

## Technical Specifications:

Model number	5800070600
Voltage	230V 50/60 HZ
Response time	3 Seconds
Sensitivity adjustment	+/- 20%
Over voltage trip	255 VAC
Under voltage trip	203 VAC
Reset time adjustment	2 min - 240 min

## Installation Instructions

1. TURN OFF POWER AT SOURCE.
2. Remove cover from control box.
3. Unplug blue, yellow, and red wires from the L1, L2, and Start positions on the terminal strip.
4. Slide the tail of the QD Pumptec under the start capacitor and rock the terminal side down to meet the L1 and L2 terminals (see figure 1).
5. Make sure that the QD Pumptec mates firmly with the L1 and L2 terminals.
6. Connect the blue wire to the terminal marked L1 on the QD Pumptec.
7. Connect the yellow wire to the terminal marked L2 on the QD Pumptec.
8. Reconnect the red wire to its original position (START terminal) on the control box terminal strip.
9. Set the timeout knob (reset time after an underload trip) to the desired position (see figure 2).
10. Adjust sensitivity setting if desired. The "Factory Setting" position should be used for most applications. (see Calibration and Sensitivity Adjustment section and figure 3 for more information).
11. Replace cover on the control box.
12. Reconnect power.
13. Adhere the "Protected by Pumptec" label to the cover of the control box.

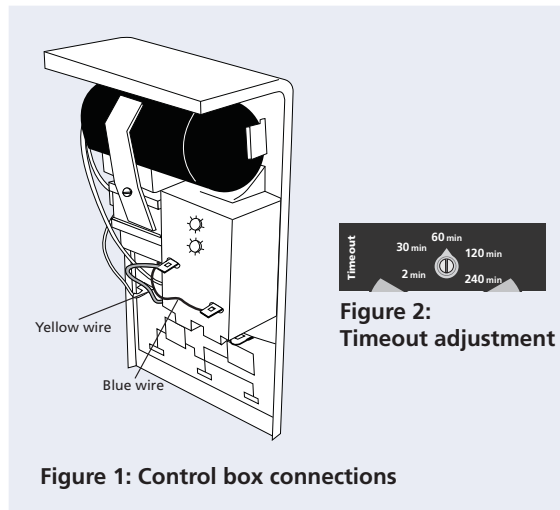


Figure 1: Control box connections

### Calibration and Sensitivity Adjustment

#### Factory Calibration Setting

The QD Pumptec comes equipped with a calibration/sensitivity adjustment knob. The QD Pumptec is shipped from the factory with this adjustment pointed to the "Factory Setting" position. This setting is designed and calibrated expressly for Franklin Electric 230 V three-wire motors. The majority of applications require no change in this adjustment. The unit will detect a dry well and shut off the motor when the motor load drops to about 70% of motor Service Factor Load (SFL).

In some instances, you may wish to adjust the sensitivity of the QD Pumptec.

#### Increasing Sensitivity

The sensitivity adjustment knob pointer may be moved from the "Factory Setting" position to point at a positive percentage number. Turning the knob (figure 3) to +10% will make the unit more sensitive by moving the 70% factory underload setting up +10% to 80%. The QD Pumptec will now trip when the motor load drops to 80% of motor SFL.

#### Decreasing Sensitivity

The QD Pumptec may be made less sensitive by moving the sensitivity knob pointer to a negative percentage number. Turning the knob (Figure 4) to -10% will decrease the sensitivity by lowering the



Figure 2: Timeout adjustment

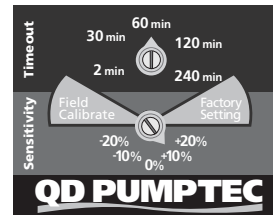


Figure 3

underload setting point to 60% of motor SFL (70% -10% = 60%). **CAUTION:** Decreasing the sensitivity may cause the QD Pumptec to fail to detect a dry well condition.

#### Field Calibrate Setting

The QD Pumptec may be calibrated to the load of a particular system. Moving the sensitivity knob pointer to the "Field Calibrate" position will initiate a field calibration "snap shot" the next time the system is powered.

The first time power is applied, after selecting the "Field Calibrate" setting, the QD Pumptec will run for fifteen seconds and take a snap shot of the load and then shut off for ten seconds. The QD Pumptec will then restart and run normally within five seconds. When the motor load goes below 25% of the "snap shot" setting, the QD Pumptec will trip on the underload condition. The sensitivity of the field calibration may be adjusted by moving the sensitivity pointer.

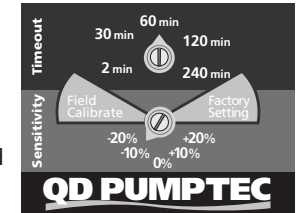


Figure 4

### TROUBLESHOOTING

- If the QD Pumptec trips in three seconds (shuts off motor) with water delivery, check the following:

#### Match Motor and Pump

Since the QD Pumptec measures load, the pump and motor must be matched. For example, if you use a 1/3 hp pump on a 1/2 hp motor, the unit will not operate correctly because the motor is not loaded sufficiently by the pump. The unit detects an underload condition while pumping water causing the QD Pumptec to shut off the motor.

#### Insure Proper Line Voltage

The QD Pumptec continuously monitors power line voltages. If the power line voltage exceeds 253 V or goes below 207 V, the QD Pumptec will shut off the motor for two minutes. If after two minutes, the line voltage becomes normal, the QD Pumptec will restart the motor.

#### Current Too High

The QD Pumptec continuously monitors motor current. If the motor current is excessively high (16 to 17 amps) for three seconds the QD Pumptec will shut off the motor. **To verify this condition, remove power from the QD Pumptec for five seconds. Re-apply**

power and observe the motor current. High motor current indicates a clogged or bound pump or motor condition. The QD Pumptec will not restart the motor until power is removed for 15 seconds.

- If the QD Pumptec trips in three seconds with no water delivery, check the following:

#### Dry Well/ Deadhead

The most common causes of an underload trip is a dry well or deadhead condition. Wait for the well to recover. It should be noted that the QD Pumptec detects a deadhead condition only if the motor load drops sufficiently. Not all pumps unload the motor under deadhead conditions.

#### Damaged Pump or Motor

The motor or pump shaft may be broken. The coupling between the pump and motor may be broken. This may be verified by observing the motor current is near the no load current. Replace either the pump or motor if the shaft or the coupling between the pump and motor is broken.

#### Other Causes

The Pump may be air or gas locked. If there is a check valve on top of the motor, put another section of pipe between the pump and the check valve. This allows more room for the trapped air/gas to be compressed above the pump.

- If the QD Pumptec does not trip (shut off motor) when the pump breaks suction, check the following:

#### Designed for Franklin Motors

The QD Pumptec is designed specifically for Franklin Electric motors. The QD Pumptec estimates motor load by calculating the power factor of the motor. Non-Franklin motors may not have the same load power factor relationships.

#### Flow Restrictors/Low Yield Wells

If pumping a low yielding well into a restriction, it may be necessary to adjust the sensitivity of the QD Pumptec. To increase the sensitivity, turn the sensitivity knob to the positive numbers on the dial. Placing the knob on +10% will cause the unit to trip at 80% of SFL load instead of 70% of SFL when in the "Factory Setting" position (figure 3).

## Limited Warranty

Franklin Electric warrants to original equipment manufacturers and Franklin Electric authorized motor shops that each QD PUMPTEC unit sold will be free from defects in workmanship and materials and will perform consistent with samples previously supplied, and will conform to specifications published or mutually established with the buyer, for a period of one year from date of installations but not more than two years from date of manufacture in water well applications. THE WARRANTY STATED IN THIS PARAGRAPH IS IN LIEU OF ALL OTHER WARRANTIES (EXCEPT OF TITLE), WRITTEN OR ORAL, STATUTORY, EXPRESS OR IMPLIED, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE.

Any QD PUMPTEC unit which fails to conform to the contract of sale, including the above warranty, will be repaired or replaced at the option of Franklin Electric. The remedy of repair or replacement is the sole and exclusive remedy afforded for breach of the above warranty or for breach of expressed or implied warranties arising under state law. Warranty on repaired or replaced equipment will be for the time remaining under the terms of the original warranty.

Under no circumstances shall Franklin Electric be liable for any special, incidental or consequential economic damages resulting from the failure of Franklin Electric to comply with the contract of sale, breach of the above warranty or for breach of any expressed or implied warranty arising under state law, negligence or otherwise.

This warranty is applicable only for water well installations.

TOLL FREE HELP FROM A FRIEND 1 800-348-2420

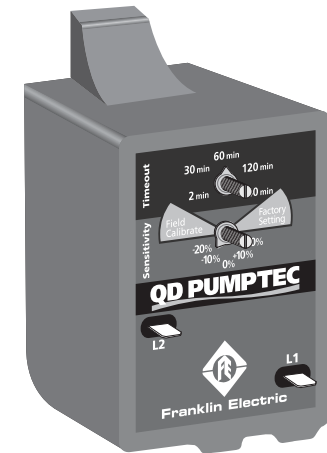


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# QD PUMPTEC

## Installation Manual



The QD Pumptec protects submersible pumping systems and is designed specifically for use with Franklin Electric's QD Relay Control Boxes and Franklin 230 V three-wire motors. The QD Pumptec microcontroller continuously monitors line voltage and motor current to protect against over voltage, under voltage and dry well conditions. Dry well conditions are detected when the motor load drops below a factory preset (or field calibrated) level for more than three seconds. When a dry well condition is detected, the unit will automatically restart after a selectable timeout period ranging from 2 to 240 minutes. Under and over voltage conditions will shut the unit off for two minutes and then automatically restart. The QD Pumptec allows the user to choose the standard factory calibration for underload or to calibrate to a particular system. The user may select a reset time between 2 and 240 minutes.

**Note:** Although the QD Pumptec may detect a deadhead condition, it is not guaranteed. Not all pumps unload under deadhead conditions.



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