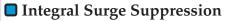# MODEL 5400
RWIS
Remote Processing Unit

- NTCIP 1204 ESS Compliant Architecture
- Supports Full Complement of RWIS Sensors
- Equip Cabinet Mount Configuration
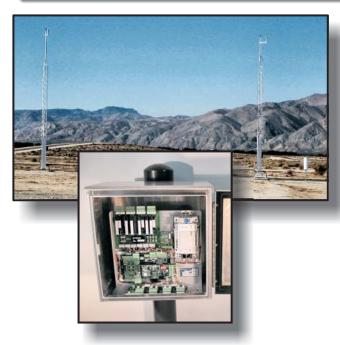- Integral Surge Suppression

PHONE: (800) 275-2080   HIGH SIERRA ELECTRONICS   FAX: (530) 273-2089

DESCRIPTION:

The Model 5400 RWIS Remote Processing Unit (RPU) is the heart of a standards based, open architecture NTCIP-compliant Road Weather Information System (RWIS) Environmental Sensor Station (ESS), designed for deployment in new or existing RWIS stations.

The enclosure shelf or panel mount form factor of the unit, along with its support for a full suite of commercially available open architecture pavement surface and atmospheric sensors, make it an ideal choice of RWIS applications.

Cabinet mount package with integral AC power supply and surge suppression.

Besides providing important road surface and weather information, the unit activates and deactivates isolated outputs based on user settable high and low thresholds, enabling use of locally resolved weather status information to activate messages signs, flashing beacon signs or other public warning devices. Further, these outputs may be used to activate traffic signal controller preemptions, enabling new and innovative approaches to improving traffic safety.

Communications with the RWIS is NTCIP 1204v3 ESS via Ethernet or RS-232 connection, providing the flexibility needed to poll and collect data over a variety of communications means. As a fully certified NTCIP compliant system, central polling and monitoring can be provided by any number of agency owned or hosted software solutions, including many ATMS systems and stand alone software solutions. Any NTCIP compliant Central Software can interrogate and receive data from the unit.

The entire RWIS RPU, including NTCIP controller, sensor surge protection, power converter and condition status outputs are packaged on a cabinet mount L-Panel. Sensors can be deployed on the RWIS tower, existing nearby traffic poles, camera poles, sign gantries or luminaries using standard mounting hardware.

RWIS systems provide important information about weather and roadway conditions, helping operations and maintenance personnel stay informed so that they can make timely decisions and improve traffic safety. HSE RWIS systems allow transportation agencies to implement open architecture RPU-based RWIS in a cost effective manner.

02-5400-00(C)

Environmental Monitoring Solutions

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

SENSORS AND FUNCTIONALITY:

All the sensors we supply are industry standard commercially available open architecture sensors. Additional sensors can be incorporated. 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.

Surface Sensors

Non-Intrusive Pavement Surface Sensors
- IceSight 2020EW/E (Model 5433-15/16)
- Equip up to 8
- IceSight sensors provide surface status, surface temperature, air temperature and a friction coefficient.
- Separate outputs can be activated for wet road and for icy surface conditions.
- American Made

HSE Passive Surface Sensors
- Model 5721- Passive Surface Sensors
- Equip up to 2
- Cost effective basic passive sensors provide accurate surface temperature and 3 surface status; Dry, Wet, or Ice.
- Separate outputs can be activated for wet road and for icy surface conditions.
- American Made

HSE Sub-Surface Temperature Sensors
- Model 5721-07 adds sub-surface temperature to the HSE Non-Intrusive and In-Road surface sensors above.
- Equip up to 2
- Cost effective basic passive sensors provide accurate sub-surface temperature.
- American Made

Lufft IRS31/ARS31 Intelligent Road Sensor
- Model 5421 Sensor provides surface temperature, surface status, freeze point and film thickness data
- With up to 2 sub-surface probes. Optionally equip ARS31 Active surface sensor with each IRS31.
- Equip up to eight (8)
- Separate outputs can be activated for wet and for icy surface conditions.

Water Depth Sensors
- Model 6600-10 & 6640-00 Pressure Transducers
- Bubbler Sensor, Radar Sensor and other sensor technologies available
- Equip up to Two (2)
- Two high and low level thresholds are provided for each of the 2 sensors, allowing activation of a total of four outputs based on flood conditions.

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Atmospheric Sensors

Combined Weather Sensors

Met One MSO-15, 5 Parameter Weather Station
- 5741-00 5-Parameter Weather Station provides Wind Speed & Direction, Air Temperature, Relative Humidity and Atmospheric Pressure
- SDI-12 Communications
- An output can be activated for high wind conditions (activates when spot wind speed threshold is exceeded, and deactivates when 10 minute wind gust speed is below threshold value).
- American Made

Lufft WS Combined Weather Station Sensors
- Model 5742 sensors are available in a range of configurations that include Wind Speed and Direction, Air Temperature & Relative Humidity, Atmospheric Pressure, Solar Radiation and Precipitation.
- Separate output can be activated for high wind conditions and for precipitation rate.

Discrete Atmospheric Sensors

Tipping Bucket Rain Gauge
- Model 2400 Series 12" or 8" Rain Gauge provides precipitation rate and totals. A settable tip rate count accumulator facilitates Central Software forwarding raw data to weather databases.
- An output can activated based on rain rate.
- American Made

HSE Atmospheric Pressure
- Model 5730-03 provides solar radiation reading.
- American Made

Rotronic HC2-S3 Air Temperature/Relative Humidity Sensor
- Model 5723 provides Air Temperature and Relative Humidity indications.

RM Young 5103 Wind Sensor
- Model 5712 provides solar radiation reading
- Separate outputs can be activated for high wind conditions (activates when spot wind speed threshold is exceeded, and deactivates when 10 minute gust speed is below threshold value.)
- American Made

EnviroTech Sentry SVS-1 Visibility Sensor
- Model 5434-00 provides visibility reading from 10m to 16km
- Separate outputs can be activated for low visibility conditions.
- American Made

Lufft R2S Radar Rain Sensor
- Model 5431 Rain Sensor classifies precipitation and provides rate and accumulation data
- An output can be activated based on rain rate

Licor Pyranometer
- Model 5790 provides solar radiation reading

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

MODEL 5400
Description and Specifications

SPECIFICATIONS:

Power Source	115 VDC (100-240VDC)
	Optional 12 VDC (9-15VDC)
Power Consumption	<4 Watts
Dimensions	13"H x 13.5"W x 4"D (33cm H x 35cm W x 10cm D)
Weight	12 Pounds (3.6kg)
Data Connection:	
Ethernet	RJ45-F
RS-232 -RS-485	DB9M
Sensor Inputs	16 Digital Inputs, expandable to 40
	8 Analog Inputs, 12 bit, expandable to 20
	3 Serial (RS-485)
	IceSight open protocol
	Lufft UMB open protocol
	SDI-12 standards based open protocol
Isolated Outputs	8 (SPDT Dry Form C), expandable to 20
Sensor Surge Protection . .	Internal M Block Plug-in Suppressors
	for sensor data and power.
	Sensor power individually fused
Operating Temp.	-40º F. to +165º F. (-40º C. to +74º C.)
Humidity	5-95% Non-Condensing
Protocol Stacks Supported:	
Ethernet	Data Objects>SNMP>UDP/IP>Ethernet>RJ45
Direct Connect (RS-232) .	Data Objects>SNMP>Null>PMPP>RS-232>DB9M

ORDERING GUIDE:

Model 5400-03.	NTCIP RWIS RPU, 115VDC (standard)
Model 5400-02.	NTCIP RWIS RPU, 12VDC

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