

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.

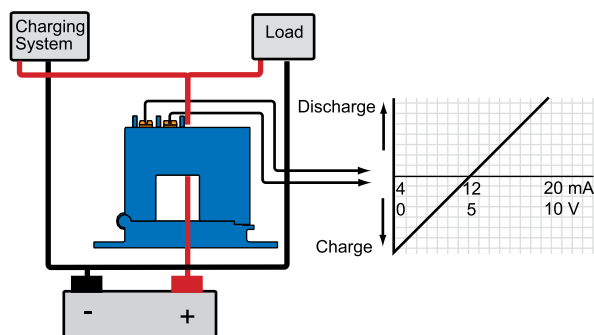
Split-core Design/Built-in Mounting Brackets

- Makes installation a snap.

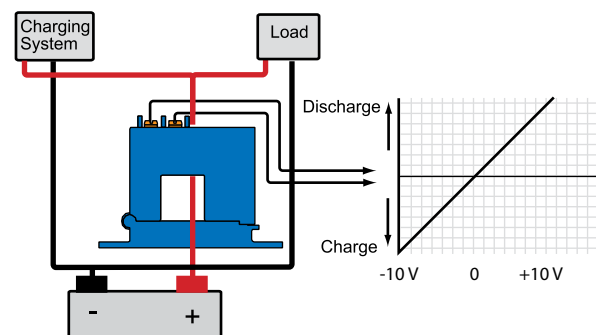
UL/cUL and CE Approved

- Accepted worldwide.

Battery Charging System - Bipolar Output



Battery Charging System - Bidirectional Output



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

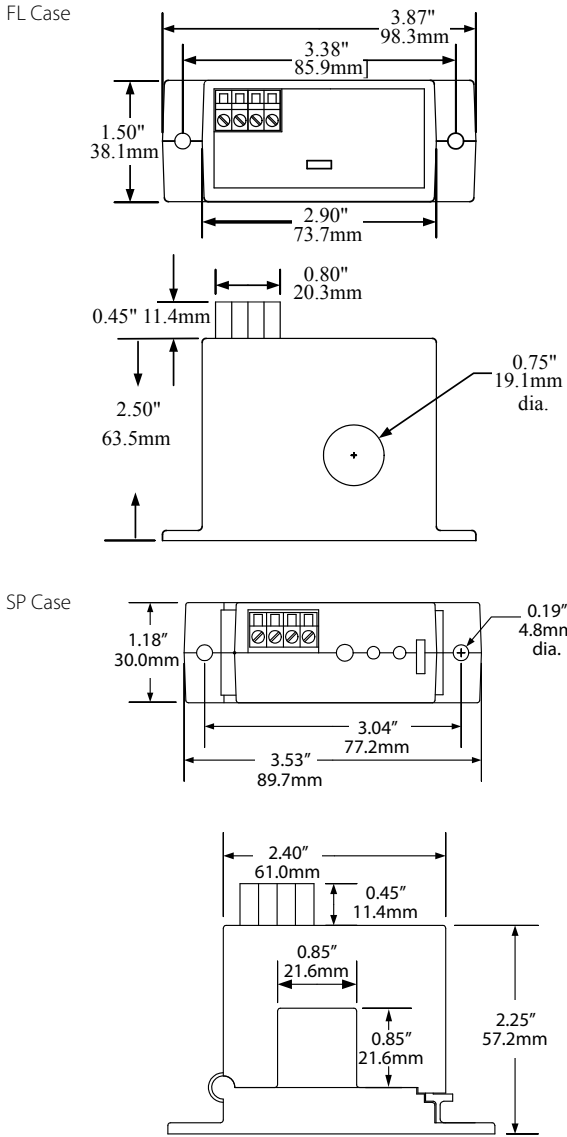
OEMs

Test & Evaluation Units for OEMs

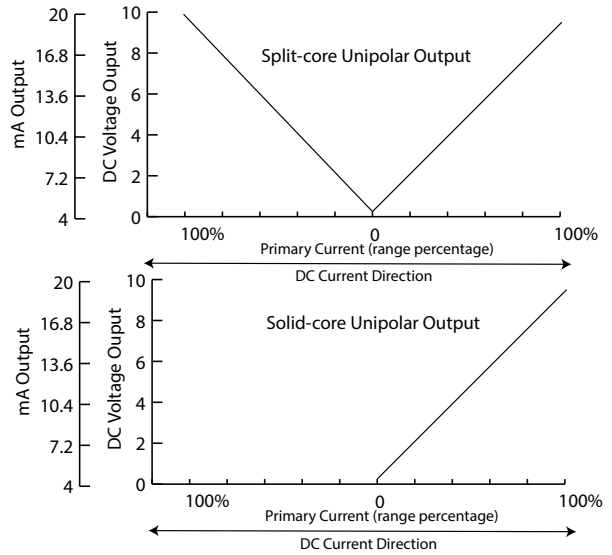
Free program expedites evaluation process. See page 1 for details.



DC Current Transducer Dimensions

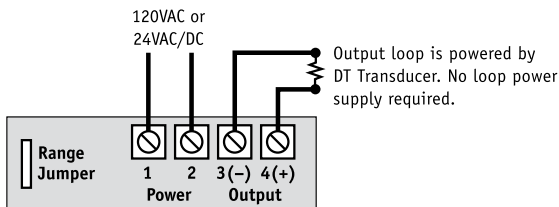


DC Current Transducer Unipolar Output



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 Specifications



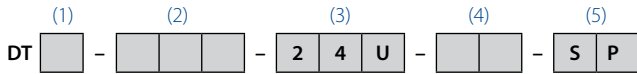
| | |
|--|---|
| Power Supply | <ul style="list-style-type: none"> • 120 VAC (108–132 V) solid-core only • 24 VAC/DC (22–26 V) solid-core only • 24 VAC/DC (20–45 VDC, 22–38 VAC) split-core |
| Power Consumption | 2 VA |
| Output Signal | <ul style="list-style-type: none"> • 0–20 mA, 4–20 mA, 0–5 VDC, 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"> • 1.0% FS (solid-core) • 2.0% FS (split-core) |
| Repeatability | 1.0% FS |
| Response Time (90% step change) | <ul style="list-style-type: none"> • 160 ms average (solid-core) • 120 ms (split-core) |
| Frequency Range | DC |
| Isolation Voltage | UL listed to 1270 VAC, tested to 3 KV |
| Input Range | <ul style="list-style-type: none"> • 0–200 A max. (solid-core) • 0–50 A min., 0–400 A max. (split-core) |
| Case | UL94 V-0 Flammability Rated |
| Environmental | <ul style="list-style-type: none"> • -4 to 122°F (-20 to 50°C) • 0–95% RH, non-condensing |
| Listings | UL/cUL, 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. (DIN rail adapters are included)



(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 |
| 005 | 0–5 VDC |
| 010 | 10 VDC |

(3) Power Supply

| | |
|-----|------------|
| 24U | +24 VAC/DC |
|-----|------------|

(4) Output Polarity

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

(5) Case Style

| | |
|----|------------|
| SP | Split-core |
|----|------------|

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. (DIN rail adapters are included)



(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 |
| 005 | 0–5 VDC |
| 010 | 10 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 |

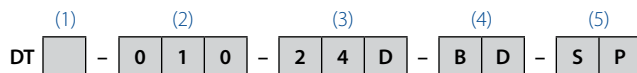
(5) Case Style

| | |
|----|------------|
| FL | Solid-core |
|----|------------|

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. (DIN rail adapters are included)



(1) Full Scale Range

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

(2) Output Signal

| | |
|-----|---------|
| 010 | ±10 VDC |
|-----|---------|

(3) Power Supply

| | |
|-----|--------|
| 24D | 24 VDC |
|-----|--------|

(4) Output Polarity

| | |
|----|---------------|
| BD | Bidirectional |
|----|---------------|

(5) Case Style

| | |
|----|------------|
| SP | Split-core |
|----|------------|

