



MICRO-MINIATURE WIRELESS INSTRUMENTATION SYSTEM FOR NEAR STATIC APPLICATIONS

MICROWIS™-XG

USED FOR TESTING & EXPERIMENT VERIFICATION ON EIGHT NASA SHUTTLE FLIGHTS

INVOCON, INC.

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The Next Generation of Invocon's Premier Wireless Sensor

The **Micro-Miniature Wireless Instrumentation System Next Generation, MicroWIS-XG**, is a data acquisition network for near-static sensing applications. The system includes MicroWIS Remote Sensors, a MicroWIS-XG Receiver, and a Graphical User Interface (GUI).

The **MicroWIS-XG Remote Sensors** can be configured for many types of resistive sensors: strain gages, resistive thermal devices (RTDs), pressure sensors, humidity sensors, and accelerometers. Regardless of the sensor application, the temperature in the enclosure is monitored for accurate data conversion. Sample rates are programmable with the GUI from 1 sample per second to 1 sample per hour. Up to 28 wireless sensors can be placed within a single RF coverage area at 1 sample per second, and up to 2388 sensors can operate simultaneously at 1 sample per minute.

The Remote Sensors remain in a low-power state until the specified sample time. The unit then samples both the external sensor and the internal temperature, and transmits the data to the Receiver allowing for both error detection and retransmissions.

Each MicroWIS-XG sensor utilizes the latest in low-power technology, enabling the units to be applied to a wide range of data acquisition scenarios.

The **MicroWIS-XG Receiver** connects to the standard RS-232 serial or USB port of a computer. This unit receives and acknowledges transmissions from the Remote Sensors. Each transmission is passed onto the PC where the **Graphical User Interface** decodes, time-stamps, saves, and plots the incoming data in real-time. The GUI incorporates unique calibration coefficients for each Remote Sensor allowing for accurate simultaneous conversion to engineering units for any type of sensor.



MicroWIS-XG Remote Sensors.

Specifications

DATA ACQUISITION RATE	Programmable via wireless link: 1 sample per second to 1 sample per hour.
EXTERNAL SENSOR	Optional full-bridge completion configuration; 1.2V excitation; 24-bit A/D; factory programmable gain and filter parameters.
INTERNAL TEMPERATURE	10-bit A/D with quarter degree C resolution.
POWER	Battery powered, 2.8-4.0V input range.
OPERATING TEMPERATURE RANGE	-35°C to +85°C (Reduce battery life by 50% when continuous operation at -35°C.)
TRANSMIT DISTANCE	Up to 100 feet in open air. (This may increase or decrease depending on the transmission path.)
BATTERY LIFE	Standard internal battery: 6 month @ 1 sample/min.
PACKAGING	Screw-on enclosure (pictured) with replaceable internal battery.
SENSOR TYPES	MicroWIS-XG can accommodate strain gages, RTDs, pressure sensors, humidity sensors, accelerometers, or any other sensor with an active resistive element.

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System specifications subject to change without notice.

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