# Installation Guide

Product Description

The PCT-120 is a transmitter that converts the signal from a pulse type water meter to a frequency output.

Typically the output from a conventional water meter or combination water meter and master valve is a reed switch attached to the mechanical totalizer gear train. This dry contact closure is usually scaled to produce one contact per gallon (1 PPG).
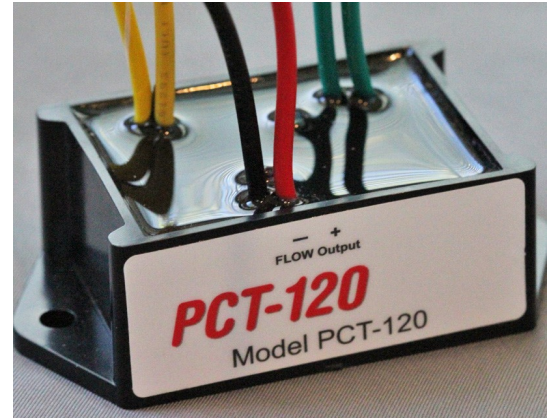
Most irrigation controller flow inputs are configured to accept a frequency output from a two wire irrigation flow sensor. The PCT-120 is a powered transmitter that converts the slow PPG pulse into a frequency.
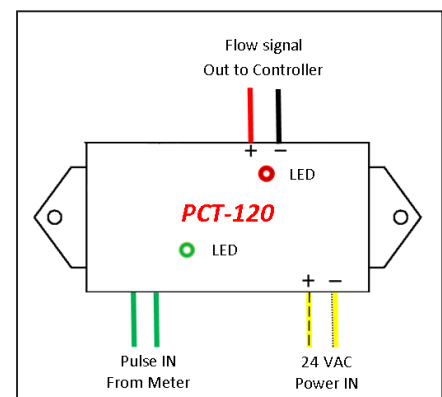
Mounting Instructions

The PCT-120 circuitry is fully encapsulated in a watertight epoxy. The preferred location is indoors or inside a controller pedestal. The enclosure may be attached to any flat surface, vertical or horizontal, using the mounting tabs or double sided adhesive tape. Make sure the LEDs are visible to assist in set-up or troubleshooting.

Electrical Requirements:

The PCT-120 requires 24 VAC power to operate and draws no more than 25 milliamps.

Wiring Instructions:

1. Connect two green pulse input leads to the water meter output using wire recommended by the meter manufacturer. This flow input is not usually polarity sensitive, but consult meter manufacturer's wiring Instructions.
2. Connect the red flow output lead to the Flow plus (+) input of the irrigation controller.
3. Connect the black flow output lead to the Flow minus (-) input of the irrigation controller.
4. Connect the yellow power leads to the controller's 24 V. auxiliary power terminals. If power is not available from the controller, use alternate 24 VAC power supply.

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Controller Flow Input Set-up

K factor Calculation and Programming

Most smart controller's flow inputs are designed to look for a frequency input; a digital signal in pulses per second. They usually include a minimum frequency rate of 0.25 Hz or higher to filter out random electrical pulses or "noise" from true reading produced by the flow sensor. At pulse rates less 4 pulses/minute, the controller flow circuit cannot read the signal produced by a pulse type water meter. To solve this problem, the PCT-120 multiplies the input pulses to convert them into a frequency.

Establish the pulse output rate of the water meter in flow units/pulse, ie gallons.

To determine the correct K factor to be programmed into the controller, the equation for the output of the PCT-120 is based on K = 2.5 x units per pulse to convert the signal to flow per minute.

Use the K value appropriate for the number of pulses per gallon:

1	gallon per pulse	K= 2.5	Offset 0.0
10	gallons per pulse	K= 25	Offset 0.0
100	gallons per pulse	K= 250	Offset 0.0

The formula is not dependent on the unit of measurement, the same K is used for gallons, liters, cubic feet, etc. as long as the rate of flow is measured per minute. Check with CST Technical Support if other units of time are required. Also notice that no Offsets are used.

LED Operation:

1. When first powered up, LEDs blink three times to show processor is active
2. Green power LED stays on to show the unit is powered up.
3. Red flow LED stays lit to indicate flow is being processed.

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