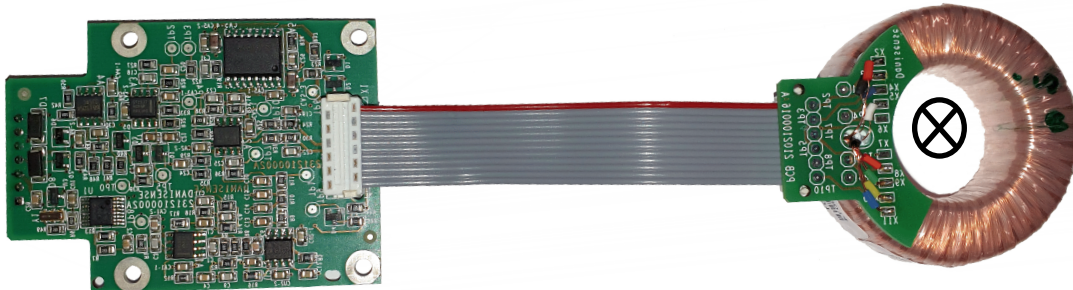


Highly stabilized and precise fluxgate technology based current transducer, re-engineered for cost sensitive, non-intrusive, isolated DC and AC current measurement applications up to 200A



Positive current direction

Features

- Linearity error maximum 6 ppm
- Offset maximum 40 ppm—equivalent to 1.5mA
- Fluxgate, closed loop compensated technology with fixed excitation frequency and second harmonic zero flux detection for enhanced accuracy and stability
- Cost focused high performance transducer
- DC and AC current metering with +/-0.1% absolute accuracy up to 5kHz
- Necessary to ensure cooling on A5 when running higher currents.

Applications:

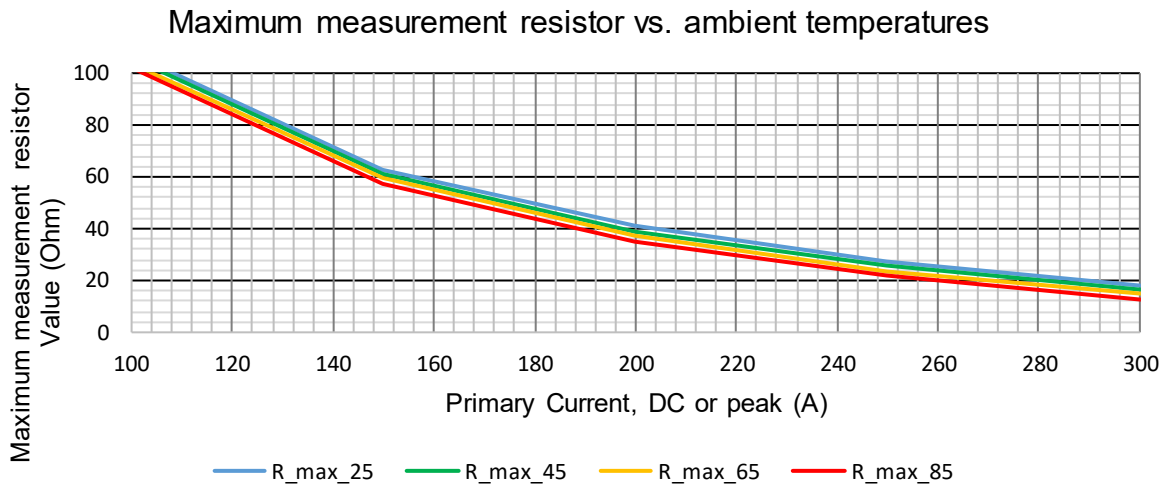
- Compact stable power supplies

Specification highlights	Symbol	Unit	Min	Typ.	Max
Nominal primary AC current	IPN AC	Arms			140
Nominal primary DC current	IPN DC	A			200
Measuring range	$\hat{I}PM$	A	-220		220
Primary / secondary ratio	n1 : n2		1:1000		1:1000
Linearity error	ϵ_L	ppm	-6		6
Offset current (including earth field)	I_{OE}	ppm	-40		40
Operating temperature range	Ta	°C	-40		60
Power supply voltages	Uc	V	±14.25		±15.75

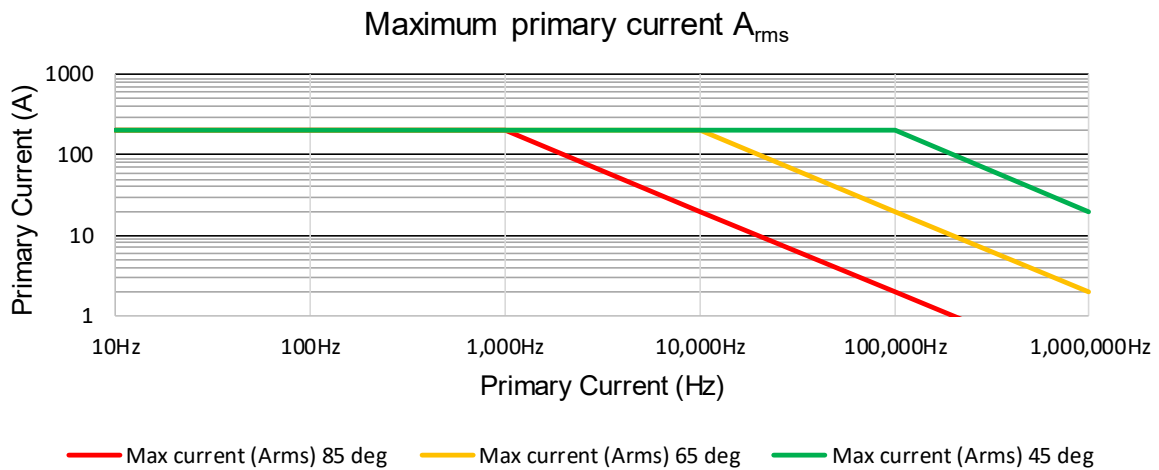
Electrical specifications at Ta=23°C, supply voltage = ± 15V unless otherwise stated

Parameter	Symbol	Unit	Min	Typ.	Max	Comment
Nominal primary AC current	I_{PNAC}	Arms			140	Refer to fig. 1 & 2 for derating
Nominal primary DC current	$I_{PND C}$	A	-200		200	Refer to fig. 1 for derating
Measuring range	I_{PM}	A	-220		220	Refer to fig. 1 & 2 for derating
Overload capacity	\hat{I}_{OL}	A			1000	Non-measured, 100ms
Nominal secondary current	I_{SN}	mA	-200		200	At nominal primary DC current
Primary / secondary ratio			1:1000		1:1000	
Measuring resistance	R_M	Ω	0		100	Refer to fig. 1 for details
Linearity error	ϵ_L	ppm μA	-6		6	ppm refers to nominal current
			-1.2		1.2	μA refers to secondary current
Offset current (including earth field)	I_{OE}	ppm μA	-40		40	ppm refers to nominal current
			-8		8	μA refers to secondary current
Offset temperature coefficient	TC_{IOE}	ppm/K $\mu A/K$	-1		1	ppm refers to nominal current
			-0.2		0.2	μA refers to secondary current
Bandwidth	$f(-1dB)$	kHz	300			Small signal, graphs figure 3
Response time to a step current IPN	$tr @ 90\%$	μs		1		$di/dt = 100A/\mu s$
Noise	noise	ppm rms	0 - 100Hz		10	
			0 - 1kHz		18	
			0 - 10kHz		30	
			0 - 100kHz		90	
Fluxgate excitation frequency	f_{Exc}	kHz		16		
Power supply voltages	U_c	V	± 14.25		± 15.75	
Positive current consumption	I_{ps}	mA			40	Add I_s (if I_s is positive)
Negative current consumption	I_{ns}	mA			27	Add I_s (if I_s is negative)
Operating temperature range	T_a	$^{\circ}C$	-40		60	
Stability						
Offset stability over time		ppm / month	-5		5	ppm refers to nominal current
			-1		1	μA refers to secondary current

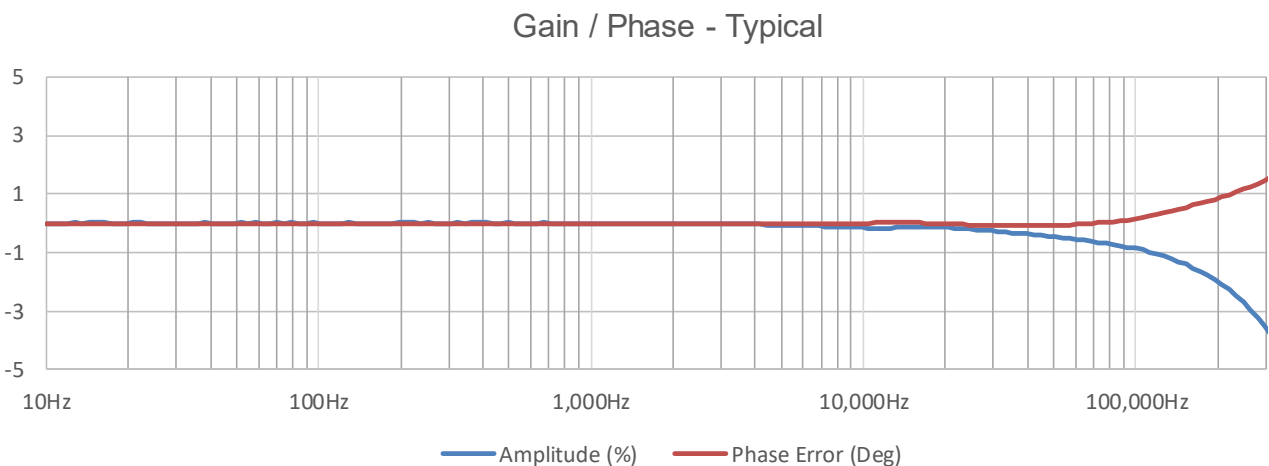
Measurement resistor R_M and ambient temperature derating (Fig. 1)



Frequency and ambient temperature derating (Fig. 2)



Frequency characteristics (Fig. 3)



Isolation specifications

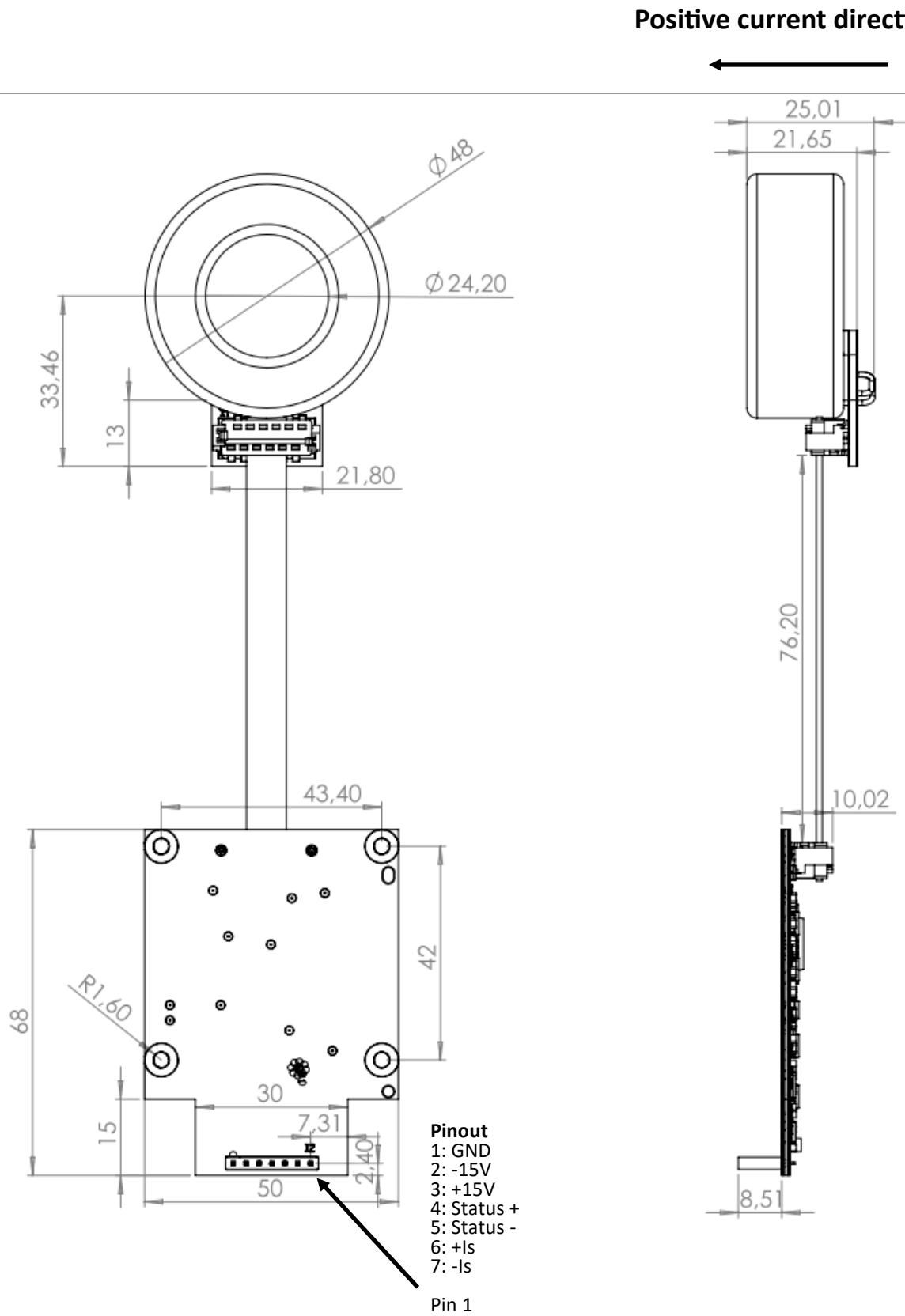
Parameter	Unit	Value
Clearance	mm	N/A
Creepage distance	mm	N/A
Comparative tracking index (CTI)	V	N/A
Rms voltage for AC isolation test, 50/60 Hz, 1 min - Between primary and (secondary and shield (GND))	kV	N/A
Impulse withstand voltage (1.2/50 μ s)	kV	N/A
Rated rms isolation voltage reinforced isolation, overvoltage category III, Pollution degree 2 according to IEC 61010-1 and EN50780	V	N/A N/A

Absolute maximum ratings

Parameter	Unit	Max	Comment
Primary	kA	1.5	Maximum 100ms
Power supply	V	\pm 16.5	

Environmental and mechanical characteristics

Parameter	Unit	Min	Typ	Max	Comment
Operating temperature range	$^{\circ}$ C	-40		60	
Storage temperature range	$^{\circ}$ C	-40		85	
Relative humidity	%	20		80	Non-condensing
Mass	kg		0.200		
Connections	Samtec SSW-107-01-G-S				
Standards	EN 61326-1 EMC				



Positive current direction

Positive current direction is from PCB side of transducer head.

Mounting instructions

- Base plate mounting

4 holes $\phi 3.5$