

CURB ALARM

Designed to reduce the tire and wheel damages caused by operators curbing tires. These damages have significant financial ramifications due to the loss of productivity and costs associated with the repair/replacement of the tires and wheels.

A collaborative effort with several transit properties was invested on the design requirements.

Looking closely at the financial costs incurred due to the damage to tires and wheels, the labor involved and loss of productivity, it became very apparent there was a considerable financial benefit to the transit properties to implement a system that can help them avoid such situations.



The system is designed to alert operators when the tires are within 2 inches of a curb so they may make a steering correction to prevent tire and wheel damage.

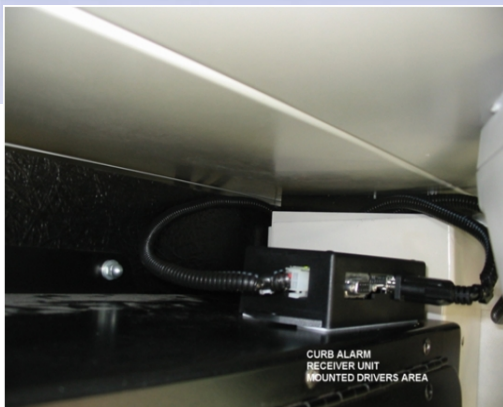
Model SUVARE-CA2001 has one programmable ultrasonic sensor located in front of the rear tires.
Model SUVARE-CA4002 has two programmable ultrasonic sensors, one for each front and rear tires.

The main components are the programmable ultrasonic sensor, transmitter and receiver.

Information from the transmitter located at the rear door panel is transmitted to the receiver by a wireless connection. The unit is powered by 12 or 24 VDC.

System features

1. An alarm gives three distinct "BEEPS" for the driver when the tire comes within two (2) inches of the curb, in time for a steering correction.
2. If the driver hits the curb, a "TIME" and "DATE" is recorded, up to 400 curbing incidents can be stored and downloaded at any time.
3. A GPS location is also recorded of the curbing incident along with a Time Stamp.
4. Easy to install wireless system.
5. Designed for Transit Buses
6. Front Tire Sensor Available



Tire and Wheel Damage **Yearly Cost**

1. Front Curb Side Tire Usage: _____ per month at \$300 each X _____ buses X 12 months	\$ _____
2. Rear Curb Side Tire Usage: _____ per month at \$300 each X _____ buses X 12 months	\$ _____
3. Curb Side Wheel Usage: _____ per month, per year _____ Aluminum Wheels per year _____ X \$580 each Steel Wheels per year _____ X \$200 each	\$ _____
4. Road Calls Flat Tires: Average _____ per month. Man hours: driver time, dispatcher time, maintenance time, ½ hour ½ hourly rate _____ X Average Per Month _____ X 12 months _____	\$ _____
5. Man hours Per Road Call: Number Personnel _____ X _____ hourly rate X _____ hours X _____ road calls	\$ _____
6. Man hours lost mechanics shop repair: (If mechanics used for road calls) Number Personnel _____ X _____ hourly rate X _____ hours X _____ road calls	\$ _____
7. Metro Police Time: Average road calls per month _____ X hours _____ X _____ hourly rate	\$ _____
8. Bus Change Outs Do to Flat Tire: Average per month _____ X hours _____ X _____ hourly rate	\$ _____
9. Tire Repair Truck: Fuel, depreciation, etc. \$25 per road call. \$25 X _____ road calls	\$ _____
10. Bus Damage Curb Side: Incidents _____ X \$ _____	\$ _____
TOTAL:	\$ _____

Curb Alarm Cost and **Savings**

1. CURB ALARM PURCHASE: \$690 Installed X _____ buses	\$ _____
2. 50% reduction in yearly tire and wheel damage cost:	\$ _____
3. Return on investment in months: 50% tire savings _____ divided into purchase:	\$ _____
4. Three Year Cost Savings: \$ _____ (50% savings X 3 years) minus purchase cost \$ _____	\$ _____
5. Five Year Cost Savings:	\$ _____
SAVINGS:	\$ _____

