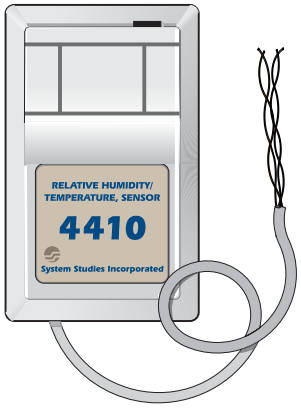
System Studies Incorporated

Relative Humidity/Temperature Sensor



Offering extra protection for central office equipment

Excessive humidity and temperature extremes cause a number of problems for telephone operating companies. Even in the relatively protected environment of the central office, equipment isn't safe from these conditions. Dangerous levels of heat and humidity in the dryer room put a strain on your dryers, leading the way to failure of that vital equipment.

To provide early warning of a developing environmental problem in the dryer room, System Studies has designed a Relative Humidity/Temperature Sensor (Part No. 9800-4410) that, in conjunction with PressureMAP™ and the 289H LSS monitor™, remotely monitors and alarms for changing conditions. This dual sensor device, which can be directly mounted to a dryer room wall, reads from 20% to 95% relative humidity, and 32° to 150° Fahrenheit. The relative humidity sensor is programmed in PressureMAP to alarm when the humidity increases to 80% and clear when it decreases to 75%. The temperature sensor alarms at 95° F and clears when the temperature drops back down to 90° F. This early warning detection is critical in implementing the necessary procedures to protect dryers from the damaging effects of heat and humidity.

Here's How It Works

The relative humidity sensor detects changes in humidity and responds with a current loop value between 4 and 20 milliamperes (mA). A small thermistor sensor monitors temperature changes in the dryer room and outputs electrical resistance in the range of 2069 ohms to 885K ohms.

Two pairs of conductors provide the electrical connection to the 289H LSS monitor in the central office (one pair for each sensor). Output values are read by the 289H LSS, and converted to humidity and temperature readings by the PressureMAP software. The Relative Humidity/Temperature Sensor is programmed into the PressureMAP database as two devices. The relative humidity sensor is programmed as a "RH" device type, and the temperature sensor as a "JD" device type. When PressureMAP scans the 289H LSS for readings, the device type cues the software to interpret the values supplied by the devices as the appropriate types of reading. A four star alarm is generated and distributed to the assigned Alarm Center(s) for any humidity reading above 80%, or any temperature reading above 95° F.

Physical Description

The System Studies Relative Humidity/Temperature Sensor consists of a humidity sensor and a temperature sensor in a wall-mount plastic housing. The device is equipped with 15 feet of 2-pair conductor wire in a protective sheath. The orange/white pair for the relative humidity sensor is polarity sensitive; however, the blue/white pair for the temperature sensor is non-polarity sensitive. The unit is flush-mounted, using the appropriate screws or fasteners for the wall where the sensor is being placed.

Sensor Specifications

Electrical The relative humidity sensor outputs a current loop value between 4 and 20 mA. The sensor operates on a single dedicated conductor pair (26 gauge, standard, orange/white), and is polarity sensitive.

The temperature sensor outputs electrical resistance readings in the range of 2069 ohms to 885K ohms. It operates on a single dedicated conductor pair (26 gauge, standard, blue/white). The sensor is not polarity sensitive. Measurement voltage: 10 to 48 volts DC.

Physical Dimensions 4.5 inches x 2.75 inches x 1.14 inches.

Relative Humidity Range Measurement Output 20 to 95% (accurate within ± 5%)

Temperature Range Measurement Output 32° F to 150° F

PressureMAP Device Types RH, JD

Monitor Compatibility 289H Loop Surveillance System (LSS)™—controller card equipped with one of the following EPROMs (or higher): Rev. B0A, Rev. C05, D03, E03, F01 or G01.

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