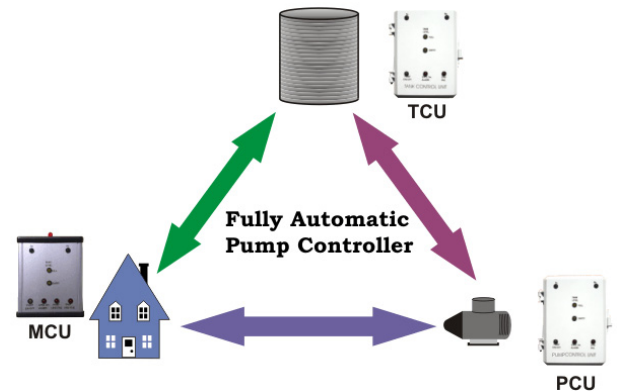


TCU, PCU, MCU

Pump Controller

Features

- Fully automatic.
- Level switch alarm. Comes on to indicate a faulty level switch.
- Wide supply connection with reverse polarity protection, EMI, surge and transient protection.
- DC Supply of 10 to 38 Volts, AC Supply to 9.5 to 28 Volts
- Full indication of all actions via LEDS.
- Built-in self test and diagnostics of RF link.
- Crystal Controlled for high stability and accuracy.



Description

The simplest form of controlling and monitoring fluid levels in a variety of different applications.

The **TCU/PCU/MCU** system allows you to not only start and stop Pumps, but also monitors the status of the fluid levels in the Tank.

A basic system only requires a PCU (Pump Control Unit) and a TCU (Tank Control Unit). These 2 units will measure high and low levels of fluid in a Tank and start or stop the Pump fully automatic.

It is as simple as that.

If you add the **MCU** (Monitor Control Unit), you can mount in a separate location, for example your house and see what is happening via LED status at both the Pump and Tank units.

<p style="text-align: center;">TCU Tank Control Unit</p>	<p style="text-align: center;">PCU Pump Control Unit</p>	<p style="text-align: center;">MCU Monitor Control Unit</p>

Operation

The system has been fully tested to comply with the requirements of the client. The contractor has to only connect the Float Switches, (Not supplied), to the TCU, and the load, (not to exceed 3A) to the Relay outputs, (N/O), of the PCU.

It is the clients decision as to whether additional protection, (Flow Switches etc), should be incorporated into the circuit to protect Motors in the event of no flow.

TANK LEVEL CONTROLLER

TANK	___ Full	<u>Mode Switches:</u> Mode Switch 1: if ON => No External Pump Controller (Pump is wired to the TCU)
	___ Empty	Mode Switch 4: if ON => Tank Cont. POLL every 2 mins. Pump Cont. POLL every 1 mins. Monitor POLL every 5 mins.

ALL controllers have a free air check system so will listen before it transmits.
Only input changes at the TCU are transmitted "instantaneously".

If Mode Sw 4 is ON on all the units the system will communicate every minute to refresh float switch and pump status.

If Mode Sw 4 is OFF on all the units the system will communicate every twenty minutes to refresh level switch and pump status.

Tank Controller Unit: (TCU)

Transmits an ON signal when level is below Empty, pump relay comes ON
Transmits an OFF signal when level is above Full, pump relay goes OFF
The Level Switch Debounce is set to 10 sec.

If Mode Switch 1 is OFF (meaning that an external PCU is present) the TCU will wait for a return acknowledgement after it sends data out.

If no return acknowledgement is received from the PCU, the TCU will go in a Pump Link Fail Mode where the pump relay is turned OFF and Link Fail relay is turned ON. It also transmits the Link Fail data so that the monitoring station knows that the PCU has failed.

Pump Controller Unit: (PCU)

The relay 1 on the pump controller is controlled by the level switch at the tank. The pump controller gets updated by the Tank Controller every minute.

If no update is received from the TCU, the PCU will go in a Tank Link Fail Mode where the pump relay is turned OFF and Link Fail relay is turned ON. It also transmits the Link Fail data so that the monitoring station knows that TCU has failed.

Monitor Control Unit: MCU

The MCU listens to TCU and PCU and updates its output relays. If it does not receive from either of the units then: if Mode Sw 4 is ON the MCU will POLL every 5 mins. If no communication is received in the 5mins the Tank and Pump Link Fail relays will come on.

Level Switch Alarm: Level switch alarm comes on when the low level switch is not active and the high level switch is active indicating that one of the level switches has gone faulty. The motor is turned off if there is a level switch alarm.

Installation Instruction

All units have been assembled and tested to operate as a fully automatic High-Low RF Device. There is no need for adjustments of any Dip Switches or components on the PC Board. Follow the instructions detailed below.

Antennas

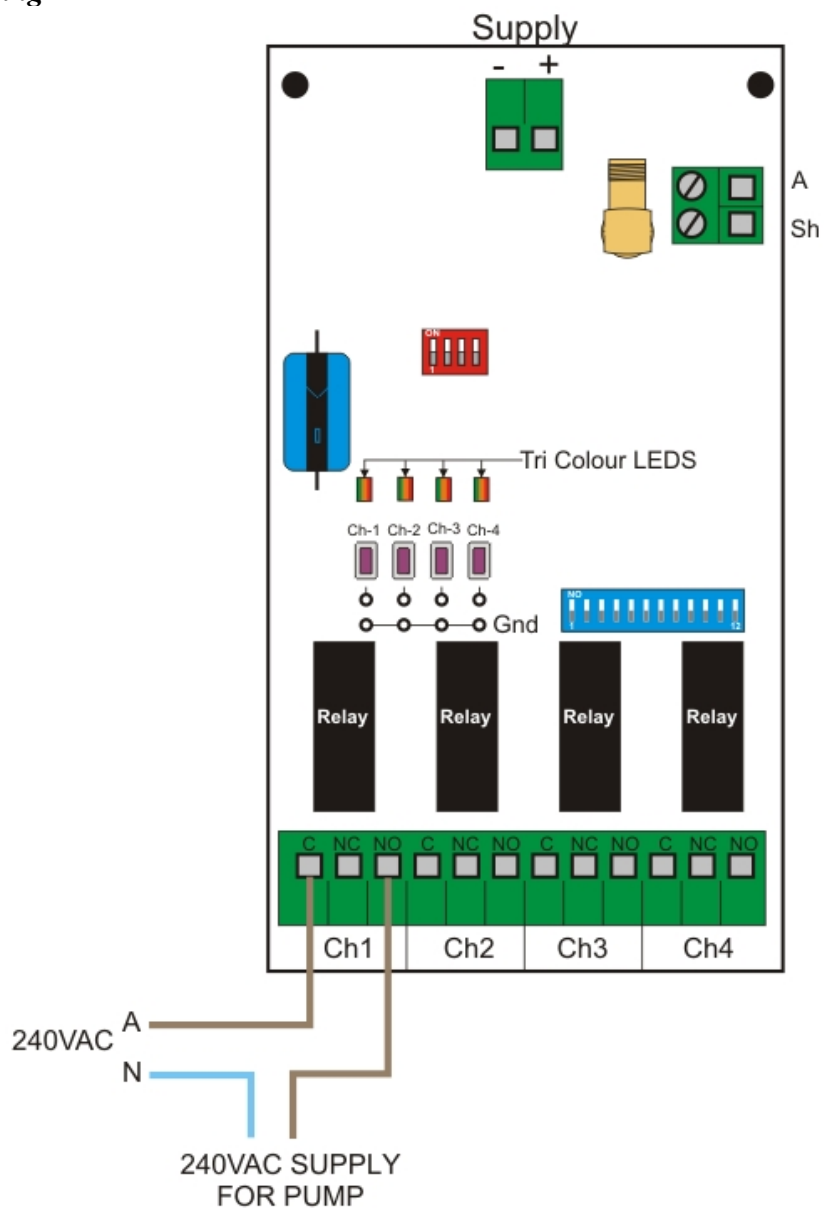
Both Antennas are to be mounted as high as possible so that there are no obstructions between the Antennas. (Line of Sight). They should also be mounted at the highest point of a pitched roof especially if it is metal.

Pump Control Unit

Connect the Plug Pack to the PCU and screw the Antenna connection.

Supply should be connected as shown on the Wiring Configurations. Maximum load of the Relay should be no more than 3 Amps. The use of a secondary Relay or Contactor is advised.

Pump Control Unit Wiring

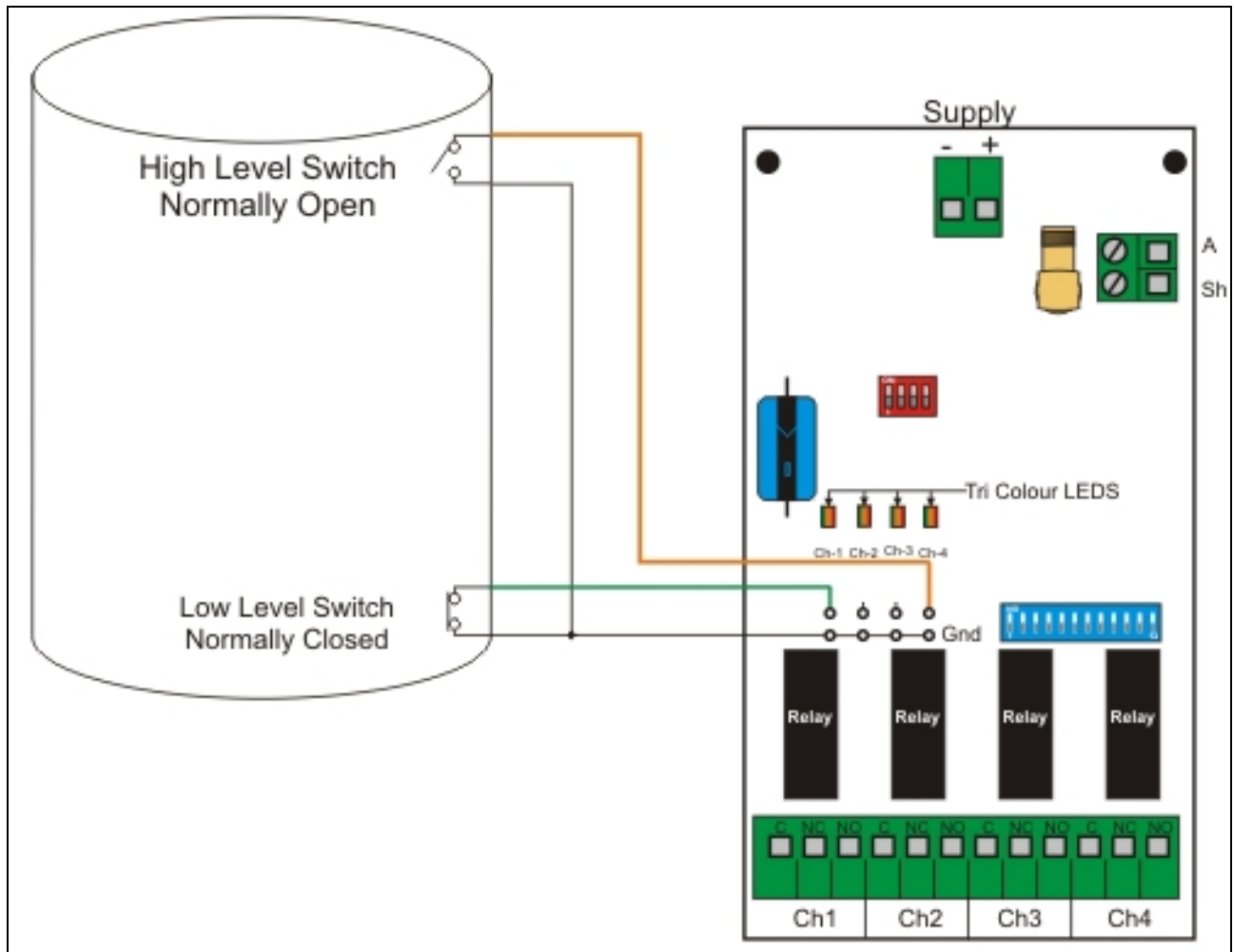


Tank Control Unit

Connect the Plug Pack to the TCU and screw the Antenna connection.

Connection of the Float Switches should be as shown on the Wiring Configurations. You do not need to connect the additional supply unless you are using the PCU. (Using the TCU as a stand-alone unit).

Maximum load of the Relay should be no more than 3 Amps. The use of a secondary Relay or Contactor is advised.

Tank Control Unit Wiring***Monitor Control Unit (If supplied)***

Connect the Plug Pack to the MCU and screw the Antenna connection.

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