



**Veterinary**  
**Patient Warming System**  
**Controller Model WC52-VET**  
**User Manual**

**Manufactured by:**

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## **INTRODUCTION**

### **Device Description**

The Hot Dog Veterinary Patient Warming System (“System”) consists of the Hot Dog Controller, reusable Warming Blankets. This manual includes use and maintenance instructions and specifications for the Hot Dog Controller Model WC52-VET. For information about Hot Dog warming blankets, refer to the User Manual provided with each blanket.

The Hot Dog Controller is designed to help maintain normothermia in patients before, during and after surgical procedures and to help prevent unintended hypothermia. The system is powered and controlled by an electronic control unit. Warming blankets are powered at low voltage, ensuring safety for patients and operators. Warming temperatures are controlled automatically to user-selected levels, and over-temperature safety shut-offs are integrated into the Controller as well as into each warming blanket.

The Hot Dog Controller can be placed on a flat surface or mounted on an IV pole. The System can be operated continuously to maintain uniform heat under or over the patient, depending on which warming blanket is selected. It is the responsibility of the user to determine whether warming is appropriate for each individual patient. The System should not be used when clinical considerations indicate that warming of the patient is not advisable.

### **Indications for Use**

The System is intended to prevent or treat hypothermia and to provide warmth to patients. The System should be used in circumstances in which patients may not maintain a state of normothermia. The System is intended primarily for use in hospitals and surgical centers including, without limitation, operating, recovery, and emergency rooms and on medical/surgical floors.

### **Contraindications**

- DO NOT warm patients during aortic cross-clamping; thermal injury may result.
- DO NOT warm patients with ischemic or non-perfused limbs; thermal injury may result.

## **WARNINGS**

### **General**

- **EXPLOSION HAZARD – DO NOT** use the Hot Dog Patient Warming System in the presence of flammable anesthetics or highly oxygen-enriched environments such as hyperbaric chambers, oxygen tents, etc.
- **Inspect Hot Dog Warming Blankets prior to use** for signs of damage or excessive wear such as cuts, holes or loose electrical connections. If signs of wear are evident, do not use the product. Do not expose the inner heating element to fluids.
- **DO NOT** continue to use the System if the over-temperature indicator and/or alarm continue to sound after reset. Refer to the “Alarm” section of this manual for more information.

### **Hot Dog Warming Blankets,**

- **DO NOT** use Hot Dog Warming Blankets beyond the labeled expiration date.

### **Pressure reduction**

When a patient remains in a single position for an extended amount of time, ischemia can occur at points of elevated pressure, which can lead to tissue necrosis. Warming ischemic tissue is contraindicated. Therefore, precautions should be taken when using Hot Dog Warming Blankets under a patient. The Hot Dog Warming Blanket IS NOT a pressure reduction device.

When using Hot Dog Warming Blankets under a patient, ensure that adequate steps are taken to mitigate pressure.

Hard objects should not be placed between the patient and the Hot Dog Warming Blanket. If a rigid cautery ground plate is used, ensure that adequate steps are taken to mitigate pressure. Do not place the cautery plate on the sensor area of the Hot Dog Warming Blanket. The cautery plate must not be larger than the patient, i.e. the patient must completely cover the cautery plate.

## **PRECAUTIONS**

Monitor the patient’s vital signs regularly during warming according to institutional protocol. If vital-sign instability occurs, notify the clinician.

Do not use heat settings above 40°C on or under patients with poor perfusion.

Use over-body warming instead of under-body warming when using a vacuum-activated positioning system. **DO NOT** use a Hot Dog Warming Blanket between a patient and a vacuum-activated positioning system.

Use over-body warming instead of under-body warming on patients with multiple risk factors such as short hair, poor circulation, severe illness that may impact circulation, or long-duration procedures (> 2 hours).

Do not expose the Hot Dog Warming Blanket to a continuous exchange of cold irrigation fluids.

## **INSTRUCTIONS FOR USE**

### **When using the Hot Dog Warming Blanket above the patient:**

Use on the warmest setting appropriate to the patient condition and procedure for maximum effectiveness.

Place the Hot Dog Warming Blanket directly on the patient with the sensor in contact with the patient.

### **When using the Hot Dog Warming Blanket under the patient or wrapped around the patient:**

Do not use heat settings above 40°C unless you have a towel placed between the patient and the Hot Dog Warming Blanket.

The sensor should be in contact with the patient. A towel between the sensor and the patient is acceptable.

Ensure that adequate steps are taken to mitigate pressure.

## **PROPER USE AND MAINTENANCE**

Do not open the Hot Dog Controller. There are no user-serviceable parts. If service is required, contact Technical Support (see **page 14**). The manufacturer assumes no responsibility for the reliability, performance, or safety of the Hot Dog Patient Warming System if any of the following events occur:

- The Hot Dog Controller is disassembled or serviced by an unauthorized person.
- The System's components are used in a manner other than described in the User Manuals.
- The Hot Dog Controller is installed in an environment that does not meet the appropriate electrical and grounding requirements.

The Hot Dog Controller is grounded and should not be attached to un-grounded tables intended for use with a hyfrecator or equivalent devices.

## INITIAL SETUP & ASSEMBLY

### Contents

The following components are included in the Hot Dog Controller box:

- 1—Hot Dog Controller Model WC5X
- 1—IV pole adapter and mounting hardware
- 1—Mains power cord
- 1—User Manual and Service Manual
- 1—Hot Dog Warming Blanket Cable (P/N A101)

Reusable Hot Dog Warming Blankets are sold separately.

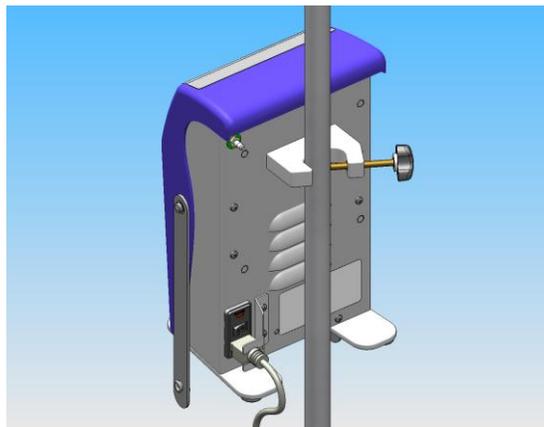
### Mounting the Hot Dog Controller to an IV Pole

To mount the Hot Dog Controller to an IV pole, place the Controller IV pole Clamp around the IV pole and turn the clamp handle clockwise until securely tightened (**Figure 1**). To remove the Controller from the IV pole, turn the clamp handle counterclockwise until the unit releases.

#### **Caution**

To prevent the IV pole from tipping, the Controller must be attached at a height that provides stability. It is recommended to use an IV pole with a minimum wheelbase radius of 35.6 cm (14 in) and to mount the Controller no higher than 112 cm (44 in) from the floor. Failure to properly mount the Controller may result in IV pole tipping, catheter site trauma and patient injury.

**Figure 1: Hot Dog Controller Mounted on an IV Pole**



## Control Panel Features & Operating Modes

Figure 2: Hot Dog Model WC5X Controls

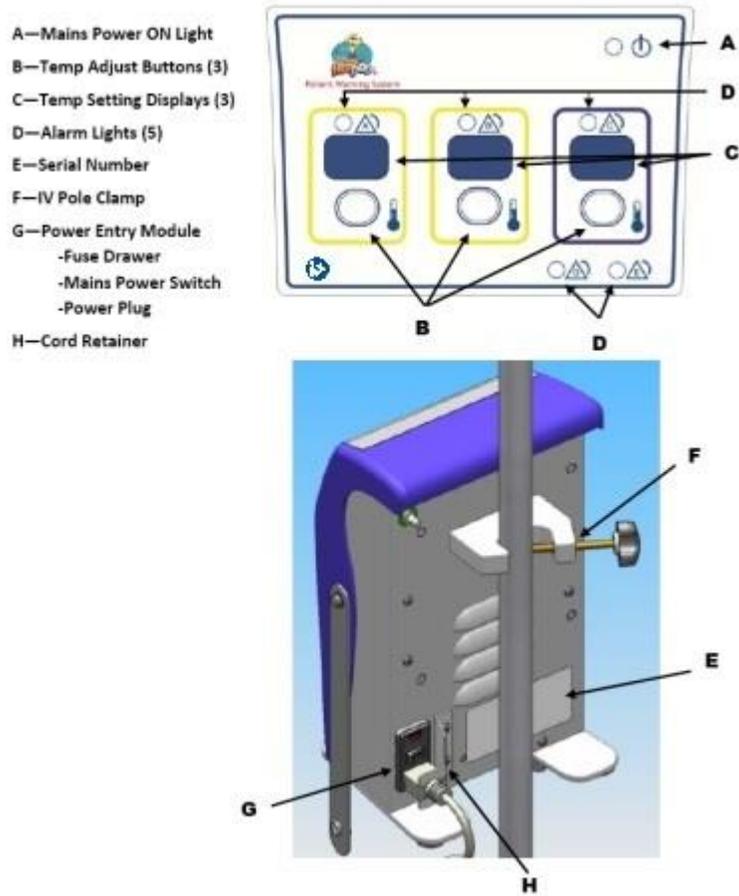
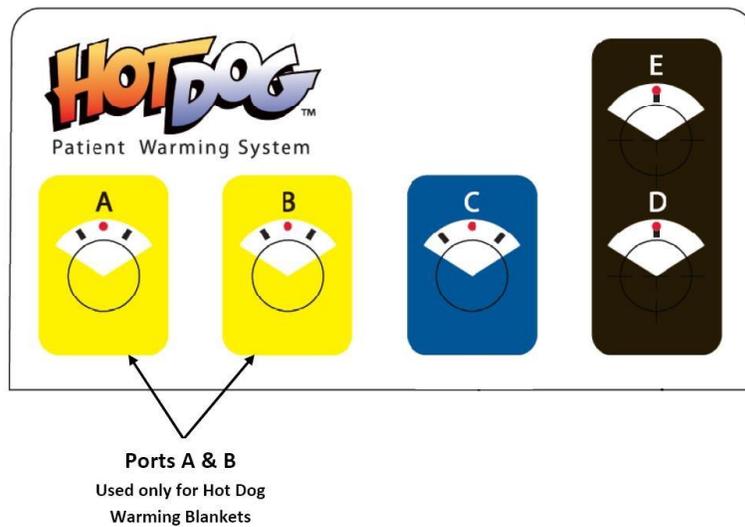


Figure 3: Hot Dog Ports



### ***Mains Power Switch / ON Power Indicator***

When the Hot Dog Controller is plugged into an electrical outlet and the Mains Power Switch on the back of the Controller is turned ON, all displays will illuminate briefly, and the Controller will beep. Afterwards, the software version will display for approximately 2 seconds. The Mains Power ON Light will illuminate and the Controller will remain idle until a warming blanket is plugged in. When the unit is ON and idle (i.e., no Temperature Setting Lights are illuminated), no power will be applied to the warming blanket, and no alarm conditions will be indicated.

### ***Temperature Adjust Button / Temperature Setting Display***

When a warming blanket is plugged into a port, an audible beep will sound, and the display will show two dashes. Press the Temperature Adjust Button for the desired port until the desired temperature is displayed. The temperature can be selected in one-degree increments from 37-43°C for Ports A and B. The designated warming temperature will flash until the selected temperature is achieved, at which time the selected temperature will steadily display.

### ***Port A and B***

Ports A and B are used only for Hot Dog Warming Blankets.

### ***Port C, D and E***

Ports C, D and E are for future Hot Dog veterinary accessories; at this time there are no accessories manufactured for use on these ports.

## **Alarms**

### ***Alarm: Port A and B***

If the warming device sensor temperature exceeds one degree above set point or other fault conditions exist, an audible alarm sounds and the Alarm Light for the affected port illuminates

Yellow. The Controller will automatically turn off power to that warming device. If the Alarm Light stays illuminated and the alarm continues to sound, disconnect the warming device from the Controller to silence the alarm. If the controller alarms again after a reset was performed, discontinue use and refer the Controller to biomedical engineering for evaluation.

## Error Codes

The Controller displays the following error codes on the Temperature Display for specific alarm conditions. Refer to Troubleshooting and Error Codes sections for more details.

Error Code	Alarm Condition
E1 on affected port	Over-temperature alarm – Temperature of sensor has exceeded 1 degree above set-point
E2 on affected port	Time-to-temperature alarm – device has not reached selected set point within ten minutes
E3 on affected port	Over-current condition
E3 on all ports	System over-current condition
E4 on affected port	Primary or secondary broken sensor alarm
E8 on affected port	Over temperature – Secondary – Temperature of sensor has exceeded 46C for blankets (on controllers with software version 1.06 and lower, this alarm displays as E1 and not E8)
Six hour timer	If a warming device is left on with no adjustment to temperature settings for six hours the controller will turn off power to warming device.
EA, EC, EE, EF, EH, EP on all ports	System failure, refer controller to biomedical engineering department.

## INSTRUCTIONS FOR USE

The instructions below describe how to operate the Model WC5X Hot Dog Controller. For information about Hot Dog warming blankets, refer to the User Manual provided with each blanket.

1. Mount the Controller on an IV pole or place the Controller on a flat, horizontal surface.
2. Insert the Controller's power plug into a properly grounded hospital-grade electrical outlet.

**WARNING:** To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

**Note: The Controller is grounded and should not be attached to un-grounded tables intended for use with a hyfrecator or equivalent devices.**

3. After the lights illuminate in sequence, the Controller will emit an audible tone and display the software Version on the Temp Setting Display for approximately 2 seconds.
4. Position and secure the Hot Dog Warming Blanket **following instructions in the User Manual provided with the Blanket.**
5. Insert the Warming Blanket's connecting cable into port A or B on the Controller...

**Note: When the connecting cable is inserted into the Controller, an audible beep indicates that the control sensor and over-temperature sensor are present and functioning properly.**

6. Press the Temp Adjust Button that corresponds with the port being used until the desired temperature is set, as indicated by the Temp Setting Display. The Display will flash until the temperature has been reached.
7. Monitor the patient's temperature regularly. Adjust the temperature setting on the Controller (as described in the preceding paragraph) as necessary to maintain the desired patient temperature.
8. When the warming therapy is complete, turn the Mains Power Switch to OFF.

## MAINTENANCE & CLEANING

### Testing of Indicator Light Function

#### *Frequency*

This test should be completed upon initial equipment check-in and once every 12 months (or more frequently if required by hospital guidelines).

**Method**

1. Insert the Hot Dog Controller's power plug into a properly grounded hospital-grade electrical outlet and confirm that NO cables or blankets are connected to any of the Controller's ports.
2. Turn the Mains Power Switch to ON and observe for the following proper start-up sequence:
  - a. The Alarm LED's will power up sequentially
  - b. The Segmented displays then power up sequentially one by one, from left to right as the number "8"
3. After the LED's sequence, the buzzer will give a short chirp and the software version will display for approximately 2 seconds.
4. After the sequence completes, only the Mains Power ON Light will remain illuminated.
5. If this sequence varies or is incomplete, contact Customer Service (see **page 14**).

**Cleaning—General****Warnings**

- DO NOT use a dripping wet cloth to clean Hot Dog components, and DO NOT immerse Hot Dog components in liquid. Moisture will damage the components, and thermal injury may result.

**Precautions**

- DO NOT use pure harsh solvents (e.g., MEK, acetone, etc.) to clean Hot Dog components. Solvents may damage plastic parts, labeling and product finish.
- DO NOT use high-level disinfectants (e.g., glutaraldehyde, peracetic acid). The U.S. Centers for Disease Control (CDC) recommends against the use of high-level disinfectants for cleaning environmental surfaces that may contact the patient since the chemicals are highly toxic.
- DO NOT spray cleaning solutions into electrical connectors.

**Recommended cleaners**

Alcohol-based disinfectants are easiest to use, since they are fast-acting and can be either sprayed or wiped on.

Other cleaners that have been tested and are compatible with the outer surfaces of Hot Dog components include sodium hypochlorite (diluted bleach), phenolic germicidal detergent, quaternary ammonium detergent and chlorhexidine. Cleaners that contain accelerated hydrogen peroxide (Accel, Rescue, Prevail) are NOT recommended for cleaning.

## **Cleaning—Hot Dog Controller**

### ***Frequency***

As needed

### ***Tools/Equipment***

- Sponge or soft cloth
- Mild detergent or anti-microbial spray
- Dry soft cloth

### ***Method***

1. Disconnect the Controller from the power source before cleaning.
2. Wipe Controller with moistened sponge or soft cloth; avoid pushing fluids into any openings.
3. Dry with a separate soft cloth.

## **Cleaning—Warming Blankets**

### ***Frequency***

Clean between patient use and when the Warming Blanket appears soiled.

### ***Method***

**Cleaning steps are described in the User Manual provided with the Warming Blankets.**

## TROUBLESHOOTING/ERROR CODES

<b><u>Alarm lights and error code display</u></b>		
<p>Alarm lights and an audible alarm turn on when an error condition occurs. The associated error code will remain on the display until the condition is cleared. If multiple alarm conditions occur sequentially, the code associated with the initial alarm condition will be displayed. In all cases, the heater is turned off when an alarm occurs.</p>		
<b>Alarm Error Condition</b>	<b>Error Code Displayed</b>	<b>Description</b>
Over-temperature (primary)	E1 (for each port)	<p>When the temperature exceeds one degree above set point, audible and visual alarms are initiated, and power is removed from the output. The alarm will reset when:</p> <ul style="list-style-type: none"> <li>• Temperature is within acceptable limits (<math>\pm 1^{\circ}\text{C}</math>), or</li> <li>• Cable connecting warming device to Controller is disconnected, or power is turned off at mains switch.</li> </ul>
Heater Time Out	E2 (for each port)	<p>Failure to reach temp</p> <p>(Time to Temperature): When the system does not achieve the set-point within 10 minutes, audible and visual alarms are initiated. The alarm will reset when the device is unplugged or power is turned off at mains switch.</p>
Overcurrent (Port)	E3 (for each port)	When port current draw exceeds a predetermined level, audible and visual alarms are initiated. The alarm will reset when the device is unplugged or power is turned off at mains switch.
Primary or Secondary sensor failure	E4 (for each port)	Sensor are reading outside of the useful range
Over-temperature (secondary)	<p>E8 (for each port) for software versions <math>\geq 1.07</math></p> <p>E1 for software version <math>\leq 1.06</math></p>	When the temperature exceeds $46^{\circ}\text{C}$ on port A and B, audible and visual alarms are initiated. The alarm will reset when the device is unplugged or power is turned off at mains switch.
Temperature control timeout	-- (for each port)	If a warming device is left operating for 6 hours with no changes to set point, power will be removed, three short audible chirps will sound, and the visual alarm indicators will flash continuously. Pressing the temperature select button will clear the alarm and re-start normal operation.
Overcurrent (System)	E3, E3, E3	Too many large heating devices in use. Power system down (remove from mains or cycle power switch). Remove one device and re-start. If problem continues call customer service

Calibration failure	EA, EA, EA	System failure. If this occurs, call customer service for technical support
Hardware CPLD failure	EC, EC, EC	System failure. If this occurs, call customer service for technical support
System Failure (FET Failure)	EF, EF, EF	System failure. If this occurs, call customer service for technical support
Hardware I2C failure	EH, EH, EH	System failure. If this occurs, call customer service for technical support
Hardware power supply failure	EP, EP, EP	System failure. If this occurs, call customer service for technical support
General System Failure	EE, EE, EE (software version 1.06 or lower only)	System failure. If this occurs, call customer service for technical support

## TECHNICAL SUPPORT & CUSTOMER SERVICE

Please have the serial number of your Hot Dog Controller when you call for technical support. The serial number is located on the back of the Controller. If it is necessary to return the Controller for service or repair, contact your local supplier or sales representative.

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### DEFINITION OF PRODUCT SYMBOLS

	Do Not Place Under Patient		This Side Up		Mains Power On Indicator
	This Side Down		Heating Area		Alarm
	Attention, consult accompanying documents		Reference Number		Lot Number
	BF Patient Applied Part according to IEC60601-1.		Serial Number		Manufacture Date
	Temperature in Range		Transport and storage temperature range		Temperature Adjustment
	Keep Dry		Transport and storage humidity range		Fuse
	Equipotential		EU Authorized Representative		Return to Authorized Representative
	Temperature Sensor		Do not use after YYY-MM		Manufacturer
<b>IPX2</b>	Protected against dripping water when tilted up to 15°; Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle up to 15° from its normal position.				
	Conforms to European Medical Device Directive 93/42/EEC				
	Medical Equipment Classified by Intertek Testing Services NA Inc. with respect to electric shock, fire, and mechanical hazards only, in accordance with UL 60601-1. Classified under the Medical Device Directive (93/42/EEC) as a Class IIb device.				

### ACCESSORY PART NUMBERS

The following cable part numbers are used with the Hot Dog Patient Warming System:

Part Number	Description
A101	Hot Dog Warming Blanket Cable, 4m (13ft)
A101-6000	Hot Dog Warming Blanket Cable, 6m (19.7ft)

## SPECIFICATIONS

<b>Physical Characteristics</b>									
Dimensions	33 cm high x 14.0 cm deep x 19.7 cm wide 13" high x 5.5" deep x 7.75" wide								
Weight	5 kg (11 lbs.)								
Mounting	Can be placed on a horizontal flat surface (i.e. table top), clamped to an IV pole or hung on a OR/gurney rail using optional hanging hooks								
<b>Temperature Characteristics</b>									
Temperature Control	Micro-processor								
Operating Temperatures	Blanket Ports A and B adjustable in 1°C increments 37° to 43° ± 1.0°C      98.6° to 109.4° ± 1.8°F								
	Port C - NA								
<b>Safety System</b>									
All alarm conditions are classified as Medium Priority Technical Alarms									
Primary Over-temp Alarm	Ports A and B (Warming Blanket) Alarm sounds when temperature sensor is at set point + 1°C								
	Port C - NA								
Secondary Over-temp Alarm	Ports A and B (Warming Blanket) Independent electronic circuit shuts the heater off if the Warming Blanket temperature sensor reaches set point + 3°C. (46°C) Port C - NA								
Time out timer	If warming blanket does not reach set temperature within 10 minutes the controller will alarm								
Six hour timer	If a warming blanket is left at a steady setting for six hours, the controller will discontinue power to warming blanket.								
Over-current limits	<table border="1"> <tr> <td>Port A</td> <td>10 amps max</td> </tr> <tr> <td>Port B</td> <td>10 amps max</td> </tr> <tr> <td>Port C</td> <td>5 amps</td> </tr> <tr> <td>System</td> <td>14.6 amps</td> </tr> </table>	Port A	10 amps max	Port B	10 amps max	Port C	5 amps	System	14.6 amps
Port A	10 amps max								
Port B	10 amps max								
Port C	5 amps								
System	14.6 amps								
System Over-current Protection	Dual input fused lines.								

<b>Electrical Characteristics</b>	
Leakage Current	Meets UL 2601-1 and IEC 60601-1 requirements for Class I, Type BF equipment.
Power Consumption	850W maximum
Power Cord	4.6 m (15 ft)
Device Ratings	Input: 100-240 VAC, 50/60 Hz, 850VA Output A & B: 48 VDC, 480 VA Max each Output C: 240 VA Max Output D & E: 48 VDC, 144 VA Max each
Fuses	T10AL250V (2 x 5x20mm)
<b>Environmental Conditions</b>	
Environmental Conditions for Transport and Storage	Temperature: -20°C to 60°C Humidity: 20% to 80% Keep Dry
Environmental Conditions for Use	Temperature: 15°C to 25°C Humidity: 20% to 80%
<b>Classification and Standards</b>	
Certifications	IEC 60601-1; EN 60601-1-2; UL 60601-1; CAN/CSA-C22.2, No. 601.1, EN 55011 
Classification	Classified under IEC 60601-1 Guidelines (and other national versions of the Guidelines) as Class I, Type BF, Ordinary equipment, Continuous operation. Not suitable for use in presence of flammable anesthetic mixtures with air or with oxygen or nitrous oxide. Classified by Intertek Testing Services NA Inc. with respect to electric shock, fire, and mechanical hazards only, in accordance with UL 60601-1. Classified under the Medical Device Directive (93/42/EEC) as a Class IIb device. Classified under the Canadian Medical Device Regulation as Class II.
Diagnostics	A qualified technician can perform general system testing. The Controller has no user serviceable parts.
Important Information	This device complies with the EMC requirements according to IEC 60601-1-2. Radio transmitting equipment, cellular phones, etc. shall not be used in the close proximity of the device since this could influence the performances of the device. Particular precaution must be considered during use of strong emission sources such as High Frequency surgical equipment and similar so that, e.g., the HF-cables are not routed on or near the device. If in doubt, contact a qualified technician or your local representative.

## ELECTROMAGNETIC COMPATIBILITY (EMC)

The Hot Dog Vet Patient Warming System requires special precautions regarding EMC and must be installed and put into service according to the EMC information provided in this User Manual.

### **Warning**

- **Use of accessories and cables other than those specified may result in increased emissions or decreased immunity of the Hot Dog Vet Patient Warming System.**
- **The Hot Dog Vet Patient Warming System should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, carefully observe the Hot Dog Patient Warming System to verify that it operates normally in this configuration.**

Guidance and Manufacturer's Declaration – Electromagnetic Emissions		
The Hot Dog™ Patient Warming System is intended for use in the electromagnetic environment specified below. The customer or user of the Hot Dog Patient Warming System should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic Environment – Guidance
RF emissions, CISPR 11	Group 1	The Hot Dog Patient Warming System uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions, CISPR 11	Class A	The Hot Dog Patient Warming System is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions, IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions, IEC 61000-3-3	Complies	

<b>Guidance and Manufacturer's Declaration – Electromagnetic Immunity</b>			
The Hot Dog™ Vet Patient Warming System is intended for use in the electromagnetic environment specified below. The customer or the user of the Hot Dog Patient Warming System should assure that it is used in such an environment.			
<b>Immunity Test</b>	<b>IEC 60601 Test Level</b>	<b>Compliance Level</b>	<b>Electromagnetic Environment – Guidance</b>
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % <i>UT</i> (>95 % dip in <i>UT</i> ) for 0,5 cycle 40 % <i>UT</i> (60 % dip in <i>UT</i> ) for 5 cycles 70 % <i>UT</i> (30 % dip in <i>UT</i> ) for 25 cycles <5 % <i>UT</i> (>95 % dip in <i>UT</i> ) for 5 sec	<5 % <i>UT</i> (>95 % dip in <i>UT</i> ) for 0,5 cycle 40 % <i>UT</i> (60 % dip in <i>UT</i> ) for 5 cycles 70 % <i>UT</i> (30 % dip in <i>UT</i> ) for 25 cycles <5 % <i>UT</i> (>95 % dip in <i>UT</i> ) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Hot Dog Patient Warming System requires continued operation during power mains interruptions, it is recommended that the Hot Dog Patient Warming System be powered from an uninterruptible power supply or a battery.
Power frequency 50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE <i>UT</i> is the a.c. mains voltage prior to application of the test level.			

Guidance and Manufacturer’s Declaration – Electromagnetic Immunity (cont’d)			
<p>The Hot Dog™ Vet Patient Warming System is intended for use in the electromagnetic environment specified below. The customer or the user of the Hot Dog Vet Patient Warming System should assure that it is used in such an environment.</p>			
Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
<p>Conducted RF IEC 61000-4-6</p>	<p>3 Vrms 150 kHz to 80 MHz</p>	<p>3 V</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the Hot Dog Patient Warming System, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p><b>Recommended separation distance</b></p> $d = 1,2\sqrt{P}$ $d = 0,35\sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 0,7\sqrt{P} \quad 800 \text{ MHz to } 2,5 \text{ GHz}$ <p>where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,<sup>a</sup> should be less than the compliance level in each frequency range.<sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
<p>Radiated RF IEC 61000-4-3</p>	<p>10 V/m 80 MHz to 2,5 GHz</p>	<p>10 V/m</p>	
<p>NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p>NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			
<p><sup>a</sup> Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Hot Dog Patient Warming System is used exceeds the applicable RF compliance level above, the Hot Dog Patient Warming System should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Hot Dog Patient Warming System.</p> <p><sup>b</sup> Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.</p>			

<b>Recommended separation distances between portable and mobile RF communications equipment and the Hot Dog Patient Warming System</b>			
<p>The Hot Dog™ Vet Patient Warming System is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Hot Dog Vet Patient Warming System can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Hot Dog Vet Patient Warming System as recommended below, according to the maximum output power of the communications equipment.</p>			
<b>Rated maximum output power of transmitter</b> W	<b>Separation distance according to frequency of transmitter</b> m		
	<b>150 kHz to 80 MHz</b> $d = 1,2\sqrt{P}$	<b>80 MHz to 800 MHz</b> $d = 0,35\sqrt{P}$	<b>800 MHz to 2,5 GHz</b> $d = 0,7\sqrt{P}$
0,01	0,12	0,04	0,07
0,1	0,37	0,11	0,22
1	1,2	0,35	0,70
10	3,7	1,1	2,2
100	12	3,5	7,0
<p>For transmitters rated at a maximum output power not listed above, the recommended separation distance <math>d</math> in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.</p> <p>NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.</p> <p>NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			

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