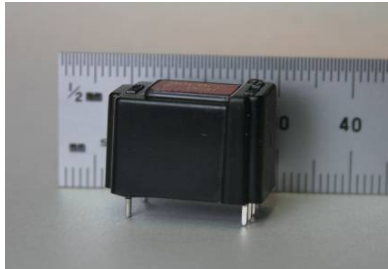


80 mA current transducer RAZ3-800A range



This new Hall Effect Current Transducer retains the excellent linearity and low hysteresis of our 2nd Generation parts, but adds laser-trimmed calibration accuracy and a convenient machine-insertable package.

RAZ3 parts can replace closed-loop current sensors in many applications.

Features –

- Small-footprint UL94-V0 rated package
- Line voltage isolated
- High measuring circuit dv/dt rejection – suitable for PWM controllers
- Gains compatible with 12 bit ADC (1 lsb = 0.1mA) or Analog (10.0mV/mA)
- Highly accurate null-trimming for current-control applications
- 5% gain accuracy

Maximum Ratings ($T_A = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Operating Temperature	T_A	-40 to +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-65 to +170	$^\circ\text{C}$
Supply Voltage	V_S	8	V
Maximum measuring-circuit current	I_{max}	100	mA

Characteristics (TA = 25°C, except where stated)

Parameter	Symbol	Lower Limit	Typical	Upper Limit	Unit	
Measured current range (-40 to +85 °C)	I _P		±80		mA	
Measuring Circuit insertion resistance (excluding PCB tracks)	R _p		46		Ω	
Measuring Circuit insertion inductance (excluding PCB tracks)	L _p		37.5		mH	
Resolution (Gain code <i>A or B</i>) with 5.0V (user supplied) 12-bit ADC (lsb magnitude)	δI		0.1		mA	
Supply Current	I _s		6.6	9	mA	
Supply Voltage	V _s	4.5	5.0	5.5	V	
Null Output (V _s = 5.00V)	V _o	Tolerance code F 2.496	2.5	2.504	V	
		Tolerance code G 2.492		2.508		
		Tolerance code J 2.484		2.516		
Transfer Function (V _s = 5.00V, Gain Code <i>A or B</i>)	Tolerance Code F = 1% Tolerance Code G = 2% Tolerance Code J = 5%	ΔV/I	12.09 11.96 11.60	12.21*	12.33 12.46 12.82	mV/mA
<i>Transfer Function (V_s = 5.00V, Gain Code C or D)</i>	<i>Tolerance Code F = 1% Tolerance Code G = 2% Tolerance Code J = 5%</i>	<i>ΔV/I</i>	<i>9.9 9.8 9.5</i>	<i>10.00</i>	<i>10.1 10.2 10.5</i>	<i>mV/mA</i>
Non-linearity (±80mA, -40 to +85 °C)			1	1.5	%	
Hysteresis (0 to 50mA)	Hys		0.1	0.25	%	
Null drift due to temperature change (as equivalent current)	Continuous Cal. [†] Pulsed Calibration	TC _{ΔI/ΔT}		±0.005 ±0.02	±0.02 ±0.05	mA/K
Gain Change due to temperature change		TC _G		±0.05	%/K	
Risetime 0 to 20mA (constant current source)	Tr		15		μs	

Standards

EN50178 (1997)

* = 5.00V/4096 x 10⁴, based on least-significant bit of 12-bit ADC corresponding to 0.1mA measurement.

† Continuously calibrated recommended for most applications, Pulse Calibrated for battery powered applications.

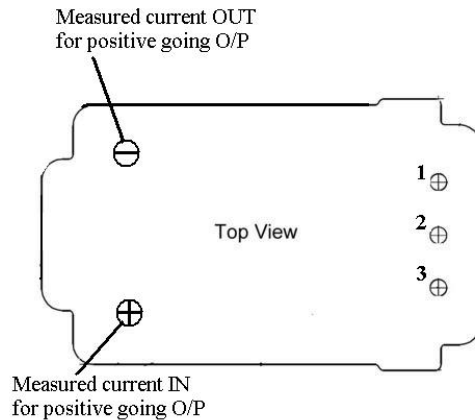
Characteristics (TA = 25°C) Continued

Parameter	Symbol	Lower Limit	Typical	Upper Limit	Unit
Output Resistance – Gain Codes B or D (Buffered) Gain Codes A or C	R_o	100	150	350 20	Ω
Effect of primary dv/dt (Equivalent measured Ampères/(Primary Volts/second) – for PWM applications) Gain Codes B or D (Buffered) Gain Codes A or C			10^{-8} 10^{-9}		mAV^{-1}s
Noise	E_{nrms}			2.5	mV rms
Creepage/Clearance Distance		14			mm
Mass			6.5		g
Fire Resistance rating			UL94-V0		

Standards

EN50178 (1997)

Connections –



Footprint looking onto mounting surface

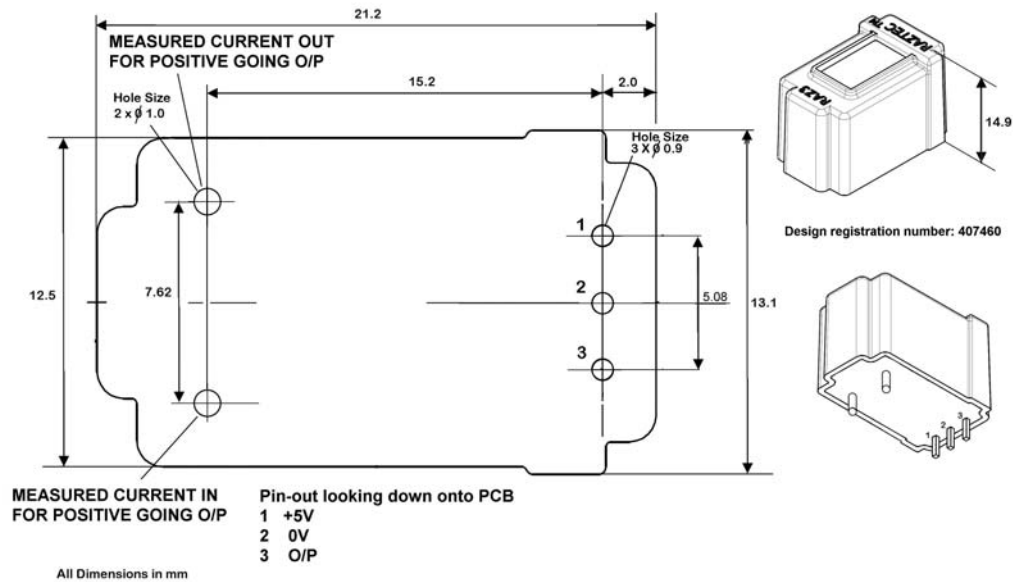
Secondary Pins -

- 1 +5V supply
- 2 0V common
- 3 Output

Options

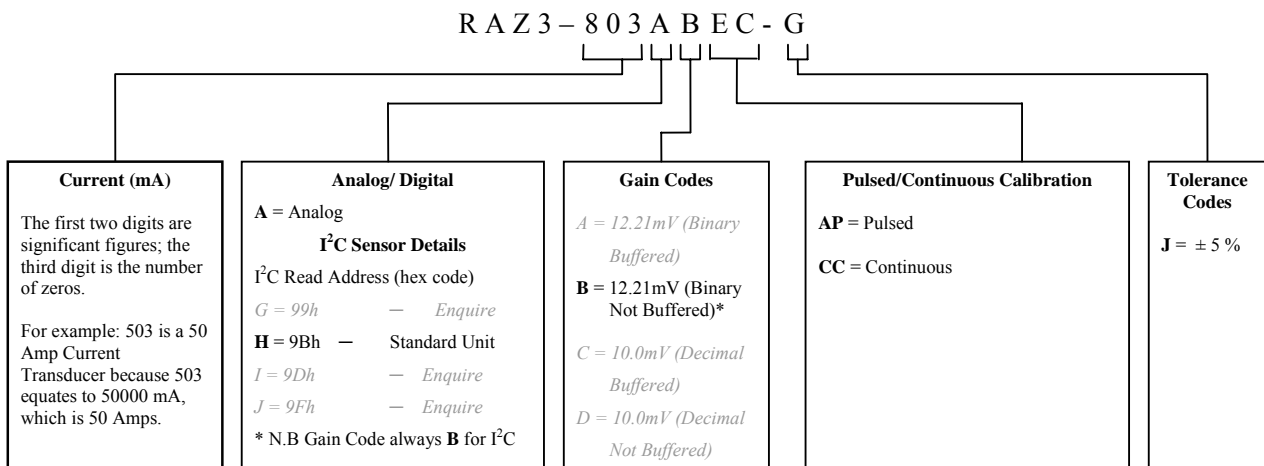
- Fast settling versions for pulsed 5V supply (e.g. Battery supplied applications)

Mechanical



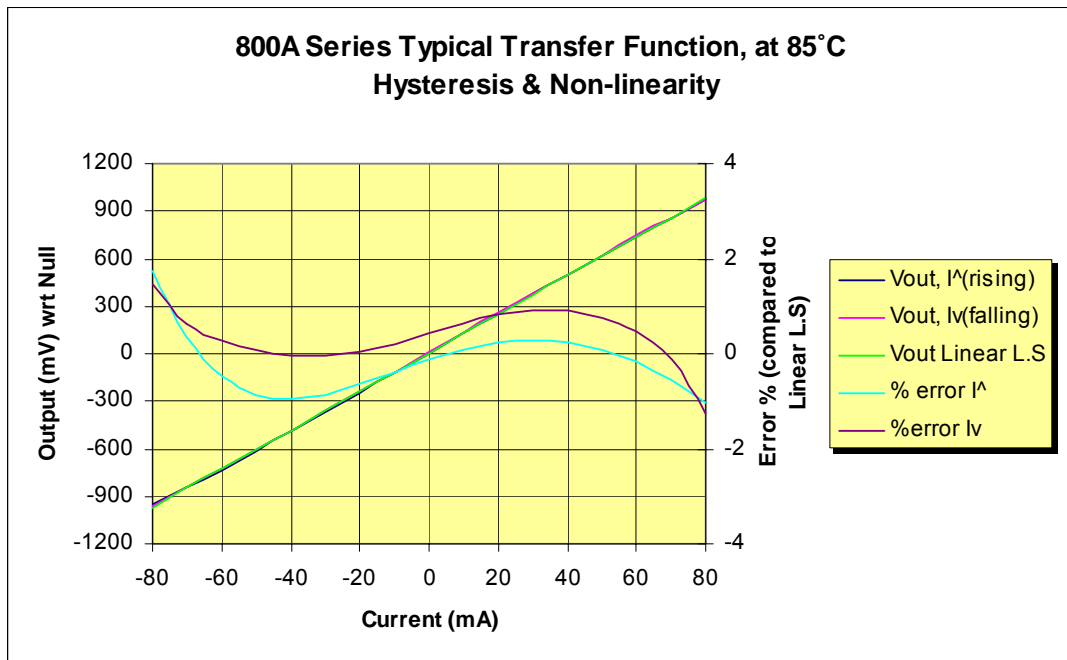
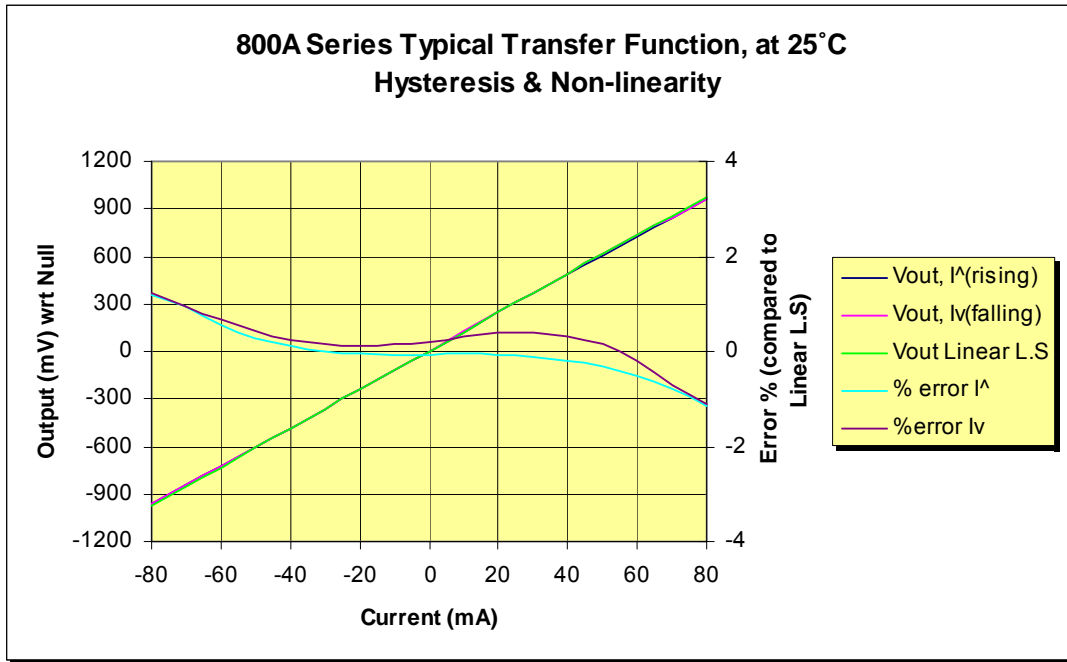
Footprint looking onto mounting surface – dimensions in mm

Part Numbering System



Options – enquire with factory prior to order

Performance characteristics



Raztec (NZ) Ltd operate a continuous product improvement program, therefore information contained in our datasheets may not reflect all current features. For clarification please contact sales@raztec.co.nz