

# VA14

## Economical Analog Input Ratometer & Totalizer



### Description:

Featuring 6 digits of bright, 7-segment LED displays, the VA14 is an integrating totalizer/ratometer which accepts analog signal inputs. The unit can be field programmed to accept 4-20mA, 0-20mA, 0-5V, 0-10V or 1-5V signals. An optional Square Law input is available for inputs that require square root extraction. A 4-20mA output option is available to control strip recorders or to transmit linear signal other peripherals. Two assignable set points are standard. The high and low scaling settings are programmable from the front panel. By pressing the "view" button, the unit will display: integrated total, rate, peak or valley. Press the "lock" key once to freeze the display.

### Specifications:

**Display:** 6 digit, .55" high, 7 segment, red orange, LED.

**Input Power:** 110, 220 VAC  $\pm$  15% or 12 to 24VDC.

Current: max. 300mA DC or 10.0VA (10W) at rated AC voltage.

**Output Power:** (AC powered units only) + 24VDC @ 50mA regulated  $\pm$ 5% (100 mA available on request)

### Temperature:

Operating: +41°F (5°C) to +130°F (+54°C).

Storage: -40°F (-40°C) to +200°F (93°C).

**Humidity:** 0-90% Noncondensing

**Memory:** EEPROM stores data for ten years if power is lost.

### Reset:

Front Panel: resets displayed values and control outputs.

Remote: 4-30VDC positive edge, resets totalizer and control outputs.

### Input:

Standard: Linear 4-20mA, 0-20mA, 0-5V, 0-10V or 1-5V selectable from the front panel.

Optional: Square Law 4-20mA, 0-20mA, 0-5V, 0-10V or 1-5V is available for inputs that require square root extraction.

**Input Impedance:** Current: 100 $\Omega$ ; Voltage: 115K $\Omega$

**Overvoltage Protection:** 50 V

**Overcurrent Protection:** 50 mA

**Resolution:** 14.5 Bits

**Listing:** CE Compliant, CSA Listed (File No. LR91109), NRTL/C pending

**Calibration:** The unit does all of the calibrations internally. There are no potentiometers to adjust and the unit never needs to be removed from the case.

### Features

- High/Low Scaling From Front Panel
- 2 Set Points Assignable To Rate or Total
- Display Rate, Integrated Total and Peak & Valley
- 0-5V, 0-10V, 1-5V, 4-20mA or 0-20mA Analog Input
- NEMA 4X/IP 65 Front Panel
- +24V Output Power For Peripherals
- 4-20mA Output (optional)
- Square Root Extraction (optional)
- Rate Per Day Feature (optional)

### Control Outputs:

Standard: Open collector sinks 250 mA from 30VDC when active.

Optional: 2 each Form C SPDT 5 Amp @ 120/240 VAC or 28 VDC. (Open collector outputs are also supplied with 10VDC provided at transistor outputs through relay coil. If greater than 2mA is used, relay will remain energized. Applying greater than 10 VDC may destroy unit. Transistor will sink 100mA in "ON" state.)

Usage: rate alarm, total alarm, scaled pulse output for remote totalizers.

**Set Points:** The two control set points can be set at any number from 0 to 59999. The set point outputs can be assigned to rate or total. The unit comes standard with two open collector control outputs. Two 5 Amp, Form C relays are optional. The outputs are programmable from .01 to 599.99 sec or latched until reset when assigned to the total and a hysteresis (alarm range) when assigned to the rate.

**Rate Display:** Updates 2 times per second, Accurate to 4.5 digits. Set "low" greater than "high" for inverted display (LINEAR ONLY). A user programmable low cutoff inhibits indications at low flow rates.

**Totalizer:** Integrates from the rate reading and accumulates up to 6 digits of total count. A totalizer divider allows the total to be divided by 1, 10, 100 or 1000. This feature is especially useful for users who deal with high total volumes.

**Analog Output:** The unit can be ordered with an optional 4-20mA output which is proportional to the instantaneous rate. (The normalizing averaging factor does not affect the analog output) The high and low settings are programmable from the front panel. Set "low" greater than "high" for inverted output. A sinking driver generates a corresponding linear current through the external devices. The output updates with each update of the rate. Accuracy is  $\pm$ .25% FS worst case. Compliance voltage must be 3 to 30 VDC non inductive. (The unit can provide the DC source as long as the drop across the devices being driven does not exceed 21V).

**Programming:** Decimal points, Scaling from 0 to 59999 units per selected time base, set points, input type, security lock code, and assigning outputs are all programmable from the front panel.

**Housing:** Standard 1/8 DIN, high impact ABS plastic case (NEMA 4X/IP65 front panel).

**Shipping Weight:** 2 lbs.

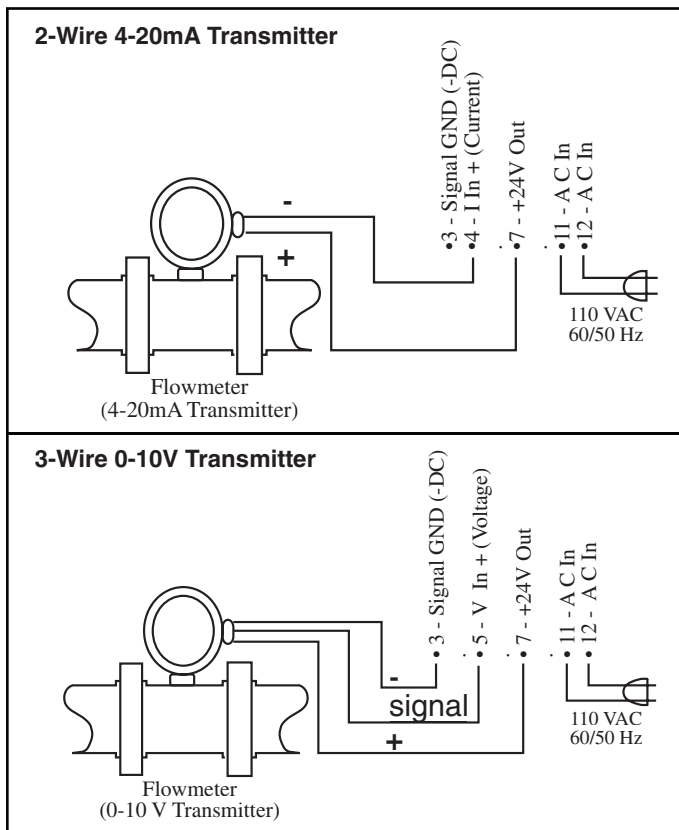
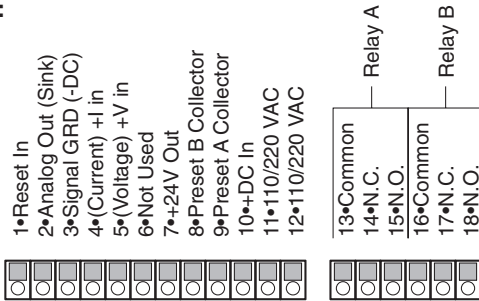
**Accuracy:**

<u>RANGE</u>	<u>% FS ERROR</u> (worst case)	<u>% FS ERROR</u> (typical)
0-20 mA	0.1%	.05%
4-20 mA	0.1%	.05%
0-10 VDC	0.2%	0.1%
0-5 VDC	.25%	.15%
1-5 VDC	.25%	.15%

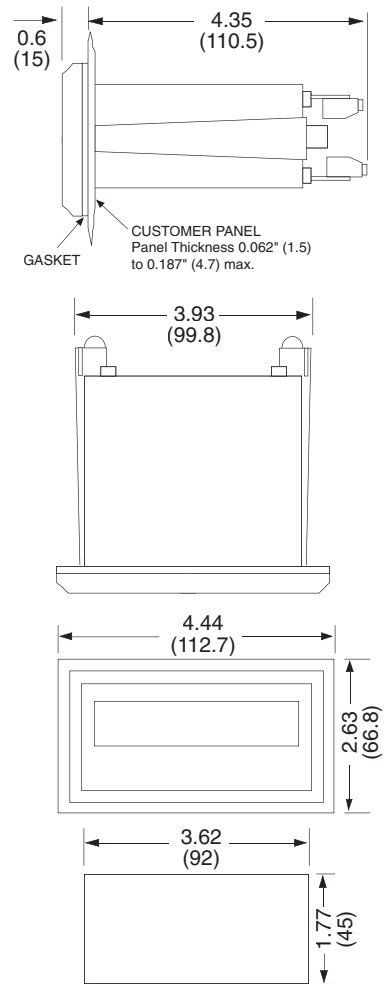
Square Law: (above 5% of bottom range) 0.1%  
(5V inputs .4%) Worst case over complete range: 2%

**Temperature Stability:** Will not drift more than 20 parts per million per °C from 5°C to 54°C

**WIRING:**



**Dimensions:**



**Ordering Information**

**Example:** VA14INT69RT A L 1 A

**Series:** VA14INT69RT= Ratemeter / Totalizer

**Operating Voltage:** A= 110 VAC ± 15% or 12 to 24 VDC  
B= 220 VAC ± 15% or 12 to 24 VDC

**Inputs:** L= Linear (standard)  
S= Square Law (optional)

**Control outputs:** 1= 2 - Open Collector Outputs (standard)  
2= 2 - 5 Amp Form C Relays (optional)

**Options (Multiple Options Available)** A= Analog Output (4-20 mA)  
D= Rate per Day, Hour or Minute



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