

Current Transformers

We offer current transformers (CTs) for use with power transducers, panel meters, and in two-piece installations with transducers and switches to extend ranges for high amperage/large conductor applications.

Features:

- 5 A or 0–333 mV secondary outputs
- Split-core or solid-core enclosures
- Agency approved
- 5 A secondary ratios available from 50 A to 3000 A and higher

- **CTRC Series**
AC Current Transformer
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CTRC SERIES

AC Current Transformer

ProteCT™ Type 333 mVAC Output

CTRC AC Current Transformers monitor circuits up to 2000 A and produces a safe, low voltage output proportional to the RMS current value. This output is designed as an input to a power monitor or transducer, replicating the AC wave shape with phase angle resolution better than 2 degrees. The flexible coil design allows the sensor to be installed over multiple conductors or bus assemblies easily, and the cable requires very little space to fit between adjacent phase conductors. The design eliminates the magnetically permeable core of standard current transformers while providing excellent isolation, sensing only the magnetic field of the phase inside the loop.



Current Transformer Applications

Power Monitoring

- Accurate representation of current without the weight or hazards created by 5 A secondary current transformers.

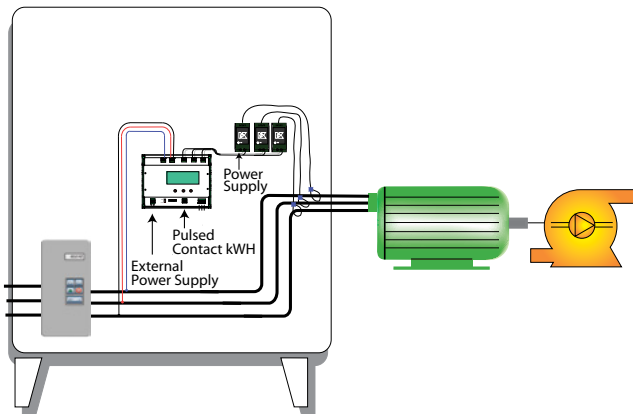
Individual Machines

- Measure power use for cost allocation.
- Detect voltage sags and spikes.

Monitor Entire Building Power Usage

- Locate unneeded power consumption.

Monitoring Power Usage of a Motor Driven Pump



Current Transformer Features

333 mVAC Output

- Specifically designed for connection to power monitors and transducers.
- Safe with no need for shorting blocks.

24 VAC or DC Powered

- Supply and Output are optically isolated.

Factory Calibrated

- Reduces field calibration errors.
- Coils matched with signal conditioning.

DIN Rail Mounted Case*

- Compact size requiring very little panel space.
- Simple snap fit to standard rails.

UL and CUL Approval

- Accepted worldwide

*See DIN Rail accessory page for panel mounting kit.

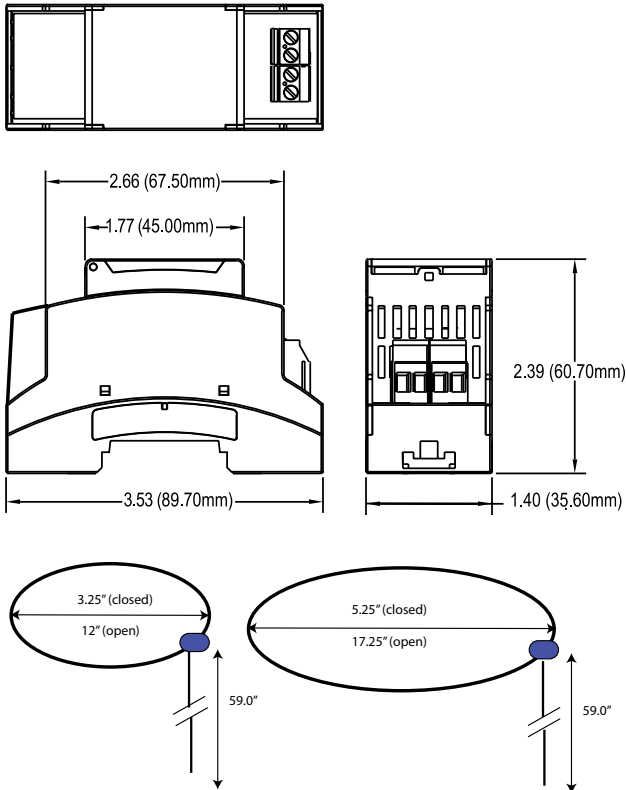


Free program expedites evaluation process.
See page 1 for details



Current Transformer Dimensions

DIN Case



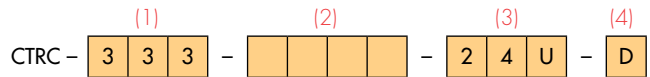
Current Transformer Specifications



Power Supply	24 VAC or DC, <2 VA
Output	333 mVAC
Response Time	2 ms
Range	<ul style="list-style-type: none"> • 0–300 • 0–500 • 0–1000 • 0–1500 • 0–2000
Accuracy	±1% FS
Isolation Voltage	Designed to UL 508 1270 VAC, tested to 5000 VAC
Frequency Range	40–400 Hz
Sensing Aperture	<ul style="list-style-type: none"> • 0–300 & 500 approximate 3.5 inches ID • 0–1000, 1500 & 2000 approximate 5.25 inch ID
Case	UL94 VO Flammability Rated
Environmental	-4 to 122°F (-20 to 50°C) 0–95% RH, non-condensing
Listings	UL 508 Industrial Control Equipment Standards, Designed to meet CE

Current Transformer Ordering Information

Sample Model Number: CTRC-333-500-24U-D
Flexible loop current sensor, 0–500 A AC produces 0–333 mVAC, DIN rail mounted case.



(1) Output Type

333	333 mVAC
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(2) Full Scale Range

300	300 A AC
500	500 A AC
1000	1000 A AC
1500	1500 A AC
2000	2000 A AC

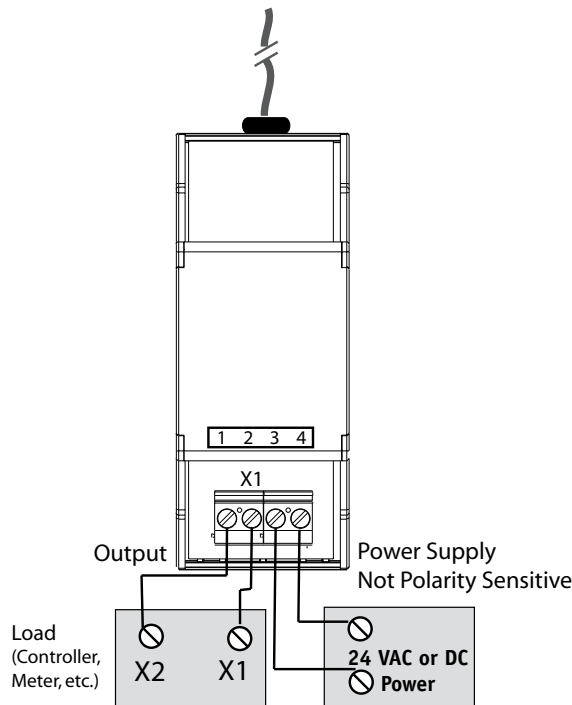
(3) Power Supply

24U	24 VAC or DC
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(4) Power Supply

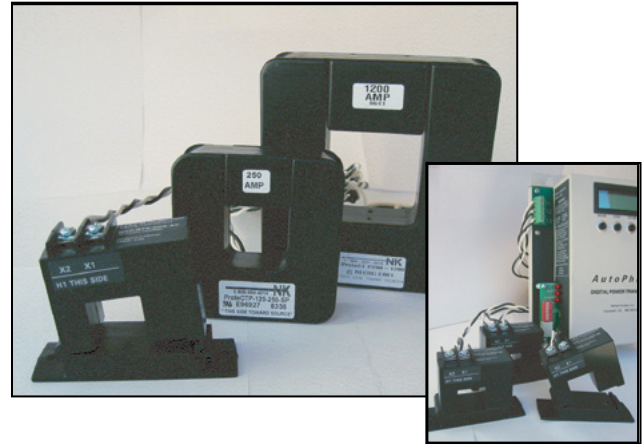
D	DIN Rail Mounting
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Current Transformer Connections



ProteCT™ SERIES mV Current Transformers

ProteCT™ Series Current Transformers are intended for use with APT and APO/APN Series power transducers, ProtectCT™ low voltage output current transformers provide easy sensing of current on three-phase applications with the added safety of a 333 mV output secondary. Available in split-core packaging as standard.



Current Transformer Applications

- Tailored for use with AP Series AutoPhase KW/KWH transducers.
- Self-powered design works well in data logger applications.
- Excellent response time for power monitoring applications.

Current Transformer Features

0.333 VAC Output Secondary

- Unique low voltage output allows safe opening of transformer secondary, protecting installers from shock hazards found on traditional 5 A CTs.

Eliminates Need for “Shorting Blocks”

Standard Split-core Enclosure Design

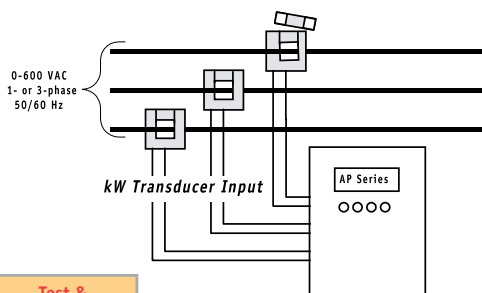
- Snap close package speeds installation and eases retrofits for existing jobs.
- Eliminates need to power down or disconnect system to install CT, maximizing up time.

High-Impact, UL94 V0 Rated Polymer Housing

- No exposed metal parts on assembled ProteCT™ devices.

Choose From Three ID's: 0.85", 1.25", 2.0"

Current Transformer Connections



Free program expedites evaluation process. See page 1 for details

Current Transformer Dimensions

in (mm)	NKP-075-xxx	CTP-125-xxx	CTP-200-xxx
Width	2.25 (57.2)	3.25 (82.55)	4.75 (120.65)
Height	2.40 (61.0)	3.35 (85.09)	5.00 (122.5)
Depth	1.18 (30.0)	1.00 (25.4)	1.20 (30.48)
Window	0.85 (22.0)	1.25 (31.75)	2.00 (50.80)

Current Transformer Specifications

Power Required	None—Self-powered
Accuracy	±1% NKP, ±2% CTP models
Output	0–0.333 VAC
Phase Angle	<1 degree, 2 degrees @ 50% Range
Response Time	<1 ms
Isolation Voltage	600 VAC
Max. Primary Voltage	5000 VAC (insulated conductor)
Max Inrush Current	300% FS (6 sec. duration)
Environmental	0 to 122°F (-18 to 50°C) 0–95% RH, non-condensing

Current Transformer Ordering Information

Model	Input Range	Model	Input Range
0.85" (22 mm) Window			
NKP-075-005SP	0–5 A	CTP-125-151	0–150 A
NKP-075-015SP	0–15 A	CTP-125-201	0–200 A
NKP-075-030SP	0–30 A	CTP-125-251	0–250 A
NKP-075-050SP	0–50 A	CTP-125-301	0–300 A
NKP-075-070SP	0–70 A	CTP-125-401	0–400 A
NKP-075-101SP	0–100 A	CTP-125-601	0–600 A
NKP-075-151SP	0–150 A	2.0" (50.8 mm) Window	
NKP-075-201SP	0–200 A	CTP-200-601	0–600 A
1.25" (31.75 mm) Window			
CTP-125-101	0–100 A	CTP-200-801	0–800 A
		CTP-200-102	0–1000 A
		CTP-200-122	0–1200 A
		CTP-200-152	0–1500 A

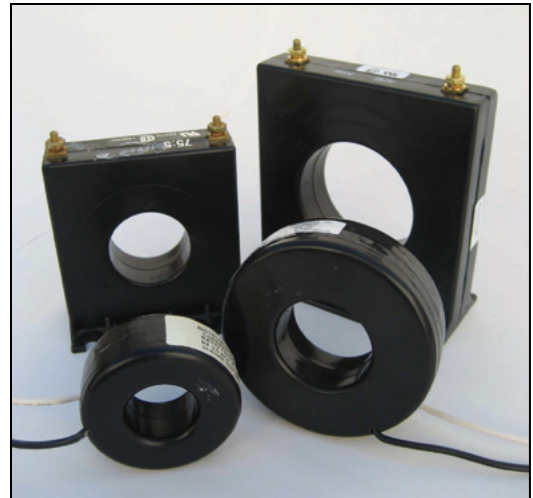
Current Transformers



CURRENT TRANSFORMERS

5 A Secondary

5 A Secondary Current Transformers offer a compact, cost-effective means of measuring primary current and providing 0–5 A secondary output proportional to the primary current being sensed. Available in solid-core or split-core enclosures.



Current Transformer Applications

- Serves as current input for use with APT and APN Series KW transducers.
- Save space in control panels by remotely locating CTs closer to load.
- 5 A secondary compatible with standard products offering a 5 A analog input option.
- Broad line accommodates primary currents from 50 A to 3000 A.

Current Transformer Features

- Solid-core enclosures; choice of round package with flying leads or integral feet for panel mount with terminals.
- Optional split-core enclosures for easy installation without disconnecting wiring.
- Aperture diameters from 1 1/8" to 3 1/4".
- Maximum window size 2.5".
- Agency approved.

Current Transformer Specifications

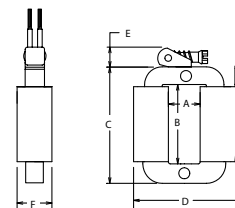
Power Supply	Self-powered
Current Ranges	See Ranges/VA Burdens
Output Signal	0–5 A (AC)
Frequency	50–400 Hz
Insulation Class	0.6 KV BIL, 10 KV full wave
Accuracy	ANSI rated, (<2.0%)
Allowable Burden	See Ranges/VA Burdens
Rating Factor	2.0 @ 30°C amb.

Current Transformer Dimensions

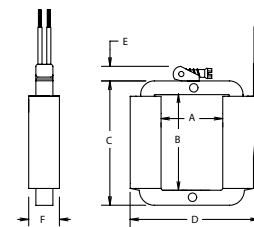
Series	Aperture Size
2	1.13" (28.7 mm)
5	1.56" (39.6 mm)
7	2.50" (63.5 mm)

Series	Aperture Size
1SP	0.84"x 2.00"
3SP	2.19"x 3.25"
5SP	2.88"x 4.25"
7SP	2.88"x 6.25"

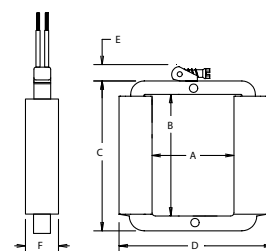
1SP



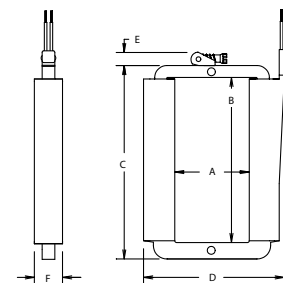
3SP



5SP



7SP



Current Transformer Ranges/VA Burdens

Model	CT Ratio:5	Solid-core Series			Split-core Series			
		2	5	7	1SP	3SP	5SP	7SP
500	50	1	0.75	0.5				
750	75	2	1.25	1				
101	100	2.5	2.25	2	1			
151	150	4	5	2.5				
201	200	5	5	5	1.5	1		
251	250	7.5	12.5	5				
301	300	10	12.5	5	2	1		
401	400		12.5	12.5	5	2		
501	500		25	15		3	2	
601	600		25	25		5	3	
801	800		30	35			10	5
102	1000		35	35		20	15	10
122	1200		40	40			25	15
152	1500			50			35	20
162	1600			50				
202	2000						50	40
252	2500							50
302	3000							50

Allowable Burden Expressed as ¹		Allowable Lead Length in Feet For Copper AWG Wire ²					
VA	Ohm ³	18	16	14	12	10	8
1	0.04	4.7	7.6	12.3	19.5	31.0	49.4
1.5	0.06	7.1	11.3	18.4	29.3	46.5	74.2
2	0.08	9.5	15.1	24.5	39.0	62.0	98.9
3	0.12	14.2	22.7	36.8	58.5	93.0	148.3
4	0.16	18.9	30.2	49.1	78.0	124.0	197.8
5	0.20	23.7	37.8	61.3	97.6	155.0	247.2
6	0.24	28.4	45.4	73.6	117.1	186.0	296.7
7	0.28	33.1	52.9	85.9	136.6	217.1	346.1
8	0.32	37.9	60.5	98.2	156.1	248.1	395.6
9	0.36	42.6	68.1	110.4	175.6	279.1	445.0
10	0.40	47.3	75.6	122.7	195.1	310.1	494.4
12	0.48	56.8	90.7	147.2	234.1	372.1	593.3
14	0.56	66.3	105.9	171.8	273.2	434.1	692.2
16	0.64	75.7	121.0	196.3	312.2	496.1	791.1
18	0.72	85.2	136.1	220.9	351.2	558.1	890.0
20	0.80	94.7	151.2	245.4	390.2	620.2	988.9
25	1.00	118.3	189.0	306.7	487.8	775.2	1236.1
30	1.20	142.0	226.8	368.1	585.4	930.2	1483.3
35	1.40	165.7	264.7	429.4	682.9	1085.3	1730.5
40	1.60	189.3	302.5	490.8	780.5	1240.3	1977.8
45	1.80	213.0	340.3	552.1	878.0	1395.3	2225.0
50	2.00	236.7	378.1	613.5	975.6	1550.4	2472.2

Notes:

1. See table for Allowable Burden. Add any other resistance such as terminations, etc.
2. Lead length is the TOTAL wire run (out and back). Divide by two to get the lead distance.
3. Resistance for 5 A output CTs.

Current Transformer Ordering Information

Solid-core CTs:

Sample Model Number: 2RL-501-NK



(1) Series

2, 5, or 7

(2) Case

RL	Round Doughnut
SFT	Square, Integral Mounting Feet

(3) Model

XXX	See Ranges/VA Burdens
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Split-core CTs:

Sample Model Number: 7SP-600-00-L24-NK



(1) Series

1SP	100-400 A
3SP	200-1200 A
5SP	300-2000 A
7SP	600-3000 A

(2) CT Ratio

XXXX	See Ranges/VA Burdens
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(3) Output

00	5 A secondary
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(4) Lead Type

L36	36" Lead Wires
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