

MODEL 5721-05 RWIS Road Sensor Station

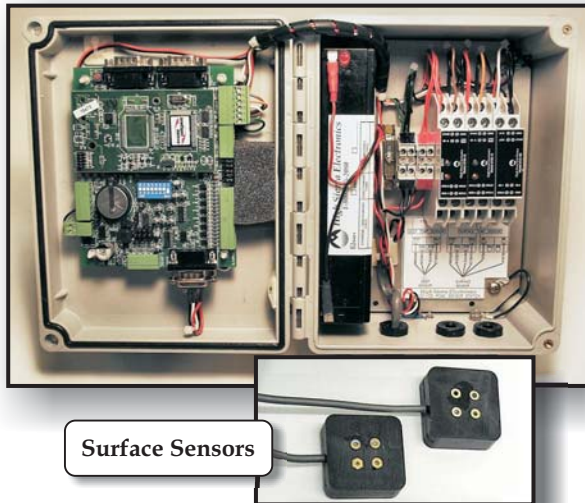
- ❑ Low Cost Sensor Station
- ❑ Monitors and Reports Real-Time Road Conditions
- ❑ NTCIP 1204 ESS Compliant



PHONE: (800) 275-2080

HIGH SIERRA ELECTRONICS

FAX: (530) 273-2089



DESCRIPTION:

The High Sierra Electronics (HSE) RWIS Road Sensor Station is designed as a low cost, limited NTCIP 1204 Environmental Sensor Station (ESS), which simplifies integration with other field devices in an ITS Network. Real-time anti-icing knowledge of the pavement surface state is necessary for making an informed decision on winter road surface treatment. The Model 5721-05 RWIS Road Sensor Station is an NTCIP compliant remote processing unit for monitoring the actual road surface conditions. It is well suited for roadways, ice prone bridges, elevated roadways (including entryways, parking garage ramps or loading docks), and other commercial applications.

The Road Surface Station is provided with two dedicated HSE Road Sensors. The first, our Passive Surface Sensor provides accurate surface temperature reading and measures surface wetness. The second, our Sub-Surface Temperature Sensor, provides an accurate temperature reading for the depth it is buried. The Remote Processing Unit consist of an NTCIP Controller and Signal Conditioning Modules. Conditioned pavement sensor signals are applied to the NTCIP Controller, which samples conditions and determines the roadway state (Dry, Wet, or IceWatch) by observing temperature and moisture phase change on the surface. The surface condition, surface temperature, sub-surface temperature and surface wetness are populated into the appropriate NTCIP 1204 (ESS) Object Identifiers (OIDs) and are transmitted when the device is interrogated. While the surface wetness portion of the sensor is measuring conductivity, the value is not provided in calibrated engineering units. The value can serve as a guide as to whether de-icing chemicals remain on the surface, or if reapplication is necessary.

The processor and signal conditioning is packaged in a compact enclosure for convenient mounting within a traffic enclosure or other cabinet. The Surface Sensor element, Model 5721-51, is molded in a resilient epoxy compound with thermal properties that closely match the roadway surface. It works on thermally passive principles; no artificial heating or cooling is used that may alter the measured environment. The maintenance free design features corrosive-resistant electrodes to derive the presence of moisture on the roadway surface. The sensors are intentionally designed as low cost units, so replacement is economical if and when required due to road surface milling, repaving, ect.

In support of HSE's commitment to open architecture solutions, we publish the full list of NTCIP Objects used, including Manufacturer Specific Objects necessary to provide data and functionality not included in the 1204v3 ESS standard. This "no secrets" approach simplifies integration with Central Software and interoperability with other manufacturer's equipment.

02-5721-05(B)

Environmental Monitoring Solutions

WEB SITE: www.highsierraelectronics.com E-MAIL: info@highsierraelectronics.com

MODEL 5721-05

Specifications and Ordering Guide



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SPECIFICATIONS:

Model 5721-05 RWIS Road Sensor Station

Power.....	12VDC@ 130mA (<2 Watts) 110 VAC, <2 Watt (typical), AC Power Module is provided
Standby Battery	2.3 Amp Hour Rechargeable - Sealed Gel Cell
Operating Temperature	-40° C. to +60° C.
Temperature Range.....	-40° C. to +60° C.
Temperature Resolution.....	0.1° C.
Temperature Accuracy	0.2° C.
Surface Status	2 (error), 3 (dry), 5 (wet), 8 (ice watch)
Sensor Cable	50 Foot Standard Length (500 Feet Maximum)
Size.....	8.5" x 7" x 4.5" ABS NEMA 4X Enclosure
Weight	5.3 Pounds
Shipping Weight	7 Pounds

Controller

Data Format	NTCIP 1204v3 ESS
Protocol Stack.....	Data Objects - SNMP - Null - PMPP - RS232
Communications	Nine Pin D-SUB Connector, 9600 Baud

ORDERING GUIDE:

Model 5721-05	RWIS Road Sensor Station (Includes Signal Processing Unit, Surface Sensor and Sub-Surface Sensor)
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OPTIONAL:

Model 5720-02	Extra Sensor Cable (1 foot Increments), factory only
Model 5721-51	Surface Sensor (Replacement)

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