1 YEAR WARRANTY

OMEGA™

User's Guide

HX200

Dew point/RH Transmitter

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Available Models: All models will display either dew point & temperature or RH & temperature. Outputs will vary depending on model.

HX200HD	Remote Dew Point/Temperature Transmitter 4 to 20mA only
HX200HR	Remote RH/Temperature Transmitter 4 to 20mA only
HX200HD-RS	Remote Dew Point/Temperature Transmitter 4 to 20mA or RS232
HX200HR-RS	Remote RH Point/Temperature Transmitter 4 to 20mA or RS232
HX200HD-W	Wall Mount Dew Point/Temperature Transmitter 4 to 20mA only
HX200HR-W	Wall Mount RH/Temperature Transmitter 4 to 20mA only
HX200HD-W-RS	Wall Mount Dew Point/Temperature Transmitter 4 to 20mA or RS232
HX200HR-W-RS	Wall Mount RH Point/Temperature Transmitter 4 to 20mA or RS232

HX200HD-RS

HX200HD-W-RS

HX200 Series

QUICK STARTUP GUIDE

Installing the probe for compressed air and dryer applications.

For the HX200HD/HX200HD-RS

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 HX200HR/HX200HR-RS

Mount probe using a ½" (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 HX200 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
HX200 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 HX200 (-) terminals must be connected to the (+) of the load device.
HX200-RS 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 sufficient air flow to sensor (positioning of sensor is important because response time can be affected.

HX200-RS wiring

RXin	Gray Wire
TXout	Blue wire
GND	Brown Wire
(+) 24VDC	White Wire
(-) RTN	Black Wire

HX200- wiring

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

INTRODUCTION

3.1 GENERAL DESCRIPTION

The HX200 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 HX200 series is offered in 8 versions, dew point/temperature-(HX200HD, HX200HD-RS, HX200HD-W, & HX200HD-W-RS), % RH/temperature- (HX200HR, HX200HR-RS, & HX200HR-W, & Hx200HR-W-RS)

The HX200HD pressure version has an enhance calibration for measuring dew points down to -60C. The HX200HR -RH version has an accuracy of +/-1.0% at 25C. These two models provide a single two wire loop powered 4-20mA interface. The HX200-RS version has all the features of the prior models but has a RS232 signal that outputs RH, temperature and dew point. These 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 1-meter 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 HX200 Series

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 HX200HR series

HX200HR 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

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 (except wall units)

SS Material: Probe, filter guard and fitting

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

For the HX200HD series

HX200HD series are 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
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 (except wall units)
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)

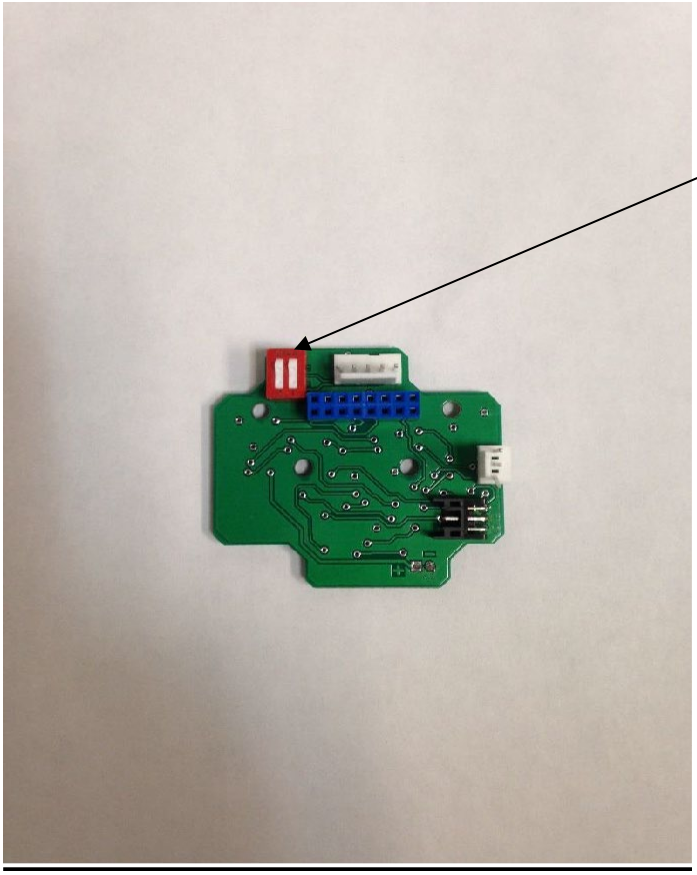
For the HX200-RS series

The HX200-RS meets all the spec's listed above for both the HX200HD and HX200HR.

Digital Output:	Bidirectional RS-232C outputs will display RH, dew point and temperature, in the streaming command. The loop power will not function if using the RS232.

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 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.

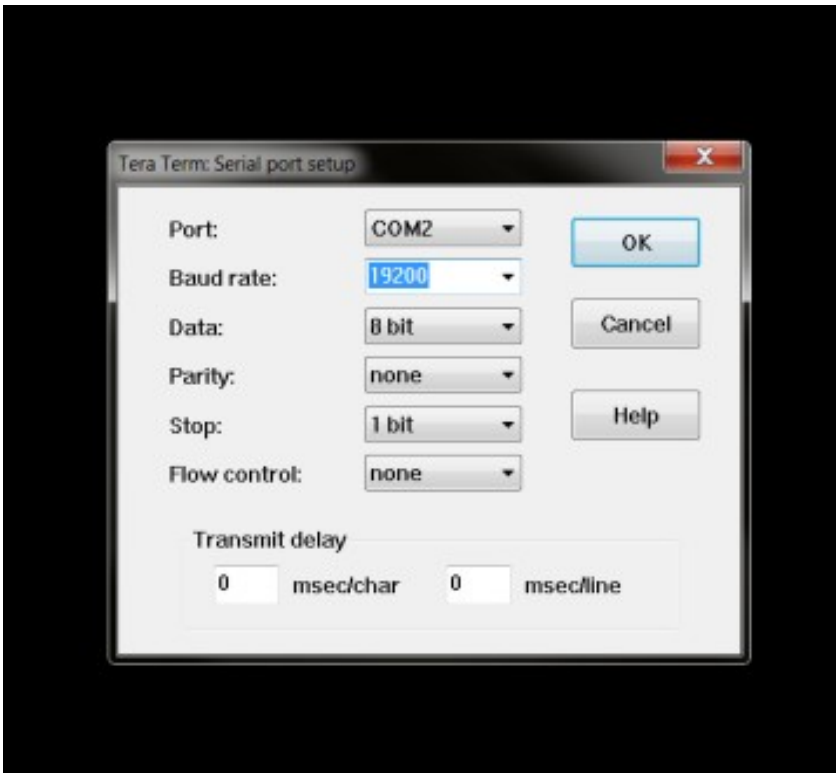
Communications from PC to the device

You can streamline 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 HX200 series to the PC via the above settings

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

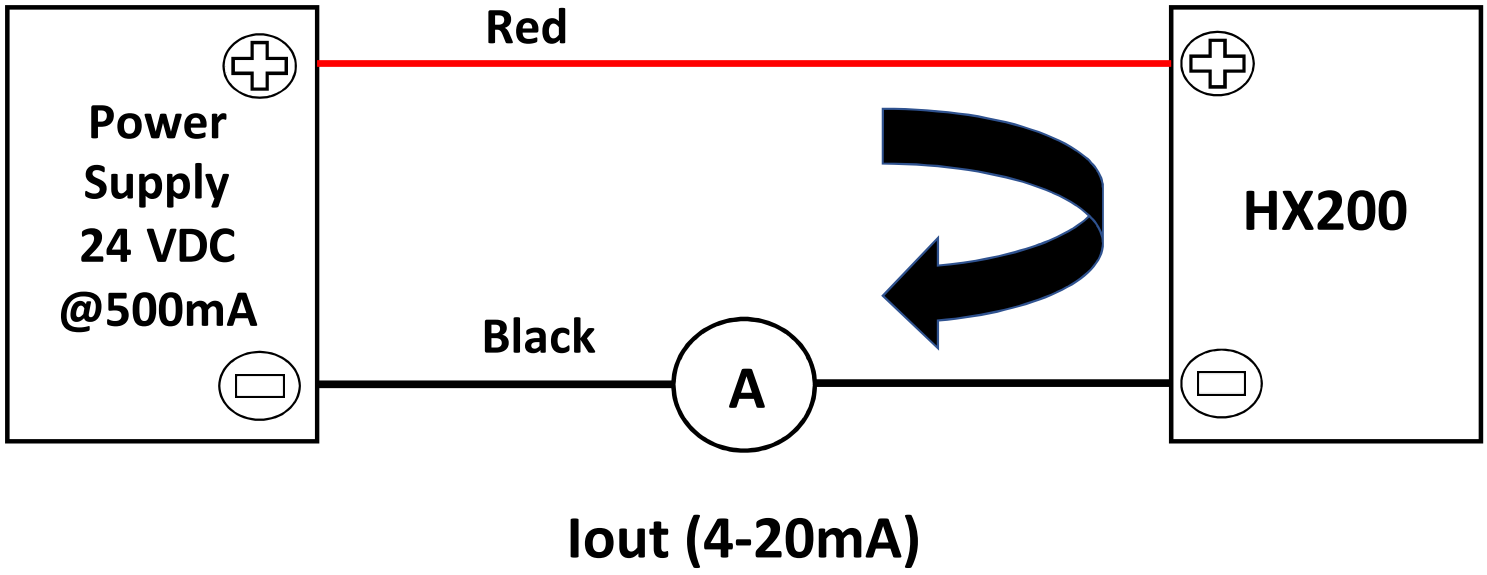
Hit the “escape” key

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 live data streaming appears on your PC, the new scaling has been changed

Wiring Diagram-HX200 Loop Powered



Iout (4-20mA)

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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M5617/0321