iStartek Vehicle GPS Tracker
VT140 User Manual
V1.0

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2. Product Description

VT140 is a 2G based GPS vehicle tracker that complies with India's AIS140 requirements. Built-in IRNSS positioning module, reporting location and vehicle status to the vehicle tracking platform through 2G network for real-time vehicle monitoring, anti-theft and scheduling management. It can be applied to fleet management, public transportation management, school bus management, taxi operation management, insurance vehicle management, lease management and private car anti-theft, etc.

The VT140 has a built-in 64Mb Flash memory. When the device enters a place without network, it will automatically save the historical positioning data. When the network returns to normal, it will automatically reissue the historical positioning data to the service platform.

VT140 contains 2 RS232 ports, which can be connected to optional accessories to achieve corresponding functions.

3. Product Function

- ✧ GPS+GSM base station dual-mode positioning
- ✧ Real-time tracking
- ✧ Track by time interval
- ✧ SOS alarm
- ✧ SOS button remove alarm
- ✧ External power failure alarm
- ✧ Low battery alarm
- ✧ Low battery alarm
- ✧ Engine and door status change alarm
- ✧ Support dual servers
- ✧ Speeding alarm
- ✧ Harsh acceleration alarm
- ✧ Harsh deceleration alarm
- ✧ Harsh turning alarm
- ✧ Mileage report

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- ✧ 64 Mb Flash
- ✧ FOTA upgrade

4. Product Specification

Item	Specification
Size	99 x 54 x 19.5mm
Weight	106g
Input voltage	DC 9 - 100V/1.5A
Waterproof level	IP66
Inbuilt Battery	500mAh/3.7V（High temperature resistant battery）
Average standby power consumption	65mA/h
Operating hours	33hours in power saving mode and 7.5 hours in normal working mode
Working temperature	-20℃to 80℃
Working humidity	5% to 95%
GSM Bands	850/900/1800/1900MHz
GPS Sensitivity	-165dB
Positioning accuracy	2.5 meter
LED Indicator	2 LED lights indicate GPS/GSM status
GSM antenna	Built-in FPC
GPS antenna	Built-in ceramic antenna（25 X 25 X 4mm）
Flash	64M bit
Sensor	3D accelerometer
Switch	External toggle switch
SIM card	Nano SIM card，external push-push type
I/O	4 Digital inputs（Can be configured as high and low level trigger mode） 2 Analog input（0~36V） 2 Outputs 1 1-wire 2 RS232 1 5V output wire 1 Micro USB

5. Products and accessories

5.1 Standard accessories

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Main Unit

5.2 Optional accessories

Ultrasonic Fuel Sensor

Capacitive Fuel Sensor

12V/24V Relay

USB Cable

Buzzer

6. Product Appearance

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7. Product Operation

7.1 Recharge

When using V200 for the first time, please connect the tracker's red wire (positive) and black (ground wire) to a 12V or 24V power supply and charge for at least 2 hours to ensure sufficient power. After configuration and testing are completed, install it on the vehicle.

7.2 Install SIM card

Please make sure that the SIM card has sufficient balance, the GPRS function has been activated and the correct APN of the SIM card has been confirmed;
Please make sure that the PIN lock function of the SIM card is turned off;

7.3 Turn on Device

Switch ON device or connect to external power supply, VT140 will start up and run.
LED lights indicate operating conditions:

GPS Indicator (Blue)	
OFF	Power OFF or in sleep mode
Flash (every 0.1 sec)	GPS module is starting or restarting
Fast Flash (0.1 sec ON, 2.9 sec OFF)	GPS signal received
Slow Flash (1sec ON, 2 Sec OFF)	No GPS signal
GSM Indicator (Green)	
ON	There is an incoming call or is in a call
OFF	Device is OFF or in sleep mode
Fast Flash (every 0.1 sec)	GSM module is starting or restarting
Fast Flash(0.1 sec ON, 2.9 sec OFF)	GSM signal received
Slow Flash (1sec ON, 2 Sec OFF)	No GSM signal

7.4 Parameter Configration

Download and install the USB cable driver "PL2303_Prolific_Driver".
After the device is turned on, connect the VT140 to the computer via a USB cable, run the "iStartek Parameter Editor_V1.00" configuration software and open the port to enter the parameter configuration state.

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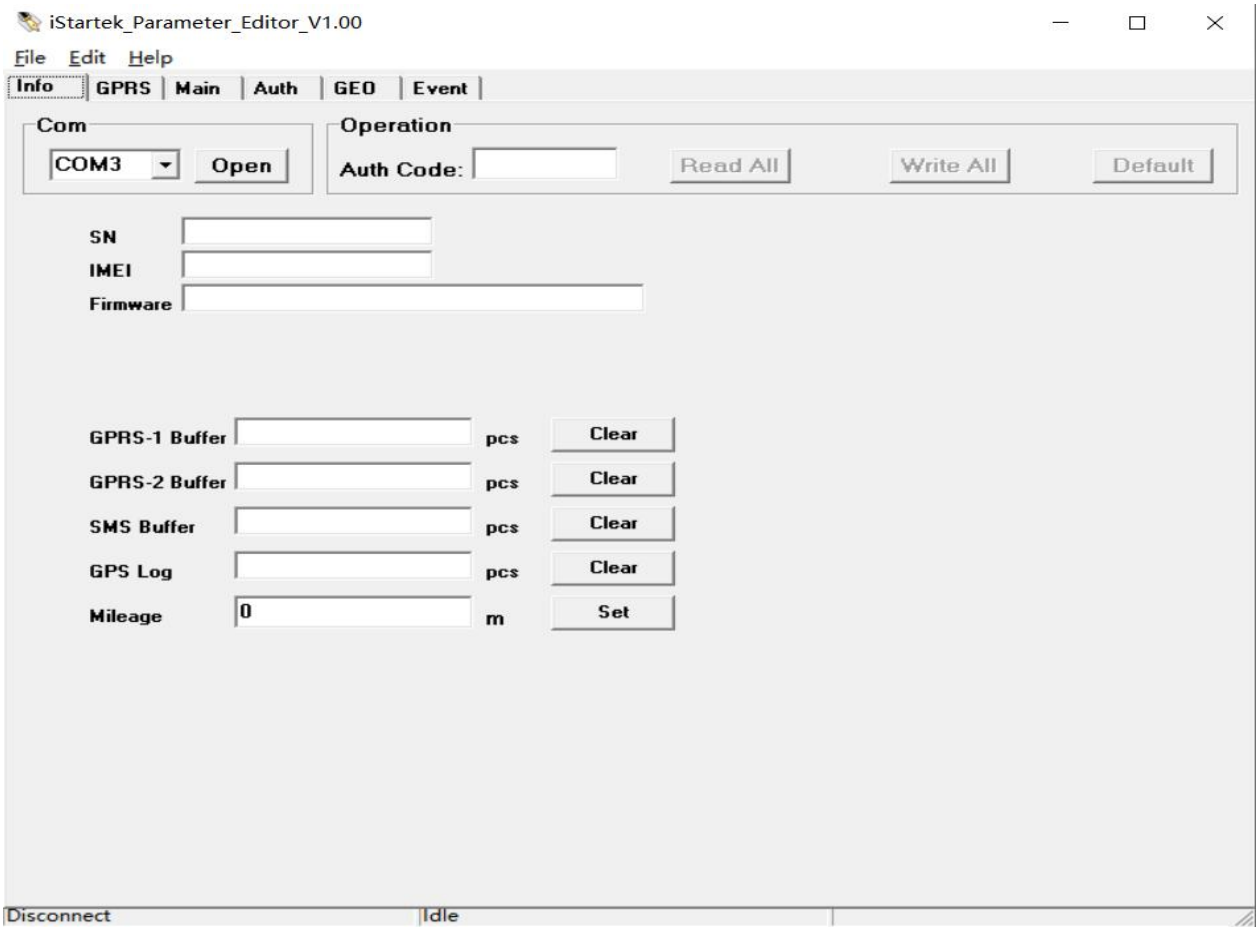

For more parameter configuration, please refer to "iStartek Parameter Editor User Manual".

7.5 Track by GPS Tracking Platform

You can set the server IP, Port, and APN parameters through SMS commands **SET PIP、SET PPT、SET SIP、SET SPT、SET APN** and you can also use the iStartek Parameter Editor software to configure related parameters.

For more SMS command functions and parameter configuration, please refer to "VT140 protocol V1.0" and "iStartek Parameter Editor User Manual".

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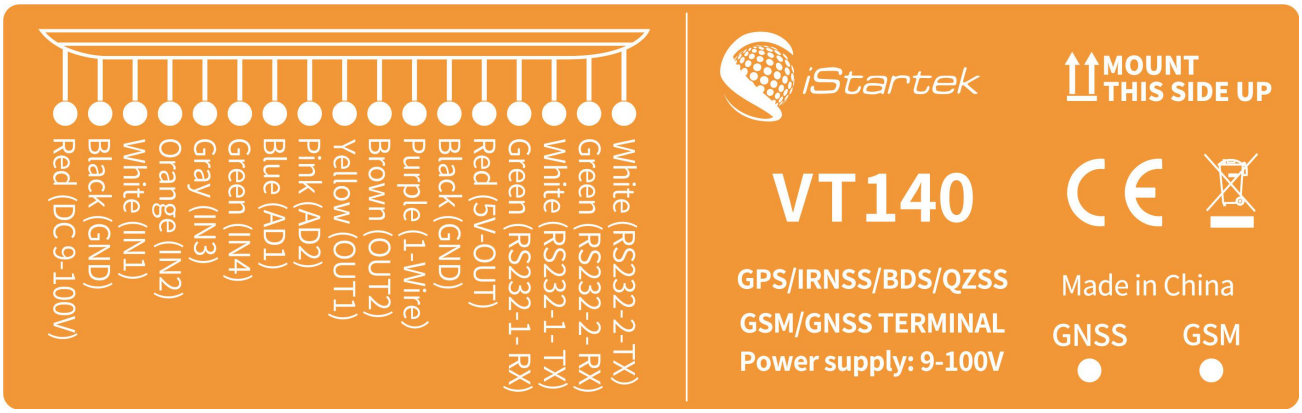
8. Product Installation

8.1 Power Cable Function Introduction



PIN	Color	Function
DC	Red	DC In (power input), connect to the positive pole of the car battery. Input voltage: 9V~100V.
GND	Black	GND, connect to the negative pole of the car battery, or to the iron place on the car.
IN1	Whit	Digital input 1, default is negative trigger. Positive and negative trigger can be configured by Parameter Editor. Used to connect to the SOS button.
IN2	Orange	Digital input 2, default is positive trigger. Positive and negative trigger can be configured by Parameter Editor; Used for ACC detection
IN3	Grey	Digital input 3, default is positive trigger. Can configure positive and negative trigger by Parameter Editor.
IN4	Green	Digital input 4, default is positive trigger. Can configure positive and negative trigger by Parameter Editor.
AD1	Blue	AD1 input, positive trigger and AD1 input (0-36V, 12-bit precision)
AD2	Pink	AD2 input, positive trigger and AD1 input (0-36V, 12-bit precision)
OUT1	Yellow	Open-drain output, drive capacity greater than 500MA; An external relay can be connected to remotely cut off the car's fuel/engine power supply, etc.
OUT2	Brown	Open-drain output, drive capacity greater than 500MA; Can connect an external buzzer to alarm, etc.
1-wire	Purple	Digital, can be connected to iButton and temperature sensor
GND	Black	GND
5V	Red	DC 5V output, available for temperature sensor and serial port accessories.
RX	Green	RS232-1 RX
TX	White	RS232-1 TX
RX	Green	RS232-2 RX

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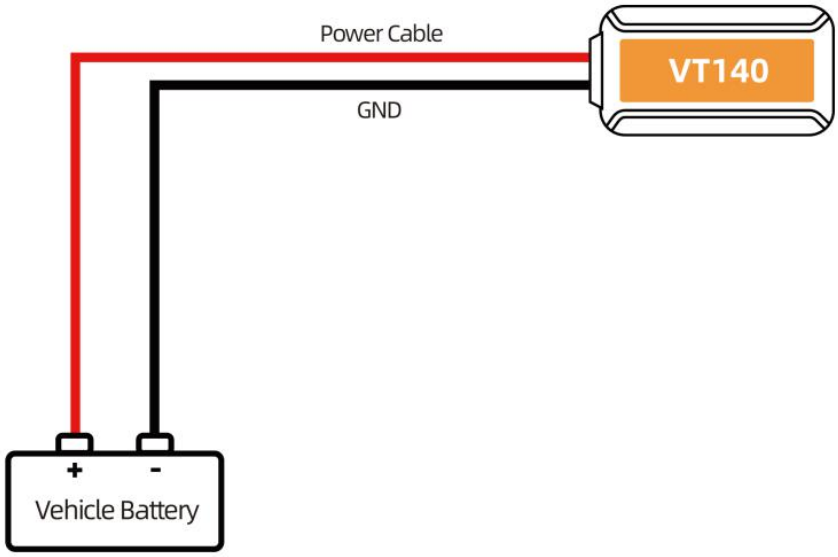
TX	White	RS232-2 TX

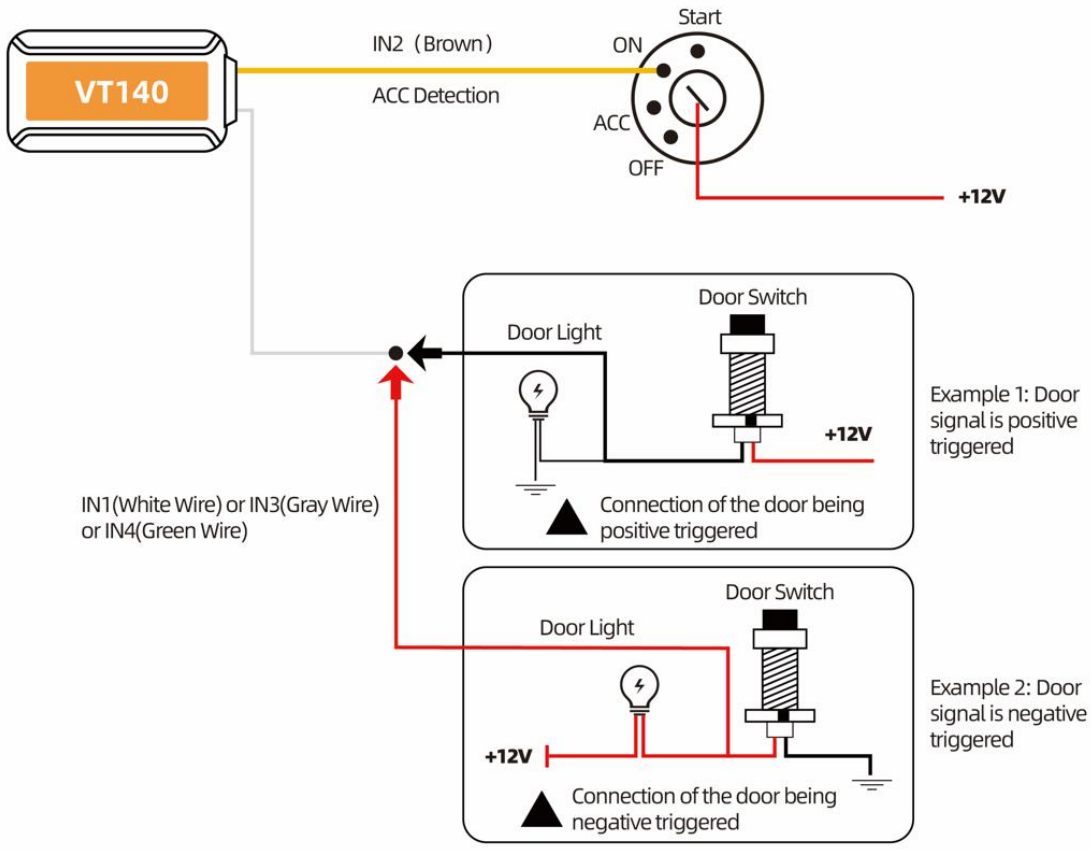
8.2. Power Connection

Connect the red power wire and black ground wire to the positive and negative pole of the car battery to get power supply:



8.3 Digital inputs installation

Input2 can be connected to the vehicle ignition to detect ignition status.
Input1, input3 or Input4 can be connected to the car door to detect the state.



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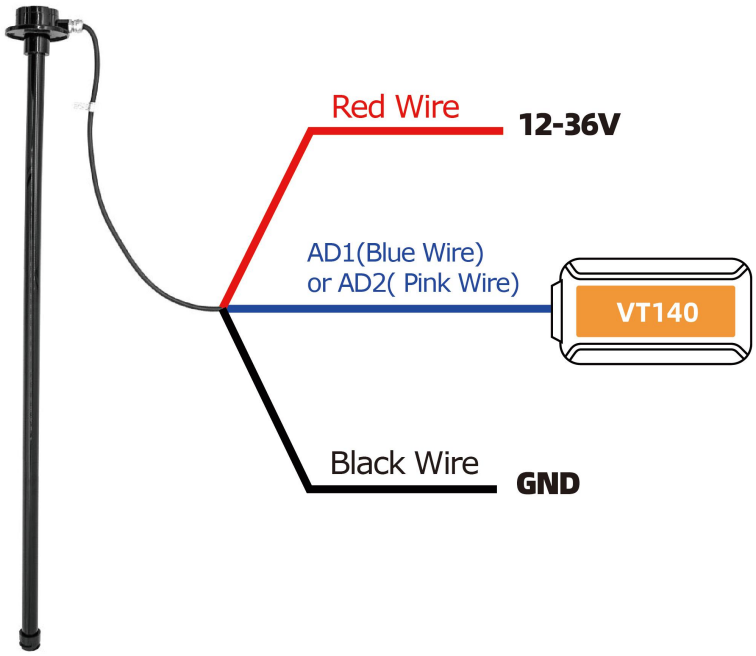
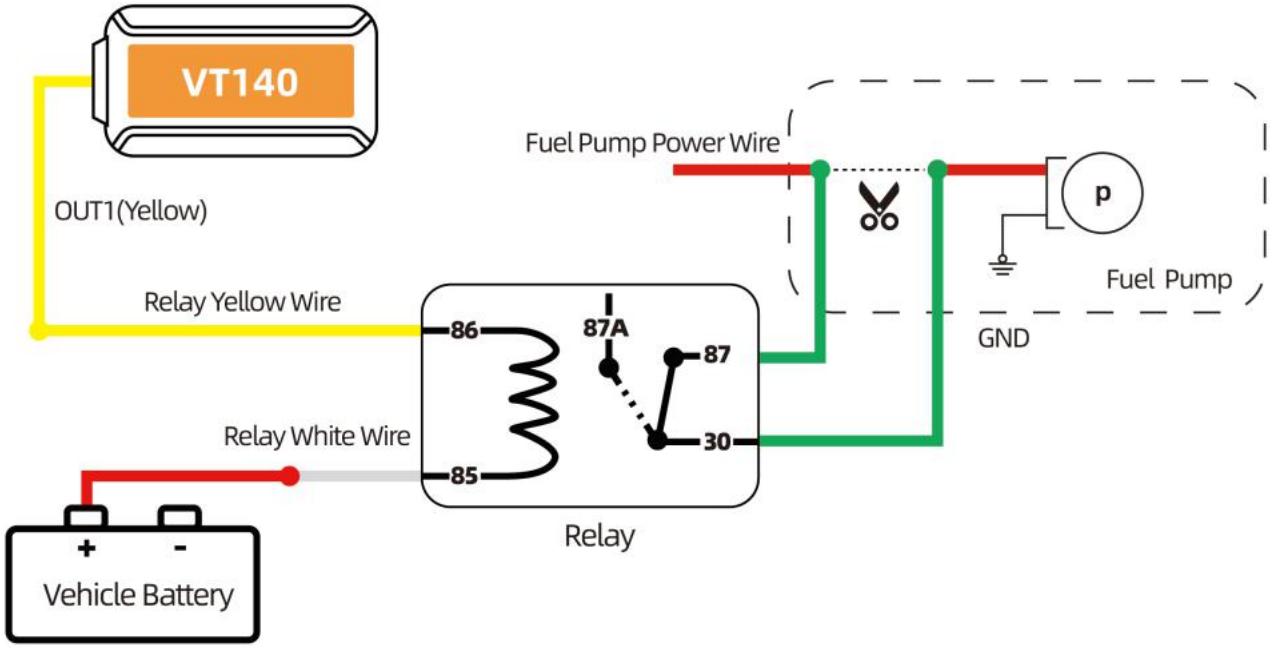
8.4 Analog Input Installation

The device can be connected to up to two fuel sensors. The wiring connection is as follows:



8.5 Output Control Wire Installation

The output wire can be connected to an external relay to cut off fuel/electricity and control the vehicle. You can also connect the buzzer to alarm.



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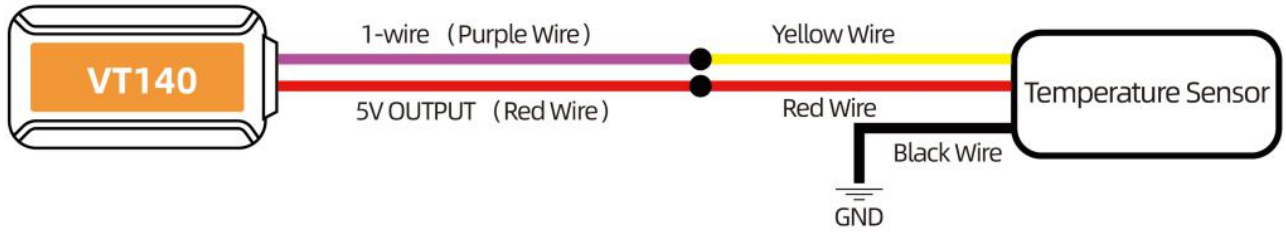
8.6 Temperature Sensor Installation

Connect device to a temperature sensor, the wiring connection is as below:



8.7 Ultrasonic Fuel Sensor Installation

The height measurement range of the ultrasonic fuel sensor is 0~100cm (0~250cm optional), and the corresponding voltage output range is 0~5V.

VT140 analog input connect to the ultrasonic fuel sensor, the green wire of the ultrasonic sensor is connected to the AD1 blue wire of the VT200 or the AD2 pink wire.

Example: When the fuel is empty, the sensor output voltage is 0V. With a fuel tank height of 100cm as the standard, then fuel sensor output voltage is 5V when fuel is full.

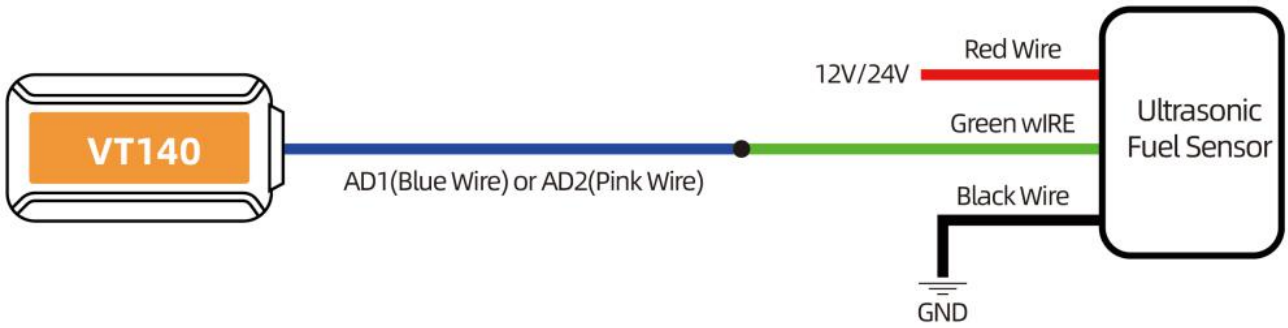
If the height of the fuel tank is H_0cm and the fuel tank is full of F liters, the fuel sensor output voltage is **$V=H_0/20$** when the fuel is full.

Calculate the remaining fuel volume:

Percentage of fuel = **(AD/V)*100%**

The fuel volume height is: **H=(AD/5)*100cm**

The remaining liters of fuel volume = **(AD/V)*F liters**



If you have any other questions, please send an email to info@istartek.com, we are happy to serve you.

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