NORDEN®

ADDRESSABLE SOUNDER STROBE
INSTALLATION AND OPERATION MANUAL

Product Safety

To prevent severe injury and loss of life or property , read the instruction carefully before installing the Sounder Strobe to ensure proper and safe operation of the system.

European Union directive

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.

For more information, please visit the website at www.recyclethis.info

EN54 Part 3 Compliance

NFA-T01ST Addressable Sounder Strobe complies with the requirements of EN 54-3:2014 + A1:2019

EN54 ✓   EN54 Standard Conformity Information

LPCB
EN54-3
1330d/01

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| NFA-T01ST |
| EN 54-3:2014 + A1:2019 |

Table of Content

1.Introduction

1.1.Overview

The NFA-T01ST Addressable Sounder Strobe functions as an alarm warning device designed to alert individuals in the vicinity of a fire emergency, prompting them to take appropriate actions. This unit is a versatile multi-application device, encompassing various types, parameters, and wiring layouts within a single unit. Through Programming Tool, the NFA-T01ST can be transformed into different alarm warning configurations, including sounder-strobe, sounder-only, or strobe-only types. Furthermore, users can customize parameters to meet specific requirements, such as selecting from 17 different alarm tones, choosing between single or dual address modes, and adjusting power consumption to a low current mode through straightforward programming.

The NFA-T01ST Addressable Sounder Strobe is designed in accordance with the EN 54 Part 3 European Standard. Its aesthetically pleasing and unobtrusive design seamlessly complements modern building aesthetics. The plug-in assembly simplifies installation and maintenance for installers. Additionally, the unit is fully compatible with the NFA-T04FP Intelligent Addressable Fire Alarm Control Panel, ensuring smooth addressable communication without any compatibility issues

1.2.Feature and Benefits

- EN54-3 Compliance
- Built-in MCU processor and digital addressing
- 17 tones Programmable sound output
- Programmable types such as Sounder-Strobe, Sounder or Strobe alone
- Programmable Evacuate or Pre-alarm/Evacuate signal
- Low and normal consumption mode
- One or Two addresses mode
- 10 Highlights LED status cluster
- Onsite Adjustable Parameters
- Loop or external power input
- Aesthetically pleasing design
- Universal mounting with fix base for simple installation

1.3.Technical Specification

•	Listed	LPCB Certification
•	Compliance	EN 54-3
•	Input Voltage	Loop Power: 24VDC [18V to 27.5V]
		External PSU: 24 VDC [20V to 27.5V]
•	Typical Current	Loop: Standby 0.6mA, Alarm: 1.5mA
	[Loop and External PSU]	External PSU: Standby 0.6mA, Alarm: 15mA
•	Saving Current	Standby 1.2mA, Alarm: 9mA
	[Loop powered]	
•	Protocol/Addressing	Norden, Value range from 1 to 254
•	Address Sequence	Single Address: Evacuate tone
•		Dual Address: 1st Alert Tone / 2 nd Evacuate tone
•	Strobe Light	10 Highlights LED
•	Material / Colour	ABS / RED Glossy finishing
•	Dimension / Height	Diameter 110 mm / 39.6 (with Base)

- Weight   176g (with Base), 110g (Without Base)
- Class   Type A, Indoors
- Operating Temperature   -10°C to +50°C
- Ingress Protection Rating   IP21
- Humidity   0 to 95% Relative Humidity, Non condensing

2.Installation

2.1.Installation Preparation

This alarm warning device must be installed, commissioned and maintained by a qualified or factory trained service personnel. The installation must be installed in compliance with all local codes having a jurisdiction in your area or BS 5839 Part 1 and EN54.

2.2.Installation and Wiring

1. Mount the sounder base on standard one [1] gang electrical back box. Follow the arrow mark for the correct position. Do not over-tighten the screws otherwise the base will twist. Use M4 standard screws.
2. Connect the wire in terminal as shown in Figu re [2&3]. Verify the device number or other device parameters if desired using programming tool then stick on the label before attaching sound-er-strobe. The sticker labels are available on the control panel.
3. Attach the sounder to the base, point the sounder in the base by the mark-line and secure the sounder in that position by rotating it clockwise, until it reaches the next mark line.
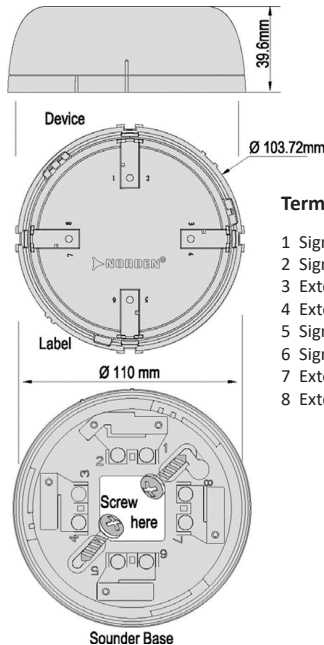
Terminal Description

1 Signal In (+)
2 Signal Out (+)
3 External PSU In (+) Optional
4 External PSU Out (+)Optional
5 Signal In (-)
6 Signal Out (-)
7 External PSU In(-)Optional
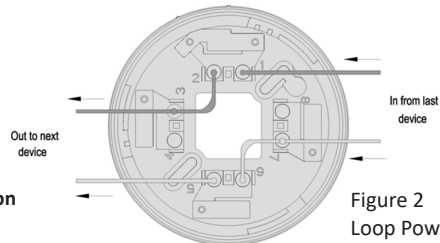8 External PSU Out (-)Optional
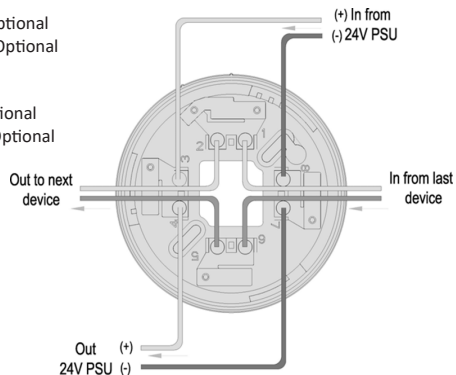
Figure 1

Figure 2 Loop Powered

Figure 3: With External Supply

3.Sounder Strobe Configuration

3.1.Preparation

The NFA-T01PT Programming tool is used to configure sounder strobe soft address and parameters. This Programming Tool is not included, must be purchased separately. The programming tool is packed with twin 1.5V AA battery and cable, ready for usage once received.

It is mandatory for the commissioning personnel to have programming tool in order to adjust the sounder strobe conferring to the site situation and environmental requirements.

Program a unique address number for each device according to the project layout before placing from the Terminal Base.

Warning: *Disconnect the loop connection whilst connecting to the programming tool.*

3.2.Addressing

1. Connect the programming cable to Z1 and Z2 terminals (Figure 4). Press "**Power**" to switch on the unit.
2. Switch-on the programming tool, then press button "**Write**" or number "**2**" to enter Write Address mode (Figure 5).
3. Input the desire device address value from 1 to 254 and then press "**Write**" to save the new address (Figure 6).

   Note: If display "**Success**", means the entered address is confirmed. If display "**Fail**", means failure to program the address (Figure 7).
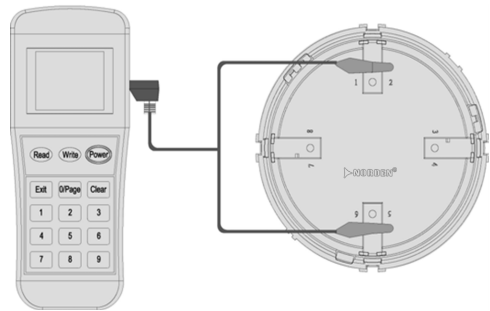

Figure 4

Press "**Exit**" key to go back Main Menu. Press " **Power**" key to switch-off the programming tool..
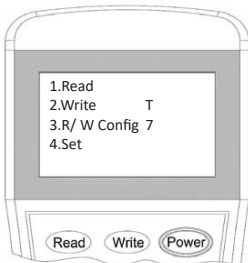

Figure 5

Figure 6

Figure 7

6

3.3.Single and Dual Address Mode

Single address is commonly used to program immediate Evacuate tone while the dual address used for programming Pre-alarm and Evacuate tones respectively in a given period of time.

In Single Address Mode

When in action (Evacuation stage), the sounders will produce visible signal of 1.4 flashes per second at 1±20% Hz frequency and simultaneously audible signal according to the pre- defined tone (Table 1- Tone 14 is the default tone) and will stop if the panel is reset.

In Dual Address Mode

When In action the 1st **Address sounder** (Pre-alarm Stage), will produce visible signal of 0.7 flashes per second at 1±20% Hz frequency and simultaneously audible signal according to the pre-defined tone (Table 1- Tone 17 is the default tone). This will run continuously according to the pre-defined time unless the panel is being reset before.

When the delay time is over the 1st address sounder will stop then immediately, the **2nd address sounder** (Evacuate Stage) will produce visible signal of 1.4 flashes per second at 1±20% Hz frequency with simultaneously audible signal according to the pre-defined tone (Table 1- Tone 14 is the default tone) and will stop if the panel is reset.

1. Attach the programming cable to 1 and 6 Terminals of sounder. Press "**Power**" to switch-on the unit.
2. Switch-on the programming tool , then press button "**3**" to enter to **Configuration mode** (Figure 8).
3. Input the "**1**" for **Single** Address mode or "**2**" for Dual Address mode then press "**Write**" to change the setting into the desire mode (Figure 9).

   Note: If display "**Success**", means the entered mode is confirmed. If display "**Fail**", means failure to program the mode.
   In Dual address mode, the sounder will generate the unique next higher number for the second address for example: In single address mode the address number is 15, when change to dual address mode the address numbers will now be 15 and 16.

   Warning: Dual address mode may cause Duplicate address fault on the panel and may affect the operation of the next device with conflicted address number if not carefully arrange the loop addressing.
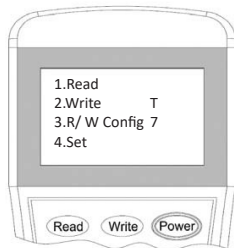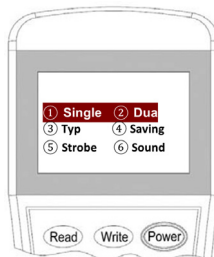

Figure 8

Figure 9

Configure Description

① **Single** [Default]
② **Dual**

4. Press "**Exit**" key to go back Main Menu. Press "**Power**" to switch off the programming tool.

3.4.Typical and Saving Mode

When Sounder-Strobe is configured to Saving Mode the recommended wiring is loop powered [Figure 2] within the limit of 20 units per loop and subject to the total calculated current load in particular loop. If Sounder Strobe is configured to Typical Mode, it requires external power supply [Figure 3] installer should consider additional power cable.

1. Attach the programming cable to 1 and 6 Terminals of sounder. Press "**Power**" to switch-on the unit.
2. Switch-on the programming tool, then press button "**3**" to enter to **Configuration mode** (Figure 10).
3. Input the "**3**" for **Typical** mode or "**4**" for **Saving** mode then press "**Write**" to change the setting into the desire mode (Figure 11).

   Note: If display "**Success**", means the entered mode is confirmed. If display "**Fail**", means failure to program the mode.

   Warning: Under saving mode loop powered up to 20 sounder strobe maximum per loop is the recommended.
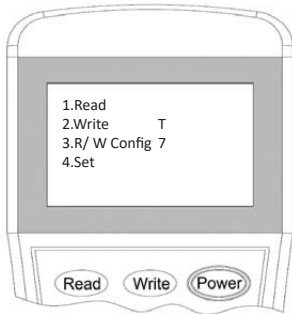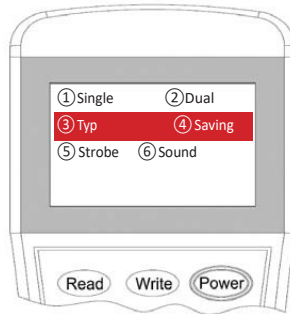

Figure 10

1.Read
2.Write   T
3.R/ W Config 7
4.Set

Figure 11

①Single   ②Dual
③Typ   ④Saving
⑤Strobe   ⑥Sound

Read Description

③ **Typ:** Typical mode, the sounder device consume 15mA [Default]
④ **Saving:** Low current consumption at 9mA

4 Press "**Exit**" key to go back Main Menu. Press "**Power**" key to switch off the programming tool.

3.5.Sounder Strobe Type

1. Attach the programming cable to 1 and 6 Terminals of sounder. Press "**Power**" to switch-on the unit.
2. Switch-on the programming tool, then press button "**3**" to enter to **Configuration mode** (Figure 12).
3. Input the "**5**" for Strobe type or "**6**" for **Sounder** type, then press "**Write**" to change the setting into the desire mode (Figure 13).

   Note: If display "**Success**", means the entered type is confirmed. If display "**Fail**", means failure to program the type.

4. Press "**Exit**" key to go back Main Menu. Press "**Power**" key to switch off the programming tool.
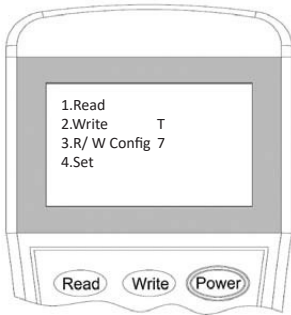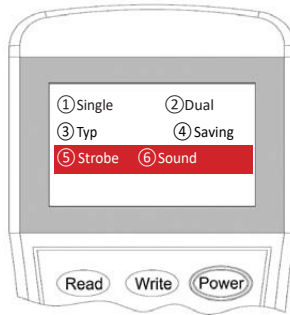
Figure 12

Figure 13

Read Description

⑤ **Strobe:** Visible signal only
⑥ **Sound:** Audible signal only
Note: Select 5 and 6 for both visible and audible signal. [Default 5 and 6]

3.6.Tones Selection

The Tones can be change according to the project requirement

Parameter	Tone Code	dB(A) Output (high)	dB(A) Output (low)	Description
1	01	98.9	95.7	970Hz
2	02	100.9	96.6	800Hz / 970Hz @ 2Hz
3	03	102.9	99.3	800Hz -970Hz @1Hz
4	04	99.7	97.4	970Hz 1s off / 1s on
5	05	101.3	98.7	970Hz, 0.5s / 630Hz, 0.5s
6	06	102.7	98.8	500Hz - 1200Hz×3, 3.5s on / 0.5s off
7	07	106.6	101.4	2850Hz, 0.5s on / 0.5s off×3 / 1.5s off
8	08	106.1	102.3	2850Hz 0.4s on, 0.3s off
9	09	99.7	96.6	550Hz, 0.7s / 1000Hz, 0.33s
10	10	105.7	100.8	1500Hz -2700Hz @ 3Hz
11	11	102.3	97.0	2400Hz
12	12	102.4	97.0	500Hz -1200Hz @ 0.33Hz
13	13	104.4	100.6	2400Hz -2900Hz @ 9Hz
14	14	105.7	102.0	2400Hz -2900Hz @ 3Hz [Default]
15	15	102.0	99.2	800Hz-970Hz @ 3Hz
16	16	102.1	98.8	500Hz-1200Hz, 3.75s / 0.25s off
17	17	101.3	98.7	800Hz 1s off / 1s on [Pre-alarm]

Table 1

1. Attach the programming cable to 1 and 6 Terminals of sounder strobe. Press "**Power**" to switch-on the unit.
2. Switch-on the programming tool, then press button "**4**" to enter to **Setting** mode (Figure 14). The programming tool will display the actual configuration after few seconds. Input the desire Tone (Table 1) then press "**Write**" to change the setting (Figure 15).

    Note: If display "**Success**", means the entered tone is confirmed (Figure 16). If display "**Fail**", means failure to program the tone. (Figure16) Tone 14, Tone 16 and Tone 17 are recognized by LPCB.

3. Press "**Exit**" key to go back Main Menu. Press "**Power**" to switch off the programming tool.
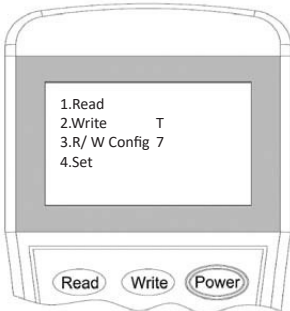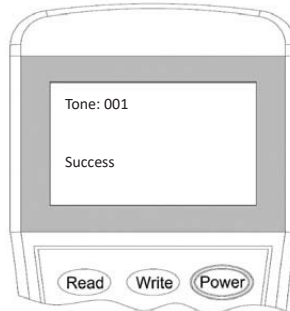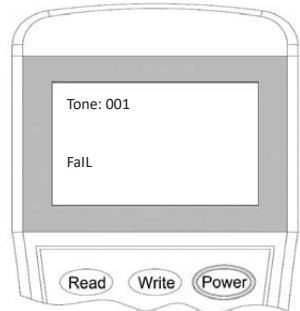

| Figure 14 | Figure 15 | Figure 16 |

3.7.Read Configuration

1. Attach the programming cable to 1 and 6 terminals of sounder strobe. Press "**Power**" to switch on the unit.
2. Switch-on the programming tool, then press button "**Read**" or "**1**" to enter to **Read** mode (Figure 17). The programming tool will display the configuration after few seconds. (Figure 18).

Figure 17   Figure 18

Read Description

Address: Unique number assigned
Note: Single address displays
one address while dual addresses display two addresses
Tone: selected audible tone
ID: Device serial number

4.General Maintenance

1. Inform the suitable personnel before conducting the maintenance.
2. Disable the alarm warning device on the control panel to prevent false alarm.
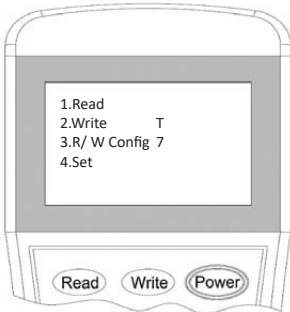3. Do not attempt to repair the circuitry of the alarm warning device, it may affect the operation to respond to a fire condition and will void the manufacturer's warranty.
4. Use a damp cloth to clean the surface.
5. Notify again proper personnel after conducting the maintenance and make sure to enable the alarm warning device and confirm if up and running.
6. Perform the maintenance on semi-annually or depending on the site conditions.

5.Troubleshooting Guide

What you notice	What it means	What to do
Address not enrolling	The wiring is loose The address is duplicate	Conduct maintenance Re-Commission the device
Unable to commission	The damage the electronic circuit	Replace the device

Appendix 1

Operational Performanc e Data for LPCB Approved Tones

1.Tone 14 – Volume dB(A)

Angle	Typical Mode dB(A)				Saving Mode dB(A)			
	Horizontal Plane		Vertical Plane		Horizontal Plane		Vertical Plane	
	Max 27.5V	Min 20V	Max 27.5V	Min 20V	Max 27.5V	Min 18V	Max 27.5V	Min 18V
15°	92.1	87.8	95.8	91.2	84.8	86.6	83.9	84.1
45°	93.1	88.6	96.7	91.7	84.8	83.6	89.0	88.6
75°	96.5	92.7	101.1	97.1	88.1	89.2	90.8	89.2
105°	94.5	90.2	101.3	96.1	86.2	84.8	91.2	90.1
135°	91.7	86.9	99.4	94.6	84.8	82.2	84.9	84.2
165°	89.6	84.9	97.8	93.3	83.5	84.1	84.7	84.0

Table 2

2.Tone 16 – Volume dB(A)

Angle	Typical Mode dB(A)				Saving Mode dB(A)			
	Horizontal Plane		Vertical Plane		Horizontal Plane		Vertical Plane	
	Max 27.5V	Min 20V	Max 27.5V	Min 20V	Max 27.5V	Min 18V	Max 27.5V	Min 18V
15°	89.4	84.8	89.6	85.3	83.4	80.0	83.8	80.7
45°	89.8	85.6	94.0	90.0	84.8	82.0	87.3	84.3
75°	91.2	86.8	95.6	91.7	86.8	84.0	88.0	85.3
105°	91.7	87.3	96.7	92.4	83.9	81.6	85.0	82.1
135°	90.0	86.0	90.5	86.2	83.4	79.9	87.9	85.5
165°	86.7	82.9	90.9	86.6	80.4	77.6	83.4	80.5

Table 3

3.Tone 17 – Volume dB(A)

Angle	Typical Mode dB(A)				Saving Mode dB(A)			
	Horizontal Plane		Vertical Plane		Horizontal Plane		Vertical Plane	
	Max 27.5V	Min 20V	Max 27.5V	Min 20V	Max 27.5V	Min 18V	Max 27.5V	Min 18V
15°	87.3	85.1	89.3	98.0	76.7	76.1	76.1	77.3
45°	87.3	83.9	86.7	84.4	75.4	76.8	81.0	81.2
75°	84.2	81.1	94.3	90.9	81.9	83.7	81.4	82.8
105°	84.1	82.4	90.9	87.7	79.5	81.2	79.4	80.2
135°	89.7	87.6	87.5	85.3	79.7	82.0	85.2	86.2
165°	89.4	87.2	91.2	88.9	80.8	82.3	76.6	77.2

Table 4

Limitation of Sounder Strobe Device

The alarm warning device cannot last forever. In order to keep the alarm warning device working in good condition, please maintain the equipment continuously according to recommendations from manufacturers and relative nation codes and laws. Take specific maintenance measures on the basis of different environments.

This alarm warning device contains electronic parts. Even though it is made to last for a long period of time, any of these parts could fail at any time. Therefore, test your alarm warning device at least every half-year according to national codes or laws. Any fire alarm devices or any other components of the system must be repaired and/or replaced immediately as they fail.

This product is not approved to EN54-23 (Beacon Functionality) and must not be used as a visual alarm device or to provide a primary warning notification of fire.

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