THIEF HATCH LATCH DETECTION SYSTEMS

OVERVIEW:
The following Application note provides a basic summary of Sensor Solutions Thief Hatch sensors and how to implement them in remote monitoring systems.

Our patent pending Thief Hatch Detection systems consist of a sensor mounted into the latch and a replacement latch pin. The sensor wires are then attached to a C1/D1 certified wireless transmitter. When the transmitter powers up, it checks to see if the circuit is “closed” or “open”. The circuit is only closed when the hatch is properly latched. If the latch is not closed or the sensor wires have been damaged or disconnected, the transmitter will send an “open” signal.

SIMPLE APPARATUS DESIGNATION:
Simple apparatus is defined in paragraph 3.12 of the ANSI/ISA-RP 12.6-1987 as any device which will neither generate nor store more than 1.2 volts, 0.1 amps, 25 mW or 20 μJ. The only component of the system that is capable of storing electricity is the cable between the sensor and the transmitter. If multiple sensors are being connected to a single transmitter port, or if additional wiring is being connected, calculations should be performed to ensure the total cable length will not store more than 1.2V. Contact Sensor Solutions Engineering department for additional information.

INSTALLATION:
To mount the sensor, latches are tapped for threading the sensor in aligned with the pin. Then the sensor can be threaded into the hole. Once threaded into the latch the sensor face should be flush with the inside of the latch or recessed inside the latch.

The OEM latch pin is then replaced with Sensor Solutions replacement pin, part number CS1209. Wiring from the sensor can then be routed to an open/close terminal pair in the wireless transmitter.

The control system receiving the data from the sensor is then programmed to provide notification of when hatches are open and send alarms via email or text message when the latch has been open for a specified amount of time.