PT32 Single Pulse Timer
PT33 Dual Pulse Timer
Instructions

General Information

PT32 and PT33 pulse timers are designed for use with SeaMetrics (or similar) meters and flow sensors which produce a pulse signal. They can control metering pumps or valves in a variety of cooling tower, boiler and other water treatment applications. These units include accumulators, which count pulses from the meter. When a preset number has been reached, output power turns on for a set time and then the cycle repeats.

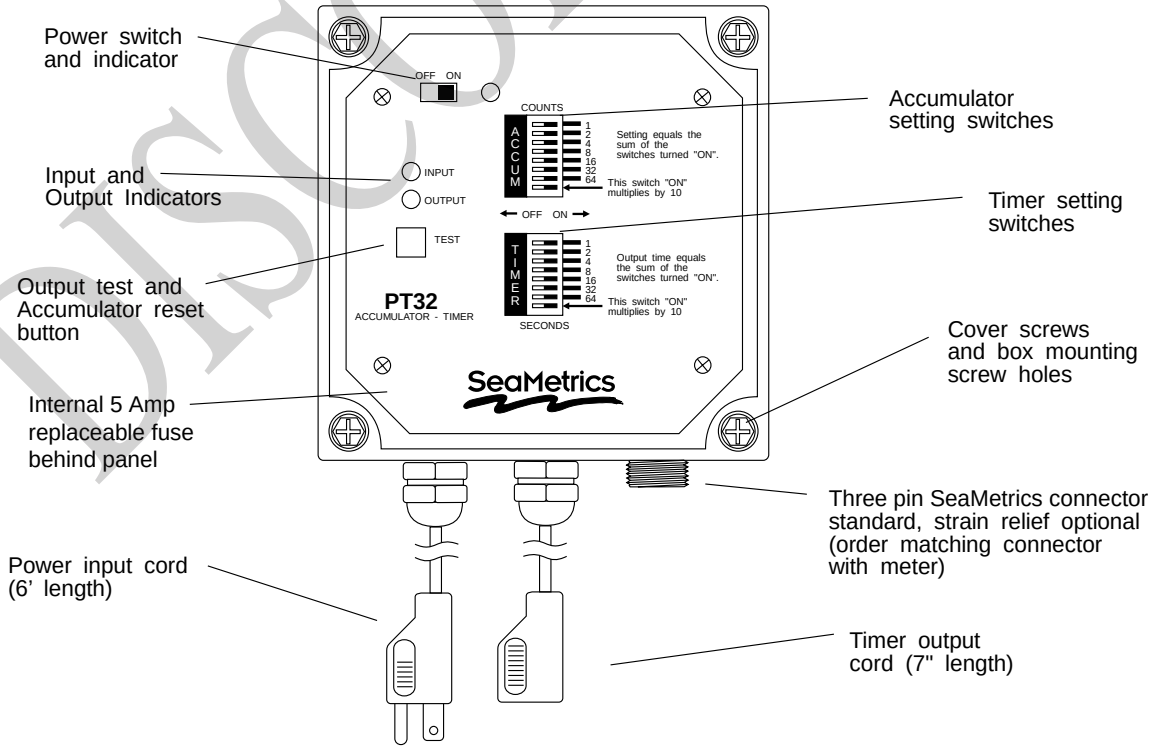
For applications requiring dual timers (typically one for feed and one for bleed), the PT33 has two timers and accumulators in one enclosure. Input is from one meter, but the accumulators and timers are set independently of each other. A sequential feature locks one timer out while the other is operating, to prevent bleed and feed from occurring simultaneously.

A 12 VDC low-current meter loop is a standard feature. This can be used with brass pulse meters, as well as most of the SeaMetrics line of insertion, turbine, and low-flow meters. Both dry-contact reed switch and solid-state Hall-effect sensor signals are accepted.

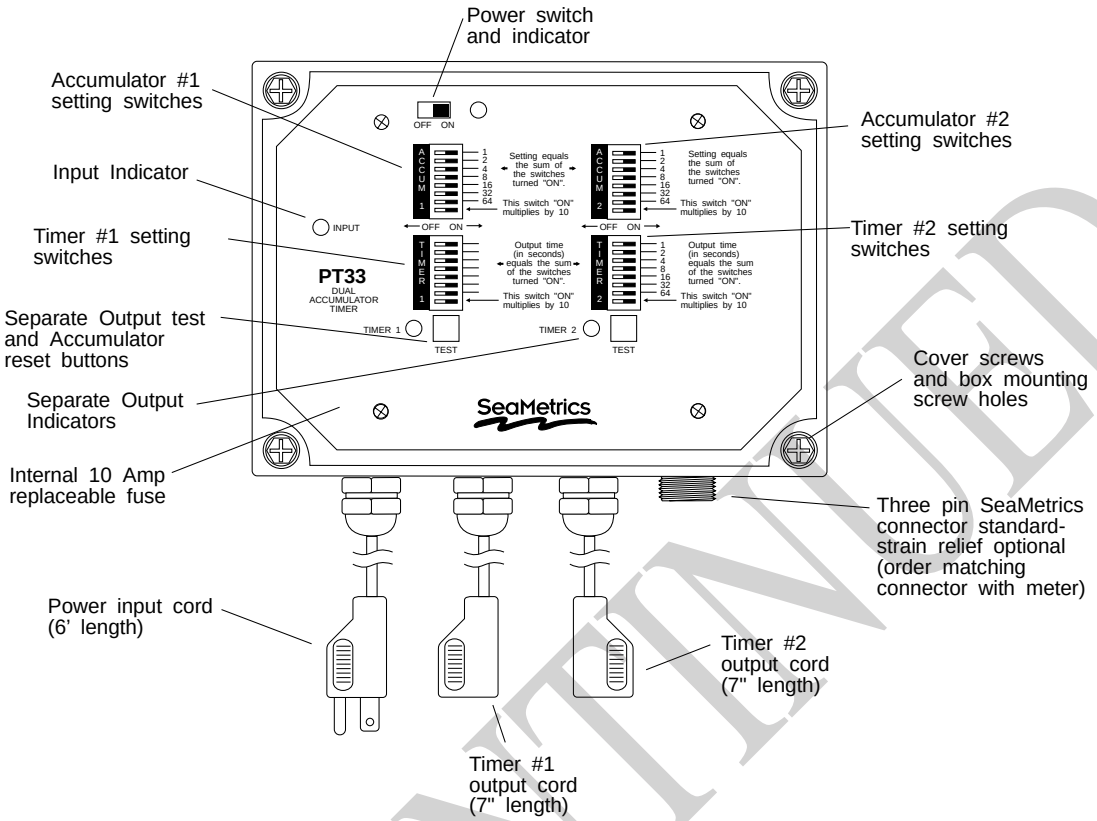
Specifications

Power	115 VAC
Accumulator Range	1 - 1270 counts
Timer Range	1 - 1270 seconds (21 min.)
Enclosure	Glass-filled polycarbonate,
PT32	5" X 5"
PT33	5" X 7"
Max Input Frequency	500Hz (500 pulses/sec.)
Relay Contact Rating	5 A resistive at 115 VAC
Sensor Power	25 mA at 12 VDC nominal

PT32 Features



PT33 Features



Installation

Mounting. Use a secure surface which will accept screws. To gain access to the mounting screw holes, remove the front clear cover. Mounting screw holes are at the four corners, under the cover screws. Using the box or enclosed template, mark centers of these holes with a pencil and drill. Finally, insert the enclosed screws through the four corner holes and tighten.

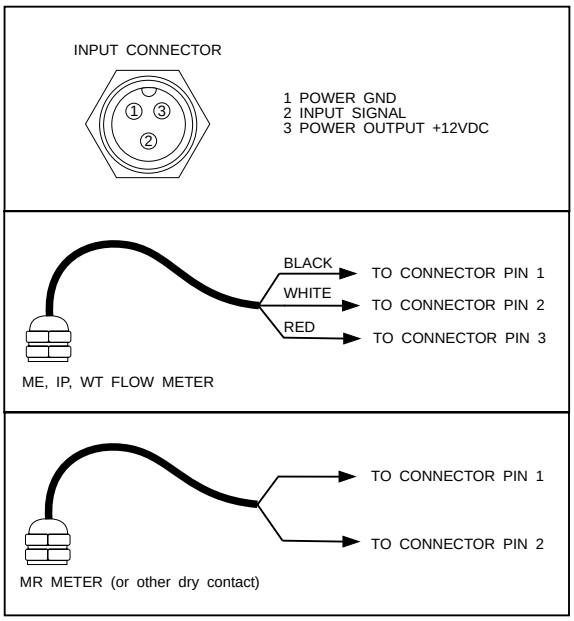
Terminal Access. It is not normally necessary to access terminals, since all connections can be made externally. However, conduit connection requires the front plate to be removed to reach the terminals. See Connections diagram.

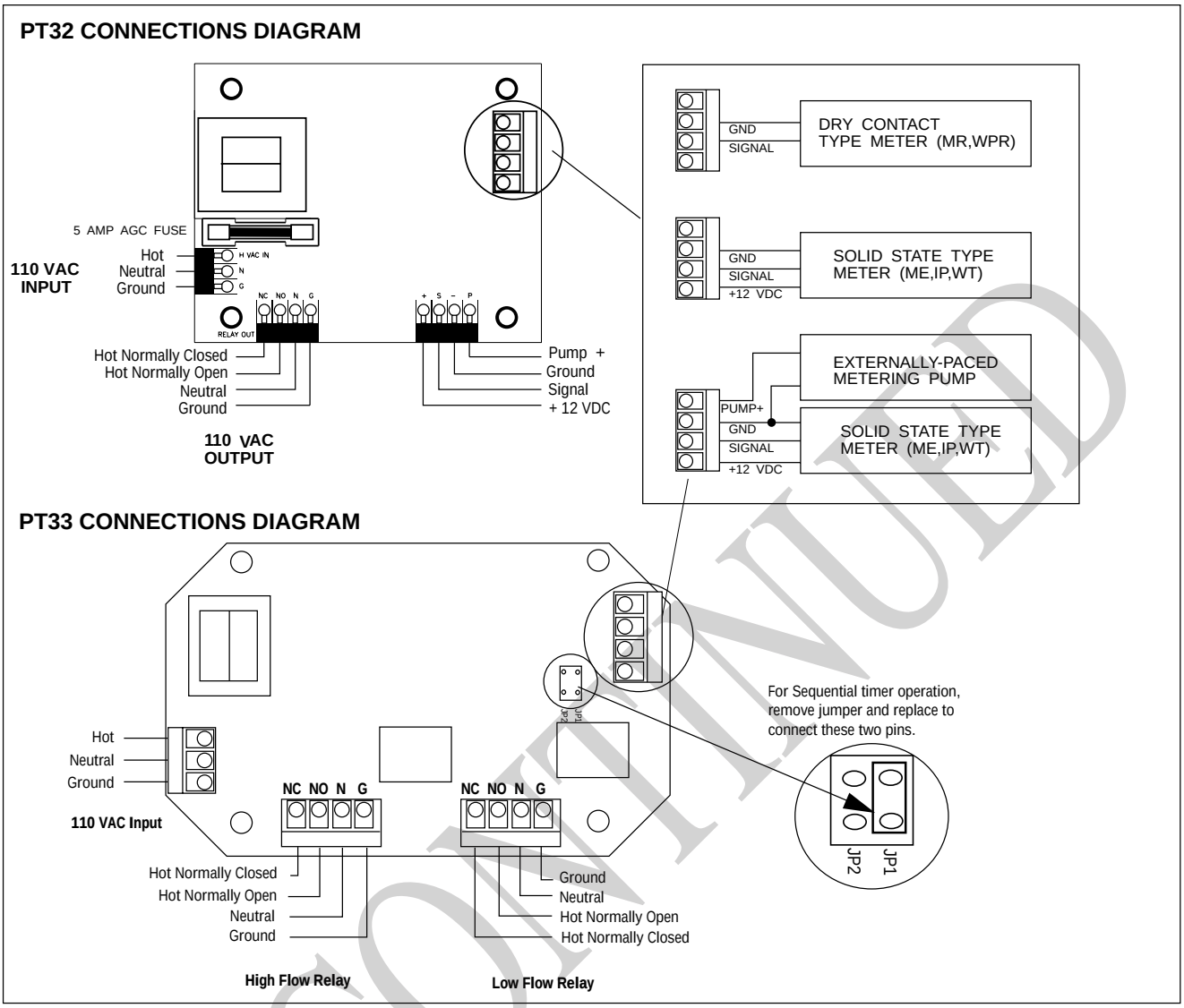
Connect the Meter. Standard units use a meter connector. The mating half of this three-pin "SeaMetrics" connector can be ordered preinstalled on the end of the meter cable, or can be ordered as a separate item. See diagram for pin numbers. Plug in the connector and secure the threaded locking ring.

Connect Power. A power cord is provided standard. Connect by plugging in to any grounded outlet. See Connections diagram for conduit connection.

Connect the Load. On standard units, a short pigtail cord with receptacle is provided for connection of a 115 VAC load. The unit can also be hard-wired if necessary. See Connections diagram.

Pin Numbers for Connector - Field Installation





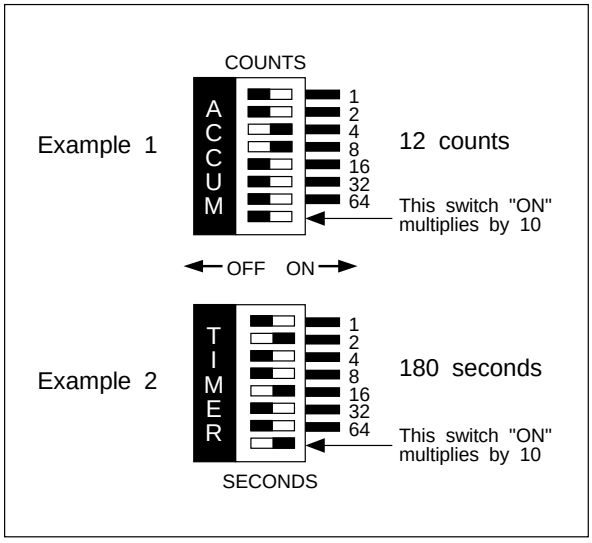
Setting

The DIP switches under the front clear cover are used for accumulator and timer settings. As the front plate states, the setting is the sum of the numbered switches turned on. Any number from one to 127 can be set. The multiply-by-ten switch must be used for numbers from 130 to 1,270.

The easiest way to set a number is to begin with the largest number which is less than the target, then add smaller numbers until the target is reached. See illustration at right.

Example 1: The desired accumulator count is 12. First turn on the 8 switch, followed by the 4.
(8 + 4 = 12)

Example 2: The desired time is three minutes (180 seconds). Use 16 and 2 to set 18, then use the multiply-by-ten switch to get 180.



Operation

Test for Proper Operation

·Turn the power switch to ON. The power indicator should light.

·Set a short time. Then press the TEST button. The TIMER indicator should light and stay on for the length of time set.

·When the meter is operating, the INPUT indicator should light periodically. Note that at low flow rates or low pulse rates (such as 100 G/P) there may be a considerable interval between inputs.

Changing Settings

When a time or count setting is changed, it is necessary to reset to the new number. This can be done by pressing the test button, turning power off and back on, or by simply waiting for a new count or time cycle to begin.

PT33 Timer Operation

Standard operation of PT33 timers is independent, and if the accumulators are set to different numbers the timers will operate at different times. However, if accumulator settings are the same, the timers will operate simultaneously. If this is undesirable, the unit can be factory or field-set for sequential operation (see connections diagram, p.3). This means that the two timers will never come on at the same time. Timer #2 will wait until timer #1 is finished before operating. This feature is set by a jumper. It can also be field-set by removing the front panel and moving a jumper into the appropriate position.

How to Determine Accumulator Setting(s):

If the meter pulses once every gallon, set the accumulator for the number of gallons desired between timer cycles. For meters with multiple pulses per gallon, multiply the desired number of gallons by the pulses per gallon. For meters with multiple gallons between pulses, divide the desired gallons by the gallons per pulse.

Example:

The goal is one timer output every 60 gallons. The meter has a 5 gallons per pulse (G/P) output.

$$\frac{\text{60 gallons}}{\text{5 gallons/pulse}} = 12 \text{ (accumulator setting)}$$

How To Determine Timer Setting(s). The timer setting is based on the desired amount of chemical to be fed or water to be bled, and is specific to the pump, valve, etc. being used. When calculating the time be sure it isn't more than the expected time between cycles, to avoid overlapping. Check by calculating:

$$\frac{\text{Cycle Size (Gallons)}}{\text{Max. Flow Rate (GPM)}} = \text{min. between cycles}$$

$$\text{min. between cycles} \times 60 = \text{sec. between cycles}$$

Troubleshooting and Repair

If the unit fails to work properly, first check for power. If power indicator fails to light when the power switch is on, either there is no power to the unit or a fuse has blown. Remove the front panel to change the fuse. For the PT32, use a 3AG-5A-SB fuse. The PT33 requires a 3AG-10A-SB.

The other common problems are incorrect setting and lack of meter input. Double check to be sure that the desired number has been set, particularly the position of the multiply-by-ten switch. Meter input can be checked by watching for the INPUT indicator to light.

PT32 and PT33 timers are not designed for field repair. Any circuit board work must be done at the factory. Please obtain a returned material authorization (RMA) number from the factory or your distributor before returning your unit.

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