SDN212H

Programmable Siren Amplifier System w/ 15-Button Handheld Controller

— Installation & Operation Manual —

Firmware Ver. A/B

NOTICE TO INSTALLER

Before installation and operation — read all instructions and warnings.
Deliver this manual to the end user of this product.

TABLE OF CONTENTS

WARNING

1. Proper installation of the product requires the installer to have a good understanding of automotive electronics, systems and procedures. It is essential to install the unit properly to ensure safe and reliable operation.

2. Please read through all instructions thoroughly and carefully before installing the unit.

3. Failure to follow these instructions could result in serious damage to the unit or vehicle and may void warranties.

4. The correct mounting and wiring is the key to the effectiveness of SDN212.

5. Installers must read and follow instructions and warnings in the manual from the original manufacturer.

6. The operator should verify the siren system is fastened to the vehicle securely and is functioning properly. Failure to follow all safety precautions and instructions may cause property damage, injury, or death.

7. Ensure that any switch control panel is located in an area that allows both the vehicle and the control panel to be operated safely in any driving condition.

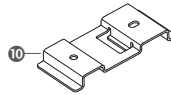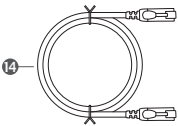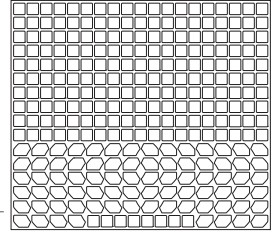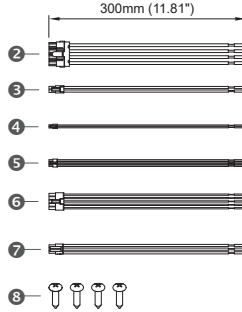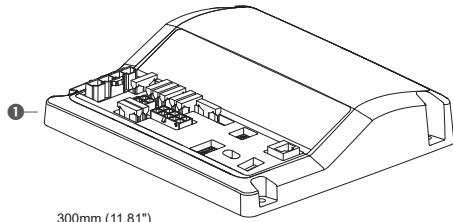**WARNING** **Sound Hazard** - Sound level from a siren speaker (109dB at 2M) may cause hearing damage.

Do not operate the siren without adequate hearing protection for you and anyone in immediate vicinity.

(Ref. OSHA 1910.95 for occupational noise exposure guidelines)

CONTENTS

❶ Siren amplifier   x 1 pc
❷ 4-PIN power harness   x 1 pc
❸ 4-PIN high current   x 1 pc
    relay outputs harness
❹ 4-PIN speaker harness   x 1 pc
❺ 8-PIN inputs harness   x 1 pc
❻ 10-PIN mid/low current   x 1 pc
    relay outputs harness
❼ 3-PIN CAN_COMM harness   x 1 pc
❽ Sheet metal screws   x 4 pcs
    (ø4 x 16mm)
❾ Controller   x 1 pc
❿ Controller clip   x 1 pc
⓫ Sheet metal screws   x 2 pcs
    (ø4 x 16mm)
⓬ Decal   x 1 set
⓭ Manual   x 1 pc
⓮ RJ45 cable   x 1 pc
    (6m)
⓯ RJ45 coupler   x 1 pc

300mm (11.81")

SDN212H
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w/ 15-Button Handheld Controller

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SPECIFICATIONS

Input Voltage: 12~24VDC
Siren Output Power: 200W (100W x2)
Siren Output Load: 100W-ACR 11Ω
Siren Frequency: 759Hz - 1592Hz (may varies through PC setting)
Max. Current (Siren only):
    20A @ 12VDC / 10A @ 24VDC (w/o light control outputs)
Standby Current:
    (Sleep Mode)   <2mA @ 12V / <2mA @ 24V
    (Operation Mode)   <0.35A @ 12V / <0.31A @ 24V
Operating Temperature Range: -22°F~149°F (-30°C~65°C)
Light Controls Output: 15A x3, 10A x3, 2A x2, 0.25A x4
Fuse Rating:
    Blade Fuse: 30A x1, 15A x3, 10A x3, 2A x2
    Resettable Fuse: 0.25A x4
Dimensions [WxLxH] (amplifier): 7.48" x 8.54" x 1.79" (190mm x 217mm x 45.6mm)
Dimensions [WxLxH] (controller): 2.61" x 5.28" x 1.06" (66.4mm x 134mm x 26.9mm)

DEFAULT TONES	CYCLE RATES
HORN	Composite (Constant)
WAIL	12CPM
YELP	155CPM
PHASER (PIERCER)	882CPM
HI/LO	40CPM

(Actual Tone may varies through PC setting)

WIRING

● *Wiring diagram:*

Diagnostic LED
- D1 PWR
- D2 CAN
- D3 SPK1
- D4 SPK2

Connector groups: **J2 Power** · **J6 HI Current Relay Outputs** · **J7 MID/LOW Current Relay Outputs** · **J8 Speaker Output** · **J5 Inputs** · **J9 CAN COMM** · **J3 Controller / CAN**

Fuses: F1 30A · F3 15A · F4 15A · F5 15A · F6 10A · F7 10A · F8 10A · F9 · F12 2A OUTPUT7 FUSE · F13 2A OUTPUT8 FUSE

J1 PC USB · J1 USB-C · J3 CONTRL / CAN (RJ45) · J8 SPK (SPK1 SPK2) · J5 INPUTS · J9 CAN_COMM

J2 Power Harness (Fuse Rating: 30A each)

PIN	Color	Function
PIN1	RED	Power +VDC
PIN2	RED	Power +VDC
PIN3	RED	Power +VDC
PIN4	BLACK	Power -GND

→ BATTERY (+ / −)

J6 HI Current Relay Outputs Harness

PIN	Color	Function	Load
PIN1	BLUE	OUTPUT1	LOAD (Max. 15A)
PIN2	WHITE	OUTPUT2	LOAD (Max. 15A)
PIN3	YELLOW	OUTPUT3	LOAD (Max. 15A)
PIN4	BROWN	OUTPUT4	LOAD (Max. 10A)

J7 MID/LOW Current Relay Output Harness

PIN	Color	Function	Load
PIN1	PINK	OUTPUT5	LOAD (Max. 10A)
PIN2	BROWN	OUTPUT6 N.C	LOAD (Max. 10A)
PIN3	RED	OUTPUT6 N.O	LOAD (Max. 10A)
PIN4	ORANGE	OUTPUT6 Dry Contact Common	
PIN5	YELLOW	OUTPUT7 (max. 0.25A)	LOAD (Max. 0.25A) — Use with fuse position F9
PIN6	GREEN	OUTPUT8 (max. 2A)	LOAD (Max. 2A)
PIN7	BLUE	OUTPUT9 (max. 2A)	LOAD (Max. 2A)
PIN8	PURPLE	OUTPUT10 (max. 0.25A)	LOAD (Max. 0.25A)
PIN9	GREY	OUTPUT10 (max. 0.25A)	LOAD (Max. 0.25A)
PIN10	WHITE	OUTPUT11 (max. 0.25A)	LOAD (Max. 0.25A)

J8 Speaker Output Harness

PIN	Color	Function
PIN1	GREY	SPEAKER1 (-)
PIN2	BLUE	SPEAKER1 (+)
PIN3	WHITE	SPEAKER2 (+)
PIN4	RED	SPEAKER2 (-)

SPK1 — 100w 11ohm Speaker x 1
SPK2 — 100w 11ohm Speaker x 1

J5 8-PIN Input Harness

PIN	Color	Function	Note
PIN1	GREEN	Logic Input 1	(Horn-Ring Transfer)
PIN2	PURPLE	Logic Input 2	(Park Kill)
PIN3	YELLOW	Logic Input 3	(Activate OUTPUT12) — OUTPUT12 SWITCH
PIN4	GREY	Logic Input 4	(Dual Tone) — DUAL TONE SWITCH
PIN5	RED	Ignition Activation	(+) — IGNITION SWITCH
PIN6	BLUE	Analogue Input	(Backlight ON)
PIN7	WHITE	Radio IN (+)	RADIO OUTPUT
PIN8	BROWN	Radio IN (-)	

J9 CANBUS Communication Harness

PIN	Color	Function	Note
PIN1	BROWN	CAN_H	(CANBUS_H) — to peripheral CAN devices
PIN2	BLACK	GND	(GND) — Not used
PIN3	WHITE	CAN_L	(CANBUS_L) — to peripheral CAN devices

Wire Gage vs Maximum Current Draw Through The Wire

	22AWG 0.5mm²	20AWG 0.75mm²	18AWG 1mm²	16AWG 1.5mm²	14AWG 2.5mm²	12AWG 4mm²	10AWG 6mm²	8AWG 10mm²	6AWG 16mm²
FEET									
10A	3'	5'	7.5'	12'	19.5'	31'	49'	78'	124'
20A	Ins.	Ins.	4'	6'	9.5'	15.5'	24.5'	39'	62'
30A	Ins.	Ins.	Ins.	4'	6.5'	10.5'	16.5'	26'	41.5'
40A	Ins.	Ins.	Ins.	3'	5'	7.5'	12.5'	19.5'	31'
50A	Ins.	Ins.	Ins.	Ins.	4'	6'	10'	15.5'	25'
60A	Ins.	Ins.	Ins.	Ins.	3'	5'	8'	13'	20.5'
70A	Ins.	Ins.	Ins.	Ins.	Ins.	4.5'	7'	11'	17.5'
80A	Ins.	Ins.	Ins.	Ins.	Ins.	4'	6'	10'	15.5'
METERS									
10A	0.9m	1.5m	2.3m	3.7m	5.9m	9.4m	14.9m	23.8m	37.8m
20A	Ins.	Ins.	1.2m	1.8m	2.9m	4.7m	7.5m	11.9m	18.9m
30A	Ins.	Ins.	Ins.	1.2m	2.0m	3.2m	5.0m	7.9m	12.6m
40A	Ins.	Ins.	Ins.	0.9m	1.5m	2.3m	3.8m	5.9m	9.4m
50A	Ins.	Ins.	Ins.	Ins.	1.2m	1.8m	3.0m	4.7m	7.6m
60A	Ins.	Ins.	Ins.	Ins.	0.9m	1.4m	2.4m	4.0m	6.2m
70A	Ins.	Ins.	Ins.	Ins.	Ins.	1.4m	2.1m	3.4m	5.3m
80A	Ins.	Ins.	Ins.	Ins.	Ins.	0.9m	1.8m	3.0m	4.7m

Ins. = Insufficient

PURPLE — Park Kill Input

- Positive (+Ve) Switching [Default]: +VDC → Door Switch → PKL → DOME LIGHT
- Negative (-Ve) Switching [via PC Setting]: Added Door Switch → PKL

GREEN — Horn-Ring Transfer Input

- Positive (+Ve) Switching [Default]: +VDC → Horn Ring Switch → HRT **OR** +VDC → Added SPDT Switch (N.C / N.O) → HRT
- Negative (-Ve) Switching [via PC Setting]: Momentary Foot Switch → HRT

(J2 Connector) 4-PIN POWER Harness

● *Power +VDC & -GND (J2-PIN1~PIN3 & J2-PIN4)*
1. Connect three **RED** wires to the positive (+) battery terminal. Fuse each wire independently @30 Amps (user-supplied). DO NOT install these fuses until the wiring for the entire system has been completed.
2. Connect **BLACK** wire to the vehicle's chassis ground (typically adjacent to the battery).
3. Plug the Connector into the siren amplifier unit.

(J6 Connector) 4-PIN SPEAKER Harness

● *Speaker 1 Out (J8-PIN1~PIN2)*
Connect the **GREY** (SPK1-) and **BLUE** (SPK1+) wires to one 100W 11-ohm impedance speaker.

● *Speaker 2 Out (J8-PIN3~PIN4)*
Connect the **WHITE** (SPK2+) and **RED** (SPK2-) wires to one 100W 11-ohm impedance speaker.

NOTE: Do not attempt to connect two speakers in parallel or series on any one pair of Speaker outlets.

(J5 Connector) 8-PIN INPUT Harness

● *Ignition Enable Input (J5-PIN5)*
This wire serves as the power switch for the unit. Connect this wire to a positive circuit controlled by the vehicle ignition switch, and use the ignition to act as the ON/OFF switch (power up /power down). If the unit is in Normal Operation Mode, disconnect this input from **+VDC** to enter the Sleep Mode. While in Sleep Mode, all function is ceased and unable to operate until the unit is turned back onto the Normal Operation Mode. To exit the Sleep Mode for normal operation, while in Sleep Mode, connect this input to **+VDC**.

● *Programmable Logic Inputs (J5-PIN1~PIN4)*
These four inputs may be PC-programmed to activate other buttons, inputs, outputs, sirens, etc. via positive or negative switching. By default, they function as Horn-Ring, Park Kill and Dual Tone inputs:

- **Horn-Ring Transfer Input (J5-PIN1)**
Connect this input to the vehicle horn ring circuit; apply +VDC continuously to **GREEN** wire for Air Horn Tone. This tone will temporarily override all other Siren Tones and Radio Rebroadcast while it is activated. If Hands-Free mode is active, momentarily apply +VDC to start the Siren, tap again to change tone and double tap to end the Siren. This input also activate OUTPUT7 while it is active.

- **Park Kill Input (J5-PIN2)**
Connect this input to the vehicle Park Shift circuit; apply +VDC continuously to **PURPLE** wire for temporarily mute of all other Siren Tones and Radio Rebroadcast while it is activated. Once released, all siren tone and Radio Rebroadcast will resume (if applicable).

- **Logic Input 3 (J5-PIN3)**
Apply +VDC continuously to **YELLOW** wire to activate OUTPUT12.

- **Dual Tone Input (J5-PIN4)**
While a siren tone is active, apply +VDC continuously to **GREY** wire to activate dual tone function for a multi-speaker effect. This function is not available in a single speaker set-up.

● *Programmable Analogue Input (J5-PIN6)*
This analogue input can be programmed to activate other buttons, inputs, outputs, sirens, etc. depending on the input voltage (1VDC ~ 32VDC). By default, this input function is BACKLIGHT POWER ON:

- **Backlight ON Input (J5-PIN6)**
Apply +VDC continuously to **BLUE** wire to activate backlight on the handheld controller.

● *Radio Re-broadcast Input (J5-PIN7~PIN8)*
Connect **WHITE** and **BROWN** wires to the speaker output of a radio console.

(J6 Connector) 4-PIN HIGH CURRENT RELAY OUTPUT Harness

- *OUTPUT1~3 (J6-PIN1~PIN3)*
  Connect to auxiliary devices power up to 15 Amps max.
- *OUTPUT4 (J6-PIN4)*
  Connect to auxiliary devices power up to 10 Amps max.

(J7 Connector) 10-PIN MID/LOW CURRENT RELAY OUTPUT Harness

- *OUTPUT5 (J7-PIN1)*
  Connect to auxiliary devices power up to 10 Amps max.

- *OUTPUT6 (J7-PIN2&PIN3) & OUTPUT6 Dry Contact (J7-PIN4)*
  PIN2 is a N.O (Normally Open) contact while PIN3 is a N.C (Normally Closed) contact. OUTPUT6 may function in one of the two scenarios below based on its Fuse Position:

  - **FUSE Position 1 - General Purpose Output (Factory Default)**
    Connect PIN2&3 to auxiliary devices power up to 10 Amps max.

  - **FUSE Position 2 - Dry Contact Relay**
    Connect PIN4 to output that will be contacted to PIN2&3 when OUTPUT6 is dis-activated / activated respectively.

F8	F9
10A	

Fuse Position 1 - General Purpose

F8	F9
	10A

Fuse Position 2 - Dry Contact Relay
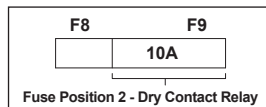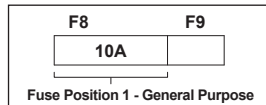
- *OUTPUT7~8 (J7-PIN6~PIN7)*
  Connect to auxiliary devices power up to 2 Amps max. or use as Lightbar function activation switch.

- *OUTPUT9~12 (J7-PIN8~PIN10, PIN5)*
  Connect to auxiliary devices power up to 0.25 Amps max. or use as Lightbar function activation switch.

(J9 Connector) 3-PIN CANBUS Communication Harness

- *CAN_H (J9-PIN1)*
  Connect to CAN_H of applicable peripheral CAN devices.
- *CAN_L (J9-PIN3)*
  Connect to CAN_L of applicable peripheral CAN devices.

DEFAULT OUTPUT WIRING
Unless otherwise re-programmed via PC software. By default, these Output wires function as Follow:

- **(J6-PIN1~PIN3)** *CODE1~CODE3 Output*
  Connect each of the three outputs to power devices that will be turned ON and OFF with CODE1, CODE2 and CODE3 buttons respectively.

- **(J6-PIN4 & J7-PIN1~PIN3)** *SW12~SW14 Output*
  Connect each of the three outputs to power devices that will be turned ON and OFF with SW12, SW13 and SW14 button respectively. Notes that J7-PIN2 and J7-PIN3 are N.C and N.O contact of SW14.

- **(J7-PIN4)** *N.A.* This port is not used with the default setting.

- **(J7-PIN5)** *Logic Input 3 Output*
  Connect this output to power devices that will be turned ON and OFF with Logic Input 3.

- **(J7-PIN6)** *Horn-ring Warning Output*
  Connect this output to power devices that will be turned ON and OFF with Horn-Ring Transfer input or Air Horn button.

- **(J7-PIN7)** *Siren Active Icon Output*
  Connect this output to power devices that will be turned ON and OFF with Siren Tone activation (excluding MAN Tone).

- **(J7-PIN8~PIN10)** *Traffic Arrow Outputs*
  Connect these outputs to activation wires of a Traffic Arrow device that will be turned ON and OFF with TA button. (i.e. J7-PIN8 to Left Arrow activation; J7-PIN9 to Right Arrow activation; J7-PIN10 to TA Warning activation)
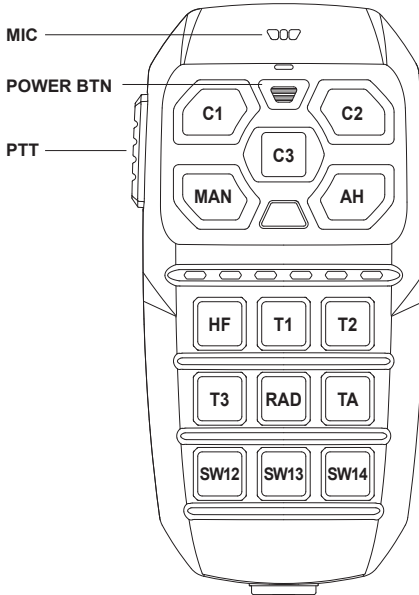
DEFAULT HAND-HELD CONTROLLER OPERATION

MIC

POWER BTN

PTT

C1 C2 C3 MAN AH

HF T1 T2

T3 RAD TA

SW12 SW13 SW14

fig. 1 - Default Button Function

1 15 2 3 4 5

6 7 8

9 10 11

12 13 14
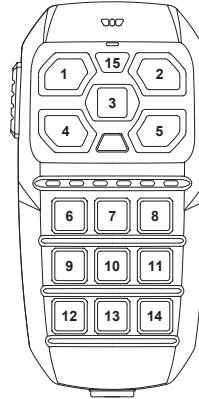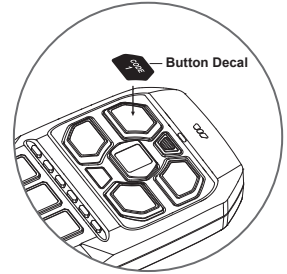
fig. 2 - Button Number

Button Decal

NOTE: The controller is shipped without any button decals installed. Place the desired decal onto each button.

- ● **(PTT)** *PTT - PA Broadcast*
  Press and hold to activate Microphone for PA Broadcast through the siren speaker. This Button overrides all other acoustic functions (i.e. Air Horn, Siren Tone and Radio Rebroadcast) while it is activated

- ● **(BTN1)** *C1 - CODE1*
  Press once to activate or de-activate OUTPUT1.

- ● **(BTN2)** *C2 - CODE2*
  Press once to activate or de-activate OUTPUT2 and [C1].

- ● **(BTN3)** *C3 - CODE3*
  Press once to activate or de-activate OUTPUT3, [C2], [C1] and [T1].
  If [T2] and [T3] is active when de-activating [C3], de-activate [T2] and [T3].

- ● **(BTN4)** *MAN*

  - **When Siren Tone is not active:**
    Activate momentary MAN WAIL tone when pressed. This tone will ramp up to sustain a specific pitch until released (stopped immediately).

  - **When Siren Tone is active:**
    Press once to change Primary Siren Tone to Override Tone (Based on the current active tone, Override Tone may differ); press again to revert back to Primary Siren Tone.

  - **When HF Mode (Hands-Free) is active:**
    Press once to start Siren Tone; press again to cycle through all HF Tone List; double press to end Siren Tone.
    Default HF Tone List: WAIL > YELP > PHASER > HILO > ...

- **(BTN5)** *AH - AIR HORN*

  Momentarily activate the AIR HORN tone and OUTPUT7 when it is pressed. This tone will override all other Siren Tones and Radio Rebroadcast while it is activated.

- **(BTN6)** *HF - HANDS-FREE*

  Press [HF] once to enter HF Mode Standby; while in standby, press [MAN] button or [Horn-Ring Transfer] Input (J5-PIN1) once to start Siren Tone; press again to cycle through all HF Tone List; double press to end Siren Tone.

  Default HF Tone List: WAIL > YELP > PHASER > HILO > ...

  While [HF] is active (in standby or in siren tone), press [HF] again to exit HF Mode.
  This Button will de-activate the [T1], [T2], [T3] and [RAD] upon activation.

- **(BTN7)** *T1 - WAIL*

  Press once to activate or de-activate WAIL tone and OUTPUT8. While in WAIL tone, press [MAN] once to change Primary Siren Tone to Override Tone in YELP; press [MAN] again to revert back to WAIL tone. This Button will de-activate the [HF], [T2], [T3] and [RAD] upon activation.

- **(BTN8)** *T2 - YELP*

  Press once to activate or de-activate YELP tone and OUTPUT8. While in YELP tone, press [MAN] once to change Primary Siren Tone to Override Tone in PHASER (a.k.a PIERCER); press [MAN] again to revert back to YELP tone. This Button will de-activate the [HF], [T1], [T3] and [RAD] upon activation.

- **(BTN9)** *T3 - PHASER/PIERCER*

  Press once to activate or de-activate PHASER tone (a.k.a PIERCER) and OUTPUT8. While in PHASER tone, press [MAN] once to change Primary Siren Tone to Override Tone in HILO; press [MAN] again to revert back to PHASER tone. This Button will de-activate the [HF], [T1], [T2] and [RAD] upon activation.

- **(BTN10)** *RAD - RADIO REBROADCAST*

  Press once to activate or de-activate Radio Rebroadcast tone. This Button will de-activate the [HF], [T1], [T2] and [T3] upon activation.

- **(BTN11)** *TA - TRAFFIC ARROW*

  Press once to activate OUTPUT9 and LED indicator going left;
  press again to activate OUTPUT10 and LED indicator going right;
  press again to activate OUTPUT9, OUTPUT10 and LED indicator going left-right split;
  press again to activate OUTPUT11 and LED indicator flashing randomly;
  press again to OFF.

- **(BTN12~BTN14)** *SW12 ~14*

  Press once to activate or de-activate OUTPUT4, OUTPUT5, OUTPUT6.

- **(BTN15)** *POWER BUTTON (Sleep Mode)*

  This button allows unit to enter and exit the Sleep Mode. While in Sleep Mode, all function is ceased and unable to operate until the unit is turned back onto the Normal Operation Mode. To enter the Sleep Mode, while in Normal Operation Mode, long press on the Power Button. To exit the Sleep Mode for normal operation, while in Sleep Mode, short press on the Power Button.

● *QUICK REFERENCE*

ID	Default Function	Description
PTT	PTT	Push-To-Talk (Microphone/PA).
BTN15	NORMAL/SLEEP	Long press for Sleep Mode.
BTN1	CODE1	Activates OUTPUT1.
BTN2	CODE2	Activates OUTPUT2, CODE1.
BTN3	CODE3	Activates OUTPUT3, CODE2, CODE1 & TONE1.
BTN4	MAN	Activates MANUAL tone; or Override Tone; or Change HF Tone.
BTN5	AIR HORN	Activates AIRHORN tone.
BTN6	HANDS-FREE MODE	Enter HF Mode; press MAN button to cycle through HF Tone List.
BTN7	TONE1	Broadcasts WAIL tone; press MAN button for YELP.
BTN8	TONE2	Broadcasts YELP tone; press MAN button for PHASER (PIERCER).
BTN9	TONE3	Broadcasts PHASER (PIERCER) tone; press MAN button for HILO.
BTN10	RADIO	Activates Radio Rebroadcast through the siren speaker.
BTN11	TRAFFIC ARROW	Cycles through Traffic Arrow, Left (OUTPUT9) > Right (OUTPUT10) > Split (OUTPUT9&10) > Warning (OUTPUT11) > Off
BTN12	SW12	Activates OUTPUT4.
BTN13	SW13	Activates OUTPUT5.
BTN14	SW14	Activates OUTPUT6.
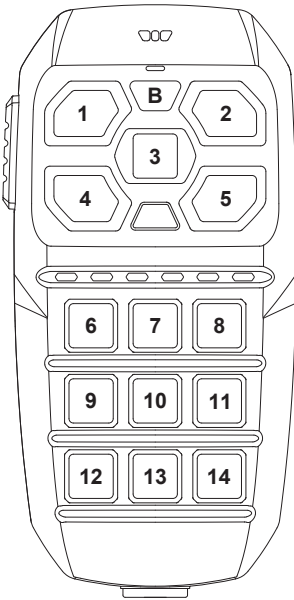
PC PROGRAMMING

All control buttons and function wires may be customized and re-programmed to user's preference for

Activation / Deactivation of,
 - Each button / input / output / buzzer / tone / TA indicator / backlight

Button modes,
 - General / MAN / HRT / HF / Dual Tone / Record-n-Play / Volume Button

Button backlight brightness,

Function precedence (priority),

Low voltage protection mode,

Shut Down delay

Shut Down Save Status,

Switch types,
 - Press ON, Release OFF / Press ON, Press OFF / Press ON, Double Press OFF / Press ON, Hold OFF / Press ON, Timer OFF / Double Press ON, Timer OFF

Tone Settings,
 - Primary Tone / Override Tone / Dual Tone
 - HF Tone List
 - Finish style

Volume,

**Voltage trip point for analogue input,**

and etc.

For more information about PC programming and Software, please refer to Software Manual or contact your sales representative.

INSTALLATION

Mounting

● *Siren amplifier*

1. Select a location that is not exposed directly to weather elements, such as the driver compartment firewall, below the seat, or in the trunk; avoid any interference of air bag deployment.
2. Using the siren amplifier as a template, mark four mounting holes to be drilled.
3. Drill four mounting holes for sheet metal screws.
4. Install the siren amplifier with provided sheet metal screws.
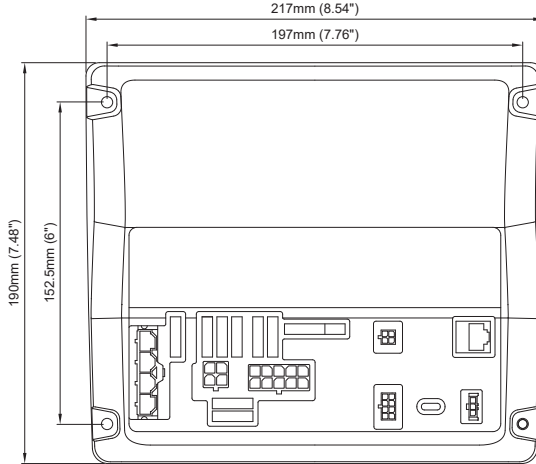
● *Controller clip*

1. Select a location where is convenient to the operator; avoid any interference of air bag deployment.
2. Using the mounting clip as a template, mark the two holes to be drilled.
3. Drill two mounting holes for sheet metal screws.
4. Install the microphone clip with provided sheet metal screws.
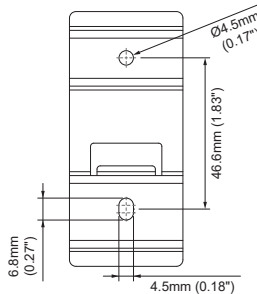
WARNING ⚠	**PINCH HAZARD** - Steel, iron and/or other ferrous objects may be attracted suddenly and forcefully to the magnets, creating the risk of pinch-type injuries. Keep all mild steel and iron tools and equipment well away from the magnets at all times.
	IMPORTANT! - Be certain to keep the controller away from the mounting location until you've cleaned up any metal shavings or other debris.

DIAGNOSTIC LEDS

Diagnostic LED
- D1 PWR
- D2 CAN
- D3 SPK1
- D4 SPK2
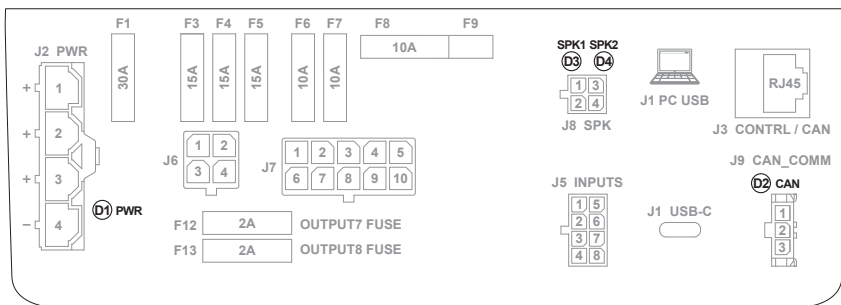
● (D1) *Power Indicator*

Steady ON	- Console powered normally.
Single Flash	- Low voltage protection in action; please check battery power. Input voltage should be above 11.25VDC.
Double Flash	- Over temperature protection in action, speaker is turned OFF for system safety; Please check check compartment ventilation. System should operate normally under 149°F (65°C).
OFF	- System power OFF or in Sleep Mode. Press BTN15 or activate IGN wire to power ON.

● (D2) *CAN Indicator*

Steady ON	- CAN communication normal; Controller signal normal.
Single Flash	- Controller abnormal; please check controller connection or setting.
Double Flash	- No CAN signal.
OFF	- System power OFF or in Sleep Mode.

● (D3) *SPK1 Indicator*

Steady ON	- Speaker channel normal. This status is checked during each activation of a siren tone.
Single Flash	- Speaker channel in low-power protection. Please check battery power. Input voltage should be above 11.25VDC.
Double Flash	- N.A.
OFF	- System power OFF or in Sleep Mode.
	- No speaker is connected.
	- Speaker shorted (possible shorted voice coil); please check and replace the speaker.

● (D3) *SPK1 Indicator*

Steady ON	- Speaker channel normal. This status is checked during each activation of a siren tone.
Single Flash	- Speaker channel in low-power protection. Please check battery power. Input voltage should be above 11.25VDC.
Double Flash	- N.A.
OFF	- System power OFF or in Sleep Mode.
	- No speaker is connected.
	- Speaker shorted (possible shorted voice coil); please check and replace the speaker.