



MVE TECH TIPS



MVE Tech Tips June 2006

TEC-3000 CONTROLLER

We are pleased to announce the introduction of our new TEC-3000 controller which will be fitted to all new MVE storage refrigerators in the near future. We have attached a datasheet for the new controller together with a comparison sheet showing the major feature and benefits of this new unit.



MVE TEC 2000 vs. TEC 3000

	TEC 2000	TEC 3000
Alarm Outputs	No Discrete Alarm Indicators	Discrete Alarm Indicators Temp A High Low Level High Level Low Battery
Serial Communications	One RS-485 Serial Port	Two RS-485 Serial Ports
User Interface	2 x 16 LCD Display 20 Membrane Switches (Keys)	4 x 20 LCD Display 8 Membrane Switches (Keys)
Data Storage	360 Records	30,000 Records
Security	1 Password	10 Programmable Passwords 4 Possible Security Levels
Timed Filling	N/A	Programmable 1-28 Days
One Fill All Fill	Simultaneous Only	Simultaneous or Sequential
Sequential Fillings	N/A	Capable To Fill Up To 100 Units
Languages	English	English Spanish French German Italian
Bypass Sensor Calibration	No	Yes
Sensor Calibration Alarm	No	Yes Temp A Temp B Bypass Temp
Usage Warning	No	Yes, When usage doubles from one calculation to the next
Usage Alarm	No	Yes, When usage increases by 5x from one calculation to the next

TEC 3000



The TEC 3000 employs a variety of high level features that enable the controller to monitor and control the environment inside a freezer with a high level of precision.

FEATURES/OPTIONS:

- Liquid Nitrogen Level Measurement
- Automatic Liquid Nitrogen Level Control
- Two Channel Temperature Measurement
- Multi-Function User Defined Alarms
- Battery Backup (Optional)
- Adjustable Security / Password System
- Gas Bypass (Optional)
- One Fill All Fill Capability (Sequential or Simultaneous)
- Timed Filling

TECHNICAL SPECIFICATIONS:

- **Level Measurement**
 - Sensor Type - Dual Port Pressure Transducer Measurement
Accuracy +/- .5 in; +/- 13 mm (typical)
 - Liquid Usage Feature
 - Two Point Calibration Feature
- **Level Control**
 - Control Type - On/Off
 - Control Output - (Fill Solenoid Valve)
 - 24VDC, 1.0 amp (max)

- **Temperature Measurement**

- Two Sensors, Platinum RTD - Two wire element
- Accuracy +/-2.0°C Full Scale
- Altitude Compensation For Accuracy
- Full Range Calibration Feature
- Probe Heater For High Temp Alarm Testing

- **Front Panel Display**

- LCD Readout, 4 row x 20 character
- Level Display - Inches, mm
- Temperature Display - °C, °F, or °K

- **Standard Alarms**

- Alarm Conditions
 - Low Level Alarm
 - High Level Alarm
 - Low Temperature (Probe A & B)
 - High Temperature (Probe A & B)
 - Fill Time Alarm
 - Power Failure (remote only)
 - Lid Open Alarm
 - Usage Warning
 - Temperature Calibration Alarm (Probe A & B)
 - Usage Alarm

- **Optional Alarms**

- Bypass Sensor Failure
- Bypass Time
- Bypass Sensor Calibration
- Power Failure (audible and visual in addition to remote)
- Low Battery Voltage

- **Alarm Output**

- Both Visual and Audible Alarms
- One Global Remote Alarm Relay
- Four Discrete Remote Contacts
 - Temp A High
 - Low Level
 - High Level
 - Low Battery (Optional When Equipped With Battery Backup)

- **Controller Features**

- Communication Interface - Serial Communication
RS485/ASCII/MODBUS
- Memory - Stores time and date stamped information on the controllers 30,000 most recent events

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MVE NAMING CONVENTION CHANGE

With the introduction of the new controller we have also taken the opportunity to review our product model naming convention in an effort to ease the explanation of model differences to customers. This new convention is more in line with that of our competitors in that model capacities are easily identified. Below is a chart showing old and new model names.

The first number in the model description indicates the size of the dewar or series. Smaller models (100, 200, 500, 600, and 800 series) will use three digit numbers and larger models will utilize four digit numbers (1200, 1300, 1400, 1500, and 1800 series) The last two numbers represent 2mL vial capacity in thousands of vials. This number will be followed by "C" if the unit is a cabinet and "F" if it is full auto (with GB and BB).

NOTES:

- Although not listed below, gas bypass and battery backup options will still be in the description as GB and BB following the F signifying full auto.
- Units sold overseas will carry an MDD CE label for European Certificate validation
- The "P" following the model size designates "pie shaped" turntable sections.
- The "R" following the model size designates "rectangular shaped turntable sections.
- -150 signifies HE models and -190 dignifies Eterne models.

Old description	2 nd Line Description	New description	Series	Notes
MVE 140	Basic	MVE 103	100 series	No auto avail.
MVE230	Basic/ old style	MVE 204	200 series	No auto avail.
MVE230 Gen2	Basic/ Gen 2	MVE 205	200 series	Basic no auto
MVE 230 Gen2	Full auto	MVE 205F	200 series	TEC-3000
MVE 511 Gen2	basic	MVE 510	500 series	Basic no auto
MVE 511G2/F	Full auto	MVE510F	500 series	TEC-3000
MVE 600F	Full auto	MVE 616CF	600 series	Cabinet/full auto
MVE 611	basic	MVE 616	600 series	Basic no auto
MVE 611F	Full auto	MVE616F	600 series	TEC-3000
MVE 810	basic	MVE 811	800 series	Basic no auto
MVE 810F	Full auto	MVE811F	800 series	TEC-3000
MVE 810HE	basic	MVE 815P-150	800 series-150	Basic no auto
MVE 810HEF	Full auto	MVE815P-150F	800 series-150	TEC-3000
MVE 810Eterne	basic	MVE815P-190	800 series-190	Basic no auto
MVE810EterneF	Full auto	MVE815P-190F	800 series-190	TEC-3000
MVE 810HE +	basic	MVE 818-150	800 series-150	Basic no auto

MVE 810HE+F	Full auto	MVE 818P-150F	800 series-150	TEC-3000
MVE 1211	basic	MVE 1223	1200 series	Basic no auto
MVE 1211F	Full auto	MVE 1223 F	1200 series	TEC-3000
MVE 1370	basic	MVE 1320	1300 series	Basic no auto
MVE 1370 F	Full auto	MVE 1320 F	1300 series	TEC-3000
MVE 1400 F	Full auto	MVE 1426 CF	1400 series	Cabinet/full auto
MVE 1411	basic	MVE 1426	1400 series	Basic no auto
MVE 1411 F	Full auto	MVE 1426 F	1400 series	TEC-3000
MVE 1520HE DRYSHIPPER W/SKID	For air transport	MVE 1533 PD -150	1500 series- 150	With shipslog
MVE 1520HE	basic	MVE1533P-150	1500 series- 150	Basic no auto
MVE 1520HEF	Full auto	MVE1533P-150F	1500 series- 150	TEC-3000
MVE1520HEG2	basic	MVE1539R-150	1500 series- 150	Basic no auto
MVE1520HEF G2	Full auto	MVE1539R-150F	1500 series- 150	TEC-3000
MVE1520HEG2+	basic	MVE1542R-150	1500 series- 150	Basic no auto
MVE1520HEFG2+	Full auto	MVE1542R-150	1500 series- 150	TEC-3000
MVE 1520 Eterne	basic	MVE1533P-190	1500 series- 190	Basic no auto
MVE1520 Eterne F	Full auto	MVE1533P-190F	1500 series- 190	TEC-3000
MVE1520HE+	basic	MVE1536P-150	1500 series- 150	Basic no auto
MVE1520HE+F	Full auto	MVE1536P-150F	1500 series- 150	TEC-3000
MVE 1830HE 2004	basic	MVE 1879P-150	1800 series- 150	Basic no auto
MVE1830HEF 2004	Full auto	MVE1879P-150F	1800 series- 150	TEC-3000
MVE1830HEG2 2004	Basic	MVE1881R-150	1800 series- 150	Basic no auto
MVE1830HEF G2 2004	Full auto	MVE1881R-150F	1800 series- 150	TEC-3000

MVE 1830 Eterne 2004	Basic	MVE 1879P-190	1800 series-190	Basic no auto
MVE 1830 Eterne F 2004	Full auto	MVE1879P-190F	1800 series-190	TEC-3000
MVE 1830HE+ 2004	basic	MVE1892P-150	1800 series-150	Basic no auto
MVE 1830HE+F 2004	Full auto	MVE1892P-150F	1800 series-150	TEC-3000
MVE1830-2T 2004	basic	MVE1894P 2T-150	1800 series-150	Basic no auto
MVE18302TF2004	Full auto	MVE1894P 2T-150F	1800 series-150	TEC-3000
MVE 1830 2004	Basic	MVE 1851P-150	1800 series-150	Basic no auto
MVE 1830F 2004	Full auto	MVE 1851P-150F	1800 series-150	TEC-3000
MVE 1841 Gen2	basic	MVE1839	1800 series	Basic
MVE 1841 Gen2F	Full auto	MVE1839F	1800 series	TEC-3000

PRICE INCREASE

The major components of our products are stainless steel and aluminum which have continually increased in price as demand is outstripping supply. Additionally, the rising cost of fuel has affected us through both transportation and supplier pricing. To counteract these costs we have placed a major focus on reducing our manufacturing costs through lean production and careful management of our raw materials. Though these efforts have enabled us to absorb a significant amount of the price increases, we were forced to increase prices by an average of 2% effective July 1st in order to recoup our losses. The majority of our competitors have increased their base prices within the last few months and feel confident that our new pricing levels (together with the new TEC-3000) will enable you to continue to gain business in your territory. These new prices will be applied to all new orders received starting July 1st 2006.

POWER SUPPLY REPLACEMENT

If an existing MDC power supply needs to be replaced on a customer's freezer, it will need to be replaced with a Jerome power supply kit (P/N 11943012 for 110V, P/N 11929886 for 220V) which includes the power supply, power cord, bracket, and screws.

TEC-2000 REPLACEMENT

Although the TEC-3000 will replace the TEC-2000, we will continue to carry the TEC-2000 for a time. There are two versions of the TEC-2000 with different front panels so ensure that the correct controller is ordered. The part numbers listed include the assembled stand alone and front panel.

- TEC-2000 controller with symbolic front panel (Europe)
- TEC-2000 controller with numeric front panel (Domestic and where MDD & CE are not requires)

NEW CUSTOMER SERVICE MEMBER

Amber Snow has joined the Chart Biomedical customer service group. She will be working primarily with U.S. and Canadian customers. Please welcome Amber as she gets settled into her new role.

CUSTOMER/TECHNICAL INFO

For copies of past Tech Tips or for more information on maintaining nitrogen storage system please contact Technical Service:

USA: 800 482 2473

Europe: +44 1344 403100

Asia/Australia: +61 297 494333