



DSC 4000

DIGITAL COMMUNICATOR

The Digital Security Controls DSC 4000 is a Micro-Computer based Digital Communicator. The DSC 4000 has 4 alarm input zones and is capable of reporting 15 alarm conditions including separate alarm and restore codes, low battery and 24-Hour Self-Test. When used with receivers capable of receiving "HEX" codes the DSC 4000 can transmit 15 codes. It is compatible with and automatically selects the correct transmitting format for DCI, Ademco, Franklin, SESCOA and Silent Knight alarm receivers. The operating system, telephone numbers, account codes and alarm codes are stored in a re-usable EPROM which may be programmed by existing compatible programmers or with the Digital Security Controls EP-1 programmer.

Code Transmissions

All recorded alarm transitions are transmitted during one dial-up connection with the receiver.

If the handshake signal is not received from the alarm receiver the alarm report is sent once in slow format (10 baud) before the next dialing attempt.

Installation Instructions

Mount the DSC 4000 communicator in the alarm control cabinet using the double sided foam tape provided or the mounting holes in the corners of the printed circuit board.

Wire all zone inputs to the DSC 4000 to provide the appropriate positive input voltages or contact closures as described in the section on Alarm Zone Inputs and in the connection diagram.

Connect approved telephone interconnect cable to the DSC 4000 as shown in the connection diagram. If the DSC 4000 is to be connected to a telephone line which is not intended for DTMF dialing cut jumper JMP2 to convert to pulse dialing.

Insert a programmed EPROM in the DSC 4000 board as shown in the connection diagram.

Connect the power supply to the + and - DC IN terminals. The line seizure relay and the off-hook LED should operate momentarily on applying power.

Plug the interconnect cable into the telephone line jack supplied by the telephone company and proceed with testing alarm transmissions to the alarm receiver. If the DSC 4000 seizes the telephone line for a long period of time or if other difficulty is experienced in completing alarm transmissions, remove the interconnect cable and seek technical assistance from your equipment distributor or from Digital Security Controls.

Specifications

Dimensions: 5" x 4" (12.7cm x 10.2cm)

Input voltage: 11.5 to 14 VDC

Current:

Standby 175 mA

Transmitting 215 mA

Alarm Zone Inputs

Each of the 4 input zones requires a positive input voltage to trip. This can be done by applying a positive voltage directly or by closing a normally open contact between the input zone and the positive supply voltage to the DSC 4000 as shown in the connection diagram. Cutting jumper 1 inverts zone 3 input such that it then requires a negative clamped voltage or a normally open contact between zone 3 input and negative to trip.

All inputs have a 100 msec. delay. An alarm signal must be stable for this time before an alarm is recognized. This delay minimizes false alarms due to transients.

Each alarm input has a separately programmable alarm and restore code. An all restored code may also be programmed. This code will be transmitted when all zones, which do not have an individual restore code programmed, have returned to the normal state.

Programmable Voltage Outputs

The DSC 4000 has 2 programmable voltage outputs. The outputs are transistor switches to ground with 25ma ratings. The outputs may be programmed for local low battery alarm, telephone line failure, telephone line seizure, and failure to communicate. The voltage outputs are programmed by entering the following data entered at addresses 7DD for PGM #1 and 7DE for PGM #2.

```

00 Ground Start
01 Failure to Communicate
02 Telephone Line Seizure
03 Low Battery(must be used on PGM#2 only)
05 Telephone Line Failure(must be used on PGM#1 only)

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The data entered in the following locations determines the output time length.

```

7DF Low Battery Timing
7E0 Telephone Line Failure Timing
7E1 Fail to Communicate Timing

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The length of time is 1 to 255 seconds (data entered 1 to FF in HEX). PGM#1 and PGM#2 may also be reset on the positive transition of zone 4 input when it is used for an opening and closing signal by entering 00 in the timing addresses.

Low Battery Alarm

The low battery alarm has a separately programmable alarm and restoral code. The low battery alarm is created if the input supply voltage drops below 11 volts for more than 5 seconds. The alarm restoral is created as soon as the input voltage goes above 12 volts. The low battery alarm will not be transmitted if an alarm or restoral

code is not programmed. A local low battery alarm may be generated whether or not low battery alarm transmission is selected by using the 2nd programmable voltage output.

Telephone Line Monitor

If telephone line failure monitoring is desired 05 is entered in address 7DD and an output time length is entered in address 7EO. PGM#1 then provides a negative voltage switch output if the telephone line voltage disappears for more than 30 seconds. The PGM#1 output can then be used to provide a local alarm.

Line Seizure

The DSC 4000 has full line seizure to completely disconnect the house phones when the DSC 4000 is communicating.

Off-Hook & Dial Pulse Indicator

The red LED indicator on when the communicator searching for a dial tone, handshake or kiss-off signal.

2 Programmable Telephone Numbers

Two telephone numbers and account codes may be programmed. Up to 15 digits can be programmed for each telephone number including search for dial tone and pause between digits for PBX systems. All alarm codes can be programmed to report to one or both telephone numbers with either number having first priority.

Up to 8 dialing attempts are made for each alarm input. If only the first telephone number is programmed up to 8 attempts are made to that number. If both numbers are programmed then the first number to be dialed and the number of attempts to that number is governed by what instruction is programmed for each zone in the call code section (addresses 7D6 to 7DC). Only a total of 8 attempts will be made for each alarm. One of the programmable voltage outputs may be used to provide a local failure to communicate indication.

Dial Tone Detection

The DSC 4000 searches for dial tone on going off-hook. If the dial tone is not found it goes on-hook and off-hook to try to get dial tone. If the dial tone is still not found it goes on-hook and tries 15 seconds later. If the dial tone is still not detected a dialing attempt is made before going on hook to prepare for the second attempt.

Programming Sheet

1ST TELEPHONE NUMBER2ND TELEPHONE NUMBER

ADDRESS	DATA		ADDRESS	DATA	
	F	N		F	N
7A0	---	---	7B4	---	---
7A1	---	---	7B5	---	---
7A2	---	---	7B6	---	---
7A3	---	---	7B7	---	---
7A4	---	---	7B8	---	---
7A5	---	---	7B9	---	---
7A6	---	---	7BA	---	---
7A7	---	---	7BB	---	---
7A8	---	---	7BC	---	---
7A9	---	---	7BD	---	---
7AA	---	---	7BE	---	---
7AB	---	---	7BF	---	---
7AC	---	---	7C0	---	---
7AD	---	---	7C1	---	---
7AE	---	---	7C3	---	---
7AF	---	---	7C4	---	---

N=telephone number digit

F=pause before telephone number digit is dialed

(Enter D before 1st digit and where search for dial tone is required. Enter 0 before other numbers. Enter 1 to 9 for delay in seconds when a pause before a dialed number is required.)

1ST USER CODE2ND USER CODE

ADDRESS	DATA	ADDRESS	DATA
7B0	0 _	7C5	0 _
7B1	0 _	7C6	0 _
7B2	0 _	7C7	0 _
7B3	0 _	7C8	0 _

ALARM CODERESTORE CODE

	ADDRESS	DATA		ADDRESS	DATA	
		F	S		F	S
ZONE 1	7C9	---	---	7D0	---	---
ZONE 2	7CA	---	---	7D1	---	---
ZONE 3	7CB	---	---	7D2	---	---
ZONE 4	7CC	---	---	7D3	---	---
ALL	7CD	---	---	7D4	---	---
LOW BATTERY	7CE	---	---	7D5	---	---
24 HOUR TEST	7CF	---	---			

F=1st alarm code digit S=2nd alarm code digit

Where only one alarm digit is required to be transmitted enter F in the 1st alarm code digit position. (ie. for digits 1 to HEX E enter F1,F2....FE) Where 2 code digits are required enter the 1st digit in the F position and the 2nd in the S position. (ie. '11' entered will transmit: one pulse-space-one pulse. 'FB' entered will transmit: eleven pulses.)

TELEPHONE NUMBER PRIORITY CODE

	ADDRESS	DATA
		N A
Zone 1	7D6	[][]
Zone 2	7D7	[][]
Zone 3	7D8	[][]
Zone 4	7D9	[][]
All	7DA	[][]
Low Battery	7DB	[][]
24 Hour Test	7DC	[][]

N=1st telephone number to be dialed 1=primary or 1st telephone number
2=2nd telephone number will be dialed first.

A=number of attempts to be made to the number selected (the total
number of attempts is 8)

*ie. if '25' is entered the 2nd telephone # will be dialed 1st for 5
attempts then if transmission is not completed the remaining 3
attempts will be made to the 1st telephone #.*

*If '18' is entered all 8 attempts will be made to the 1st telephone #
and the 2nd # will not be contacted.*

PROGRAMMABLE VOLTAGE OUTPUTS

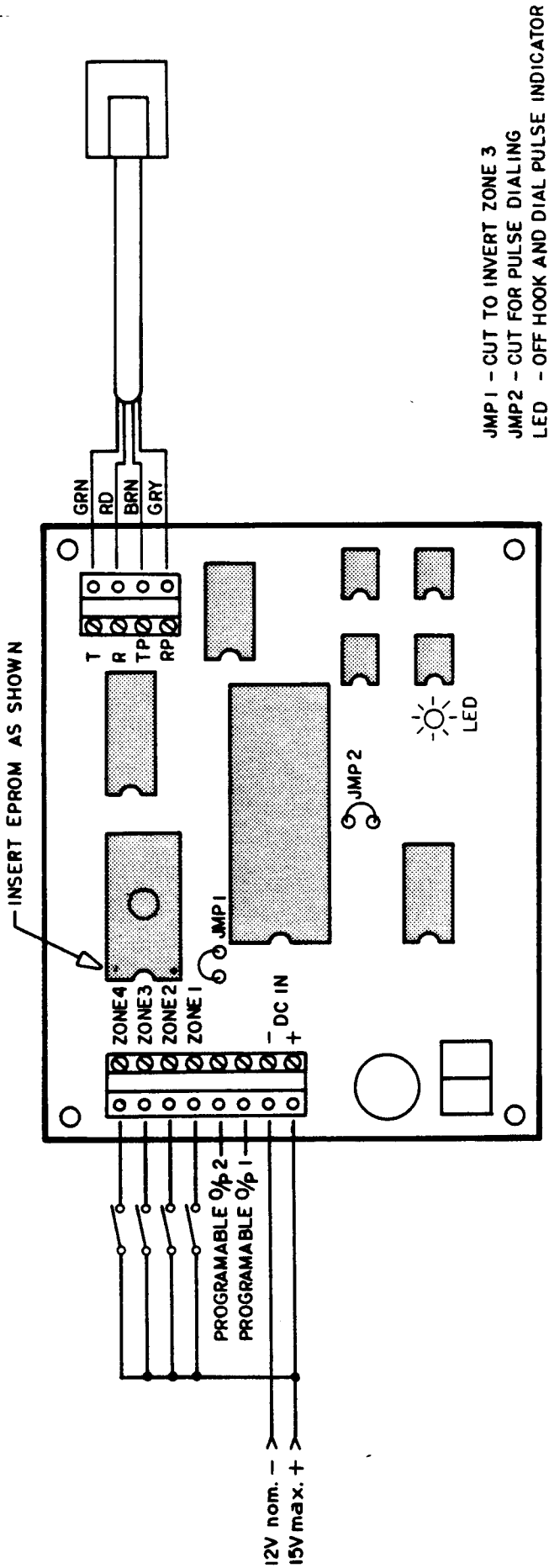
	ADDRESS	DATA
PGM#1	7DD	[][]
PGM#2	7DE	[][]

00=ground start pulse 01=fail to communicate 02=line seizure
03=low battery (PGM#2 only) 05=tel. line monitoring (PGM#1 only)

	ADDRESS	DATA
LOW BATTERY TIMING	7DF	[][]
TEL. LINE MON. TIMING	7E0	[][]
FAIL TO COMM. TIMING	7E1	[][]

01 to FE =output time in seconds(1 to 255 seconds)

00=reset on positive transition of zone 4 input



JMP 1 - CUT TO INVERT ZONE 3
 JMP 2 - CUT FOR PULSE DIALING
 LED - OFF HOOK AND DIAL PULSE INDICATOR