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NIDAC

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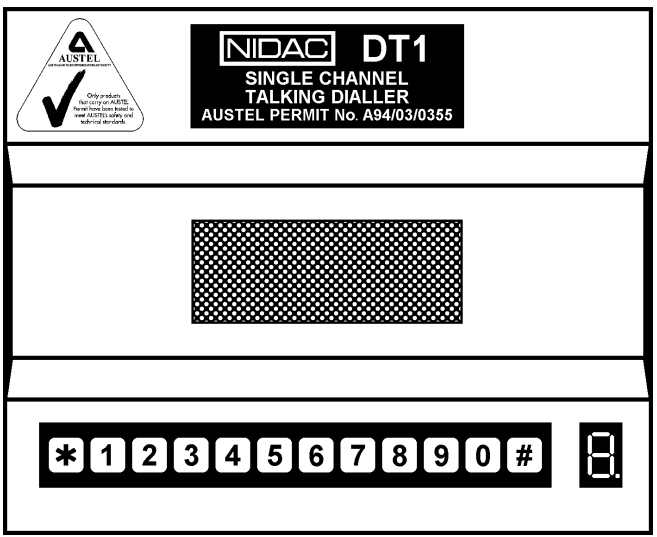
DT1

SINGLE CHANNEL TALKING DIALLER

INSTALLATION MANUAL. 1st EDITION.



SPECIAL NOTE TO NEW ZEALAND CUSTOMERS

This NIDAC DT1 dialler holds the Telepermit number of **PTC 212/94/026**.

Special Conditions of use for New Zealand customers

1. Alarm equipment or sensors etc. connected to the inputs shall meet the requirements of the New Zealand Electricity Act 1993 and its associated codes of practice.

2. The dialler shall only be powered by an approved power source.

3. The default dialling mode has been set to DTMF **not** decadic as shown on page 8 of this installation manual.

4. The preferred method of dialling is to use DTMF tones as this is faster and more reliable than pulse (decadic) dialling. If for some reason you must use decadic dialling, the numbers must be entered using the following translation table as this dialler does not implement the New Zealand "Reverse Dialling" standard.

Number to be dialled:	0	1	2	3	4	5	6	7	8	9
Number to program in dialler:	0	9	8	7	6	5	4	3	2	1

Note that where DTMF dialling is used, the numbers should be entered normally.

NIDAC DT1 - SINGLE CHANNEL TALKING DIALLER

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PRODUCT FEATURES

- AUSTEL permitted equipment. AUSTEL permit number A94/03/0355.
- 15 second user recordable voice message.
- 1 alarm input (Key switch input must be in ON state for input to operate).
- Key Switch input to enable/disable the alarm input.
- Programmable polarity on alarm and key switch inputs.
- Non volatile memory stores programmed data and voice message for 10 years without power.
- 6 user programmable phone numbers.
- Up to 6 dialling attempts at communicating an alarm condition.
- Remote shutdown of dialler via user programmable shutdown code (1 to 7 digits) on DTMF phones.
- Fully programmable through the on board keypad.
- Programmed information can be verified by replaying it on the 7-segment display (numeric data) or through the on board speaker (recorded voice).
- 50 millisecond debounce time on all inputs.
- Failure and Error code indication.

DIALLER OPERATION

POWER UP

When power is applied to the DT1 it will perform a self test, then flash the digit *1* five times on the 7 segment display. While the DT1 is performing the self test but before the *1* is displayed, the 7 segment display may show anything, this is normal.

ACTIVATION

The DT1 can be programmed to trigger from either a positive or negative going alarm source. For the alarm input to operate the key switch input must be in the ACTIVE state (for more information on this please refer to pages 5 & 9).

CALL SEQUENCE

Once the DT1 has been triggered, it will seize the phone line and hold it for 3 seconds to clear any calls that may be in progress. It then waits a further 3 seconds to get a line out before dialling a number. After dialling a phone number the DT1 plays the user message. The DT1 repeats the user message for the programmed time and only finishes the call at the end of a message repetition or until cancelled.

After receiving a trigger the DT1 will attempt up to 6 diallings to communicate the alarm information (the maximum number of dial attempts can be set from 1 to 6, refer to the *VARIABLES* section position 3 on page 8). Each programmed phone number will be called in order until either the dialler has been shut down, or the maximum number of dial attempts have been made. If there are less phone numbers programmed than the max dial attempts, then the DT1 will redial the first number followed by the second and so on, until the maximum number of dial attempts have been made.

During the dialling of an alarm the DOT on the display will flash at a rate of twice per second. If after dialling the maximum number of attempts the dialler has not been cancelled, the DOT will remain on until the K/S (key switch) input state is changed (dialler is enabled or disabled) or the DT1 makes a successful call after being given another trigger. When the dialler is shutdown a “WARBLE” sound indicating the shutdown is heard over the phone line and the display dot will go out.

Should the DT1 be unable to attempt any calls because it has not been programmed with enough information, it will display error number 5 (no phone numbers in memory) on the seven segment display.

CANCELLING THE DIALLER

The dialler can be cancelled by one of three methods. These are, remote shutdown over the phone line using the programmed shut down code, local cancel by the key switch or by removing the alarm input (this last method will only work if the alarm input has been selected to operate in the slaved mode). Once the dialler has been cancelled it will not make any more calls until it receives another alarm trigger.

The remote shutdown of the dialler can be performed by anyone the dialler calls to report an alarm. To cancel the dialler simply enter the programmed shut down code (default = digit number 3) on a DTMF (tone) phone while the message is playing.

Note shutting down of the dialler does not shut down any local alarm, even if this is the trigger source.

Note the dialler should be tested regularly to ensure that it is operating correctly.

SPECIFICATIONS

CONNECTIONS	-	4 screw terminals.
ALARM INPUT	-	User definable trigger polarity, can operate in latched or slaved mode.
KEY SWITCH INPUT	-	User definable polarity. Application of the correct polarity will enable the alarm input.
POWER SUPPLY	-	11.5 to 14V DC @ 150mA (max).
TELECOM LINE	-	Single RJ11 socket (Western Jack). Supplied with lead to suit a Telecom Mode 3 phone socket or TH3 adaptor.
COMMUNICATION		
DIALLING FORMAT	-	Selectable as Decadic (pulse) or DTMF (tone).
USER MESSAGE	-	15 seconds for alarm and name and/or address.
MECHANICAL		
DIMENSIONS	-	165mm width x 135mm depth x 45mm height.
WEIGHT	-	330 grams with cover (230 grams without).

INSTALLATION

All connections to the DT1 from an external alarm source are made via the row of screw terminal connectors found on the circuit board. To gain access to the circuit board, the outer cover will have to be removed. To do this, unscrew the two outer screws on the under side of the DT1 (**do not** unscrew the centre screw) the cover will now lift off.

To mount the DT1 the TEB dialler mounting bracket is available.

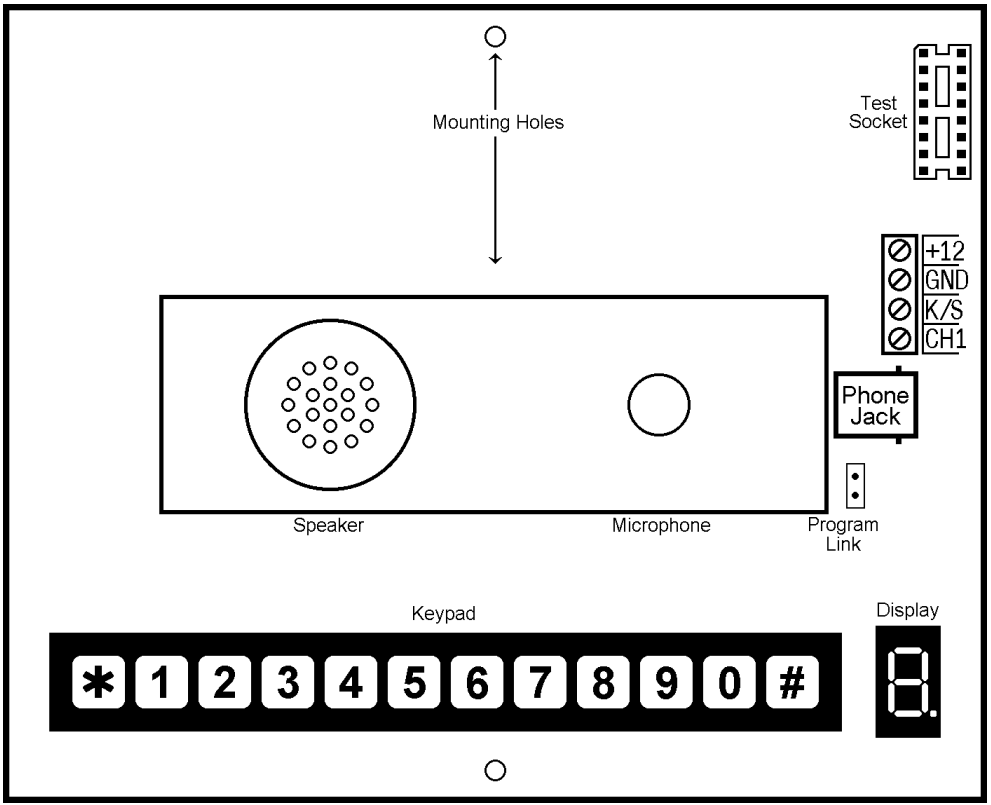

Figure 1: The DT1 with its outer cover removed.

There are 4 terminals on the DT1 board, of these 2 are power inputs, 1 is the key switch input and 1 is the alarm input. The use of each terminal is described below.

+12 The positive input for the power supply (11.5 to 14V D.C.).

GND The negative (ground) input for the power supply.

K/S The key switch input. This input is driven in the same manner as the alarm input below. When active, the key switch input enables the alarm input [the default setting requires +5 to 15V DC on K/S to enable the alarm input].

CH1 This is the alarm input. The input is held low via an internal pull down resistor to GND. The input can be put into its alarm state by either applying voltage to it or removing voltage from it, depending upon the configuration of the input's polarity (for further information on input polarity refer to programming *VARIABLES* section on page 8). To trigger the input from a source that only drives low (eg. an Open Collector output or a normally open switch to GND) the input will have to be pulled up to the positive voltage rail via a 10K resistor as shown in Figure 3 below [the default setting requires +5 to 15V DC on CH1 to trigger the dialler].

Note that the Key Switch (K/S) input must be in the active state (alarm input enabled) for at least 20 milliseconds before CH1 is triggered [the default setting requires +5 to 15V DC on the K/S input to enable the alarm input]. This means that CH1 and K/S cannot be tied together to trigger the dialler.

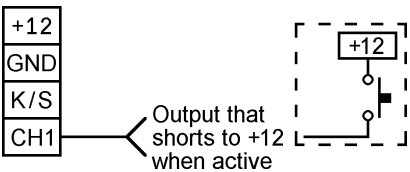

Figure 2: Connecting an output that drives high to the DT1.

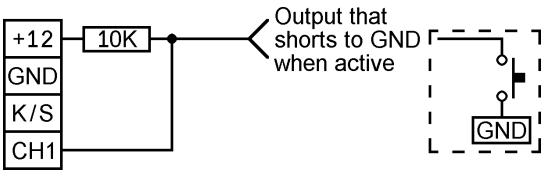

Figure 3: Connecting an output that drives low to the DT1.

PROGRAMMING

All programming of the DT1 is done via the keypad on the unit with confirmation of programmed data being given on the seven segment display as it is entered. The internal speaker will give a short beep to indicate when a key has been pressed.

The user voice message is recorded by speaking into the microphone located on the front of the unit. The message may be replayed through the on board speaker.

Programming of the DT1 is accomplished by first pressing the [#] key, next is a single digit entry identifying the memory number, followed by a **code** of variable length depending on the memory. Termination of programming is accomplished by pressing the [#] key, **or** by entering the **maximum** number of digits for the memory number being programmed.

All key presses **must** be done **within 10 seconds of each other** or all information so far programmed into the currently open memory will be lost. When this occurs the speaker sounds a "BLARP" and an error 2 is displayed (refer to the *ERROR INDICATION* section on page 11).

Programming can only be done when the dialler's alarm input is **disabled** (key switch input is not active) and memories **7** to **9** require the program link to be ON.
Note that the program link does **not** have to be removed for the dialler to operate.

The format for programming is

[#] <memory><code> [#] for memories 1 to 8.
or
[#] <memory><voice input> [#] for memory 9.

Where <memory> is one of the following numbers:

[1]	First phone number	(16 digits max)
[2]	Second phone number	(16 digits max)
[3]	Third phone number	(16 digits max)
[4]	Fourth phone number	(16 digits max)

[5]	Fifth phone number	(16 digits max)
[6]	Sixth phone number	(16 digits max)
[7]	Variables	(6 digits)
[8]	Shutdown code	(7 digits max)
[9]	User message	(voice data, 15 seconds)

When accessing any of the above <memories> for programming an "R" is displayed to show that you have **ACCESS** to the memory location. When all of the code digits are entered or a second [#] is pressed then a "WARBLE" sound is heard and a "L" will be displayed for 1 second indicating that the memory is now **CLOSED**.

<code> validity is dependent upon the <memory> being accessed and is described in detail on the following pages.

PHONE NUMBERS [Requires alarm input to be disabled]

<memories 1-6> The code is the actual **TELEPHONE NUMBER** being entered and may be up to 16 digits in length including pauses, which are entered with the [*]**n** key combination, where the **n** refers to a key from [0] [9] indicating the length of the pause in seconds. For special purposes the DTMF tones for the # and * may be entered by using the [*][#] and [*][*] key combinations respectively. The memory is closed by either pressing the [#] key **or** by entering the maximum 16 digits for the telephone number. To erase a phone number refer to the *BLANK MEMORY INDICATION* section on page 11.

Example: [#][1][3][4][5][6][7][8][9][#]

programs 3456789 as phone number 1.

Example: [#][5][0][*][3][5][5][5][4][9][3][8][#]

programs a 0, a 3 second pause and 5554938 as phone number 5.

[default is **no** phone numbers programmed]

VARIABLES [Requires program link ON and alarm input to be disabled]

<memory 7>This code is used to set variables which are defined by their position within the code.

Note that if the Key Switch polarity is changed then further programming will be locked out until the correct voltage is applied to the Key Switch input to **disable** the DT1's alarm input.

Position **1** **Dial Mode**

0 = Decadic (Pulse) dialling [default].

1 = DTMF (Tone) dialling.

Position **2** **Message play time**

0 = 30 seconds.

1 = 45 seconds.

2 = 60 seconds.

3 = 90 seconds [default].

4 = 120 seconds.

5 = 150 seconds.

6 = 180 seconds.

Position **3** **Maximum Dialling Attempts**

1-6= Maximum number of dialling attempts to be made **in total** (this is not how many times it will dial each phone number programmed) [default = 6].

Position **4** **Alarm Input Polarity**

0 = Transition to ground for Alarm.

1 = Transition to +5 to 15V DC for Alarm [default].

Remember that for the alarm input to trigger the DT1, the Key Switch input must be held at the correct voltage to enable the alarm input (see Position 5 below).

Position **5** **Key Switch Polarity**

0 = Input at **ground enables** the alarm input, input at +5 to 15V DC disables the alarm input.

1 = Input at **+5 to 15V DC enables** the alarm input, input at ground disables the alarm input [default].

Position **6** **Slave/Latching Mode**

0 = **Slave mode**. In slave mode the dialler will dial out when the alarm input is triggered and stop dialling as soon as the trigger is removed.

1 = **Latching mode**. In latching mode, only a momentary trigger is required to start the dialler (to stop the dial sequence refer to the *CANCELLING THE DIALLER* section on page 3) [default].

Example: [#][7][1][4][3][1][1][1]

- DTMF dialling.
- 120 seconds message play time.
- attempt a maximum of 3 calls for each trigger.
- +5 to 15V DC on the alarm input triggers dialler.
- +5 to 15V DC on key switch input enables the alarm input.
- Latched mode alarm input.

PARTIAL MEMORY ENTRY

It is NOT necessary to program all positions of the Variables memory. For example, if you want to change to decadic dialling and 180 seconds for message play time, but do not want to change the other variable settings, simply enter:

[#][7] [0][6][#]

This will alter the first 2 positions without affecting the other 4.

Note the last [#] is needed to close off the memory.

Note that you must program the positions up to and including the one you wish to change.

SHUT DOWN CODE

[Requires program link ON and alarm input to be disabled]

<memory 8>The shut down code may be between 1 and 7 digits in length and is used to acknowledge an alarm call. When the dialler has called a person, they can shut the dialler down by entering this code on a standard DTMF (tone) phone while the alarm message is playing, the dialler will acknowledge the code with a warble sound, hang up and not make any more calls. If this memory is blank, the dialler cannot be shut down remotely and it will make the maximum number of calls unless cancelled locally.

Example: [#][8] [2][4][7][8][#] stores 2478 as the shut down code.

Note shutting down the dialler will not cancel any local alarms.

[default = 3 (digit number 3)]

USER MESSAGE

[Requires program link ON and alarm input to be disabled]

<memory 9>The data stored for this memory is the recorded voice data for the dialler's alarm and location message.

To record a message press [#][9] then speak into the microphone at a distance of about 15cm (6 inches). Press [#] at the end of the message to stop recording. While the DT1 is recording a moving pattern is displayed in the lower half of the display. When recording stops a "WARBLE" sound is heard and a "C" is displayed for 1 second. Recording stops after 15 seconds or when the [#] key is pressed, whichever occurs first.

REPLAY OF PROGRAMMED DATA

Programmed data can be replayed for confirmation simply by pressing the [*] followed by the memory number ([1] to [9]). The contents of memories 1 to 8 will appear on the 7 segment display at intervals of 1 digit per second. A pause in a phone number will be displayed as a "P" followed by the number representing how many seconds the pause is for. When replaying a phone number, a hash (#) will be displayed as "H" and a star (*) as "E". When replaying memory 9, the recorded voice data will be replayed through the speaker.

BLANK MEMORY INDICATION

If you display a memory location that is empty, then a "b" will appear on the display. A "b" is also displayed when you deliberately erase a memory location. Only the phone number and shut down code memories can be blank.

To erase a memory location simply open the memory location then close it immediately.

eg. [#][1][#] will erase the phone number 1 memory.

ERROR INDICATION

If an error is made during the programming of data then the speaker will sound a "BLARP" and an "E" + **n** will flash 5 times on the display, where **n** is the error number as explained below. When the display has ceased flashing, the memory may be reprogrammed correctly. Error codes are described in detail below.

PROGRAMMING ERRORS

0 Memory Access denied. Memory chosen is invalid or program link is off.

1 First key pressed was a [0] to [9] or tried programming with the dialler in the enabled state (key switch input is in the ON state).

2 Too slow entering data, information is lost. When programming close with a [#].

3 Value or key entered is out of range for selected memory or memory position.

OPERATING ERRORS

5 No phone numbers in memory. Reprogram.

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Abbreviations, terms, functions and features referred to in this manual are set out in alphabetical order below. Each entry refers to an explanatory reference in the manual. **Bold-faced** numbers indicate the main treatment of the subject.

INSTALLED BY:	
FOR SERVICE PHONE:	
CUSTOMER:	
PHONE NO. 1 ( )	**PHONE NO. 2 ( )**
PHONE NO. 3 ( )	**PHONE NO. 4 ( )**
PHONE NO. 5 ( )	**PHONE NO. 6 ( )**

EQUIPMENT	**ALARM MESSAGE**

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