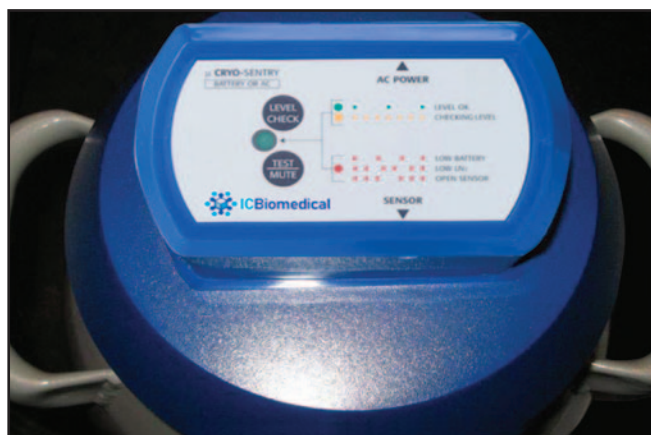# Cryo-Sentry

LOW LEVEL ALARM FOR LIQUID NITROGEN FREEZERS

The Cryo-Sentry is an optional accessory for select IC Biomedical portable liquid nitrogen freezers. Cryo-Sentry provides visual and audible alarms when the liquid nitrogen level drops below a preset level – usually 25 percent of the container's capacity.

This monitoring system provides a high level of security by alerting the user to low nitrogen levels and acting as a reminder scheduled refills.

SAFETY

The Cryo-Sentry consists of three components: Alarm Module, Power Supply, and Sensorcore.

Before using this accessory, read the Handle with Care booklet (TW-10) provided with the unit. It details safety precautions that must be read and understood before using the equipment.

Following are a few precautions described in *Handle with Care*. Please read the entire booklet.

Do not touch liquid or cold metal surfaces with your bare skin. The liquid nitrogen used in cryogenic refrigerators is **extremely cold**: -320°F (-196°C). Exposure of skin or eyes to liquid, cold gas, or frosted parts could result in a severe, frostbite-like skin injury.
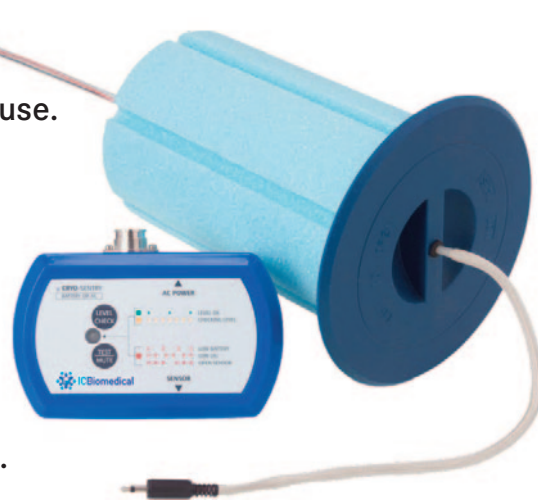
Use only the sensorcore provided with this accessory or the one originally shipped with the refrigerator. A tight-fitting plug or stopper will cause a pressure increase in the container that may damage the container and/or cause personal injury.

INSTALLATION

The Cryo-Sentry low level alarm arrives ready for immediate use.

110 VAC POWER

The alarm runs on either 110 VAC or four (4) AA size battery power. Batteries not included. For 110 VAC, simply plug the wall transformer into alarm module at the jack labeled "AC POWER". Next, plug the sensorcore into the alarm module at the jack labeled "SENSOR". (The Cryo-Sentry alarm module can either be attached to your dewar with the VELCRO® strips provided or can be mounted to the wall). Lower the sensorcore into the refrigerator, and plug the transformer in a 110 VAC outlet or a surge protected power supply.

BATTERY POWER

The alarm can also run on four (4) AA batteries. Once installed, the batteries will supply power to monitor for an extended period of time.

- continued -

Cryo-Sentry

ICBiomedical

LOW-LEVEL ALARM FOR LIQUID NITROGEN FREEZERS

INSTALLATION *(Continued from front page)*

To install the batteries, remove the back cover and insert the batteries. The positive (+) terminal should be pointed towards the "+" label on the battery holder.

Duration of battery-powered operation can vary from six months to one year depending on the usage. An audible and visual alert will be activated once battery power is low.

OPERATION

The Cryo-Sentry low level alarm automatically checks the liquid level every 30 minutes. This conserves battery power thereby extending the security. The 25 percent level notification provides sufficient time for the user to refill the refrigerator.

The user can check the level without opening the vessel by pressing the "LEVEL CHECK" button. Results will be displayed in 30 seconds. The possible results are provided in the following table:

Conditions	Color	Flash Rate	Audible
Level OK	Green	30 sec.	No
Checking	Yellow	1 sec.	No
Low battery	Red	1 sec.	Yes
Low LN(2)	Red	2 sec.	Yes
Sensor Fault	Red	3 sec.	Yes

MUTE: The user can mute the audible alarm at any time by pressing the "TEST/MUTE" button. The alarm will remain muted until the next 30 minute check is made. However, the LED will remain red until the LN2 level is raised above 25 percent.

TEST: The status light and the audible horn can be tested by depressing the "TEST/MUTE" button. This test can only be made so long as an alert condition does not exist.

REMOTE ALARM

The remote alarm circuit activates immediately once a Low Battery, Low LN2 or Sensor Fault is detected. The remote alarm will remain active even if the battery power is depleted. Pins 1 and 2 are closed in normal operation. Pins 2 and 3 are closed during a remote alarm condition.

Remote Alarm Plug Connection

1
2 (COMMON)
3
ALARM RELAY

GRAY
ORANGE
PURPLE

GRAY
(Pan View)

RECPTACLE
(SOCKET VIEW)

REPLACEMENT PARTS	
Description	**Part No.**
Alarm Module	5140-1124
Power Supply	5190-3094
Remote Alarm Plug (optional)	R06K-8C20
Sensorcore Assembly for XT20 or XT34	R033-8C40
Sensorcore Assembly for XT21	R021-8C40
Sensorcore Assy for 20HC, 34HC & TW34	R034-8C40
Sensorcore Assy for 35HC	R037-8C40
Sensorcore Assy for 35VHC or LS750	R036-8C40
Sensorcore Assembly for LS3000	RS30-8C42
Sensorcore Assembly for LS4800	R05K-8C27
Sensorcore Assembly for LS6000	RS60-8C28
Sensorcore Assembly for 38VHC	R038-8C45

REMOTE ALARM

Order all replacement parts and accessories from your local distributor. Please include the model number of your freezer, part number, quantity and description of each part requested.
For more information or to find the name of your local distributor, contact IC Biomedical.

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