



c3controls CCT1  
Control Circuit  
Transformers



# c3controls CCT1 Control Circuit Transformers Instruction Manual

[Home](#) » [c3controls](#) » c3controls CCT1 Control Circuit Transformers Instruction Manual 

## Contents

- 1 c3controls CCT1 Control Circuit Transformers
- 2 Product Information
- 3 Product Usage Instructions
- 4 CONTROL CIRCUIT TRANSFORMERS
- 5 SPECIFICATIONS
- 6 WIRING DIAGRAMS
- 7 DIMENSIONS
- 8 Documents / Resources
  - 8.1 References
- 9 Related Posts



**c3controls CCT1 Control Circuit Transformers**



## Control Circuit Transformers

### Specifications

- Conformity to Standards: UL 5085-3, UL 5085-2, IEC 61558
- UL File#: E533585
- CE Marked (per EU Low Voltage Directive 2014/35/EC and RoHS Directive 2015/863/EU)

### Product Information

c3controls' Control Circuit Transformers are designed for residential, commercial HVAC/Building Management Systems (BMS), and various industrial applications. These transformers are versatile and offer innovative design at competitive prices.

### Wiring Diagrams

Refer to the wiring diagrams for different configurations:

- CCT1-XX-DSCS-X
- CCT1-XX-PMCS-X
- CCT1-XX-RMCS-X

### Dimensions

Find detailed dimensions for different models including front view, top view, and side view:

- CCT1-20-DSCS-I, CCT1-20-PMCS-I, CCT1-40-DSCS-I, CCT1-40-PMCS-I
- CCT1-50-DSCS-C, CCT1-50-DSCS-F, CCT1-50-RMCS-C, CCT1-50-RMCS-F
- CCT1-75-DSCS-C, CCT1-75-RMCS-C, CCT1-100-DSCS-C, CCT1-100-RMCS-C
- CCT1-150-DSCS-C, CCT1-150-RMCS-C, CCT1-240-DSCS-C, CCT1-150-DSCS-N, CCT1-150-RMCS-N, CCT1-240-DSCS-N, CCT1-240-RMCS-N
- CCT1-300-DSCS-N, CCT1-240-RMCS-C, CCT1-300-DSCS-C, CCT1-300-RMCS-C, CCT1-300-RMCS-N

## Product Usage Instructions

### Step 1: Installation

Follow the provided wiring diagrams to correctly install the Control Circuit Transformer in your setup.

### Step 2: Connection

Make sure to connect the primary and secondary wires as indicated in the wiring diagrams. Ensure proper phase alignment.

### Step 3: Testing

After installation, test the transformer to ensure it is functioning correctly and providing the required voltage output.

## Frequently Asked Questions (FAQ)

- **Q: Are the Control Circuit Transformers suitable for both residential and industrial applications?**

**A:** Yes, these transformers are designed to cater to both residential and industrial settings.

- **Q: How can I ensure the correct wiring connections?**

**A:** Refer to the provided wiring diagrams and follow the instructions carefully to ensure accurate connections.

- **Q: Can the transformers operate at European voltages/frequencies?**

**A:** Yes, these transformers can operate at European voltages/frequencies, making them versatile for various settings.

## CONTROL CIRCUIT TRANSFORMERS

c3controls' line of Control Circuit Transformers are well-designed and optimized devices to cater not only to residential and commercial HVAC/Building Management Systems (BMS) but also a wide range of industrial applications. Due to the innovative design approach, you would find these products at never-seen-before prices. Check out all the features this line has to offer.

## PROVEN

### Conformity to Standards:

UL 5085-3

UL 5085-2

IEC 61558

### UL File#: E533585

UL Pending

CE Marked (per EU Low Voltage Directive 2014/35/EC and RoHS Directive 2015/863/EU)

Discover controls' exceptional line of Control Circuit Transformers, meticulously engineered to meet the needs of

residential and commercial HVAC/Building Management Systems (BMS), as well as a wide array of industrial applications. Our innovative design approach not only ensures top-tier performance but also introduces these products at unprecedented, budget-friendly prices. Dive into the rich tapestry of features that this product line unfolds, and experience excellence like never before.

DELIVERING SUPERIOR PRODUCT QUALITY AND MANUFACTURING EXCELLENCE	
✓ <b>Proven</b>	Our Series CCT Control Circuit Transformers are UL Listed and CE marked to meet global standards requirements and are compliant to the RoHS directives. 
✓ <b>Environmentally Secure</b>	Designed and tested for ensuring operation in extreme temperatures, to keep your application running.
✓ <b>Easy to Install</b>	Panel-mountable with four screws, one in each corner, for fast and simple installation as well as reliability in vibrating environments.
✓ <b>Added Safety</b>	The transformer windings are enclosed, providing much needed safety for a critical application.
✓ <b>Visible Certifications</b>	Our product certifications and electrical ratings are clearly marked on the outside of the device for easy reference during installation.
✓ <b>Limited Lifetime Warranty*</b>	Every product is backed by our limited lifetime warranty—unmatched in the industry—bringing you quality components that perform in the most demanding applications.
✓ <b>Guaranteed Same-Day Shipping*</b>	Product availability reduces inventory and improves cash-flow—saving you money. With c3controls any order for standard catalog items received by 6:00pm ET is guaranteed to ship same day.
✓ <b>Advantage Pricing</b>	Our approach to product development, manufacturing, and focus on servicing the OEM and Electrical Equipment Builder reduces cost. The result—the best value in the industry.

## CONTROL CIRCUIT TRANSFORMERS

CCT1-75-DSCS-C



CCT1-75-RMCS-C



CCT1-100-DSCS-C



CCT1-100-RMCS-C



## UNIQUE PRODUCT LINE FEATURES

- All our Class 2 devices come with an overcurrent protection option, either inherent or non-inherent, eliminating the need for additional protection in a panel.
- Transformers up to 100VA are Class 2 certified making them the safest device in your control application.
- Primary and secondary wires are 10-inches long, making them easy to connect to a nearby load.

### OVERCURRENT PROTECTION



### CLASS 2 DESIGN

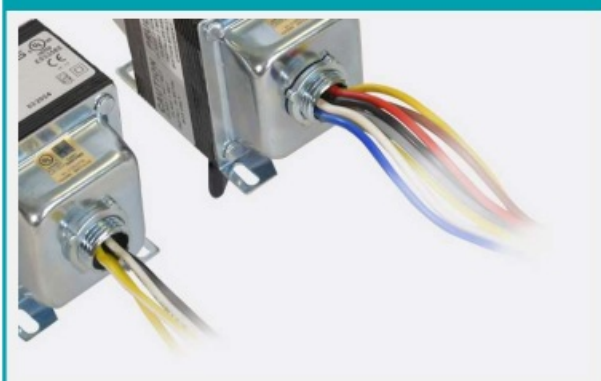


### CONNECT TO ANYTHING



- Secondary as well as different taps on primary are uniquely color-coded to facilitate error-proof installation.
- Options are available to offer multiple voltages: 120V to 480V on primary side in a single device, making it usable in a variety of applications and saving on your inventory.

### COLOR-CODED WIRES



### VERSATILE



## CONTROL CIRCUIT TRANSFORMERS

## IT'S EASY TO BUILD YOUR OWN CONTROL CIRCUIT TRANSFORMER

Simply pick the code number from each of the sections below and combine them to build your part number.

### Control Circuit Transformers

**CCT1** - **I** - **II** - **III** - **IV** **V** **VI** **VII** **C** **S** - **VII**

Example: To build one of our most popular Control Circuit Transformers, the part number would be **CCT1 + II + III + IV + C + S + VII** or **CCT1-100-DSCS-C**



#### I. PRODUCT TYPE

CODE	DESCRIPTION
CCT1	Control Circuit Transformer

#### II. VOLT - AMPERES

CODE	DESCRIPTION	LIST
20	20	\$ 12.40
40	40	\$ 20.50
50	50	\$ 32.00
75	75	\$ 45.00
100	100	\$ 56.40
150	150	\$ 82.00
240	240	\$162.00
300	300	\$188.00

#### III. VOLTAGE (PRIMARY)

CODE	DESCRIPTION	FOR VOLT-AMP CODES	LIST
D	120V	20, 40, 50, 75, 100, 150, 240, 300	\$ 8.00
P	277/240/208/120 (P-277V)	20, 40	\$16.90
R	480/277/240/208/120 (R-480V)	50, 75, 100, 150, 240, 300	\$22.00

#### IV. TAPS (PRIMARY)

CODE	DESCRIPTION	FOR VOLTAGE (PRIMARY) CODES
S	Single	D
M	Multiple	P, R

#### V. VOLTAGE (SECONDARY)

CODE	DESCRIPTION
C	24

#### VI. TAPS (SECONDARY)

CODE	DESCRIPTION
S	Single

#### VII. PROTECTION TYPE

CODE	DESCRIPTION	FOR VOLT-AMP CODES	LIST
N	None	150, 240, 300	—
I	Inherently Protected	20, 40	\$10.00
F	Fuse	50	\$11.00
C	Circuit Breaker	50, 75, 100, 150, 240, 300	\$15.00

DISCOUNT  
SCHEDULE **E**

### SOME OF OUR POPULAR CONFIGURATIONS:

#### CONTROL CIRCUIT TRANSFORMERS

CATALOG NUMBER	DESCRIPTION	LIST
CCT1-100-RMCS-C	100VA, Primary 480/277/240/208/120V, Secondary 24V, Circuit Breaker Protection, UL 5085-3 (Class 2)	\$93.40
CCT1-100-DSCS-C	100VA, Primary 120V, Secondary 24V, Circuit Breaker Protection, UL 5085-3 (Class 2)	\$79.40
CCT1-50-RMCS-C	50VA, Primary 480/277/240/208/120V, Secondary 24V, Circuit Breaker Protection, UL 5085-3 (Class 2)	\$69.00
CCT1-40-DSCS-I	40VA, Primary 120V, Secondary 24V, Inherently Protected, UL 5085-3 (Class 2)	\$38.50

### CONTROL CIRCUIT TRANSFORMERS

c3controls offers a comprehensive range of Control Circuit Transformers (CCT) designed with precise attention to detail, to cater to a wide array of applications. Whether it's residential and commercial HVAC systems, Building Management Systems (BMS), or the intricate demands of complex industrial environments, we offer a variety of options spanning from 20 to 300VA, featuring a 10-inch-long wire for seamless connectivity, having them color-coded for easy identification. These devices offer flexible primary voltage options ranging from 120 to 480V, with 24V secondary. Additionally, devices up to 100VA are Class 2, equipped with built-in overcurrent protection



### Product features include:

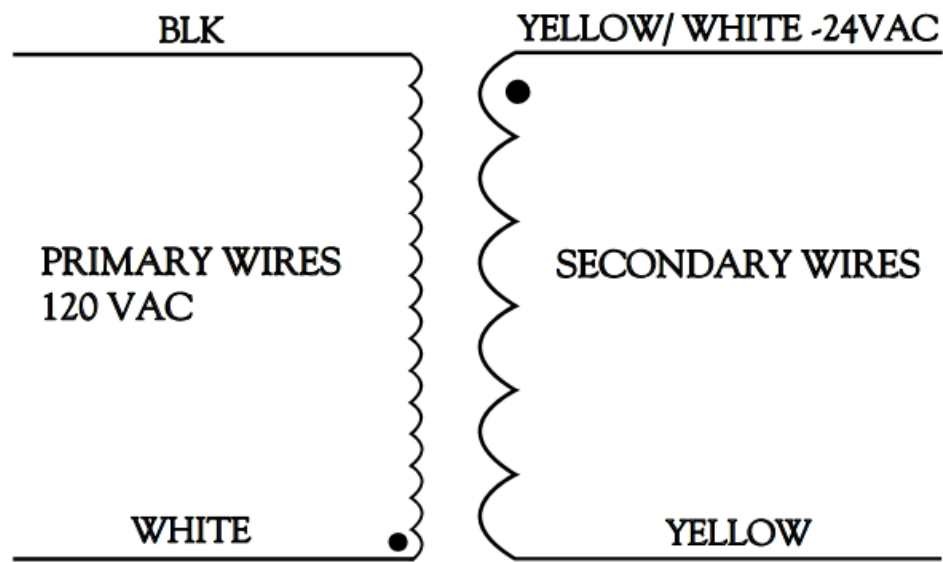
- Engineered for high efficiency, minimizing energy loss during conversion & isolation.
- Built with high-quality materials to withstand harsh environmental conditions & rigorously tested to meet the highest UL safety standards, ensuring industry-leading safety for your peace of mind.
- Equipped with an integrated grounding system for an additional layer of safety.
- Select models feature manual resettable circuit breakers, offering both protection and reliability. This feature enhances reusability, a capability not found in transformers with fuse or no protection.
- Designed with a space-saving footprint, allowing for installation in constrained environments.
- Designed with lead wires emanating from a single hub, allowing for easy connection to conduit for a secure and stable setup.
- Versatile for Class 2, Class 3, and general-purpose applications, with the added ability to accommodate a wide range of North American European voltages/frequencies. This universality makes them an adaptable energy source for various settings.

### SPECIFICATIONS

CONTROL CIRCUIT TRANSFORMER SPECIFICATIONS		
<b>ELECTRICAL/ GENERAL</b>		
	<b>UNITS</b>	
Rating	VA	20, 40, 50, 75, 100, 150, 240, 300
<b>RATED VOLTAGE</b>		
Primary	V	480/277/240/208/120
Secondary	V	24
<b>OVERCURRENT PROTECTION</b>		Inherently Protected, Fuse, Circuit Breaker, None (For Models Above 100VA)
<b>MTBF</b>	Hours	100,000
<b>POWER FREQUENCY WITHSTAND VOLTAGE</b>		
Primary		2.5kV RMS for 1 minute
Secondary	V	2.5kV RMS for 1 minute
<b>ENVIRONMENTAL</b>		
Operating Temperature	°C / °F	-34 to +60 / -30 to +140
<b>WIRING</b>		
Wire Size	AWG	16
Wire Length	Inch	10 (with 0.5-inches stripped)
<b>COMPLIANCE</b>		
Up to 100VA		UL 5085-3 (Class 2)
150VA and above		UL 5085-2
<b>ROHS COMPLIANCE</b>		For RoHS compliance documentation by product, refer to c3controls.com

WIRING DIAGRAMS

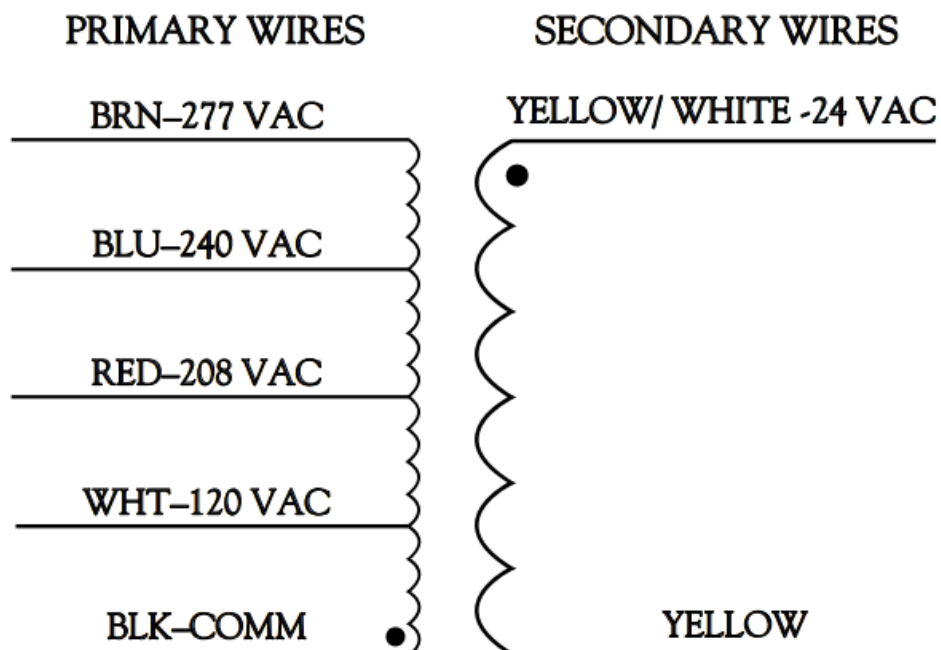
CCT1-XX-DSCS-X



SECONDARY YEL/’WHT WIRE IN PHASE WITH PRIMARY BLACK WIRE

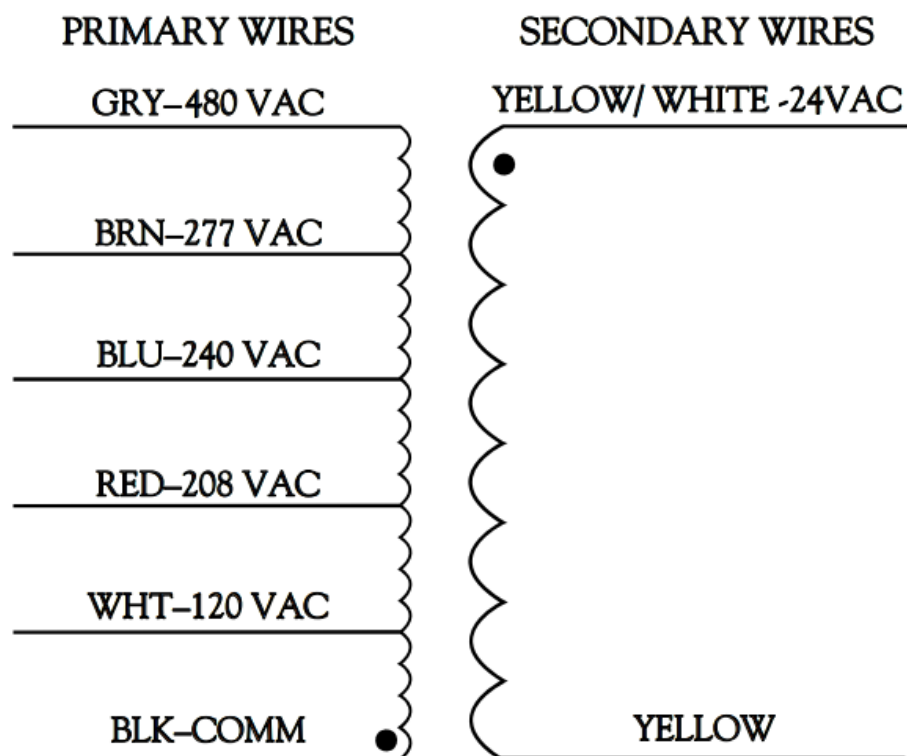
CCT1-XX-PMCS-X





SECONDARY YEL/'WHT WIRE IN PHASE WITH PRIMARY BLACK WIRE

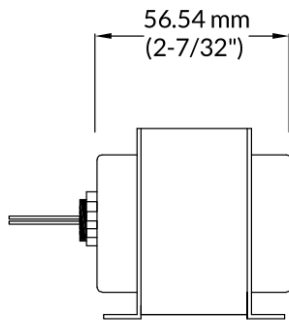
CCT1-XX-RMCS-X



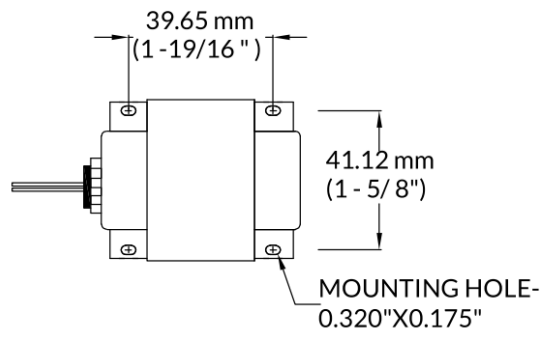
SECONDARY YEL/'WHT WIRE IN PHASE WITH PRIMARY BLACK WIRE

DIMENSIONS

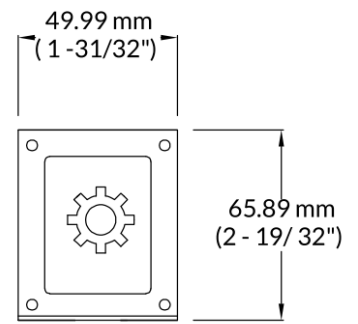
CCT1-20-DSCS-I



Front View

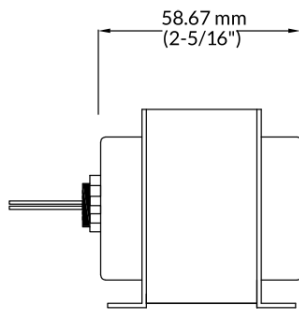


Top View

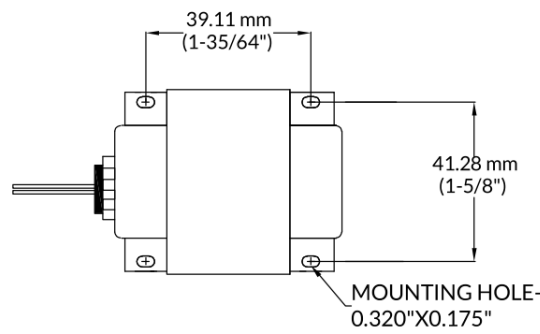


Side View

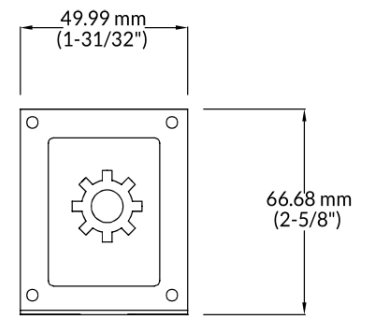
## CCT1-20-PMCS-I



Front View

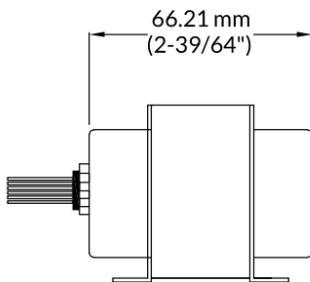


Top View

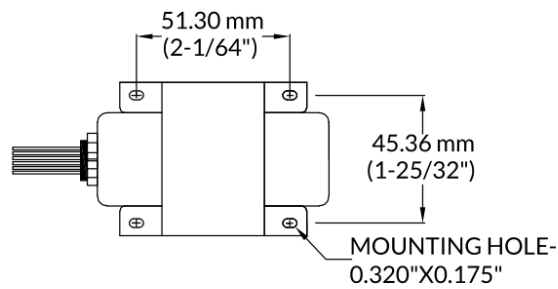


Side View

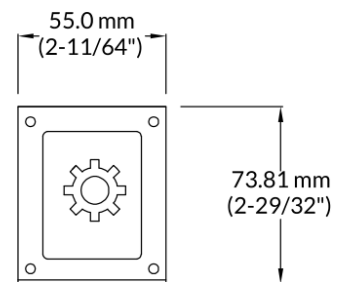
## CCT1-40-DSCS-I



Front View

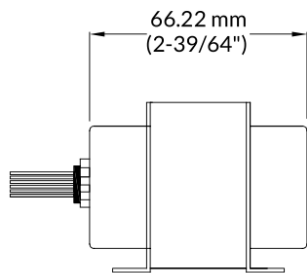


Top View

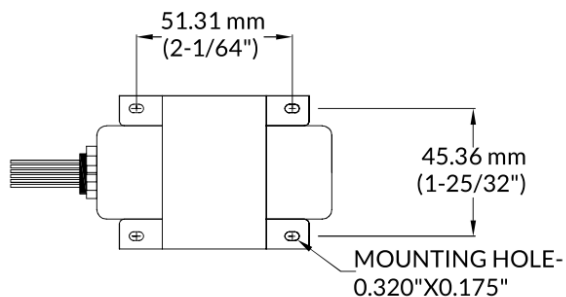


Side View

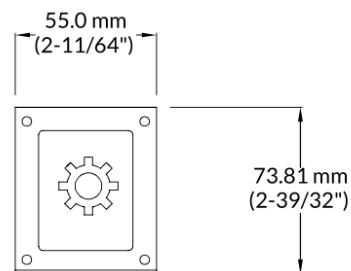
## CCT1-40-PMCS-I



Front View

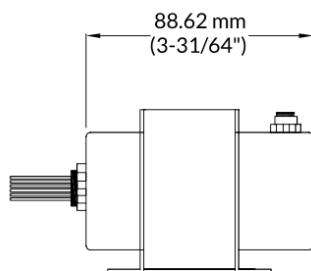


Top View

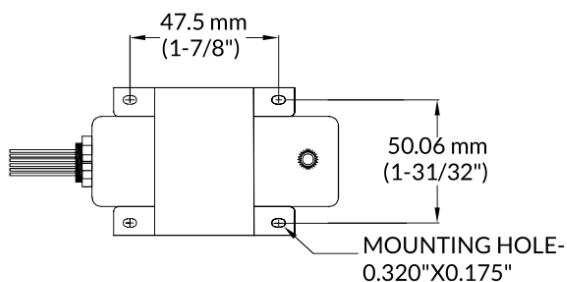


Side View

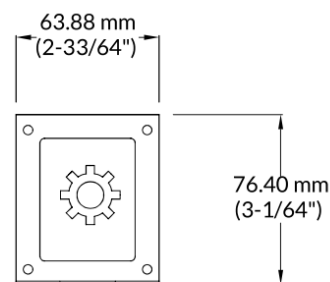
## CCT1-50-DSCS-C



Front View

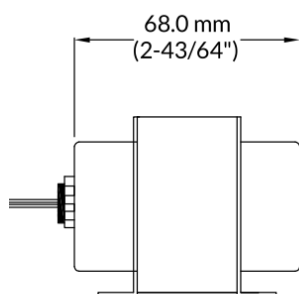


Top View

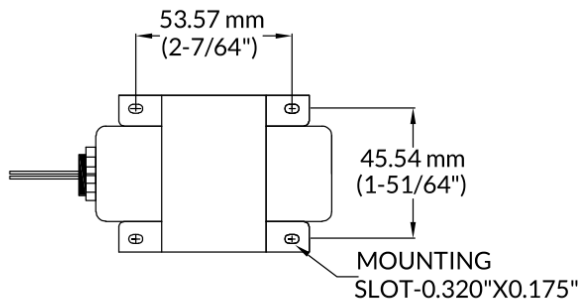


Side View

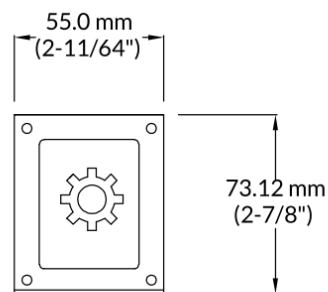
## CCT1-50-DSCS-F



Front View

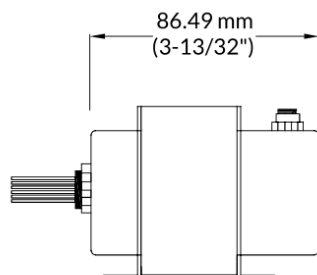


Top View

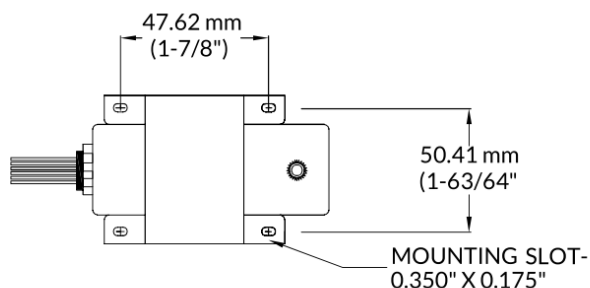


Side View

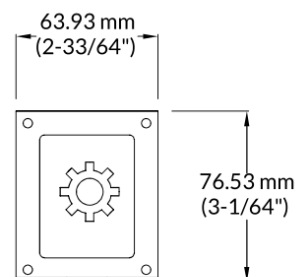
## CCT1-50-RMCS-C



Front View

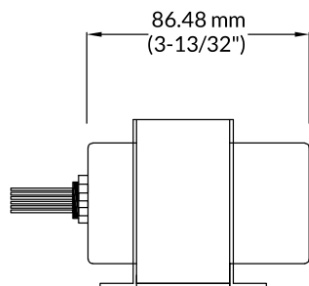


Top View

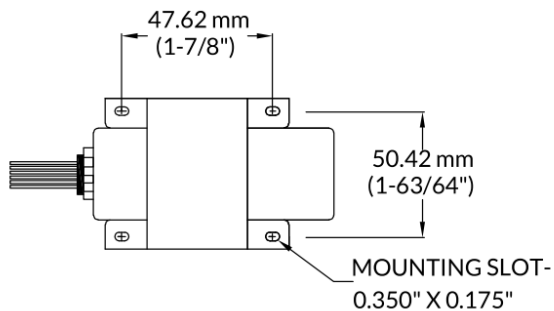


Side View

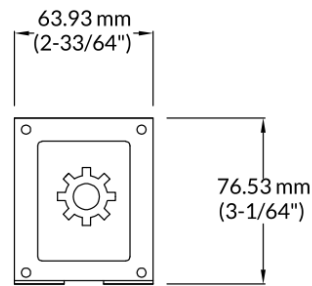
## CCT1-50-RMCS-F



Front View

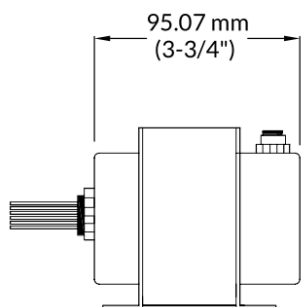


Top View

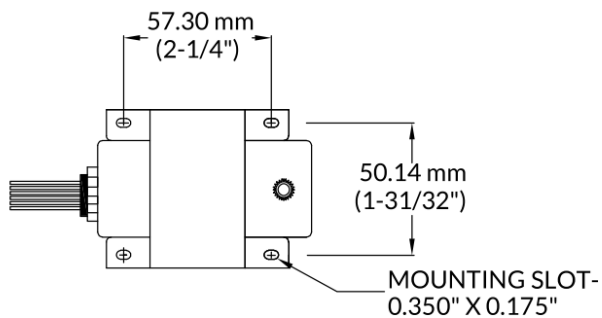


Side View

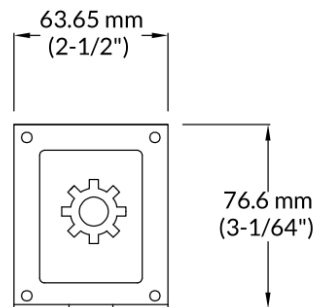
## CCT1-75-DSCS-C



Front View

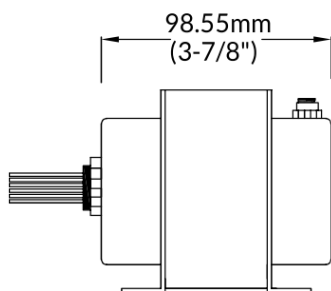


Top View

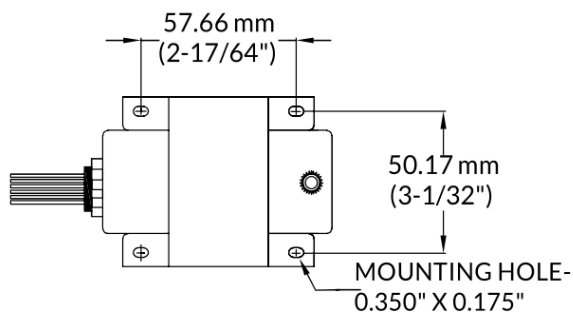


Side View

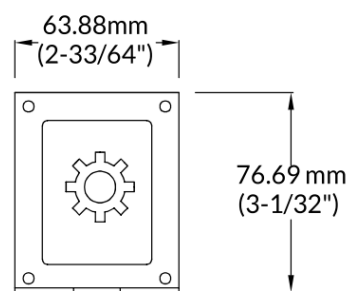
## CCT1-75-RMCS-C



Front View

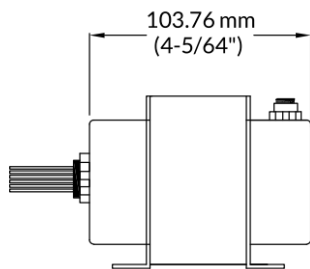


Top View

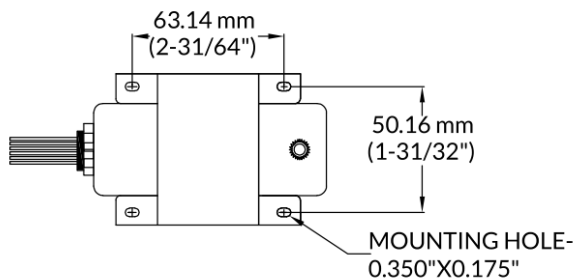


Side View

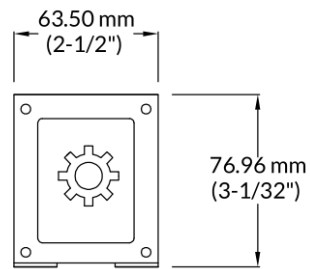
## CCT1-100-DSCS-C



Front View

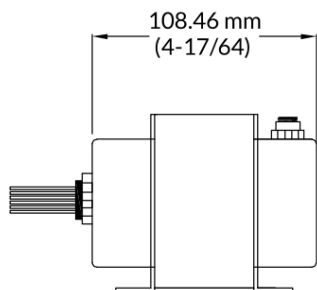


Top View

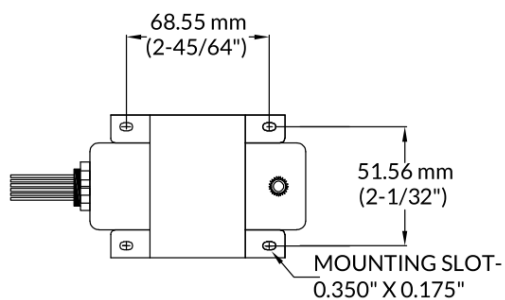


Side View

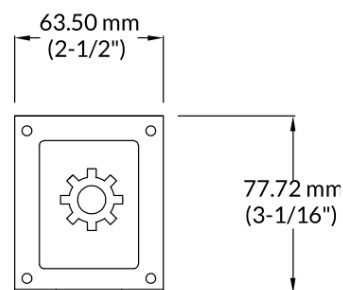
### CCT1-100-RMCS-C



Front View

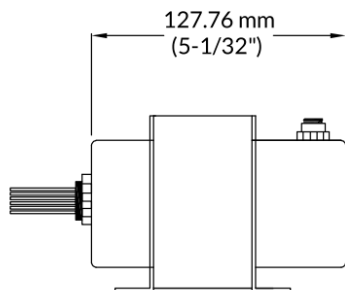


Top View

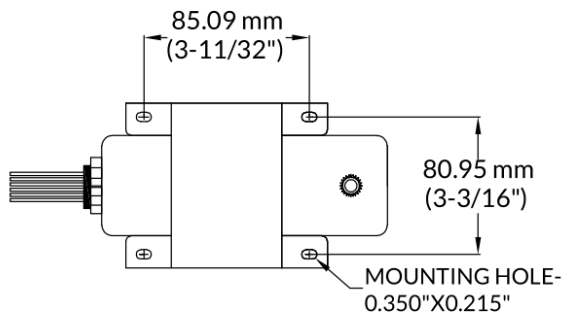


Side View

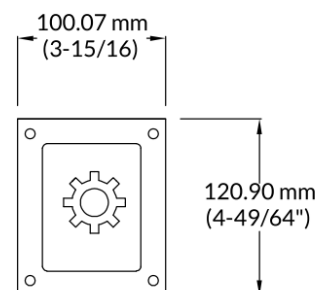
### CCT1-150-DSCS-C / CCT1-150-RMCS-C / CCT1-240-DSCS-C



Front View

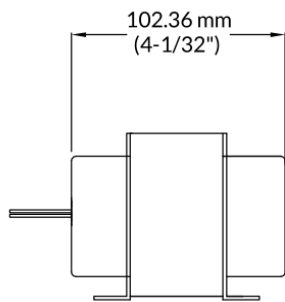


Top View

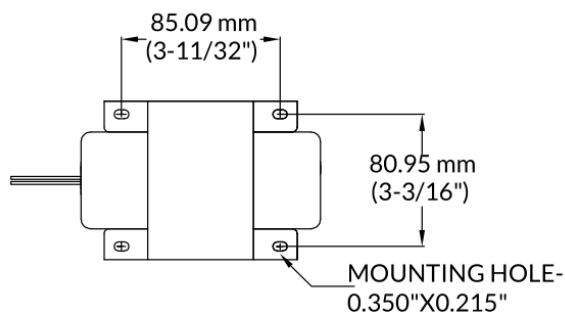


Side View

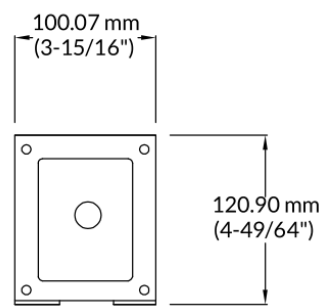
### CCT1-150-DSCS-N / CCT1-150-RMCS-N / CCT1-240-DSCS-N



Front View

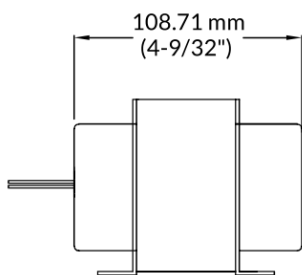


Top View

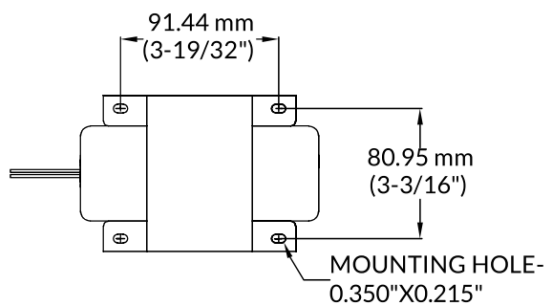


Side View

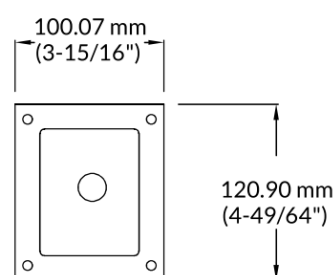
### CCT1-240-RMCS-N / CCT1-300-DSCS-N



Front View

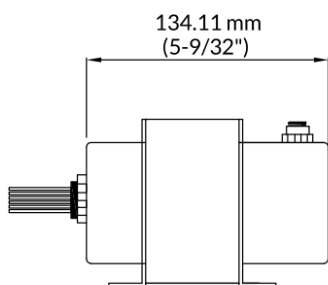


Top View

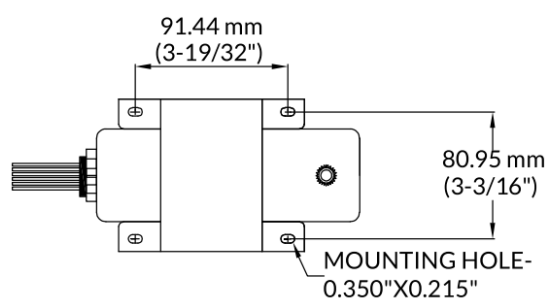


Side View

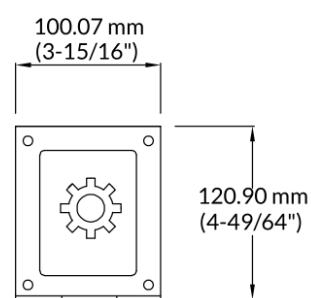
### CCT1-240-RMCS-C/ CCT1-300-DSCS-C



Front View

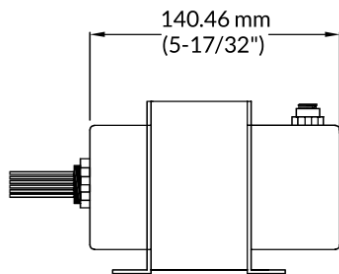


Top View

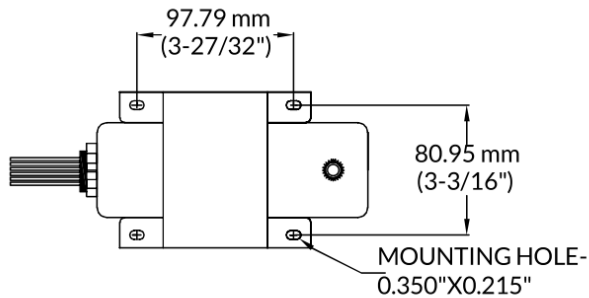


Side View

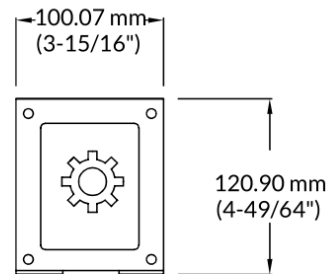
### CCT1-300-RMCS-C



Front View

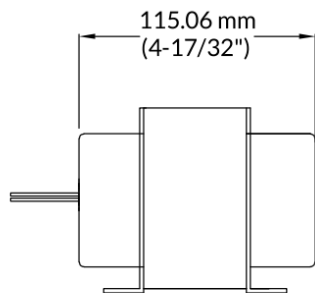


Top View

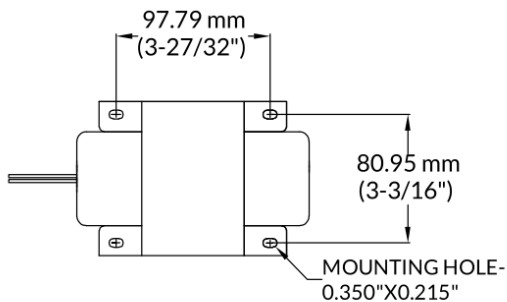


Side View

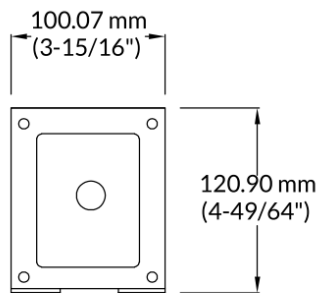
## CCT1-300-RMCS-N



Front View




Top View



Side View

**Everything** under control :: c3controls

## Documents / Resources

	<p><a href="#">c3controls CCT1 Control Circuit Transformers</a> [pdf] Instruction Manual 2024-0430, CCT1, CCT1 Control Circuit Transformers, CCT1, Control Circuit Transformers, Circuit Transformers, Transformers</p>
-------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## References

- [c3controls.com - c3controls](https://c3controls.com)
- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.