

HAMPSHIRE



CONTROLS

*"Safeguarding
Your Precious
Biological
Materials"*



MPS-LV LN2 Level & Vacuum Breach Monitor/Alarm

PRODUCT DESCRIPTION:

Safeguard your precious biological materials in liquid nitrogen (LN2) Dewars and freezers with the MPS-LV LN2 Level and Vacuum Breach Monitor/Alarm. The system is designed to monitor cold storage temperature conditions and vacuum integrity within LN2 cryogenic Dewars typically used for the cryopreservation of genetic/biological materials, cold storage of vaccines, in vitro fertilization (IVF), and other processes using LN2.

The MPS-LV LN2 Level and Vacuum Breach Monitor/Alarm can be configured to monitor up to 4 Dewars/freezers simultaneously utilizing 2 probes for each Dewar/freezer. The first probe is a cryogenic RTD that detects the LN2 level by measuring the change in electronic resistance due to self-heating when the sensor is no longer immersed in LN2. The second probe is a flat 100-ohm RTD that is mounted externally on the Dewar or LN2 freezer with an adhesive insulated strip, so that the probe does not react to ambient temperature. In the event of a Dewar vacuum breach, the outer shell of the Dewar will become cold due to the loss of the thermal insulation provided by the vacuum. This catastrophic condition will be captured by the MPS-LV LN2, and an alarm will be initiated.

The MPS-LV LN2 Level and Vacuum Breach Alarm offers comprehensive flexibility with individual operator-programmable alarm setpoints and delay periods for each of the probes for all monitored Dewars/freezers. The system is equipped for email notifications of alarm conditions and relay output to remote alarms, building automation systems, and/or automatic telephone dialers.

Custom programming and packaging can be provided to satisfy any cryogenic temperature monitoring application.



FEATURES:

- Continuously monitors LN2 level simultaneously in up to 4 Dewars to customizable levels (2" to 24")
- Continuously monitors vacuum integrity simultaneously in up to 4 Dewars
- Easy-to-read backlit 128 x 64 graphic display with variable precision (1 °C, 0.1 °C, etc.)
- Channel independent adjustable high/low alert condition settings and alarm delay periods
- Tri-color status LEDs for each probe
- Audible alarm with independent alarm mute periods
- Optional email and/or text notifications of alert conditions via Ethernet
- Web browser accessible real-time data display and programmability
- Authenticated administrative programming authorization with user and guest access
- Integrates with our T⁹ Sentry ALERT Monitoring data logging system
- Built-in LiPo battery backup
- Tilt-adjustable desk/wall mounting bracket

AVAILABLE OPTIONS:

- Up to 4 cryoRTD LN2 level sensors to customizable levels (2" to 24")
- Up to 4 flat 100-Ohm RTD Dewar vacuum breach sensors
- Optional email and/or text notifications of alert conditions via Ethernet
- 10/100 Base-T TCP/IP Ethernet output to ALERT Monitoring System data logging software
- Large display panel for cabinet mounting

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MPS-LV LN2 Level & Vacuum Breach Monitor/Alarm

Probes	LN2 Level (1 to 4 Probes)	Vacuum Breach (1 to 4 Probes)
Sensor & Probe	100-ohm cryoRTD with customized 2" - 24" (51 – 610 mm) s.s. sheath, 10' (3m) lead, Teflon jacketed	Flat 100-ohm RTD, external Dewar probe, 6' (2m) lead, Teflon jacketed
Temperature Range (°C)	Probe immersed in LN2 ("OK") or not ("ALARM")	-100 to 100 °C
Accuracy/Repeatability		±0.2 °C
Display Units	"OK" or "ALARM"	°C
Display Resolution		User selectable, 0 to 3 decimal places, ≤7 characters total

Alarm	Frequency	Amplitude	User-adjustable initial alarm delay period
Audio	3.0 – 3.6 kHz	85-90 dB	Selectable audio mute period
Visual	~1 Hz flashing red LED		

Output Options

Single Relay (SPST)	Form A (normally open – NO)	Form B (normally closed – NC)
Ethernet	10/100 Base-T, with data accessible via HTTP and/or the T° Sentry ALERT Monitoring System data logger, when equipped with the MPS Operating Program	

Battery Backup

3.7V Rechargeable	1150 mAh Li-polymer cell, constant current and voltage charger, automatic recharge
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	Load	Supply	Optional Supply
Power Requirements	6 Vdc, 800 mA max	Standard 120-240 VAC, US, UL listed	7-24 VAC/DC (special order)

Mechanical & Environmental

Mounting Options	Standard: Cabinet top mount with bracket Option 1: Wall mount Option 2: Large display flush/panel mount (special order)
Dimensions, WxHxD	7.0 x 4.0 x 2.0 in. (178 x 102 x 51 mm)
Weight	1.6 lbs. (711 g)
Case	Black Bakelite
Operating Temperature Range	-18 to 55 °C (0 to 130 °F)

MPS Web Accessible Operating Program Featuring	Hardware Requirements
<ul style="list-style-type: none"> • Real time data visualization • Sensor channel configuration and calibration • Mathematical and logic functions • Alarm limits and delay settings • Email, SMS text settings and options 	<ul style="list-style-type: none"> • PC with Ethernet and modern browser

One-year warranty on all Hampshire Controls products.

About Us: Established in 1975, Hampshire Controls provides standard and custom-designed electronics to the biomedical and industrial markets. In addition to the wide variety of **MPS Multi-Probe Monitor/Alarms**, our product portfolio includes:

- T° Sentry Model 140 single probe temperature monitor/alarms
- TT-150/200 temperature & humidity Wi-Fi transmitters
- LD-215 Liquid Nitrogen Level Detector/Alarms
- Air Flow Monitors (50 to 2500 FPM)
- STEDIVOLT SV2005 Line Voltage Controls
- Customized OEM electronics design and manufacturing
- T° Sentry **ALERT Monitoring System** data logging
- CO₂, LN₂ **CA5000 Freezer Backup Systems**
- **TC-25 & TC-25+ TEMPCHECK Rapid Response Thermometers**
- **ADM-215 Remote Alarm Delay Modules**
- Customized monitoring, alarm notification, and logging

