

## The Proper Installation & Maintenance of H-CL.

All power and signals must be de-energised before connecting any wiring.

### MOUNTING.

- (1) Mount in a clean environment.
- (2) Do not subject to vibration.
- (3) Avoid mounting near power control equipment.
- (4) Mount the H-CL-D on a solid wall or panel, where air will flow freely around it.
- (5) Always mount the H-CL so that the protective cap is either horizontal or sloping downwards. This helps prevent condensate build up in high humidity situations.
- (6) Avoid mounting where the protective cap will get wet as this may cause false readings.
- (7) Again ensure there is adequate air flow over the sensor.

### WIRING.

- (1) All cables should be good quality overall screened INSTRUMENTATION CABLE with the screen earthed at one end only.
- (2) Signal cables should be laid a minimum distance of 300mm from any power cables.
- (3) For the two, 2 wire current loops Austral Standard Cables B5002CS is recommended.
- (4) It is recommended that you do not ground current loops and use power supplies with ungrounded outputs.
- (5) Lightning arrestors should be used when there is a danger from this source.
- (6) Cables are available ready made from your supplier. Standard cables are 1, 5 and 10 meter.
- (7) To make your own cable you will need:  
1 off JST connector shell 04R-JWPF-VSLE-S  
2 off JST female pins SWPR-001T-P025  
Screened 1 pair cable.  
Crimp tool.

Positive wire to pin 2 of connector.  
Negative wire to pin 1 of connector.

Pins 3 and 4 of connector are for a programming cable to set up the unit. End users should not have to change the setup or calibrate this sensor.

### COMMISSIONING.

- (1) Once all the above conditions have been carried out and the wiring checked apply power to the H-CL loop and allow five minutes for them to stabilize.
- (2) To check humidity accuracy use a calibration standard %RH device in the same location. Check that the readings agree within 2% + % error of the calibration device. Alternatively expose the H-CL to a known %RH atmosphere, and check the readings agree within 2% + % error of atmosphere. All readings should be referenced against the ASTM Relative Humidity tables, and allowances made for pressure effects if necessary. If there is a problem with the Humidity reading the unit will need to be returned for recalibration.

### MAINTENANCE.

- (1) Breath on the protective cap and check that the %RH and Temperature readings alter.
- (2) Do it regularly - at least once every 6 months.
- (3) Check cables entering the H-CL head.



# H-CL Humidity Transmitter

## Features:

- ◇ Single 4~20mA Outputs
- ◇ Factory Calibrated digital Humidity sensor
- ◇ Very Compact Design
- ◇ High Accuracy
- ◇ Low Cost
- ◇ Easy to Install
- ◇ Reverse Polarity Protection
- ◇ Wide Power Supply Range
- ◇ IP67 weather proof.



## Description.

The H-CL is a complete relative humidity current loop sensing module, with one Humidity (0~100% RH) loop powered 4~20mA output.

Two versions are available:

- Display (H-CL-D)
- Non Display (H-CL).

Both versions come completely encapsulated in a "Macromelt" molding to create a IP67 weather proof unit. The connector used is also rated to IP67.

## Ordering Information.

H-CL-D 0~100%RH, Weather Proof Transmitter with Display.

H-CL 0~100%RH, Weather Proof Transmitter NO Display.

### H-CL %RH Transmitter Specifications.

Accurate to	±2% FSO Typical. 20~80%RH, 3% at 0%RH and 100%RH.
Important:	For continuous measurements of ≥90%RH, refer to operating range on next page.
Ambient Temperature Drift	<±0.05%/C FSO Typical.
Humidity Sensor	-Hysteresis ±0.8% of Span Typical.
	-Linearity ±0.5%RH Typical.
	-Repeatability ±0.5%RH Typical.
	-Long Term Drift ±1%RH Typical at 50%RH in 5 years.
	- Output 0~100%RH for 4~20mA

### H-CL Common Specifications.

Output.	2 wire 4~20mA (Loop Powered).
Power Supply.	9~33Vdc.
Supply Voltage Sensitivity.	<±0.01%/V FSO.
Maximum Output Current.	Limited to <32mA.
Max output Load Resistance.	800Ω @ 24Vdc. (50Ω/V Above 8Vdc).
Operating Temperature.	-30~70C
Storage Temperature.	-30~85C.
Operating Humidity.	100%RH.

Note. Good airflow and good air mixing must be maintained over the sensor to minimise local temperature fluctuations, and to ensure accurate measurements.

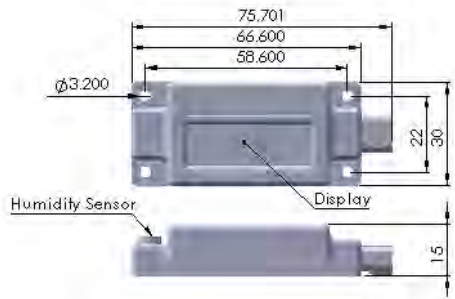
CONDENSATION occurs whenever the surface temperature of the sensor's active area drops below the ambient dew point of the surrounding gas. Condensation forms on the sensor (or any surface) even if the surface temperature only momentarily drops below the ambient dew point. Small temperature fluctuations near the sensor can unknowingly cause condensation to form when operating at humidity levels above 90%. While quick to condense, water is slow to evaporate in high humidity conditions. (i.e. when the surface temperature of the sensor is only slightly above the ambient dew point.) Because of this, a sensor's recovery from either condensation or wetting is much longer than its normal time response.

During recovery, the sensor outputs a constant 100%RH signal, regardless of the ambient RH.

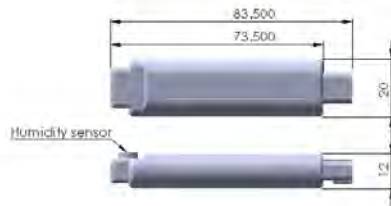
### Product Liability.

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 on going 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 at 25C, 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.**



H-CL-D Display Version

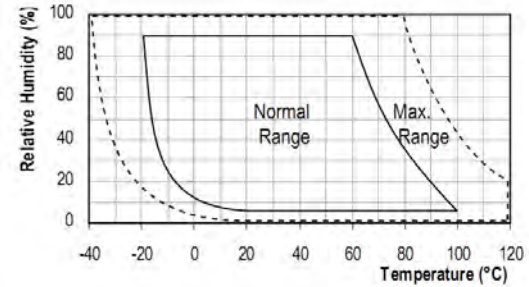


H-CL No Display

### Humidity Sensor Operating Range.

The sensor used in this Transmitter is a Sensirion SHT21. This sensor is fully calibrated at Sensirion. A Sensirion Calibration certificate is available from their web site <http://www.sensirion.com>.

The sensor works stable within recommended Normal Range. Long term exposure to conditions outside Normal Range, especially at humidity >80%RH, may temporarily offset the RH signal (+3%RH after 60h). After return into the Normal Range it will slowly return towards calibration state by itself.



Graph Of Maximum Load Versus Power Supply.

