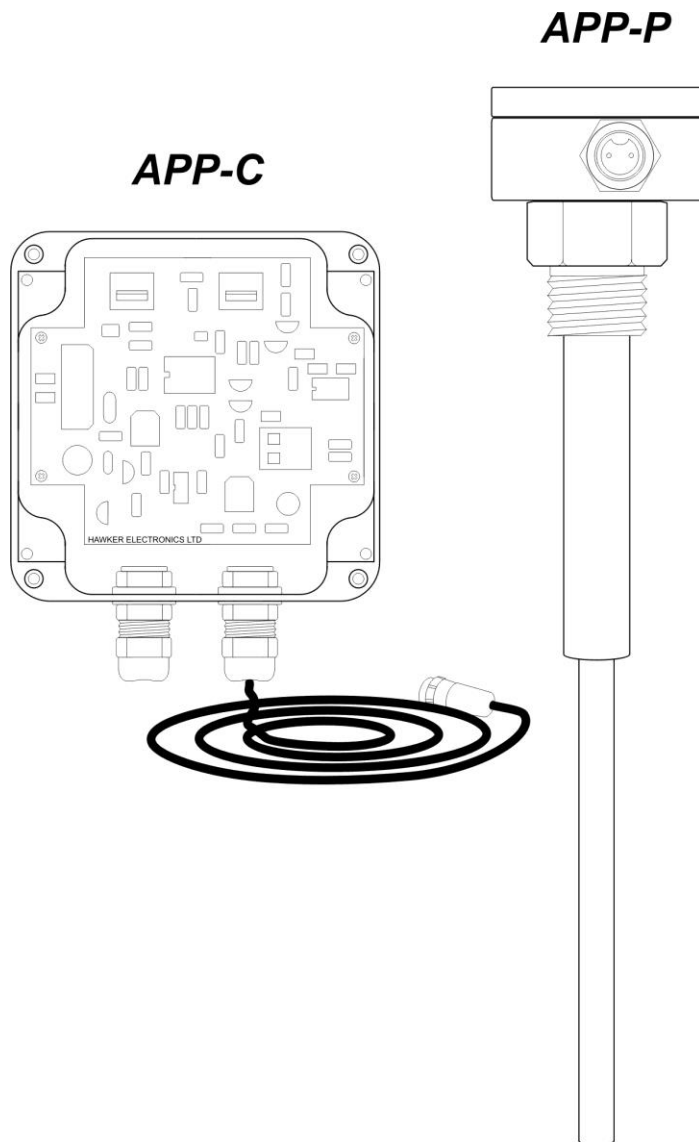




Auto Pump Primer System

Installation and Setting up Instructions

**Version 2 - with Solenoid Response Adjustment and
fixed clutch delay time**



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Description

The APP System consists of two parts, an electronic controller (**APP-C**), and probe (**APP-P**). When used together they form a smart auto pump priming system. The probe is mounted in the liquid containment tank and the controller can be located up to 1.7m away from the probe. The controller output is generally used to operate a solenoid and a timed clutch.

Operation

1. With the probe uncovered, both the solenoid and clutch outputs are at +12V DC, energising the solenoid and clutch.
2. When liquid is detected by the probe the solenoid output goes to 0V DC turning OFF the solenoid, the clutch output stays at +12V DC (remains energised) for a fixed factory set period. After the timed period the clutch output goes to 0V DC.
3. If the water level falls below the probe both outputs go to +12V DC re-energises both solenoid and clutch immediately and the clutch time period is reset.

Solenoid Delay Adjustment

The 'DELAY' adjustment trimmer on the PCB can be set to give a variable solenoid response time of between approximately 0 and 2 seconds. Factory default setting is approximately 1 second.

Sensitivity adjust

The 'SENSE' adjustment trimmer on the PCB is adjusted to match the capacitance of the probe, cable and liquid. This is normally set at works but can be user adjusted if required. In most applications this is negligible.

Power up Conditions

On power up if the probe is covered with liquid the solenoid will be OFF and the clutch will be ON until the timed period is over then the clutch will turn OFF. If when powered up liquid is not on the probe both the Solenoid and Clutch will be ON.

Wiring and Connection



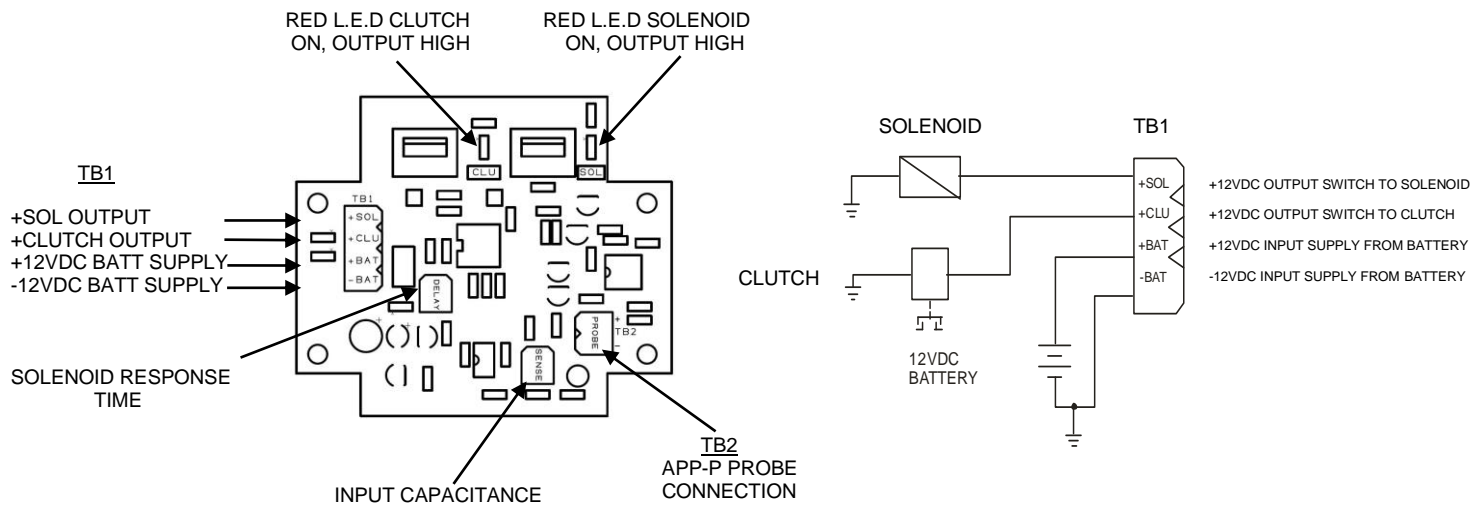
Caution

This Product uses negative earth, connecting to a positive earth may result in failure and damage to the equipment.

Controller to Probe

The controller is pre-fitted with a length of cable and is attached to the probe via a connector (TB2). The cable length is fixed and should not be altered.

TB1 connector is a 4 terminal connector, which connects to the battery, clutch, and solenoid



Caution

Observe the terminal block connections and polarity. Do not connect the Solenoid and Clutch outputs directly to 0V DC, this will result in failure and possible damage to the equipment. The Solenoid and Clutch outputs should be individually externally fused.

Technical Data

APP-Controller v2

Supply:	Nominal 12V DC Battery, (+10.5V DC to +15V DC Max).
Power:	0.25W with probe attached and uncovered, 0.1W covered (circuit only, excluding solenoid and valve power).
Outputs:	Solenoid: +12V DC @ 3.5A Max. Clutch: +12V DC @ 3.5A Max. Each output is internally switched, supply derived from +V DC Battery input. RED L.E.D indicators for each output ON when the output is high.
Clutch Delay:	Factory fixed at 15,30,60,90 seconds, advise on order
Solenoid Delay:	Solenoid response time, user adjustable, approx. 0 to 2 seconds.
Sig Input:	C/W 1.7M of pre-fitted cable with a 2-pin connector for <i>APP-P</i> .
Sensitivity:	Range: 10pF Approx.
Enclosure:	Material: Polycarbonate 100 x 100 x 55mm IP65 screw mount, enclosure holes on a 4 x 86mm spacing on square, 4.5mmØ hole, 2 x pre-fitted cable glands.
Weight:	295g Approx.
Op Temp	-20 ⁰ to +70 ⁰

APP-Probe

Operating Principle:	Capacitance.
Max Probe Voltage:	8V AC
Current:	<1mA.
Enclosure:	Material: ABS, 64 x 58 x 35mm, IP65.
Probe	Material: Stainless Steel and Nylon.
Length:	Insertion Approx 325mm.
Connection:	Electrical: 2 Pin socket for connection to <i>APP-C</i> . Mechanical: 1" B.S.P.
Weight:	345g Approx.
Op Temp:	-20 ⁰ to +70 ⁰

The Probe has a nylon upper part; this is to prevent false switching due to liquid tracking.