

# Models 104A and 104AR

Digital/Analog Converter

## Description

The Models 104A and 104AR convert pulses from meters with electronic outputs to a 4-20 mA signal. It also provides the 12 volts of DC power when required by the meters electronic transmitting register. There are no option available with these instruments, therefore; they are used when no other options are required. If options are required or may be required in the future the appropriate model should be specified with the necessary options.

The Model 104AR has an electronic readout in the door that displays both the total consumed and the flow rate on an eight digit reflective 0.46" LCD display. (For low ambient light conditions a RED high intensity transmissive readouts are available at the time of order). A single display indicates flow rate designated by an R on the left side of the display. The display can be toggled manually with the front panel SELECT switch to show the total consumed.

There are two (2) totalizers available; typically one is programmed to be reset with the front panel RESET button. It is designated with a lower case b on the left side of the display. The second totalizer is usually set to indicate the total consumed. This totalizer display is blank on the left side. The totalizers can be set to both being resettable or both nonreset. They can also indicate different values such as one set to GALLONS and the second set to CUBIC FEET. IMPERIAL GALLONS and CUBIC METERS are common pairs.

Although the totalizers can be programmed the field, it may be specified when the order is placed. The display may be left to show any of the readouts continuously or may be set to automatically toggle between the three (3) displays. Recalibrating the 4-20 mA signal requires calibration equipment and is usually returned to the factory for this function.



## Features

### ENCLOSURE

NEMA4X – a wall mountable 3.9" deep x 3.95" high x 5.9" wide, plastic enclosure.

### Front Panel

Model 104A – Blank

Model 104AR – 8-digit reflective LCD with 0.46" display.

### Pulse Indicator

A red LED, located at the bottom right side of the PC board, display each pulse received from the meter.

### Power Indicator

A red LED, located at the top of the PC board, indicates the instrument's DC power supply is functional.

### OUTPUT

#### 4-20 mA Proportional Output

Both instruments have a 4 – 20 mA DC output proportional to the flow rate through the metering device. This signal has the capability of driving external equipment with impedances from 0 to 500 ohms without recalibration. The output is

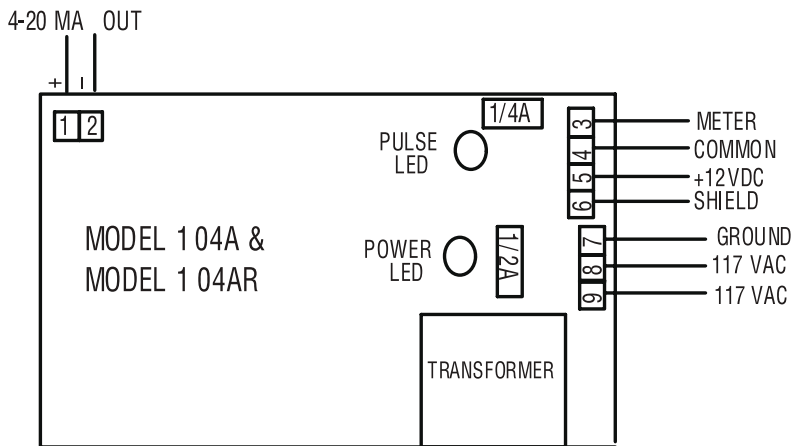
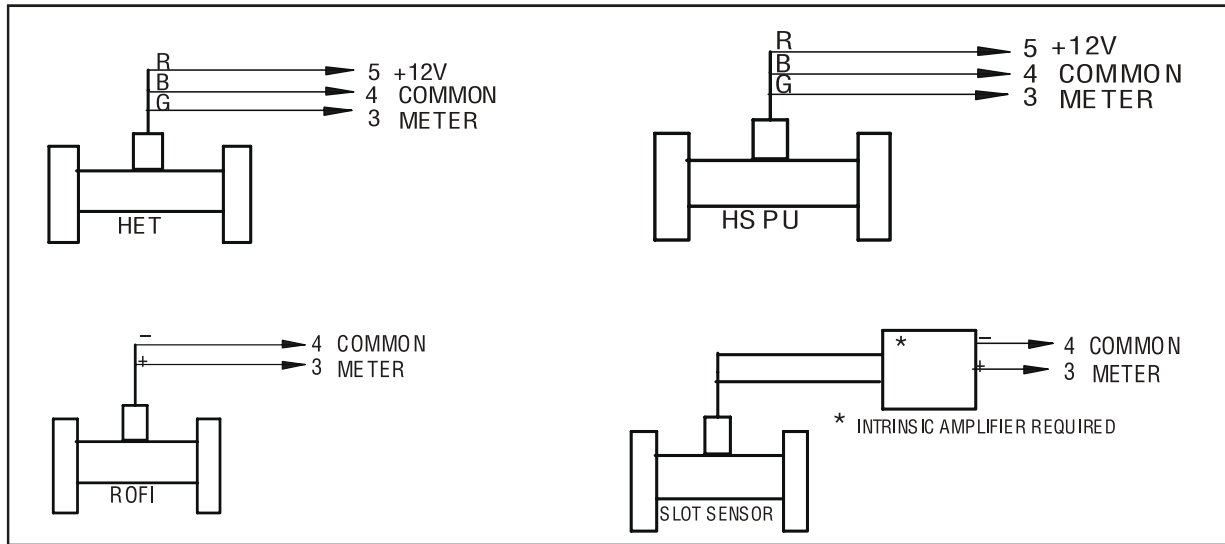
powered by the internal supply and **MUST NOT** be connected to a powered loop.

### CONSTRUCTION

The case is made of a tough ABS polycarbonate material. The changeable battery is stored inside a compartment secured by a Phillips head screw which allows easy battery replacement, when required.

### SPECIFICATIONS

<b>INPUT SIGNALS GENERAL</b>	Input frequency(full scale) 1-1000 Hz Maximum loop resistance – 40 ohms Duty Cycle – 50/50 + 20%
<b>CONTACT CLOSURE INPUT</b>	Type – SPST (contact bounce less than 5ms) Interrupting Current – 50 ma. (max)
<b>SOLID STATE</b>	An open collector design conforming to switch specifications above.
<b>ELECTRICAL</b>	117 VAC +10%, 60 Hz, 1 Phase Power Consumption – 15 VA (Watts), Max
<b>ENVIRONMENTAL CONDITIONS</b>	Ambient Temperature – 0° F to 120° F Relative Humidity – Non-condensating
<b>DEPTH</b>	3.9" 9.9 cm
<b>HEIGHT</b>	3.95" 10 cm
<b>WIDTH</b>	5.9" 15.6 cm
<b>WEIGHT</b>	1.75 lbs 793.9 gm



CONNECTIONS	
Term #	Function
1	+4-20 MA
2	-4-20 MA
3	METER SIG
4	COMMON
5	+ 12v
6	SHIELD
7	EARTH GND
8	117 VAC
9	117 VAC

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