



# PT34 Single Pulse Timer PT35 Dual Pulse Timer Instructions

## General Information

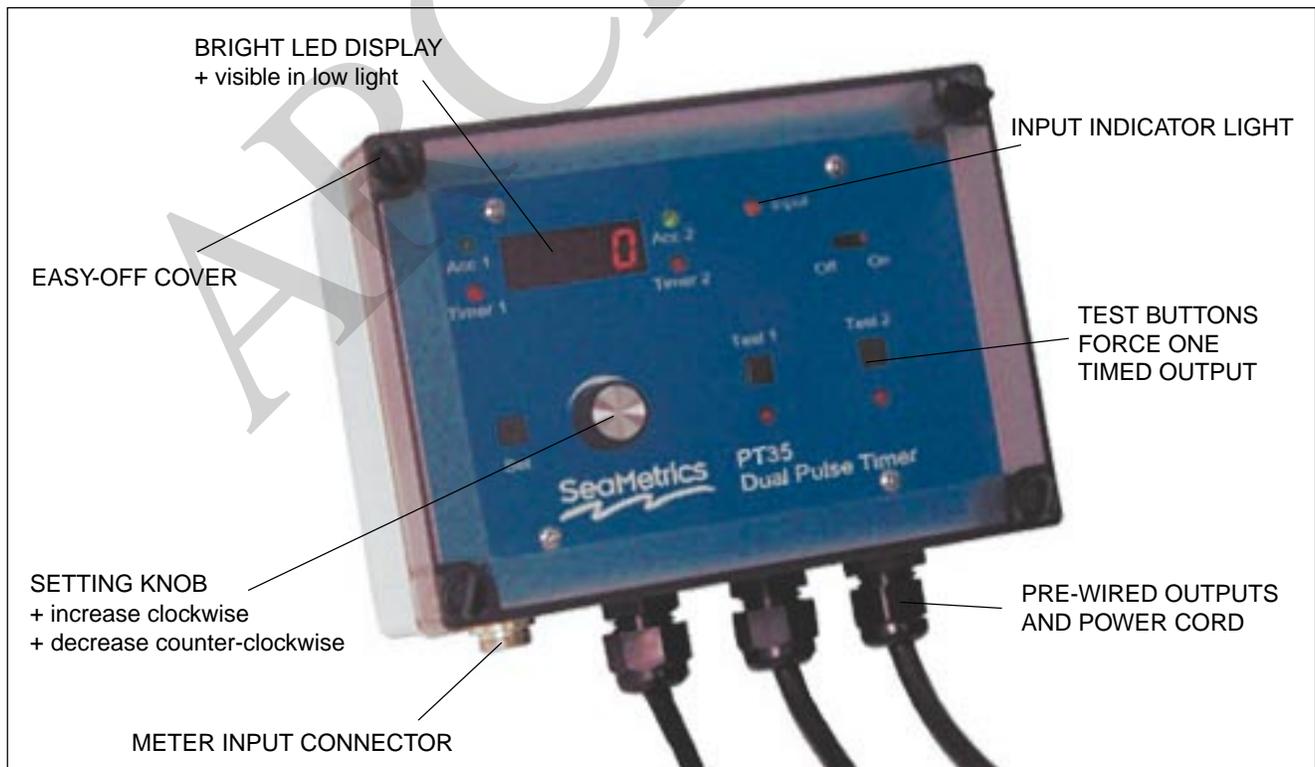
The PT34 and PT35 digital counter-timers are designed to be used with SeaMetrics (or similar) meters and flow sensors which produce a pulse signal. They are typically used in water treatment and chemical dosing applications, most often in cooling towers and boilers. The first function of these units is the accumulator, which counts 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 chemical feed and one water bleed) the PT35 has dual accumulators and timers. Input is from a single meter or flow sensor, but the accumulators and timers are set independently of each other. A sequential function can be selected to lock one timer out while the other is operating. This prevents feed and bleed from occurring simultaneously.

A 12 VDC low-current meter loop is standard. This can be used with dry contact meters, as well as contacting-head meters with solid-state pickups (SeaMetrics ME meters) or insertion flow sensors (SeaMetrics IP line).

## Specifications

|                                |                                    |
|--------------------------------|------------------------------------|
| <b>Power</b>                   | 115 VAC                            |
| <b>Sensor Power</b>            | 12 VDC                             |
| <b>Enclosure</b>               | 5" x 7" polycarbonate              |
| <b>Accumulator Range</b>       | 1 - 9,999 pulses                   |
| <b>Timer Range</b>             | 1 - 9,999 seconds                  |
| <b>Maximum Input Frequency</b> | 1000 Hz                            |
| <b>Relay Contact Rating</b>    | 5 A resistive @ 115 VAC, or 1/4 HP |
| <b>Temperature</b>             | 32°-130° F (0°-55° C°)             |



## Installation

**Mounting.** Use a secure surface which will accept screws. To gain access to the mounting screw holes, remove the front clear cover by use of the thumb screws. Mounting holes are at the four corners, under the cover. Using the box as a template, mark the centers of the holes with a pencil and drill. Insert screws through the four corner holes and tighten.

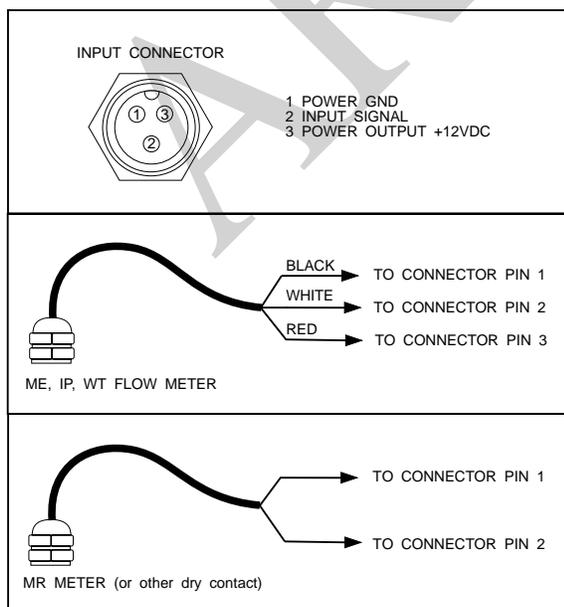
**Terminal Access.** It is not normally necessary to access the terminals, since the units come pre-wired for external pigtail connection. However, terminals are provided internally for conduit connection. To reach these terminals, remove the metal front plate after loosening the four screws which hold it on. Terminals are behind the plate.

**Connect the Meter.** Standard units provide a meter connector. The mating half of this "SeaMetrics connector" can be ordered pre-installed on any SeaMetrics meter or flow sensor, or a cable with connector can be ordered as a separate item, part no. 12050. If no connector is immediately available, any wire ends can be connected using the terminals inside (see "Terminal Access", above).

**Connect the Load.** On standard units, a short pigtail cord with receptacle is provided for connection of a 115 VAC load. The unit can be hard-wired if necessary, using the terminals inside.

**Connect Power.** A power cord is provided. connect by plugging in to any standard grounded outlet. (See "Connections Diagram" for conduit connection.)

## Pin Numbers for Connector - Field Installation



## Setting

Using the thumb screws, remove the front cover. Press the SET button. The green ACC (accumulator) light at the upper left corner of the display will begin blinking, indicating that the accumulator is ready to be set. Turn the knob clockwise to increase or counter-clockwise to decrease until the desired number is reached. Then press SET again. The red TIMER indicator will light. Set the desired time. For a PT 35, repeat the process to set accumulator 2 and timer 2. Press SET again to get the display "SEq" (sequential). Turning the knob in either direction will switch from "SEq" to "nSEq" (non-sequential). Sequential operation prevents the timer 2 output from operating while timer 1 is on, so that chemical feed does not occur during bleed. Non-sequential operation allows either timer to operate immediately when its count is reached.

One more press of the SET button returns the unit to normal operation.

### 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.

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

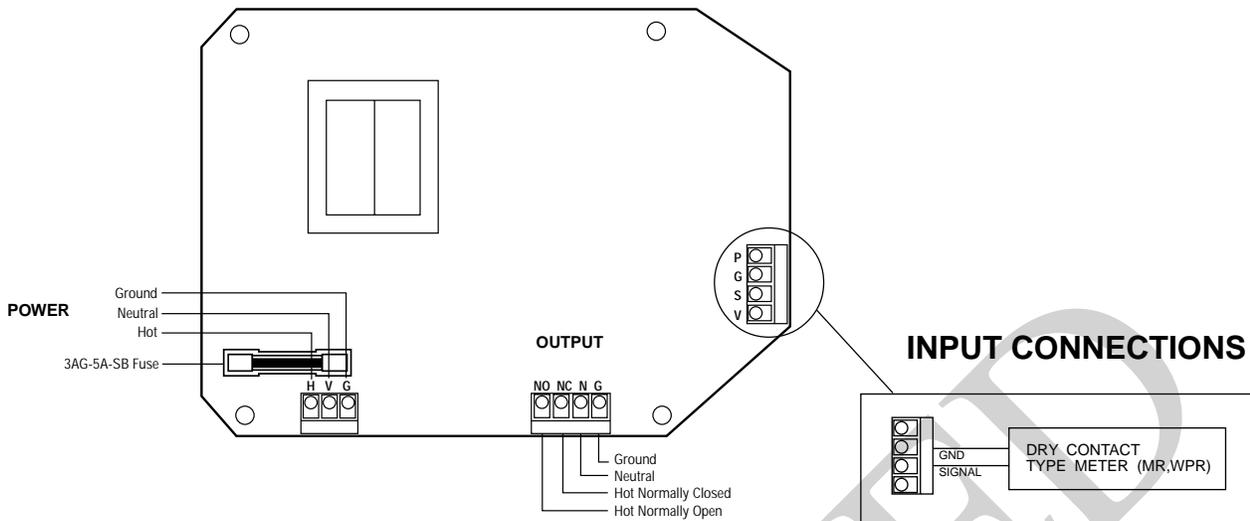
### How To Determine Timer Setting(s).

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:

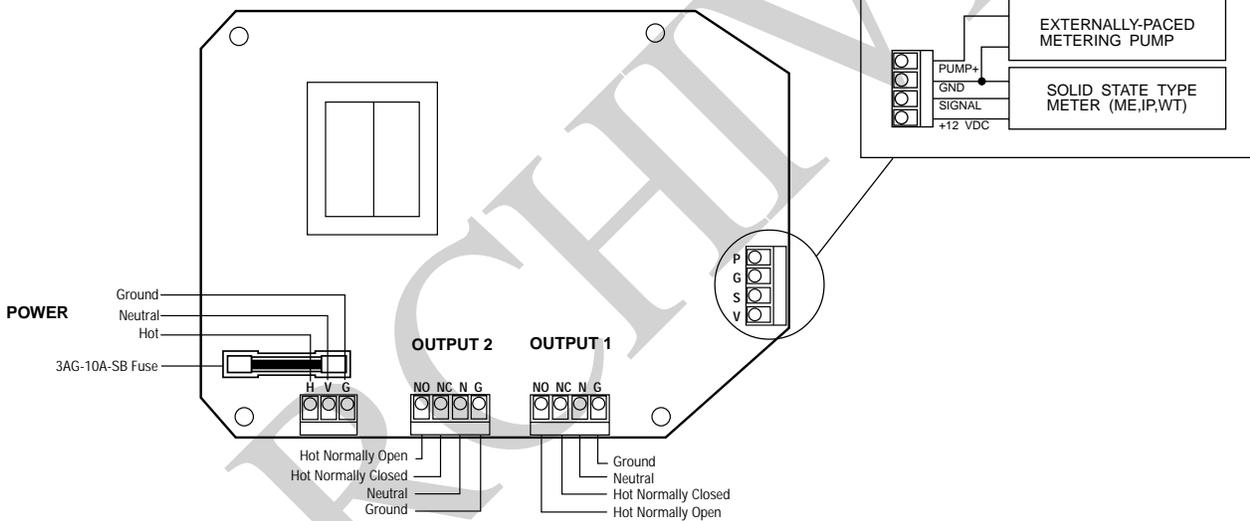
#### Cycle Size (Gallons)

$$\text{Max. Flow Rate (GPM)} = \text{min. between cycles} \times 60 = \text{sec. between cycles}$$

## PT34 CONNECTIONS DIAGRAM



## PT35 CONNECTIONS DIAGRAM



## Operation

**Test for Timer Output.** To test the timer (either timer in the case of the PT35) press the "TEST 1" or "TEST 2" button. The red output indicator should light, and remain on for the previously-set number of seconds.

**Standard Operation.** After setting (when the unit has returned to normal operation, indicated by no blinking indicators) any display can be selected at any time by turning the knob. For the PT35, turning the knob clockwise causes clockwise rotation among the indicator lights. Stop turning the knob after arriving at the desired display. This is the display that will remain until another display is selected.

## Troubleshooting and Repair

If the unit fails to work properly, first check for a display. If the Off/On switch is fully in the On position and the display is not lighted, the unit probably does not have power. Check for power at the cord or outlet the unit is plugged into.

If there is power, the switch is on, and there is no display, remove the front panel (after loosening the four screws which hold it in place) and check the fuse. If the fuse is blown, replace it with a 3AG-5A-SB fuse (PT34) or a 3AG-10A-SB (PT35).

If there is power, the switch is on, there is no display, and the fuse is good, the problem is at a component level on the printed circuit board, and the unit will need to be returned for repair. Contact your distributor, if known, otherwise contact the factory at 1-800-975-8153.

If the display is lighted but the unit seems to be functioning abnormally, check the following:

1) Is there input from the meter? If so, the "Input" indicator should light periodically when there is flow through the meter. (Note that a meter can be set for a low pulse rate, 100 gallons per pulse, for instance, and therefore several minutes can pass between inputs.)

2) Is the unit set properly? Press the "Set" button to see each setting.

3) Is the output properly connected to its load (pump or valve for example)? Press the appropriate "Test" button to force an output and check. Each test button is located directly above the output it forces.

If the unit appears to be functioning normally and the test button causes the timer indicator to light, but the appropriate output does not actually become powered, the probable cause is a relay failure. Although rare, this is possible, and the unit will need to be returned for relay replacement.



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