AER-HL1 Dew point detector / Humidity controller

Features

- Supervises dew point temperature or humidity levels and switches a relay if dew point temperature is too close to measured temperature or relative humidity exceeds the maximum level or if device is without power.
- Very low power consumption: <0.1 W
- Relays switching for outputs up to 200 W
- Password protected programmable humidity limits
- Selectable averaging signal
- Status LED
- Optional external operation terminal (OPA-S) with min. / max. humidity limit

Applications

Deactivate cooling valves if temperature on cooling media drops below dew point level. With the correct settings, condensation may be prevented.

General description

The AER-HL1 is a stand-alone electronic dew point detector or humidity controller. It supervises dew point temperature or humidity level of air and switches a relay if dew point temperature is too close to measured temperature or relative humidity exceeds the maximum level or if device is without power.

A status LED will blink green while the media temperature is above the dew point or the relative humidity is below the high limit switching level and the unit is operational. If the temperature drops below the dew point or the relative humidity exceeds the upper switching level, the limiter will disconnect the DRY contact and connect the WET contact. The LED will blink red in 5 sec. interval. The device will re-enter its normal operation only once the temperature increases above the dew point or the relative humidity drops below the low limit switching level for a period of 30 seconds.

Display and operation using OPA-S.

Using a display and programming accessory, the user has the option to read out measured values. In the large digits the difference between current temperature and dew point temperature is shown. In the small digits the humidity is displayed. If press the up key the maximum value is displayed, if the down key is pressed the minimum value is shown. The minimum and maximum values are saved into the EEPROM and are available after a power interruption.

Power interruption

The dew point detector will always enter condensation mode during power interruption or sensor failure. This means COM and WET will be connected. COM and DRY are disconnected.

Types and Ordering

Product Name	Product No.	Features
AER-HL1	40-50 0071	1 Internal humidity input, 1 relay DRY/WET
Accessories		
OPA-S	40-50 0006	External display and programming terminal

Mounting location & Installation

Mount the dew point detector close to the cooling source for example on or next to the supply pipe for cooling ceiling or chilled beams. Do not place near heat sources, draft channels. Do not expose to direct sunlight.

Further details: See installation sheet no. 70-000435 (www.vectorcontrols.com).

Configuration parameters

The device can be fine-tuned by adjusting the software parameters. The parameters are set with the OPA-S.

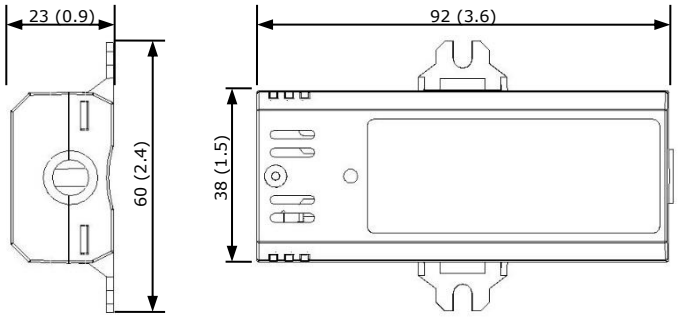
Parameter	Description	Range	Default
IP 00	TI1: Celsius or Fahrenheit, C = OFF, F = ON	ON, OFF	OFF
IP 01	TI1: Samples taken for averaging control signal	1…255	3
IP 02	TI1: Calibration	-10…10	0
IP 03	TI1: Switching difference current - dew point temperature	-40…215 °C/F	3°C
IP 04	TI1: Reset current – dew point temperature	-40…215 °C/F	7°C
IP 05	OFF = Switch based on dew point / ON = Switch based on humidity	ON, OFF	OFF
IP 06	Samples taken for averaging control signal	1…255	3
IP 07	Calibration	-10…10%	0
IP 08	Minimum display limit (keep at 0%)	0...100%	0%
IP 09	Maximum display limit (keep at 100%)	0...100%	100%
IP 10	Reset humidity limit	0...100% RH	80% RH
IP 11	Maximum humidity limit	0...100% RH	85% RH

Technical specification

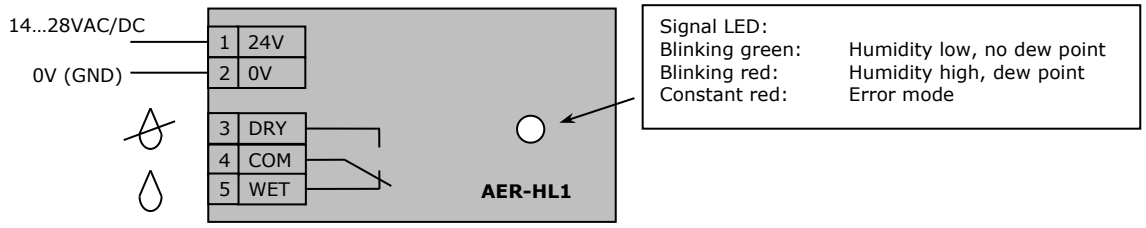
Caution! This device is intended to be used for comfort applications. Where a device failure endangers human life and/or property, it is the responsibility of the owner, designer and installer to add additional safety devices to prevent or detect a system failure caused by such a device failure. Vector Controls or its affiliates cannot be held liable for any damage caused by such a failure. Failure to follow specifications and local regulations may endanger life, cause equipment damage and void warranty.

Power supply	Operating voltage	14 V...28 VAC/DC, 50…60 Hz
	Power consumption	Max. 0.1 W
	Electrical connection	Terminal connectors, wire 0.34…2.5 mm² (AWG 24…12)
Signal inputs	Humidity input: Range Accuracy Hysteresis	Element: Polymer-Based Capacity Sensor 0…100% RH 10%...90% RH ±3.0% 0…10% and 90…100% ±5.0% ±1% RH
Signal outputs	Digital switching outputs Switching power	Relay 0.01...1(0.5)A, 5..250 VAC, 5...30 VDC
Environment	Operation Climatic conditions Temperature Humidity	To IEC 721-3-3 class 3 K5 0 °C …50 °C (32 °F…122 °F) <90% RH non-condensing
	Transport & storage Climatic conditions Temperature Humidity Mechanical conditions	To IEC 721-3-2 and IEC 721-3-1 class 3 K3 and class 1 K3 -25 °C…70 °C (-13 °F…158 °F) <90% RH non-condensing class 2M2
Standards	CE conform according to EMC standard 89/336/EEC EMEI standard 73/23/EEC	EN 61 000-6-1/ EN 61 000-6-3
	Product standards Automatic electrical controls for household and similar use Special requirement on humidity dependent controls	EN 60 730 –1 EN 60 730 – 2 - 9
	Degree of protection	IP30 to EN 60 529
	Safety class	II (IEC 60536)
Housing	Material	Polycarbonate PC (UL94 class V-0)
	Color	RAL 9016 (Traffic white)
General	Dimensions (H x W x D):	92mm x 60mm x 23mm (3.6” x 2.4” x 0.9”)
	Weight (including package)	80g (2.8 oz)

Dimensions mm (inch)



Wiring diagram



DRY = When the device is powered and no dew point alarm is active
WET = When the device is not powered or a dew point alarm is active