

20 Amp current transducer RAZ3-203AQA(F/G/J)* range



*Suffix code F = 1%, G = 2% and J = 5% transfer function accuracy.

This CE certified Hall Effect Current Transducer offers excellent linearity and low hysteresis with either 1%, 2% or 5% calibration accuracy. It has a very convenient and compact machine-insertable package which has a mains voltage rating and compliance.

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

Features –

- Small-footprint UL94-V0 rated package
- CE certified
- Line voltage isolated
- High measuring circuit dV/dt rejection – suitable for PWM controllers
- Gains compatible with 10 bit ADC (1 lsb = 0.1A)
- Highly accurate null-trimming for current-control applications
- 1%(F), 2%(G) or 5%(J) transfer function 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 +110	$^\circ\text{C}$
Supply Voltage	V_S	8	V
Maximum measuring-circuit current	I_{max}	30	A

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

Parameter	Symbol	Lower Limit	Typical	Upper Limit	Unit
Measured current range (-40 to +85 °C)	I _p		±20		A
Measuring Circuit insertion resistance (excluding PCB tracks)	R _p		1		mΩ
Measuring Circuit insertion inductance (excluding PCB tracks)	L _p		640		nH
Resolution with 5.0V (user supplied) 12-bit ADC (lsb magnitude)	δI		25		mA
Supply Current	I _s		9.2	12	mA
Supply Voltage	V _s	4.5	5.0	5.5	V
Null Output (V _s = 5.00V)	V _o	2.49	2.5	2.51	V
Transfer Function (V _s = 5.00V) Tolerance Code F = 1% Tolerance Code G = 2% Tolerance Code J = 5%	ΔV/I	48.35 47.86 46.4	48.84*	49.33 49.82 51.28	mV/A
Non-linearity (±20A, -40 to +85 °C)			1	1.5	%
Hysteresis (0 to 10A)	Hys		0.1	0.25	%
Null drift due to temperature change (as equivalent current)	TC _{ΔI/ΔT}		±0.5	±2	mA/K
Gain Change due to temperature change	TC _G		±0.05		%/K
Risetime (0 to 5A)	Tr		15		μs

Standards

IEC 61010-1: 2001



* = 5.00V/1024 x 10, based on least-significant bit of (5V) 10-bit ADC corresponding to 0.1A measurement.

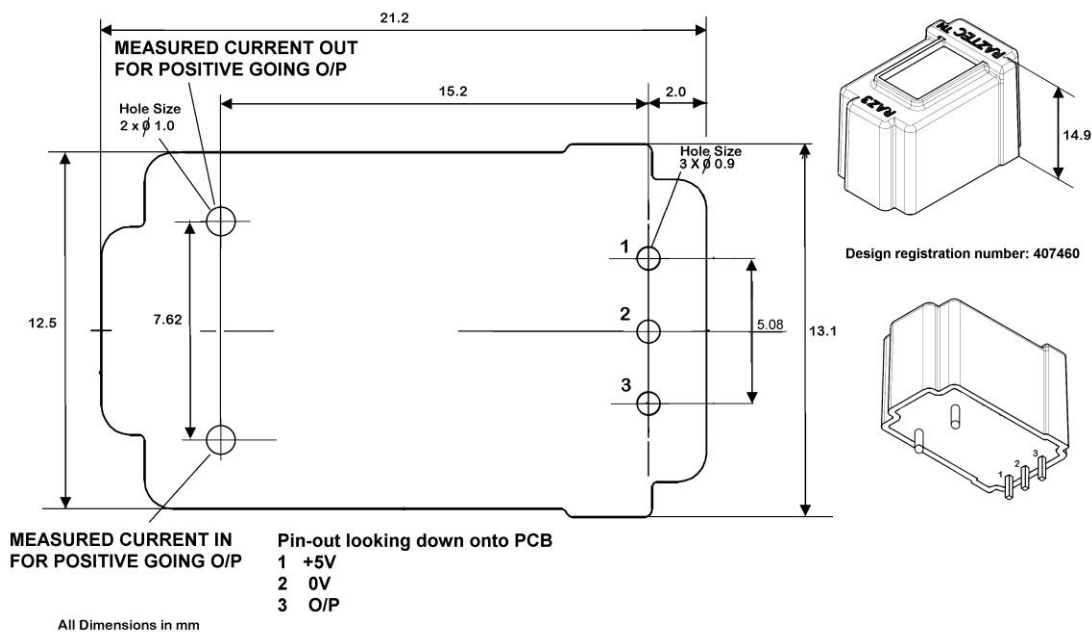
Characteristics (TA = 25°C) Continued

Parameter	Symbol	Lower Limit	Typical	Upper Limit	Unit
Output Resistance	R _o		1		Ω
Effect of primary dV/dt (Equivalent measured Ampères/(Primary Volts/second) – for PWM applications)			10 ⁻⁹		AV ⁻¹ s
Noise	E _{n rms}			2.5	mV rms
Creepage/Clearance Distance		12			mm
Mass			6.5		g
Fire Resistance rating			UL94-V0		

Standards

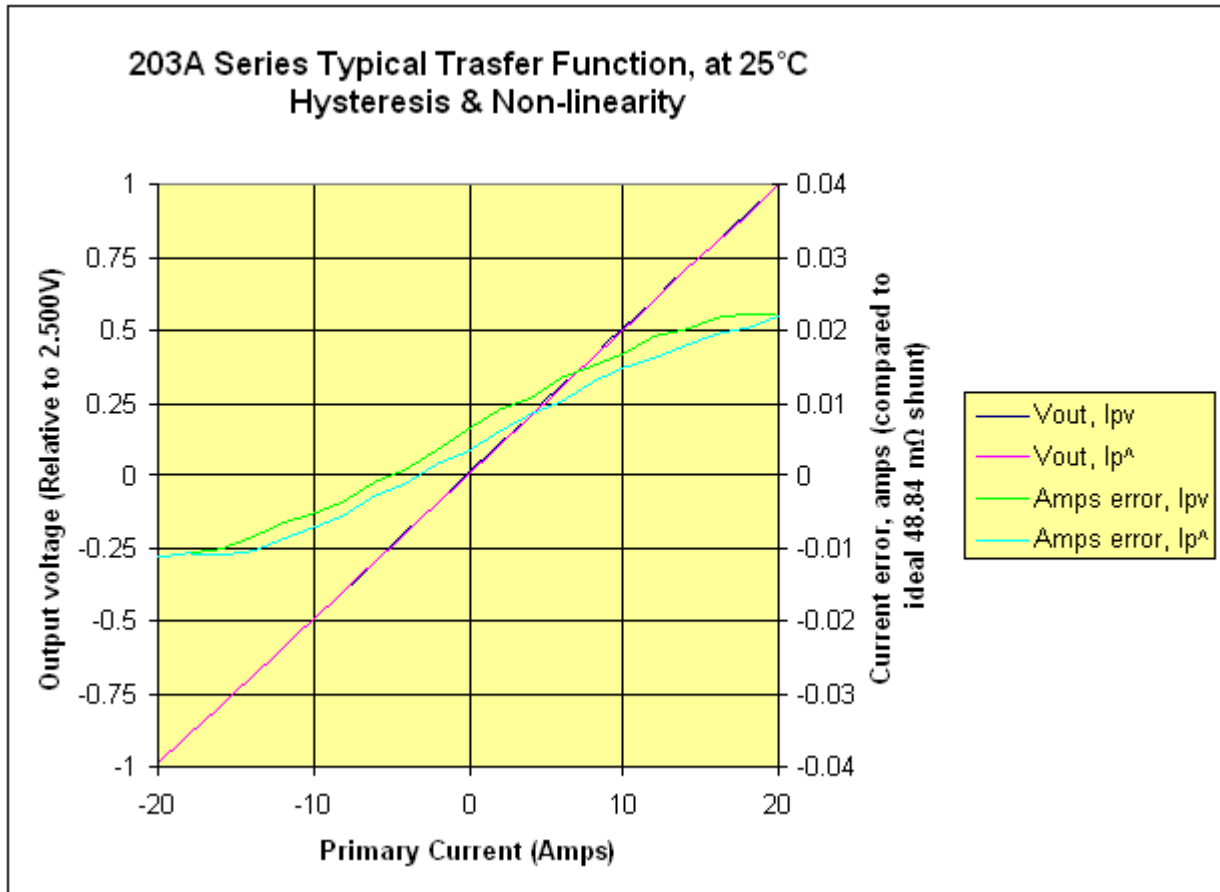
EN50178 (1997)

Mechanical



Footprint looking onto mounting surface – dimensions in mm

Performance characteristics



Notes : -

- Current error may lie anywhere within the bounds of $\pm 1.0A$ at full scale, within the full specified temperature range.
- Ipv signifies “falling primary current”, Ipv^ signifies “rising primary current”. The difference in current error represents magnetic hysteresis, which is a small fraction of the total error current budget.

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