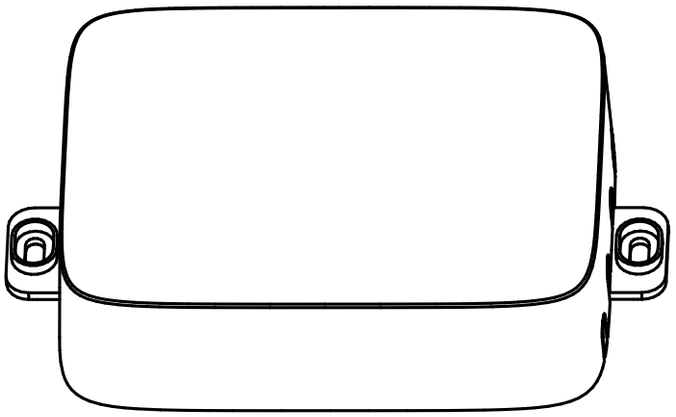
DURASTAR

Installation and Owner's Manual
24V THERMOSTAT INTERFACE MODULE
DR24VINT2



Model Number:

Serial Number:

Purchase Date:

Installing Contractor Company Name:

TIP

Capture relevant information about your Durastar mini-split equipment before it is installed and write it above for future reference.

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COMPATIBILITY CHART

This chart shows the compatibility and connection method of the DR24VINT2 with various indoor units.

	MODEL TYPE	COMPATIBILITY	CONNECTION METHOD
R-410A UNITS	DRAW_F1A	No	--
	DRAW_F1B	Yes	XYE/12V via DRPDRAWMFB1
	DRAC_F1A, DRAC24F1B	Yes	4-pin cable
	DRAL_F1A	Yes	4-pin cable
	DRAF_F1A	Yes	4-pin cable
	DRAS12F1A, DRAS12F1B	No	--
	DRAD_F1A	Yes	4-pin cable
R-454B UNITS	DRAW_F2A	Yes	XYE/12V
	DRAC_F2A	Yes	HA/HB
	DRAL_F2A	Yes	HA/HB
	DRAF_F2A	Yes	HA/HB
	DRAS_F2A	Yes	4-pin cable
	DRAD_F2A	Yes	HA/HB

NOTE

Please note that for connection to a DRAW_F1B wall unit, part number DRPDRAWMFB1 **must be ordered separately.**
For the DRAW_F2A wall unit the DRPDRAWMFB1 used for the XYE/12V connection is included in the unit.

INTRODUCTION

To better serve you, please do the following before contacting customer service:

- If you received a damaged product, immediately contact the retailer or dealer that sold you the product.
- Read and follow this manual carefully to help you install and use your thermostat.
- The troubleshooting section at the end of the manual may solve common problems. Contact a trained service provider if errors persist.
- Visit us on the web at www.durastar.com to download product guides and up-to-date information.
- If you need warranty service, our friendly customer service representatives are available via email at questions@durastar.com or by telephone at 1-888-320-0706.

SAFETY WARNINGS

- It is recommended that a professional install this interface module. Improper installation could lead to abnormal operation, electric shock, or fire.
- Use the wiring specified in this manual.
- The shielded wire must be grounded.
- The thermostat operates on a low voltage circuit loop. DO NOT connect a 115V, 220V or 380V cable to the circuit loop.
- DO NOT use an ohmmeter to detect the insulation after wiring the thermostat.
- DO NOT install the thermostat near flammable liquids or gases. Doing so creates a fire hazard.
- DO NOT operate the unit with wet hands, as this could lead to electrical shock.
- DO NOT remove the cover or touch the interior parts of the remote control.

INCLUDED ACCESSORIES

The following items are included in the kit:

ACCESSORY	QTY	NOTES
Installation and Owner's Manual	1	----
DR24VINT2 Interface	1	----
M4 x 25 Mounting Screws	2	Used to mount the interface
Wall Anchors	2	----
M4x8 Screw	1	For grounding the DRPDRSTATEXT1 wire
T1 Temperature Sensor	1	
DRPDRSTATXYE	1	Used for connecting to DRPDRAWMFB1 board
DRPDRSTATADPT1	1	Blue plug wire that connects to the interface
DRPDRSTATADPT2	1	Red plug adapter that connects between DRPDRSTATADPT1 and board (only some units)

Field Supplied Installation Accessories

The following installation accessories are required and must be purchased separately.

- Transformer
- Switch box
- DRPDRSTATEXT1 (20' (6m) wire extension if necessary)
- DRPDRAWMFB1 (if installing with a DRAWxxF1B indoor unit)

Optional Accessories

The following installation accessories are optional and can be purchased separately.

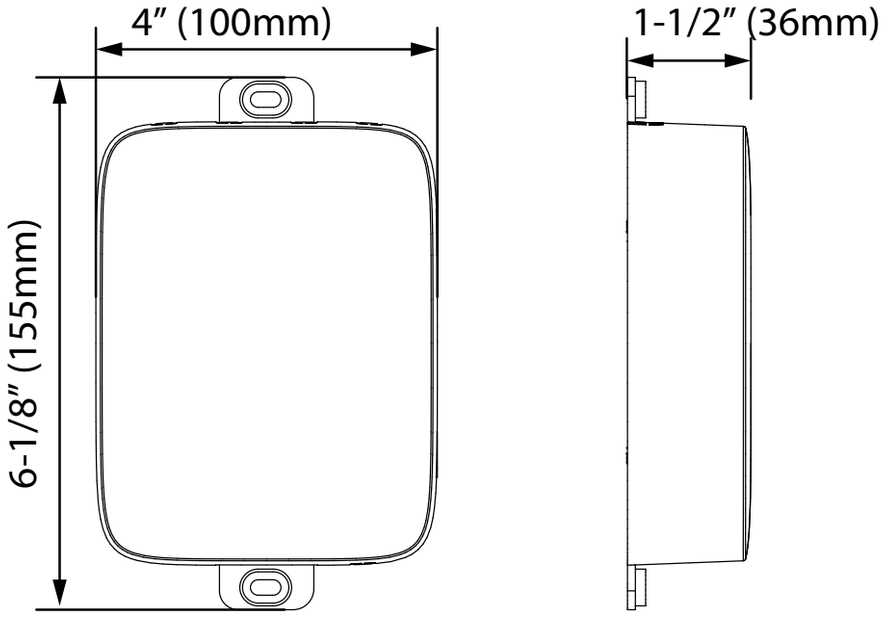
- Putty

Tools Needed

The following tools are required for installation.

- Phillips screwdriver
- Flat head thermostat screwdriver
- Drill

DIMENSIONS



SPECIFICATIONS

Input Voltage	5V – 12V
Ambient Temperature	23 – 110°F (–5 – 43°C)
Ambient Humidity	40–90% RH
4–Pin Connection Max Length	65 ft (20m)
Non–Polar 2–Conductor Wire Gauge	16 AWG – 20 AWG*
HA/HB Non–Polar 2–Conductor Wire Max Length	65 ft (20m) max length

*On new installations or if you experience communication interference, it is strongly suggested to use 16 AWG stranded, shielded wire.

INSTALLATION CONSIDERATIONS

Before installing the interface, consider the following requirements.

DO NOT mount the interface:

- Anywhere the interface module can get wet
- Near heat sources, like electrical devices, dimmer switches, heaters, or direct sunlight
- Close to windows, on outside walls, or by doors leading outside
- Near curtains or shelves that might restrict air movement
- Where the unit's discharge airflow will blow on the module

WARNING

Electrical shock can cause personal injury or death. Before installing the thermostat, shut off all power to this equipment. There may be more than one power disconnect. Tag all disconnect locations to alert others not to restore power until work is completed.

CAUTION

Failure to follow this caution may result in equipment damage or improper operation. Improper wiring or installation may damage the thermostat. Check to make sure wiring is correct before proceeding with installation or turning on unit.

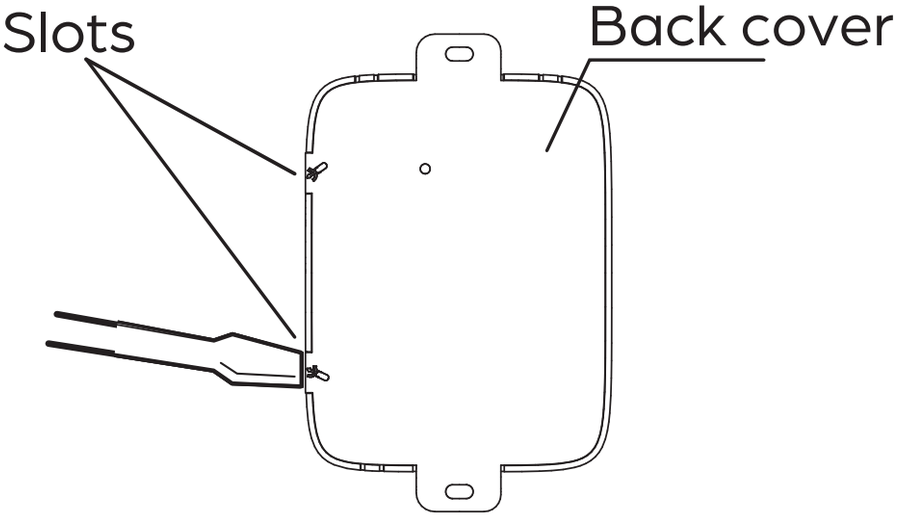
MOUNTING THE INTERFACE

Review the steps to connect the interface to help determine placement.

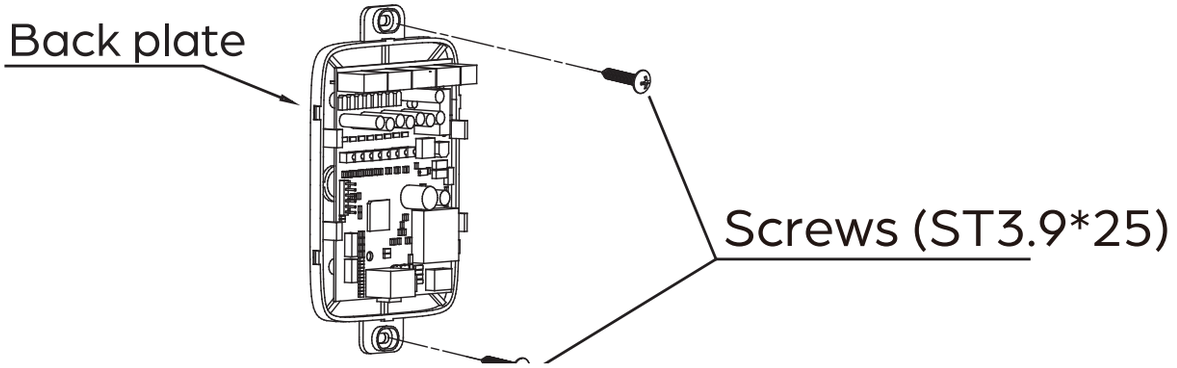
NOTE

The interface can be surface mounted with an exposed wire. Take into consideration a field supplied transformer must be used to supply power when determining mounting location. Follow NEC and local codes for your area.

1. Remove the top panel of the interface by inserting a screwdriver into the two slots on the bottom and twisting. Be careful not to break the tabs on the cover and do not pry up and down with the screwdriver.



2. Mount the back plate of the interface to the wall with two screws. Use anchors provided if necessary. Do not overtighten.

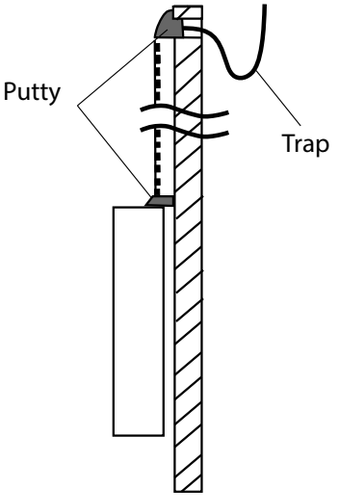


CAUTION

Over-tightening the screw will cause deformation to the rear cover and control board damage.

NOTE

In order to prevent water or condensation getting into the interface, we recommend making a loop with the wire or using putty.



WIRING THE INTERFACE

WARNING

Wiring should only be completed by trained technicians. Make sure power is disconnected before working on the unit. Injury or death may occur. Wire the interface according to the wiring diagram in this manual and local codes.

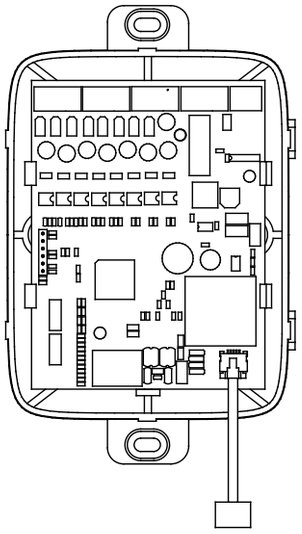
Determine the Transformer Location

This interface module requires 24V power via a transformer (field supplied). Power to this transformer can either come from the L1 and L2 terminals on the indoor unit or a separate power supply. See the wiring diagram for proper installation.

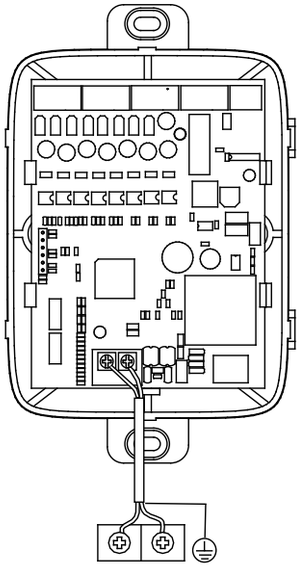
Connect the Interface to the Indoor Unit

There are several methods to connect this interface module depending on which indoor unit is being connected. Refer to the indoor unit model and the compatibility table on page 3 for guidance.

4–Pin Molex or
XYE/12V Cable



Non–polar 2–wire
HA / HB



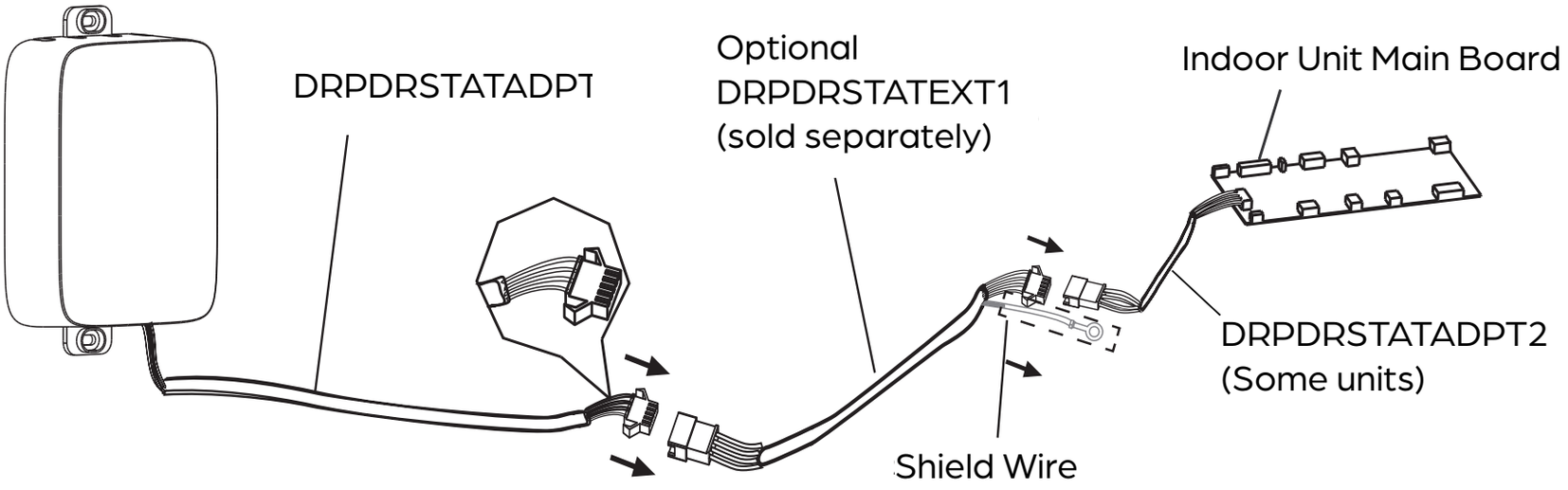
Using Provided 4–Pin Connecting Cables

Using the wires and adapters provided, connect the interface to the indoor unit's board. Connection methods will differ depending on the indoor unit model. Reference the chart on page 3 to determine which method to use.

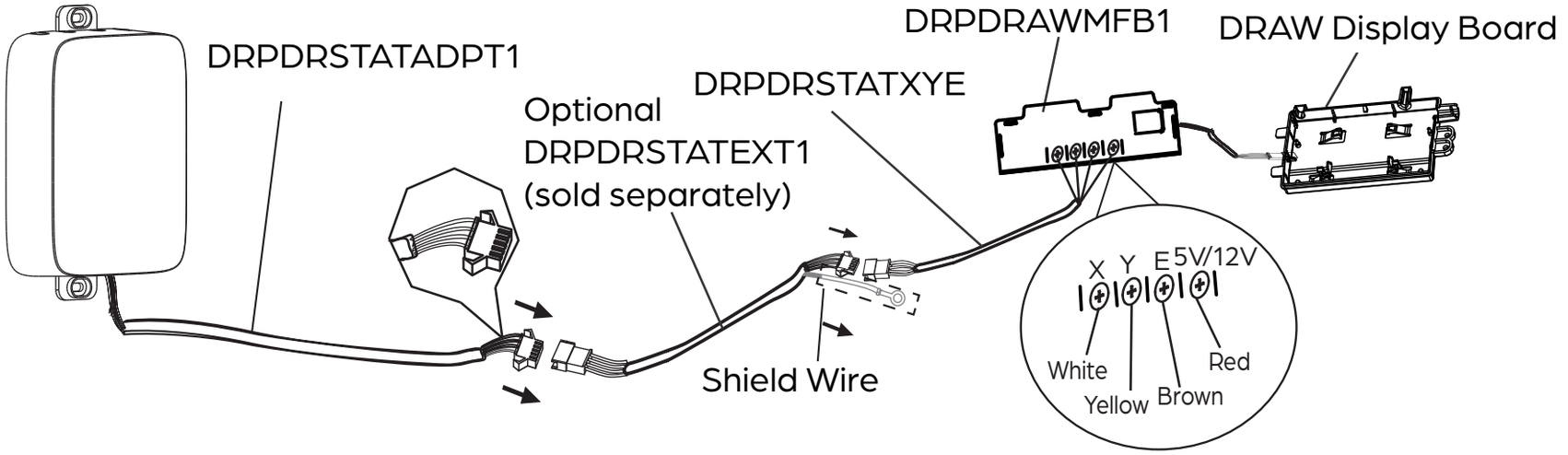
NOTE

It is suggested to use only use one 20' DRPDRSTATEXT1 wire extension (sold separately) if it is necessary to extend the wire.

4–pin Cable Connection Method



XYE/12V Connection Method for DRAW_F1B High Wall Indoor Units (DRPDRAWMFB1 purchased separately) and DRAW_F2A High Wall (DRPDRAWMFB1 included)

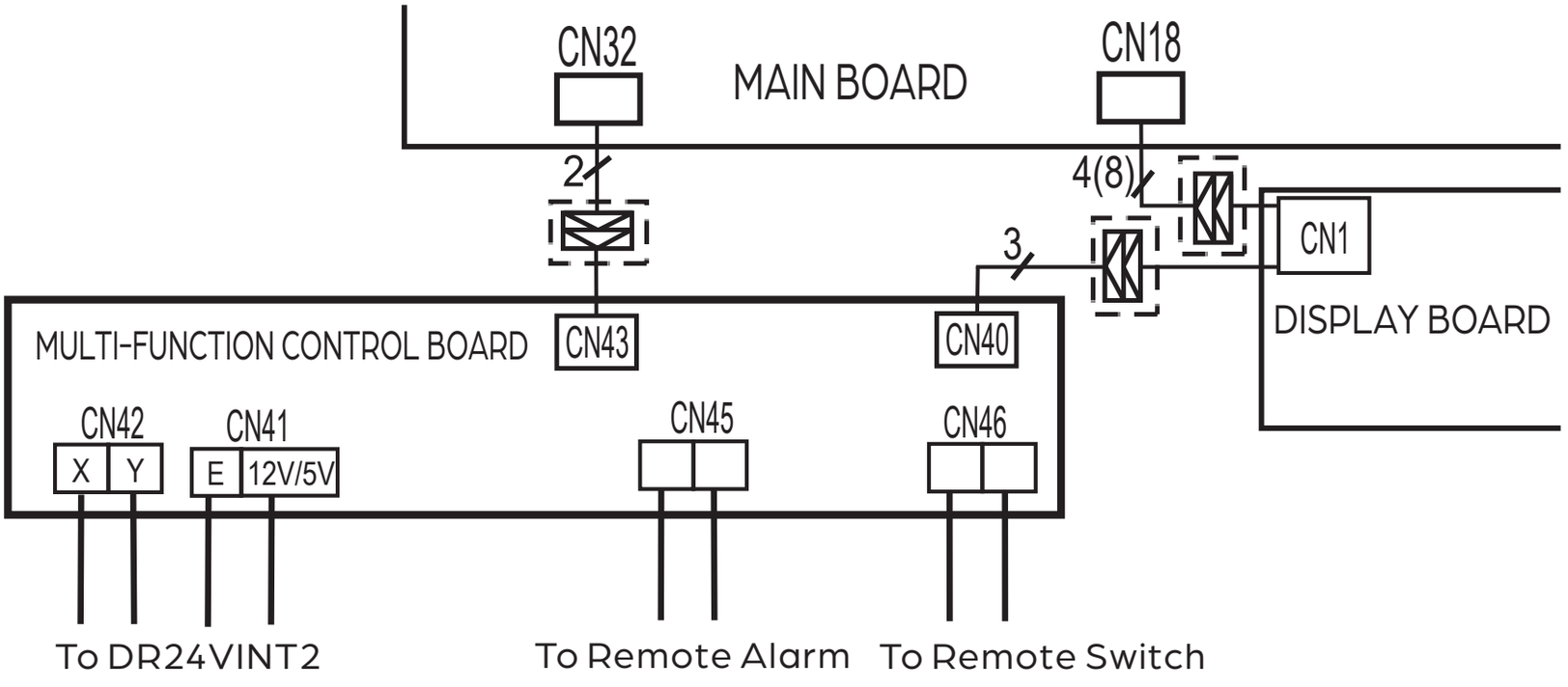


Installing the DRPDRAWMFB1 Multifunction Board (For DRAWxxF1B units)

Included Parts

- DRPDRAWMFB1
- 2-wire cable
- 7-wire branching cable (7-pin plug to a 3-pin plug and 4-pin plug)

Wiring Diagram

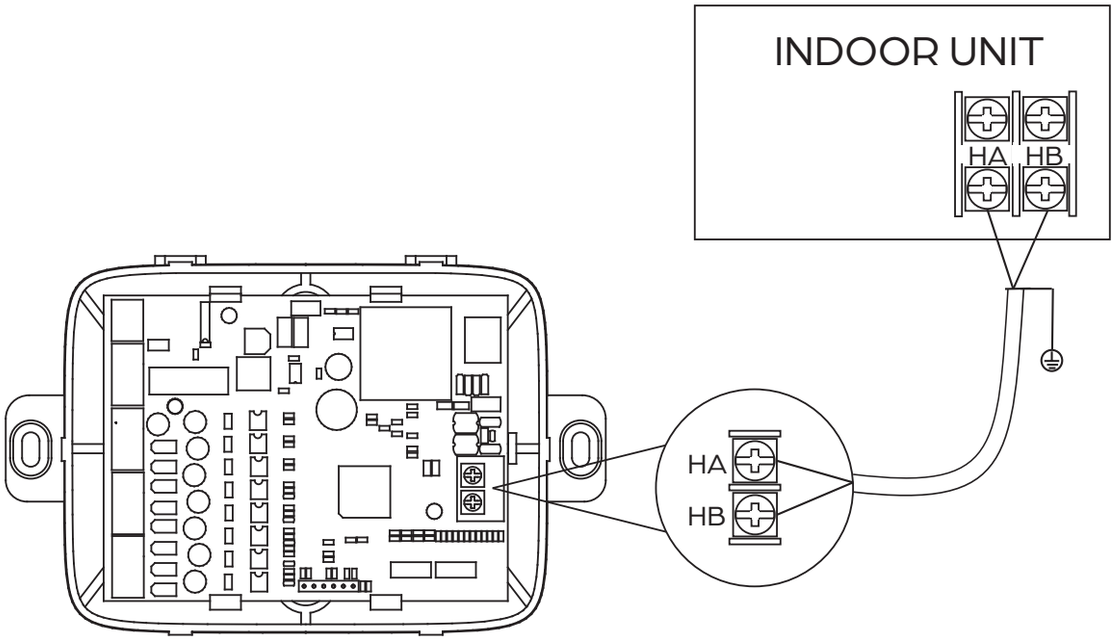


Installation Steps

1. Open the front cover of the unit.
2. Mount the multifunction board to mounting location built into the inside of the front cover of the wall unit.
3. Unplug and remove the 7-pin (4-wire) cable from CN1 on the display board to the 4-pin connecting jack. Leave the wire coming from the main control board in place. The wire that was removed can be discarded.
4. Using the branching cable provided, plug the 7-pin plug coming into CN1 on the display board. Plug the 3-wire plug into CN40 on the multifunction board into the display board. Plug the male 4-wire plug into the female 4-wire cable leading to the main control board.
5. Plug the 2-wire cable provided into the 2-pin (yellow/brown) wire coming from port CN32 on the main board and then into port CN43 on the multifunction board.
6. Feed the wires through the channels on the indoor unit to avoid crimping the wires when closing the front cover.

Using the Non–polar 2–Wire Connection (HA/HB)

This method can be used on models with HA/HB ports included on the indoor board. Use field supplied wire according to the specifications listed in the Wire Specifications chart. Connect the HA/HB ports on the thermostat to the HA/HB ports on the indoor unit depending on your chosen application. The HA/HB ports do not have polarity.

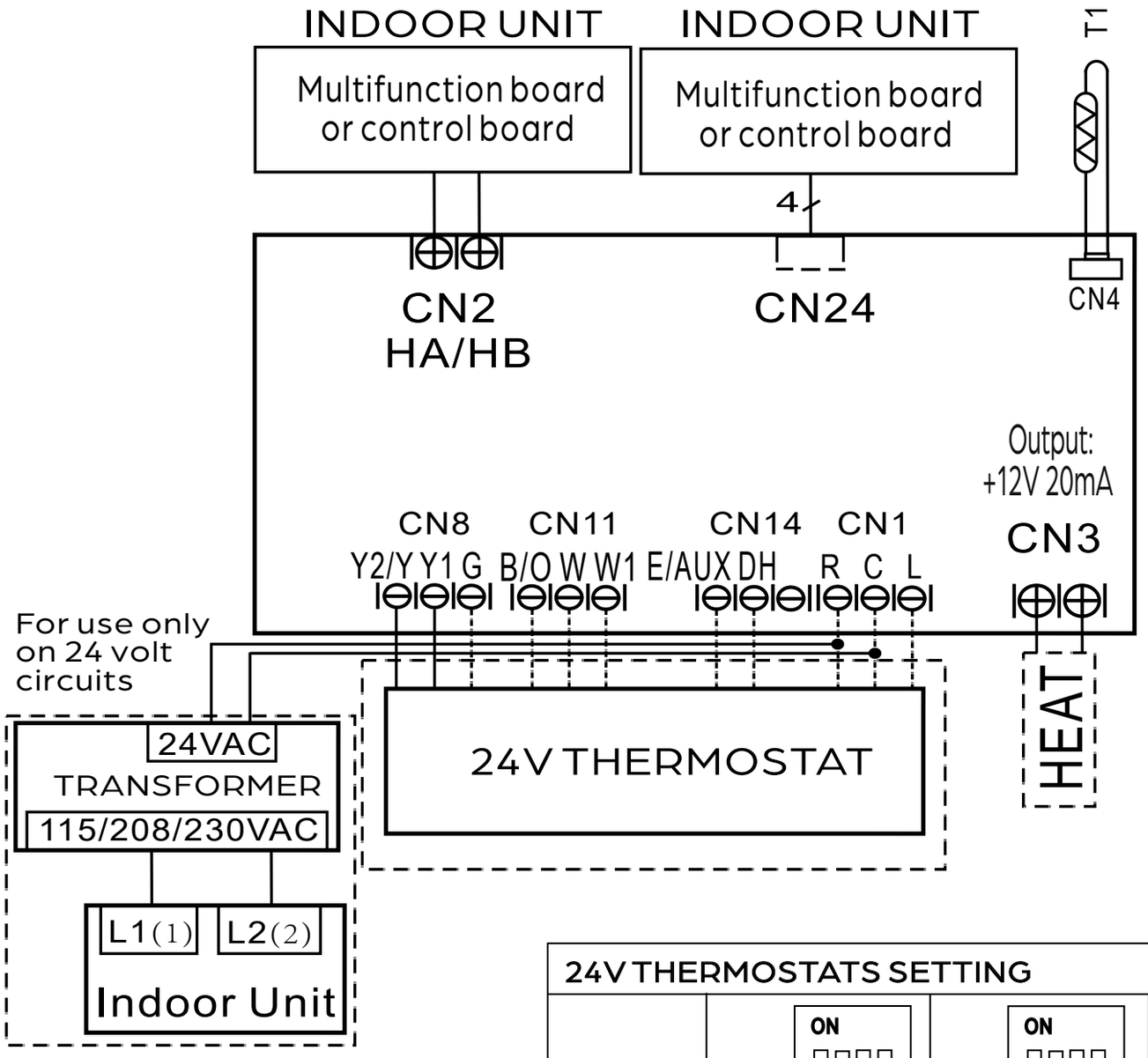


INTERFACE MODULE

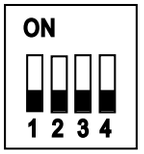
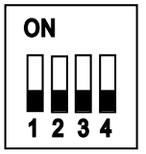
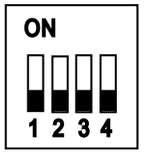
NOTE

The maximum is 65ft (20m). For the best communication, use 16 AWG stranded shielded wire, grounding the shield as seen above.

WIRING DIAGRAM



1. [ ] This symbol indicates the element is optional and not provided.

24V THERMOSTATS SETTING			
	SW1 	SW2 	SW3 
Code	ON~OFF	ON~OFF	ON~OFF
DEFAULT SETTING	OFF	OFF	OFF

NOTE

The T1 room temperature sensor must be placed in the indoor space to detect the ambient temperature of the room and plugged into CN4.

Notes on Operation

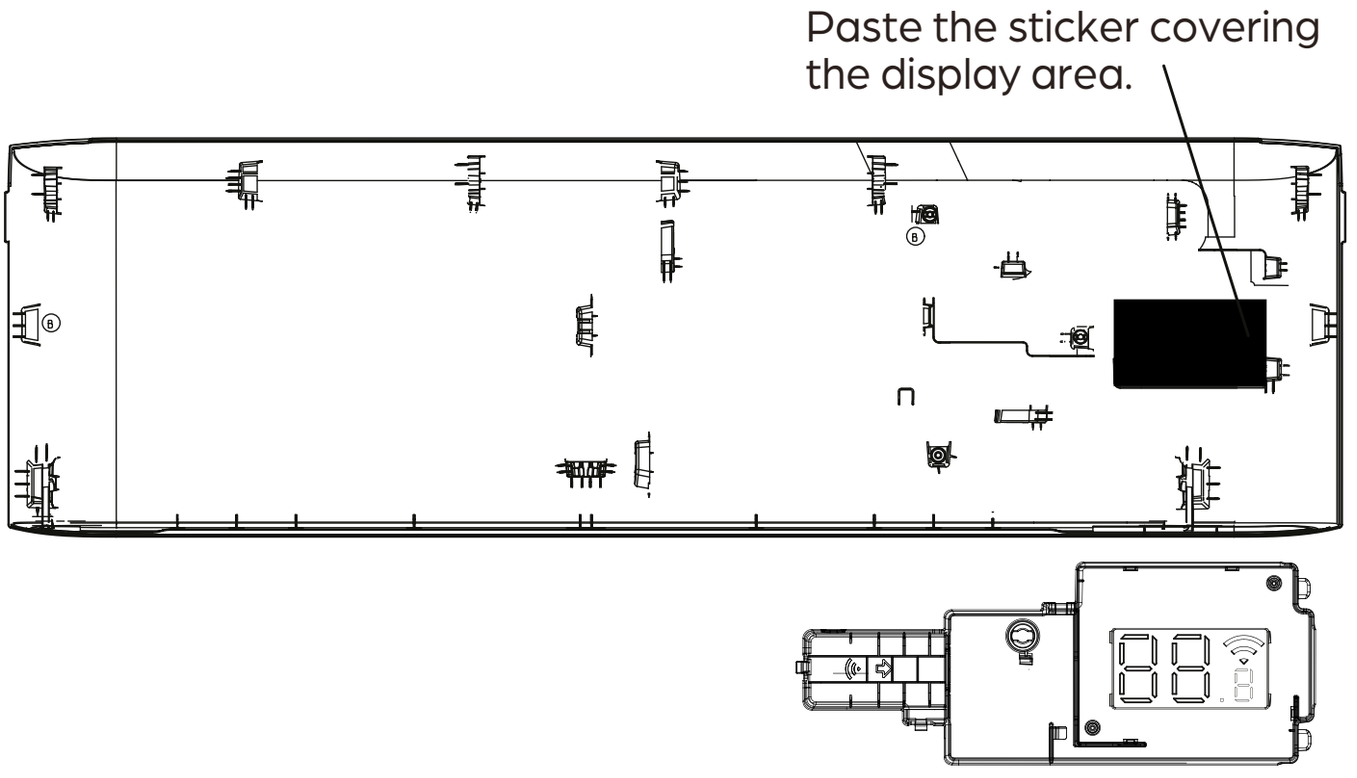
1. When the 24V thermostat is used to control a single zone unit, and the thermostat changes from the heating mode (or heating & electric heating mode) to the FAN mode, the fan of the indoor unit may stop running until the indoor unit evaporator normalizes temperature. This is because the indoor unit is still running in heating mode and the anti-cold air function is active.
2. When the user uses the thermostat to control a multi-zone unit and the thermostat mode is changed from the heating mode (or heating & electric heating mode) to the FAN mode, the fan of indoor unit may stop running.
3. When the 24V thermostat is set to auxiliary heating mode, the indoor unit will continue to run in heat mode if it does not have a heater.
4. When the 24V thermostat is connected to control the unit, the remote control can only be used for the SWING function and can not be used for other functions.

COVER THE UNIT DISPLAY

The indoor LED display may not show the same temperature displayed and set by the thermostat.

Also, when the indoor LED display set to OFF and the 24V thermostat is in use, the indoor unit LED display will be ON for 15 seconds every 5 minutes.

Cover the indoor unit's display board with a sticker on the backside of the panel and use the 24V thermostat display only.



LED DISPLAY INDICATORS

The following is a list of possible indicators that may appear on the indoor unit's display panel. Not all the display indicators may be available on the unit purchased.

Connector	Purpose
R	24V Power Connection
C	Common
G	Fan Control
Y1	Low Cooling
Y/Y2	High Cooling
B	Heating Reversing Valve
W	Heating Control
W1	Stage 1 Electric Heating
E/AUX	Emergency Heating
DH	Dry (Dehumidification)
L	System Fault Signal (output)
Output Terminal 12V	12V Output to Drive Aux Heating Relay

AUX HEATING (OPTIONAL)

The CN3 terminals on the interface module can be used for an auxiliary heating connection (such base board heating). Use the 12V DC output to connect to a single pole single throw DC relay (field supplied) then connect to the auxiliary heat source.

Algorithm:

The contact closes when the ambient temperature drops either 2^0F (1^0C) (default) or 4^0F (2^0C) below the set point (as set by DIP switch SW3-3).

The contact opens when the temperature rises and reaches the set point. In cooling or fan mode the contact is always open.

SETTING OPTIMAL RUN SWITCHES

The following dip switches MUST BE ADJUSTED IN SINGLE ZONE APPLICATIONS depending on the type of unit being used.

SW2–4	SW3–4	Unit Connected
ON	N/A	All DRAW, All DRAL, DRAS_F2B, DRAC24F1B, DRAC_F2A
OFF	OFF	Default
OFF	ON	All DRAD, All DRAF, DRAC_F1A

NOTE

If the indoor unit is in a multi-zone applications SW2-3 must be switched ON.

DIP SWITCH SETTINGS

CAUTION

DIP switch settings should only be changed by trained technicians. Irregular unit operation or unit damage could occur if switches are improperly set. VERIFY PROPER SETTINGS!

Cooling Fan Speed					
SW1–1	OFF	OFF	OFF	OFF	ON
SW1–2	OFF	OFF	ON	ON	OFF
SW1–3	OFF	ON	OFF	ON	OFF
Function	Auto Fan (Default)	Low	Middle	High	Turbo

Heating Fan Speed					
SW1–4	OFF	OFF	OFF	OFF	ON
SW2–1	OFF	OFF	ON	ON	OFF
SW2–2	OFF	ON	OFF	ON	OFF
Function	Auto Fan (Default)	Low	Middle	High	Turbo

Switch	Function	ON	OFF (DEFAULT)	Note
SW2–3	Multi–zone or Single Zone	Multi–zone	Single zone	
SW2–4	Split selective dialling code 1	See Optimal Run Switches Table	See Optimal Run Switches Table	Not needed in multi–zone (if SW2–3 is ON)
SW3–1	Heating with zone control and dehumidify	Available	Not available	
SW3–2	Time till call to run faster for temp not satisfying	60 minutes	30 minutes	
SW3–3	Heat demand output gap compare with ambient temperature	2°F (1°C)	4°F (2°C)	
SW3–4	Split selective dialling code 2	See Optimal Run Switches Table	See Optimal Run Switches Table	Not needed in multi–zone (if SW2–3 is ON)

24V SIGNAL CHART

Mode	Priority	G	Y1	Y2	B/O	W	W1	E/ AUX	DH	Fan Speed	Note
OFF	/	0	0	0	0	0	0	0	*	OFF	
FAN	6	1	0	0	*	0	0	0	*	Low	Note 1
Cooling stage 1	5	*	1	0	0	0	0	0	*	Switch Setting	
Cooling stage 2		*	*	1	0	0	0	0	*	Switch Setting	
Heat pump stage 1	4	*	1	0	1	0	0	0	*	Switch Setting	
Heat pump stage 2		*	*	1	1	0	0	0	*	Switch Setting	
Heat pump stage 2		*	*	*	*	1	0	0	*	Switch Setting	
Electric heater kit 1	2	*	0	0	*	0	1	0	*	Turbo	Note 2

Note 1: (a) For a multizone indoor unit, when the heating mode is switched to the fan mode, the fan of indoor unit will stop running. (b) For a single zone indoor unit, when the heating mode is switched to the fan mode, the anti-cold-air function is active. (c) When the OFF mode or cooling mode are transferred to the fan mode, the fan of indoor unit will run in low speed.

Mode	Priority	G	Y1	Y2	B/O	W	W1	E/ AUX	DH	Fan Speed	Note
Heat pump stage 1 + Electric heater kit 1	3	*	1	0	1	0	1	0	*	Turbo	Note 3
Heat pump stage 2 + Electric heater kit 1		*	*	1	1	0	1	0	*	Turbo	Note 3
Heat pump stage 2 + Electric heater kit 1		*	*	*	*	1	1	0	*	Turbo	Note 3
Emergency heat	1	*	*	*	*	*	*	1	*	Turbo	Note 2

Note 2: When the indoor unit does not support auxiliary heating only mode, the indoor unit operates in heating mode.

Note 3: When the indoor unit does not have the electric auxiliary heating function, the indoor unit operates in heating mode.

LIMITED WARRANTY – PARTS

This Limited Warranty applies to Covered Equipment manufactured on or after November 1st, 2024.

COVERED EQUIPMENT is defined by the following model number categories: DRA1_S2A, DRA3_M2A, DRA4_M2A, DRA5_M2A, DRA6_M2A, DRU1_S2A, DRAC_F2A, DRAD_F2A, DRAF_F2A, DRAL_F2A, DRAM_F2A, DRAS_F2A, DRAW_F2A, DRUM_S2A.
Durastar accessories installed with Covered Equipment carry the balance of the Covered Equipment warranty.

BASE RESIDENTIAL WARRANTY: SEVEN (7) YEARS PARTS
Subject to the terms of this Limited Warranty, Manufacturer will repair or replace, at its option, any part of the Covered Equipment that is found to be defective in material or workmanship.

Covered Equipment Parts are warranted to be free from defects in material and workmanship for a period of seven (7) years from the date of installation, under normal use and service. Durastar will, at its option, repair or replace any part determined by Durastar to be defective. Replacement parts carry the balance of the original parts warranty. If an exact replacement part is not available, an equivalent part or credit will be provided.

To qualify:

- The Covered Equipment must be installed in a residential single-family home.*
- The Covered Equipment must be properly installed by a licensed HVAC professional pursuant to all local and state laws.
- Any part to be replaced must be made available to Durastar in exchange for the replacement.

*Single-family home is defined as any single-family dwelling, which includes apartments, condominiums, duplexes, and homes.

BASE COMMERCIAL WARRANTY: TWO (2) YEAR PARTS
Subject to the terms of this Limited Warranty, Covered Equipment installed in commercial applications are warranted against defects in material and workmanship for a period of TWO (2) YEARS.

REGISTERED WARRANTY
Parts for Covered Equipment that is registered by the purchaser online within ninety (90) days of the original installation date shall be warranted for an extended period subject to the terms in this Limited Warranty. Any Covered Equipment not properly registered within the ninety (90) day registration window will be subject to the base warranty terms outlined herein. To register your Covered Equipment online, go to: www.durastar.com/warranty-registration

Registered Residential Warranty: TEN (10) years
Registered Commercial Warranty: FIVE (5) years

FLORIDA, TEXAS, AND CALIFORNIA RESIDENTS ONLY: Failure to register Covered Equipment does not diminish or decrease your limited warranty length. Covered Equipment will receive the full REGISTERED WARRANTY terms.

EFFECTIVE DATE OF WARRANTY
The Effective Date of warranty coverage is determined as follows: (a) If the original installation date can be verified by the installer's invoice then the Effective Date of warranty coverage is the original installation date as shown on the installer's invoice. For residential new construction installations, the final occupancy permit, or proof of purchase from the builder can be substituted for the installer's invoice. (b) if the original installation date cannot be verified by the installer's invoice, or

proof of purchase from the builder in residential new construction applications, then the Effective Date of warranty coverage is the Covered Equipment's manufacture date (as verified by the product's serial number) plus ninety (90) days.

LIMITATIONS

There is NO LABOR component provided with this warranty. This Limited Warranty does NOT cover any labor costs or expenses for service, NOR for removing or reinstalling parts.

This Limited Warranty does NOT cover shipping costs for warranty replacement parts from our factory to the Manufacturer's distributor or from the distributor to the location of your Covered Equipment. You also are responsible for the cost of shipping allegedly defective parts to the distributor and for incidental costs incurred locally, including handling charges. (If in Alaska, Hawaii or Canada, you also must pay the shipping costs of returning the failed part to the port of entry into the continental United States.)

Manufacturer's Liability hereunder is limited to the repair or replacement of Covered Equipment Parts, and in no event shall exceed the value of the original Covered Equipment Purchase Price. Liability for incidental, consequential or special damages are specifically excluded.

EXCLUSIONS

In addition to the other exclusions identified in this Limited Warranty, this Limited Warranty excludes:

- Damages, malfunctions, or failures resulting from failure to properly install, operate, or maintain Covered Equipment in accordance with the Manufacturer's instructions.
- Damages, malfunctions, or failures resulting from misuse, accident,

contaminated, or corrosive atmosphere, vandalism, freight damage, fire, flood, freeze, lightning, acts of war, acts of God and the like.

- Non-original parts installed with Covered Equipment or used in connection with normal maintenance, such as cleaning or replacing air filters, refrigerant, thermostats, tubing, or concrete pads.
- Covered Equipment that is not installed in the United States.
- Covered Equipment that is not installed by a qualified, trained or licensed HVAC professional in accordance with applicable codes, ordinances, and good trade practices.
- Damages, malfunctions, or failures resulting from the use of any attachment, accessory, or component not authorized by the Manufacturer or resulting from alteration or modification of the unit.
- Covered Equipment moved from the original installation location.
- Covered Equipment when operated with system components (indoor unit, outdoor unit, coil, and refrigerant control devices) or accessories which do not match or meet the specifications recommended by the Manufacturer.
- Any Covered Equipment manufactured that has been sold to the consumer via the Internet or auction website, and has not been installed by a trained, qualified HVAC professional.
- Covered Equipment that is not part of a properly matched system as specified by the Air Conditioning, Heating & Refrigeration Institute (AHRI).

OBTAINING WARRANTY SERVICE

If you believe your Covered Equipment is defective, contact the licensed contractor who installed your mini-split system. Alternatively, contact a licensed contractor, dealer, or distributor.

Durastar Customer Support is available for troubleshooting assistance. Before contacting Customer Support, please locate your model number, serial number, and proof of purchase. These items will be required to complete any warranty service. A Durastar authorized representative will verify warranty eligibility and determine appropriate service options. Service will be provided during normal business hours.

The warranty claim must be submitted at www.durastar.com/warranty-claim by the servicing contractor within 90 DAYS after the date of service in order for the warranty to be approved. The service invoice and/or return of parts may be requested to verify eligibility.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT ANY IMPLIED WARRANTY IS REQUIRED BY LAW, IT IS LIMITED IN DURATION TO THE EXPRESS WARRANTY PERIOD ABOVE. NEITHER THE MANUFACTURER NOR ITS DISTRIBUTORS SHALL BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY NATURE, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR PROFITS, OR ANY OTHER DAMAGE WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. IN NO EVENT AND UNDER NO CIRCUMSTANCE OF ANY TYPE OR KIND SHALL THE SELLER, MANUFACTURER AND/OR DISTRIBUTOR BE LIABLE FOR ANY REASON, UNDER ANY THEORY, FOR MORE THAN THE BASIC COST OF THE PRODUCT TO THE PURCHASER OR END USER. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.