NIDAC

DT1 Series 2.1

SINGLE CHANNEL TALKING DIALLER

INSTALLATION MANUAL 3rd EDITION.

NIDAC △N761

DT1 Series 2
**SINGLE CHANNEL
TALKING DIALLER**

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✱ 1 2 3 4 5 6 7 8 9 0 #     8.
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DT1 Series 2.1 - SINGLE CHANNEL TALKING DIALLER

PRODUCT FEATURES

- A-tick approved equipment.
- 15 second user recordable voice message.
- 1 alarm input.
- 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.

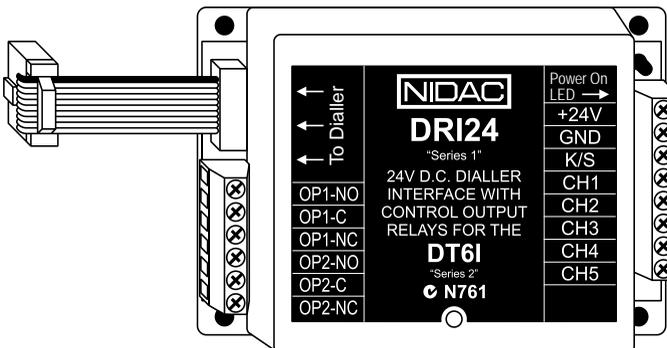# NEW FEATURES

- Simplified memory layout allows for quicker and easier programming.
- Phone line now uses RJ12 with standard connections.

NOW AVAILABLE

DRI24 - interface to allow the DT1 to be used with 24V D.C. power supplies, convenient for use with Fire Panels.

> **Note** that the CH2, CH3, CH4 & CH5 inputs and the 2 relay outputs have no function when the DRI24 is used with a DT1.

SPECIFICATIONS

CONNECTIONS   - 4 screw terminals.

ALARM INPUT   - User definable trigger polarity, latched or slaved operation.

KEY SWITCH INPUT - User definable polarity. Can be used to enable/disable the alarm input and/or programming.

POWER SUPPLY   - 11.5 to 14V DC @ 150mA (max).

PHONE LINE   - Single RJ12 socket. Supplied with RJ12 to RJ12 lead and 606M adaptor to suit a Mode 3 phone socket or TH3 adaptor. Use only with a standard analog line (PSTN).

COMMUNICATION

DIALLING FORMAT - Selectable as Decadic (pulse) or DTMF (tone).

VOICE 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).

DIALLER OPERATION

POWER UP

When power is applied to the DT1 it will perform a self test, then flash the digit *I* five times on the 7 segment display. While the DT1 is performing the self test but before the *I* 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. The key switch input can be used to cancel an alarm call and/or disable the alarm input.

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 voice message. The DT1 repeats the voice 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 *MAXIMUM DIALLING ATTEMPTS* section on page 6). 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 maximum dial attempts, the DT1 will redial the first number then 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 changed between "Away/On" and "24 hour" mode) or the DT1 makes a successful call after being triggered again. When the dialler is shutdown a "WARBLE" sound indicating shutdown is heard over the phone line and the display dot will go off.

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 slave 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.

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.

There are 4 terminals on the DT1 board (refer Figure 1), 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 puts the DT1 into "Away/On" mode [the default setting requires +5 to 15V DC on K/S for "Away/On" mode].

CH1   This is the alarm input. The input is held low via an internal 100K 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 (refer to the *ALARM INPUT POLARITY* section on page 6 for

more information). 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].
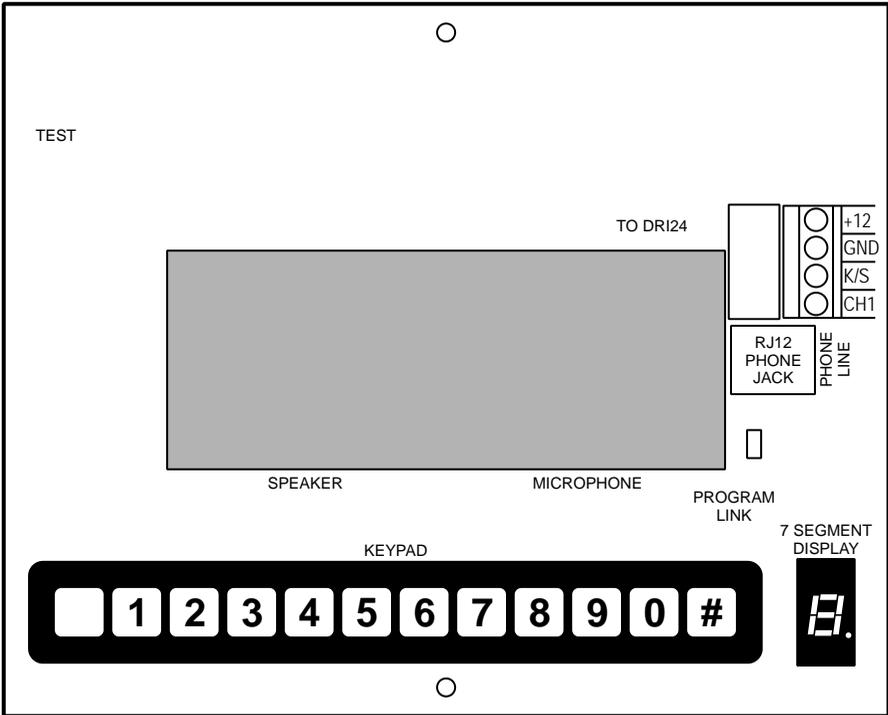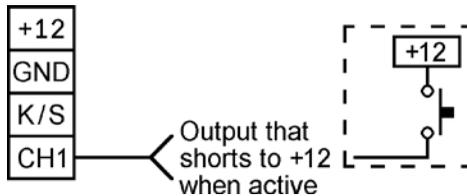

Figure 1: The DT1 with its outer cover removed.

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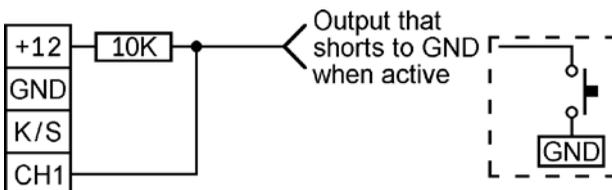

Figure 3: Connecting an output that drives low to the DT1.

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 $\boxed{\#}$ key, a "P" will appear on the display to indicate programming, next is a single or double 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 $\boxed{\#}$ 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 8).

Programming of memories **70** 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

    $\boxed{\#}$ <memory><code> $\boxed{\#}$ for memories 1 to 8.
            or
    $\boxed{\#}$ <memory><voice input> $\boxed{\#}$ for memory 9.

Where <memory> is one of the following numbers:

$\boxed{1}$	First phone number	(16 digits max)
$\boxed{2}$	Second phone number	(16 digits max)
$\boxed{3}$	Third phone number	(16 digits max)
$\boxed{4}$	Fourth phone number	(16 digits max)
$\boxed{5}$	Fifth phone number	(16 digits max)
$\boxed{6}$	Sixth phone number	(16 digits max)
$\boxed{7}\boxed{0}$	Dialling mode	(1 digit)
$\boxed{7}\boxed{1}$	Message repeat time	(3 digits)
$\boxed{7}\boxed{2}$	Maximum dialling attempts	(1 digit)
$\boxed{7}\boxed{3}$	Key Switch input polarity	(1 digit)
$\boxed{7}\boxed{4}$	Alarm input polarity	(1 digit)
$\boxed{7}\boxed{5}$	Alarm input mode	(1 digit)
$\boxed{7}\boxed{6}$	Slave / latching mode	(1 digit)
$\boxed{7}\boxed{7}$	Cut off message after DTMF	(1 digit)
$\boxed{8}$	Shutdown code	(7 digits max)
$\boxed{9}$	Voice message	(15 seconds max)

When accessing any of the above <memories> for programming an "R" is displayed to show that you have **ACCESS** to the memory location. After pressing the first digit of a two digit memory 'n' will be displayed to indicate another digit is required. When all of the code digits have been entered or a second ⌗ is pressed then a "WARBLE" sound is heard and a "ᒐ" 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

<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 8.

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]

DIALLING MODE   [Requires program link ON]

<memory 70> This memory is used to select whether Decadic or DTMF dialling is to be used.

    0 = Decadic (Pulse) dialling.

    1 = Normal DTMF (Tone) dialling [default].

    2 = Slow DTMF (Tone) dialling. This selection may be necessary when using the DT1 with some PABX systems.

MESSAGE REPEAT TIME   [Requires program link ON]

<memory 71> This memory is used to set how many seconds the message is repeated for over the phone line. Note that repetition cycle will only end at the end of the recorded message.

    1 - 199 = Number of seconds the message is repeated for [default = 60].

MAXIMUM DIALLING ATTEMPTS   [Requires program link ON]

<memory 72> This memory is used to select the maximum number of phone calls that will be made each time the DT1 is triggered.

Note this is not how many times it will dial each phone number programmed

     1 - 6 = Max number of dialling attempts to be made **in total** [default = 6].

KEY SWITCH INPUT POLARITY   [Requires program link ON]

<memory 73> This memory is used to select what voltage is required on the K/S terminal to put the dialler into "Away/On" mode.

     0 = Input at **ground** puts the dialler in "Away/On" mode, input at +5 to 15V DC puts the dialler in 24 Hour Mode.

     1 = Input at **+5 to 15V DC** puts the dialler in "Away/On" mode, input at ground puts the dialler in 24 Hour Mode [default].

     2 = Same as setting 0 but will also lock out programming when the dialler is in the "Away/ON" mode.

     3 = Same as setting 1 but will also lock out programming when the dialler is in the "Away/ON" mode.

ALARM INPUT POLARITY   [Requires program link ON]

<memory 74> This memory is used to select what voltage is required on the CH1 to trigger an alarm dial out on the DT1.

     0 = Transition to ground for Alarm.

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

ALARM INPUT MODE   [Requires program link ON]

<memory 75> This memory is used to select whether the status of the key switch input affects whether the alarm input is active.

     0 = The key switch input must be active (dialler in "Away/On" mode) for the alarm input to work.

     1 = The alarm input is always active [default].

SLAVE / LATCHING MODE   [Requires program link ON]

<memory 76> This memory is used to select whether the alarm input must remain triggered for the dialler to complete its dialling sequence.

    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].

CUT OFF MESSAGE AFTER DTMF   [Requires program link ON]

<memory 77> This memory is used to select whether the dialler stops playing the alarm message once it receives a valid DTMF digit over the phone line. The reason why the message is usually stopped once a DTMF digit has been received is to minimise any errors in detecting the correct shutdown code.

Note that if there is no shutdown code programmed the message will not be stopped when a DTMF digit is received.

    0 = The dialler **does not** stop the message after receiving a DTMF digit.

    1 = The dialler stops the message after receiving a DTMF digit [default].

SHUT DOWN CODE   [Requires program link ON]

<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: $\boxed{\#}\boxed{8}\boxed{2}\boxed{4}\boxed{7}\boxed{8}\boxed{\#}$ stores 2478 as the shut down code.

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

[default = 3 (digit number 3)]

VOICE MESSAGE   [Requires program link ON]

<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 $\boxed{\#}\boxed{9}$ then speak into the microphone at a distance of about 15cm (6 inches). Press $\boxed{\#}$ 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 "Ɛ" is displayed for 1 second. Recording stops after 15 seconds or when the $\boxed{\#}$ key is pressed, whichever occurs first.

REPLAY OF PROGRAMMED DATA

Programmed data can be replayed for confirmation simply by pressing the ⌧, a "d" will appear on the display to indicate displaying, 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. When replaying a phone number, a pause will be displayed as a "P" followed by the number representing how many seconds the pause is for, a hash (#) as "H" and a star (∗) as "⁰". 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 not a ⌧ or #.
2   Too slow entering data, information is lost. When programming close with a #.
3   Value entered is out of range for selected memory.
4   Insufficient digits entered for selected memory.

OPERATING ERRORS

5   No phone numbers in memory. Program in a phone number.

SPECIAL NOTE TO 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 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.

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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MANUFACTURERS OF SECURITY EQUIPMENT

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