

ROAD ANGEL™

TO REPORT A THEFT

CALL **0330 232 3030** Select Option 1.

1. Notify Control Room

So we can locate the device.

2. Report to Police

Obtain an incident reference number (we cannot do this for you).

3. Update Control Room

Call back with the incident reference number.

REPORTING A THEFT

ROAD ANGEL™

Secure S5/S7 4G

Hard wired tracker



• Real-Time Tracking

• Driving Alerts & Reports

• Easy Plug & Play

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- Customers are only allowed to return products as a result of the product being defective, due to order assembly or manufacturing fault.
- Products are intended to be used by personnel with training and experience.
- Warranty does not cover defects or malfunctions caused by accidents, misuse, abuse, catastrophes, improper maintenance or inadequate installation – not following operating instructions (including failure to heed warnings) or use with equipment with which it is not intended to be used.
- Warranty does not apply to any consequential damages.
- Warranty is not applicable for supplementary product equipment (i. e. PSU, power cables, antennas) unless the accessory is defective on arrival.

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We guarantee our products for as long as a valid subscription is held or for 24 months, whichever is longer.

(All batteries carry a 6-month warranty period.)

Post-warranty repair service for products is not provided.

If a product stops operating within this specific warranty time, the product can be:

- Repaired
- Replaced with a new product
- Replaced with an equivalent repaired product fulfilling the same functionality
- Replaced with a different product fulfilling the same functionality in case of EOL for the original product

LIFETIME WARRANTY

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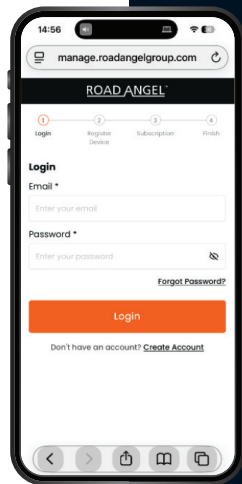
CONTENT

How to register your Road Angel Secure S5/S7 4G

1. Scan the QR code, which takes you to the Road Angel onboarding website (normally found inside the lid of the box).



2. The QR code sends the serial number to the onboarding website to make registration easier.



HOW TO REGISTER

CERTIFICATION AND APPROVALS



This product is in conformity with the relevant Community harmonisation: European Directive 2014/53/EU (RED).



The RoHS1 is a directive regulating the manufacture, import and distribution of Electronics and Electrical Equipment (EEE) within the EU, which bans from use 10 different hazardous materials (to date).



The IP rating defines the level of protection of the device from water and dust.



This sign on the package means that all used electronic and electric equipment should not be mixed with general household waste.



E-Mark and e-Mark are the European conformity marks issued by the transport sector, indicating that the products comply with relevant laws and regulations or directives. Vehicles and related products need to go through the E-Mark certification process to be legally sold in Europe.



REACH addresses the production and use of chemical substances, and their potential impacts on both human health and the environment. Its 849 pages took seven years to pass, and it has been described as the most complex legislation in the Union's history and the most important in 20 years. It is the strictest law to date regulating chemical substances and will affect industries throughout the world.



The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by UAB Road Angel Telematics is under license. Other trademarks and trade names are those of their respective owners.

DECLARATION OF IMEI ASSIGNMENT

The IMEI number is used by a GSM network to identify valid devices and therefore can be used for stopping a stolen phone from accessing that network. For example, if a mobile phone is stolen, the owner can call their network provider and instruct them to blacklist the phone using its IMEI number. This renders the phone useless on that network and sometimes other networks too, whether or not the phone's subscriber identity module (SIM) is changed.

CHECK ALL CERTIFICATES

All newest certificates may be found in our Wiki?

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SAFETY INFORMATION

You must read these instructions carefully and follow them strictly before operating the device!

- The device uses SELV limited power source. The nominal voltage is +12 V DC. The allowed voltage range is +10...+30 V DC.
- To avoid mechanical damage, it is advised to transport the device in an impact-proof package. Before usage, the device should be placed so that its LED indicators are visible. They show the status of device operation.
- When connecting the 2x6 connector wires to the vehicle, the appropriate jumpers of the vehicle power supply should be disconnected.
- Before unmounting the device from the vehicle, the 2x6 connector must be disconnected. The device is designed to be mounted in a zone of limited access, which is inaccessible to the operator. All related devices must meet the requirements of EN 62368-1 standard.
- The device Secure S5/S7 4G, is not designed as a navigational device for boats.



Do not disassemble the device. If the device is damaged, the power supply cables are not isolated or the isolation is damaged, DO NOT touch the device before unplugging the power supply.



All wireless data transferring devices produce interference that may affect other devices which are placed nearby.



The device must be connected only by qualified personnel.



The device must be firmly fastened in a predefined location.



Installation and/or handling during a lightning storm is prohibited.



The device is susceptible to water and humidity.



Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.



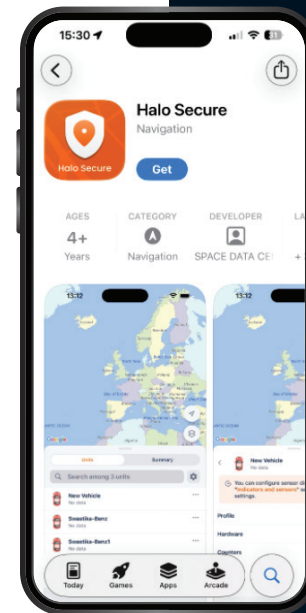
Battery should not be disposed of with general household waste. Bring damaged or worn-out batteries to your local recycling center or dispose them to battery recycle bin found in stores.

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Download the Halo Secure APP.

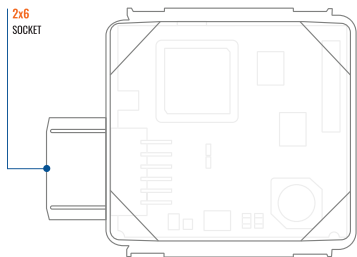
1. Your account will be set up automatically once your device is registered.
2. We will e-mail your log-in credentials.
3. Your device will be automatically added to the Halo Secure APP and should be visible when you have logged in.

Having problems call 0330 320 3030

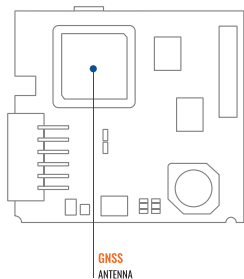


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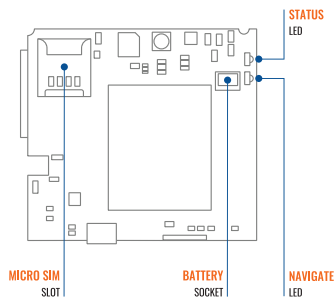
TOP VIEW



BOTTOM VIEW (WITHOUT COVER)



TOP VIEW (WITHOUT COVER)



04

KNOW
YOUR
DEVICE

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CHARACTERISTIC DESCRIPTION	VALUE			
	MIN.	TYP.	MAX.	UNIT
Input Voltage (Recommended Operating Conditions), Range 2	0		+30	V
Input resistance, Range 2		150		kΩ
Measurement error on 12 V, Range 2		0.9		%
Additional error on 12 V, Range 2		108		mV
Measurement error on 30 V, Range 2		0.33		%
Additional error on 30 V, Range 2		88		mV

OUTPUT SUPPLY VOLTAGE 1-WIRE

Supply voltage	+4.5	+4.7	V
Output inner resistance	7		Ω
Output current (Uout > 3.0 V)	30		mA
Short circuit current (Uout = 0)	75		mA

CHARACTERISTIC DESCRIPTION	VALUE			
	MIN.	TYP.	MAX.	UNIT
NEGATIVE INPUT				
Input resistance	38.45			kΩ
Input voltage (Recommended Operating Conditions)	0		Supply voltage	V
Input voltage threshold		0.5		V
Sink current			180	nA

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ELECTRICAL CHARACTERISTICS

CHARACTERISTIC DESCRIPTION	VALUE			
	MIN.	TYP.	MAX.	UNIT
SUPPLY VOLTAGE				
Supply Voltage (Recommended Operating Conditions)	+10		+30	V
DIGITAL OUTPUT (OPEN DRAIN GRADE)				
Drain current (Digital Output OFF)			120	µA
Drain current (Digital Output ON, Recommended Operating Conditions)		0.1	0.5	A
Static Drain-Source resistance (Digital Output ON)		400	600	mΩ
DIGITAL INPUT				
Input resistance (DIN1)	47			kΩ
Input resistance (DIN2)	38.45			kΩ
Input resistance (DIN3)	150			kΩ

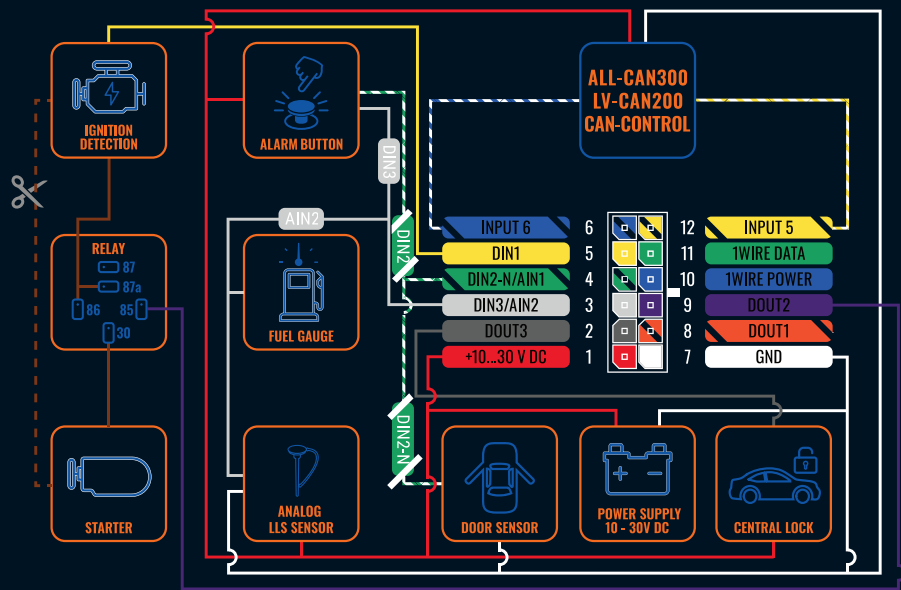
CHARACTERISTIC DESCRIPTION	VALUE			
	MIN.	TYP.	MAX.	UNIT
Input voltage (Recommended Operating Conditions)	0		Supply voltage	V
Input Voltage threshold (DIN1)		7.5		V
Input Voltage threshold (DIN2)		2.5		V
Input Voltage threshold (DIN3)		2.5		V
ANALOG INPUT				
Input voltage (Recommended Operating Conditions), Range 1	0		+10	V
Input resistance, Range 1		38.45		kΩ
Measurement error on 12V, Range 1		0.9		%
Additional error on 12 V, Range 1		108		mV
Measurement error on 30 V, Range 1		0.33		%
Additional error on 30 V, Range 1		88		mV

PIN NUMBER	PIN NAME	DESCRIPTION
1	VCC (10-30) V DC (+)	Power supply (10-30 V DC).
2	DOUT 3	Digital output, channel 3. Open collector output. Max. 0,5 A DC.
3	DIN 3 / AIN 2	Analog input, channel 2. Input range: 0-30 V DC / Digital input, channel 3.
4	DIN 2-N / AIN 1	Digital input, channel 2, Negative input (ground sense), Analog input, channel 1, Input range: 0-30 VDC.
5	DIN 1	Digital input, channel 1.
6	INPUT 6	TX EXT (LVCAN - TX).
7	GND (-)	Ground pin. (10-30) V DC (—)
8	DOUT 1	Digital output, channel 1. Open collector output. Max. 0,5 A DC.
9	DOUT 2	Digital output, channel 2. Open collector output. Max. 0,5 A DC.
10	1WIRE POWER	+3,8 V output for 1-Wire devices.
11	1WIRE DATA	Data for 1-Wire devices.
12	INPUT 5	RX EXT (LVCAN - RX).



Secure S5/S7 4G 2x6 socket pinout

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WIRING SCHEME

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PHYSICAL SPECIFICATION

Dimensions	70,5 x 67,0 x 25,6 mm (L x W x H) 85,0 x 67,0 x 25,6 mm (L x W x H) (length with connector socket)
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OPERATING ENVIRONMENT

Operating temperature (without battery)	-20 °C to +85°C
Storage temperature (without battery)	-20 °C to +85°C
Operating temperature (with battery)	-20 °C to +60 °C
Storage temperature (with battery)	-20 °C to +60 °C
Operating humidity	5% to 95% non-condensing
Ingress Protection Rating	IP67
Battery charge temperature	0 °C to +45 °C
Battery discharge temperature	-20 °C to +60 °C
Battery storage temperature	-20 °C to +45 °C for 1 month -20 °C to +35 °C for 6 months

FEATURES

Sensors	Accelerometer
Scenarios	Green Driving, Over Speeding detection, Jamming detection, GNSS Fuel Counter, DOUT Control Via Call, Excessive Idling detection, Immobilizer, iButton Read Notification, Unplug detection, Towing detection, Crash detection, Auto Geofence, Manual Geofence, Trip ⁷
Sleep modes	GPS Sleep ⁸ , Online Deep Sleep ⁸ , Deep Sleep ⁸ , Ultra Deep Sleep ⁸
Configuration and firmware update	OTA Updates
SMS	Configuration, Events, DOUT control, Debug
GPRS commands	Configuration, DOUT control, Debug
Time Synchronization	GPS, NITZ, NTP
Ignition detection	Digital Input 1, Accelerometer, External Power Voltage, Engine RPM (CAN Adapters, OBDII dongle)

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Data transfer	LTE: LTE FDD: Max 10Mbps (DL)/Max 5Mbps (UL)
	LTE TDD: Max 8.96Mbps (DL)/Max 3.1Mbps (UL)
	UMTS: WCDMA: Max 384Kbps(DL)/Max 384Kbps(UL)
	GSM: GPRS: Max 107Kbps (DL)/Max 85.6Kbps (UL)
Data support	SMS (text/data)
Transmit power	Class 4 for GSM850/900: 23±2dBm
	Class 1 for GSM1800/1900: 20±2dBm
	Class 3 for LTE-TDD: 23±2.7dBm
	Class 3 for LTE-FDD: 23±2.7dBm

POWER

Input voltage range	10-30 V DC with overvoltage protection
Internal Back-up battery	1000 mAh Li-Po rechargeable 3.7 V battery (3.7 Wh)
Internal fuse	3 A, 125 V
Power consumption	At 12V < 3 mA (Ultra Deep Sleep ¹)
	At 12V < 5 mA (Deep Sleep ²)
	At 12V < 16 mA (Online Deep Sleep ³)
	At 12V < 18 mA (GPS Sleep ⁴)
	At 12V < 33 mA (nominal with no load)
	At 12V < 1A Max. (with full Load / Peak) (FMC234-MCIB0)
	At 12V < 2A Max. (with full Load / Peak) (FMC234-MBIB0)

BLUETOOTH® TECHNOLOGY

Bluetooth beacons

Specification	4.0 + LE
Supported peripherals	Temperature and Humidity sensor, Headset ⁵ , OBDII dongle ⁶ , Inateck Barcode Scanner, Universal Bluetooth® LE sensors support

INTERFACE

Digital Inputs	3
Negative Inputs	1 (Digital Input 2)
Impulse Inputs	2 (Digital Input 1, Digital Input 2)
Digital Outputs	3
Analog Inputs	2
CAN Adapter inputs	1
1-Wire	1
GNSS antenna	Internal High Gain
Cellular antenna	Internal LTE High Gain
USB	2.0 Micro-USB
LED indication	2 status LED lights
SIM	Micro-SIM or eSIM
Memory	128MB internal flash memory

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DEFAULT CONFIGURATION SETTINGS

MOVEMENT AND IGNITION DETECTION:



VEHICLE MOVEMENT
will be detected by
accelerometer



IGNITION
will be detected by
vehicle power voltage
between 13,2 – 30 V

DEVICE MAKES A RECORD ON MOVING AFTER EVERY 60S



PASSES
300 seconds



VEHICLE DRIVES
100 meters



VEHICLE TURNS
10 degrees



SPEED DIFFERENCE
between last coordinate
and current position is
greater than 10 km/h

DEVICE MAKES A RECORD ON STOP IF:



1 HOUR PASSES
while vehicle is
stationary and
ignition is off

RECORDS SENDING TO SERVER:



EVERY 60 SECOND
it is sent to the server
If device has made a
record



IN THEFT MODE
records are sent to the
server every 1s if
vehicle is moving.

MOUNTING RECOMMENDATIONS WITH A STANDARD CABLE

CONNECTING WIRES

- Wires should be fastened to the other wires or non-moving parts. Try to avoid heat emitting and moving objects near the wires.
- The connections should not be seen very clearly. If factory isolation was removed while connecting wires, it should be applied again.
- If the wires are placed in the exterior or in places where they can be damaged or exposed to heat, humidity, dirt, etc., additional isolation should be applied.
- Wires cannot be connected to the board computers or control units.

CONNECTING POWER SOURCE

- Be sure that after the car computer falls asleep, power is still available on chosen wire. Depending on car, this may happen in 5 to 30 minutes period.
- When module is connected, measure voltage again to make sure it did not decrease.
- It is recommended to connect to the main power cable in the fuse box.
- Use 3A, 125V external fuse.

CONNECTING IGNITION WIRE

- Be sure to check if it is a real ignition wire i. e. power does not disappear after starting the engine.
- Check if this is not an ACC wire (when key is in the first position, most of the vehicle electronics are available).
- Check if power is still available when you turn off any of vehicles devices.
- Ignition is connected to the ignition relay output. As alternative, any other relay, which has power output when ignition is on, may be chosen.

CONNECTING GROUND WIRE

- Ground wire is connected to the vehicle frame or metal parts that are fixed to the frame.
- If the wire is fixed with the bolt, the loop must be connected to the end of the wire.
- For better contact scrub paint from the spot where loop is going to be connected.

Please note, Secure S5/S7 4G must be fitted by a Road Angel approved technician.

MOUNTING RECOMMENDATIONS

LED INDICATIONS

NAVIGATION LED INDICATIONS

BEHAVIOUR	MEANING
Permanently switched on	GNSS signal is not received
Blinking every second	Normal mode, GNSS is working
Off	GNSS is turned off because: Device is not working or Device is in sleep mode
Blinking fast constantly	Device firmware is being flashed

STATUS LED INDICATIONS

BEHAVIOUR	MEANING
Blinking every second	Normal mode
Blinking every two seconds	Sleep mode
Blinking fast for a short time	Modem activity
Off	Device is not working or Device is in boot mode

BASIC CHARACTERISTICS

MODULE

Name	Road Angel Secure S5/ S7 4G-MBIB0: MeiG SLM320
Technology	LTE(CaT1)/2G(GSM/GPRS)/GNSS/BLUETOOTH® LE

GNSS

GNSS	GPS, GLONASS, GALILEO, BEIDOU, QZSS, AGPS
Receiver	Tracking: 33
Tracking sensitivity	-165 dBm
Position Accuracy	< 2.5 CEP
Velocity Accuracy	< 0.1 m/s (within +/- 15% error)
Hot start	< 1 s
Warm start	< 25 s
Cold start	< 35 s

CELLUAR

2G bands	GSM: B2/B3/B5/B8
4G bands	LTE FDD: B1/B3/B7/B8/B20/B28 LTE-TDD: B38/B40/B41