



# CS3-SR

## spread spectrum radio communication option

The Calsense Spread Spectrum Radio communication option, model CS3-SR, enables two or more controllers to communicate using spread spectrum radios. A spread spectrum radio is a 1-watt radio modem that uses the 902-928 MHz ISM band.

### description

This option also enables the Calsense Command Center Online web application to communicate with a controller through a spread spectrum radio system, which consists of one or more spread spectrum radio hubs and one or more controllers with the CS3-SR option. The hub manages data flow between the cloud and surrounding controllers.

- Blanket your entire campus with wireless communication so your Calsense controllers can share a single central communication option
- Does not require any trenching or wires
- Does not require FCC licensing
- Used as a communication path for *FLOWSENSE*® technology to share a single internet-connected communication option, programming information, and flow

### spread spectrum radio accessories

#### antennas

An antenna, purchased separately, is required to use the CS3-SR option for communication. Calsense offers three antennas, each designed to accommodate specific situations.

- The Calsense Stubby Antenna, model SR-STUBBY, is an omnidirectional, surface mount antenna designed for all environments and applications.
- The Calsense Stick Antenna, model SR-STICK-X, is a fiberglass omnidirectional antenna used to extend the range of a spread spectrum radio system and is often recommended for use with spread spectrum hubs and repeaters. This antenna is available in 0-, 3-, 5-, and 7-dBi, represented by X in the part number.
- The Calsense Yagi Antenna, model SR-YAGI-X, is an aluminum directional antenna typically used to extend the communications range of a specific controller location. This antenna is available in 6- and 9-dBi, represented by X in the part number.

**Note:** LMR-400-DB or LMR-600-DB cable is required if mounting a stick or yagi antenna.

#### optional equipment

- The Calsense Spread Spectrum Radio Frequency Filter, model SR-FILTER and the Calsense Antenna Cable Surge Protector, model ANT-PROT, are recommended when using STICK and YAGI antennas with the Spread Spectrum Radio communication option.



### technical specifications

#### wireless interface

- Frequency Range: 902 - 928 MHz
- Output Power: up to 1-watt
- Data Range: up to 2-miles, clear line of sight

#### environmental

- Operating Temperature: -40° to 75°C (-40° to 167°F)
- Relative Humidity: 0 to 95%, non-condensing

#### certifications

- Emissions: FCC, IC
- Safety: UL® Class 1, Div 2, EN 60079-0:2012 + A11:2013, EN 60079-15:2010

#### warranty

- 3-year limited warranty

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