

AC Current Transducers

Current: The electric charge passing through a circuit per unit of time. Engineering unit is the Ampere. Measured in series with a source or load. Can be inductively monitored with a current transformer.



Standard Features

- True RMS or average-sensing models
- 0.25% of full scale accuracy
- 0.01%/°C temperature coefficient
- 0.2%/year long-term stability
- 2.5 kV transient immunity
- 5 kV impulse test
- 2 kV dielectric testing
- Current and voltage outputs
- ABS DIN rail mount or metal surface mount cases

Specifications

Accuracy (20°C to 25°C): 0.25% of rated full scale output from 5% to 110% of rated input range

Operating Temperature: -20°C to +70°C

Operating Humidity: 0 to 95% non-condensing

Temperature Coefficient: 0.01%/°C

Long Term Drift: less than 0.2% of rated output per year

Output Ripple (Peak): 0.5% maximum

Power Factor Range: any

Dielectric Test Input/Output/Power/Case: 2,000 Vrms for 1 minute

Response Time

To 90%: 200 ms maximum

To 99%: 400 ms maximum

Surge Withstand: ANSI C37.90a (IEEE 472); BEAMA 219; Special 5 kV (metal case only)

Calibration Range Full scale: ±10% minimum; ±2% minimum (if applicable)

Operating Frequency: 60 Hz (unless otherwise specified)

UL Approved Models: A100, A300, A104E, A304E, DA100, DA300, DA104E, DE304E

Option	Input	Overrange with Acc.	Overload Without Damage			Burden
			Cont.	10 s/h	1 s/h	
0	0-5 A	7.5 A	15 A	30 A	250 A	Maximum input burden is 4 VA at full scale regardless of option. Burden may be as low as 0.1 VA. Consult factory if critical.
1	0-1 A	1.5 A	3 A	6 A	100 A	
2	0-2 A	3.0 A	6 A	12 A	150 A	
3	0-10 A	15 A	30 A	50 A	300 A	
4*	0-25 A	35 A	35 A	75 A	300 A	

*Metal case models only

Available Models – AC Current Transducers

A/DA Series

Average Sensing, Zero-Based Input

An economical and accurate means of current measurement on systems where the waveform is a pure sine wave. Can also be used for non-critical applications with distorted waveforms, where high accuracy is not required. Calibrated to the RMS (root mean square) value of the sine wave. Available in single or triple versions, self-powered or externally powered. 4-20 mA and 1-5 V output versions must have auxiliary power.

To Order, Specify:

A. ENCLOSURE	
Extruded Aluminum Metal, Surface Mount	A
ABS DIN, Rail Mount	DA
B. CONFIGURATION	
Single	1
Triple	3
C. INPUT	
0-5 A	0
0-1 A	1
0-2 A	2
0-10 A	3
0-25 A ^①	4
Special	X
^① Metal case models only.	
D. OUTPUT	
0-1 mA (0-10,000 Ohms)	0
0-3 mA (0-3,300 Ohms)	1
0-5 mA (0-2,000 Ohms)	2
0-10 mA (0-1,000 Ohms)	3
4-20 mA (0-750 Ohms) ^②	4
0-100 mV (2,000 Ohms min.)	5
0-1 V (2,000 Ohms min.)	6
0-5 V (2,000 Ohms min.)	7
0-10 V (2,000 Ohms min.)	8
1-5 V (2,000 Ohms min.) ^②	9
Special	X
E. SUFFIX (If Applicable)	
25 to 125% Calibration	A
50 Hz	C
400 Hz	D
120 VAC Aux Power	E
230 VAC Aux Power	F
Case Ground Terminal ^①	G
DC Aux Power (Please Specify)	K
Special	X
^① Metal case models only.	
^② Auxiliary power supply required.	

EXAMPLE: DA-3-2-4-E is the ordering code for an Average-Sensing Current Transducer in a DIN rail mount case, a triple version, with a 0-2 A input, a 4-20 mA output, and 120 VAC auxiliary power.

RA/DRA Series

True RMS Sensing, Zero-Based Input

Recommended where harmonics are present in the system. Uses new low voltage integrated circuit technology that computes the RMS value of the input waveform, regardless of shape, from the fundamental to the 50th harmonic. Self-powered or externally-powered. Readings down to virtually zero can be achieved with auxiliary-powered models. 4-20 mA output versions must have auxiliary power.

To Order, Specify:

A. ENCLOSURE	
Extruded Aluminum Metal, Surface Mount	RA
ABS DIN, Rail Mount	DRA
B. CONFIGURATION	
Single	1
C. INPUT	
0-5 A	0
0-1 A	1
Special	X
D. OUTPUT	
0-1 mA (0-10,000 Ohms)	0
4-20 mA (0-750 Ohms) Aux Power Only	4
Special	X
E. SUFFIX (If Applicable)	
25 to 125% Calibration	A
50 Hz	C
400 Hz	D
120 VAC Aux Power	E
230 VAC Aux Power	F
Case Ground Terminal ^①	G
DC Aux Power (Please Specify)	K
Special	X
^① Metal case models only.	

EXAMPLE: RA-1-0-4-F is the ordering code for an RMS-Sensing Current Transducer in a metal surface mount case, a single version, with a 0-5 A input, a 4-20 mA output, and 230 VAC auxiliary power.

SA/DSA Series

Three-Phase Summation Transducers

Average sensing devices calibrated to the RMS value of the sine wave. Available in three phase versions only, they provide an output that is the arithmetic sum of the inputs. Self-powered or externally-powered. 4-20 mA and 1-5 V output versions must have auxiliary power.

To Order, Specify:

A. ENCLOSURE	
Extruded Aluminum Metal, Surface Mount	SA
ABS DIN, Rail Mount	DSA
B. CONFIGURATION	
Triple	3
C. INPUT	
0-5 A	0
0-1 A	1
Special	X

D. OUTPUT	
0-1 mA (0-10,000 Ohms)	0
0-3 mA (0-3,300 Ohms)	1
0-5 mA (0-2,000 Ohms)	2
0-10 mA (0-1,000 Ohms)	3
4-20 mA (0-750 Ohms) ^②	4
0-100 mV (2,000 Ohms min.)	5
0-1 V (2,000 Ohms min.)	6
0-5 V (2,000 Ohms min.)	7
0-10 V (2,000 Ohms min.)	8
1-5 V (2,000 Ohms min.) ^②	9
Special	X

E. SUFFIX (If Applicable)	
25 to 125% Calibration	A
50 Hz	C
400 Hz	D
120 VAC Aux Power	E
230 VAC Aux Power	F
Case Ground Terminal ^①	G
DC Aux Power (Please Specify)	K
Special	X

^① Metal case models only.

^② Auxiliary power supply required.

EXAMPLE: DSA-3-1-2-A is the ordering code for a Three-Phase Summation Current Transducer in a DIN rail mount case, triple-phase, with a 0-1 A input, a 0-5 mA output, and 25 to 125% calibration.

BA/DBA Series

Single-Phase, Average Sensing, Bi-Directional

Average sensing, zero-based input transducers that are bi-directional and calibrated to the RMS value of the sine wave. Single-phase versions only, they must be powered from a potential source on the power line being measured. Output is proportional to the input magnitude, with polarity set by the direction of current flow. 4-20 mA and 1-5 V versions use 12 mA and 3 V as the zero current reference.

To Order, Specify:

A. ENCLOSURE	
Extruded Aluminum Metal, Surface Mount	BA
ABS DIN, Rail Mount	DBA
B. CONFIGURATION	
Single	1
C. INPUT	
0-5 A	0
0-1 A	1
Special	X
D. POTENTIAL	
120 VAC	0
Special	X
E. OUTPUT	
0 ± 1 mA (0-10,000 Ohms)	0
0 ± 3 mA (0-3,300 Ohms)	1
0 ± 5 mA (0-2,000 Ohms)	2
0 ± 10 mA (0-1,000 Ohms)	3
4-20 mA (0-750 Ohms)	4

0 ± 100 mV (2,000 Ohms min.)	5
0 ± 1 V (2,000 Ohms min.)	6
0 ± 5 V (1,000 Ohms min.)	7
0 ± 10 V (2,000 Ohms min.)	8
1-5 V (1,000 Ohms min.)	9

F. SUFFIX (If Applicable)	
25 to 125% Calibration	A
50 Hz	C
400 Hz	D
120 VAC Aux Power	E
230 VAC Aux Power	F
Case Ground Terminal ^①	G
DC Aux Power (Please Specify)	K
Special	X

^① Metal case models only.

EXAMPLE: BA-1-0-1-3-E is the ordering code for a Single-Phase Average Sensing, Bi-Directional Current Transducer in a metal surface mount case, a single version, with a 0-5 A input, 120 VAC potential input, a 0 ± 10 mA output, and 120 VAC auxiliary power.

TA/DTA Series

Single-Phase, Average Sensing, Two-Wire Loop Powered

Average sensing, zero-based input transducers that are calibrated to the RMS value of the sine wave. Single-phase versions only. Two-wire loop powered. 4-20 mA output only.

To Order, Specify:

A. ENCLOSURE	
Extruded Aluminum Metal, Surface Mount	TA
ABS DIN, Rail Mount	DTA
B. CONFIGURATION	
Single	1
C. INPUT	
0-5 A	0
0-1 A	1
Special	X
D. OUTPUT	
4-20 mA (Load limited by loop voltage, 18-30 VDC)	4
E. SUFFIX (If Applicable)	
50 Hz	C
400 Hz	D
Case Ground Terminal ^①	G
Special	X

^① Metal case models only.

EXAMPLE: TA-1-1-4-G is the ordering code for a Two-Wire Loop Powered Single-Phase, Average Sensing Transducer in a metal surface mount case, single-phase with a 0-1 A input, a 4-20 mA output, and a case ground terminal.

See page 29 for connections.