

- Small size 82 x 63 x 28 mm
- Water drops and humidity resistant
- 1-Wire interface
- Low power consumption
- Internal power supply available (ECO4+)

PHYSICAL PROPERTIES

Dimensions, mm	82 x 63 x 28
Connector	12pin
Indication	3 LEDs
Housing	Plastic
Device is resistible to water drops and humidity of environment	

PRODUCT FAMILY

- **ECO4/ECO4+**
- ECO3
- PRO4
- PRO3
- TCO4
- TCO3

CONTACTS

- +370 5 272 65 70
- info@ruptela.lt
- www.Ruptela.lt

Electrical specification

Power supply	12/24 V DC (range:10 - 32 V DC)	
Absolute maximum ratings	50 V @ 60 s	
(on ECO4+)	72 V @ 0.1 s	
Power consumption	ECO4	ECO4+
Deep sleep mode	6 mA*	7 mA*
Normal mode, battery not charging/full battery	100 mA	100 mA
Normal mode, battery charging	.	200 mA
Internal supply (ECO4+)	Li-Po 3.7 V 190 mAh	

Protections

- Short circuit protection
- Reverse polarity protection
- Electrostatic discharge protection on USB
- Electrostatic discharge protection on 1-wire data
- Over-current protection on 1-Wire power
- Electrostatic discharge protection on sim card slot
- Charging protection (on ECO4+)**

* Firmware dependent

** If temp is >45C, charging is disabled, if >60C battery is disconnected from the system at all

I/O Characteristics

4 x DIN	Digital inputs
Threshold	4 V
2 x DOUT	Digital outputs
Max output	Open collector 32 V, 1 A max
2 x AIN	Analog inputs
Input range	0 - 30 V
1 - Wire	1-Wire peripherals
Output current	80 mA
USB	Configuration interface

Environmental data, reliability, certification

	ECO4	ECO4+
Storage temperature	-40 - +65	-40 - +65
Operating temperature	-35 - +60	-35 - +60
Operating from battery:		
Charging	.	-20 - +45
Discharging	.	-20 - +60
Operating altitude	Up to 2000 m	
Certifications:		
E-mark	.	.
CE ready	.	.
RoHS	.	.
Temp. Test ISO16750	.	.
FCC HW ready	.	.

Telecommunication, Positioning

GPS\GLONASS module	Ublox MAX-7C
Internal	
56 channel	
Sensitivity	-161 dBm
Cold start	29 s
Aided start	5 s
Reacquisition	1 s
GPS antenna	External
Frequency	1575.42 ± 3 MHz
GSM modem	Quectel M95
Internal	
GSM850\GSM900\DCS1800\DCS1900	
GSM antenna	Internal
GSM850\GSM900\DCS1800\DCS1900	
Accelerometer	3-axis; 2g/4g/8g/16g

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Peripherals

Available on 1 - Wire

- 4 x Temperature sensors DS18B20/DS18S20
- 1 x iButton DS1990 with passive socket

Available on digital outputs

- 1 x Buzzer\LED
- 1 x Eco driving panel

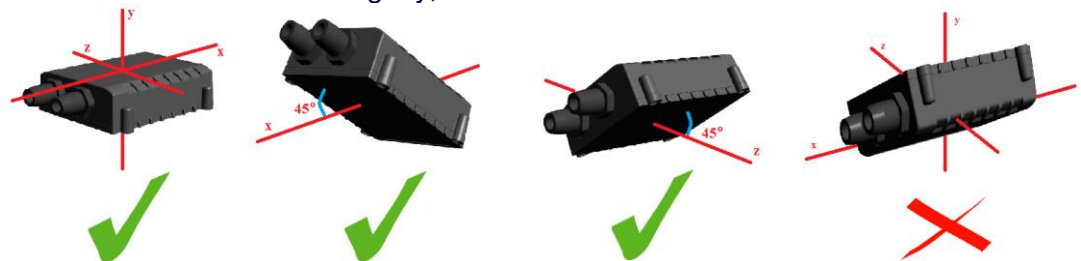
Pin out

Red	Power supply
Black	Ground
Purple	DOUT1
Orange	DOUT2
White with red stripe	1-Wire power
Green with yellow stripe	1-Wire data
Gray	AIN1
Green	AIN2
Yellow	DIN4
Pink	DIN1
White	DIN3
Blue	DIN2

Explanations

Deep sleep mode – Power saving mode when GPS and GSM modems and all peripheral devices are disabled, except DINs and DOUTs. Device wake up on state change of DIN3 and DIN4.

Device can be installed within 45° angle in any axis but top surface facing up. Device should be installed tightly, does not move or shake.



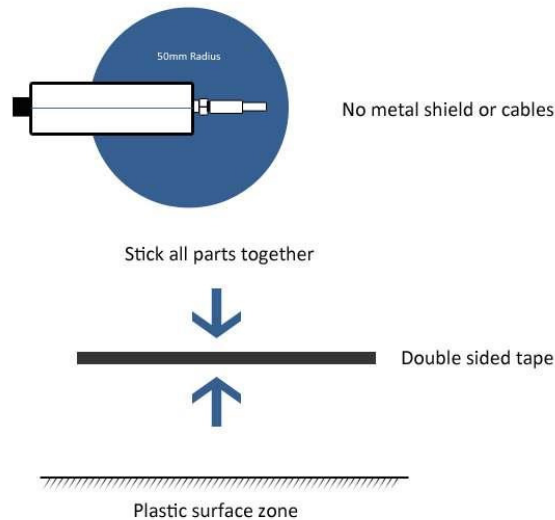
Warning!

All internal components including battery must be replaced only by manufacturer! Any self-willed attempt to open device cases will void any warranty.

Device must be installed in service access area (e.g. under dashboard, behind fuse box).

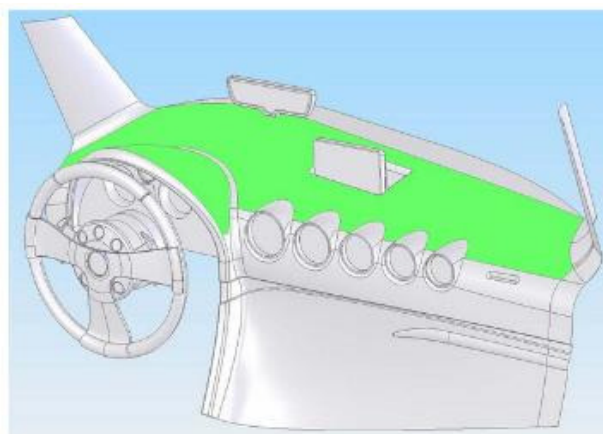
Device installation

- When installing device into vehicle please obey these instructions over wise you device may not work properly.
- Module should not be seen or easily reached.
- Module should be firmly fixed to the surface. Please avoid mounting module near the metal surface or cables (see the picture below).
- Wrong module mounting may be the cause of module malfunction.
- Module cannot be fixed to heat emitting or moving parts.
- SIM card should be inserted in the module while the connector is plugged off (while module has no power).
- Module must be fitted with double sided stick tape!



Antenna installation

It is recommended to place GPS/GLONASS antenna behind the dashboard as close to the window as possible. It must be uncovered, installed heads up (see picture).



Best place for GPS antenna is marked with green in picture.



CORRECT



INCORRECT

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