



**HDR200**



**HDR200-M12**

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## **QUICK STARTUP GUIDE – Page 2**

### **Installing the probe for compressed air and dryer applications.**

#### **For the HD200/HD200-M12**

**Install fitting on to probe fitting threads facing the probe's filter**

**Apply Teflon tape to the external threads of the fitting**

**Slide probe to desire depth. Note: be sure sinter filter is clear of the ferrule on the NPT fitting, hand tight and then use a wrench a do a quarter turn,**

**Check for leaks, if leaks occur tightened down on fitting another 1/8" turn until leaks have been eliminated, probe is rated to 750psi**

### **Installing the probe for environmental applications**

#### **For the HR200/HR200-M12**

**Mount probe using a 1/2" (ID) mounting clamp (not provided) over probe and attached it to a surface where measuring. Avoid installation in direct line with water injection.**

### **For the mounting the HDR200 series Electronics**

**Mount the electronics with two # 8 sheet metals screws  
Mounting centers are 3.1" from each other**

**Power 12 to 28Vdc, 24 Vdc (typical) 25mA max**

#### **HDR200 Connections:**

**Connect red wire (+) to the positive excitation source and the black wire (-) to a negative excitation. The output load if isolated from the excitation voltage can be in line with either the red or black wire. If the load shares a common connection to the negative excitation voltage, the HDR200 (-) terminals must be connected to the (+) of the load device.**

#### **HDR200-M12 Connections:**

**Connect white wire (+) to the positive excitation source and the black wire (-) to a negative excitation. If using the unit as a loop powered device, the output load if isolated from the excitation voltage can be in line with either the white or black wire. If the load shares a common connection to the negative excitation voltage, the unit (-) terminals must be connected to the (+) of the load device. RS232 connections: Receive is the gray conductor, transmit is the blue conductor, ground is the brown conductor.**

**Verify that the received signal agrees with the display value.**

**Things to avoid: submersion in liquids, condensing conditions and dew points above 95C (live steam)**

**Quick reminder: provide enough air flow to sensor (positioning of sensor is important because response time can be affected).**

## **INTRODUCTION**

### **3.1 GENERAL DESCRIPTION**

The HDR 200 Series is a family of humidity probes and electronic modules that offer %RH and dew point measurements with NIST traceable calibration. All stainless-steel probe construction coupled with a high temperature cable allows up to 200c operations. For pressure applications, the probe is capable of handling 750PSI.

The HDR 200 series comes in 2 versions, dew point (HD200) and % RH (HR200)

The HD200 pressure version has an enhance calibration for measuring dew points down to -60C. The HR200 -RH version has an accuracy of +/-1.0% at 25C. The probe and electronics provide a single two wire loop powered 4-20Ma interface. The units accept a voltage source from 12 to 28Vdc, 24Vdc is recommended. These units will display temperature along with RH or dew point depending on the version selected. The RS232 allows a user to scale their outputs ranges as well as displayed units. The unit and sensor are connected via a 1meter high temperature cable. This unit has a single output, 4-20mA output wiring and can provide a signal up to 400 ft.

#### **3.2.1 HDR200/HD200-M12**

Operating temperature: 0C to 200C, no- condensation condition, non-steam applications, max dew point 95C  
Electronics 0C to 85C

All units will come with a traceable NIST calibration certificate.

#### **For the HR200/HR200-M12**

HR200 is ideal for environmental chamber, clean rooms and high temperature applications

One Analog Output: 4-20mA Loop Power corresponds 0-100%RH

Output signal resolution: 0.03%RH

Digital Output:	bi directional RS-232C outputs will display RH, dew point and temperature, in the streaming command. The loop power will not function if reading via the RS232
Power Supply:	12 to 28Vdc, 25 mA max. 24Vdc recommended
Display resolutions:	0.1% RH
RH Accuracy:	+/- 1% at 25C
Temp. Accuracy:	+/- 0.5°C from 0 to 100C, >100C +/-1C
Mounting:	Cable Length: 1 meter
SS Material:	probe, filter guard and fitting
Dimensions of Probe:	Length: 6.5" (185mm), O.D.: 0.5" (13mm)

### **For the HD200**

HD200 is an ideal unit for compressed air and dryer applications.

One Analog Output:	4-20mA Loop Power corresponds -60 to 40C dew point
Output signal resolution:	0.03C
Digital Output:	bi directional RS-232C outputs will display RH, dew point and temperature, in the streaming command. The loop power will not function if reading via the RS232
Power Supply:	12 to 28Vdc, 25 mA max.
Display resolutions:	0.1C
Dew Point:	Accuracy: +/- 1.0C from 40c to -20C, +/-3.0C <-20C
Temp. Accuracy:	+/- 0.5°C from 0 to 100C, >100C +/-1C
Mounting:	Cable Length: 1 meter
SS Material:	probe, filter guard and fitting

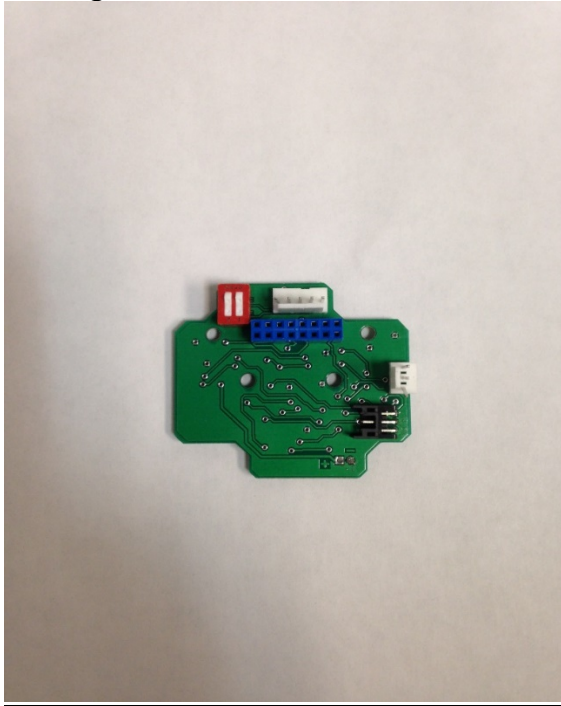
Fitting: ½”NPT stainless steel (included)

Pressure rating: 750psi

Dimensions of Probe: Length: 6.5” (185mm), O.D.: 0.5” (13mm)

### **Switches for DP or RH and Fahrenheit or Celsius**

Located on the circuit board there are two switches. The switch on the left will allow for the customer to switch between DP or RH and the switch on the right allows for the customer to switch between Celsius and Fahrenheit.



The red block switch actually has 2 switches, the one furthest from the blue connector is for changing the reading from Dew Point to RH or vice versa, and the switch closes to the white connector is for changing it to degree F or C for both dew point and temperature

### **For the HDR200-M12 series**

**Important note: For the HDR200-M12 Series you can either read the data via the RS232 or via a 4-20mA loop (single signal) signal but not both**

### **Communications from PC to the device**

**You can stream line your data via the RS232, that gives you all three measurement units**

Using the terminal emulation program, i.e.: HyperTerminal, Tera term, etc.

## Rs232 SETTINGS

19.2k Baud Rate  
Flow control: none  
8 Bits  
No Parity  
1 Stop Bit



Update rate is 5 seconds for dew point, or RH and temperature

### **To change the scaling**

Connect the HDR200 series to the PC via the above settings

When finished connecting to the PC and the protocol is set:

Hit the “escape” key

The main menu will appear (upper case lettering is used to change the commands)

(O)utput

(R)s232

E(X)it

Select output and follow the instruction

It will show the present scaling and if you want to change the scaling, select S for Set and enter the scaling change.

Select ‘Y” to save settings and X for exit until see to see live data streaming on your PC, the new scaling has been changed

### **HDR200-M12 wiring**

RXin	Gray Wire
TXout	Blue wire
GND	Brown Wire

(+) 24VDC	White Wire
(-) RTN	Black Wire

Special note:

During the testing of EN 61326-1:2013, the display function value flickered once during the initial test. After the test, the deviation vanished and the unit self-recovered within seconds.