

Name: **Relay Shield**

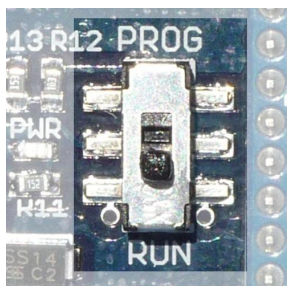
Code: **MR007-002.1**

The *Relay Shield* is an Arduino compatible module that provides an easy way to control high voltage thanks to 4 independent channels equipped with photo-coupled mechanical relays preassembled on the board. The maximum switching power is 1250VA AC or 150W DC.

The control of all the channels of this shield have to be done through the digital I/O pins 5, 6, 7 and 8 of the Arduino board where this shield is mounted on, anyway it is necessary an external 12VDC power source to correctly supply the relay coils. The 12VDC power presence is pointed out by the switching on of the red led *PWR* placed next to the corresponding terminal block.

An important characteristic of this shield is the presence of the XBee interface connectors that allow, through the use of the wireless XBee modules, a remote communication with the Arduino board where the *Relay Shield* is mounted on, making more easy the use of the shield in robotic applications, in industrial controls and in home automation projects.

During the programming of the Arduino board, the presence of the XBee module could interfere with the serial port signals; for this reason it has been implemented a switch (see Fig.1) to interrupt the connection between the Arduino board and the XBee module mounted on the shield. In normal mode the switch has to be moved into the *RUN* position, while during the programming of the Arduino board, it has to be moved into the *PROG* position. Because of the presence of this switch it won't be necessary to remove and insert constantly the XBee module at every changing operation of the Arduino sketch.



*Fig.1 - Run/Prog switch*

**!!! CAUTION !!!**

This device can carry high voltages and can therefore be deadly if incorrectly used

### ***CHARACTERISTICS***

<b>Name</b>	<b>Description</b>
OUT-1 control pin	Arduino pin 5
OUT-2 control pin	Arduino pin 6
OUT-3 control pin	Arduino pin 7
OUT-4 control pin	Arduino pin 8
Supply voltage	12VDC
Supply current	200mA (max.)
Dimensions	2.7" x 2.2" (69 x 55 mm)
Weight	1.73 oz (49 gr)
Operating temperature	-30°C to +70°C

### ***SPECIFICATIONS (each channel)***

<b>Name</b>	<b>Description</b>
Rated voltage	30VDC, 250VAC
Rated current	5A
Coil voltage	12VDC
Coil resistance	320 $\Omega$ $\pm$ 10%
Electrical Life Expectancy	100000 operations
Mechanical Life Expectancy	10000000 operations
Operate time max.	10ms
Release time max.	4ms

