SENECA

T Series - Loop powered in-field converters

EN

T201DCH100 - T201DCH300

Contact-less direct and alternating TRMS current transducer or direct BIPOLAR

Overall description

The T201DCH100 and 300 are isolated, contact less loop powered AC/DC current transducers. The look and device's function are very similar to those of an active standard Current Transformer, but with the remarkable feature of measuring the TRMS DC and AC component or DC bipolar of the current. For its electrical endurance, ease of use and compact dimensions, the T201DCH100 and 300 fit every kind of current measurement: up to 100 Adc/Aac and 300 Adc/Aac (respectively).

Key features

HW

- ✓ Similar usage to a standard alternating current active C.T.
- ✓ No shunt, no wasted power from the measure circuit.
- ✓ High accuracy rating: AC:0.5%, DC:1%.
- ✓ Suitable for use with all Seneca modules that allow to power the T201DCH100 and 300 with at least 12 Vdc and having a 0 – 10Vdc input
- ✓ Two ranges, dip-switch selectable.
- ✓ Damping filter availability to improve stable reading.
- ✓ Suitable for batteries , battery chargers, solar panels, power units and generic dc and ac loads.
- ✓ Compact size: overall dimensions less than 96,5 x 68 x 26 mm.

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ISO 9001:2008

Technical features

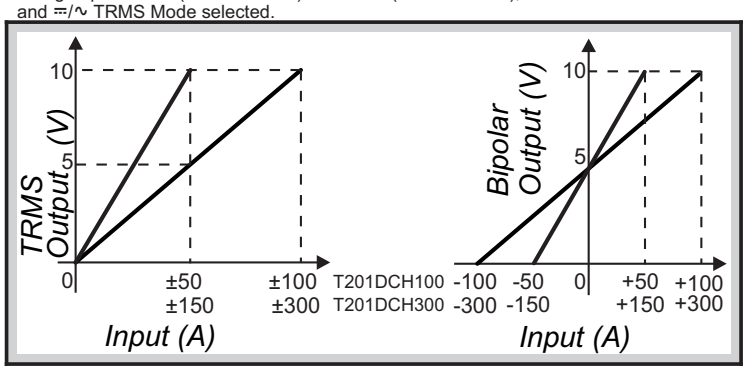
INPUT			
Limit values	0 – 100A ⎓/∿ TRMS or -100 – +100A ⎓ Bipolar for DCH100 0 – 300A ⎓/∿ TRMS or -300 – +300A ⎓ Bipolar for DCH300		
Type of measure	⎓/∿ TRMS or ⎓ Bipolar		
Ranges	0 – 50 or 0 – 100A TRMS;-50 – +50 or -100 – +100A Bipolar 0 – 300 or 0 – 150A TRMS;-150 – +150 or -300 – +300A Bipolar (selected by dip-switches)		
Peak factor	2		
Pass band	2.5kHz		
Insulation	DON'T USE BARE CONDUCTORS; The insulated cable ensures double insulation up to 300 V CAT II (to Earth).		
Overload	2000 A impulsive, 300 A continuous		
OUTPUT AND POWER SUPPLY			
Type	0 – 10 V⎓, min load R_{LOAD}=2 kΩ. The output has the negative in common with power supply. Screws: Vout and GND		
Connections	Removable screws pitch 5.mm for max 2.5mm² cables		
Hole diameter	20.8 mm		
Power supply	11.5 – 28Vdc (between Vcc and GND)		
Protections	- Polarity reversal - Over-temperature.		
Absorption	21 mA (with no load)		
ACCURACY			
Accuracy class (over the 2% of end scale)	Range	Accuracy ∿	Accuracy ⎓
	100 A o 300 A	0.5% of end scale.	1% of end scale.
	50 A o 150 A	1% of end scale.	2% of end scale.
Accuracy class (under the 2% of end scale)	Range	Accuracy ∿	Accuracy ⎓
	100 A o 300 A	1% of end scale.	2% of end scale.
	50 A o 150 A	2% of end scale.	4% of end scale.
Resolution	12 bit (4000 points)		
Temperature coefficient	< 200 ppm/°C.		
EMI error	< 0.5%		
Response Time	- Filter «fast»: 800 ms - Filter «slow»: 2000 ms.		
Hysteresis on the measurement	0.15% of end scale		

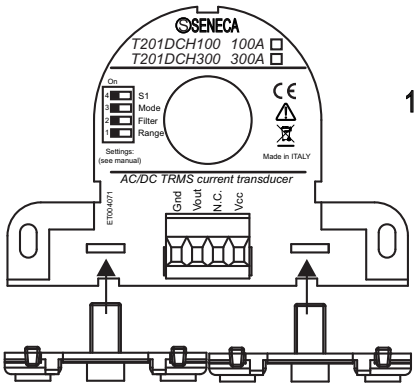
OPERATING CONDITION	
Protection index	IP20.
Temperature	-20 – +65 °C.
Storage Temperature	-40 – +85 °C.
Humidity	10 – 90 % non-condensing.
Altitude	Up to 2000 m a.s.l.
CASE	
Weight	47 g.
Overall dimensions	96,5 x 68 x 26 mm (without terminals).
Box material	PBT, black
STANDARDS	
Standards CE	EN61000-6-4 (electromagnetic emission, industry). EN64000-6-2 (electromagnetic immunity, industry). EN61010-1 (safety).

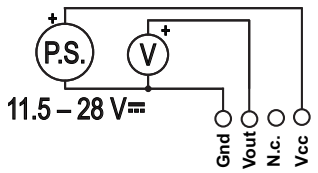
DIP-switches

Range			Filter (10% – 90%)		Mode		Not Used	
1	DCH100	DCH300	2	DCH100 - 300	3	DCH100 - 300	4	
	0 – 100A	0 – 300A		Filter = 800ms		⎓/∿ TRMS		X
●	0 – 50A	0 – 150A	●	Filter =2000ms	●	⎓ Bipolare	●	X

In the table, the symbol • refers to switch in ON position; the factory setting of the device is: - range up to: 100A (T201DCH100) and 300A (T201DCH300); - filter selected for 800ms and ⎓/∿ TRMS Mode selected.







P.S.=power supply

Vout= 0 – 10V⎓ output

N.c.=no connected

Included accessories for DIN rail mounting

Mounting

The device can be located in any position and place, in accordance with the operating conditions above stated. Use the included holder bracket when fixing to a DIN rail.
WARNING: High-strength static magnetic fields may change the output value: let avoid closeness to permanent magnets, electromagnets or iron bulks that cause such a modification of the surrounding magnetic field; try a different arrangement or orientation if zero-error was greater than expected.

Multi-turn primary winding to improve sensibility

You can increase the sensibility of the device passing several times trough the hole with the measuring current cable, realizing turns with multiplicative effect: e.g. passing 5 times trough the hole, as to see 4 turns,choosing a 100A range, you get an equivalent sensibility of 20 A full-scale. When you make this, let dispose the turns with symmetry in order to preserve accuracy: use diametric contraposition with 2 turns, cross disposition with 4 turns, and so on.