NOVA II & NOVA IV RECEIVERS

Programmable Wireless Receivers

NOVA II - 2-Alarm outputs for 8 addressable transmitters

NOVA IV - 4-Alarm outputs for 16 addressable transmitters

INSTALLATION INSTRUCTIONS AND OPERATION MANUAL

INTRODUCTION TO NOVA II & NOVA IV

The NOVA II & IV have been designed for quick, easy installation in either of two levels. The Basic level is adopted by most users. The Advanced level of installation gives additional facilities for locating the source of an alarm.

When should I use the Basic Installation Setup?

Use this simple setup when you have only one transmitter for each zone, or when you do have several transmitters per zone but do not have to identify them individually. Program each zone on your panel, just as you do using wired sensors.

What are the advantages of Advanced Installation Setup?

With the NOVA II (NOVA IV) Advanced Installation, you can identify the source and the cause of any alarm from up to 8 (16) wireless detectors and portable devices, even when you use only 2 (4) zones of your panel. The latch display will show you which transmitters alarmed during the previous ARM period. This is possible because the connection of the NOVA II (NOVA IV) to the arm follow output of the panel allows the receiver to freeze all alarms that occurred while the system was armed.

Did you choose the Advanced Installation? If so, please proceed to page 2 having first familiarised yourself with the Preparation of the Receiver and the layout diagram (Figure 1) below.

For more information, contact the ROKONET branch office nearest to you.

NOVA II & NOVA IV FEATURES

NOVA II

- Processes radio signals from **up to 8 remote transmitters** including PIR and smoke detectors, universal/door/window-contact transmitters, wireless panic buttons and remote controls.
- Has **2 ZONE alarm outputs** and a TROUBLE output that indicates low battery, tamper, dead transmitter or jamming.

NOVA IV

- Processes radio signals from **up to 16 remote transmitters** including PIR and smoke detectors, universal/door/window-contact transmitters, wireless panic buttons and remote controls.
- Has **4 ZONE alarm outputs** and a TROUBLE output that indicates low battery, tamper, dead transmitter or jamming.

NOVA II & NOVA IV

- Memorize the pre-programmed identifying address of each transmitter during installation.
- Outputs may be connected to any control panel.

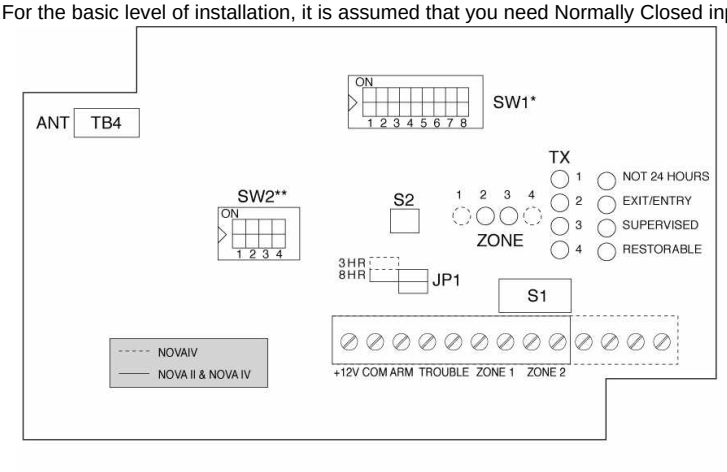
PREPARATION OF NOVA II OR NOVA IV RECEIVER

Regardless of the chosen level of installation (basic or advanced), you should prepare your NOVA receiver as follows:

- Remove the cover by inserting and twisting a screwdriver in the slots along the upper or lower edge of the receiver.
- Mount the NOVA receiver high – at least 1.5 m (5 ft) above the floor near the control panel.
- Mount the Receiver relatively close and central to the transmitters' locations. Receiver should be kept away from metal objects and RF generating devices such as TV sets and computers.
- Connect the antenna to the left terminal of TB4 (see Fig. 1).
- Set all positions on dip-switches SW1 and SW2 to OFF (levers are pushed DOWN).

LAYOUT AND WIRING OF NOVA II & NOVA IV

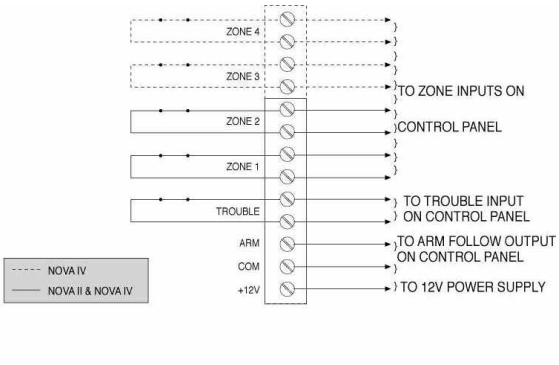
For the basic level of installation, it is assumed that you need Normally Closed inputs to your control panel.



The schematic drawing allows you to familiarize yourself with the different elements you need for the installation.

TB4: Reserved for the antenna connection
SW1*: Micro-switch used for programming and testing options (see Table 2)
SW2:** Micro-switch used in advanced mode of installation (see Table 4)
S2: Switch used to "step" through the LEDs during addressing
S1: Tamper switch (used also to clear the transmitters' addresses)
TX: LEDs for identification and location of transmitters' addresses
JP1: Determines the supervision time for advanced mode

Figure 1: Circuit Board Layout



Notes:
Please note that the outputs are dry contacts. All outputs are Normally Closed.
The zone outputs may be set to Normally Open by setting dip-switch SW1 position 2 to ON. See Table 2

Figure 2: Receiver Terminal Block to Control Panel Wiring Diagram

BASIC LEVEL INSTALLATION & OPERATION

The following instructions describe a simple way to set up and operate a NOVA wireless system.

REGISTERING TRANSMITTER ADDRESSES IN RECEIVER :

Note : Of the two dip-switches present on the PCB (SW1 and SW2), only **SW1** is used for the basic installation mode.

1. Ensure all dipswitches are in OFF position.
2. Set SW1 position 7 to ON.
   ➔ All LEDs blink. Then Zone 1 LED blinks and TX1 LED blinks or lights steadily (either condition is acceptable). Steady TX LED means location has no transmitter address programmed.
3. Send WRITE transmission from a transmitter. (See Table 1)
   ➔ All LEDs blink and buzzer sounds. Addressing of TX1 has been completed.
4. To proceed to TX2 or other transmitters press push-button S2 until LEDs indicate desired zone and transmitter number.
   ➔ Zone LED blinks and TX LED blinks or lights steadily.
5. Send WRITE transmission from another transmitter.
   ➔ All LEDs blink and buzzer sounds.
6. Continue to step through the LEDs by pressing S2 and sending WRITE transmissions until all transmitters have been written in the receiver (up to 4 transmitters per zone). Set SW1 position 7 to OFF.
   ➔ All LEDs will flash once and then extinguish.

Table 1: *Summary instructions for making transmitters send a WRITE transmission:*

NOVA-20 & NOVA-90	Set jumpers to WRITE Mode, then press Tamper Switch for over 3 seconds.
NOVA-30	Press push button on internal transmitter board for over 3 seconds.
NOVA-42, 43, 50, 51,52,53 & 61	Press push button for over 3 or 5 seconds as directed by device installation instructions.
NOVA-70	Disconnect and reconnect battery.
NOVA-71 & NOVA-91 (*Available shortly)*	Press Tamper for at least 3 seconds.

COMMUNICATION LINK TEST

Mount transmitters in their intended locations, then test communications as shown below.
The strength of the transmission is measured by the number of LEDs. Two LEDs is minimum acceptable transmission level.
Note: Output relays do not operate in this mode.

1. Cover must be removed during communications test.
2. Set SW1 position 7 to OFF and position 8 to ON.
   ➔ The LEDs blink, indicating COMMUNICATION MODE.
3. Operate each transmitter
   ➔ The zone and transmitter LEDs corresponding to each transmitter will light-up and the buzzer will sound to confirm communication. The red event LEDs will indicate the relative quality of the RF transmission link. If there is no response or if less than 2 LEDs light-up when a transmitter sends a signal, move the transmitter or receiver to a different location and try again. Confirm reception from all transmitters before ending the communication test. Each transmitter resets earlier transmission results.
4. Set SW1 positions 7 and 8 to OFF. Replace the cover.

Replacing cover automatically puts receiver in NORMAL MODE.
Note: For Nova T50, 51, 52, 53 & 61 press the button of the transmitter for only 2 to 3 seconds after the red LED has lit up.

BASIC LEVEL OPERATION MODE

In this mode, reception of a signal from a transmitter will cause the green LEDs corresponding to zone and transmitter to blink. A red event LED or LEDs will also blink to indicate the type of transmission, i .e. Alarm, Tamper, or Low Battery. Interference or jamming on the radio frequency channel will be indicated by the two bottom red LEDs blinking according to SW2 settings. See Trouble Output Operation.
Alarm signals will cause a zone output contact to actuate for 2 seconds. Alternatively, if the alarm comes from a NOVA Universal Transmitter, a NOVA Smoke Detector, or a NOVA restorable type transmitter, the zone output contact will latch until a restore signal is received, indicating that the alarm situation is no longer present.
Perform a functional test of the system by causing each transmitter to alarm, and noting proper response from the receiver and control panel.

ADVANCED LEVEL INSTALLATION

Remove the cover by inserting and twisting a screwdriver in the slots along the upper or lower edge of the receiver.
Mount the NOVA receiver at the highest point close to the control panel. Connect the antenna to the left terminal of TB4.
Set all positions on dip-switches SW1 and SW2 to OFF.
Wire the NOVA receiver to the control panel as shown in Figure 2.
Connect the Arm Follow output of the Control Panel to the ARM terminal on the receiver.
If this output gives a low or Ground signal when the panel is armed, set position 3 of SW1 to OFF.
If the Arm Follow output gives a high or open signal when the control panel is armed, set position 3 of SW1 to ON.
If the ARM connection is not used, position 3 remains OFF.

ADVANCED LEVEL INSTALLATION & OPERATION

The dip-switch positions and supervision jumper are described in Table 2 and Table 4 below.

Table 2 : *Configuration Dip-switch SW1 (8 Positions)*

Position	Description	Comments
1	MOMENTARY mode LATCH mode	OFF : During disarm only, upon memory activation, will display last 10 events by zone and transmitter. See: Event Retrieval From Memory. ON : During disarm only, will display, zone by zone, all the transmitters that were activated with an indication of the events that occurred since the last arming. See: Event Retrieval From Memory.
2	Zone outputs polarity	OFF : Zone outputs are Normally Closed. ON : Zone outputs are Normally Open.
3	ARM input polarity	OFF : Used if ARM FOLLOW output from panel is low (ground) when panel is armed. ON : Used if ARM FOLLOW output from panel is high (or open) when panel is armed.
4	SUPERVISION ARM/DISARM option	ON : During WRITE mode, for supervised transmitters (NOVA 20, 30, 70, 71, 90, 91). ON : During NORMAL mode for Zone 1 only.
5	EXIT/ENTRY DELAY	ON : During WRITE mode when ON, an alarm signal within 30 seconds of arming will be ignored. Output due to an alarm signal received more than 30 seconds after arming will be delayed by 30 seconds and cancelled if receiver is disarmed during this period.
6	NOT 24 HOURS	ON : During WRITE mode, alarm signals received when receiver is disarmed will be ignored.
7, 8	OPERATIONAL MODES : NORMAL MODE: WRITE MODE: COMMUNICATION MODE: APPLICATION MODE:	SW1 SETTINGS 7 OFF, 8 OFF Normal operation 7 ON, 8 OFF Used to register transmitter addresses in receiver. 7 OFF, 8 ON Used to test communication with transmitters. 7 ON, 8 ON Used to verify configuration of each transmitter.

Note : When receiver is armed the display will not light-up.

REGISTERING TRANSMITTER ADDRESSES IN RECEIVER :

1. Set SW1 position 7 to ON and 8 to OFF.
   ➔ All LEDs blink. Then Zone 1 LED blinks and TX1 LED blinks or lights steadily (either condition is acceptable). Steady TX LED means location has no transmitter address programmed.
2. Set SW1 positions 4, 5, 6 as required for the transmitter settings. (See Table 2)
3 Send WRITE transmission from the transmitter. (See Table 1)
   ➔ All LEDs blink and buzzer sounds. Then Zone 1 LED blinks and TX1 LED blinks.
4. Press push-button S2 until LEDs indicate desired zone and transmitter number.
   ➔ Zone LED blinks and TX LED blinks or lights steadily.
5. Set SW1 positions 4, 5, 6 as required for another transmitter setting, then send WRITE transmission from that transmitter.
   ➔ All LEDs blink and buzzer sounds. Then Zone LED blinks and TX LED blinks.
6. Continue to advance the LEDs by pressing S2. Set SW1 positions 4,5,6 as required, and send WRITE transmissions until all transmitters have been written in the receiver (up to 4 transmitters on each zone).
   ➔ Blinking LEDs indicate present transmitter location, and WRITE action is confirmed by all LEDs blinking and buzzer sounding.
7. Set SW1 position 7 OFF.
   ➔ All LEDs blink to indicate return to NORMAL MODE.

TO VERIFY SET-UP

1. Set SW1 positions 7 and 8 to ON.
   ➔ LEDs blink. Then the green LEDs display a transmitter and the red LEDs display the settings. See Table 3.
2. Press push-button S2.
   ➔ The green LEDs display the next transmitter and the red LEDs display its setting.
3. Continue pressing push-button S2 until setups of all transmitters have been displayed.
4. Set SW1 positions 7 and 8 to OFF.
   ➔ All LEDs blink to indicate return to NORMAL MODE.

Table 3: Settings Indications

Red LED numbered from top to bottom	**Setting**
1	NOT 24 HOURS. Dip-switch SW1 position 6 was ON during WRITE transmission.
2	EXIT/ENTRY DELAY. Dip-switch SW1 position 5 was ON during WRITE transmission.
3	SUPERVISED. Dip-switch SW1 position 4 was ON during WRITE transmission.
4	WRITE transmission was from a RESTORABLE NOVA transmitter.

ARM / DISARM OPTION – ZONE 1 ONLY

In this option up to 4 T43 transmitters can arm and/or disarm the receiver through Zone 1. Once the system is armed it will be possible to disarm it by using any of the 4 transmitters.

In order to activate this option in NORMAL MODE set SW1 positions 7 and 8 to OFF and position 4 to ON.
Note: If you choose not to use this option (DIP switch #4 in OFF position), you can use Zone 1 with all types of transmitters.

TO ERASE AN ADDRESS FROM RECEIVER

While in WRITE MODE (SW1 position 7 ON), press push-button S2 as often as needed until the desired transmitter location appears on the LEDs. The chosen zone and transmitter LEDs will blink.
Press and hold tamper switch S1, then press push-button S2 for three seconds. Release push-button and tamper switch. All LEDs blink and buzzer sounds. Then desired zone blinks and transmitter LED lights steadily. This will indicate removal of transmitter from system's memory.
Set SW1 position 7 to OFF to return to NORMAL MODE.

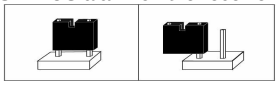
TROUBLE OUTPUT OPERATION

TROUBLE OUTPUT is activated while 1 or more (up to 4) of SW2 switches are set to ON. TROUBLE signals will activate the TROUBLE relay and together will illuminate the red event LEDs. TROUBLE outputs are not affected by the ARM/DISARM setting of the system. Table 4 below describes TROUBLE signals and the SW2 TROUBLE output settings.

Table 4: *Output Dip-switch SW2 (4 Positions)* determines which TROUBLE signals produce an output at the TROUBLE terminals. The TROUBLE output contacts are Normally Closed.

SW2 Position	TROUBLE Output when set ON	**Corresponding LED display on receiver**
1	**Low Battery.**	Low battery
2	**Tamper from transmitter (NOVA 20, NOVA 71, NOVA 90, NOVA 91), or from NOVA receiver.**	Tamper
3	**Supervision Gives an output if no signal is received from supervised transmitter for 3 or 8 hours (time depends on setting of jumper JP 1).**	Status
4	**Jamming Gives an output if there is interference or jamming on channel for 30 seconds or more.**	Low battery + Status

Jumper JP1
Will determine supervision period. Supervised transmitters (NOVA 20, 30, 70, 71, 90, 91) send signals periodically. Lack of signal for a period determined by the jumper setting will cause a STATUS alarm on the receiver.



Jumper Placement	**Supervision Time**
On both JP1 pins	8 hours
On one JP1 pin or removed	3 hours

NORMAL MODE

Perform a functional test of the system by causing each transmitter to alarm, and noting proper response from the receiver and control panel.
When your receiver is in NORMAL MODE :

1. SW1 positions 7 & 8 have been set to OFF.
2. You may ARM/DISARM the receiver by use of an appropriate transmitter and/or by arming and disarming the control panel.
3. During ARM periods :
   ➔ All LEDs will be extinguished
   ➔ Alarm signals will be received from transmitters and handled appropriately.
   ➔ No LED display can be see on the receiver.
4. During DISARM periods:
   If you have chosen LATCH display:
   ➔ Display will appear automatically and will continue until the next ARM.
   ➔ All events will be shown continuously, zone by zone, on the appropriate LEDs.
   ➔ Events occuring to transmitters defined as 24 HOURS will activate zone relay and will be added to the LATCH display.
   If you have chosen MOMENTARY display:
   ➔ There will be no automatic LED indications of events that took place during previous ARM period. You may view up to 10 events by entering Event Retrieval From Memory. Messages sent from transmitters can each be viewed for 2 seconds.
   ➔ Events occuring to transmitters defined as 24 HOURS will activate zone relays and will appear in MOMENTARY mode.

EVENT RETRIEVAL FROM MEMORY

Up to 10 most recent events may be retrieved and displayed while cover is closed, and receiver is disarmed. Note that last event will be displayed first.

1. Press the MEMORY push-button.
   ➔ All LEDs blink, then the most recent event is displayed by lighting the relevant zone LED, the transmitter LED and an event LED. If the event was tamper or jamming of the receiver, only the red event LED or LEDs will light.
2. Pressing the MEMORY push-button up to 10 times will display on the LEDs the last 10 events as above.
3. After all events have been displayed, pressing MEMORY push-button once more will return the receiver to NORMAL mode.

You may return to NORMAL mode at any time by pressing push-button MEMORY for 3 seconds. Receiver will return automatically to NORMAL mode if MEMORY button is not pressed for 1 minute.The memory will be cleared only after a WRITE or ERASE action in WRITE MODE.

APPLICATION QUESTIONS & ANSWERS

Can I have supervised transmitters & detect low battery & tamper when I use Basic Installation Setup?
Yes. Connect the TROUBLE output of the receiver to a Trouble zone on your panel. Set the required SW2 positions to ON. Set SW1 position 4 to ON when you send a WRITE transmission from a detector you want supervised (NOVA 20, 30, 70, 71 or 90, 91). Don't forget to return SW1 position 4 to OFF when sending WRITE from a non-supervised portable transmitter (NOVA 42, 43, 50, 51, 52, 61).

What is a Restorable Transmitter?
A restorable transmitter sends an alarm signal when an alarm occurs, and another ("restore") signal when the alarm situation ends. The ON/OFF transmitters also have this characteristic. When NOVA II or NOVA IV receives an alarm signal from one of these devices, it operates the output relay and holds it until it receives a restore signal, instead of releasing the relay after two seconds. This means that if NOVA 70/71 is used to detect an open window, the panel cannot be armed with the window open, just as when a window switch is wired directly to the panel.

SPECIFICATIONS

Operating Voltage and Current	10 to 15 Vdc, 70 mA. typical, outputs NO
Receiver Type	SAW Stabilized Superheterodyne
Outputs for **NOVA II** Outputs for **NOVA IV**	➔ **2** Alarm relay outputs plus 1 trouble relay output ➔ **4** Alarm relay outputs plus 1 trouble relay output
Maximum number of transmitters for **NOVA II** Maximum number of transmitters for **NOVA IV**	➔ **8** (maximum 4 per zone) ➔ **16** (maximum 4 per zone)
Transmitter Addresses	Over 16 million
Frequency Options	318 MHz FCC and IC Approved 433.92 MHz as per European Standards
Output Contacts	0.5 A at 24 Vdc maximum
Dimensions	Width: 145 mm (5.7 in.) Height: 90 mm (3.54 in.) Depth: 42 mm (1.65 in.)
Weight	200 gr. (7 oz.)
Temperature Range	0 to 50°C (32 to 122°F)

CAUTION NOTICE

This device complies with U.S. FCC PART 15 and with RSS-210 of Industry Canada (318 MHz option only).
Operation is subject to the following two conditions:

This device may cause interference.

This device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by ROKONET may void the user's authority to operate this equipment.
The communication quality of this unit may be affected by its surrounding environment. Nearby electrical equipment may interfere with its normal operation. The operation of this unit must, therefore, be tested at each installation since its transmission quality may vary as a result of operational conditions.
Simultaneous transmissions from two different units may cause message interference resulting in loss of information.

ROKONET LIMITED WARRANTY

Rokonet Electronics, Ltd. and its subsidiaries and affiliates ("Seller") warrants its products to be free from defects in materials and workmanship under normal use for 18 months from the date of production. Because Seller does not install or connect the product and because the product may be used in conjunction with products not manufactured by the Seller, Seller can not guarantee the performance of the security system which uses this product. Sellers obligation and liability under this warranty is expressly limited to repairing and replacing, at Sellers option, within a reasonable time after the date of delivery, any product not meeting the specifications. Seller makes no other warranty, expressed or implied, and makes no warranty of merchantability or of fitness for any particular purpose. In no case shall seller be liable for any consequential or incidental damages for breach of this or any other warranty, expressed or implied, or upon any other basis of liability whatsoever.
Sellers obligation under this warranty shall not include any transportation charges or costs of installation or any liability for direct, indirect, or consequential damages or delay. Seller does not represent that its product may not be compromised or circumvented; that the product will prevent any persona; injury or property loss by burglary, robbery, fire or otherwise; or that the product will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm may only reduce the risk of burglary, robbery or fire without warning, but is not insurance or a guaranty that such will not occur or that there will be no personal injury or property loss as a result. Consequently seller shall have no liability for any personal injury, property damage or loss based on a claim that the product fails to give warning. However, if seller is held liable, whether directly or indirectly, for any loss or damage arising from under this limited warranty or otherwise, regardless of cause or origin, sellers maximum liability shall not exceed the purchase price of the product, which shall be complete and exclusive remedy against seller.
No employee or representative of Seller is authorized to change this warranty in any way or grant any other warranty.
WARNING: This product should be tested at least once a week.

- Specifications are subject to change without prior notice. Should any questions arise, please contact your supplier.

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