



ohmic instruments co.

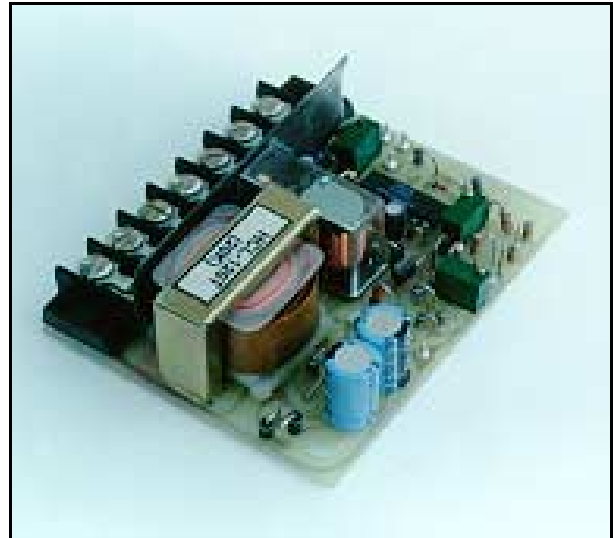
508 August Street, Easton, Maryland 21601
(410) 820-5111 (800) 626-7713 Fax (410) 822-9633
www.ohmicinstruments.com
e-mail: ohmic@ohmicinstruments.com



INDUSTRIAL & ENVIRONMENTAL SENSORS, INSTRUMENTS & CONTROLS SINCE 1969

**HUMIDITY CONTROL LOGIC & SIGNAL CONDITIONING CARDS - HCL/SC SERIES
ECONOMICAL & RELIABLE INTERFACE FOR RESISTIVE HUMIDITY SENSORS**

- CAN BE USED WITH ANY RESISTIVE SENSOR
- SETTABLE OVER FULL SENSOR RANGE
- WIDE SENSOR RANGE: 1K to 10MΩ
- CONTROLS HUMIDIFIERS OR DEHUMIDIFIERS
- ANALOG OUTPUT: 0-1 or 0-5 VDC
- 10A SPDT RELAY & STABILITY
- OPT. TEMP. COMPENSATION TO 160°F
- COMPACT SIZE: 3.5 x 2.8 x 1.5" (W x L x H)



TIME PROVEN HUMIDITY LOGIC CONTROLLERS & SIGNAL CONDITIONERS

OHMIC Instruments HCL/SC series circuit cards are designed for OEMs that have requirements for the control and monitoring of relative humidity. The cards are connected to any resistive type humidity sensor such as OHMIC's UPS or HS series. These sensors vary their resistance in an exponential relationship with the ambient humidity. The cards provide an analog signal (0-1 or 0-5 VDC) and relay output. The analog output is related to the resistance of the sensor by the following relationship.

$$V_o = \frac{R_l \times V_{fs}}{R_s + R_l}$$

V_o = Voltage Output (0-1 or 0-5VDC)

R_s = Resistance of the Sensor (refer to the particular sensor's data sheet for resistance vs%RH data)

R_l = Load Resistor (Three standard load resistors are available 20KΩ, 100KΩ & 909KΩ)

V_{fs} = Full Scale Voltage Output (1 or 5VDC)

HCL/SC cards excite the sensor with a regulated 3V, 60Hz square wave. As the sensor's resistance changes with humidity, the AC current flowing through the sensor changes. This current is amplified, rectified and

converted to a DC voltage signal. An optional temperature compensation circuit corrects the humidity signal based on the 10 mV/°F voltage output of an LM-34 sensor. The humidity signal is fed to a comparator circuit which energizes or de-energizes a relay based on a selectable setpoint that is adjusted with a potentiometer. HCL cards are available for 120 VAC, regulated 12 VDC, and 15-35 VDC operation. SC cards, (signal conditioning only units), are available for 120 VAC, regulated 12 VDC, and 15-35 VDC.

For calibration, a fixed reference resistor (referred to as a "setplug") is used. Fixed resistance values enable the units to be calibrated independently of humidity standards as a given resistance produces a corresponding voltage output. To set the control setpoint on HCL models, a setplug is connected to the sensor input terminals and the potentiometer is adjusted for the midpoint between energized and nonenergized of the relay.

HCL and SC series circuit cards are economically priced and may be customized for a wide variety of applications. Contact our engineers to discuss your requirements.

WARRANTY: All products manufactured by OHMIC Co. are warranted to be free of defects in material and workmanship for one year after delivery. Any equipment found to be defective within this period will be repaired or replaced free of charge.

SPECIFICATIONS HCL/SC SERIES

HCL/SC Series

Power	120 VAC, 60Hz at 20mA 12 VDC (regulated) at 20mA 15-35 VDC a1 20 mA
Sensor Excitation	3 Vac, 60Hz at 150µA Max
Sensor Load Resistance	20K, 100K or 909K
Operating Temperature	120°F Ambient Maximum
Analog Voltage	0-1 Vdc for HCL Models 0-5 Vdc for SC Models
Analog Output Linearity	±0.5% of Full Scale
Temperature Compensation (Optional)	5-160°F for Sensor Environment (Requires LM-34 Solid State Temperature Sensor)
I/O	Screw Terminal Barrier Strip Terminal studs for Analog Output and Temperature Sensor/Comp.
Size	3.5" x 2.8" x 1.5" (L x W x H)
Weight	6 oz Net
Relay Output	10A Resistive Form C, SPDT
Setpoint Accuracy	±2% of Full Scale
Hysteresis	1.5% Factory Preset

ORDERING INFORMATION

HCL	120	T	100K
Model HCL Controller/ Transmitter SC Signal conditioner	Power Supply 120 120VAC 12 Regulated 12VDC 15 15-35 VDC	Temperature Blank No Temp. Compensated T Temperature Compensated	Load Resistor 909K - Low 100K - Med 20K - High

ENGINEERING SUPPORT: OHMIC Instruments Co. designs and manufactures a full line of environmental and bio-medical sensors, instruments and controls. Many of our products are custom designed to meet specific requirements. Our engineers will be pleased to discuss your application.



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