

# CO<sub>2</sub> BACKUP



This system is designed to enable the Low or Ultra-Low temperature freezer to maintain a safe sample storage temperature in the event of power cut or freezer fault.

An electronic measurement system continuously monitors the freezer's internal temperature. If this temperature rises above a certain level (determined by the user), the system will inject liquid CO<sub>2</sub> at a controlled rate to keep the cabinet cold. This action will continue until either the liquid CO<sub>2</sub> supply is empty or the internal battery of the CO<sub>2</sub> back up is discharged, giving time to restore power or move samples to an alternative location.

The system is powered by electric mains under normal conditions. Should the main power fail, the internal battery will continue to operate the system for several days (72 hours), providing continuous sample protection.

| TECHNICAL SPECIFICATIONS   |  |
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| Power supply required  | 100-240V - 50/60Hz   |
| Power connection   | Via integral power cord  |
| Dimensions (mm) (WxDxH)  | 240x340x120  |
| Cabinet material   | Stainless steel  |
| Weight (kg)  | 15kg   |
| Liquid CO <sub>2</sub> connection (supplied form cylinder with dip tube) | 3/8"   |
| Min/Max pressure   | 5/70 bar   |
| Liquid CO <sub>2</sub> injection   | Via integral solenoid valve and capillary tube   |
| Liquid CO <sub>2</sub> consumption (when back up active)                 | Estimated life of single 10kg cylinder. 7 hours at -70 °C inject setpoint and 20 °C ambient temperature. Multiple cylinders can be connected |
| Backup battery   | 12V / 7 AH   |
| Battery life (no main power)   | Typically minimum 72hrs with -70°C inject setpoint   |
| Injection set point  | User adjustable in 1°C increments > -76°C  |
| Temperature probe  | PT 1000  |
| Temperature measurement uncertainty                                      | -/+ 2°C of displayed temperature at -70°C  |
| CO <sub>2</sub> injection hysteresis                                     | 2°C  |

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