



# RVA Series

## Fully signal conditioned pressure transducers

### FEATURES

- Pressure ranges from 0 ...  $\pm 50$  mmHg to 0 ... 500 psi gage
- High accuracy
- TTL power supply
- Ratiometric 0.5 to 4.5 V output
- Dual-Inline pinning for easy PCB-mounting
- Excellent media compatibility
- Sensortech PRO services



### MEDIA COMPATIBILITY

P1: dry gases only

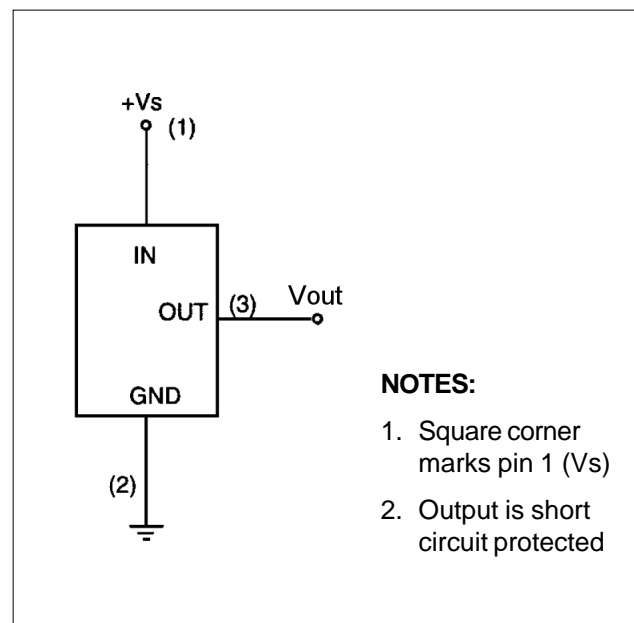
P2: all media compatible with glass, silicon, stainless steel, Invar, Sn/Ni plating or Sn/Ag solder

### SPECIFICATIONS

#### Maximum ratings

Supply voltage ( $V_s$ )	4.75 ... 5.25 V
Output current	
Source	0.5 mA
Sink	1.0 mA
Output load capacitance	10 nF
Temperature limits	
Operating	-45 to +125°C
Storage	-55 to +125°C
Compensated	-45 to +125°C
Humidity (non-condensing)	0 - 95 %RH

### ELECTRICAL CONNECTION



#### NOTES:

1. Square corner marks pin 1 ( $V_s$ )
2. Output is short circuit protected



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#### PRESSURE RANGE SPECIFICATIONS

( $V_s = 5.00$  V,  $R_L > 100$  kW,  $t_{amb} = 25^\circ\text{C}$ )

Part number	Operating pressure range	Proof pressure <sup>1</sup>	Sensitivity (typ.)
RVAQ050GB...	0 ... $\pm 50$ mmHg	170 mmHg	40.0 mV/mmHg
RVAQ300GU...	0 ... 300 mmHg	650 mmHg	13.33 mV/mmHg
RVAP015GU...	0 ... 15 psig	45 psi	266.7 mV/psi
RVAP015GV...	0 ... -15 psig	30 psi	-266.7 mV/psi
RVAP030GU...	0 ... 30 psig	60 psi	133.3 mV/psi
RVAP100GU...	0 ... 100 psig	200 psi	40.0 mV/psi
RVAP150GU...	0 ... 150 psig	300 psi	25.7 mV/psi
RVAP250GU...	0 ... 250 psig	500 psi	16.0 mV/psi
RVAP500GU...	0 ... 500 psig	1000 psi	8.0 mV/psi

#### Specification notes:

1. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
2. Non-linearity - the maximum deviation of measured output at constant temperature, from "Best Straight Line" through three points (offset pressure, full scale pressure and 1/2 full scale pressure).
3. Thermal effects tested and guaranteed in the specified temperature ranges relative to 25°C. All specifications shown are relative to 25°C.
4. Span is the algebraic difference between lowest and highest specified pressure.
5. Total accuracy is the maximum deviation from the 25°C reference transfer function at any pressure or temperature over the specified ranges. This calculation includes null, span, linearity, hysteresis, repeatability, null shift and span shift.
6. Response time for 0 to full-scale pressure step change, readings taken at 10 % and 90 % of full-scale pressure.



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### PERFORMANCE CHARACTERISTICS ( $V_s = 5.00\text{ V}$ , $R_L > 100\text{ kW}$ , $t_{amb} = 25^\circ\text{C}$ )

#### RVAQ050GB...

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure		-50		+50	mmHg
Zero pressure offset		2.45	2.50	2.55	V
Span <sup>4</sup>			4.0		
Output	at -50 mmHg		0.5		
	at +50 mmHg		4.5		
Thermal effects (0 to 50°C) <sup>3</sup>	Offset			±1.50	%FSS
	Span			±1.50	
Non-linearity (BSL) <sup>2</sup>				±0.8	
Hysteresis and repeatability			±0.15		
Ratiometricity error ( $V_s = 4.75 \dots 5.25\text{ V}$ )			±0.25		
Current consumption (no load)				10.0	mA
Response time <sup>6</sup>			1		ms

#### RVAQ300GU...

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure		0		300	mmHg
Zero pressure offset		0.45	0.50	0.55	V
Span <sup>4</sup>		3.95	4.00	4.05	
Full scale output			4.5		
Thermal effects <sup>3</sup>	Offset	-18 to +63°C		±1.25	%FSS
		-45 to +125°C		±2.75	
	Span	-18 to +63°C		±0.75	
		-45 to +125°C		±2.0	
	Combined offset and span	-18 to +63°C		±1.5	
		-45 to +125°C		±4.0	
Non-linearity (BSL) <sup>2</sup>				±0.2	
Hysteresis and repeatability			±0.15		
Ratiometricity error ( $V_s = 4.75 \dots 5.25\text{ V}$ )			±0.25		
Current consumption (no load)				10.0	mA
Response time <sup>6</sup>			1		ms



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### PERFORMANCE CHARACTERISTICS ( $V_s = 5.00\text{ V}$ , $R_L > 100\text{ kW}$ , $t_{amb} = 25^\circ\text{C}$ )

#### RVAP015GU...

Characteristics			Min.	Typ.	Max.	Unit
Operating pressure			0		15	psig
Zero pressure offset			0.39	0.50	0.61	V
Span <sup>4</sup>			3.89	4.00	4.11	
Full scale output				4.5		
Thermal effects <sup>3</sup>	Offset	-18 to +63°C			±2.0	%FSS
		-45 to +85°C			±2.75	
	Span	-18 to +63°C			±0.75	
		-45 to +85°C			±1.0	
	Combined offset and span	-18 to +63°C			±2.0	
		-45 to +85°C			±3.0	
Total accuracy <sup>5</sup>					±4.0	
Non-linearity (BSL) <sup>2</sup>					±0.2	
Hysteresis and repeatability				±0.15		
Ratiometricity error ( $V_s = 4.75 \dots 5.25\text{ V}$ )				±0.25		
Current consumption (no load)					10.0	mA
Response time <sup>6</sup>				1		ms

#### RVAP015GV...

Characteristics			Min.	Typ.	Max.	Unit
Operating pressure			0		-15	psig
Zero pressure offset			0.46	0.50	0.54	V
Span <sup>4</sup>			3.9	4.0	4.1	
Full scale output				4.5		
Thermal effects <sup>3</sup>	Offset	-18 to +25°C			±0.75	%FSS
		-45 to +85°C			±1.0	
	Span	-18 to +25°C			±2.0	
		+25 to +85°C			±1.25	
	Combined offset and span	-45 to +25°C			±2.25	
		-18 to +25°C			±1.5	
		+25 to +85°C			±1.0	
		-40 to +25°C			±1.75	
Total accuracy <sup>5</sup>					±2.25	
Non-linearity (BSL) <sup>2</sup>					±0.3	
Hysteresis and repeatability				±0.15		
Ratiometricity error ( $V_s = 4.75 \dots 5.25\text{ V}$ )				±0.25		
Current consumption (no load)					10.0	mA
Response time <sup>6</sup>				1		ms



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### PERFORMANCE CHARACTERISTICS ( $V_s = 5.00\text{ V}$ , $R_L > 100\text{ k}\Omega$ , $t_{amb} = 25^\circ\text{C}$ )

#### **RVAP030GU...**

Characteristics			Min.	Typ.	Max.	Unit
Operating pressure			0		30	psig
Zero pressure offset			0.46	0.50	0.54	V
Span <sup>4</sup>			3.92	4.00	4.08	
Full scale output				4.5		
Thermal effects <sup>3</sup>	Offset	-18 to +63°C			±1.5	%FSS
		-45 to +85°C			±2.0	
		-45 to +125°C			±2.25	
	Span	-18 to +63°C			±1.5	
		-45 to +85°C			±2.0	
		-45 to +125°C			±2.25	
Combined offset and span	-18 to +63°C			±2.0		
	-45 to +125°C			±2.25		
Non-linearity (BSL) <sup>2</sup>					±0.3	
Hysteresis and repeatability				±0.15		
Ratiometricity error ( $V_s = 4.75 \dots 5.25\text{ V}$ )				±0.25		
Current consumption (no load)					10.0	mA
Response time <sup>6</sup>				1		ms

#### **RVAP100GU...**

Characteristics			Min.	Typ.	Max.	Unit
Operating pressure			0		100	psig
Zero pressure offset			0.46	0.50	0.54	V
Span <sup>4</sup>			3.91	4.0	4.09	
Full scale output				4.5		
Thermal effects <sup>3</sup>	Offset	-18 to +63°C			±1.25	%FSS
		-45 to +85°C			±2.0	
		-45 to +125°C			±3.0	
	Span	-18 to +63°C			±0.75	
		-45 to +85°C			±1.0	
		-45 to +125°C			±2.0	
	Combined offset and span	-18 to +63°C			±1.5	
		-45 to +85°C			±2.5	
		-45 to +125°C			±3.0	
Non-linearity (BSL) <sup>2</sup>					±0.1	
Hysteresis and repeatability				±0.15		
Ratiometricity error ( $V_s = 4.75 \dots 5.25\text{ V}$ )				±0.25		
Current consumption (no load)					10.0	mA
Response time <sup>6</sup>				1		ms



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### PERFORMANCE CHARACTERISTICS ( $V_s = 5.00\text{ V}$ , $R_L > 100\text{ k}\Omega$ , $t_{amb} = 25^\circ\text{C}$ )

#### RVAP150GU...

Characteristics			Min.	Typ.	Max.	Unit
Operating pressure			0		150	psig
Zero pressure offset			0.46	0.50	0.54	V
Span <sup>4</sup>			3.93	4.0	4.07	
Full scale output				4.5		
Thermal effects <sup>3</sup>	Offset	-18 to +63°C			±0.75	%FSS
		-45 to +85°C			±1.0	
		-45 to +125°C			±1.5	
	Span	-18 to +63°C			±0.75	
		-45 to +85°C			±1.0	
		-45 to +125°C			±1.5	
	Combined offset and span	-18 to +63°C			±0.75	
		-45 to +85°C			±1.0	
		-45 to +125°C			±1.5	
Total accuracy <sup>5</sup>					±2.5	
Non-linearity (BSL) <sup>2</sup>					±0.1	
Hysteresis and repeatability				±0.15		
Ratiometricity error ( $V_s = 4.75 \dots 5.25\text{ V}$ )				±0.25		
Current consumption (no load)					10.0	mA
Response time <sup>6</sup>				1		ms

#### RVAP250GU...

Characteristics			Min.	Typ.	Max.	Unit
Operating pressure			0		250	psig
Zero pressure offset			0.46	0.50	0.54	V
Span <sup>4</sup>			3.93	4.0	4.07	
Full scale output				4.5		
Thermal effects <sup>3</sup>	Offset	-18 to +63°C			±0.75	%FSS
		-45 to +85°C			±1.0	
		-45 to +125°C			±2.0	
	Span	-18 to +63°C			±0.75	
		-45 to +85°C			±1.0	
		-45 to +125°C			±2.0	
	Combined offset and span	-18 to +63°C			±0.75	
		-45 to +85°C			±1.0	
		-45 to +125°C			±3.0	
Non-linearity (BSL) <sup>2</sup>					±0.1	
Hysteresis and repeatability				±0.15		
Ratiometricity error ( $V_s = 4.75 \dots 5.25\text{ V}$ )				±0.25		
Current consumption (no load)					10.0	mA
Response time <sup>5</sup>				1		ms





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### ORDERING INFORMATION - AVAILABLE LISTINGS

**Note:** Preferred listings are highlighted in grey

Pressure range	Gage pressure	
	Unformed lead (straight)	Lead formed away from port
0...±50 mmHg	RVAQ050GB1	RVAQ050GB2
0...300 mmHg	RVAQ300GU1	RVAQ300GU2
0...15 psi	RVAP015GU1	RVAP015GU2
0...-15 psi	-	RVAP015GV2
0...30 psi	-	RVAP030GU2
0...100 psi	RVAP100GU1	RVAP100GU2
0...150 psi	-	RVAP150GU2
0...250 psi	RVAP250GU1	RVAP250GU2
0...500 psi	-	RVAP500GU2

#### Sensortech PRO services:

- Extended guarantee period of 2 years
- Improved performance characteristics
- Custom product modifications and adaptations even for small quantities
- Advanced logistics models for supply inventory and short delivery times
- Technical support through application engineers on the phone or at your site
- Fastest possible technical response for design and QA engineers
- ... plus other services on request

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