



DUCT MOUNT
MODEL# HSA-DM



WALL MOUNT
MODEL# HSA

WALL MOUNT AND DUCT MOUNT
VERSION AVAILABLE

OUTDOOR TEMPERATURE
OFFSET FOR SETPOINT RESET
DUE TO LOW OUTDOOR
TEMPERATURE.

N/C AND N/O CONTACT OUTPUT
FOR ON/OFF CONTROL.

MODULATION OUTPUT (0-10V)
FOR PROPORTIONAL CONTROL.

SETPOINT ADJUSTMENT INSIDE
CASE. NO HUMIDISTAT GUARD
REQUIRED.

ACTUAL HUMIDITY OUTPUT
AVAILABLE (0-10V).

LOW COST.

THE HSA CAN BE MOUNTED
DIRECTLY ON DRYWALL
OR WITH AN ELECTRICAL BOX.

THE HSA-DM COMES WITH
BACKING GASKET AND
MOUNTING SCREWS FOR
INSTALLATION DIRECTLY
ON DUCTS

WHY OUTDOOR TEMPERATURE OFFSET IS REQUIRED:

When outdoor temperatures fall below freezing, condensation may form on windows or thermopanes due to the large temperature difference between the two sides of the glass. Since insulation values for even the best thermally insulated windows are lower than an R5 rating, all windows installations can be subject to this fogging effect. The HSA humidistat, when used with the OTS-1 outdoor temperature sensor, detects low temperatures outside and automatically lowers (offsets) the humidity setpoint to prevent water condensation on your windows. The offset amount is nonlinear to avoid having the setpoint drop too low on very cold days.



DESCRIPTION:

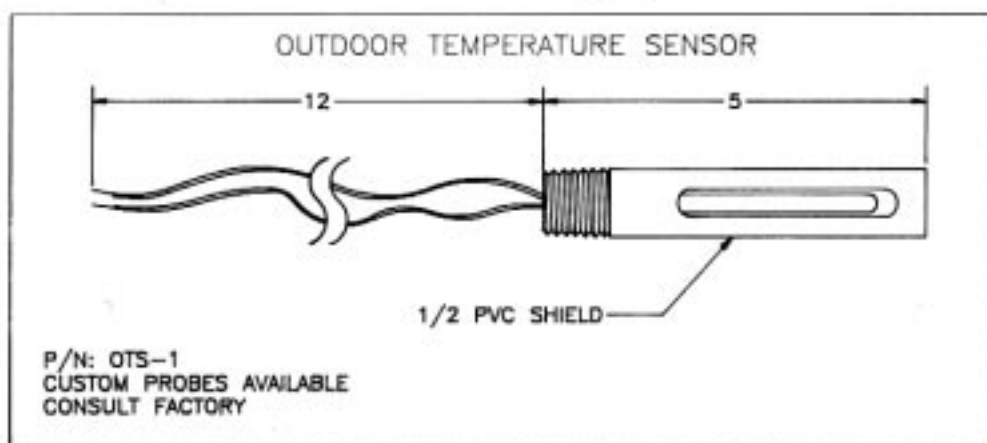
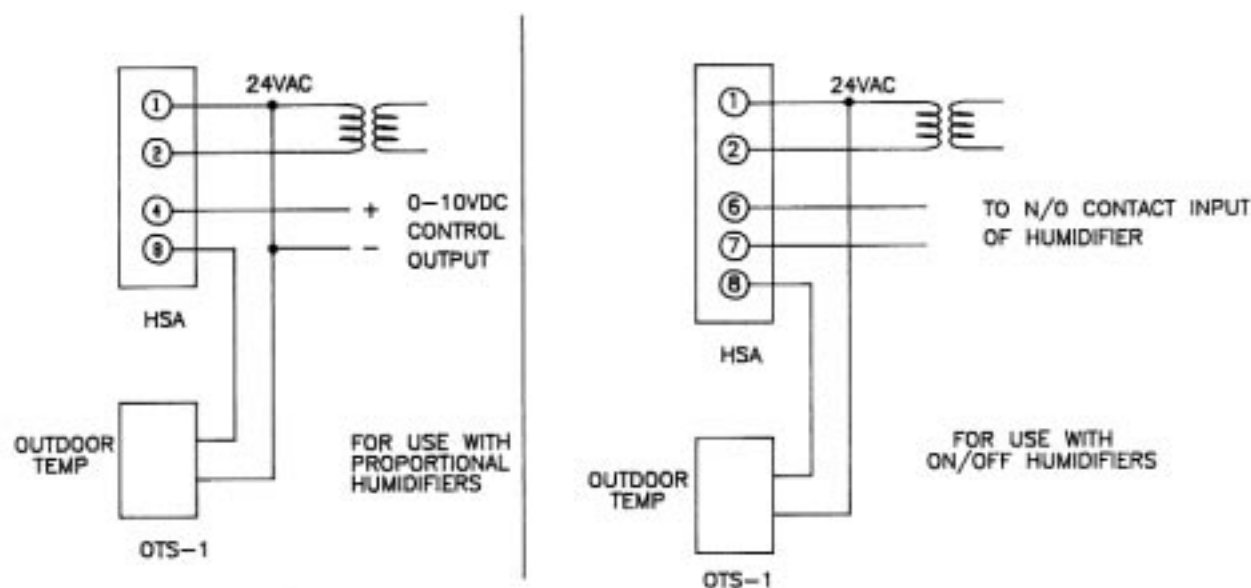
The Intempco HSA is a humidity sensor/controller with several output features. It may be used as a modulating controller for proportional humidifiers, or as an on/off controller for humification or dehumidification systems (using the N/C contact).

The setpoint may be offset (downward) due to outdoor temperatures below freezing with the addition of the optional OTS-1 temperature sensor. An advanced non-linear offset rate is used to allow high offset ratios without the danger of having the setpoint drop too low on very cold days.

An actual setpoint output is available for precise adjustment and monitoring of the reset function, and a humidity output is available for monitoring the actual humidity at the humidistat.

The HSA is rugged and can withstand most ventilation type conditions including swimming pool environments.

TYPICAL APPLICATIONS



**SPECIFICATIONS:**

POWER INPUT	24VAC $\pm 15\%$ 27VDC $+20\% -0\%$
POWER CONSUMPTION	2 VA MAX.
INPUTS	OTS-1 SENSOR FOR OUTDOOR TEMPERATURE
OUTPUTS	ACTUAL HUMIDITY 0-10 VDC CORRESPONDING TO 0-100% RH MODULATION CONTROL 0-10VDC ACTUAL SETPOINT 0-5 VDC CORRESPONDING TO 0-100% RH
CONTACT OUTPUT	N/C AND N/O 3A @ 120VAC MAXIMUM FOR RESISTIVE LOADS
OUTPUT IMPEDANCE	10K Ω ALL OUTPUTS
SETPOINT RANGE	0-100%
PROPORTIONAL BAND	3%-10%
OFFSET RATIO	1/6, TO 1/1, SEE CURVE FOR OFFSET CHARACTERISTICS
SENSOR ACCURACY	$\pm 3\%$ AT 40% RH , 23° C
TEMPERATURE RANGE	OPERATING 10°C TO 40°C, 0-95% RH STORAGE -10°C TO 50°C, 0-95% RH

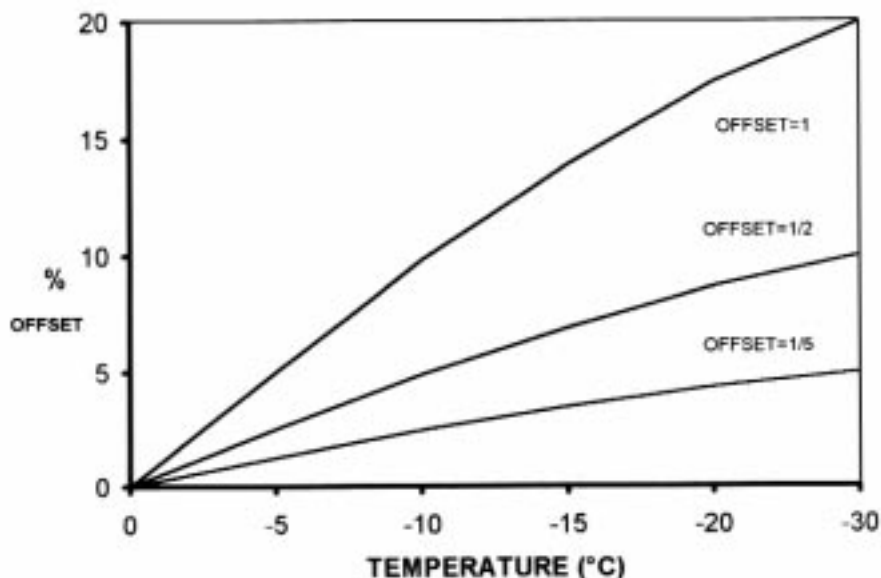
CONNECTIONS:

- TB # 1** - COMMON
- TB # 2** - 24 VAC INPUT 2VA MAX.
- TB # 3** - ACTUAL HUMIDITY OUTPUT
0-10 VDC
- TB # 4** - CONTROL OUTPUT 0-10 VDC
- TB # 5** - NORMALLY OPEN CONTACT
(OPEN IF SETPOINT > RH)
- TB # 6** - CONTACT COMMON
- TB # 7** - NORMALLY CLOSED CONTACT
(CLOSED IF SETPOINT > RH)
- TB # 8** - OTS-1 SENSOR INPUT
- TB # 9** - ACTUAL SETPOINT 0-5 VDC

OFFSET CHARACTERISTICS:

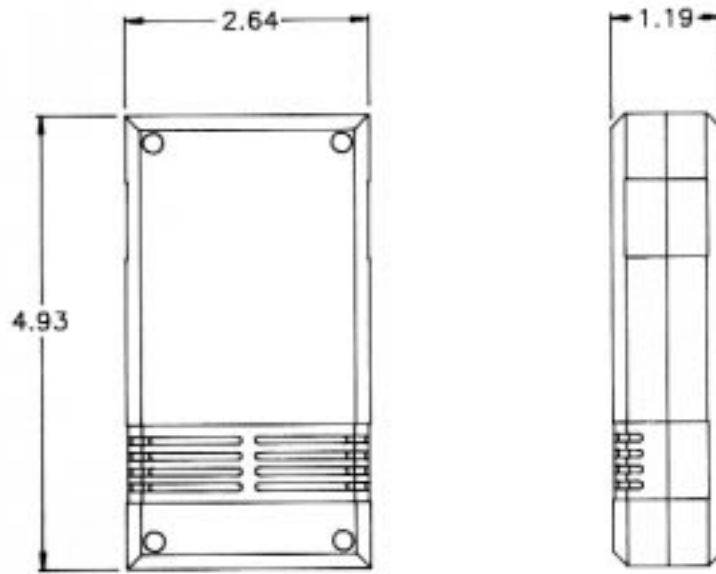
To calculate % offset, multiply the % offset_{ratio=1} by the offset ratio. For example: at -20° c with an offset ratio of 1/2 the offset would be $(-16.6\%) \times (1/2) = -8.3\%$. If the setpoint was 40% RH the actual setpoint as modified by outdoor reset would be 31.7%. See the chart and graph below for offset values at various temperatures.

TEMPERATURE		PERCENT OFFSET
°F	°C	
32	0	0%
23	-5	-5%
14	-10	-10%
5	-15	-13.2%
-4	-20	-16.6%
-22	-30	-21.4%
-40	-40	-28.9%

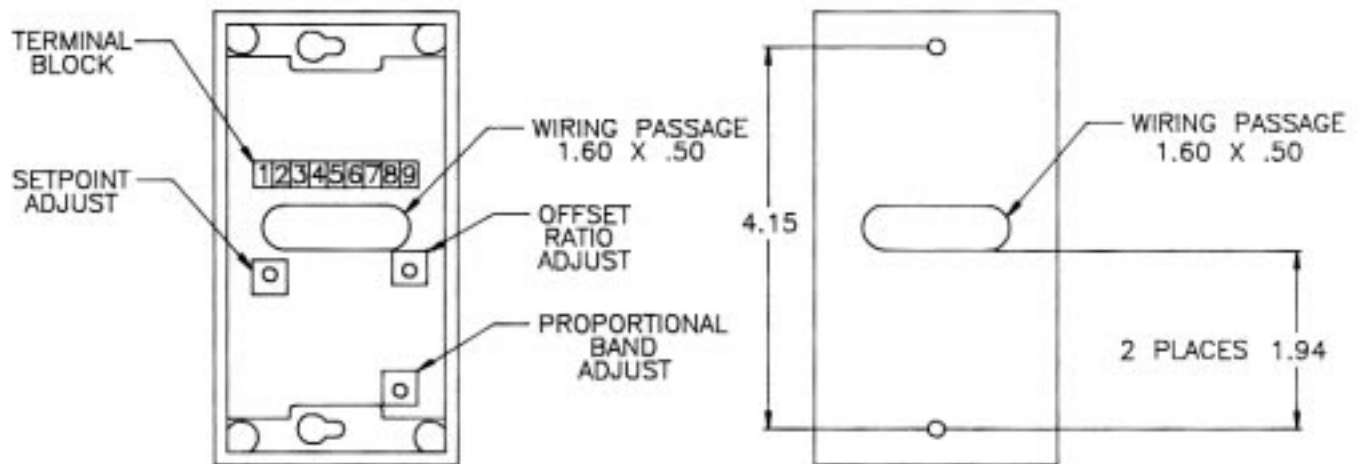




MECHANICAL AND INSTALLATION INFORMATION



ENCLOSURE DIMENSIONS



ADJUSTMENT LOCATIONS

DRYWALL MOUNTING TEMPLATE

WARRANTY

EVERY UNIT IS WARRANTED FOR ONE YEAR AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP. CONTACT INTEMPCO CONTROLS FOR DETAILS.

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