T201 Series AC/DC CURRENT TRANSDUCERS





- AC/DC CURRENT TRANSDUCERS WITH 4-20 mA OUTPUT
- AC/DC HALL EFFECT CURRENT TRANSDUCERS WITH 0-10 V OUTPUT
- AC/DC HALL EFFECT CURRENT TRANSDUCERS WITH 4-20 mA OUTPUT
- AC/DC HALL EFFECT CURRENT TRANSDUCERS WITH 0-10 V OUTPUT / MODBUS INTERFACE



T201 Series

AC/DC Current Transducers









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. Most of **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 12 models with different measuring principles: average rectified, magnetic balance (patented technology), Hall Effect or TRMS with bipolar input range. Three models include an RS485 port supporting Modbus RTU protocol.



INPUT

SELECTABLE CURRENT

Selectable wide range input through DIP-switches up to 300 A, single or bipolar scales



OUTPUT

NR. 1 CHANNEL

- 4-20 mA (2-wire)
- 0-10 V



APPLICATION

Direct application without shunts even with pulse currents



MODBUS INTERFACE

RS485 / ModBUS RTU



MEASUREMENT OPTIONS

- Magnetic Induction (patented)
- Hall Effect
- AC/DC TRMS
- Bipolar



ACCURACY CLASS

High accuracy standard from 0.2% up to 0,5%



ENERGY EFFICIENCY

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



CERTIFICATION

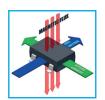
- C-UL US classification Mark
- International Patented technology

MEASUREMENT PRINCIPLES



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.

AC/DC CURRENT TRANSDUCERS WITH 4-20 mA OUTPUT

T201DC100 Passive current transducer 100 Adc AC current transducer to DC current DC current transducer to DC current (4..20 mA - loop powered) for 4..20 mA current loop (4..20 mA - loop powered) **GENERAL DATA Power Supply** Loop powered (5..28 Vdc) Loop powered (6..100 V) Loop powered (6..100 V) Power Consumtption < 21 mA < 21 mA < 21 mA Isolation / Protection 3 kVdc (on bare conductors) 3 kVdc (on bare conductors) 3 kVdc (on bare conductors) **LED Status Indicators** 300 V CAT III (bare conductor) 300 V CAT III (bare conductor) 300 V CAT III (bare conductor) Overvoltage category 600 V CAT III (isolated conductor) 600 V CAT III (isolated conductor) 600 V CAT III (isolated conductor) Measurement polarity Positive (incoming current on label side) Positive (incoming current on label side) Positive (incoming current on label side) IP20 Protection degree Accuracy class AC: 0,2% f.s. DC: 0,2% f.s. DC: 0,2% f.s. Settings DIP switch DIP switch DIP switch Log Data Operating temperature -20..+65°C -10..+65°C -10..+65°C Storage temperature -40..+85°C -40..+85°C -40..+85°C Humidity 10rH..90% non condensing 10rH..90% non condensing 10rH..90% non condensing Up to 2.000 m.a.s.l. Altitude Up to 2,000 m.a.s.l. Up to 2,000 m.a.s.l. Removable terminals (5 poles), pitch 5 mm for cable up Removable terminals (5 poles), pitch 5 mm for cable up to Removable terminals (5 poles), pitch 5 mm for cable up Connections to 2,5 mm2 2,5 mm2 to 2,5 mm2 Max diameter conductor 12,3 mm 12,3 mm 20,8 mm Dimension (wxhxd) 41x44x26 mm 41x44x26 mm 95x68x26 mm Free or on DIN rail IEC EN 60715 (35 mm) with Free or on DIN rail IEC EN 60715 (35 mm) with Mounting Free or on DIN rail IEC EN 60715 (35 mm) with accessories accessories accessories PA6, black PA6, black PA6, black Case Weight 47 g 47 g 120 g COMMUNICATION **Communcation port** Protocol Speed **INPUT DATA** Channels 1 "Monopolar: 0..5, 0..10, 0..20,0.. 40 A Monopolar: 0..10, 0..25, 0..50, 0..100 A Range 5, 10, 15, 20, 25, 30, 35, 40 A Bipolar: -10..10, -25..25, -10..50, -25..100 A Bipolar: -5..5, -10..10, -5..20, -10..40 A" Measurement type Magnetic balance Magnetic balance Average adjusted Bipolar measurement Yes Hysteresis Max instantaneous overcurrent 800 A 800 A 2000 A (impulsive) Bandwidth / frequency 20..1.000 Hz n.d. n.d. 1.2 Crest factor 2 12 **OUTPUT DATA** Channels 1 4..20 mA (2 fili) 4..20 mA (2 fili) 4..20 mA (2 fili) Range Resolution Unlimited 12 hit 12 hit < 5000 Ohm @ 100 Vdc Max load EMI Error < 40uA < 50µA < 50µA Thermal drift < 150 ppm/K < 150 ppm/K < 150 ppm/K 100 ms (without filter) 100 ms (without filter) 100 ms (without filter) Response time 2,5 s (with filter) 600 ms (with filter) 600 ms (with filter) **STANDARD** CE, UL-UR, european patent Approvals CE, UL-UR CE, UL-UR, european patent FN60688 EN61000-6-4 EN61000-6-4 EN61000-6-4 EN61000-6-2 EN61000-6-2 Norms EN61000-6-2 EN61010-1 EN61010-1 EN61010-1

T201 Series

AC/DC HALL EFFECT CURRENT TRANSDUCERS WITH 0-10 V OUTPUT

	T201DCH HALL EFFECT SSENECATZOTDCH SSENECAT	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	1028 Vdc	1228 Vdc	1228 Vdc
Power Consumtption	< 25 mA	< 25 mA	< 25 mA
Isolation / Protection	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)
LED Status Indicators	-	-	-
Overvoltage category	300 V CAT III (bare conductor) 600 V CAT III (isolated conductor)	300 V CAT III (bare conductor) 600 V CAT III (isolated conductor)	300 V CAT III (bare conductor) 600 V CAT III (isolated 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
Accuracy class	0,3% f.s. (DC bipolare, AC TRMS)	0,3% f.s. (DC bipolare, AC TRMS)	0,3% f.s. (DC bipolar, AC TRMS)
Settings	DIP switch	DIP switch	DIP switch
Log Data	-	-	-
Operating temperature	-10+65°C	-20+70°C	-20+70°C
Storage temperature	-40+85°C	-40+85°C	-40+85°C
Humidity	10rH90% non condensing	10rH90% non condensing	10rH90% non condensing
Altitude	Up to 2.000 m.a.s.l.	Up to 2.000 m.a.s.l.	Up to 2.000 m.a.s.l.
Connections	Removable terminals (5 poles), pitch 5 mm for cable up to 2,5 mm2	Removable terminals (5 poles), pitch 5 mm for cable up to 2,5 mm2	Removable terminals (5 poles), pitch 5 mm for cable up to 2,5 mm2
Max diameter conductor	12,3 mm	20,8 mm	20,8 mm
Dimension (wxhxd)	54 x 41 x 30 mm	95x68x26 mm	95x68x26 mm
Mounting	Free or on DIN rail IEC EN 60715 (35 mm) with accessories	Free or on DIN rail IEC EN 60715 (35 mm) with accessories	Free or on DIN rail IEC EN 60715 (35 mm) with accessories
Case	PA6, black	PA6, black	PA6, black
Weight	47 g	120 g	120 g
COMMUNICATION			
Communcation port	-	-	-
Protocol	-	-	-
Speed	-	-	-
INPUT DATA			
Channels	1	1	1
Range	025, 050 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	AC/DC 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 Resolution	010 V 12 bit	010 V 12 bit	010 V 12 bit
Max load	> 2 k0hm	> 2 kOhm	> 2 kOhm
EMI Error	-		-
Thermal drift	< 200 ppm/K	< 200 ppm/K	< 200 ppm/K
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
STANDARD	Con mon 2 o	5.5.7 III.01. E 0	5.5. III.01. 2 0
Approvals	CE, UL-UR	CE, UL-UR	CE, UL-UR
	EN61000-6-4	EN61000-6-4	EN61000-6-4
Norms	EN61000-6-2 EN61010-1	EN61000-6-2 EN61010-1	EN61000-6-2 EN61010-1

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

T201DCH50-LP

T201DCH100-LP

T201DCH300-LP





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 (928 Vdc)	Loop powered (928 Vdc)	Loop powered (928 Vdc)
Power Consumtption	< 22 mA	< 22 mA	< 22 mA
solation / Protection	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)
.ED Status Indicators	-	-	-
Overvoltage category	300 V CAT III (bare conductor) 600 V CAT III (isolated conductor)	300 V CAT III (bare conductor) 600 V CAT III (isolated conductor)	300 V CAT III (bare conductor) 600 V CAT III (isolated 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
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.
Settings	DIP switch	DIP switch	DIP switch
og Data	-	-	-
perating temperature	-20+70°C	-20+70°C	-20+70°C
Storage temperature	-40+85°C	-40+85°C	-40+85°C
lumidity	10rH90% non condensing	10rH90% non condensing	10rH90% non condensing
Altitude	Up to 2.000 m.a.s.l.	Up to 2.000 m.a.s.l.	Up to 2.000 m.a.s.l.
Connections	Removable terminals (5 poles), pitch 5 mm for cable up to 2,5 mm2	Removable terminals (5 poles), pitch 5 mm for cable up to 2,5 mm2	Removable terminals (5 poles), pitch 5 mm for cable u to 2,5 mm2
Max diameter conductor	12,3 mm	20,8 mm	20,8 mm
Dimension (wxhxd)	41x44x26 mm	95x68x26 mm	95x68x26 mm
Mounting	Free or on DIN rail IEC EN 60715 (35 mm) with accessories	Free or on DIN rail IEC EN 60715 (35 mm) with accessories	Free or on DIN rail IEC EN 60715 (35 mm) with accessories
Case	PA6, black	PA6, colore nero	PA6, black
Veight	47 g	120 g	120 g
COMMUNICATION	, , , , , , , , , , , , , , , , , , ,	120 g	
Communcation port	-	-	-
Protocol	-	-	-
Speed	-	-	-
INPUT DATA			
Channels	1	1	1
Range	050 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
lysteresis	0,3% f.s.	0,3% f.s.	0,3% 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	1,3
OUTPUT DATA			
Channels	1	1	1
Range	420 mA rated value 3,6 mA fault 22 mA max	420 mA rated value 3,6 mA fault	420 mA rated value 3,6 mA fault 22 mA max
Resolution	12 bit	22 mA max 12 bit	12 bit
Max load	< 1.000 Ohm @ 28 Vdc	< 1.000 Ohm @ 28 Vdc	< 1.000 Ohm @ 28 Vdc
EMI Error	< 1%	< 1%	< 1%
Thermal drift	< 200 ppm/K	< 200 ppm/K	< 200 ppm/K
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
STANDARD	SIOW HILE. I S	SIOW HILEI. I S	SIOW HILEI. I S
	CE, UL-UR	CE, UL-UR	CE, UL-UR
Approvals	oL, oL-on	OL, UL-UN	oL, oL-UN
Norms	EN 61326, EN 61010-1	EN 61326, EN 61010-1	EN 61326, EN 61010-1

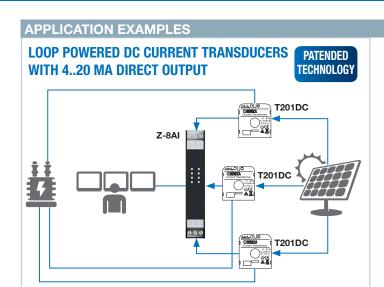
Technical data, diagrams and drawings in this catalog are indicative only and not binding

T201 Series

AC/DC HALL EFFECT CURRENT TRANSDUCERS WITH 0-10 V / MODBUS INTERFACE

	T201 DCH50-M HALL EFFECT ModBUS AC/DC contactless TRMS direct and alternate current (±50 A) transducer, Hall Effect, ModBUS interface	T201 DCH100-M HALL EFFECT ModBUS AC/DC contactless TRMS direct and alternate current (±100 A) transducer, Hall Effect, ModBUS interface	T201 DCH300-M HALL EFFECT ModBUS AC/DC contactless TRMS direct and alternate current (±300 A) transducer, Hall Effect, ModBUS interface
GENERAL DATA			
Power Supply	1028 Vdc	1228 Vdc	1228 Vdc
Power Consumtption	< 25 mA	< 25 mA	< 25 mA
Isolation / Protection	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)
LED Status Indicators	Power Supply / RS485 commmunication	Power Supply / RS485 commmunication	Power Supply / RS485 commmunication
Overvoltage category	300 V CAT III (bare conductor) 600 V CAT III (isolated conductor)	300 V CAT III (bare conductor) 600 V CAT III (isolated conductor)	300 V CAT III (bare conductor) 600 V CAT III (isolated 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
Accuracy class	0,3% f.s. (DC bipolar, AC TRMS)	0,3% f.s. (DC bipolar, AC TRMS)	0,3% f.s. (DC bipolar, AC TRMS)
Settings	DIP switch, Software (EASY SETUP)	DIP switch, Software (EASY SETUP)	DIP switch, Software (EASY SETUP)
Log Data	Sì	Sì	Sì
Operating temperature	-20+70°C	-20+70°C	-20+70°C
Storage temperature	-40+85°C	-40+85°C	-40+85°C
Humidity	10rH90% non condensing	10rH90% non condensing	10rH90% non condensing
Altitude	Up to 2.000 m.a.s.l.	Up to 2.000 m.a.s.l.	Up to 2.000 m.a.s.l.
Connections	Removable terminals (5 poles), pitch 5 mm for cable up to 2,5 mm2	Removable terminals (5 poles), pitch 5 mm for cable up to 2,5 mm2	Removable terminals (5 poles), pitch 5 mm for cable up to 2,5 mm2
Max diameter conductor	20,8 mm	20,8 mm	20,8 mm
Dimension (wxhxd)	95x68x26 mm Free or on DIN rail IEC EN 60715 (35 mm) with	95x68x26 mm	95x68x26 mm Free or on DIN rail IEC EN 60715 (35 mm) with
Mounting	accessories	Free or on DIN rail IEC EN 60715 (35 mm) with accessories	accessories
Case	PA6, black	PA6, black	PA6, black
Weight	120 g	120 g	120 g
COMMUNICATION			
Communcation port	RS485	RS485	RS485
Protocol	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave
Speed	1.200115200 bps	1.200115200 bps	1.200115200 bps
INPUT DATA			
Channels	1	1	1
Range	025, 050 Aac/dc TRMS ±25 A, ±50 Adc bipolar	0-50 A, 0-100 Aac/dc TRMS ±50 A, ±100 Adc bipolar	0-150 A, 0-300 Aac/dc TRMS ±150 A, ±300 Adc 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	0,3% f.s.	0,3% f.s.	0,3% f.s.
Max instantaneous overcurrent	300 A (direct) 2.000 A (impulsive)	300 A (direct) 2.000 A (impulsive)	300 A (direct) 2.000 A (impulsive)
Bandwidth / frequency	1 kHz	1 kHz	1 kHz
Crest factor	2	2	2
OUTPUT DATA	1.		1.
Channels	1	1	1
Range	010 V	0.10 V	010 V
Resolution	13 bit (10.000 points)	13 bit (10.000 points)	13 bit (10.000 points)
Max load	> 2 k0hm	> 2 k0hm	> 2 k0hm
EMI Error	<0,5%	<0,5%	<0,5%
Thermal drift	< 200 ppm/K	< 200 ppm/K	< 200 ppm/K
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
STANDARD			
Approvals	CE	CE	CE
b.b. a. a. a.	EN61000-6-4	EN61000-6-4	EN61000-6-4
Norms	EN61000-6-2 EN61010-1	EN61000-6-2 EN61010-1	EN61000-6-2 EN61010-1

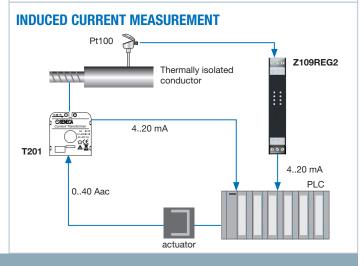
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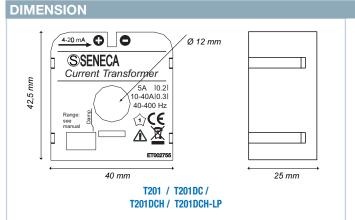


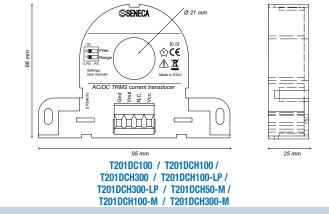
inverter A B C T201DCH

AC/DC TRMS HALL EFFECT CURRENT TRANSDUCER

0-300 Aac/dc O-300 Aac/dc ModBUS T201DCH300-M







ORDER CODES	
T201	AC current transducer to DC current (420 mA - loop powered)
T201DC	DC current transducer to DC current (420 mA - loop powered)
T201DC100	Passive current transducer 100 Adc for 420 mA current loop
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
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
T201DCH50-M	AC/DC contactless TRMS direct and alternate current (±50 A) transducer, Hall Effect, ModBUS interface
T201DCH100-M	AC/DC contactless TRMS direct and alternate current (±100 A) transducer, Hall Effect, ModBUS interface
T201DCH300-M	AC/DC contactless TRMS direct and alternate current (±300 A) transducer, Hall Effect, ModBUS interface
ACCESSORIES	
A-DIN-T201	DIN rail plastic clip for T201 Series
S107USB	RS485/USB serial converter, portable version
S117P1	RS232/USB, TTL/USB, RS485/USB asynchronous serial converter
SOFTWARE	
EASY SETUP	Plug&Play software suite for SENECA programmable instruments (ModBUS versions)

CONTACT AND INFORMATION

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