DS200 Voltage Output

A contact free flux gate based current measurement sensor – 200A_{rms}

DS 200 is member of the small housing sensor family. The family includes a 200A and a 600A version.

- Up to 300Apeak ($t_{ambient}$ -40°C to 85°C) for 1V output version
- DC: 200A ($t_{ambient}$ -40°C to 85°C) for both 1V and 10V output version
- Aperture size 27.6mm
- Danisense advanced sensor protection circuit "ASPC"

The sensor is a flux gate based sensor and is build in a ruggedized aluminum housing for optimal shielding against external noise and optimal cooling.

CE

RoHS 2011/65/EU

Available versions

DS200UBSA-1

- 1V output at 200A, optimized for power analyzer and frequency analysis
- 1,5V output at 300A peak
- Need to have a high impedance input on the measuring device
- Gain trimmed to 50ppm maximum error
- Offset is typical 20uV
- Temperature drift 15ppm/K
- BNC output connection

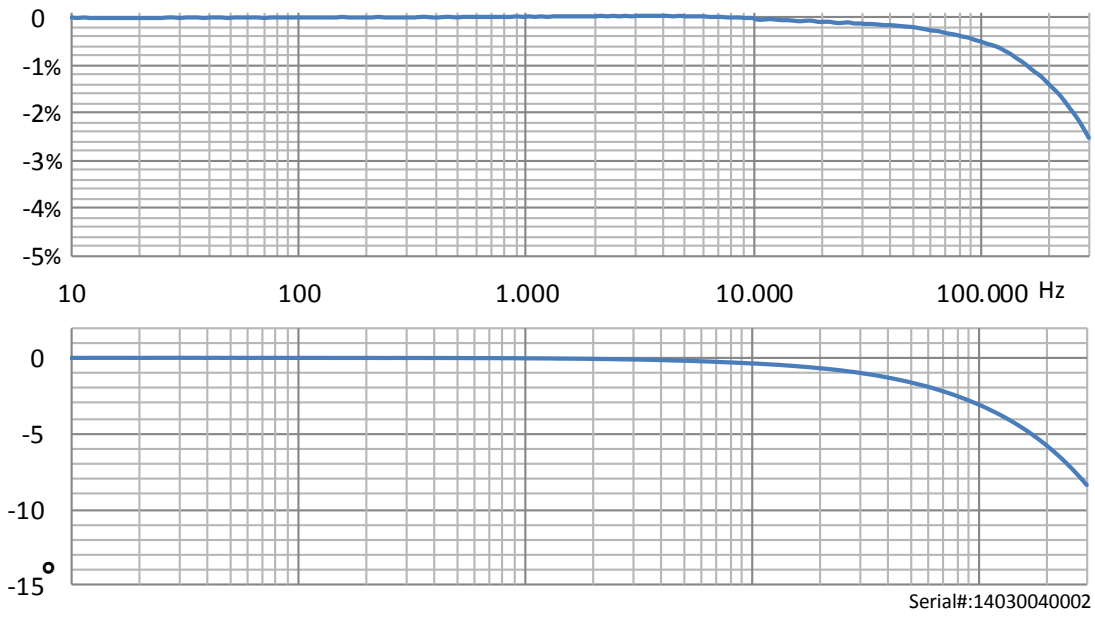
DS200UBSA-10

- 10V output at 200A, optimized for DC and low frequency applications
- Not suitable for higher currents than 200A
- Need to have a high impedance input on the measuring device
- OP27 output buffer, gain trimmed to 50ppm
- Offset is typical 500uV
- Temperature drift 15ppm/K
- BNC output connection

DS200UBSA-1 specifications (tambient 23°C)

Parameter	Unit	Min	Typ	Max	Comment
AC: Primary current, rms	A			200	Iprimary
AC: Primary current peak	A			300	
Output voltage (Uout)	V				Iprimary/200A*1V
Offset voltage	V		20uV		
Gain error	ppm			100	
Absolute error					If Iprimary is 200A then Uout will be 1V±20uV(Offset, typical)±100uV(Gain Error, max) ± 15uV/K(Ambient Temperature drift, max)
Current consumption	mA	80		110	
Temperature drift	ppm/K			15	
Gain error - DC to 5kHz - 5kHz to 100kHz - 100kHz to 1MHz	%			 0,01 0,5 20	
Phase error - DC to 5kHz - 5kHz to 100kHz - 100kHz to 1MHz	Degree			 0,2 4 30	

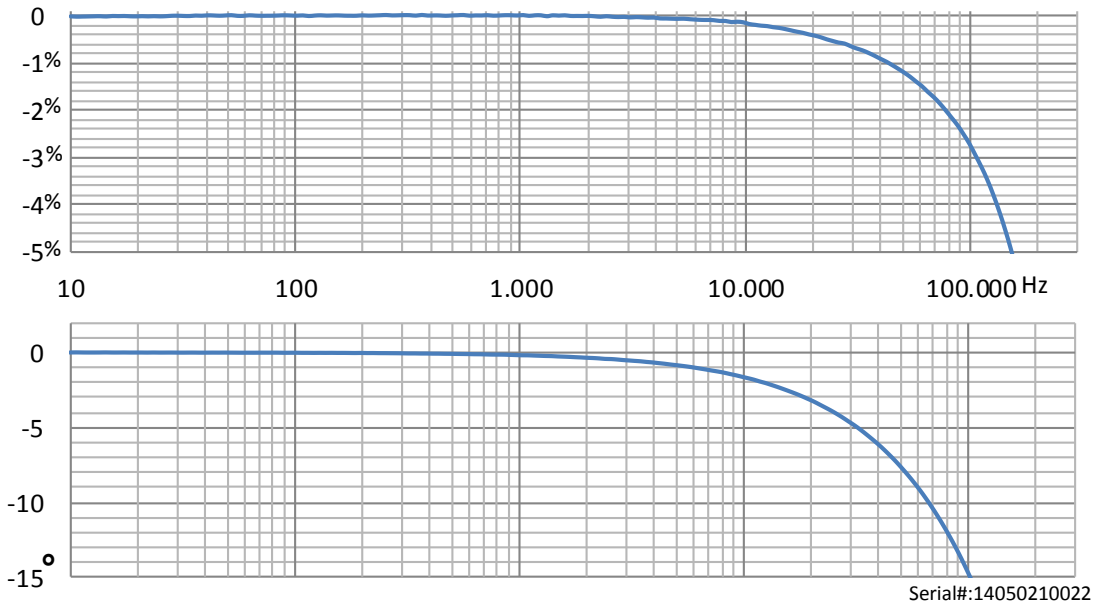
Gain/Phase



DS200UBSA-10 specifications (tambient 23°C)

Parameter	Unit	Min	Typ	Max	Comment
DC: Primary current	A			200	Iprimary
AC: Primary current peak	A			200	
Output voltage	V				Iprimary/200A*10V
Offset voltage	uV		500		
Gain error	ppm			100	
Absolute error					If Iprimary is 200A then Uout will be 10V±500uV(Offset, typical)±1mV(Gain Error, max) ± 150uV/K(Ambient Temperature drift, max)
Current consumption	mA	85		115	
Temperature drift	ppm/K			15	
Gain error - DC to 4kHz - 4kHz to 10kHz - 10kHz to 100kHz	%			 0,05 0,15 5	
Phase error - DC to 4kHz - 4kHz to 10kHz - 10kHz to 100kHz	Degree			 0,8 2 20	

Gain/Phase



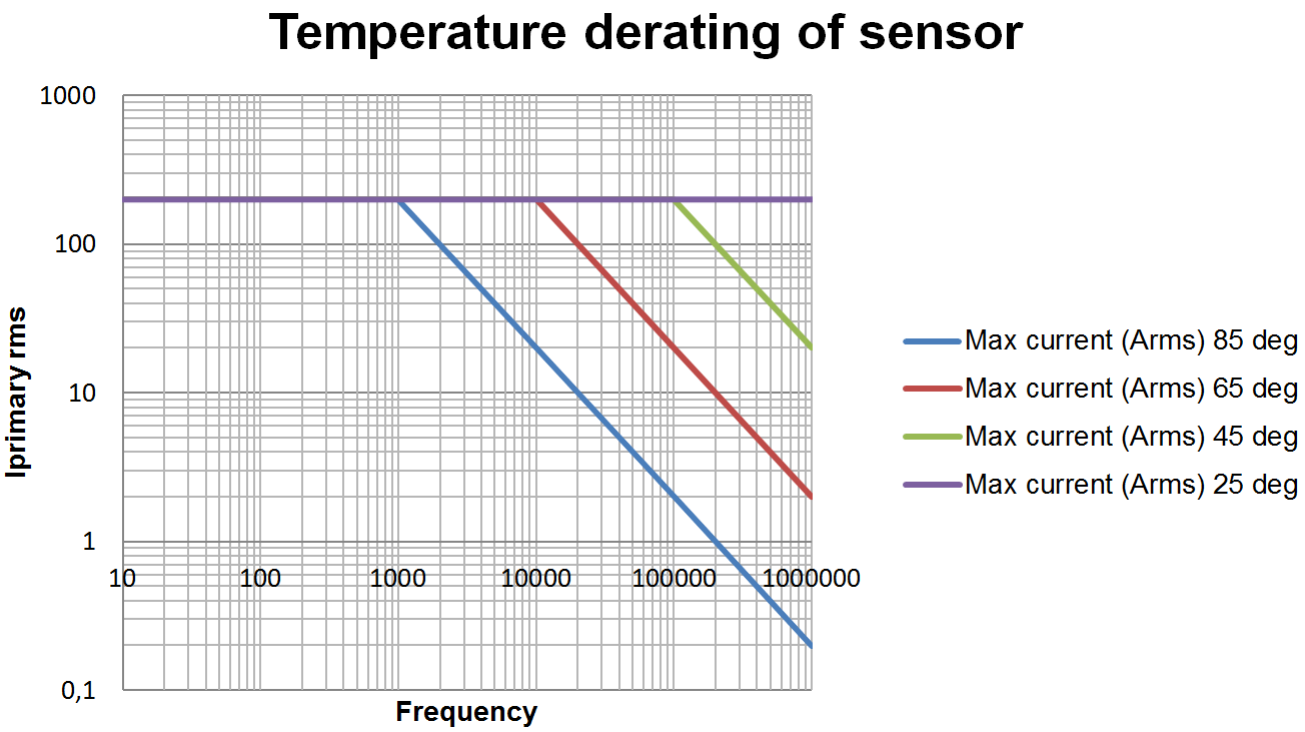
Absolute maximum ratings

Parameter	Unit	Min	Typ	Max	Comment
Primary	kA			1,5	* Maximum 100ms
Power supply	V			±16,5	

Environment and mechanical characteristics

Parameter	Unit	Min	Typ	Max	Comment
Ambient operating temperature	°C	-40		85	
Storage temperature	°C	-40		85	
Mass	Kg		0,6		
Standards	EN 61326 EMC EN 61010 Safety				

Temperature derating with Iprimary$_{rms}$, ambient temperature and frequency



Isolation characteristics

Parameter	Unit	Min
Rated isolation voltage rms, reinforced isolation IEC 61010-1 standard and with following conditions - Overvoltage category II - Pollution degree 2	V	500
Rms voltage for AC isolation test, 50/60 Hz, 1 min - Between primary and (secondary and shield) - Between secondary and shield	kV	 3,6 0,2
Impulse withstand voltage	kV	9
Creepage distance	mm	10
Comparative Tracking Index	CTI	600

Danisense advanced protection circuit “ASPC”

Developed to protect your sensor from fault conditions typically harmful to flux-gate Sensors. Protection against damage to the electronics in the following situations.

1. Large primary AC(and DC) current are applied without the sensor powered.
2. Sudden disconnection of burden resistor while measuring large AC(and DC) currents.
3. Very large AC currents above the absolute maximum rating will however still be measured at lower accuracy.

Package content

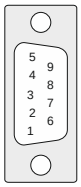
Sensor specific test report with CE certificate of conformance

- Offset error
- Gain / Phase analysis 1Hz-300kHz
- Noise DC-100kHz

Sensor

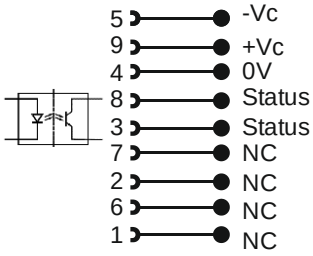
Connection diagram

DSUB-9 connection



When sensor is operating in normal condition the status pins are shorted.

Status pin properties.
- Forward direction pin 8 to pin 3
- Maximum forward current 10mA
- Maximum forward voltage 60V
- Maximum reverse voltage 5V



Options and ordering information

Product Description	Part Name	Part Number
DS 600 with voltage 1V output in BNC connector	DS0600UBSA-1	1212200001
DS 600 with voltage 10V output in BNC connector	DS0600UBSA-10	1212200002

Part Name

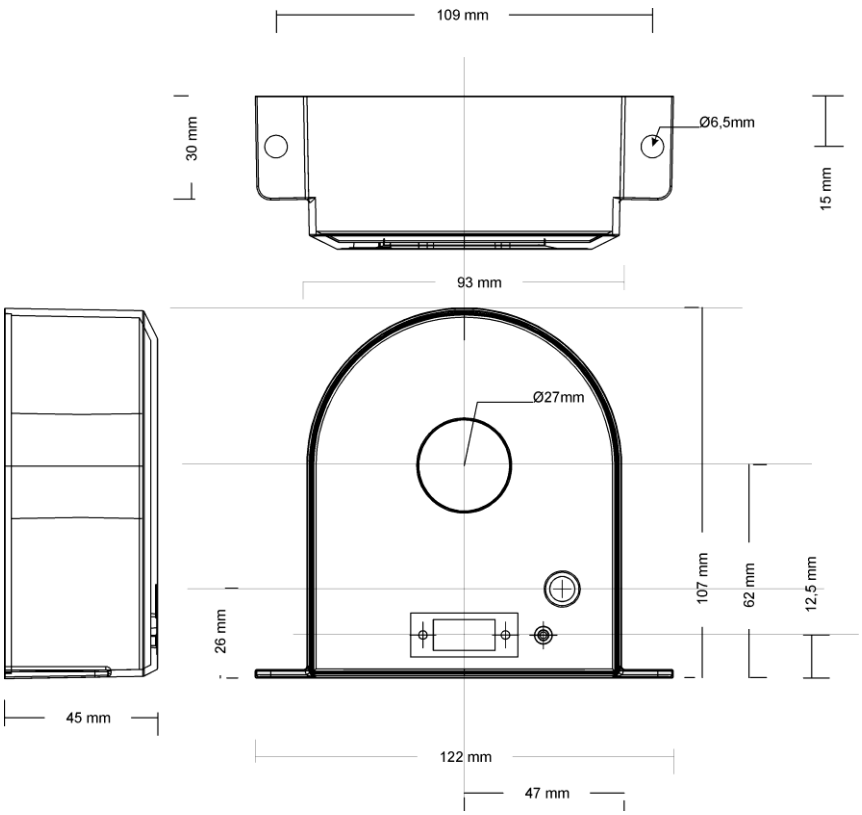
DS XXXX Y Z SA

Max Current RMS

I = current
U = Voltage
C = Calibration & current

L = LEMO type
B = BNC
D = 9 pin DSUB

Mechanical dimensions



Mounting bushings on the back