

## San Francisco 9-1-1 Center Receiving Coded Signals with Keltron Receiver and Form Four Equipment



Serving one of the largest cities in the country, the San Francisco 9-1-1 Center provides life safety event response across a wide range of technologies and equipment. The facility needed an alarm monitoring system with huge capacity and the ability to interface with multiple alarm technologies - old and new - simultaneously and convert the data for selective transmission to a computer-aided dispatch system.

The San Francisco 9-1-1 center chose Keltron's solutions, known in the industry for their universal compatibility and proven reliability for large, complex configurations. Keltron's coded signal decoders - DR/CSD703 - and Keltron Form Four control equipment combine to monitor the existing coded signal technology that transmits alarm signals in areas of San Francisco.

### How the system works

Form Four equipment powers and supervises the coded fire alarm loops and conditions for reception of coded signals through an earth ground. Meters enable testing of the current and voltage of 80 circuits. Output voltages that ensure the ability to source 100mA on each circuit, are 50, 90, 110, and 150 VDC. Each set of common cards and meters services 20 loop circuits. Individual circuit indicators indicate open circuit, low current, auto-ground, and repeater off. Individual circuit timers enable low current and auto-ground.

The redundant Keltron DR/CSD703 alarm receivers decode coded signals from fire alarm coded box loops. Accepting codes with as many as 5 digits, each receiver can simultaneously monitor as many as 96 circuits, with digit spacings from .1 to 8 seconds. Each round of code received is individually annunciated. The format for the display/readout is the number of the circuit (channel) on which the code was received, the code itself, and the date and time. Each code received can be individually assigned a field-programmed English text message using the plug-in keyboard. A coded transmitter may be included in each system to enable the transmission of coded signals from the system location. Each transmitter has two independent outputs, both of which have loop current sensing to effect type B (PNIS) operation if desired.

The Keltron DR/CSD703 simultaneously accepts digital alarm communicator transmitter (DACR) alarm signals via the dialup network. Accepting all digital communication formats, the receiver can simultaneously manage up to sixteen incoming lines with no loss of data. Each signal from a DACT is individually annunciated. The annunciated information includes the account number and message, the event code, event code descriptor, the zone and its preprogrammed message along with the date and time of the event.

### At the operator station

When an event is received, an audible signal sounds until the operator acknowledges the event on the touch screen. Preprogrammed information is retrieved and accompanies the received signal to the integral 7" CRT display screen with its touch screen controls and to an internal red/black printer with a date and time stamp. This information remains on the display to enable the operator to read the displayed message and dispatch personnel accordingly. The screen must then be cleared via the touch screen to enable the next alarm to be annunciated. An 'alarms waiting' message flashes on the screen and the audible signal activates if additional events are received before the screen is cleared. All alarms result in a four line programmable printout that may be taken by the responding personnel for on site assistance.

15:36:09 15:36:09 15:36:09  
03/11/02 03/11/02 03/11/02  
15:36:09 15:36:09 15:36:09  
05/18/08 05/18/08 05/18/08  
20:36:09 20:36:09 20:36:09  
08/07/08 08/07/08 08/07/08

Signals are stored in the receiver's internal memory until annunciated. All received events energize the audible signal indefinitely and require manual operator acknowledgment to silence them. The operator then determines if the event should be forwarded to CAD to create an incident report. Signals that are waiting for operator acknowledgment will print on both the internal and remote printers upon receipt.

An RS-232c output transmits printed or displayed text to a remote printer. A remote CCTV display shows a mirror image of the CRT display of the unit to which it is connected. A CAD system interface supports both the manual and automatic modes as specified. A 2000VA UPS provides four hours of run time for the alarm receivers, the remote display, and the telegraph interface.

A dedicated system processor is employed as the telegraph system interface. This allows the coded signal events to be forwarded to both alarm receivers simultaneously via an RS422 data line. An inter-processor link (IPL) is also included to maintain synchronization of both redundant alarm receivers. The IPL supports alarm event transfer, cross acknowledge and automatic database updates.

### **System redundancy**

At the San Francisco 9-1-1 Center, if one alarm receiver fails, the other automatically and seamlessly receives all coded alarms. To ensure that the system maintains 100% operational ability after an alarm receiver failure, the PSTN lines need to be switched to the back up unit if they were connected to the unit that failed. The remote printer connection, CAD System connection, and remote display connection also need to be switched if they were connected to the unit that failed.

### **Recording and reporting**

The San Francisco 9-1-1 Center Keltron system features a keyboard to enable easy message database programming quick access to history. The system features 720K of message memory that enables the programming of over 3200 screens of 224 characters each - far more than required in the specifications.

Keltron's REMP703 software program facilitates the creation, uploading and storage of the message database as well as providing the ability to download the internal history file and generating reports.

Keltron develops and manufactures universally-compatible, UL listed life safety event management systems for the municipal and proprietary markets. Solutions include Ethernet signaling systems, active network radio systems, distributed multiplex systems, digital communicator/receiver systems, and direct wire systems. This document is not intended for installation or maintenance purposes. All specifications are subject to changes without notice. For more information visit [www.keltroncorp.com](http://www.keltroncorp.com) or contact us at 781-894-8710.

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