

# Counters, Preset Counters, and Printers

Bulletin SS01100 Issue/Rev. 0.4 (8/24)

## Counters

### Large Numeral Counters

The large numeral counters (LNC) feature large, easy-to-read, five-digit 600 Series or six-digit 900 Series reset counter numerals with fine graduations on the right-hand wheel for an additional digit of resolution. An eight-digit, non-reset totalizer is standard on all models.



### Available Units of Registration

- Barrels
- Gallons
- Imperial gallons
- Liters
- Dekaliters
- Hektoliters
- Cubic meters
- Pounds
- Tons

### Models

- 620: Units and tenths



- 620-1: Tenths and hundredths



- 660: Tens and units



## High-Capacity Large Numeral Counters

### Models

- 920: Units and tenths
- 920-1: Tenths and hundredths

### Pulse Transmitters

**Note:** For every revolution of the right-hand wheel, you can order the low resolution pulse transmitter with options of either 1 pulse or 10 pulses per revolution. For the high resolution pulse transmitter, there are options for a 50 or 100 pulse per revolution pulse transmitter.

- Low resolution: 1 or 10 pulses
- High resolution: 50 or 100 pulses

### Swivel Adapter

The swivel adapter allows rotation of the register for easy readability.

## Horizontal Non-Reset Counters

### Model 200A Series counters

Model 200A Series counters have eight non-resettable numeral wheels plus a fine graduated disc for an additional digit of resolution. Available units of registration are the same as for 600 Series counters.

### Model SM-200A Counters

Model SM-200A counters are the same as the Model 200A counters except they are equipped with an explosion-proof, switch-type pulse transmitter.



## Preset Counters

### 300C Series Preset Counters

The Model 300C Series preset counters are four-digit (340C) or five-digit (350C), two-stage, preset (down) counters designed for mounting directly under a Model 600 Series counter on all Smith Meter PD meters. They are used with appropriate accessories to either mechanically or electrically trigger two-stage valve closure to control precise, shock-free delivery of a preset quantity of liquid. The signal to initiate a first stage valve shut-down is field-adjustable from 3 to 9, 10 to 90, or 100 to 900 right-hand wheel units. The final stage shut-down signal, just prior to zero, is easily field-adjusted on start-up to assure precise delivery of the preset quantity.

#### Options

- Four single pole double throw relay (SPDT) microswitch and control handle kit
- Two SPDT microswitch kit for pump control on mechanical set stop valve systems
- Linkage adapter for use with mechanical set stop valves

### Preset Counter Model 340C

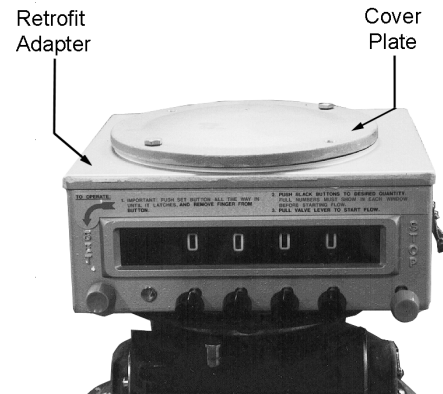


## Accessories for Counter, Printer, and Preset Counter

### 350C Series Preset with Large Numeral Counter (LNC), Explosion-Proof Microswitch and Ticket Printer



### 340C Series Preset with Cover Plate



## Specifications

### General

Speed: 250 revolutions per minute (rpm) of right-hand register wheel.

Torque: Average running torque with a 300C Preset/600 or 900 LNC/TP package is 6 oz-in (4 N•cm) at room temperature with 1:1 gear plate. Momentary peak not to exceed 40 oz-in (28 N•cm) during valve shut-off with maximum 60 lb (27.2 kg) valve load.

Operating temperature range: -40 to 160 °F (-40 to 71 °C).

Rated life (under normal operating conditions): 50,000 reset cycles or 25,000,000 revolutions of right-hand wheel, whichever comes first.

### Size of Figures

600 and 900 Series Counters	Reset totalizer (600 Series): 0.750" high, 0.400" wide (19.05, 10.16 mm)
	Reset totalizer (900 Series): 0.625" high, 0.300" wide (15.87, 7.62 mm)
	Accumulative totalizer: 0.125" high, 0.078" wide (3.18, 1.98 mm)
200A Series Counters	0.328" high, 0.188" wide (8.33, 4.76 mm)
300C Series Preset	0.500" high, 0.370" wide (12.7, 9.40 mm)
Zero Start and Accumulative Printer	0.156" high, 0.085" wide (3.86, 2.16 mm)

## Model LNC Low Resolution Pulse Transmitter

- Adapts to 600 and 900 Series LNC counters to provide 1 or 10 pulses per revolution of LNC right-hand wheel
- UL Listed and CSA Certified for use in Class I, Groups C and D hazardous locations
- Reference the LNC transmitter specifications ([SS01045](#))

## Model HR-LNC High Resolution Pulse Transmitter

- Adapts to 600 and 900 Series LNC counters to provide 50 or 100 pulses per revolution of LNC right-hand wheel. Requires 10 to 15 VDC input power
- UL Listed for use in Class I, Groups C and D hazardous locations
- Reference the HR-LNC transmitter specifications ([SS01046](#))

## SM-200A Stack Monitor

- Available only on 200 Series counters
- Provides a pulse per revolution of the first wheel from the right side
- UL Listed and CSA Certified for use in Class I, Groups A, B, C, and D, Division 1 hazardous locations
- Reference the SM-200A stack monitor specifications ([SS01042](#))

## Tray-Actuated Microswitch

- Single pole, single throw (SPST) switch with capacity of 115 VAC or 230 VAC, 50/60 Hz at 15A; 125 VDC at 1/2A; 250 VDC at 1/4A
- UL Listed and CSA Certified for use in Class I, Group C, Division 1 hazardous locations

## Explosion-Proof Switch Packages for Preset Counter

### North American

- UL/CSA explosion-proof switch package for preset counter UL Listed and CSA Certified for use in a Class I, Division 1, Group D hazardous locations

- Hydraulic valve and pump control: 4 single pole double throw (4 SPDT)
- Each SPDT switch is rated for 115/250 VAC, at 15A; 125 VDC at 0.5A, 250 VDC at 0.25A

### European

- ATEX Ex II 2 G Ex d IIC T6, T5 Gb, hazardous locations. Certificate: EPS 14 ATEX 1776 X
- Hydraulic valve and pump control: 4 SPDT
- Each SPDT switch is rated for 250 VAC maximum at 7A; 250 VDC maximum at 0.8 A

# Printers

The accurately recorded printer ticket takes the uncertainty out of liquid transfers. The tamper-proof system seals the ticket into the meter register printer while a transfer is being made and also seals out dirt and weather. The ticket is mechanically printed before it can be removed from the printer.

## Options

- High-capacity accumulative ticket printer (Series 3900) features eight print wheels instead of seven, as on a 2600 accumulative printer
- Tray-actuated microswitch activates with or without a ticket in the tray
- Long-ticket features enable multiple transactions on one ticket
- Custom suffix identifier for single, double, or triple characters
- Metric units
  - Unit symbol: l, m<sup>3</sup>, kg, t
  - Fixed zero: For high speed liter registration
  - Comma: For decimal position

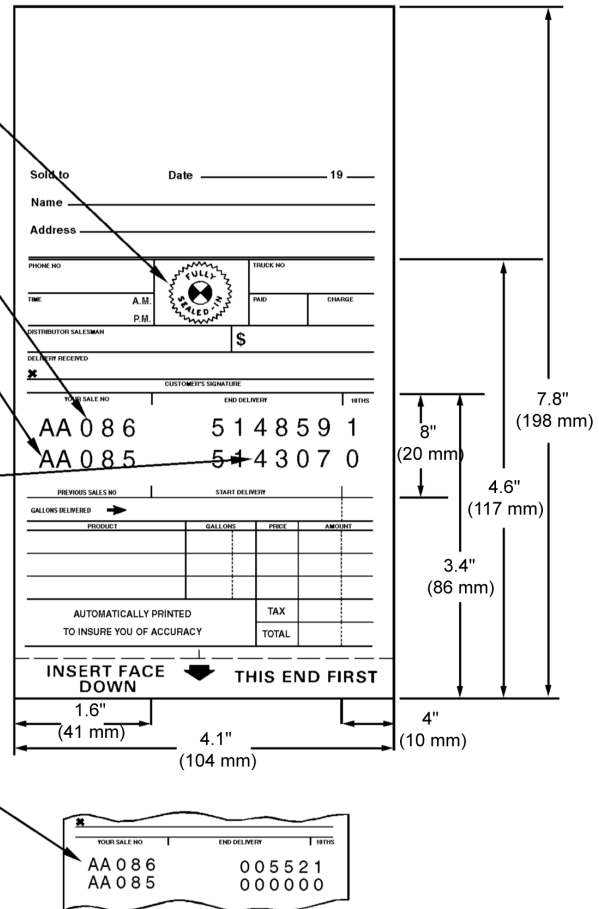
The ticket is automatically sealed into the printer. The tamper-proof ticket cannot be removed without being damaged until the final reading is printed. The printer accommodates the most used size ticket which is 4 1/8" wide by 7 3/4" long (104.78 mm x 196.85 mm). It also handles ticket sizes up to 5" wide (127 mm). The movable guides and adjustable ticket stop make it easy to locate the printing position on the ticket.

The consecutive three-digit transaction (or printout) serial number advances one digit when "Finish Print" occurs. Any missing ticket is immediately detected by discontinuity of number sequence.

The two-wheel manually (internal) selectable location identifier (not available on European versions) is in alpha characters A, B, D, E, F, G, J, K, P, or R.

The accumulative system assures complete accountability of production. "Start Print" recording is the same seven-digit number printed as "Finish Print" number from the previous transaction. "Finish Print" is recorded above "Start Print". Delivery or process output is obtained by subtracting "Start Print" from "Finish Print" (552.1 for the ticket shown).

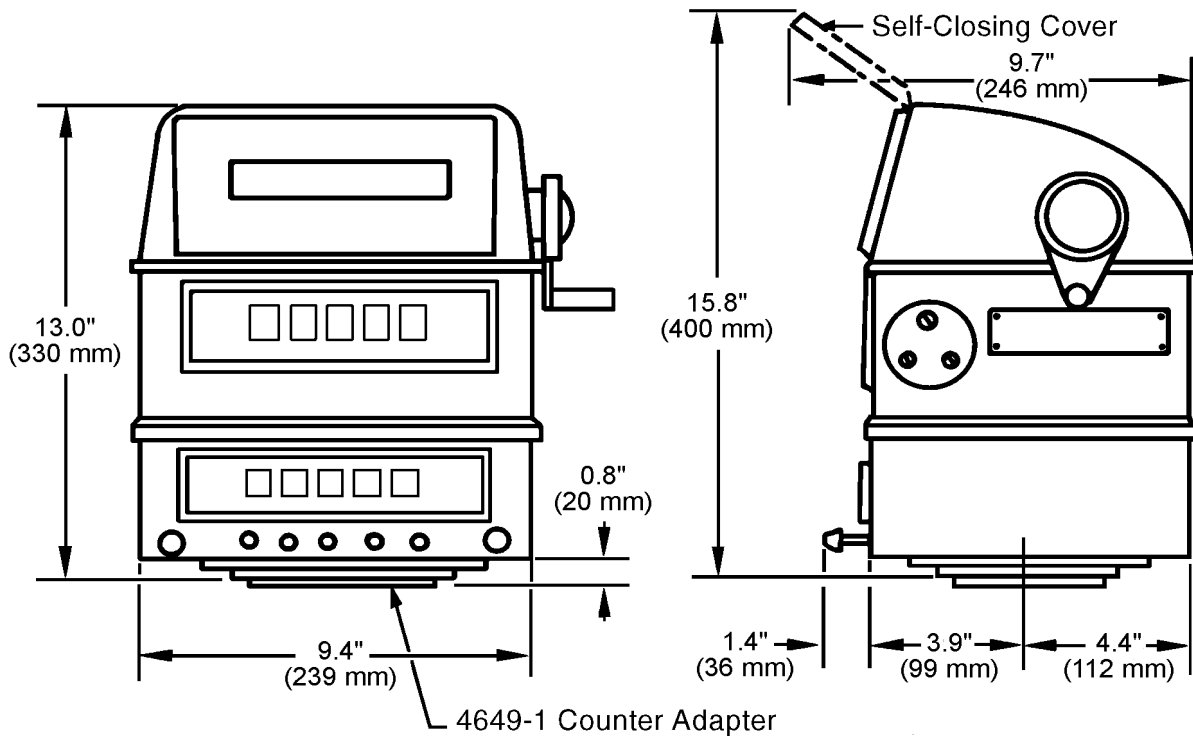
The zero start system includes all the features of the accumulative system except that delivery is recorded and printed in a six-digit (five-digit on European versions) number instead of seven and "Start Print" is all zeros. Subtraction is not needed because the "Finish Print" number is the actual volume delivered.

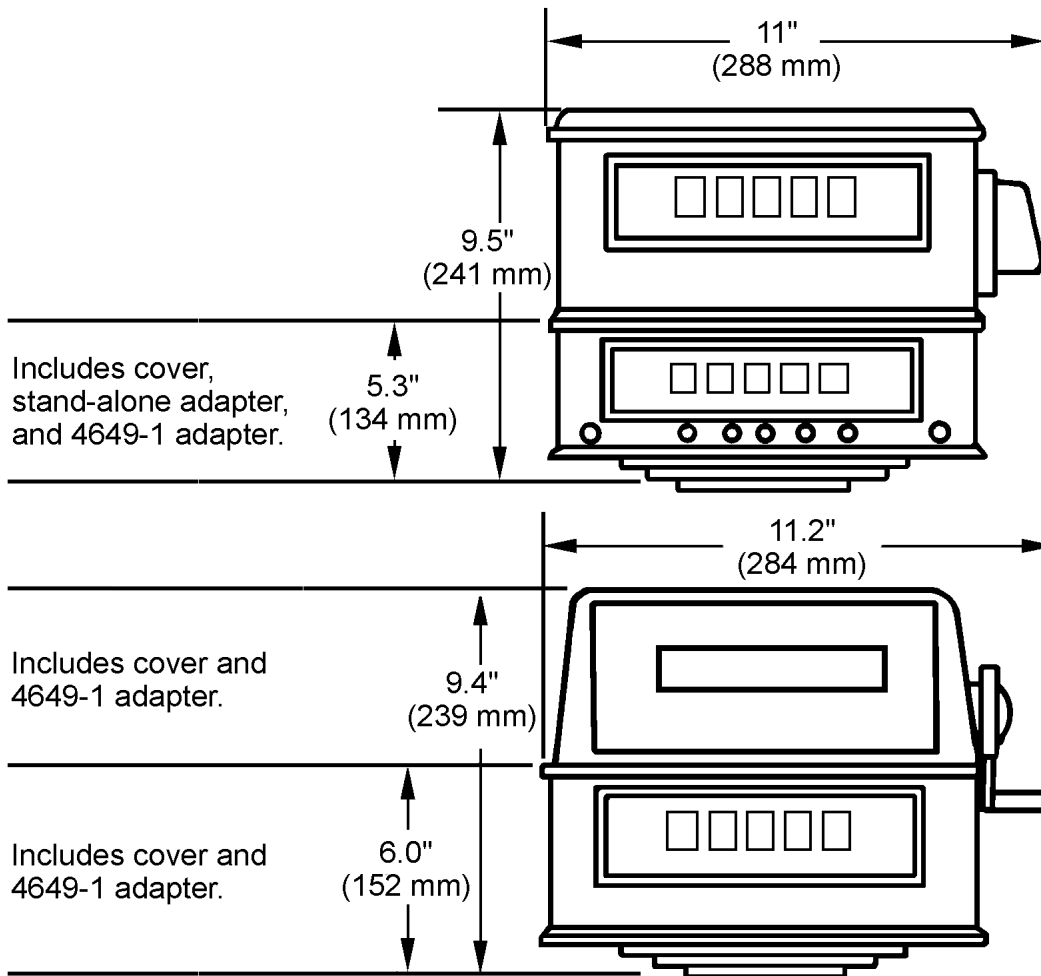


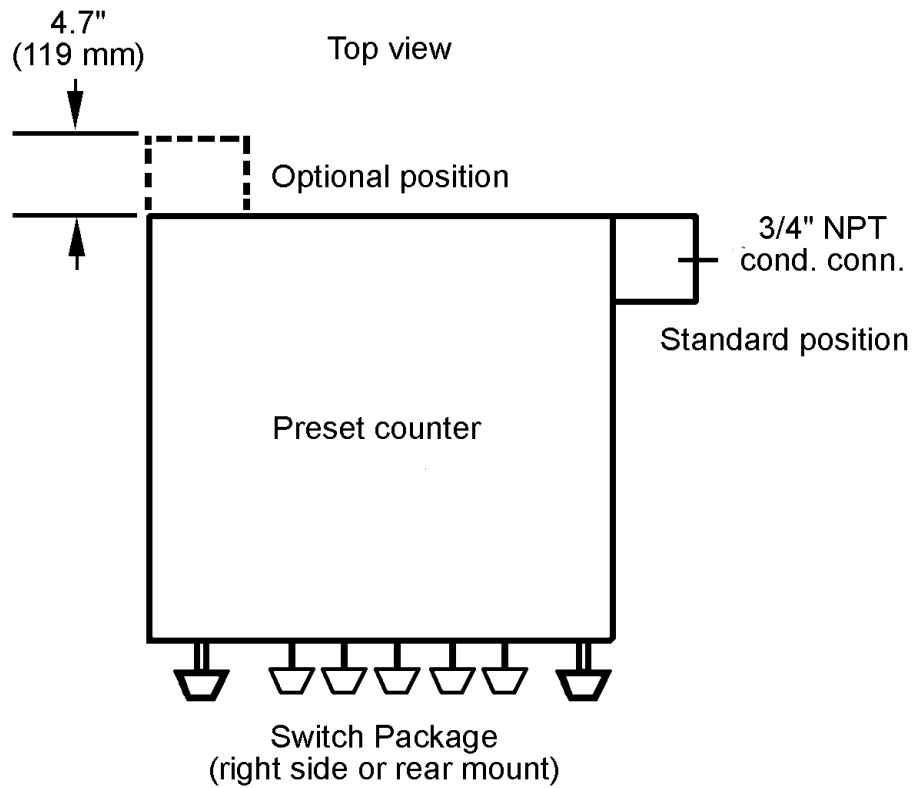
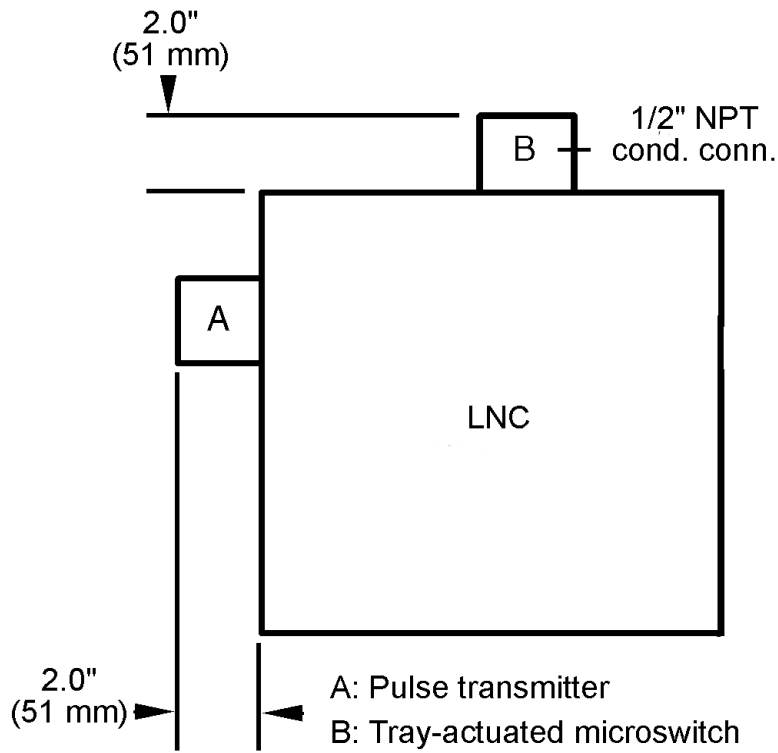
## Dimensions and Weight

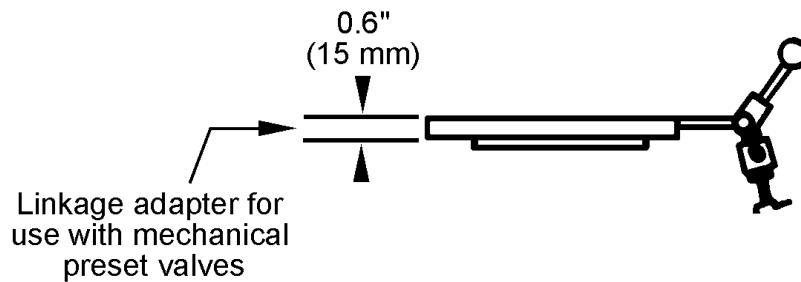
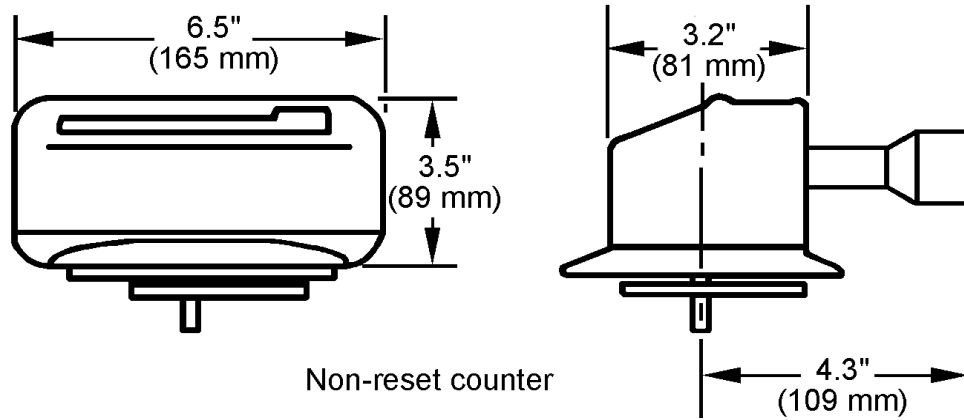
The dimensions are in inches (") to the nearest tenth (millimeters (mm) to the nearest whole millimeter), each independently dimensioned from respective engineering drawings. Weight is measured in pounds (lb), kilograms (kg).

Weights		
Product	lb	kg
200A Series Counters	5	2.2
Large Numeral Counter	15	6.8
Ticket Printer	10	4.5
Preset Counter	11	5.0
Pulse Transmitter	1	0.5
Tray Actuated Microswitch	1	0.5
Preset Switch Package and Control Handle	3	1.4









The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacture that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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