

Specifications

Output Signal	4-20mA
Accuracy	1% FS
Frequency Range	DC
Isolation Voltage	3kV (Monitored line to output)
Linearity	0.75% FS
Response Time	100 mS (to 90% of step change)
Repeatability	1% FS
Power Supply	24VDC (12-40 VDC)
Power Consumption	1 VA
Enclosure	UL 94V-0 Flammability rated thermoplastic
Environmental	-30 to 60 deg. C

DLT Series DC current transducers are an innovative design hall effect based DC current transducer. With this design, the power needed to operate the sensor is derived from an external DC supply connected in series with the sensor output. This design utilizes two wires rather than four with most other products. Perfect for photovoltaic panel monitoring, at the panel, string or array level. Small size allows for placement inside combiner boxes, and the extended temperature range means a lower need for cooling of the control system.

Model Number Key

DLTB - 420 - 24L - U - FF

CASE:

FF- Solid Core Front Term
SP- Split Core, Top Term

POLARITY:

BP- Bipolar
U- Unipolar

POWER SUPPLY:

24L- 24 VDC 2-wire loop power

OUTPUT:

420- 4-20 mA

RANGE

A- 0 to 20 A DC (FF only)
B- 0 to 50 ADC (FF or SP)
C- 0 to 100 ADC (FF or SP)
D- 0 to 200 ADC (SP only)
E- 0 to 300 ADC (SP only)
F- 0 to 400 ADC (SP only)

SENSOR TYPE:

DLT - DC current sensor with analog output.

Know Your Power



Other NK Technologies Products Include:

DC Current Switches, Ground Fault Sensors
AC & DC Current Switches, Power Transducers
Current & Potential Transformers (CTs&PTs)



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INSTRUCTIONS



**DLT SERIES Solid or Split Core
4-20mA Outputs**

Quick "How To" Guide

1. Place wire to be monitored through aperture. Ensure monitored current flow matches arrow on sensor or as noted on figure on reverse side.
2. Mount the sensor.
3. Connect output wiring.
 - A. Use up to 2.5 mm² (14 AWG) copper wires. Tighten terminals to .6 Nm (5 in-lbs) torque.
 - B. For current output models, ensure output load is no more than 500 Ω.
4. Connect Power.
 - A. Connect the power supply in the standard 2-wire loop powered manner.

Description

DLT Series transducers combine a Hall Effect sensor and a signal conditioner into a single package. This provides higher accuracy, lower wiring costs, easier installation and saves valuable panel space. DT Series are available with 4-20mA loop-powered outputs.

Installation

Place wire to be monitored through sensor aperture. Care should be taken to ensure current flow is in accordance with any directional arrows on sensor and as noted in the figure, above right.

DLT Series transducers work in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures. They can be mounted in any position or hung directly on wires with a wire tie. For optimal performance, ensure unit has been energized for a period of 20 minutes prior to sensing operation.

4-20mA:

The current loop is powered by an external source. The connection diagram on the right. Maximum loop impedance is 500 Ω .

Current Direction:

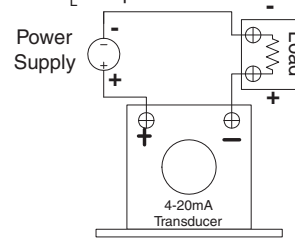
Ensure the direction of monitored current is the same as the direction shown on the diagram. The unit will not operate properly if the current is opposite the direction of the arrow.

Wiring & Mounting Information

Loop Voltage Requirements:

DLT Series: $V_L = 12V + (R_L \times 20mA)$

Where: V_L = Min. Loop voltage
 R_L = Loop Resistance



Connect the negative from the power supply to the negative of the load (panel meter, PLC, etc.). Connect the positive from the power supply to the positive terminal of the sensor. Connect the

negative terminal of the sensor to the positive or input of the load.

Or, connect the positive of the power supply to the positive input of the load, negative of the supply to the negative of the sensor, and the positive of the sensor to the negative of the load.

Either will work.

Range Select

DLT Series transducers feature factory calibrated ranges.

1. Determine the normal operating amperage of moni-

tored circuit

2. Select the model with a range that is equal to or slightly higher than the normal operating amperage.

Trouble Shooting

1. Output Signal Too Low

- A. There may be current present, but lower than expected. *Check primary current with a meter.*
- B. Power supply is inadequate. *Check power supply. Make sure it is of sufficient voltage with all loads at maximum. DLT Series consumes less than 1 VA.*
- C. Output load too high. *Check output load, be sure it is no more than 500 Ω .*

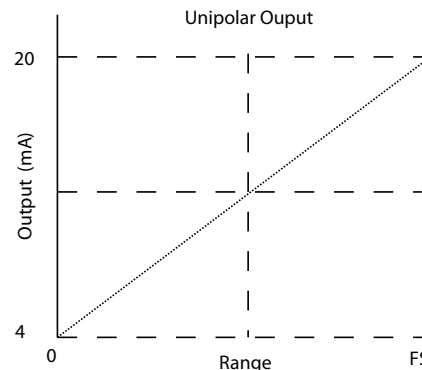
2. Output Signal is always at maximum

- A. There may be current of a higher level than the sensor range. *Replace with a sensor having a higher range.*

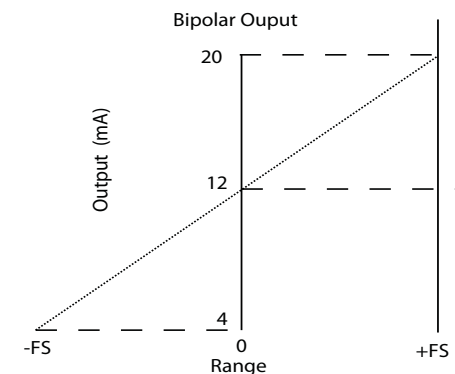
3. Sensor has no output

- A. Polarity is not properly matched. *Check and correct wiring polarity.*
- B. Monitored load is not DC or is not on. *Check that the monitored load is DC and that it is actually on.*

Unipolar versus Bipolar Output



Output with current in the direction of the arrow only.



Output at mid-scale (12 mA) at zero current, 20 mA in primary direction., 4 mA in reverse direction.