezer) can be configured with the settings described in Table 3:

Option	Configuring instructions
Threshold	Displays the last saved threshold and provides the installer with the ability to change the value using the Back / Next buttons.
Disable / Enable	Defines whether the panel will report the alert.
Wait before alert	Defines the time the panel waits before reporting the alert when temperature exceeds the defined default. The "Wait before alert" time values are: - Immediately 1 minutes 2 minutes 10 minutes 15 minutes 20 minutes 30 minutes
Wait before restore	Defines the time the panel waits before reporting on restoration of the alert when the temperature returns to the threshold range. The "Wait before restore" time values are: - Immediately 1 minutes 2 minutes 10 minutes 15 minutes 20 minutes 30 minutes

Table 3 -Temperature configuration settings

5.2. Setting the detector range

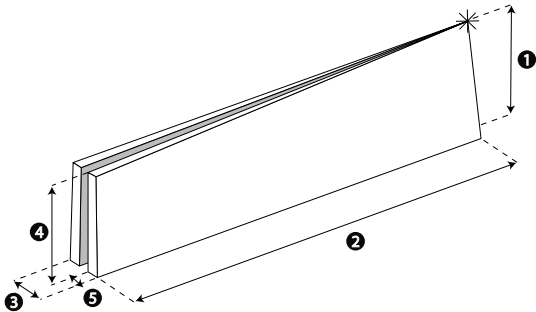
PowerMaster panel version	Device Type	Range setting menu location and options	Range
V20.2 and higher	MP-902 S.OutCurtain ID: 129-xxxx	02: ZONE / DEVICES > ... > DEVICE SETTINGS > PIR RANGE > Long Medium Short	8 m 5 m 3 m
V19.4 and lower	TOWER-20AM Motion Outd. ID: 130-xxxx	02: ZONE / DEVICES > ... > DEVICE SETTINGS > PIR SENSITIVITY > High Low One region	8 m 3 m 8 m
Detection ranges	Select 3 m, 5 m or 8 m (see number 2, figure 9)  1. 2.1 m (6.89 ft) 2. 8 m (26.25 ft) 3. 0.75 m (2.46 ft) 4. 1.9 m (6.23 ft) 5. 0.25 m (0.82 ft) Note: The * symbol signifies the detector point of view and the beginning of the PIR curtain.		

Figure 9 - Detection pattern

Table 4 - Setting the detector range

6. Inserting or replacing the batteries

To mount the MP-902 PG2, complete the following steps:

1. To separate the detector from the mounting bracket, unscrew the bottom screw (see Figure 10) and remove the detector from the bracket (see Figure 11).
2. Open the battery cover by pressing on the snap located at the top of the battery cover (see Figure 12).
3. Insert the batteries while observing polarity (see Figure 15, number 3).

Note: If the batteries are already installed, pull the battery tab while holding the batteries in place (see Figure 13).

4. Close the battery cover until you hear a click (see Figure 14) and insert the device into the bracket (see steps 4 and 5 in '3. Mounting the MP-902 PG2').

Note: It is recommended to wait about 1 minute after battery removal before inserting the new batteries.

Caution! There is a risk of explosion if the batteries are replaced by an incorrect type. Dispose of used batteries according to the manufacturer's instructions and according to local rules and regulations.

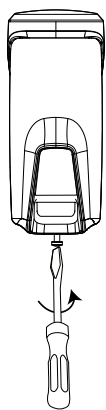


Figure 10 - Unscrewing the bracket

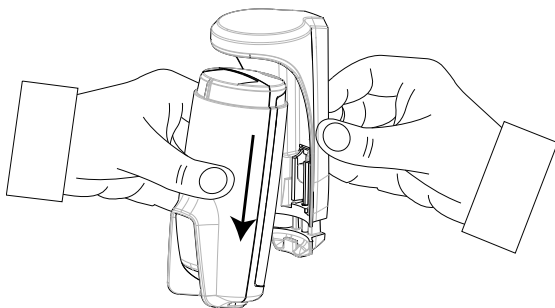


Figure 11 - Removing the detector from bracket



Figure 12 - Opening the battery cover

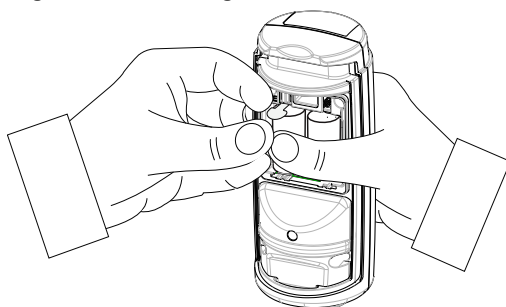


Figure 13 - Pulling the battery tab



Figure 14 - Closing the battery cover

Figure 15

1. Pet immunity selector

(1) Pet < 18 kg

(2) Pet < 9 kg

(3) No function

(4) No pet immunity

Note: Setting number '3' in the pet mask selector has no function.

2. Enrollment button

3. Battery polarity

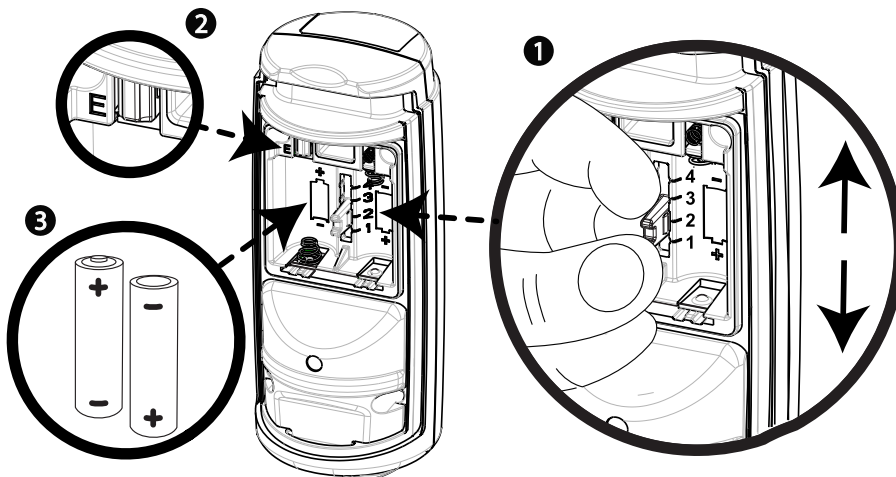


Figure 15 - Pet immunity, battery polarity, and button enrollment

7. Local diagnostic test / Walk Test

Before permanently mounting the device, temporarily mount the device and perform a walk test. Perform a walk test of the coverage area at least once a week to ensure that the detector is working correctly.

After inserting the batteries or closing the battery cover, the detector will automatically enter a stability period where the LED flashes red for 90 seconds. When you walk-test the coverage area, the LED lights red each time your motion is detected, followed by three LED blinks. The color of the three LED blinks indicates the received signal strength. The following table indicates the received signal strength.

LED response	Reception
3 Green blinks	Strong
3 Orange blinks	Good
3 Red blinks	Poor
No blinks	No communication

Table 5 - Walk test signal strength indication

Important! Reliable reception must be confirmed. Therefore, "poor" signal strength is not acceptable. If you receive a "poor" signal from the device, relocate it and re-test until a "good" or "strong" signal strength is received.

In walk-test mode, regardless of the LED selection status, the LED lights upon every motion detection. Walk-test the coverage area by walking across the far end of the coverage pattern in both directions. The red LED lights each time your motion is detected followed by steady LED signal strength indication. After 15 minutes the detector automatically enters normal mode.

The MP-902 PG2 can be configured to detect movement with the following settings: 'Left to right', 'Right to left', and 'Both'. For more information, refer to *Alarm direction* in '5. Configuring the detector parameters'

Note: For detailed diagnostics test instructions refer to the control panel installer guide.

8. LED operation

LED Indication	Event
Red LED blinks	Stabilization (Warm-up 90 seconds)
Red LED on 0.2 seconds	Tamper open / close
Red LED on 2 seconds	Intruder alarm
Yellow LED on	AM detection, diagnostic mode
Yellow LED blinks slowly (0.2 seconds on, 30 seconds off)	AM detection, normal mode
Yellow LED blinks	Back tamper self-calibration

Table 6 - LED indication significance

9. Temperature Display

For instructions on displaying the temperature and light of zones on the correct panel as measured by the MP-902 PG2, refer to '6.2 Conducting a Periodic Test' in the PowerMaster installer guide.

10. Specifications

GENERAL

Detector type Special two-channel PIR

OPTICAL

Lens data Mirror type, one curtain mirror

Detector mirror max. coverage Up to 8 m (26.2 ft) / 6 °

Detection ranges

ELECTRICAL

Power supply Type C

Internal battery Two 3 V lithium battery, type CR-123A. For UL installations, use Panasonic and GP only

Nominal battery capacity 1450 mAh

Battery life (typical use) Minimum 1 year. Typical use, 3 years (not verified by UL)

Low battery threshold 4 V

Battery power test Performed immediately upon battery insertion and periodically every several hours. The power supply is type C in accordance with EN50131-6 Documentation - Clause 6.

Current consumption 30 µA average quiescent, maximum 150 mA (during transmission)

FUNCTIONAL

Alarm period 2 seconds

Pet immunity Up to 18 kg (40 lb)

Pet configurations No pet / Pet < 9 kg / Pet < 18 kg

WIRELESS

Frequency	Europe and rest of world: 433-434 MHz, 868-869 MHz USA: 912-919 MHz Only devices in frequency band 915 MHz are UL/ULC listed.
Max Tx power	10 dBm @ 433MHz, 14 dBm @ 868MHz
Communication protocol:	PowerG
Supervision	Signaling at 256 second intervals
Tamper alert	Reported when a tamper event occurs and in any subsequent message, until the tamper switch is restored.

MOUNTING

Mounting type:	Wall mounting
Mounting height:	1.8 - 2.4 m (5.9 - 7.9 ft)
Horizontal adjustment:	-90 ° to +90 °, in 10 ° steps

ENVIRONMENTAL

RF immunity	20 V/m up to 1000 MHz, 10 V/m up to 2700 MHz
Operating temperatures	- 35 °C to 60 °C (-31 °F to 140 °F) <i>For UL / ULC installation, evaluated to 66°C</i> Average relative humidity of up to approximately 75 % non-condensing. For 30 days per year the relative humidity may vary between 85 % and 95 % non-condensing. For UL installations: 5 % to 93 % with no condensation
Humidity	
Storage temperatures	-35 °C to 60 °C (-31 °F to 140 °F)

PHYSICAL

Size (diameter)	145 mm x 71 mm x 62 mm
Weight (with battery)	283 g
Color	White

11. Compatible receivers

This device can be used with PowerMaster panels that use PowerG technology.

Note: For UL installations, the detector is for use with UL listed control units only.

Note: Only devices operating in band 912-919 MHz are UL / ULC listed.

12. Compliance with standards

	The MP-902 PG2 complies with the following standards: Europe: EN 300220, EN 301489, EN 50130-4, EN 62368-1, EN 60950-22, EN 50131-2-2 Grade 2, Class IV IP55, EN 50130-5, EN 50131-6 Type C. The PowerG peripheral devices have two-way communication functionality, providing additional benefits as described in the technical brochure. This functionality has not been tested to comply with the respective technical requirements and should therefore be considered outside the scope of the product's certification.
	Hereby, Visonic Ltd. declares that the radio equipment type MP-902 PG2 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: http://www.visonic.com/download-center .
	 USA: FCC- CFR 47 Part 15 Canada: IC RSS - 247 USA: UL639 Canada: ULC-S306

This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

To comply with FCC Section 1.1310 for human exposure to radio frequency electromagnetic fields and IC requirements, implement the following instruction:

A distance of at least 20cm. between the equipment and all persons should be maintained during the operation of the equipment.

Le dispositif doit être placé à une distance d'au moins 20 cm à partir de toutes les personnes au cours de son fonctionnement normal. Les antennes utilisées pour ce produit ne doivent pas être situées ou exploitées conjointement avec une autre antenne ou transmetteur.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful

interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- This Class B digital apparatus complies with Canadian ICES-003.
- Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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



W.E.E.E. Product Recycling Declaration

For information regarding the recycling of this product you must contact the company from which you originally purchased it. If you are discarding this product and not returning it for repair then you must ensure that it is returned as identified by your supplier. **This product is not to be thrown away with everyday waste.**

Directive 2002/96/EC Waste Electrical and Electronic Equipment.



D-307164

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