

T201 Series

AC/DC CURRENT TRANSDUCERS

Highlights

- **Selectable Input current up to 300A**
- **Loop powered models available**
- **Very low power consumption (< 22 mA)**
- **Rated analog output 0..20 mA or 0..10 V versions**
- **AC/DC TRMS or bipolar measurement**
- **Accuracy class 0,5% [AC] / 1% [DC]**
- **Wide operating temperature range (-20..+70°C)**
- **UL certification**

T201 Series includes AC/DC current transducers designed to convert measured current value (up to 300 A) into a 4..20 mA or 0..10 V industrial normalized signal. T201 Series is UL certified and it is characterized by low power consumption, measuring range freely settable via DIP-switches and high accuracy class avoiding thermal drift. T201 Series is available in 9 models with different measuring principles: average rectified, magnetic balance (patented technology), Hall Effect or TRMS with bipolar input range.

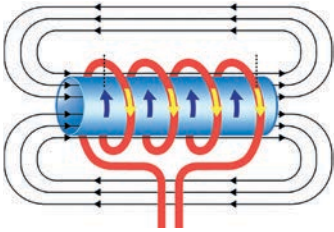


AC/DC CURRENT TRANSDUCERS – T201 SERIES



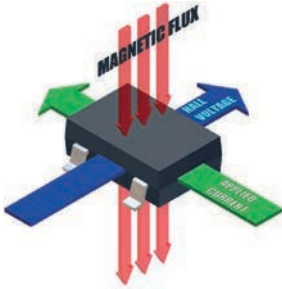
T201 Series AC/DC Current Transformers

MAGNETIC INDUCTION

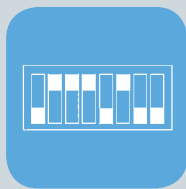


The Transducers that use the measurement based on magnetic induction technology are long life devices thanks to the principle of measurement that avoids thermal drifts and which exploits the generation of an induced current on the transducer output, through the variation of a magnetic field. A direct use will be possible without any external shunts, even for pulsed currents.

HALL EFFECT



When a magnetic field is applied perpendicularly to a conductor, a voltage is generated transversally to the direction of the current flow. The Hall Effect Current Transducers are used as alternative to shunt when dealing with high voltages and high galvanic isolation.

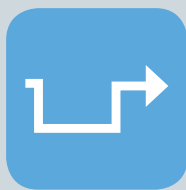


SELECTABLE CURRENT

Wide range input through dip-switches from 5 A to 40 / 100 / 300 A, single or double polarity Output: Voltage (V) or Current (mA)



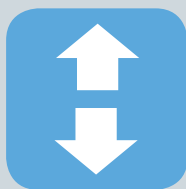
**OUTPUT: VOLTAGE (V)
OR CURRENT (mA)**



**DIRECT USE WITHOUT SHUNT
FOR PULSE CURRENT**



**COMPACT
DIMENSION**



**WIDE CONFIGURATION
RANGE**



**ACCURACY CLASS:
0,2 / 0,5 %**



ENERGY EFFICIENCY




Loop power supply /auxiliary power supply Low consumption < 21 mA



**UL
CERTIFICATION**

AC/DC CURRENT TRANSDUCERS – T201 SERIES







AC/DC CURRENT TRANSDUCERS WITH 4-20 mA OUTPUT

	T201	T201DC	T201DC100
			
	AC current transducer to DC current (4..20 mA - loop powered)	DC current transducer to DC current (4..20 mA - loop powered)	Passive current transducer 100 Adc for 4..20 mA current loop

GENERAL DATA			
Power supply	Loop powered (5..28 Vdc)	Loop powered (6..100 V)	Loop powered (6..100 V)
Power consumption	< 21 mA	< 21 mA	< 21 mA
Isolation / protection	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)
Installation category	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)
Measurement polarity	Positive (incoming current on label side)	Positive (incoming current on label side)	Positive (incoming current on label side)
Protection degree	IP20	IP20	IP20
Response time	100 ms (without filter) 2,5 s (with filter)	100 ms (without filter) 600 ms (with filter)	100 ms (without filter) 600 ms (with filter)
Accuracy class	AC: 0,2% f.s.	DC: 0,2% f.s.	DC: 0,2% f.s.
Thermal drift	< 150 ppm/K	< 150 ppm/K	< 150 ppm/K
Settings	DIP switch	DIP switch	DIP switch
Operating temperature	-20..+65°C	-10..+65°C	-10..+65°C
Storage temperature	-40..+85°C	-40..+85°C	-40..+85°C
Humidity	10..90%RH non condensing	10..90%RH non condensing	10..90%RH non condensing
Connections	Removable terminals	Removable terminals	Removable terminals
Max diameter conductor	12, 5 mm	12,5 mm	17 mm
Dimension	54 x 41 x 30 mm	54 x 41 x 30 mm	68 x 97 x 26 mm
Mounting	35 mm DIN rail with adapter	35 mm DIN rail with adapter	35 mm DIN rail with adapter
Weight	50 g	50 g	100 g
INPUT DATA			
Channels	1	1	1
Range	5, 10, 15, 20, 25, 30, 35, 40 A	Monopolar 0..5, 0..10, 0..20, 0..40 A Bipolar -5..5, -10..10, -5..20, -10..40 A	Monopolar 0..10, 0..25, 0..50, 0..100 A Bipolar -5..5, -10..10, -5..20, -10..40 A
Measurement type	Average adjusted	Magnetic balance	Magnetic balance
Bipolar measurement	No	Yes	Yes
Hysteresis			
Max instantaneous overcurrent	800 A	800 A	2000 A (impulsive)
Bandwidth / frequency	20..1.000 Hz	n.d.	n.d.
Crest factor	2	1,2	1,2
OUTPUT DATA			
Channels	1	1	1
Range	4..20 mA (2 wires)	4..20 mA (2 wires)	4..20 mA (2 wires)
Resolution	Unlimited	12 bit	12 bit
Max load	< 5000 Ohm @ 100 Vdc		
STANDARD			
Approvals	CE, UL-UR	CE, UL-UR, european patent	CE, UL-UR, european patent
Norms	EN60688 EN61000-6-4 EN61000-6-2 EN61010-1	EN61000-6-4 EN61000-6-2 EN61010-1	EN61000-6-4 EN61000-6-2 EN61010-1
ORDER CODES			
Model	T201 AC current transducer to DC current (4..20 mA - loop powered)	T201DC DC current transducer to DC current (4..20 mA - loop powered)	T201DC100 Passive current transducer 100 Adc for 4..20 mA current loop
SPARE PARTS			
A-DIN-T201	DIN rail Plastic clip for T201		







AC/DC CURRENT TRANSDUCERS – T201 SERIES

AC/DC HALL EFFECT CURRENT TRANSDUCERS

	T201DCH	T201DCH100	T201DCH300
	 <p>HALL EFFECT</p> 	 <p>HALL EFFECT</p> 	 <p>HALL EFFECT</p> 
	AC/DC contactless TRMS direct and alternate current transducer	AC/DC contactless TRMS direct and alternate current (± 100 A) transducer, Hall Effect	AC/DC contactless TRMS direct and alternate current (± 300 A) transducer, Hall Effect
GENERAL DATA			
Power supply	10..28 Vdc	12..28 Vdc	12..28 Vdc
Power consumption	< 25 mA	< 25 mA	< 25 mA
Isolation / protection	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)
Installation category	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)
Measurement polarity	Positive (incoming current on label side)	Positive (incoming current on label side)	Positive (incoming current on label side)
Protection degree	IP20	IP20	IP20
Response time	Fast filter: 800 ms - Slow filter: 2 s	Fast filter: 800 ms - Slow filter: 2 s	Fast filter: 800 ms - Slow filter: 2 s
Accuracy class	AC: 0,5% f.s. DC: 1% f.s.	AC: 0,5% f.s. DC: 1% f.s.	AC: 0,5% f.s. DC: 1% f.s.
Thermal drift	< 200 ppm/K	< 200 ppm/K	< 200 ppm/K
Settings	DIP switch	DIP switch	DIP switch
Operating temperature	-10..+65°C	-20..+70°C	-20..+70°C
Storage temperature	-40..+85°C	-40..+85°C	-40..+85°C
Humidity	10..90%RH non condensing	10..90%RH non condensing	10..90%RH non condensing
Connections	Removable terminals	Removable terminals	Removable terminals
Max diameter conductor	20,5 mm	20,5 mm	20,5 mm
Dimension	54 x 41 x 30 mm	68 x 97 x 26 mm	68 x 97 x 26 mm
Mounting	35 mm DIN rail with adapter	35 mm DIN rail with adapter	35 mm DIN rail with 2 adapters / screws
Weight	50 g	100 g	100 g
INPUT DATA			
Channels	1	1	1
Range	0..25, 0..50 Aac/dc TRMS	0-50 A, 0-100 Aac/dc TRMS; ± 50 A, ± 100 A Bipolar	0-150 A, 0-300 Aac/dc TRMS; ± 150 A, ± 300 A Bipolar
Measurement type	TRMS	AC/DC TRMS or DC Bipolar	AC/DC TRMS or DC Bipolar
Bipolar measurement	No	Yes	Yes
Hysteresis	0,1 % f.s.	0,1 % f.s.	0,1 % f.s.
Max instantaneous overcurrent	2000 A (impulsive)	2000 A (impulsive)	2000 A (impulsive)
Bandwidth / frequency	1 kHz	1 kHz	1 kHz
Crest factor	1,2	2	2
OUTPUT DATA			
Channels	1	1	1
Range	0..10 V	0..10 V	0..10 V
Resolution	12 bit	12 bit	12 bit
Max load	> 2 kOhm	> 2 kOhm	> 2 kOhm
STANDARD			
Approvals	CE, UL-UR	CE, UL-UR	CE, UL-UR
Norms	EN61000-6-4 EN61000-6-2 EN61010-1	EN61000-6-4 EN61000-6-2 EN61010-1	EN61000-6-4 EN61000-6-2 EN61010-1
ORDER CODES			
Model	T201DCH AC/DC contactless TRMS direct and alternate current transducer	T201DCH100 AC/DC contactless TRMS direct and alternate current (± 100 A) transducer, Hall Effect	T201DCH300 AC/DC contactless TRMS direct and alternate current (± 300 A) transducer, Hall Effect
SPARE PARTS			
A-DIN-T201	DIN rail Plastic clip for T201		

AC/DC CURRENT TRANSDUCERS – T201 SERIES

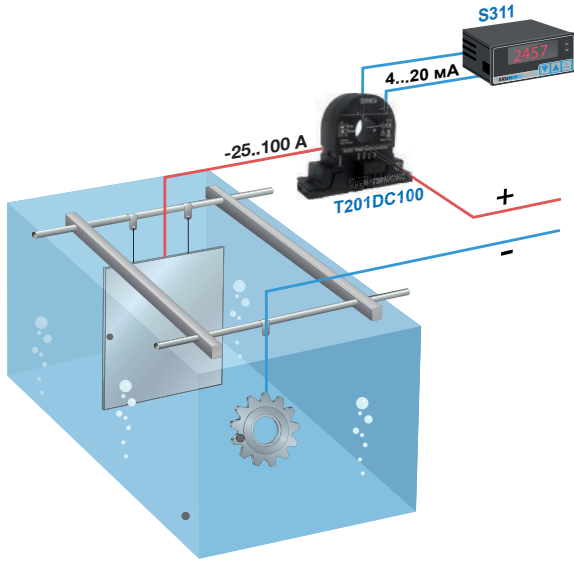
AC/DC HALL EFFECT CURRENT TRANSDUCERS WITH 4-20 MA OUTPUT

	T201DCH50-LP	T201DCH100-LP	T201DCH300-LP
	  <p>AC/DC current transducer (± 50 A), Hall Effect, Loop Powered, 4-20 mA output</p>	  <p>AC/DC current transducer (± 100 A), Hall Effect, Loop Powered, 4-20 mA output</p>	  <p>AC/DC current transducer (± 300 A), Hall Effect, Loop Powered, 4-20 mA output</p>
GENERAL DATA			
Power supply	Loop powered (9..28 Vdc)	Loop powered (9..28 Vdc)	Loop powered (9..28 Vdc)
Power consumption	< 22 mA	< 22 mA	< 22 mA
Isolation / protection	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)
Installation category	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)
Measurement polarity	Positive (incoming current on label side)	Positive (incoming current on label side)	Positive (incoming current on label side)
Protection degree	IP20	IP20	IP20
Response time	Fast filter: 500 ms - Slow filter: 1 s	Fast filter: 500 ms - Slow filter: 1 s	Fast filter: 500 ms - Slow filter: 1 s
Accuracy class	AC: 0,5% f.s., DC: 1% f.s.	AC: 0,5% f.s., DC: 1% f.s.	AC: 0,5% f.s., DC: 1% f.s.
EMI error	< 1%	< 1%	< 1%
Thermal drift	< 200 ppm/K	< 200 ppm/K	< 200 ppm/K
Settings	DIP switch	DIP switch	DIP switch
Operating temperature	-20..+70°C	-20..+70°C	-20..+70°C
Storage temperature	-40..+85°C	-40..+85°C	-40..+85°C
Humidity	10..90%RH non condensing	10..90%RH non condensing	10..90%RH non condensing
Connections	Removable terminals	Removable terminals	Removable terminals
Max diameter conductor	12,5 mm	20,5 mm	20,5 mm
Dimension	54 x 41 x 30 mm	68 x 97 x 26 mm	68 x 97 x 26 mm
Mounting	35 mm DIN rail with adapter	35 mm DIN rail with 2 adapters / screws	35 mm DIN rail with 2 adapters / screws
Weight	50 g	100 g	100 g
INPUT DATA			
Channels	1	1	1
Range	0..50 Aac/dc TRMS; ± 50 Adc Bipolar	0-50 A, 0-100 Aac/dc TRMS; ± 50 A, ± 100 A Bipolar	0-150 A, 0-300 Aac/dc TRMS; ± 150 A, ± 300 A Bipolar
Measurement type	AC/DC TRMS or DC Bipolar	AC/DC TRMS or DC Bipolar	AC/DC TRMS or DC Bipolar
Bipolar measurement	Yes	Yes	Yes
Hysteresis	0,25% f.s.	0,25% f.s.	0,25% f.s.
Max instantaneous overcurrent	300 A direct; 2.000 A (impulsive)	500 A direct; 2.000 A (impulsive)	500 A direct; 2.000 A (impulsive)
Bandwidth / frequency	1 kHz	1 kHz	1 kHz
Crest factor	1,3	1,3	1,5
OUTPUT DATA			
Channels	1	1	1
Range	4..20 mA rated value; 3,6 mA (fault); 22 mA (max)	4..20 mA rated value; 3,6 mA (fault); 22 mA (max)	4..20 mA rated value; 3,6 mA (fault); 22 mA (max)
Resolution	12 bit	12 bit	12 bit
Max load	< 1.000 Ohm @ 28 Vdc	< 1.000 Ohm @ 28 Vdc	< 1.000 Ohm @ 28 Vdc
STANDARD			
Approvals	CE, UL-UR	CE, UL-UR	CE, UL-UR
Norms	EN 61326, EN 61010-1	EN 61326, EN 61010-1	EN 61326, EN 61010-1
ORDER CODES			
Model	T201DCH50-LP AC/DC current transducer (± 50 A), Hall Effect, Loop Powered, 4-20 mA output	T201DCH100-LP AC/DC current transducer (± 100 A), Hall Effect, Loop Powered, 4-20 mA output	T201DCH300-LP AC/DC current transducer (± 300 A), Hall Effect, Loop Powered, 4-20 mA output
SPARE PARTS			
A-DIN-T201	DIN rail Plastic clip for T201		

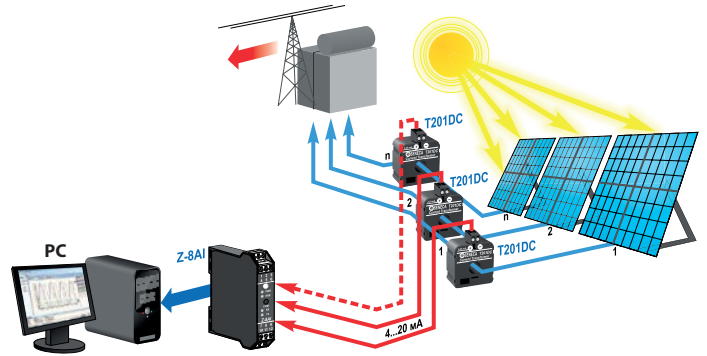
Technical data, diagrams and drawings in this brochure are indicative only and not binding

AC/DC CURRENT TRANSDUCERS – T201 SERIES

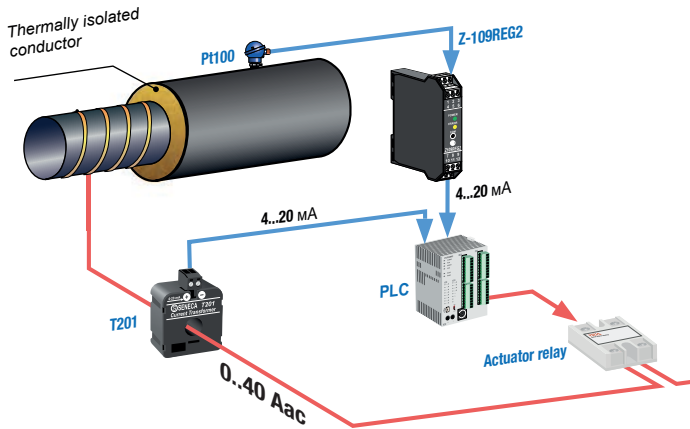
APPLICATION EXAMPLES



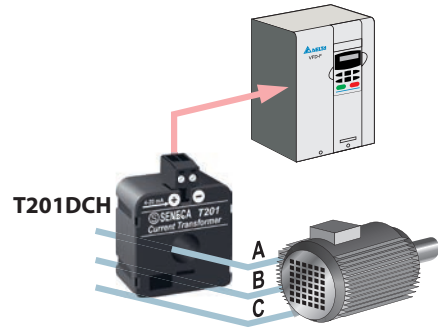
Galvanic surface treatment



DC Current Transducers with 4-20 mA output, powered by measurement loop

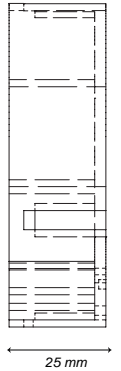
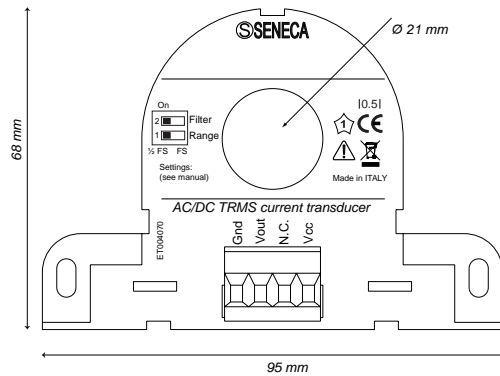
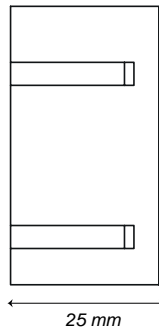
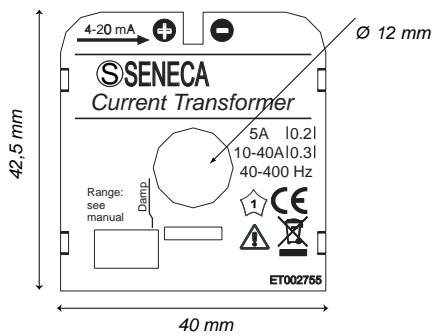


Induced current measurement



Hall effect DC current transducer converting motor output current into 0-10 V inverter signal

DIMENSION



Via Austria, 26 • 35127 Padova - (I) - Tel. +39 049 87.05.359
Fax +39 049 87.06.287 • www.seneca.it • info@seneca.it

The material in this document is for information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, SENECA assumes no liability resulting from errors or omissions, or from the use of the information contained herein.