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### I. System

#### A. Supports up to 60 VAV HVAC Units

1. Each HVAC Unit Can Support up to 59 VAV Boxes
2. Constant Volume Units Can Be Integrated With VAV Units
3. System Can Support Over 3000 Controllers

#### B. Fill-in the Blank Programming

#### C. Program and Monitor VAV Unit and Box Controllers Without a Personal Computer

#### D. Remote Communications Options

1. Modem
2. Intranet
3. Internet

#### E. Free PRISM Personal Computer Software!

#### F. Intelligent Integration Between HVAC Unit and Boxes

#### G. VAV Box Packages Available From WattMaster or Factory Mounting Available From Other VAV Box Suppliers

#### H. Automatic Controller Search and Find

#### I. Password Access Security

#### J. Onsite and Remote Alarm Notification Capability

#### K. Operator Interfaces

1. System Manager
  - a) Features:
    - (1) User Friendly Interface
    - (2) Menu Driven Programming
    - (3) Function Keys Simplifies Data Entry
    - (4) Program and Monitor all Controllers Without a Personal Computer
2. Handheld Service Tool
  - a) Features:
    - (1) User Friendly Interface
    - (2) Menu Driven Programming
    - (3) Function Keys Simplify Data Entry
    - (4) Program and Monitor all Controllers Without a Personal Computer
    - (5) Special Override Features for Service Technicians

#### L. All Devices 24VAC - Low Voltage

#### M. Non-battery Memory Back-up

## **II. VAV/CAV Unit Controller**

### **A. Stand Alone Controller**

### **B. One Controller Supports Variable Air Volume and Constant Air Volume Applications**

### **C. Works With Heat Pumps**

### **D. Up to 16 Relay Outputs Configurable for:**

1. Heating Stages
2. Cooling Stages
3. Exhaust Fans
4. Preheat for Low Ambient Protection
5. Gas Reheat for De-humidification on CAV Units
6. Warm-up Command for Non-WattMaster Boxes
7. Reversing Valve for Air to Air Heat Pumps
8. Alarm Indication

### **E. Heating/Cooling**

1. Staged Control
  - a) Up to 8 Stages Cooling
  - b) Up to 8 Stages Heating
2. Modulating Control With Expansion Module (Optional Feature Contact Factory)
  - a) Chilled Water Valve
  - b) Hot Water Valve or SCR

### **F. Field Selectable Controlling Sensor:**

1. Supply Air Temperature
2. Return Air Temperature
3. Space Temperature
4. Outdoor Air Temperature
5. Signal From Remote Source

### **G. Supply Air Reset Sources:**

1. Outside Air Temperature
2. Space Temperature
3. Fan VFD Percentage
4. Return Air Temperature
5. External Voltage Signal
6. Local Analog Value

### **H. VFD Control**

1. Supply Fan Static Pressure
2. Relief Fan

**I. Economizer Control**

1. Drybulb
2. Wetbulb
3. IAQ/CO2 Reset
4. Free Night Cooling

**J. Relief Fan**

1. Controlled From Building Pressure Sensor
2. Variable Relief Control With VFD
3. On/Off Relief/Exhaust Fan Control

**K. Plug-in Expansion Boards for Added Capability****L. Scheduling Functions**

1. Time of Day Scheduling
  - a) Occupied/Unoccupied - Night Set Back/Up
  - b) 2 Events per Day
2. Holidays
  - a) 365 Day Programming
  - b) 14 Events per Year
    - (1) Event = 1 Day or Group of Days
3. Automatic Daylight Savings Adjustment

**M. Fan Proof of Flow****N. De-humidification Control With Hot Gas Reheat for Constant Volume Applications****O. Morning Warm-up****P. Outside Air Temperature Lockouts****Q. Optimal Start****R. Equipment Safeties**

1. Fan Delay
2. Staging Delays
3. Minimum Off Time
4. Minimum Run Time

**S. Remote Overrides**

1. Occupied/Unoccupied
2. Forced Cooling Mode
3. Forced Heating Mode

**T. Alarms**

1. Mechanical Failure
  - a) Heating
  - b) Cooling
2. Space Sensor Failure
3. Fan Failure
4. Dirty Filter
5. Controlling Temperature Alarm

**U. Controller Board Features**

1. Status LEDs
  - a) Power
  - b) Relay Status
  - c) Communications
  - d) Diagnostics
2. Quick Disconnect Terminal Blocks
3. Plug-in Service Port
4. Plug-in Port for Expansion Boards
5. Field Replaceable Communication Driver Chip

**V. Trend Logging Values:**

1. Date and Time
2. Space Temperature
3. Return Temperature
4. Active Heating and Cooling Setpoint
5. Supply Air Temperature
6. Outside Air Temperature
7. Outside Air RH (if installed)
8. Static Pressure
9. Economizer Percentage
10. Supply Fan VFD Percentage
11. Relief Fan VFD Percentage
12. Onboard Relay Status
13. Expansion Board Relay Status
14. Supply Setpoint Reset Value
15. Relief Pressure Reading
16. Adjustable Log Interval

### **III. VAV Box Controller**

#### **A. Box Types**

1. Cooling Only
2. With Reheat
  - a) Electric
    - (1) Staged
    - (2) Modulating SCR
  - b) Hot Water
    - (1) Modulating
    - (2) On/Off
  - c) Reheat Interlock With Supply Fan
3. Fan Powered
  - a) Series
  - b) Parallel

#### **B. Direct or Reverse Actuator Control**

#### **C. Airflow Control**

1. Pressure Dependent or Independent
2. Min Position Settings for All Modes
3. Damper Force Modes

#### **D. Precision Proportional/Integral Damper Control Algorithm**

#### **E. Alarms:**

1. Hi and Low Space Temperature
2. Space Sensor Failure
3. Damper Actuator Failure
4. Airflow Sensor Failure
5. Damper Feedback Failure

#### **F. Trend Logging Values:**

1. Date and Time
2. Space Temperature
3. Active Heating and Cooling Setpoint
4. Supply Air Temperature
5. Air Flow on Pressure Independent Boxes
6. Damper Position
7. Adjustable Log Interval

**G. Controller Board Features:**

1. Status LED's
  - a) Power
  - b) Relay Status
  - c) Communications
  - d) Diagnostics
2. Quick Disconnect Terminal Blocks
3. Plug-in Service Port
4. Plug-in Connectors for:
  - a) Actuator
  - b) Flow Sensor
  - c) Expansion Board
5. Field Replaceable Communications Driver Chip

**IV. PRISM Software**

**A. Windows Based**

1. Compatible With 95, 98, ME, XP, 2000

**B. User Friendly**

1. Auto Installation
2. Fill-in the Blank/Point and Click Programming
3. Pre-designed Status Screens

**C. Communication with Controllers From a Personal Computer**

1. Onsite
2. Remote
  - a) Modem
  - b) TCP/IP Internet

**D. Data Logging**

1. Trend Logging
  - a) Automatic Trend Log Retrieval via a Personal Computer
2. Alarms Logging
3. Tenant Override Logging
4. User Log In History

**E. Alarm Reporting**

1. Direct to Personal Computer
2. Via Modem to Remote Personal Computer
3. Via Modem to a Pager
4. Via E-mail With TCP/IP Connection

**F. User Defined Descriptors for All Controllers****G. User Defined Custom Graphics****H. Auto Device Search and Find Feature****I. Multiple Password Levels****J. Broadcast Programming Allows Multiple Controllers to be Programmed With Just a Click!****K. Status Reporting Documentation****V. Add-On Devices****A. Lighting Controller**

1. Indoor or Outdoor Lighting
2. Point and Click Programming
3. Personal Computer Required for Set-up

**B. General Purpose Controllers**

1. Configurable Controller for Special Control Functions
2. Covers Broad Range of Possible Applications:
  - a) Boilers
  - b) Pumps
  - c) Unit Heaters
  - d) Exhaust Fans
  - e) Time Clock Control
  - f) Monitoring
  - g) Logic Statement Programming Provides Flexibility for Special Requirements.

**C. Scheduler**

1. For Expansion of Scheduling Capability
2. Expands Holiday Capacity