

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 300A



Features

Fluxgate, closed loop compensated technology with fixed excitation frequency and second harmonic zero flux detection for enhanced accuracy and stability

Industry standard 6.3 x 0.8mm faston connection

Plastic housing with $\phi 20.0\text{mm}$ aperture for insulated cables or bus bars

Industrial grade (non-instrumentation) components

Cost oriented high performance model

DC and AC (50/60Hz) current metering with +/-0.05% absolute accuracy

Applications:

Gradient amplifiers for MRI devices

Precision power supplies

Batteries testing and evaluation systems

Variable speed motor drives

Specification highlights	Symbol	Unit	Min	Typ.	Max
Nominal primary AC current	IPN AC	Arms			200
Nominal primary DC current	IPN DC	A	-300		300
Measuring range	\hat{I}_{PM}	A	-300		300
Primary / secondary ratio	n1 : n2		1:1000		1:1000
Linearity error	ϵ_L	%	-0.005		+0.005
Offset current (including earth field)	I_{OE}	%	-0.02		+0.02
DC-100Hz Overall accuracy @25°C (= $\epsilon_L + I_{OE}$)	acc ϵ	%	-0.05		+0.05
AC Maximum gain error from 100Hz to 5kHz	ϵ_G	%			± 0.5
Operating temperature range	Ta	°C	-40		+70
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	IPN AC	Arms		200		
Nominal primary DC current	IPN DC	A	-300		300	
Measuring range	ÎPM	A	-300		300	
Overload capacity	ÎOL	A	-1500		1500	Non-measured, 100ms
Nominal secondary current	ISN	mA	-300		300	At nominal primary DC current
Primary / secondary ratio				1:1000		
Max. measuring resistance	RM	Ω	0		20 10	@200A peak/DC @300A peak/DC
Linearity error	εL	%	-0.005		+0.005	% refers to ISN
Offset current (including earth field)	IOE	%	-0.01		+0.01	% refers to ISN
Offset temperature coefficient	TCIOE	ppm/K	-3		+3	ppm refers to ISN
Bandwidth	f(-1dB)	kHz		1000		Small signal,
Gain error 100Hz – 5kHz 5kHz -100kHz 100kHz –1MHz	εG	%			0.50% 3.0% 50%	% of reading
Phase shift 100Hz – 5kHz 5kHz -100kHz 100kHz –1MHz	θ	°			0.2° 0.5° 20°	
Response time to a step current IPN	tr @ 90%	µs		1		di/dt = 100A/µs
Noise 0 - 100Hz 0 - 1kHz 0 - 10kHz 0 - 100kHz	noise	µA rms			0.2 2.0 15 30	Measured on secondary current
Fluxgate excitation frequency	fExc	kHz		15.6		
Power supply voltages	Uc	V	±14.25		±15.75	
Positive current consumption	Ips	mA	30	32	33	Add Is (if Is is positive)
Negative current consumption	I _{ns}	mA	-31	-33	-34	Add Is (if Is is negative)
Operating temperature range	Ta	°C	-40		+70	
Stability						
Offset stability over time		ppm/month	-10		+10	ppm refers to ISN

Isolation specifications

Parameter	Unit	Value
Clearance	mm	9
Creepage distance	mm	10
Comparative tracking index (CTI)	V	> 600
Rms voltage for AC isolation test, 50/60 Hz, 1 min - Between primary and (secondary and shield) - Between secondary and shield	kV	5.7
Impulse withstand voltage (1.2/50µs)	kV	10.4
Rated rms isolation voltage reinforced isolation, overvoltage category III, Pollution degree 2 according to - IEC 61010-1 - EN50780	V	300

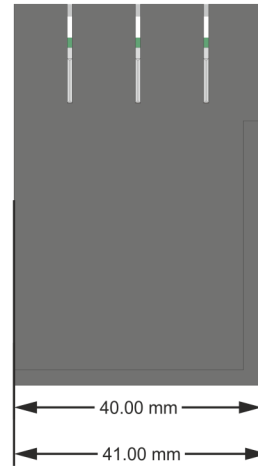
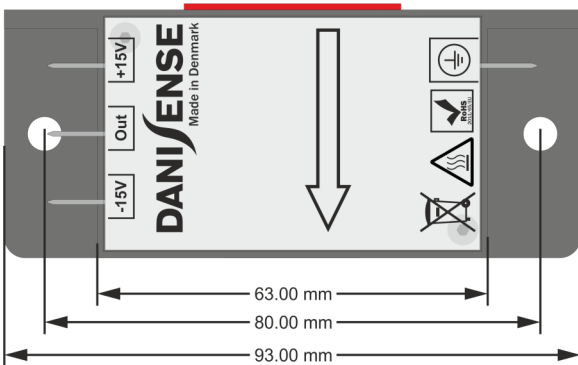
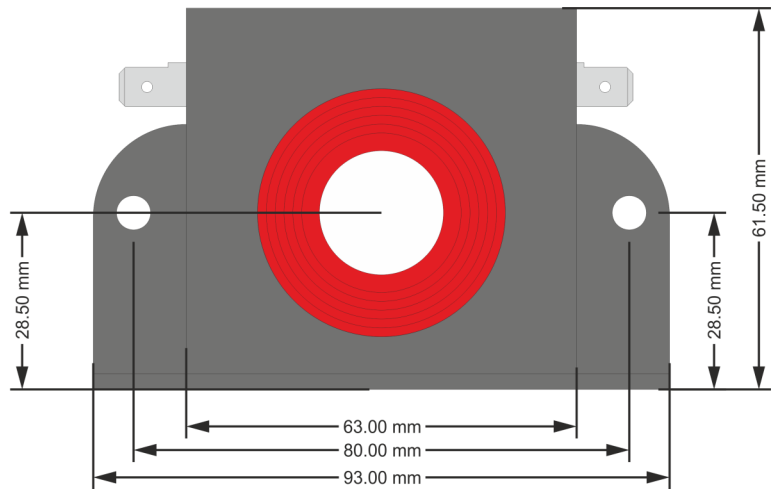
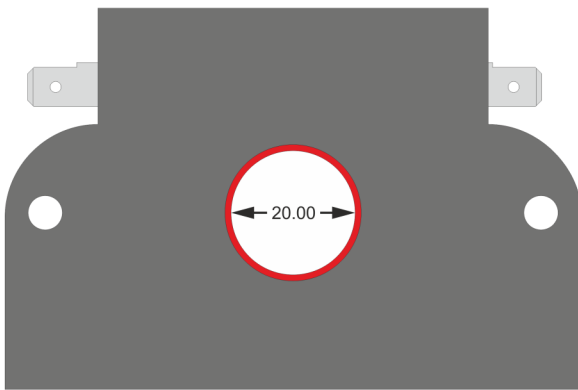
Absolute maximum ratings

Parameter	Unit	Max	Comment
Primary	kA	3.0	Maximum 100ms
Power supply	V	±16.5	

Environmental and mechanical characteristics

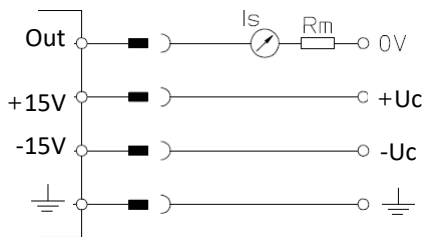
Parameter	Unit	Min	Typ	Max	Comment
Operating temperature range	°C	-40		70	
Storage temperature range	°C	-40		85	
Relative humidity	%	20		80	Non-condensing
Mass	kg		0.17		
Connections	4 Industrial fastons 6.3 x 0.8mm				
Standards	EN 61326-1 EMC, EN 61010-1:2010 Safety				

Mechanical Dimensions



(general tolerance 0.1mm unless otherwise stated)

DS200ILP connection



Positive current direction

Is identified by an arrow on the transducer body

Mounting instructions

- Base plate mounting
- 2holes $\phi 5.5$
- 2 x M5 screws