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 trasducers 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.

100% Made & Designed in Italy

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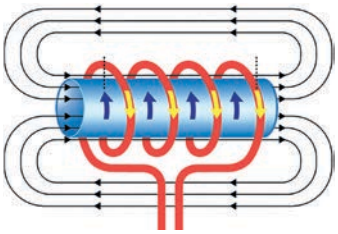
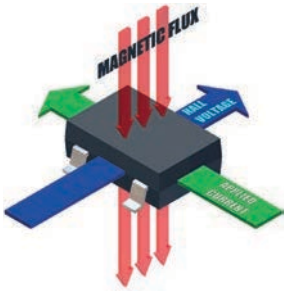
T201 Series
AC/DC Current Transformers

MAGNETIC INDUTION



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
		Patented technology 	Patented technology 
	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 -10..10, -25..25, -10..50, -25..100 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		

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

AC/DC CURRENT TRANSDUCERS – T201 SERIES

AC/DC HALL EFFECT CURRENT TRANSDUCERS

	T201DCH	T201DCH100	T201DCH300
	HALL EFFECT 	HALL EFFECT 	HALL EFFECT 
	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 filetr: 2 s	Fast filter: 800 ms - Slow filetr: 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	**T201DCH100** AC/DC contactless TRMS direct and alternate current (± 300 A) transducer, Hall Effect
SPARE PARTS			
A-DIN-T201	DIN rail Plastic clip for T201		

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AC/DC CURRENT TRANSDUCERS – T201 SERIES

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

	T201DCH50-LP	T201DCH100-LP	T201DCH300-LP
	HALL EFFECT 	HALL EFFECT 	HALL EFFECT 
	AC/DC current transducer (± 50 A), Hall Effect, Loop Powered, 4-20 mA output	**AC/DC current transducer (± 100 A), Hall Effect, Loop Powered, 4-20 mA output**	**AC/DC current transducer (± 300 A), Hall Effect, Loop Powered, 4-20 mA output**
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		

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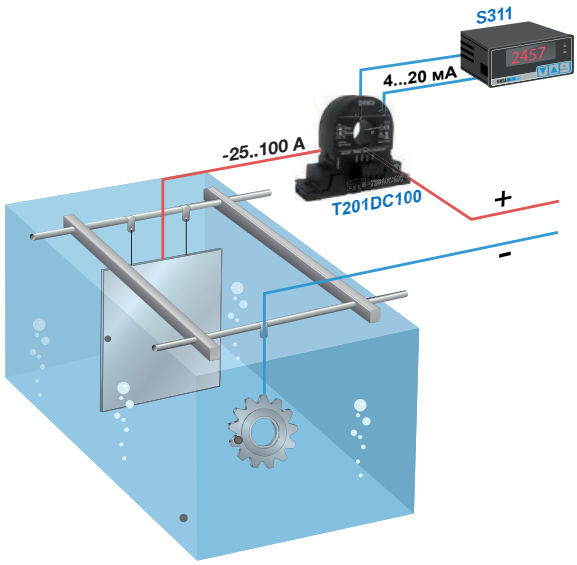
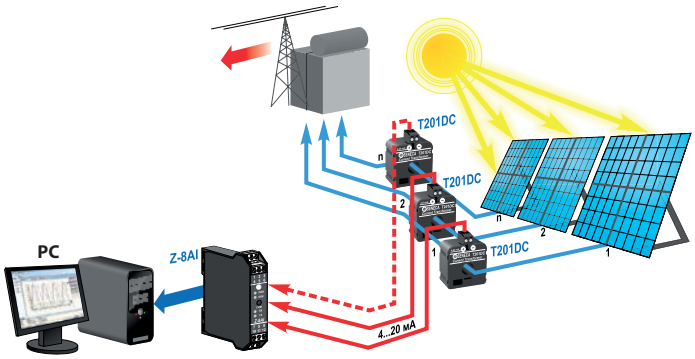
AC/DC CURRENT TRANSDUCERS – T201 SERIES

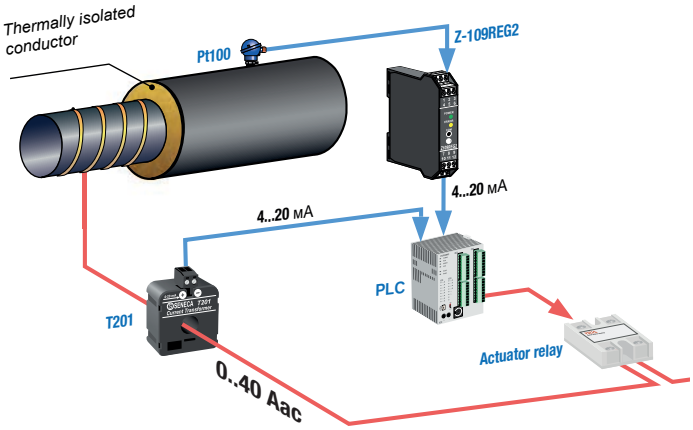
APPLICATION EXAMPLES



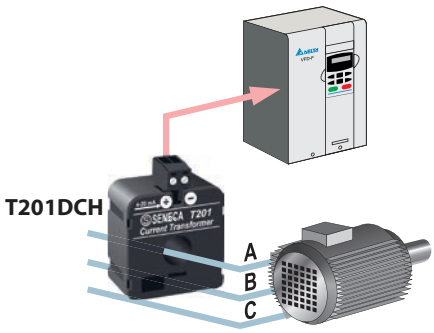
Galvanic surface treatment



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

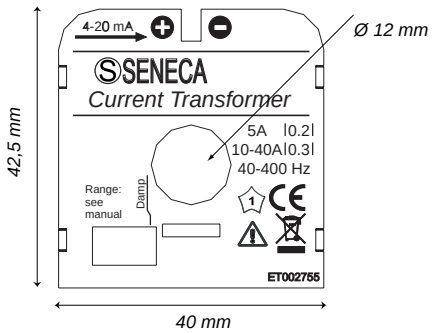


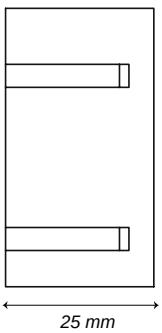
Induced current measurement

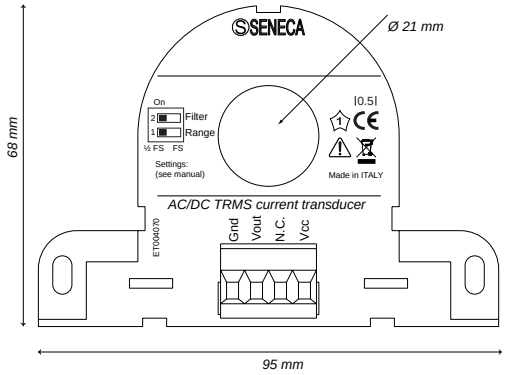


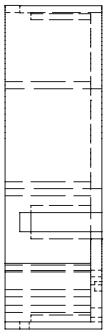
Hall effect DC current transducer converting motor output current into 0-10 V inverter signal

DIMENSION









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