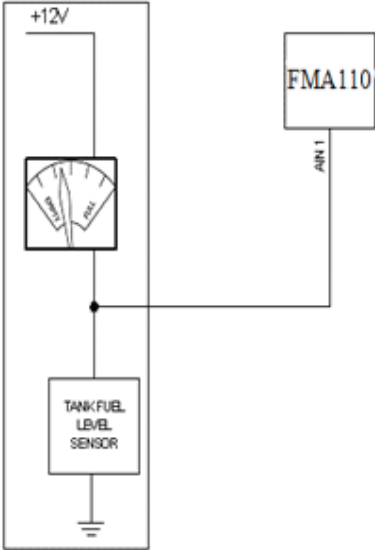


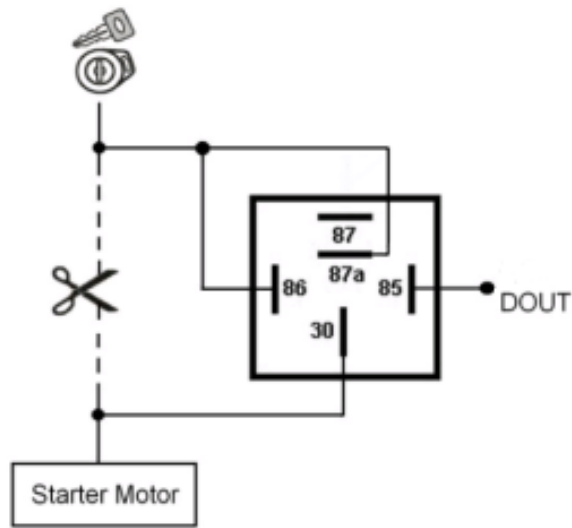
FMA110 Accessories

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Please order accessories separately as they are not included into device package.

Accessory and its description	Accessory connection schematic
<p>Fuel tank sensors</p> <p>A fuel tank level sensor which indicates the approximate fuel level on the driver's indicator panel exists in most cars. If the sensor returns analogue signal proportional to fuel level it can be connected to FMA110 Analog input. After connection to the tank fuel level sensor a calibration is needed because most fuel tank sensors are not linear. Calibration is performed by measuring voltage values resulting from the volume of fuel in tank.</p>	<p>Fuel sensor connection to FMA110</p>  <p>The diagram illustrates the connection of a fuel tank level sensor to the FMA110 device. On the left, a vertical box represents the car's fuel system, containing a fuel gauge and a 'TANK FUEL LEVEL SENSOR'. The sensor is connected to a '+12V' power source at the top and ground at the bottom. A signal line from the sensor is connected to the 'AN1' input of the 'FMA110' device, which is shown as a separate box on the right.</p>
<p>Alarm buttons, door sensors etc.</p> <p>Alarm buttons, door sensors, ignition, etc. have two output states: high or low. FMA110 Digital inputs are used to detect these states.</p>	<p>Panic button connection to FMA110</p> <p><input type="checkbox"/></p>
<p>Relays</p> <p>In cases when sensor output signal is negative, an additional relay has to be installed to convert negative signal to positive.</p>	<p>Inverting relay connection to FMA110</p> <p><input type="checkbox"/></p>
<p>Immobilizer relay</p>	<p>Immobilizer relay connection to FMA110 output</p>

When connected as shown on the right hand side, FMA110 disables engine starter when output is ON.



Automotive relay

An ordinary automotive relay is used to invert input signal or to immobilize engine starter. Note that relays can be 12 V or 24 V capable.



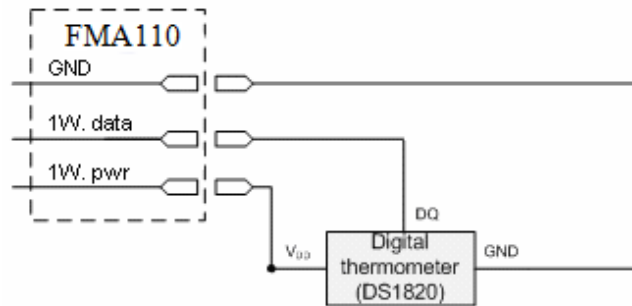
1-Wire devices

One of the implemented features on FMA110 is 1-Wire® data protocol, which enables connection to devices such as thermometer (DS1820, DS18S20 and DS18B20) and I-Button types: DS1990, DS1991, DS1994, DS1993, DS1992, DS1982, DS1995, DS1985, DS1996, DS1986, DS1971, DS1963L, DS1921, DS1973, DS1904, DS1972, DS1977, DS2413, DS1922/1923, DS1990A, DS1982U, DS1985U, DS1986U.

Automotive relay pinout



Digital thermometer DS1820 and TTJ100 connection to FMA110



TTJ sensor pinout



I-Button DS1990A connection to FMA110

