M357T V2 Thatcham Category 1 Motorcycle Alarm/Immobiliser

by META SYSTEM®

GB

INSTALLATION MANUAL

Technical features

Power supply:..... 12Vdc (10 V – 15 V)
Consumption:. .....Fully armed 1.9mA
.....Immobiliser only 1.2mA
.....Sleep mode 0mA
Operating temperature: .....-25° C - +85° C
Self-supply autonomy:.....5 minutes
Alarm duration: .....25 seconds
Remote duration: controls:.....Lithium battery
Combinations: .....over 7.2 x 10^{16}
Dimensions:.....125 x 47 x 47

Relay contact capacity

Engine immobilisation relays:.....10 A
Direction indicators:.....5+5A

Timing

Initial non-active period:.....26 seconds
Alarm duration:.....26 seconds
Passive arming delay after ignition OFF (immobilisation only): ..50 seconds
Sleep mode delay in unchanged state.....10 days

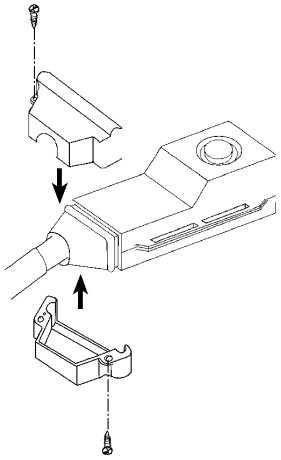
General

These instructions should be read in conjunction with the information supplied by the manufacturers/distributors training course.

Alarm positioning and mounting

-Fit the alarm control ECU in such a position that to gain access, would cause an alarm condition.
-Secure the alarm in place using suitable means (E.g. Cable ties or screws and spacers).
-Make sure that the alarm unit is located at least 15 cm from the exhaust system.
-Mount the alarm system in a reasonably dry area to minimise exposure to rain and spray.
-The movement sensor of the alarm system is at its most sensitive when wire 51 is connected to a permanent fused positive feed. Its effect is at a minimum when wire 51 is connected to a permanent negative or earthing point. The movement sensor default setting is a medium; therefore select the position of wire 51 to give more or less movement coverage as necessary.

Only fit the security housing to the alarm when all functional testing has been completed. The screws are one-way only and cannot be removed.



Fitting

-Disconnect the motorcycle battery negative terminal before beginning the loom installation.
-Make all connections following the general diagram annexed and the website service manual.
-While connecting the harness, make sure that the markings at the end of the wires are removed to make it impossible to identify the wire function.
-Use the M3 tester with the correct "V2" patch lead during **all** installations.
-The machine specific information supplied on the website is a guide; always check all wiring prior to connection.

Main negative and positive connections (Red wire No.2 and 2 x Black wires No.3

Connect the 2 Black wires No.3 to two independent permanent earth points. These can be frame or wire based.

Caution.

The frame on some machines does not provide a good earthing point so always check. Also on some machines wires that appear as negative with the machine switched off can change state when the machine is running or controls are operated. If in doubt check the wiring diagram for the specific machine or use a multimeter and test lamp.
Connect the Red wire No.2 to a permanent 12v supply via the fuse supplied in the kit.

Ignition sensing wire (Orange wire No.1)

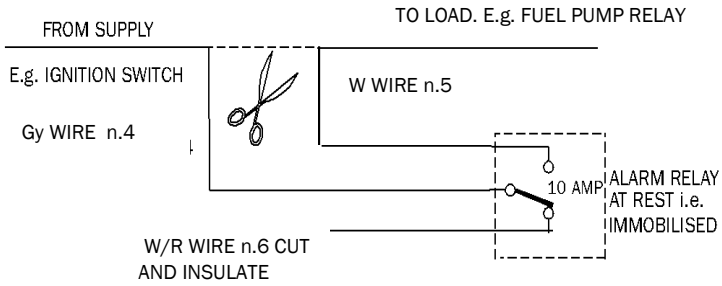
Connect the Orange wire No. 1 to a wire on the machine, which is 12v ignition switched positive.
Take care, on some machines the positive supply may disappear whilst the machine is being started or when certain controls are used. Always check the circuit remains ignition switched positive by testing whilst operating the controls and cranking the engine.

Immobilisation techniques

Under no circumstances must a constant 12v positive wire be immobilised with the M357TV2 alarm system. If this type of circuit is immobilised the unit will not passively immobilise and will not respond to the remotes.

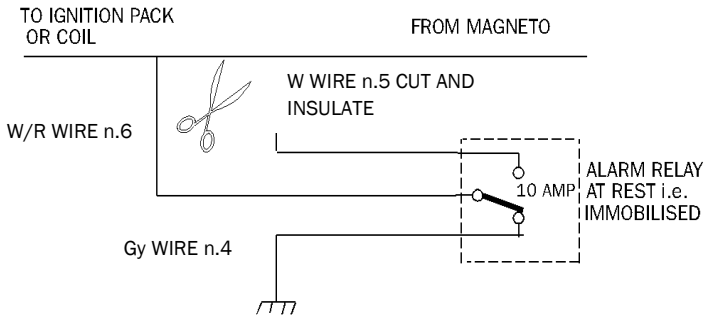
DC Ignition systems (normally open method) **(Grey wire No.4 and White wire No.5)**

This method works by cutting the control wire of the circuit to be immobilised e.g. fuel pump relay or side stand switch. The circuit will be made when the system is disarmed and the ignition is turned on.



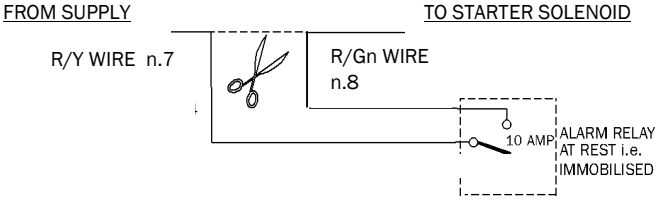
AC ignition systems (normally closed) **(Grey wire No.4 and White/Red wire No.6)**

This method of immobilisation works by supplying a running circuit with an earth therefore stopping the trigger pulse reaching the ignition pack or coil.



Starter immobilisation (Red/Yellow wire No.7 and Red/Green wire No. 8)

Cut the control wire to the starter solenoid and connect the Red/Yellow wire No.7 to one end and the Red/Green wire No.8 to the other. The circuit will be made when the system is disarmed and the ignition is turned on.



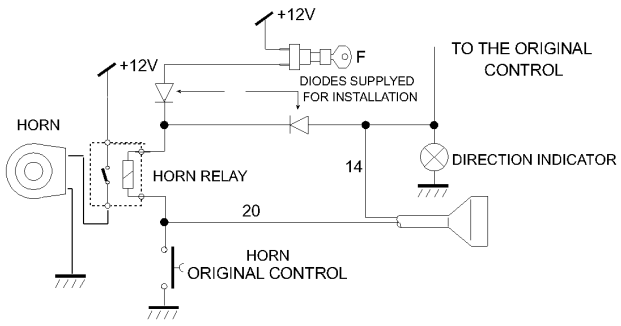
Direct trigger circuits (Green wire No.17 and Yellow wire No.44)
It is a requirement of Thatcham that the alarm ECU be protected by a security switch. The best way of carrying this out is via a 'normally open' magnetic reed switch. This switch is continuous whilst its magnet is present but will break the circuit when the magnet is removed.
Connect either wire No.17(Green) or No.44(Yellow) to the alarm protection switch you have installed, and then the switch to a negative earth.
The other, 'additional' trigger wire may be connected to any pin switches you install, or any circuit that provides a negative change of state when operated (e.g. side stand switch).
You may pass the 'additional' trigger wire through any article requiring protection, if these are removable items, fit connectors as required. Connect the end of the wire to a negative earth,
If combining several trigger points (e.g. side stand, pin switch, etc), it is strongly recommended each trigger circuit is isolated from each other by fitting a diode. Failure to do this may affect the running/safety of the machine due to back feeds.
Note. These wires trigger the alarm when a negative earth is applied to or removed from either of them (a change of state) whilst the alarm is armed.

Connecting the indicator circuits (Blue wires Nos. 14 and 15)
Connect wires 14 and 15 to the right and left hand **POSITIVE** indicator supplies of the machine.
On certain machines, the indicators may have the effect of powering other circuits of the machine if the indicator switch is positioned to the left or right during alarm operation.
To check for this, with the ignition turned off, apply 12v to an indicator feed and switch the indicator to that side, check the other functions of the machine (e.g. headlight, horn, or fuel pump) to see if they are operational.
If any other system on the machine is working, an inline diode (as supplied with the kit) must be installed in the indicator relay ignition switched input wire or the output wire from the indicator relay to the indicator switch.
Ensure the indicators work normally when operated. If they do not, the diode has most probably been installed in reverse.

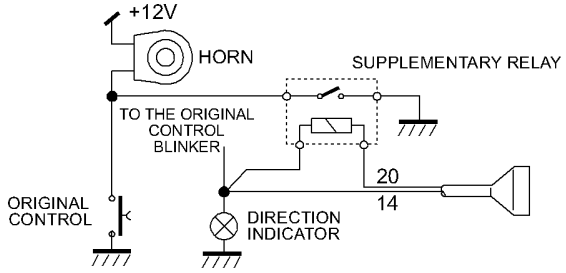
Connecting the LED (Small Black/Red wire No.29 and Black wire No.3)
The system is supplied with two types of LED. Select the most suitable type for the specific application and connect as per general diagram.
Do not install both types of LED.
The Black/Red wire No.29 is the pulsed positive feed from the alarm to flash the LED. Connect this to the red wire of the LED.
The small Black wire No.3 running in the loom with wire No.29 is the negative supply to the LED. Connect this to the black wire of the LED.

Connecting the alarm system to the motorcycle horn system (Brown wire No.20 and Blue wire No.14)
This is not a normal requirement of the installation and should be treated only as a customer requested extra.
Establish the switching arrangement on the machine and install according to the diagrams laid out below.

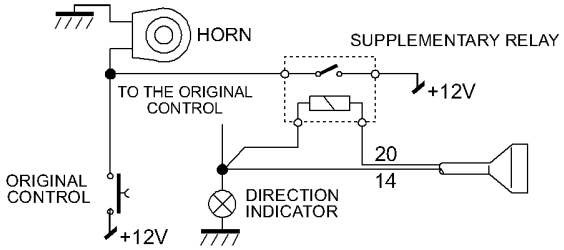
NEGATIVE CONTROL WITH THE HORN UNDER KEY



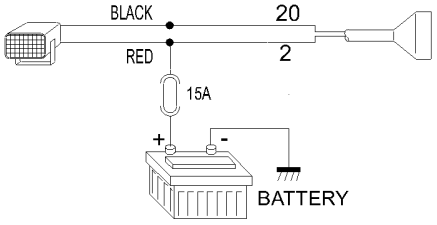
NEGATIVE CONTROL



POSITIVE CONTROL



Connecting the alarm system to a supplementary siren (Brown wire No.20)
The siren output is negative and has a maximum rating of 100mA.
Should a supplementary siren be requested, connect as below.



Connecting the alarm system to paging system (Brown wire No. 20)
You may use the Brown wire No.20 to trigger a pager transmitter. Please refer to our pager installation instructions for more information.

Final functional check
When the installation of the wiring is complete and has been checked via the M3 tester, transfer the wiring from the tester to the alarm system. Make sure that both the alarm plugs are fitted securely. The alarm will remain switched off.
-Switch the ignition on and off to activate the alarm unit.
-Once activated in this way, the alarm will be supplied from the machine's battery and will be passive armed (immobilised only).
-Disarm the immobiliser by pressing the remote control once. A single beep and flash of the indicators will be seen and heard. If a different disarm sequence is given, there may be a problem. Note the disarm sequence and check in the diagnostic table for the possible cause.
-Within 50 seconds, turn the ignition on and start the machine to check it runs.
-Turn off the ignition and check the system arms passively and via the remote controls.
-Next check all functions of the alarm for correct operation (see full operating instructions).

Movement detection sensitivity adjustment (Purple wire No.51)
The movement sensor is preset to medium sensitivity.
To increase the sensitivity to maximum, connect the Purple wire No.51 to a permanent positive supply via a fuse.
To decrease the sensitivity to minimum, connect the Purple wire No.51 to a permanent negative.

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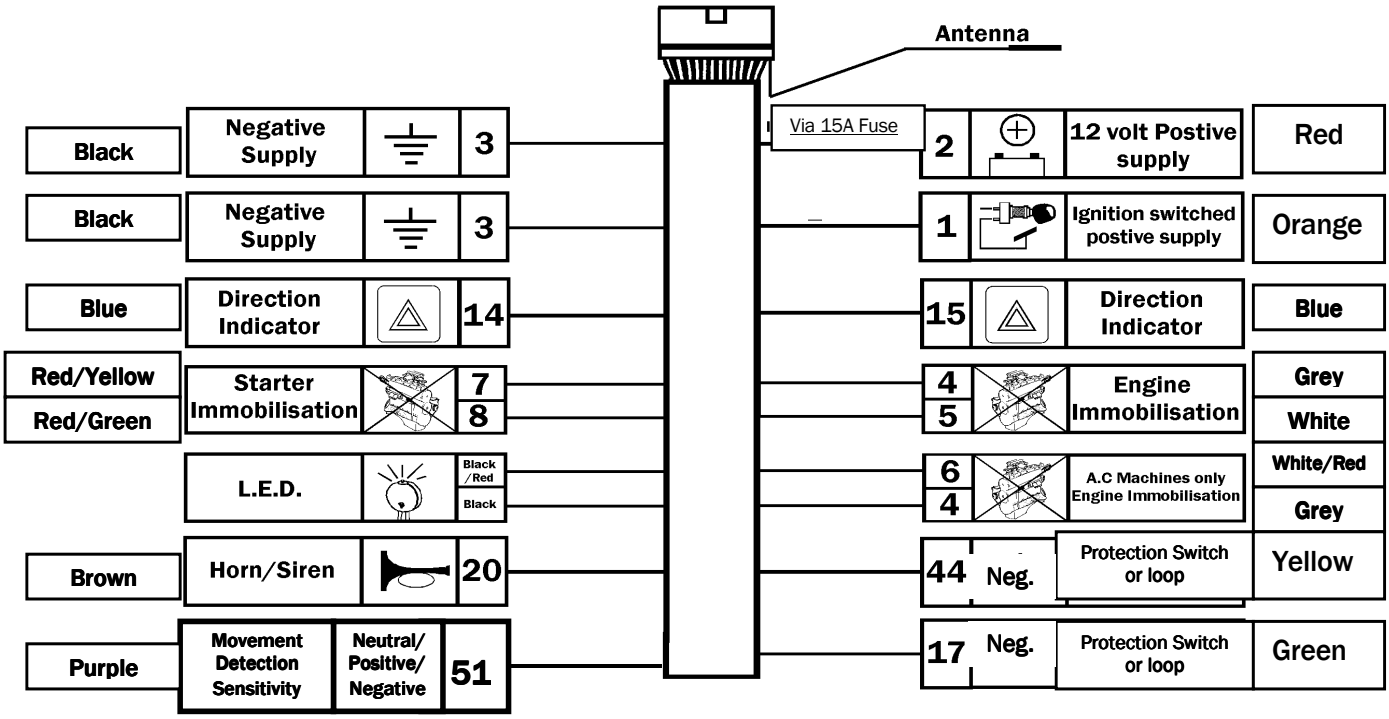
M357TV2
General Diagram



N°	Colour	Function	Connection point
1	Orange	Ignition (+15) sensing	Ignition switch positive supply (+15)
2	Red	Positive supply	12V positive supply via 15A fuse (+30)
3	Plain Black	Negative supply (2 wires)	2 independent earth points (-31)
4	Grey	Engine immobilisation relay - C.	Supply side of engine's immobilised circuit "cut"
5	White	Engine immobilisation relay - N.O.	Load side of engine's immobilised circuit "cut"
6	White/Red	Engine immobilisation relay - N.C.	Engine immobilisation (AC machines only-see fitting instructions)
7	Red/Yellow	Crank immobilisation relay – C.	Starter immobilisation
8	Red/Green	Crank immobilisation relay – N.O.	Starter immobilisation
14	Blue	Direction indicator	To direction indicator positive feed (left)
15	Blue	Direction indicator	To direction indicator positive feed (right)
17	Green	Alarm trigger circuit	To negative earth via magnetic reed switch for alarm ECU protection
20	Brown	Pager/siren/horn negative output	See fitting instructions
29	Small Black/Red	LED Positive supply	To red wire of the LED
3	Small Black	LED Negative supply	To black wire of the LED
44	Yellow	Additional alarm trigger circuit	To negative earth through accessory loop protection/pannier switch etc.
51	Purple	Movement sensor adjustment	**MEDIUM.** Not connected / **MAX.** To positive supply via fuse (+30) / **MIN.** To negative earth point
-	Plain Black	Antenna	Do not connect

Batteries are considered to be harmful waste materials and should be disposed of according to the regulations in force