

WATER PUMP LEVEL CONTROL
CODE 425 **LEVEL 1**

Cut-connect water pump circuit, it is controls water pump automatically to pump water up till tank is full, then it will automatically stopping. whenever the water in tank is required till set level, water pump will start pumping water up again.

Technical specifications:

- power supply : 12VDC.
- consumption : 45mA max.
- maximum load : 1000 watts @ 220VAC
- 2 levels detect
- PCB dimensions : 2.42 x 1.62 inches.

How to works:

If there is no have water in the tank. TR1 and TR2 will not working at the beginning stage because the base of TR1 and TR2 have no voltage, the collector of TR1 will having high voltage. This high voltage will transfer through D1 to the base of TR3 and make TR3 and TR4 conduct current, LED displays, relay works and water pump is working. Water level will flow pass L level and cause TR1 conduct current, shorts the collector of TR1 to ground while TR3 and TR4 still work by having feedback voltage to R8 and preventing by diode D1. Water pump is continuously working till water reaches H level, TR2 conducts current to short at the base of TR2 to ground. TR3 and TR4 will stop conducting current, LED shuts down and relay does not work, so water pump is stop working too. When water in tank is reduced respectively from H to L level, TR1 will stop conducting current, the collector then has high voltage which will transfer to diode D1 to the base of TR3. All functions will be repeated as above.

PCB assembly:

Shown in Figure 3 is the assembled PCB. Starting with the lowest height components first, taking care not to short any tracks or touch the edge connector with solder. Some tracks run under components, and care should be taken not to short out these tracks. If the pins will not enter the holes with ease, use a small drill to slightly enlarge the opening. All components with axial leads should be carefully bent to fit the position on the PCB and then soldered into place. Make sure that the electrolytic capacitors are inserted the correct way around. Some components are particularly

sensitive to heat (ie: Transistors, IC's, diodes etc.) extra care must be taken to only apply the iron for as little time as possible, using a pair of pliers to grip the leads will help conduct heat away. Trim components leads with wire cutters to prevent excess lengths causing a short circuit. Now check that you really did mount them all the right way round!

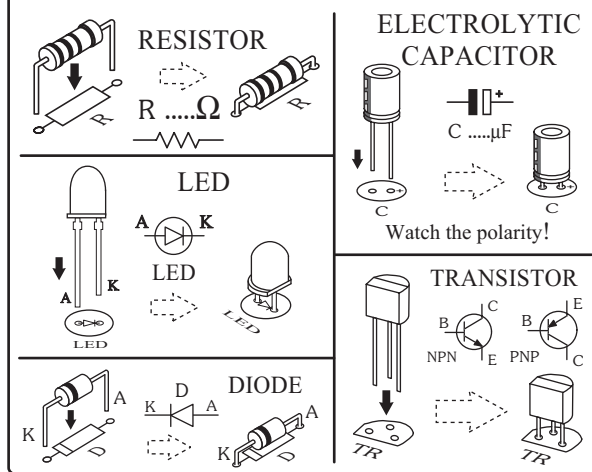
Testing:

Giving connected 12VDC to the circuit.

1. At the beginning stage, LED displays and relay works. Connecting H pole with COM pole, LED will shut down and relay stop working. Taking H off from COM, LED displays and relay will work again.

2. Shorting L pole with COM, relay is working. Shorting H pole to COM again. Now, COM, L and H are connected, LED shuts down and relay stop working. Taking H pole off from COM, now LED displays while relay works.

Figure 1. Installing the components



Troubleshooting:

The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted in the wrong places. Make sure that all the polarised components have been soldered the right way round.

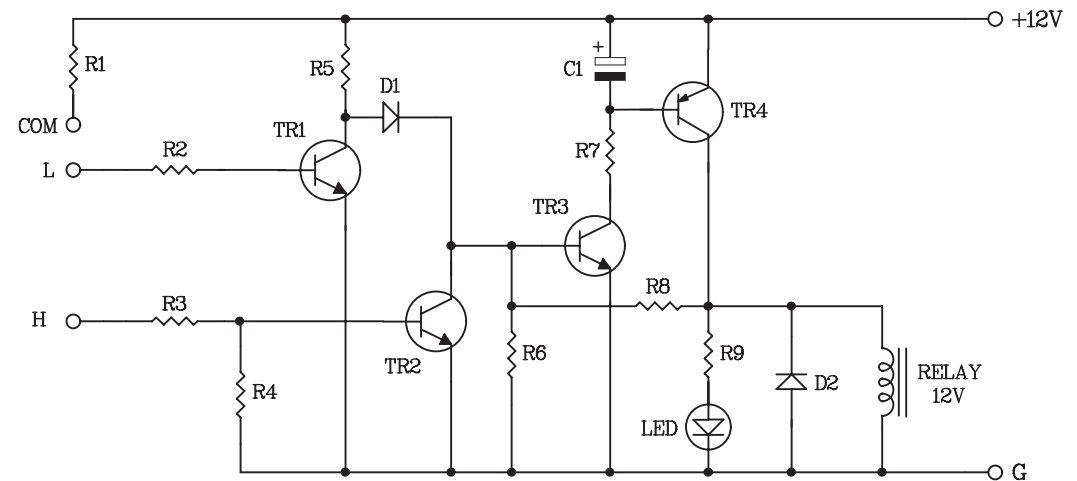


Figure 2. The water pump level control circuit

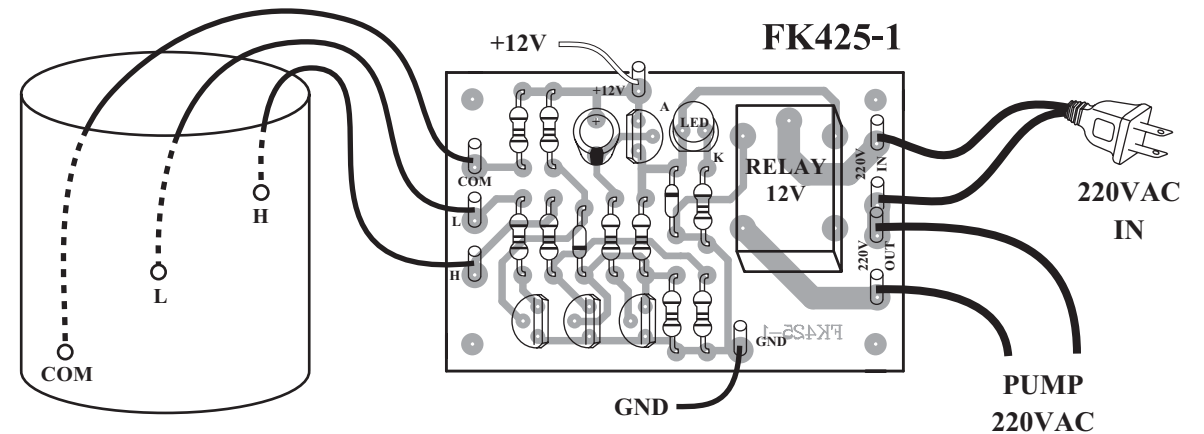
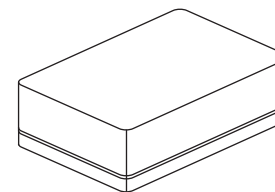


Figure 3. Connections



NOTE:
FUTURE BOX FB03 is suitable for this kit.

NEW KIT SET **NEW**

CODE FK	DESCRIPTION	POWER
161	FEELING FLASHER 14 LED	9-12VDC
162	SATURN'S RING FLASHER 31 LED	9-12VDC
163	UNIVERSAL FLASHER 10 LED	9VDC
164	XENON TUBE FLASHER (STRAIGHT TYPE)	220VAC
165	SOUND ACTIVATED XENON FLASHER (STRAIGHT TYPE)	220VAC
166	LIGHT ACTIVATED XENON FLASHER (STRAIGHT TYPE)	220VAC