

DT SERIES, 4-WIRE

DC Current Transducers

DT Series DC Current Transducers combine a Hall effect sensor and signal conditioner into a single package for use in DC current applications up to 400 A. The DT Series DC Current Transducers unipolar and bipolar models have jumper-selectable current input ranges and industry standard 0–20 mA, 4–20 mA, 0–5 VDC or 0–10 VDC outputs. DT transducers are available in a split-core or solid-core case.



DC Current Transducer Applications

Battery Banks

- Monitors load current.
- Monitors charging current.
- Verifies operation.

Transportation

- Measures traction power or auxiliary loads.

Welding Processes

- Measures the current used while welding.
- Log processing time and number of operations.

Photovoltaic Panels

- Monitor panel or string current output.
- Monitor combiner box output.

DC Current Transducer Features

Single Range or Three Jumper-selectable Ranges

- Reduces set-up time.
- Reduces inventory.
- Eliminates zero and span pots.

Isolation

- Output is magnetically isolated from the input for safety.
- Eliminates insertion loss (voltage drop).

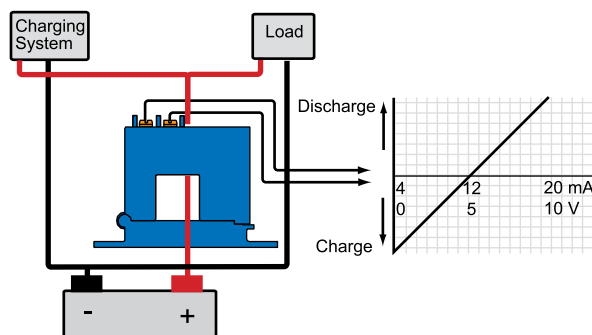
Internal Power Regulation

- Works well, even with unregulated power.
- Cuts installation cost.

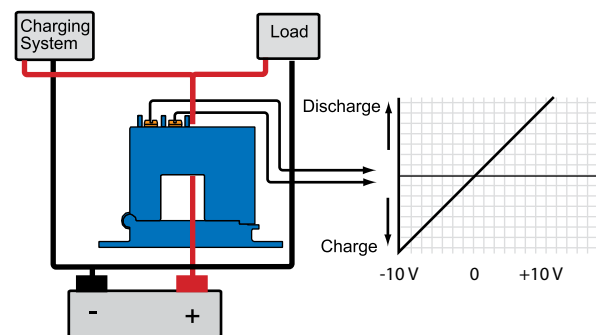
Split-core Design/Built-in Mounting Brackets

- Makes installation a snap.

Battery Charging System - Bipolar Output



Battery Charging System - Bidirectional Output



For additional Application Examples, go to www.nktechnologies.com/applications

OEMs

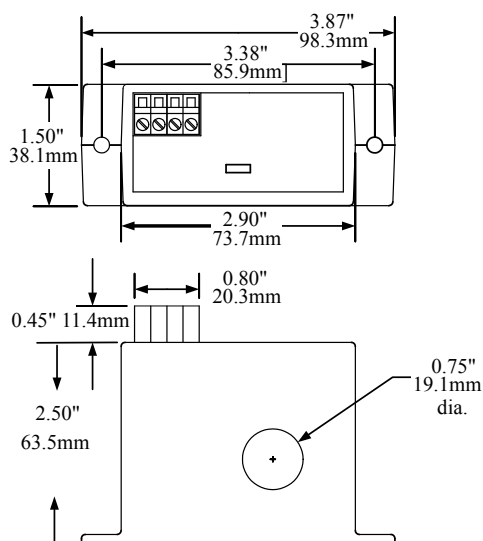
Test & Evaluation Units for OEMs

Free program expedites evaluation process. See page 1 for details.

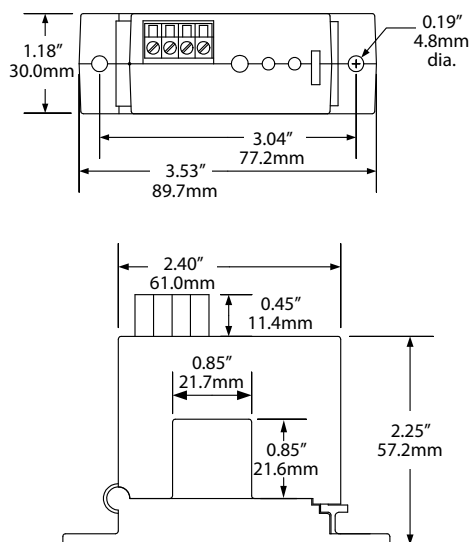


DC Current Transducer Dimensions

FL Case

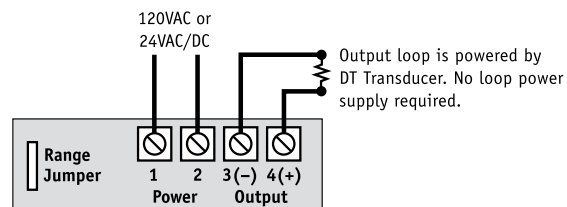


SP Case



DC Current Transducer Connections

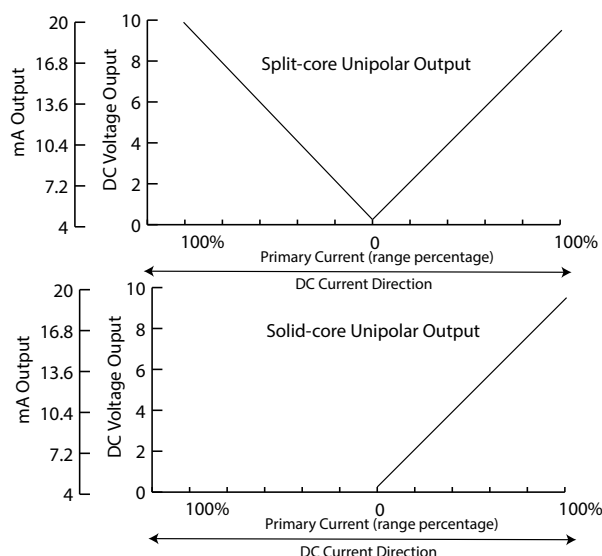
DT Series Unipolar and Bipolar Output Models



Notes:

Deadfront captive screw terminals.
12–22 AWG solid or stranded.
Observe polarity.

DC Current Transducer Unipolar Output



DC Current Transducer Specifications



Power Supply	<ul style="list-style-type: none"> • 120 VAC (108–132 V) solid-core only • 24 VAC/DC (22–26 V) solid-core only • 24 VAC/DC (20–45 VDC, 22–38 VAC) split-core
Power Consumption	2 VA
Output Signal	<ul style="list-style-type: none"> • 0–20 mA, 4–20 mA, 0–5 VDC, 0–10 VDC • ± 10 VDC (Bidirectional models only)
Output Limit	<ul style="list-style-type: none"> • 0–20 mA, 4–20 mA: 23 mA • 0–5 VDC: 5.75 VDC • 0–10 VDC: 11.5 VDC
Output Impedance	<ul style="list-style-type: none"> • 0–20 mA, 4–20 mA: 500 max. • 0–3 or 5 VDC: 25 KΩ min. • 0–10 VDC: 50 KΩ min.
Accuracy	<ul style="list-style-type: none"> • Solid-core: 1% FS • Split-core: 2% FS
Repeatability	1.0% FS
Response Time	<ul style="list-style-type: none"> • Solid-core: 160 ms average (to 90% of step change) • Split-core: 120 ms (to 90% of step change)
Frequency Range	DC
Isolation Voltage	3 KV (monitored line to output)
Linearity	0.75% FS
Current Range	<ul style="list-style-type: none"> • Solid-core: 0–200 max. • Split-core: 0–50 min., 0–400 max.
Sensing Aperture	<ul style="list-style-type: none"> • FL Case: 0.74" (19.0 mm) dia. • SP Case: 0.85" (21.6 mm) sq.
Case	UL94 V0 Flammability Rated
Environmental	-4 to 122°F (-20 to 50°C) 0–95% RH, non-condensing
Listings	UL 508 Industrial Control Equipment (USA & Canada), CE

DC Current Transducer Ordering Information

DT Series Unipolar and Bipolar Output Models, Split-Core Models

Sample Model Number: DT2-420-24U-U-SP

DC current transducer, 0–100/150/200 A range, 4–20 mA output, 24 VAC/DC powered, unipolar polarity, split-core case.

(1) (2) (3) (4) (5)
DT - - 2 4 U - - S P

(1) Full Scale Range

1	50, 75, 100 A
2	100, 150, 200 A
3	150, 225, 300 A
4	200, 300, 400 A

(2) Output Signal

020	0–20 mA
420	4–20 mA

003	0–3 VDC
005	0–5 VDC
010	10 VDC

(3) Power Supply

24U	+24 VAC/DC
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(4) Output Polarity

U	Unipolar (Output with current in either direction)
BP	Bipolar

(5) Case Style

SP	Split-core
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DT Series Unipolar and Bipolar Output Models, Solid-Core Models

Sample Model Number: DT2-420-24U-U-FL

DC current transducer, 0–100/150/200 A range, 4–20 mA output, 24 VAC/DC powered, unipolar polarity, solid-core case.

(1) (2) (3) (4) (5)
DT - - - - F L

(1) Full Scale Range

0	5, 10, 20 A
1	50, 75, 100 A
2	100, 150, 200 A

(2) Output Signal

020	0–20 mA
420	4–20 mA
003	0–3 VDC

(3) Power Supply

24U	+24 VAC/DC
120	120 VAC

(4) Output Polarity

U	Unipolar (Output with current in one direction only)
BP	Bipolar

(5) Case Style

FL	Solid-core
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DT Series Bidirectional Output Models

Sample Model Number: DT2-010-24D-BD-SP

DC current transducer, 0–200 A range, ± 10 VDC output signal, 24 VDC powered, split-core case.

(1) (2) (3) (4) (5)
DT - 0 1 0 - 2 4 D - B D - S P

(1) Full Scale Range

1	100 A
2	200 A
3	300 A
4	400 A

(2) Output Signal

010	± 10 VDC
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(3) Power Supply

24D	24 VDC
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(4) Output Polarity

BD	Bidirectional
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(5) Case Style

SP	Split-core
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