

2100-A4-HWD Humidity & Temperature Converter

The 2100-A4-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.



Ordering Information.

2100-A4-HWD---
AO C PS

Ranging Options for 2100-A4-HWD					
Analogue Output	AO	COMMS	C	Power Supply	PS
4~20mA	A	RS422	422	85~264Vac/dc	H
0~10V	V	RS485	485	23~90Vdc	M
				10~28Vac/dc	L

The Standard Calibration for the 2100-A4-HWD is:

- DIN Pt100 inputs, both calibrated for 0~100 temperature range;
- 4~20mA outputs for both relative humidity and temperature.

Note 1: The 2100-A4-HWD is factory set to RS485. RS422 is field selectable.

Note 2: Power supply H is field selectable for M; and M for H. Power supply L must be ordered separately.

Notes.

- This unit replaces the IN-HWD and uses the IN-HWD software in conjunction with the 2100-A4 software.
- In addition to the standard IN-HWD features all the other features and options of the 2100-A4 can be used except the 2100-A4-HWD does not have PLC Retransmission Software.
- Analogue input 1 and analogue input 2 are available as Pt100, mV, V, mA and are all ranged 0/100C irrespective of the input type. The standard analogue outputs are available.
- The input signal can be calibrated using the zero offset software available in the Intech Micro 2100 series configuration software. This software is available as a free download from www.intech.co.nz and is found on the 2100-A4 page.
- The Scada can read back %RH as the value of AO1 and Dry Bulb Temperature as the value of AO2.
- The 2100-A4-HWD can run fully independent of a Data Hi-Way as a stand alone transmitter and or also on the Data Hi-Way.
- In certain parts of the %RH curve a small change in temperature can cause a large change in Humidity and so the Software in the 2100-A4-HWD has the same damping function as the IN-HWD to ensure stable readings. In addition to this the standard 2100-A4 input averaging software is available.

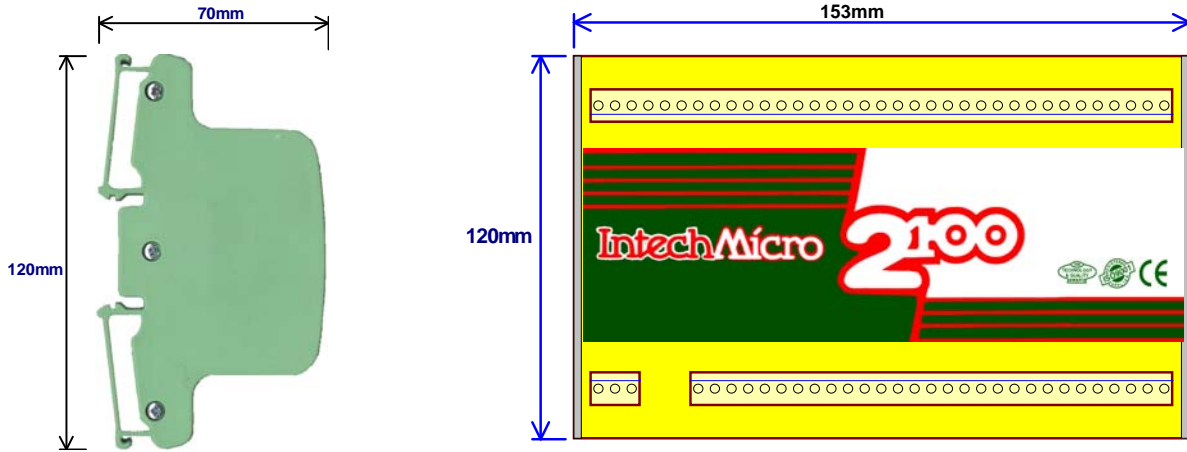
Specifications.

Inputs	-Standard		2 X Pt100 DIN RTD (3 Wire Type).
	-RTD Sensor Current		1mA.
	-RTD Lead Resistance		5Ω/Wire Max.
Optional	-mA:		Other types of RTD Input Available.
	-V:		Input Impedance = 250Ω.
	-mA:		Input Impedance = 7300kΩ.
Outputs	-Standard		2 X 4~20mA.
	-Optional		Max Load Resistance at 20mA = 450Ω.
	-V:		Max Output Drive = 4mA.
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			<±0.01%/C FSO Typical for Temperature.
			<±0.02%/C FSO Typical for Humidity.
Operating Temperature			0~60C.
Storage Temperature			-20~80C.
Operating Ambient Humidity			90%RH Max. Non-condensing.
Power Supply			10~264Vac.
Mounting			DIN Rail or Rear Panel.

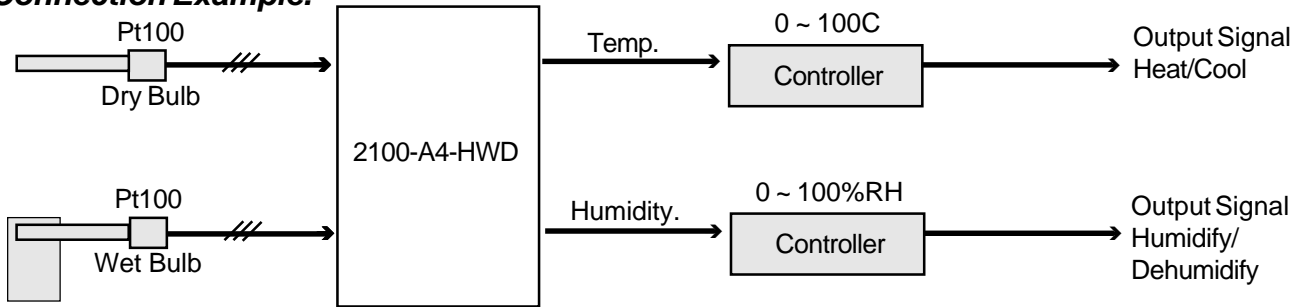
Quality Assurance Programme.

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. This instrument has been designed and built to comply with EMC and Safety Standards requirements.

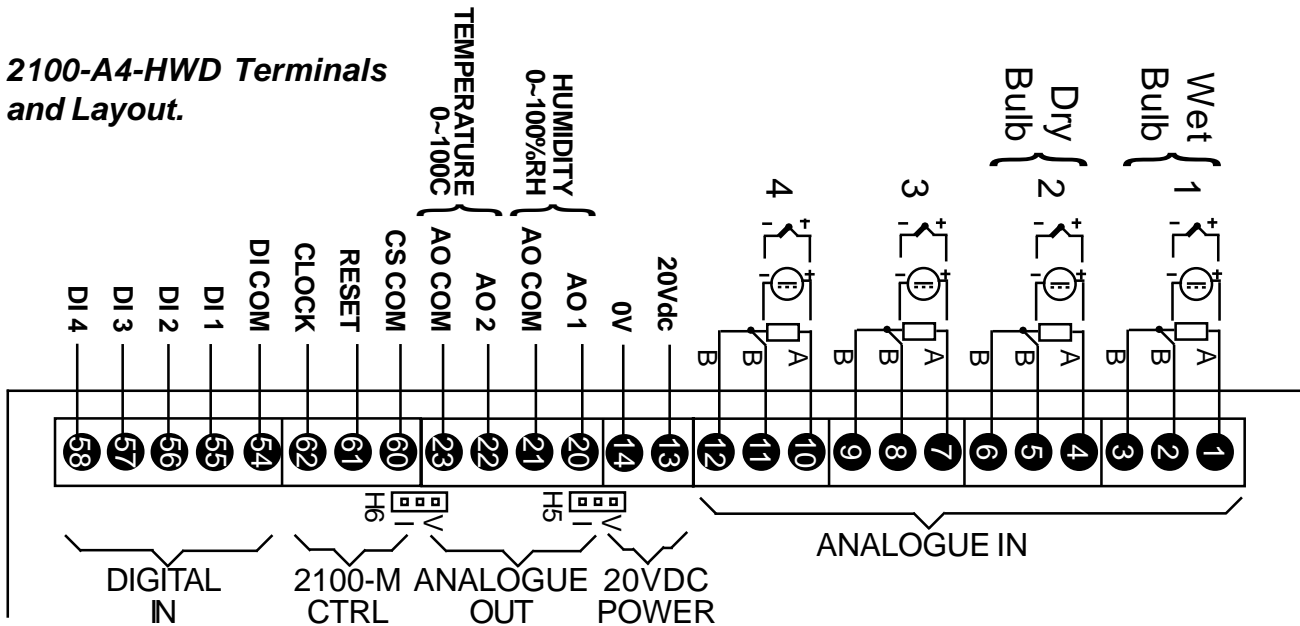
2100-A4-HWD Dimensions.



Connection Example.



2100-A4-HWD Terminals and Layout.



Formulae Information.

The 2100-A4-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.

CAUTION: Dangerous voltages may be present. The 2100-A4-HWD has no user serviceable parts.
Protective enclosure only to be opened by qualified personnel.
Remove ALL power sources before removing protective cover.

Product Liability. This information describes our products. It does not constitute guaranteed properties and is not intended to affirm the suitability of a product for a particular application. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. Regrettably, omissions and exceptions cannot be completely ruled out. No liability will be accepted for errors, omissions or amendments to this specification. Technical data are always specified by their average values and are based on Standard Calibration Units, unless otherwise specified. Each product is subject to the 'Conditions of Sale'.

Warning: These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independent fail-safe back-up system must always be implemented.