NV780 Digital Outdoor Dual Side-View Detector with 4x Dual Sensors Installation Manual V2.51

Introduction

The NV780 incorporates two independent, side-by -side passive infrared detectors into a single housing. Covering approximately 24 meters (12m for each side), and configurable to report as a single unit (2 sides of the unit report to a single zone output) or dual units (each side reports to a separate zone output), the NV780 provides flexible and accurate boundary protection.

Installation

To install the NV780:

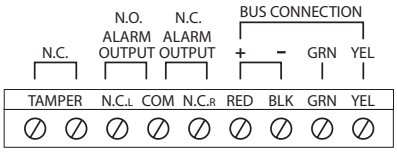
1) Select the detector's location.
2) Remove the front cover screws holding the cover into place; open the cover.
3) Drill or punch out the cable entry knockout. Run the wires through the cable entry.
4) Mount the back plate to the wall by securing the included 1.5" screws (4x) in each of the dedicated mounting holes. Secure the 2" screw in the dedicated wall tamper hole. Do not overtighten the tamper screw, it may lead to water infiltration of the unit.
   IMPORTANT: The NV780 must be installed at least 40 cm (15.7 in) away from the desired protected area (door, window, etc.) when its sensitivity is set at 75%, and 10 cm (3.9 in) when set at 100%. See *Detector Settings* below to set the sensitivity.
5) Connect the wires according to the desired configuration (see *Wiring* below). **IMPORTANT**: Insert the protective foam piece in the cable entry.

Wiring

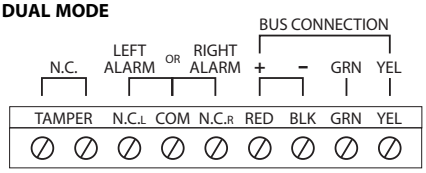
The NV780 can be either hard-wired with or without a bus connection. In addition, the NV780 can be used to detect as one single zone for both left and right sides (Single Mode), or as two independent zones; one for each side (Dual Mode). See *Detector Settings* below to set the Zone Mode.

Figure 1: Wiring Methods

SINGLE MODE



DUAL MODE



Operational Modes: Relay/Combus

In relay mode, the NV780 functions as would any standard motion detector by communicating its alarm and tamper signals via relays.The GRN and YEL terminals are not used in relay mode. In combus mode, the NV780 communicates alarm and tamper signals via the combus. The detector's relay output always remains active even when set to combus mode and can be used to activate other devices.

- Relay mode is the default state.
- Combus mode is initiated when the NV780 detects bus communication with the panel (connections made on green and yellow terminals).
- Upon a loss of communication in combus mode, the left LED will start flashing rapidly until communication is restored.
- In order to return to Relay operational mode, disconnect the power, and power-up the module with no bus communication connections (i.e., no green and yellow terminal connections).

Detector Settings

IMPORTANT: When changing DIP switch settings, the unit must be powered. To save changes, trigger the box tamper or close the cover.

DIP Switch#	Functionality
DIP Switch 1	**LED** Enable (ON) or disable (OFF) the LED, (**default = ON**)
DIP Switch 2	**Buzzer** Enable (ON) or disable (OFF) the buzzer, (**default = OFF**)
DIP Switch 3	**Sensitivity** *(see table at right)* ON= 100% (High), OFF= 75% (Normal), (**default =ON**)
DIP Switch 4	**Zone Mode: Single/Dual** ON= Single Mode, OFF= Dual Mode, (**default =ON**)

Min. and Max. Detection Coverage		
The following is the minimum and maximum detection coverage when the vertical beam adjustment is set at 0°.		
	Minimum Coverage	**Maximum Coverage**
75% Sensitivity Level	0.4m (1.3 ft.)	11m (36 ft.)
100% Sensitivity Level	0.1m (0.3 ft.)	23m (75.4 ft.)

Power-up Sequence

If the module is set in Single Mode:

- Both left and right LEDs blink simultaneously 4 times
- Buzzer activates (on/off beep: one tone)

If the module is set in Dual Mode:

- Both left and right LEDs blink alternately 4 times
- Buzzer activates (two tones, continuous)

Alarm

If the module is set in Single Mode:

- **LED**: red LED indication only on the relevant side(s) for 3 sec.
- **Buzzer**: activates (same tone for each side)

If the module is set in Dual Mode:

- **LED**: red LED indication only on the relevant side(s) for 3 sec.
- **Buzzer**: activates, each side has its own tone. If there is an alarm on both sides, there is a separate, third tone.

Firmware Upgrade via Built-in Serial Port

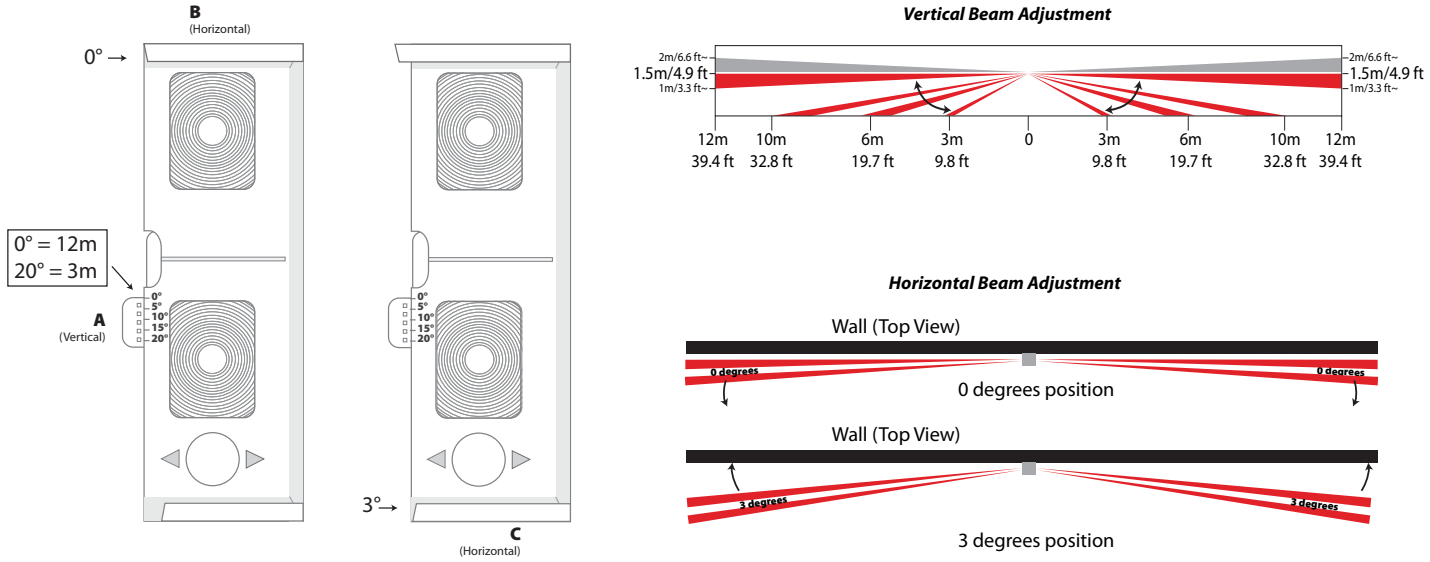
For upgrade instructions, refer to the Firmware Upgrade Instructions document which is available at paradox.com > Software > InField.

Adjustable Beam Pattern

The NV780 features an adjustable beam pattern, both vertically and horizontally. The vertical adjustment is made to extend or shorten the range of detection; each lower beam can be independently adjusted between five positions (0° = 12m, 5° = 10.5m, 10° = 7.5m, 15° = 5.25m, 20° = 3m). The horizontal adjustment is made to avoid detection of unwanted objects directly next to the detector (0° or 3° away from wall).

A: Vertical Beam Adjustment (lower beam only)	Adjust the vertical beam by sliding the lens tab vertically (see A in Figure 2), and locking the lens tab in the desired position, where: 0° = 12m, 5° = 10.5m, 10° = 7.5m, 15° = 5.25m, 20° = 3m.
B and C: Horizontal Beam Adjustment	Adjust the horizontal beam by sliding the lens casing horizontally, and aligning its top edge with either the upper railing, (see B in Figure 2), or aligning its top edge with the lower railing (see C in Figure 2). Lens casing aligned with upper railing = 0° Lens casing aligned with lower railing = 3°

Figure 2: Adjustable Beam Pattern



Technical Specifications

Sensor	4x dual rectangular element, low noise, high sensitivity, EMI immunity
Lens	2nd gen., flat, 2x dual beam, 1.7" focal point, narrow beam long-range Fresnel lens
Processing	High resolution digital signal processing / digital APSP / true digital temperature compensation / ultra low current-saving algorithm
Startup time	25 sec.
Detection speed	0.2m/sec – 4m/sec (0.6' – 13.1'ft/sec)
Power input	10Vdc to 15Vdc
Current consumption	9.9mA @ Standby (Dual), 14.4mA @ Standby (Single) 39.8 mA @ Alarm (Dual, One Led + Buzzer), 58.0mA @ Alarm (Dual, Two Leds + Buzzer), 41.5mA @ Alarm (Single, One Led + Buzzer)
Coverage	Bi-directional, independent, 2 x 3m to 12m (9.8ft to 39ft), increased coverage possible depending on detector settings, temperature, etc.
PET Immunity	Up to 40kg (90lb) - requires min.1.5m (4.9ft) installation height
Installation height	1.5m and above
Alarm indicator	2x red LED for 2 sec., 1 for each detection side + buzzer (can be disabled)
Alarm output	2x Solid State, N.C, 150mA. In Dual mode the relays are 2 independent Form B type and in Single mode the relays are a single Form C type operation
Anti-tamper switch	N.C. 28Vdc, 0.15A
Operating temperature	-35°C to +50°C (-31°F to +122°F)
Humidity	95% max.
Dimensions	9 x 5.5 x 4 cm (3.5 x 2.2 x 1.6 in.)
RF immunity	Complies with EN 50130-4: 10V/m 80MHz to 2GHz