Viconics VH7200 Digital PI Humidity Controller Engineering Guide Specification
General – The VH7200 family is specifically designed for control of humidification and dehumidification equipment such as steam header direct injection, desiccant wheel, or stand alone humidification / dehumidification equipment. The VH7200 features a complete embedded humidity control solution with a backlit LCD display. Non-communicating stand-alone as well as communicating BACnet™ MS-TP models are available depending on the application.

Quality Assurance - The humidistat shall be manufactured within a systems certified **ISO-9001** and **ISO-14001** facility and must have the following industry approvals:

Humidistat power requirements:	19-30 Vac 50 or 60 Hz; 2 VA (RC & C) Class 2
Operating conditions:	0 °C to 50 °C (32 °F to 122 °F) 0% to 95% R.H. non-condensing
Storage conditions:	-30 °C to 50 °C (-22 °F to 122 °F) 0% to 95% R.H. non-condensing
Resolution:	Temperature: ± 0.1 °C (± 0.2 °F) Humidity: ± 0.1%
Control accuracy:	Humidity: ± 5% RH from 20 to 100% RH at 50 to 90°F (10 to 32°C)
Humidification setpoint range:	10% RH to 90% RH
Dehumidification setpoint range:	15% RH to 95% RH
Outdoor air temperature range:	-40 °C to 50 °C (-40 °F to 122 °F)
Binary inputs:	Relay dry contact only across “Scom” and “DI1” terminals
Contact output rating:	Each relay output: 30 Vac, 1 Amp. Max. / 30 Vac, 3 Amp. in-rush
Analog output rating:	0 to 10 Vdc into 2KΩ resistance minimum
Wire gauge:	18 gauge maximum, 22 gauge recommended
Dimensions:	4.94” x 3.38” x 1.13”
Approximate shipping weight:	0.75 lb (0.34 kg)

Agency Approvals:
UL UL 873 (US) and CSA C22.2 No. 24 (Canada), File E27734 with CCN
XAPX (US) and XAPX7 (Canada)
FCC Compliant to CFR 47, Part 15, Subpart B, Class A (US)
Industry Canada ICES-003 (Canada)
CE EMC Directive 89/336/EEC (Europe Union)
C-Tick AS/NZS CISPR 22 Compliant (Australia / New Zealand)

VH72xx
General – The low-voltage humidistat shall be capable of **on/off dehumidification** as well as **(on/off and/or analog 0-10Vdc humidification)**. The humidistat shall be a **(non-communicating stand-alone model, BACnet MS_TP communicating model, Echelon Lontalk communicating model or Zigbee wireless communicating model).**

- Humidistat shall provide accuracy of +/-3% over control range.
- Humidistat shall be equipped with a large, 2 line, 16 character LCD dual intensity backlit display with two status LEDs showing HUM (Humidification), DEHUM (Dehumidification).
- Humidistat shall achieve accurate relative humidity control using a unique PI proportional-integral algorithm. Traditional differential-based humidistats are not acceptable.
- Humidistat shall have an embedded local “real text” configuration utility for simplified sequence selection, start-up and configuration using an integrated three-button keypad. Humidistats requiring external configuration tools or network interface for start-up and configuration are not acceptable.

- Humidistat shall have an internal relative-humidity sensor in addition to embedded humidification and dehumidification sequences. The humidistat shall have a 0-10Vdc analog output and/or on/off output to control modulating humidifiers. The humidistat shall also have a discreet output (dry contact) to activate . Dessicant type or mechanical dehumidification equipment.
- Humidistat shall have an input for a remote relative humidity sensor (0-10Vdc). Remote sensor shall be auto-sensing and require no internal configuration. While connected the internal RH sensor shall be disabled
- Humidistat shall have ability to display the actual relative humidity directly on the LCD display.
- Humidistat shall have adjustable relative humidity setpoints as well as adjustable maximum humidification (from 10% to 90% relative humidity) and minimum dehumidification limits (from 15% to 95% relative humidity).
- Humidistat shall be capable of humidity set point reset based upon outdoor temperature sensing for added flexibility (outdoor temperature sensor or network signal required). When an outdoor air temperature sensor is connected, the humidistat shall be capable of displaying the outdoor air temperature on the local LCD display.
- Humidistat shall have integrated proportional high-limit logic and input (0-10Vdc humidity sensor required) for discharge humidity sensor. This feature shall prevent excess condensation in the supply duct.Humidistat shall be capable of displaying the high limit when a humidity sensor is connected. Humidistat shall have an adjustable “reset humidity setpoint” from 10% RH to 90% RH. The humidistat will override the user relative humidity setpoint and revert to this setpoint when the outside air temperature reaches the low temperature setpoint (adjustable from –40°F to 15°F (-40°C to –9.5°C)) ***Models VH7270K1000x and VH7270F1000x only**
- Humidistat shall have the following modes of operation that can be selected using the local keypad (model dependant):

Off	System is disabled
Auto	System will satisfy both Humidification and Dehumidification setpoints
Humidification	System will satisfy the Humidification setpoint only
Dehumidification	System will satisfy Dehumidification setpoint only

- Humidistat shall have the ability to lockout the dehumidification sequence based on outside air temperature from –40ºF up to 122ºF, -40ºC up to 50ºC (outdoor air temperature sensor required).
- Humidistat shall have the ability to lockout the humidification sequence based on outside air temperature from –15ºF up to 120ºF, -26ºC up to 49ºC (outdoor air temperature sensor required).
- Humidistat shall have an adjustable maximum number of cycles per hour (under normal control operation) for the output relay for dehumidification and humidification (for on/off models). The adjustments range from 3 to 8 cycles per hour.
- Humidistat shall be supplied (without networking interface, BACnet MS_TP network interface, Echelon Lontalk network interface, Zigbee wireless network interface). BACnet MS_TP versions shall be provided with Protocol Implementation Conformance Statement or Lonmark approval disclosing all object/SNVT properties and instance numbers to facilitate the integration process. Echelon-Lontalk Communicating versions shall be provided with appropriate application files and LNS plug-in as required free of charge from the manufacturer.
- Humidistat shall utilize EEPROM memory to back up local configuration parameters in the event of power failure. Humidistats requiring batteries, or have no provisions for retention during loss of power shall not be acceptable.

- Thermostat shall have two (2) adjustable keypad lockout levels limiting access as follows:

Access Level	System Mode Changes	Setpoint Adjustment
0	Yes access	Yes access
1	No access	No Access

- Humidistat shall have a programmable binary input that can be used for the following local monitoring capabilities:

  - DI-1
    1. **None:** No function will be associated with the input
    2. **Service:** A backlit flashing “Service” alarm shall be displayed on the local humidistat LCD screen when input is energized.
    3. **Canister:** A backlit flashing “Canister” alarm shall be displayed on the local humidistat LCD screen when input is energized. This input can be tied to a dry contact output supplied by others.

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- Humidistat shall be pre-programmed, containing all required I/O to accomplish local humidity control.
- Humidistat shall be provided with intelligent HMI, to which will display services only as are available as switched through local digital input or network layer such as:

  - Outdoor air temperature display only enabled when outdoor air temperature sensor is connected
  - COM Address and various other parameters when a communication module is integrated inside the unit.

Humidistat with outdoor reset and proportional high limit shall be Viconics **VH7270x1000x**

Humidistat with outdoor reset only shall be Viconics, model **VH7200A1000x**