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IST Humidity Sensor Installation & Setup Manual

Introduction:

The IST humidity sensor is a pre-calibrated relative humidity sensor that will trigger when either of the two thresholds has been passed. The thresholds for the high and low humidity alarms are adjusted by setting the alarm thresholds on the board to the desired level. Setting one threshold to a high humidity value and one to a lower value allows the IST system to alarm on high and low humidity levels. The alarms levels are set on the humidity board but IST server changes are required to allow the system to recognize and process the humidity alarms.

Note: ***Both high and low thresholds need not be set. The sensor can alarm using a single set point.***

Setup:

By monitoring the "ref" pin voltage on the humidity board using a volt meter and using a simple calculation the technician can adjust the alarm points to any level between 0% and 100%RH. The corresponding voltage levels at the "ref" pin are 0-2.5Vdc.

The equation for setting the humidity thresholds:

$$\frac{\%RH}{40} = ref$$

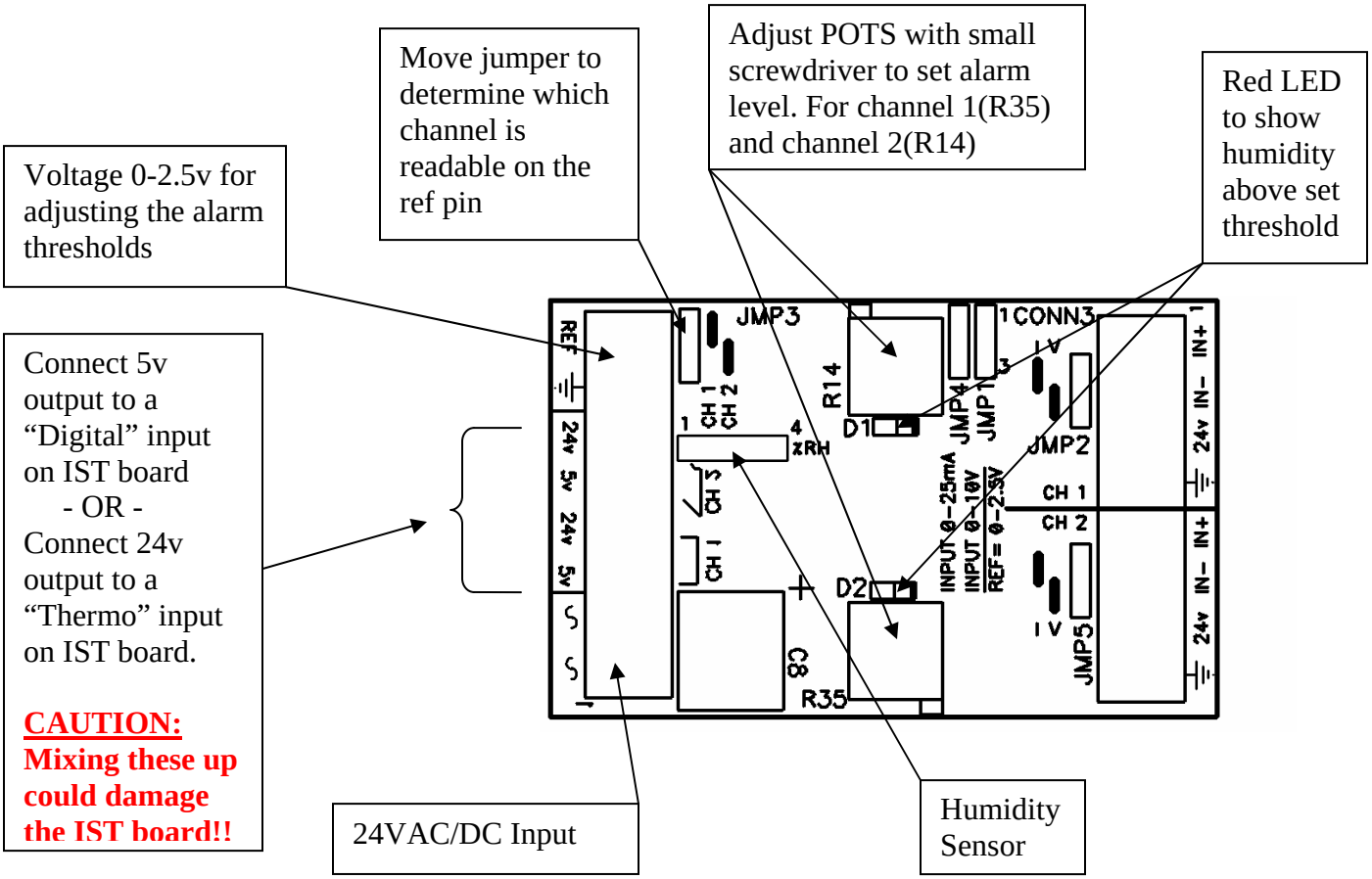
For example to set the Channel 1 to alarm at 72% RH

$\frac{72\%}{40} = 1.8v$ Adjust the pot for channel 1 until the reference voltage reads 1.8volts. The humidity board will now turn on/off at 72%RH.

To set the system to alarm if the humidity goes above or below the set point is very easy. When logged onto the IST web site, simply select whether the IST input channel is normally open (NO) or normally closed (NC). By using both channels on the humidity board the user can alarm if the humidity goes outside a predetermined operating range or the 2 channels can be set to give a warning alarm then a danger alarm.

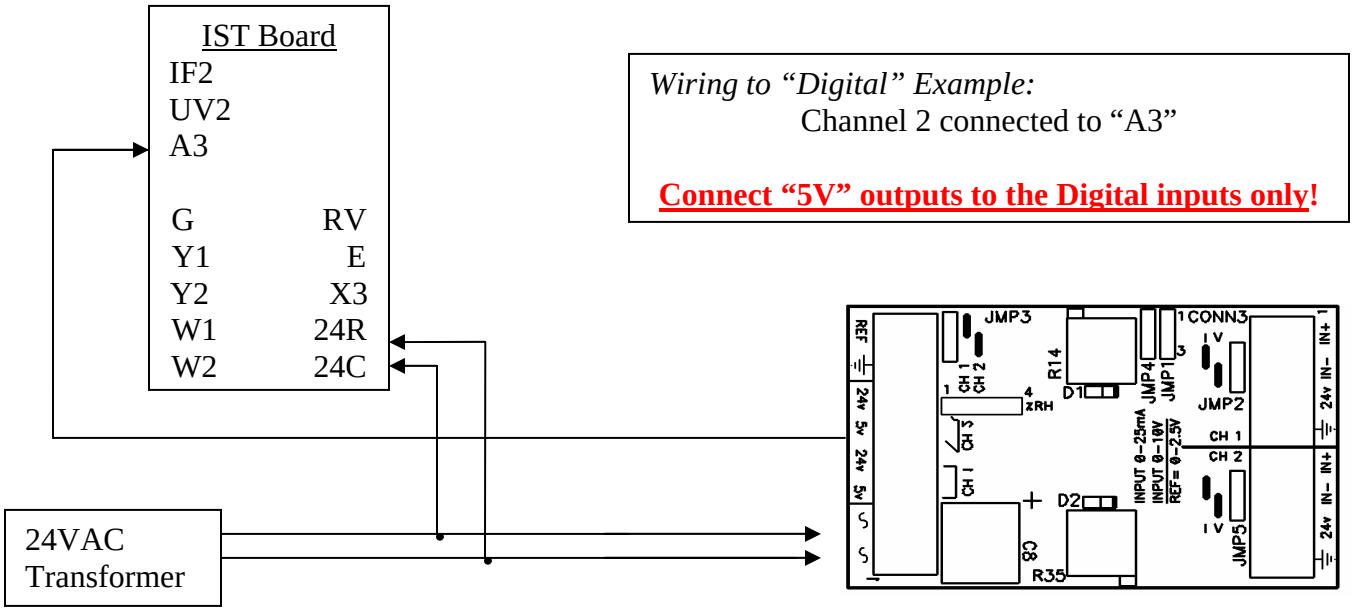
To alarm ABOVE the set point select Normally Open (NO).
To alarm BELOW the set point select Normally Closed (NC).

Wiring:



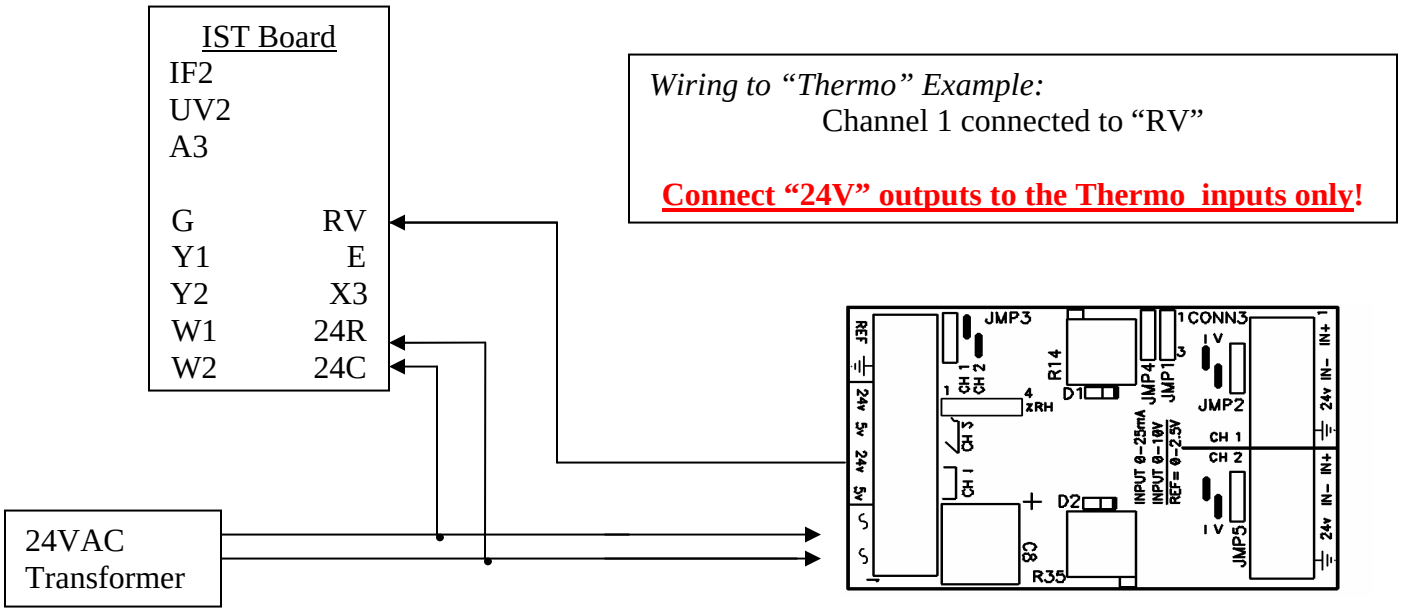
As can be seen in the pictures, there are two channels on the humidity board. Each channel has the ability to connect to the IST board via either a digital (5V) or thermo (24V) input. This allows for maximum flexibility in using the humidity board in any application.

Wiring Examples:



Wiring to "Digital" Example:
Channel 2 connected to "A3"

Connect "5V" outputs to the Digital inputs only!



Wiring to "Thermo" Example:
Channel 1 connected to "RV"

Connect "24V" outputs to the Thermo inputs only!

Note:
Both Examples show only 1 channel connected to the IST board in order to keep the drawings as simple as possible while showing the necessary detail. Both channels can be connected to the IST to allow for alarming on high and low levels.

Specifications:

	Min.	Max.	Typ.	Units
Measurement				
Accuracy			±2	%RH
Linearity			± .5	%RH
Hysteresis			±1	%RH
Stability			±.5	%RH/Year
Response Time*		5min	25	Seconds
Temperature range				
Operating	-30	85		C
Storage	-30	100		C
Power				
Supply Voltage	7	40	24	AC/DC
Supply Current	3.5		5	Milliamps
Outputs				
“5v” Digital	0	5		Volt
“24v” Digital	0	40		Volt
“ref”	0	2.5		Volt

* On initial power up the humidity sensor can take up to 5 minutes to come to steady state.