

IN-HWD Humidity and Temperature Converter.

The IN-HWD uses a microprocessor with formulae and look-up tables to obtain better than 1% accuracy for relative humidity over the complete temperature range of 0~100C.

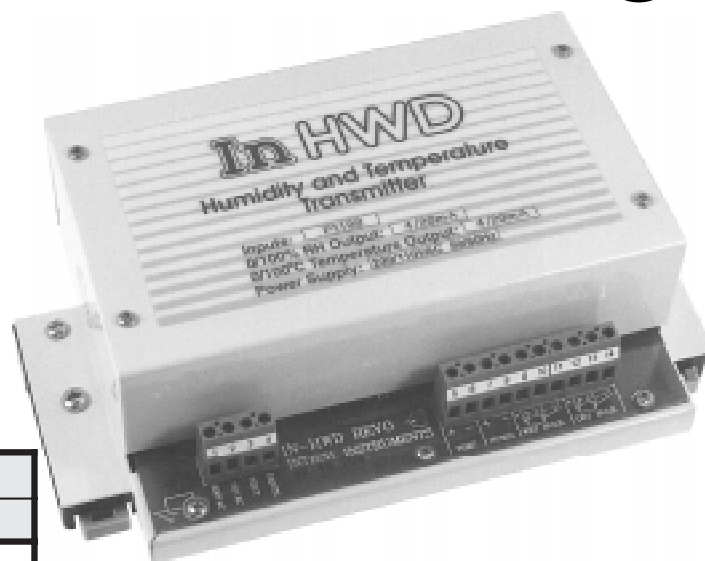
Features.

- Independent Temperature and Relative Humidity Outputs.
- %RH Accurate to 1.0%.
- Temperature Accurate to 0.1%.
- Low Cost.
- Easy to Install.
- Internal Zero and Span Adjustments.



Ordering Information.

IN-HWD-X Standard Calibration.
 IN-HWD- - - Special Range Calibration.
 IR OR



INPUT RANGES		OUTPUT RANGES	
Input	IR	Output	OR
Pt100 RTD	1	0~10mV	A
0~100mV	2	0~100mV	B
0~1V	3	0~1V	C
0~5V	4	0~5V	D
1~5V	5	1~5V	E
0~20mA	6	0~20mA	F
4~20mA	7	4~20mA	G
Special Input Range	Z	Special Output Range.	Z

The Standard Calibration for the IN-HWD is:
 (i) DIN Pt100 inputs, both calibrated for 0~100C temperature range;
 (ii) 4~20mA outputs for both relative humidity and temperature.

Specifications.

Inputs	-Standard		2 X Pt100 DIN RTD (3 Wire Type).
	-RTD Sensor Current		2mA.
	-RTD Lead Resistance		5Ω/Wire Max. Other Types of RTD Input Available.
	-Optional	-mA:	Input Impedance = 100Ω.
		-mV & V:	Input Impedance = 200kΩ.
Outputs	-Standard	-mA	2 X 4~20mA. Max Load Resistance at 20mA = 450Ω.
	-Optional	-mV & V	Max Output Drive = 5mA.
Resolution of Inputs & Outputs			0.025% FSO (4096 Steps).
Humidity measuring range			0~100%RH Over 0~100C.
Humidity Accuracy & Linearity			to <±1% FSO Typical.
Temperature Measuring Range			0~100C.
Temperature Accuracy & Linearity			to <±0.1% FSO Typical.
Ambient Drift			<±0.005%/C FSO Typical for Temperature. <±0.02%/C FSO Typical for Humidity.
Operating Temperature			0~70C.
Storage Temperature			-20~80C.
Operating Ambient Humidity			90%RH Max. Non-condensing.
Power Supply			110/230Vac 50/60Hz.
Mounting			DIN Rail or Rear Panel.

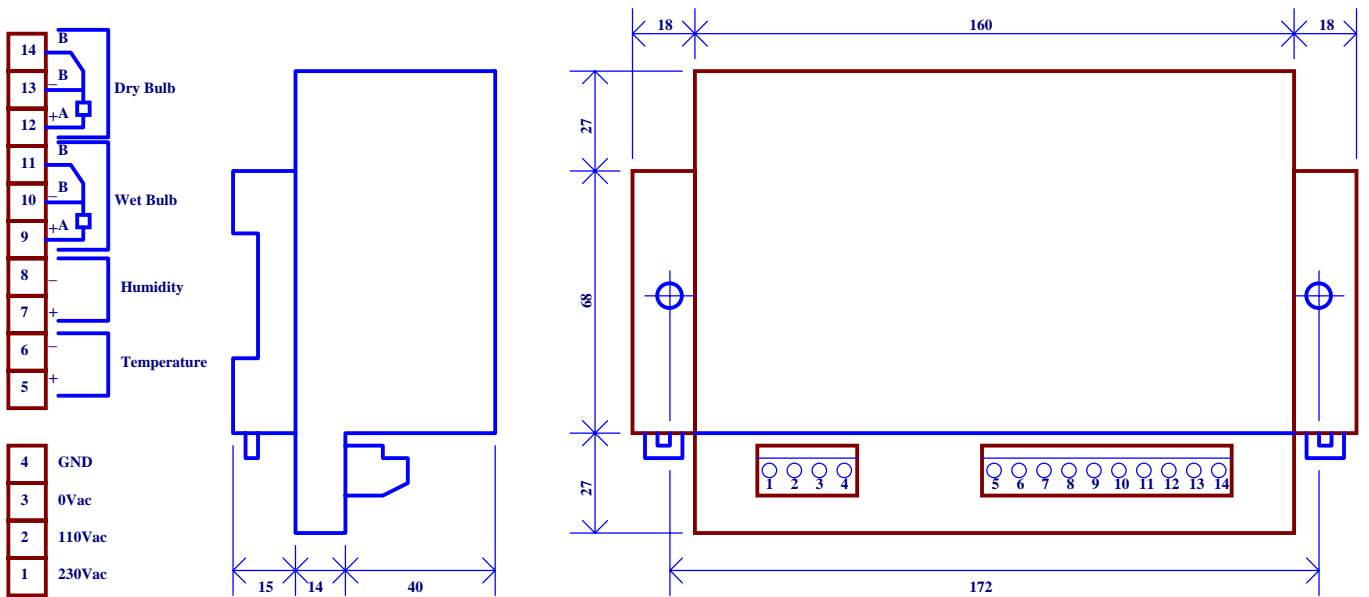
Note 1. Specifications based on Standard Calibration Unit, unless otherwise specified.

Note 2. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. No liability will be accepted for errors, omissions or amendments to this specification.

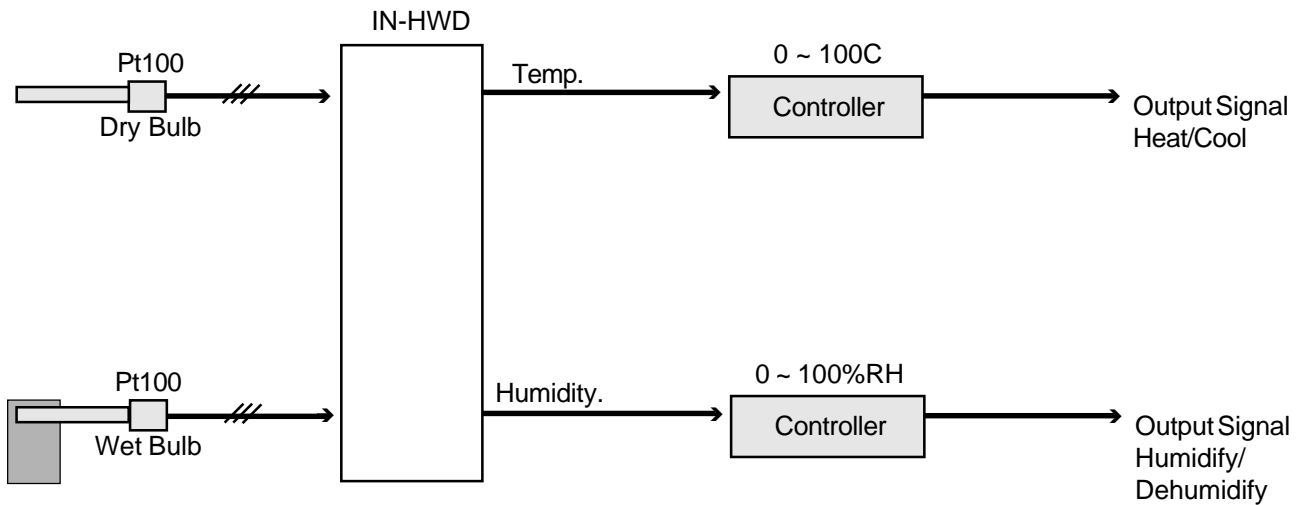
Quality Assurance Programme.

The modern technology and strict procedures of the ISO9001 Quality Assurance Programme applied during design, development, production and final inspection grant long term reliability of the instrument.

IN-HWD Terminal Arrangement and Enclosure Dimensions.



Connection Example.



Formulae Information.

The IN-HWD formulae and look-up table is based on the ASTM Standards and takes the psychrometric constant:

$$A = 6.60 \times 10^{-4} (1 + 0.00115 \text{ tw})$$

tw = Wet bulb temperature and the atmospheric pressure P = 101325 Pa.

Note: 'A' is still under dispute by different organisations.
Most relative humidity tables are within 1% of the ASTM relative humidity tables.