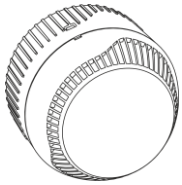


Natron SD

Wireless addressable fire alarm optical-smoke detector

CE 23
1293
DoP No: 208
Tested by EVPU

EN 54-7:2018
EN 54-25:2008

TELETEK

Teletek Electronics JSC
Address: 2 Iliyansko Shose Str,
1220 Sofia, Bulgaria

ATTENTION: Read carefully this installation Instructions before installing the device!
This manual is subject to change without notice!

1. General Description

Natron SD is a wireless addressable fire alarm optical-smoke detector, designed for operation with Natron series wireless expander modules*. The detector is equipped with 360˚ visible LED indication and a built-in buzzer for additional sound signalization in case for announcing of events – fire alarm and finding the place of installation. The detector is compatible with a deep wireless fire base for ceiling mounting. For prevention of unauthorized disassembling or removing, the detector can be locked to the fire base. The detector is equipped also with a tamper switch for self-protection of the box.
Natron SD is designed for indoor installation.

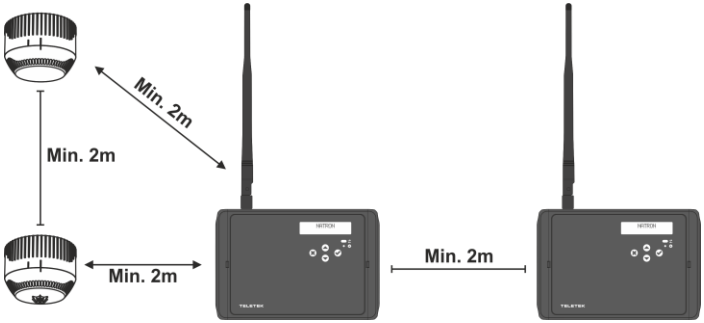
** Refer to the installation manuals of Natron WE-C, Natron WE-A and Natron WE-A/C wireless expander modules for detailed information about the programming menus and other details.*

2. Technical Specifications

Communication range with expander module	1500m
Battery power supply	3 x CR123A 3V
Battery life	~10 years*
Radio frequency	868MHz
Communication type	Bidirectional
Communication Protocol	NATRON TTE
Radio signal modulation type	GFSK
Number of frequency channels	6 pair channels
Radiated power	≤ 20 mW
Receiver category (EN300-220-1)	1.5
Trace attenuation	≥ -90dBm (during the installation)
Test transmission message period	300s
Sensitivity (selectable from panel/module menus)	High/Normal/Middle/Low
Built-in buzzer volume	80dB/1m
Operation temperature	-10°C to +55°C
Related humidity resistance	(93±3)% @ 40°C (no condensation)
Enclosure box type, color	ABS, White
Dimensions (including base)	Ø106x76mm
Protection	IP30
Weight (including base and batteries)	227g
Mounting	Ceiling, Indoor use
Standards	EN 54-7; EN 54-25

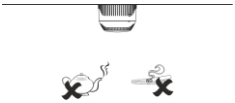
** With disabled operation of the built-in buzzer. If the operation of the built-in buzzer is enabled, the battery life will be shorter - ~6 years. By default, the operation of the built-in buzzer is disabled.*

3. Installation Place and Mounting



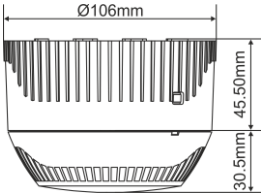
Attention:
For optimum operation, plan to ensure at least 2m distance between two Natron expander modules and the same minimal distance between each device and the expander module.

Installation place

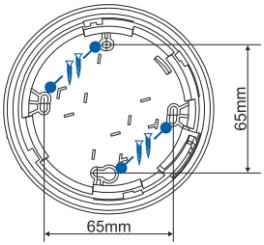


Do not install the detector near sources of steam, condensation or smoke!

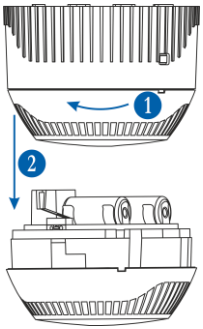
Dimensions of Natron SD – Wireless fire base and detector



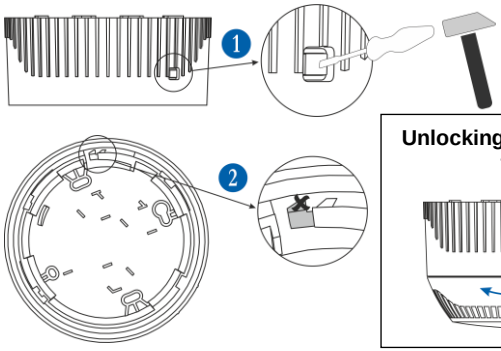
Wireless fire base - mounting



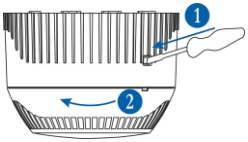
Disassembling



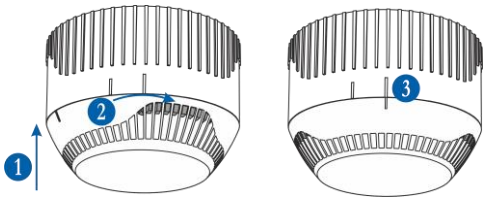
Locking the detector to the base



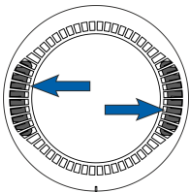
Unlocking the detector from the base



Assembling

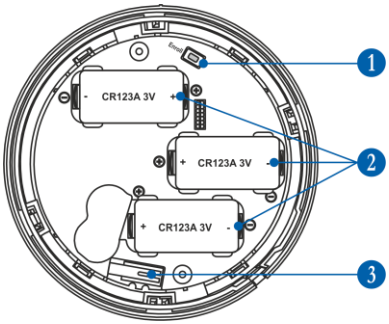


LED Indication – see item 5.



4. PCB Elements

The PCB of Natron SD is factory mounted and is accessible after disassembling the detector from the wireless fire base – see item 3.



1 – Enroll button. The button is used for the following actions:
- Enrolling the detector to the expander module.
- Checking the signal strength.
- Reset the detector.

2 – Power Batteries CR123A 3V
Attention: Use only batteries from the same type!

3 – Tamper switch

5. Description of the LED Indication and Sound Signalization

The LED indicators are used for signalization of different status events and modes.
The operation of the built-in buzzer can be enabled/disabled from the panel/module programming menus (that depends on the type of the control panel – addressable or conventional).
The LED and sound signalization after fire alarm event is cleared only after resetting the control fire alarm panel.

Mode	LEDs status	Built-in buzzer
Stand-by	Off	Off
Fire Alarm	On - Fast blinking in red	On - Continuous sound
Find Position	On - Blinking in orange	On - Short sounds
Test signal strength	On - See item 6	Off
Test fire detector operation	On - See item 7	Off
Reset	On - See item 8	Off
RSSI Check	On - See item 9	Off

6. Enrolling to Expander Module

1. Remove the wireless fire base to access the PCB with the batteries compartment. If the device is not new, perform reset as described in item 8.
2. Enter in programming mode of the Natron expander module. Select ADD DEVICE menu and press ENTER button. A list with already enrolled devices is shown on the screen with an order number and type of the device.
3. Scroll down to find a free address to enroll the detector. Every free address is labeled as EMPTY.
4. Press ENTER button. Message SEARCHING >>> (arrows are blinking) appears on the screen showing that the module is scanning for signals from wireless device in its covering range.
Note: *If there is no signal from the device in 2-minute period, the expander module will exit automatically the programming mode.*
5. Power on the detector. If the device is new just remove the protective folio from the batteries – the enrolling process starts automatically. If the device is powered and reset - single press the ENROLL button. The LEDs start flashing in red.
6. In case of successful enrolment, the LEDs flash 3 times in green and message DONE appears for a while on the screen of the module. The detector is added to the list as SD type.
7. Test the signal strength between the detector and the expander module. Single press the ENROLL button and wait for the LEDs indication:
- 3 flashes in green – excellent signal strength;
- 3 flashes in orange – good signal strength, but, if possible, change the place of installation;
- 3 flashes in red – poor signal strength and it is obligatory to change the place of installation.

You can also check the signal quality for the device in DEVICE RSSI menu of the module - item 9.
8. If the signal quality and strength are excellent or good, you can proceed with mounting.
9. Use appropriate fixing elements to mount the wireless fire base to the place of installation. Follow the instructions in item 3 to lock the detector to the fire base if this is needed.
10. Place the detector in the base and rotate until the short marks of both sides coincide. Continue to rotate the detector until the long mark of the base and the mark on the detector coincide – a click is heard.
11. Test the detector for proper operation.

7. Test of the Fire Detector

Start testing procedure for the fire zone to which the detector is associated - follow the given instructions in the operation manual of the addressable/conventional fire alarm control panel. Exert influence on the fire detector by smoke generator (Aerosol Dispenser) or by aerosol simulator of smoke to test the optical part. After short period the detector enters in test fire alarm mode - LEDs start blinking in red. The built-in buzzer is not activated. Reset the fire alarm control panel and exit the zone test mode.

8. Reset of the Detector

If the detector is not new, you must reset it before enrolment to the expander module. Check the batteries condition. It is recommended to change all of them with a brand new.
To reset the Natron SD, power it on with the batteries and after that press and hold ENROLL button for 5-7 seconds. The reset is complete when the LEDs of the detector flash 3 times in green, followed from 1 long flash in red and 1 long flash in green. Next pressing of ENROLL button will start the enrolment procedure to expander module.

9. Checking the Signal Quality (RSSI)

The quality of the signal between the detector and the expander module is checked at DEVICE RSSI menu of the module. The signal quality is assessed in [dB].
1. Enter in programming mode of the module. Scroll to menu DEVICE RSSI and press ENTER button. A list with present enrolled devices is shown on the screen with an order number and type of the device.
2. Find in the list the detector number.
3. Press ENTER button. Refer to the table below to read the signal quality on the screen:

Signal quality	Level RSSI	Description
< -90 dB	Loss	Bad signal or no connection.
-90 ÷ -70 dB	Good	The signal is satisfactory but needs improvement. It is recommended to change the installation place of the device.
> -70 dB	Excellent	Excellent signal.

4. You can exit the menu at any time with pressing CANCEL button.

10. Finding the Detector Installation Place

This is a procedure that helps the engineer to find the exact location of every wireless device in the fire installation and test the connection with module.
1. Enter in programming mode of the module. Scroll to menu FIND DEVICE and press ENTER button. A list with present enrolled devices is shown on the screen with an order number and type of the device.
2. Find in the list the detector number which you want to locate in the fire installation.
3. Press ENTER button. Message FINDING >>> (arrows are blinking) appears on the screen showing that the module is scanning for signals from the selected wireless device. The message will change for a while to FINDING DONE in case of success.
4. The detector will respond with blinking in orange LEDs and short sound signals from the built-in buzzer.
5. The module will exit automatically the finding procedure after 70-80 seconds. You can also stop the procedure at any time with pressing CANCEL button.

11. Replacing Batteries

It is recommended to change the batteries after 10 years of operation regardless of their indicated discharge level. Always use only batteries approved by the manufacturer - Panasonic CR123A 3V or other with similar characteristics. **Attention:** After indication from the panel/expander module for low battery of a device, the user/ installer must replace the discharged batteries with new within one month. The remaining shelf time of the new batteries must not be less than 8 years.

1. Disable the detector operation to avoid fault messages.
2. Disassemble the detector as described in item 3.
3. Remove the old batteries and place the new as observe the +/- polarity.
4. Assemble the detector back in place.
5. Enable the detector operation.
6. Check the signal quality in DEVICE RSSI menu of the expander module.
7. Test the detector operability.

CAUTION: *Do not expose used batteries to fire, hot ovens, or mechanical crushing/cutting as this can result in an explosion. Exposing batteries to extremely high environmental temperatures or low air pressure can result in explosion or the leakage of flammable liquid or gas.*
DISPOSAL: *Follow local regulations regarding disposal of the batteries.*

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