

## Simpson S66x Counter Series Application Note

# AN-6606



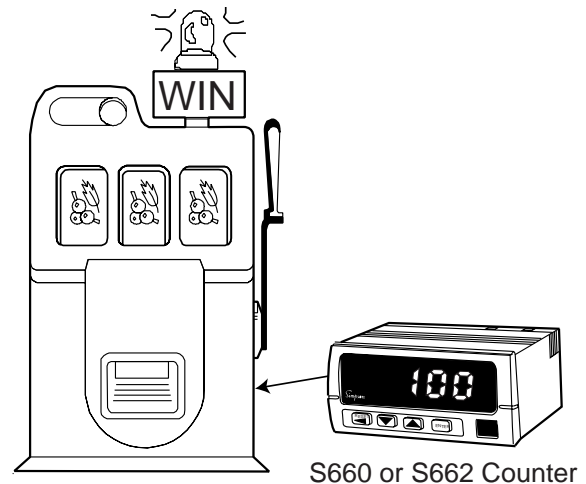
## Vending & Entertainment

Technical Level: Intermediate

### Application Description

A Simpson Counter is to be used to indicate when the 100<sup>th</sup> play on a new game machine has been completed. The casino owner will award a promotional gift to the lucky customer. This special promotion is independent of the machine's normal payout.

An attention getting rotating beacon will announce the winner.



S660 or S662 Counter

### Application Specifications

Game Machine:	The machine has an 'auxiliary' contact available which is traditionally used for a cycle counter option. The contact is closed whenever a game is in progress.
Beacon Lamp:	Power requirement is 120 VAC, 0.5 Amp maximum.
Procedure:	The 'winner' is to be announced <b>after</b> the 100 <sup>th</sup> game is completed. When this occurs, the beacon lamp must activate and the game counter reset to 0. The indicator is to remain on for 10 seconds.



## Product Selection

Using Preset Totalizer / Counter (Simpson Model **S660**) operating from 120 VAC power has the required capabilities. By adding the single relay option, the control requirement is met.

Normally, the switch contact would be connected from A INPUT to COMMON. A complication is that the counter counts on the falling edge of the input signal (when the switch closes). This will increment the count and subsequently activate the beacon at the beginning of play. To overcome this, two methods may be used:

1. Use an auxiliary power source, such as the excitation option, to create a 'sourcing' circuit instead of the default 'sinking' circuit.
2. Use the Quadrature / Universal input card option in place of the Standard input card. The Quadrature card has signal inversion capabilities selectable by DIP switch settings.

For this discussion, the second alternative will be used.

## Product Ordering Information

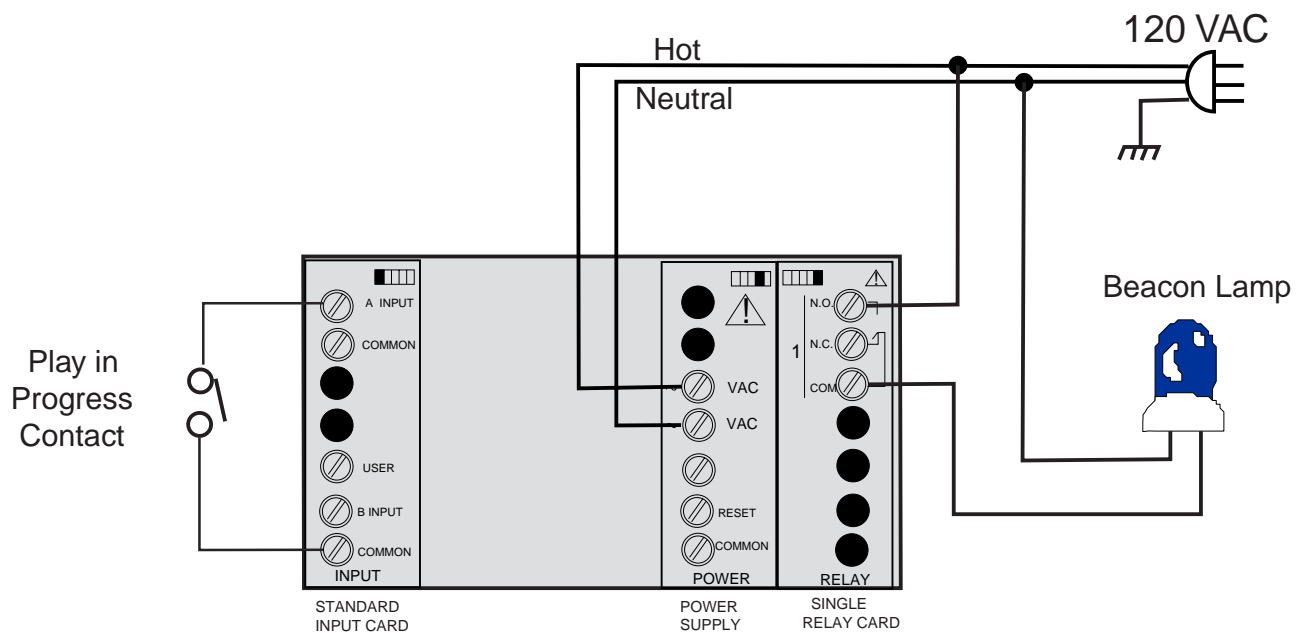
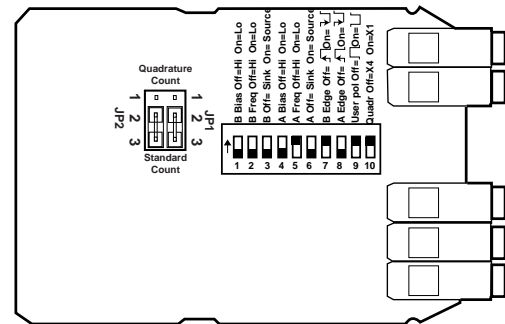
Qty	Simpson Part #	Description					
1	S660-1-2-1-0-0	Model ↓ S660	Power ↓ 120VAC 1 240VAC 2	Input ↓ Standard 1 Quadrature 2	Output ↓ None 0 1 Relay 1 2 Relay 2	Excitation ↓ None 0 12 VDC 1	Other ↓ None 0

### Hardware Setup :

The switch contact is attached in the default manner and used as a ‘sinking’ device. That is, as a ‘switch to ground’.

Using the Quadrature / Universal input card, the mode jumpers must be moved to the ‘Standard Count’ position.

Switch 5 is set ON to enable the low pass filter. Using this feature eliminates the ‘bounce’ that occurs when the switch makes its transition.



## Counter Programming:

A standard count-up sequence will be used. Output 1 is configured to activate for 10 seconds when the count reaches 100. The Auto Reset feature of the counter allows the count to be reset to zero at the same time the output is activated.

### S660 Programming

Category	Parameter	Selection	Comments
Input Setup	CHARn	UP	Typical count up sequence.
Count Setup	PRESCl	10	A pre-scaler is not required in this application.
Count Setup	SCALE	0.0000	1 pulse = 1 count.
Count Setup	DP	000000	No decimal point will be displayed.
Output 1 Setup	MODE	timed	Output 1 acting as timed output. SP1 defines the activation point.
Output 1 Setup	DELAY 1	0.10.00	Output 1 activation time is 10 seconds.
Setpoint Setup	SP 1	000.100	Output 1 is to activate when count = 100.
Setpoint Setup	ResetPoS	000000	When Reset occurs, set count to 0.
Reset Setup	ARESET	At SP 1	Auto-Reset feature must be enabled and uses the same Setpoint as Output 1 'trigger' count.
Reset Setup	Resetbtn	disabled	The counter's reset button is disabled in this application.

## Application Expansion

1. Use a Simpson Model S662 Batch Counter to retain the number of plays (in Count2) while still performing 100<sup>th</sup> game play detection.