



## TECHNICAL NOTE 03-97

# RANS-DV SYSTEMS

## RS-232 INPUT INTERFACE FOR RANS-DV SYSTEMS

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### INTRODUCTION

*The RS-232 serial alarm input interface is available on Digital Voice Roving Alarm Notification System (RANS-DV). The circuitry is built into the encoder circuit boards but must be selected in software to operate. When the serial interface is selected in software, the discrete (closed-contact) inputs are disabled.*

### CONNECTION

Connection is made to a 9-pin female connector connected to the encoder circuit board by a ribbon cable and 10-pin board mounted header. A standard 9-pin serial cable can be used to connect to the serial port of the host computer system. All other connections to the encoder circuit board remain the same.

### COMMUNICATION PROTOCOL

The alarm communications consist of an individual byte for each alarm input sent to the alarm encoder. The serial input memory map has a capacity of up to 64 individual alarms. Alarms are contained in 64 bytes of RAM memory. The communications protocol consists of 2400 baud, 8 bits, no parity, and 1 stop bit. The operation for each alarm transmission is as follows:

The alarm encoder is ready to receive alarms whenever the CTS is high. Each alarm is contained in one byte. The host computer can

send one byte at a time or up to 64 alarm bytes in one transmission. The alarm byte consists of 8 bits with the MSB and the 128-bit set, and the remaining 6 bits are the alarm number.

*Example:* 10XXXXXX. The Xs are the alarm number  
10001010 indicates a zone 10 alarm

In addition, the computer can send control codes to the RANS to activate different functions. The following are the allowable control codes:

242 (binary 11110010)

causes the encoder to clear all alarms.

This is useful to stop a string of alarms from being transmitted.

243 (binary 11110011)

causes the encoder to activate all alarms.

This may be used as a testing mode.

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245 (binary 11110101)

causes the encoder to return the status of each alarm input in the system. An input status byte is returned for each of the 64 possible inputs. An "0" indicates the zone is not active, a "1" means the input is queued for alarm and is waiting to transmit, a "3" means that the input has been activated and the alarm transmitted. The clear function will clear active alarm inputs.

### **SAMPLE SOFTWARE**

Included with the serial alarm input interface is sample software for testing or assisting in setting up the serial interface. The software program is written Turbo C. The program name is DRALM.EXE and will load under DOS or a DOS shell. The Com port is defaulted to COM 1, but can be changed if necessary. Running the program will allow you to selectively send alarms to the encoder from the PC.

### **INTERNAL RANS-DV SOFTWARE SETTINGS**

The RANS-DV circuit board stores several internal settings in EEPROM. These items are selectable through the serial port using a PC, adapter cable, and programming software. These selectable functions are programmed at the factory and are provided here for reference only.

1. Relay contact or RS-232 alarm input
2. Normal or continuous transmit
3. Voice message word matrix
4. Number of alarm message repeats
5. Alarm tones and durations
6. Delay between tone and voice
7. Transmit override timeout (channel alert)
8. Customer name and number

If you have any questions, please contact **CDT**.