GPRS & HSRS Smart Controllers

Mini-Guide

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Introduction:

This guide contains introductory setup and configuration information. It contains limited detail and is intended for use only by qualified technicians who possess prior knowledge of GPRS and HSRS setup and operation. **If you are unfamiliar with these devices, you are strongly advised to consult the full user manual for complete details.** You may view and/or print the manual via the following website link:

http://www.kadtronix.com/downloads/gprs_user_man3.pdf

Information in this guide is applicable to the Kadtronix family of smart relay controllers. Applicable devices include the following models:

- General Purpose Relay Switch (GPRS)
- HVAC Smart Relay Switch (HSRS)

These controllers provide sensor-activated remote control capability for devices and equipment. Onboard relay with SPDT contacts provides switching for loads up to 10A @250VAC. Wired and/or wireless sensors may be employed.

WARNING: Only a qualified technician should attempt to perform the setup and installation instructions contained in this guide. Your warranty may be voided if damage occurs due to improper installation.

Configuration Settings:

There are two sets of configuration DIP switches (labelled DSW1 & DSW2) which must be properly configured before use. Recommended switch settings will vary depending on the application as there are literally thousands of possible settings combinations. Two common default settings are listed below. The first allows for both wired and wireless sensor operation. The second supports only wireless sensors, disabling wired sensor operation. (Both settings define immediate trigger activation and de-activation time periods.)

```
            DSW1:             DSW2:
            --------------    --------------
            1 2 3 4 5 6 7 8   1 2 3 4 5 6 7 8
            --------------    --------------
    Both:   0 0 0 0 0 0 0 0   0 0 0 0 0 0 0 0   [All switches OFF]
Wireless:   0 0 0 0 1 0 0 1   0 0 0 0 0 0 0 0
```

Note: An indicated '0' digit means the specified DIP switch is "off". A '1' digit means the switch is "on".

Delay Timing:

The system can be configured to invoke a delay so that relay trigger activation (i.e., equipment shutoff) will not occur until the specified time period has elapsed. DSW1 switches 1 through 4 establish the desired delay. The listing below provides definitions for several available delay settings. (Consult the full user manual for detailed settings and options.)

	DSW1:			
	1	2	3	4
1 min:	1	0	1	0
2 min:	0	1	1	0
5 min:	1	1	1	0
10 min:	0	0	0	1

Notes:

1) A '0' digit means the specified DIP switch is "off". '1' means the switch is "on".
2) You may also optionally configure a post-shutoff reactivation delay using switches 1, 2, 3, 4 at DSW2. Desired delay values follow the same convention as described for DSW1.

Terminal Block Wiring Connections:

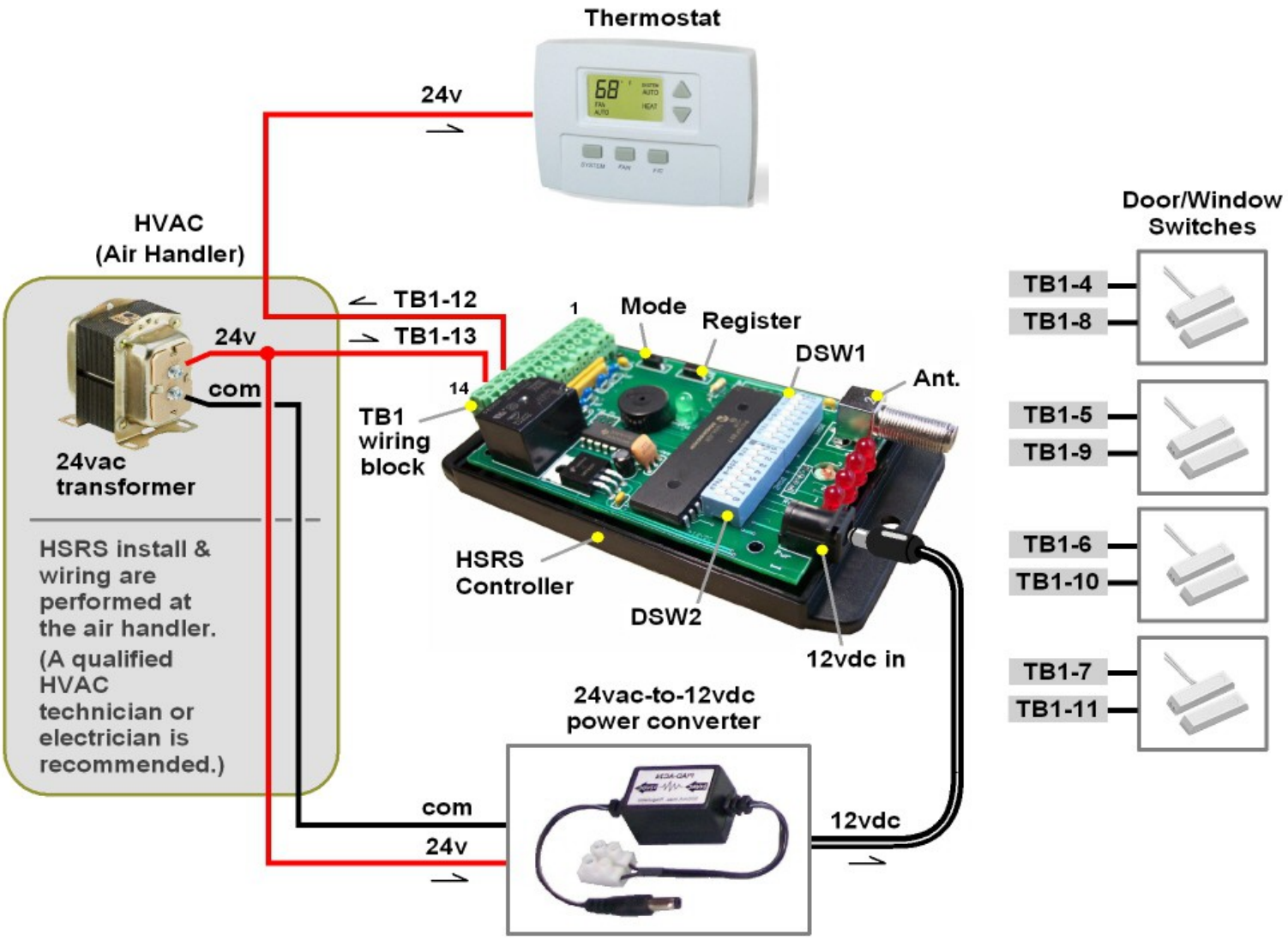
The controller provides screw terminal connections for wiring purposes:

1) +12VDC power in/out
2) Ground
3) Reserved
4) Wired Sensor #1
5) Wired Sensor #2
6) Wired Sensor #3
7) Wired Sensor #4
8) Wired Sensor return
9) Wired Sensor return
10) Wired Sensor return
11) Wired Sensor return
12) Relay - COM
13) Relay - N/C
14) Relay - N/O

Notes: 1) For wired-sensor applications, any unused sensor inputs should be disabled with a short jumper wire to the appropriate return.
2) Please consult the user manual for complete wiring explanations. (See website link above.)
3) ***WARNING***: For wireless applications, avoid contacting the antenna and/or mounting bracket with any grounded object such as the HVAC chassis, water heater, laundry equipment, or metal wall studs.
4) For proper signal reception, antenna must **NOT** be located near metal equipment or appliances. Do **NOT** install within a metal chassis or enclosure.
5) If you encounter any issues during or after the install, please contact Kadtronix technical support (321-757-9280) for on-site assistance. Please do not return the product without authorization - proper troubleshooting and/or problem resolution may be impossible once the unit has been removed from service.

Sample Wiring - HVAC Shutoff

(with wired door/window switches)



Applying Wireless Sensor to a Metal Door or Patio Door:

Wireless door sensor operation can be adversely affected when affixed to a metal door or metal-frame opening such as a patio door. Prior to mounting the unit, the sensor may operate flawlessly. But once applied to the metal surface, there may be little, if any, detected signal at the controller / receiver.

IMPORTANT: The receiving antenna should be located at ceiling height and oriented vertically. Ensure 3 ft. separation (minimum) from HVAC equipment, metal shelving, plumbing, conduits, electronic devices, appliances, etc. An improperly located antenna may result in poor signal reception and marginal system performance.

Option 1: Direct attach (traditional mounting)

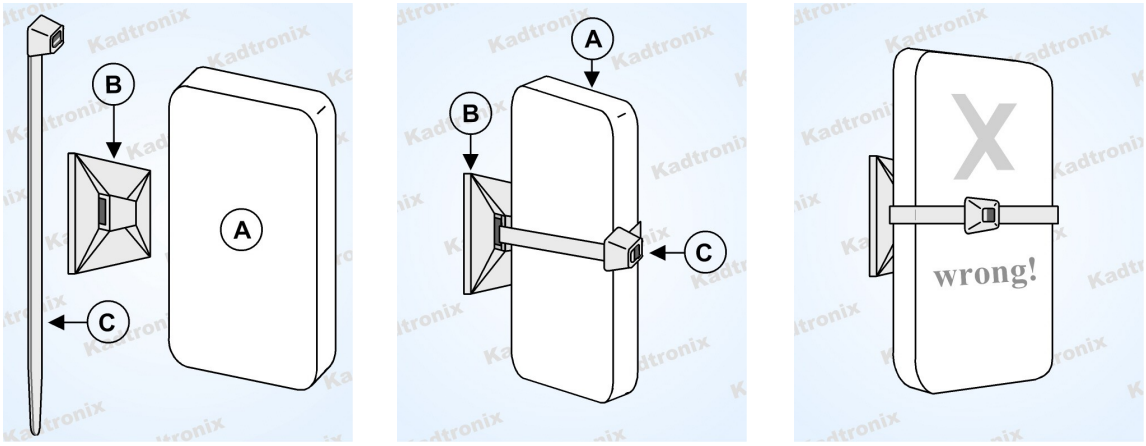
In many instances, the problem can be resolved with a minor relocation adjustment of the sensor (& magnet). Sometimes, an inch or two in one direction or the other can make a huge impact. A few minutes of patient trial-and-error may be required. (Hint: Use masking tape for temporary attachment to the intended surface, avoiding use of the 3M adhesive backing until you achieve consistent and reliable results at the controller/receiver.) If results continue to produce poor or marginal results after multiple re-positioning attempts, proceed to Option 2.

Option 2: Re-orient sensor (pivot method)

Consider adjusting the sensor orientation, pivoting the device 90-degrees, away from the metal surface. In order to achieve this new orientation, a custom "side-mount" attachment will be necessary as shown below:

Custom "side-mount" (using nylon fasteners)

(A = door sensor, B = cable-tie mount, C = zip tie)



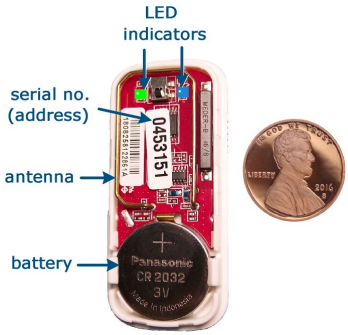
Apply cable-tie mount to the sensor as shown, securing with a zip tie. Ensure the orientation allows for proper detection of the external magnet. (The magnetic sensing side should face outward, away from the mount.) Do not apply the cable-tie's 3M adhesive backing at this time. Instead, use masking tape to temporarily affix assembly (sensor + custom mount) to the intended surface, allowing for easy re-positioning. Hint: Trial-and-error tests will be necessary to determine the best locations for the sensor assembly and magnet.

Notes:
1) Cable-tie mount and zip tie are comprised of plastic or nylon. (Metal compositions are to be strictly avoided.)
2) Smaller devices such as the GEN3 mini sensor require only a single mount. Larger sensors may require dual mounts.
3) For convenience, perform sensor registration (pairing) prior to permanently affixing sensor (with mount) to door or frame surface.

Wireless (Mini) Sensor:

The KD-DS-5800-MINI wireless door/window sensor is powered by a single CR2032 battery (included). The device emits RF message signals when the corresponding door or window is opened or closed. Additionally, it is suitable for concurrent use with compatible Honeywell security systems featuring 345 MHz alarm panels. For details including features, special considerations, and specifications, refer to the following resource:

https://www.kadtronix.com/downloads/d5800_cut.pdf



LED Indicators:

The sensor contains two (2) multi-color LED indicators which remain enabled for 15 minutes after inserting / replacing the battery, or indefinitely while the cover is detached. Colors are defined below:

- Blue – illuminates when the magnet is in proximity; aids installation for optimal placement
- Green – indicates sensor is transmitting
- Red – low battery

Color	Meaning
Blue	Active when magnet is within range of the sensor unit (1 inch max).
Green	Flashes when sensor unit transmits.
Red	Upon low battery condition, the indicator flashes once every five seconds, for two minutes after a RF message transmission.

Installation:

- Detach front cover from sensor unit
- Insert battery (CR2032 - included)
- Mount the device as instructed below:
    - For wood doors, mount the sensor (& magnet) using 3M adhesive backing - included.
    - For metal doors, patio doors, and other metal-framed openings, masking tape is strongly recommended for temporarily mounting the sensor (& magnet). Using trial-and-error testing, reposition as necessary until you have confirmed consistent, reliable signal detection at the controller/receiver. Apply 3M adhesive backing for permanent hold.

  Note: Attach sensor unit to the stationary part of the desired opening (typically the door-frame or window-frame), and attach magnet to the door or window.

- Verify that the blue test LED illuminates when the door or window is closed (i.e., magnet is near), and that it extinguishes when the door is opened.
- Replace cover.

Wireless (Basic) Sensor:

The KD-DS-5816WM wireless door/window sensor is powered by a single CR123A battery (included). The device emits RF message signals when the corresponding door or window is opened or closed. Additionally, it is suitable for concurrent use with compatible Honeywell security systems featuring 345 MHz alarm panels. This device also features wired screw terminals for external wired switch connection. (Note: If this option is not to be used, you must apply a jumper wire at the wiring terminals to disable the feature. Otherwise, inadvertent trigger may occur at the HSRS controller.) For details including features, special considerations, and specifications, refer to the following resource:

https://www.kadtronix.com/downloads/d5816_cut.pdf

IMPORTANT: This device features wired contact screw terminals for optional external wired switch (N/C) or closed contact loop. Unless you plan to utilize this input, it must be disabled to avoid inadvertent trigger at the HSRS controller. To disable, apply a short jumper wire across the wiring terminals.

Installation:

- Detach front cover from sensor unit
- Insert battery (CR123A - included)
- Mount the device as instructed below, based on door construction:
    - For wood doors, mount the sensor (& magnet) using 3M adhesive backing or screws (both included).
    - For metal doors, patio doors, and other metal-framed openings, masking tape is strongly recommended for temporarily mounting the sensor (& magnet). Using trial-and-error testing, reposition as necessary until you have confirmed consistent, reliable signal detection at the controller/receiver. Apply 3M adhesive backing (or screws) for permanent hold.

  Note: Attach sensor unit to the stationary part of the desired opening (typically the door-frame or window-frame), and attach magnet to the door or window.

Register / Pair Wireless RF Sensors:

All wireless door/window sensors & motion detectors must be properly registered (paired) at the controller.

*IMPORTANT: For proper signal reception at the HSRS controller, the receiving antenna must **NOT** be located near metal equipment or appliances. (A minimum separation of 3 feet is recommended.) Do **NOT** install within a metal chassis or enclosure.*

- Detach HSRS controller lid by removing the 4 retaining screws.
- Locate the "Register" button.
- Press/hold the button until the unit beeps, then release.
- Activate a sensor. (For a door/window sensor, bring the magnet in close proximity to the transmitter and then separate them. For a motion detector, walk in front of the sensor.)
- Confirm that a red LED illuminates at the controller with an accompanied audible beep.
- Repeat the previous two steps for each additional wireless sensor device (up to 8 max).
- To exit wireless registration, press/release the register button. (There is no need to hold the button at this step.)

Warranty:

This product is warranted for a period of 1 year from the date of purchase and is guaranteed to be free from defects. The warranty covers the entire unit, except if any part or component has been modified or otherwise converted from its original form. The warranty does not cover damage or failure due to neglect, improper setup/use, or unshielded exposure to moisture, power surges, hazardous environments, and the like.

Note: The customer is responsible to provide protection against over-voltage situations including power surges, spikes, and lightning strikes. The use of adequate surge protection is recommended.

Disclaimer:

The customer is responsible to obtain qualified assistance for proper installation of the product. We bear no responsibility for unintended errors, omissions, or ambiguities in product literature. Further, we accept no liability for unforeseen expenses, damages, personal injury, accident, or death due to use or misuse of the product. Purchase and use of this product indicates that you understand and accept these terms.

Notes: