

# VLC5501

## Immobiliser installation manual

**Installation manual - Version 2.4**

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### **Attention!!!**

Installation of this security product is additional protection for your vehicle, but it does not protect your vehicle from all possible thefts.



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### **Product warranty and registration:**

Warranty of this product is for 12 months. If you register this product on line, Vapormatic will give a further 12 months warranty free, giving 24 months in total.

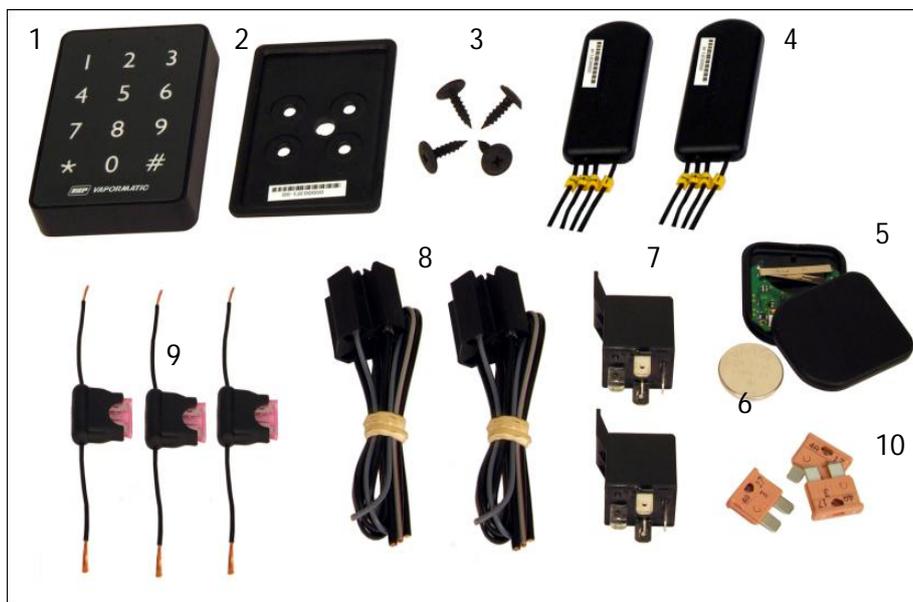
To register this product please go to: [www.vapormatic.com/vehiclesecurity](http://www.vapormatic.com/vehiclesecurity).

### **Safety instructions:**

- **Please read this manual carefully before installation.**
- **This security system should be installed by a qualified Agricultural Technician. If you have any concerns with fitting this immobiliser, you should seek professional advice by taking it to your local authorised vehicle dealer.**
- **The vehicles battery should be disconnected during this installation.**
- **An incorrect installation could damage the security system and/or vehicles electronics.**
- **The keypad and both immobiliser blockers must be protected by the fuses supplied and all components firmly fastened in to their location.**
- **All interconnecting wiring connections shall confirm to one or more of the following methods:-**
  - **Insulated crimp type connectors**
  - **Vehicle manufacturers recommended method of termination**

## Kit contents:

1. Keypad
2. Keypad mounting plate
3. Mounting plate screws x 4
4. Immobiliser blockers x 2
5. Keypad Override Disc
6. Keypad Override Disc battery
7. 30 Amp relays
8. 30 Amp relay wiring looms
9. In-line fuse holders x 3
10. 3 Amp fuses x 3
11. PIN card with unique code (no image)
12. Installation CD (no image)



## Wiring suggestions:

### High security:

Installing the two immobiliser blockers (supplied), to totally disable the ignition feed, down stream of the ignition switch. This makes it very difficult to start the vehicle without finding the blockers. Most ignition systems use one power feed in, and several out.

Power feed in: - Normally one or two power feeds in to the ignition switch.

Ignition switch position one: - Auxiliary line: Radio and power sockets feed.

This line can be used for power to the Keypad, however not normally very good for the blockers as it drops to '0' voltage when in the start position.

Ignition switch position two: - Power to the main electronic system, normally two feeds from this position.

Breaking these two lines are normally sufficient to knock out dash, ignition and all CAN devices including the ECU engine controller. Ensuring that engine starting is impossible.

Ignition switch position three: - Start.

If the correct feeds from position two have been blocked, the engine starter may still operate, however the engine will not start, this is normal.

**NOTE: Care must be taken not to induce any vehicle diagnostic error codes of any kind whilst interrupting power supply to CAN bus devices on modern vehicles.**

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### Medium security:

Installing the two immobiliser blockers (supplied), to interrupt power to the starting and fuel stop solenoids combined. On newer common rail engines with no fuel stop solenoid, the ignition feed can be used instead.

**NOTE: Care must be taken not to induce any vehicle diagnostic error codes of any kind whilst interrupting power supply to CAN bus devices on modern vehicles.**

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## Immobiliser blocker module wiring diagrams:

### Important!!! Please read first.

- **Both immobiliser blockers must be installed.** The keypad sends a signal to both immobiliser blockers, if one is not installed the other will not work. When only one circuit is being blocked, the spare secondary blocker wires marked (7), should be taped up and insulated out of harm's way.
- An ignition (switchable) live feed & a chassis earth are required. Both the earth (-) & positive (+) wires to the blockers must have a secure joint. This will limit any continuity issues for the units use. If either wire has a loose or high resistance joint, the unit may be re-energized which could cause the blocked circuit to fail & the vehicle to become immobilized.
- Please note the keypad, both immobiliser blockers and the Keypad Override Disc come with a serial number and are matched to each other. Therefore only the two immobiliser blockers supplied will work together with the supplied keypad and Keypad Override Disc.
- Prior to the immobiliser blockers being fitted, it is necessary to measure the power consumption of the electrical circuit being re-routed through the Vapormatic blockers, the continuous current draw must not exceed 12 Amps. Also the length of the wires and their cross-sectional area must be taken into consideration. If the switch current approaches this level, external relays (supplied) should be used.
- Each immobiliser blocker must be protected by fitting the 3 Amp fuses (supplied). As with the immobiliser, this should be hidden from sight, and reasonable difficult to gain access to.
- The installation of the immobiliser blockers must be installed in a way that access to them is restricted by removing "panels/trim ETC".
- Care must be taken not to induce any vehicle diagnostic error codes of any kind whilst interrupting power supply to CAN bus devices on modern vehicles.
- The Keypad Override Disc is designed to be a backup device in case the keypad stops working or an intruder damages it trying to start your vehicle. For this reason **DO NOT** leave the vehicle unattended whilst the Keypad Override Disc is within a 5 metre range. Damaged keypads or lost discs can be ordered from Vapormatic, quoting the serial number printed on all components of this system.
- To change the factory default PIN code setting from '0000', please refer to the User manual also supplied on the installation CD.

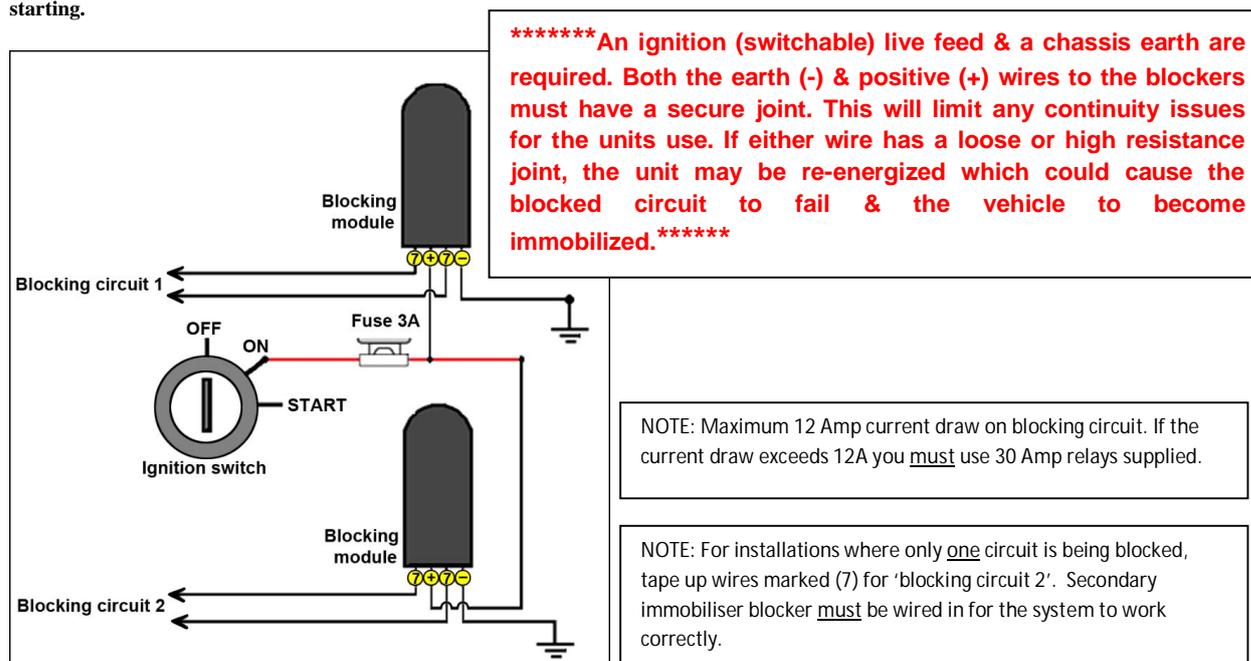
**Important!!! Please read all of this section carefully:**

## Immobiliser blocker module wiring diagram without relays: (Up to 12 Amp continuous current draw)

### Both immobiliser blockers must be installed.

The keypad sends a signal to both immobiliser blockers, if one is not installed the other will not work. When only one circuit is being blocked, the spare secondary blocker wires marked (7), should be taped up and insulated out of harms way.

**If power to the immobiliser blockers decays below 8 Volts power to the blockers will be lost, resulting in the vehicle not starting.**



- **Earth wire (-):** Must be firmly secured to the vehicle's chasses.
- **Power wire (+):** Must be connected to an ignition live via a 3 Amp fuse supplied. Example: when the ignition is switched off the blocker feed wire marked (+) must be at 0 voltage. With the ignition in the 'ON' position the blocker feed wire marked (+) must receive between 8 to 16 Volts D.C. **NOTE: Please read "Start Position" below.**
- **Blocking wires (7):** Two wires are marked with (7), these are used as a continuity break (blocking circuit).

**Ignition off:** No power to the two immobiliser blockers or keypad. The contacts inside the immobiliser blockers are normally closed (N/C), therefore when the ignition is switched off the blocker allows continuity through the two wires marked (7).

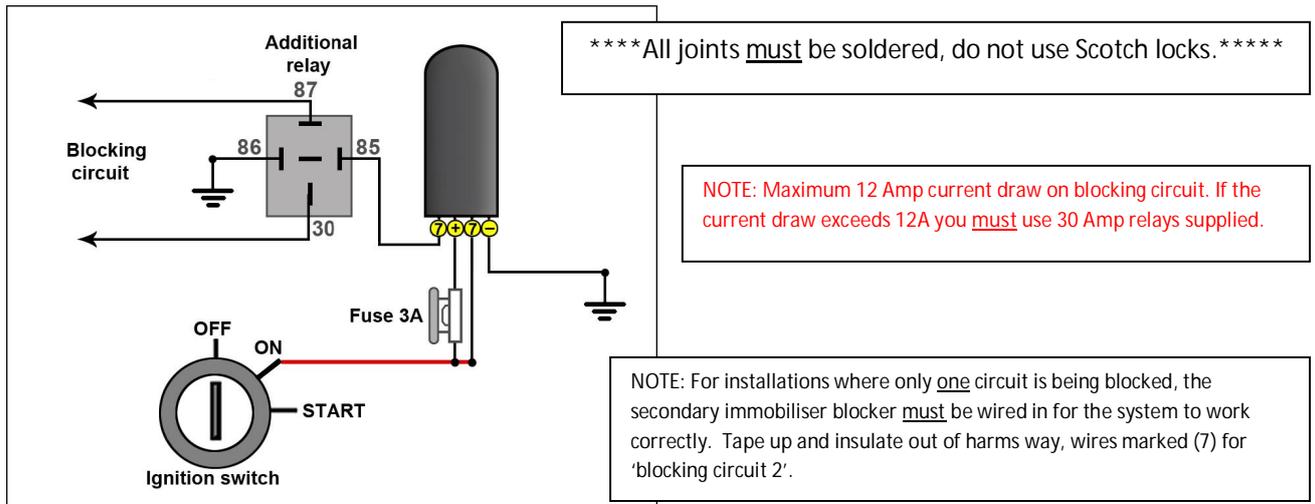
**Ignition on:** When the ignition is switched on the immobiliser blockers become live and instantly open the contacts breaking the continuity through wires marked (7), thus breaking the circuit.

**Authorisation:** When the immobiliser blockers receive a confirmation signal from the Keypad or Keypad Override Disc, the immobiliser blockers switch off, therefore restoring the power supply and allowing the vehicle to start.

**Start position:** With the ignition in the start position the voltage supply to the blocker feed wire marked (+) must not decay below 8 volts when the engine is cranking. **Some ignition circuits are not live when the ignition key is in the start position, if the voltage decays below 8 Volts, the blockers will drop out causing the vehicle not to start.**

**Fuse Holders:** The Fuse holders supplied are of a special automotive anti-vibration type, therefore each fuse is held tighter than normal.

## Immobiliser blocker module wiring diagram with relays:



## Both immobiliser blockers must be installed.

The keypad must transmit a signal to both immobiliser blockers before the vehicle will start, even if only one circuit is being blocked. When only one circuit is being blocked, the spare secondary blocker wires marked (7), should be taped up and insulated out of harms way.

- Earth wire (-):** Must be firmly secured to the vehicle's chasses.
- Power wire (+):** Must be connected to an ignition live via a 3 Amp fuse supplied. Example, with the ignition is switched off the blocker feed wire marked (+) must be at 0 voltage. With the ignition in the 'ON' position the blocker feed wire marked (+) must receive from 8 to 16 Volts D.C. **NOTE: Please read "Start Position" below.**
- Blocking wires (7):** Two wires are marked with (7), these are used to power the relay.
- Relay wiring:** The relay works like a switch to cut power to the blocking circuit. Connect the vehicle wire you want to break to terminals **30** (in) and **87** (out) on the relay. Connect the immobiliser blocking wire marked (7) to terminal (85) and earth to (86). The spare blocking wire marked (7) should be connected to the ignition live. Please refer to the wiring diagram above.
- Fuse Holders:** The Fuse holders supplied are of a special automotive anti-vibration type, therefore each fuse is held tighter than normal.

### Example:

- Ignition off:** No power to the two blockers or keypad. The contacts inside the immobiliser blockers are normally closed (N/C), therefore when the ignition is switched off the blocker allows continuity through the two wires marked (7).
- Ignition on:** When the ignition is switched on, the immobiliser blockers become live, instantly opening the contacts breaking the continuity through wires marked (7), thus breaking the circuit – not energising the relay.
- Authorisation:** When the immobiliser blockers receives a confirmation signal from the Keypad or Keypad Override Disc, the immobiliser switches off, therefore energising the relays and allowing power supply to the vehicles electrical network.
- Start position:** With the ignition in the start position the voltage supply to the blocker feed wire marked (+) must not decay below 8 volts when the engine is cranking. **Some ignition circuits are not live when the ignition key is in the start position, if the voltage decays below 8 Volts, the blockers will drop out causing the vehicle not to start.**

## Keypad installation:

### Mounting of the Keypad module:

The Vapormatic keypad module transmits an authorisation code to the two immobiliser blockers wirelessly, unblocking the electrical system and allowing the vehicle to start. The keypad module must be installed in a dry location normally inside the vehicles cabin providing easy access to the keypad buttons.

### Keypad installation procedure:

- Location of the keypad is very important, it should be placed in an easy to see and use position with no obstructions. The desired location must have sufficient room behind to accommodate the four screws and keypad wiring.
- Using the keypad mounting plate (2) as a template, drill four small pilot holes for the mounting screws.
- Using the four screws provided, screw the mounting plate to the desired surface.
- Drill one final hole into the mounting surface to allow for insertion of the keypad wiring.
- Pull the keypad power cable through the drilled hole, then clip together part 1 and part 2 as it's shown on the Figure 1 below.
- Follow the keypad wiring diagram to complete the keypad installation procedure.

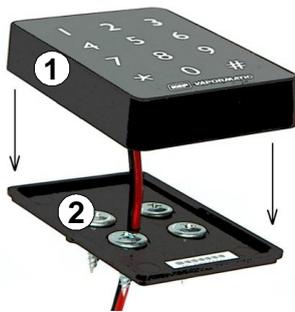
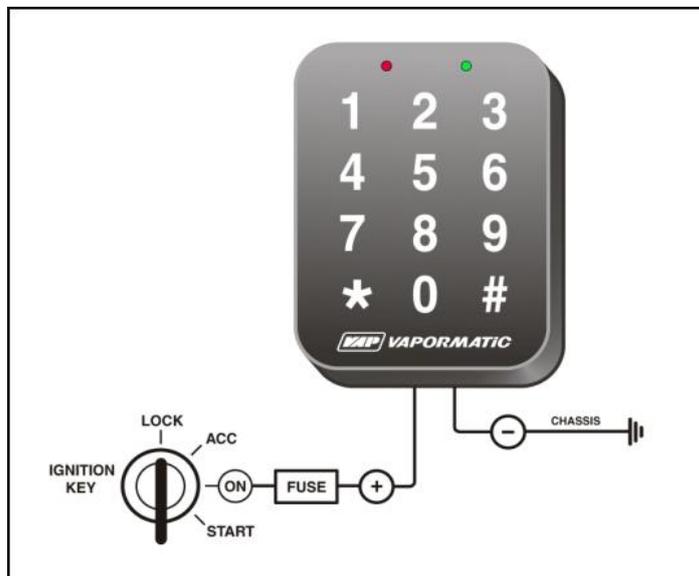


Fig1

### Keypad wiring diagram:

The Vapormatic keypad only requires an ignition live and a good chassis earth, all other communications to the immobiliser blocker modules are wireless.



**Earth wire (-):** Must be firmly secured to the vehicle's chasses.

**Power wire (+):** Must be connected to an ignition live 8V to 16V, (Ignition live is 0 volts with the ignition switched off, and 8 to 16 volts with the ignition switched on) using one of the three in-line fuse holders supplied.

**Attention!!!** For convenience, the keypad power can be run off of the ignition Auxiliary line as long as it is 0 voltage with the ignition turned off. When the ignition is in the start mode, power can dissipate to Zero volts because the keypad has already transmitted the authorisation code to the immobiliser blockers.

**The default Factory PIN code is '0000' then press the # button to confirm code.** To change the Factory PIN code, please refer to the User manual supplied on the installation CD.

**Fuse Holders:** The Fuse holders supplied are of a special automotive anti-vibration type, therefore each fuse is held tighter than normal.

## Keypad Override Disc:

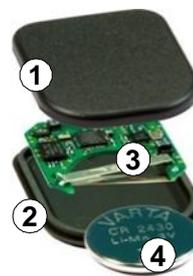
The Keypad Override Disc is a wireless battery powered driver identification tag, which informs the security system about the presence of the driver. This overrides the keypad, allowing the vehicle to start without using the keypad PIN number.

**Attention!!! Do not leave the Keypad Override Disc inside the vehicles cabin or in a 5 metre range, whilst the vehicle is not attended. This device overrides your security, and should therefore be kept on your person at all times.**

Note: This disc device operates within a 5 metre range, it transmits a signal every 20 seconds. Therefore once the ignition is switched on, it may take up to 20 seconds for the Green keypad LED to illuminate and for the engine to be started.

The Keypad Override Disc consists of following parts:

1. Enclosure (part1)
2. Enclosure (part2)
3. Electronic board
4. Battery



**Note:** Please ensure the positive plus sign on the battery matches the positive plus sign on the battery holder.

With the battery correctly inserted, the red LED on the printed circuit board will flash twice. Carefully place the combined circuit board and battery into enclosure 1, and snap enclosure 2 into place.

## Testing the system:

To complete the installation, these two system checks must be performed.

In order to test the system using the Keypad Override Disc, follow these instructions:

1. Remove the battery from the Keypad Override Disc.
2. Turn ON the ignition and wait for 10 seconds, the keypad red LED must stay ON.
3. If the Keypad green LED light illuminates, switch off the ignition for 4 minutes, and go back to step one.
4. Try to start the engine. If the engine cannot be started, carry on with the next steps. (If the engine can be started, installation has been carried out incorrectly. Check electrical connections.)
5. Assemble the Keypad Override Disc, you should see a small red LED light flash on the PCB board. (Ensure the battery is installed correctly, positive on the battery to positive on PCB board power strip)
6. Turn the ignition ON
7. Wait until you hear a double beep emitted from the keypad and the green LED switches ON. (This can take up to 20 seconds)
8. Try to start the engine. If the engine can be started, this test has been successful.

\*\*\*\*\***Warning!!!**\*\*\*\*\*

***In order to make both tests, wait for 4 minutes (approx) for system to passively arm itself.***

In order to test the system using the Keypad PIN code, do the following:

1. Remove the battery from the Keypad Override Disc.
2. Turn ON the ignition, the red LED must stay ON.
3. If the engine cannot be started carry on with the next steps. (If the engine can be started, installation has been carried out incorrectly. Check electrical connections.)
4. Turn ON the ignition, and enter factory PIN code '0000' and press the # button to confirm. (See user's manual, section ***Entering factory PIN code***).
5. Wait until you hear a double beep emitted from the keypad and the green LED switches ON. (This should be within a couple of seconds)
6. Try to start the engine. If the engine can be started, this test has been successfully finished.

### Fault Finding Chart:

1. Keypad Override Disc not operating the immobiliser blockers	Check Keypad Override Disc battery, insert new battery
	Switch ignition on, immobiliser blocker wires (7) go to open contacts ( <u>no</u> continuity) – if not go to 5 or 6
	Check that the Keypad Override Disc is with-in 5 metres of the vehicle
	Any strong radio signals/power lines in area (interference)
	Check the serial numbers match on both the immobiliser blockers (sticker on outer casing), and the Keypad Override Disc (Sticker on PCB board)
2. Red keypad LED not lighting up with ignition switched on	Check keypad in-line fuse
	Check 8 to 16V supply current
	Check for good chassis earth
3. Keypad code entered but no green light	Have you entered correct code:  One long beep – incorrect code  Two short beeps – correct code
	Have you confirmed code by pressing the # key
	Check correct operation of immobiliser blockers, go to 5 or 6
	Is Keypad with-in a 5 metre range of the immobiliser blockers
	Check the serial numbers match on both the immobiliser blockers (sticker on outer casing), and Keypad mounting plate (Sticker on mounting plate)

4. Keypad not accepting new user codes, 1 long beep	Check power supply, go to 2
	Check correct procedure for adding codes. (see page 12)
	Switch ignition off, switch ignition on, try again with correct master code, confirm with #
	Are you hearing a beep on every digit entry
	Re-set to factory default by using Master override card 8 digit unique number (please refer to the PIN code card section in the User manual)
5. Immobiliser not working, 30 amp relays <u>not</u> in circuit, engine starts with out entering PIN code	Check in-line fuses to immobiliser blockers
	Is the Keypad Override Disc within a 5 metre range or on person
	Check all wiring for good connections
	Check chassis earth
	Test blockers, normally closed with no power, open with power
6. Immobiliser not working, 30 amp relays in circuit, engine starts with out entering PIN code	Check relays & correct wiring to relay terminals
	Check chassis earth to relays
	Check power supply from blockers
7. System not working	Check vehicle power supply
	Check immobilisers in-line fuses
	Check for correct wiring connections to vehicle
	Check all connection for good contact
	Check for good chassis earth
	Check the serial numbers match on the immobiliser blockers (Sticker on casing), Keypad mounting plate (Sticker on mounting plate) and Keypad Override Disc (Sticker on PCB board)
	Check for correct code, enter factory reset 8 digit code (please refer to the PIN code card section in the User manual)
	Complete installation tests as per manual

## Technical parameters:

### Keypad module:

Parameter name	Value
Operating frequency	2,4GHz
Operating range	~5 metres
Operating voltage	8-16V
Current consumption	120mA
Operating temperature	-40.....+85°C
Dimensions	72x52x13mm

### Blocking modules:

Parameter name	Value
Operating frequency	2,4GHz
Operating range	~5 metres
Operating voltage	8-16V
Current consumption	100mA
Maximal load to blocking circuit	15A (12 Amp continuous)
Operating temperature	-40.....+85°C
Dimensions	69x29x9mm

### Keypad Override Disc:

Parameter name	Value
Operating frequency	2,4GHz
Operating range	~5 metres
Battery type	CR2430
Battery life	12 months
Operating temperature	-30.....+85°C
Dimensions	49x41x6 mm

### Additional relays:

Parameter name	Value
Operating voltage	12V
Maximal current draw	30A

## Conditions of sale:

This product is subject to an extended warranty – please see [www.vapormatic.com/vehiclesecurity](http://www.vapormatic.com/vehiclesecurity).

**Please note:** The terms and conditions of sale currently in effect are always those as shown on our website at [www.Vapormatic.com](http://www.Vapormatic.com).

### 1. General

(i) All orders are accepted by the Company from the Buyer on the following terms, conditions and exceptions and no other terms, conditions or warranties shall apply unless agreed to in writing by the Company.

(ii) References to Incoterms are references to the edition of Incoterms published by the International Chamber of Commerce in force at the date when the contract is made and expressions used in any contract shall have the meanings ascribed to them by Incoterms as modified by these Conditions of Sale.

### 2. Prices and Payment

(i) All prices, UK and Export are subject to adjustment without notice. The contract price shall be the price current at the date of despatch of the goods.

(ii) In the case of U.K. sales payment shall be effected by cash, cheque or credit transfer by the end of the month following the date of invoice. In the case of Export sales, payment shall be made at such time and in such manner as expressed in the contract and the Company reserves the right at any time to request payment by Confirmed Irrevocable Letter of Credit confirmed by an approved bank in the U.K.

(iii) Any bank or other charges on negotiable instruments in respect of Export payments are payable by the customer.

(iv) The Company reserves the right to charge interest on overdue payments at 15% per annum from the date they first become overdue. Interest is at the latest charged from the normal due date + 120 days for UK customers or the due date + 150 for export customers.

### 3. Licences, Taxes and Other Charges

(i) The placing of an order with the Company is deemed to constitute a warranty and representation by the Buyer that every applicable licence (import or otherwise), foreign exchange control authorisation or any other authorities that may be required in connection with the goods supplied have been or will be duly obtained by and at the expense of the Buyer.

(ii) Unless otherwise agreed in writing the contract price does not include Value Added Tax ("VAT") or any other tax or levy on the supply or importation of the goods which shall be charged extra. Insofar as the Buyer is situated in another member state of the European Community, with effect from 1st January 1993 and until completion of the Internal Market of the European Community, VAT will be added to the contract price automatically unless the Buyer provides its VAT registration details and all other appropriate information to the Company.

(iii) The Basic Tax Point for VAT (where applicable) is the invoice date.

#### 4. Carriage, Risk and Property

(i) Details of carriage terms are given in the Company's current price list.

(ii) In the case of U.K. sales, unless otherwise agreed, risk of loss or damage to the goods shall pass to the Buyer when the goods are handed to the carrier for delivery to the Buyer. Subject thereto, where goods are to be carried at the cost of the Company, the Company will bear the risk of loss or damage in transit provided that the Company shall have received written notification of such loss or damage within five days of the date of despatch.

(iii) In the case of Export sales, unless otherwise agreed, Incoterms shall apply and risk of loss or damage to the goods shall pass to the Buyer in accordance with the terms of the shipping documents. The Company does not normally insure the goods during transit abroad.

(iv) Where the goods are to be collected by the Buyer, the Company shall be entitled to treat the contract as repudiated, and re-sell the goods, should the Buyer fail to collect the goods within 14 days of notification by the Company that they are ready for despatch.

(v) (a) Notwithstanding the passing of risk, the Company retains ownership of the goods the legal and equitable title in which shall not pass to the Buyer until the Company has received payment of the price of all of the goods (whether or not the goods are delivered in instalments and some have been paid for by the Buyer) and until such time the Buyer shall hold the goods in a fiduciary capacity for the Company and in particular the Buyer:

- (1) shall insure the delivered goods against any loss or damage with an insurance office of repute;
  - (2) shall store the delivered goods separately or in some other way ensure that they are readily identifiable as the property of the Company;
  - (3) shall deliver the goods to the Company forthwith on demand and if the Buyer fails to do so the representatives of the Company shall be entitled to enter upon the Buyer's premises where the delivered goods are or are thought by the Company to be stored for the purpose of repossessing them (including without limitation removing or detaching them from the New Goods as defined in Clause 4(v)(d) and subsequently reselling them;
  - (4) shall keep and retain the delivered goods free from any charge lien or other encumbrance thereon.
- (b) Upon any resale of any of the goods by the Company pursuant to Clause 4(v)(a)(3) if the proceeds of sale exceed the amount of all sums due to the Company from the Buyer the Company shall pay the excess to the Buyer having deducted the cost and expense of the repossession and re-sale of the goods and any damages which the Company has suffered as a result of any breach of the contract by the Buyer;
- (c) Until the Company has received full payment of all the sums due to the Company from the Buyer provided always that the Buyer continues to trade and is not insolvent nor enters into liquidation whether compulsorily or voluntarily nor becomes subject to an administration order nor has a receiver appointed over all or any part of its assets nor compounds with nor convenes a meeting of its creditors nor takes or suffers any similar action in consequence of a debt the Buyer shall be entitled to offer for sale and sell the goods in the ordinary course of business as principal for its own account and not as agent for the Company. Where any of the goods is sold to a third party before title to it has passed to the Buyer, that sale will constitute a sale by the Buyer of the Company's property.
- (d) If the Buyer incorporates the goods within other equipment or products ("the New Goods") provided that the goods remain a readily identifiable and removable part of the New Goods the provisions of Clauses 4(v)(a) and 4(v)(b) shall apply.
- (e) The provisions of this Clause 4(v) shall survive the termination of the contract for whatever reason and in particular but without limitation termination of the contract by the Company by the acceptance of any repudiation of the contract by the Buyer.

## 5. Delay and Force Majeure

(i) Whilst every effort will be made to comply with any quoted dates given for dispatch or delivery, time shall not be of the essence and the Company shall not be liable for any loss or damage caused by delay or failure by the Company in obtaining goods from the Company's own suppliers, or any loss or damage caused by strikes, lockouts, trade disputes, transport delays, shortages of material, breakdowns, fire, accidents and/or any causes whatsoever beyond the company's control. Such delay shall not constitute a breach or repudiation of the contract.

(ii) In the event of performance of the contract being frustrated or prevented by reason of war, civil commotion or the operation of any statute, order, regulation or promulgation made by any statutory or duly constituted authority whether in the UK or elsewhere, the Buyer shall accept and pay for all goods delivered, work executed and expenses incurred in connection with the contract up to the date of such event, and the Company shall from such date be under no further liability under the contract.

## 6. Specifications

(i) The specifications of the goods shall be those stated in the Company's current catalogue.

(ii) Whilst specifications are considered to be correct at the date of printing the Company reserves the right to change specifications of the goods and their packing and presentation without prior notification having regard to the Company's continuing programme of research and development.

(iii) Original equipment part numbers are quoted for reference purpose only and are not intended to infer that equivalent replacements are used as original equipment.

## 7. Warranties

(i) Subject to the conditions set out below and Clause 4(ii), the Company warrants that the goods will correspond to their specification and will be free from defects in materials and workmanship for a period of 12 months from the date of delivery, or in the case of goods which have a shorter working life as determined by the Company, three months from the date of delivery ("The Warranty Period").

(ii) If the Company receives written notice during the Warranty Period from the Buyer of any breach of the above warranty then the Company shall at its own expense and within a reasonable time after receiving such notice repair, or at its option replace the goods or otherwise remedy such defect. The Buyer will, at the request of the Company, return such defective goods to the Company carriage paid.

(iii) The Company shall be under no liability under the above warranty:

(a) in respect of any defect in the goods arising from any drawing, design or specification supplied by the Buyer;

(b) in respect of any defect arising from fair wear and tear, wilful damage, negligence of the Buyer, abnormal working conditions, failure to follow the Company's instructions (whether oral or in writing), misuse or alteration or repair of the goods without the Buyer's approval, or improper storage.

(c) where the goods are transported to the Buyer at the Buyer's risk and the defect occurred during transit;

(d) in respect of non-Vapormatic branded goods. In that case the buyer shall only be entitled to the benefit of any such warranty or guarantee as is given by the manufacturer to the Company.

(iv) The Company shall have no liability under the above warranty other than under Clause 7(ii) above. If the Company fails to comply with such obligations its liability for such failure shall be limited to the contract price of the goods.

(v) The express terms of these Conditions of Sale are in lieu of all warranties, conditions, terms, undertakings, and obligations implied by statute, common law, custom, trade usage, course or dealing or otherwise, all of which are hereby excluded to the fullest extent permitted by law. The United Nations Convention on Contracts for the International Sale of Goods (Vienna, 1980) shall not apply to orders for goods.

## 8. Liability

Except in respect of injury to or death of any person caused by the Company's negligence, or in respect of the Company's liability under the Consumer Protection Act 1987 for any injury to or death of any person or loss of or damage to property intended for private use caused by a defect in the goods the Company shall not be liable to the Buyer for any loss or damage which arises out of or in connection with the supply of the goods or their use or resale by the Buyer, except as expressly provided in these Conditions of Sale.

## 9. Construction:

These Conditions of Sale shall be subject to and shall be construed in accordance with English law and the High Court of Justice in London shall have non-exclusive jurisdiction over any dispute which may arise hereunder unless the parties agree otherwise in writing