NEW

CONTROL POWER TRANSFORMERS

series CPT

c3controls' Series CPT Control Power Transformers are open-type control transformers ranging from 50 to 5000VA with reliable output voltage stability and designed for lower inrush applications (Lighting, Motor Control, Circuit Isolation, etc). These transformers are commonly preferred solutions to power control circuits including: PLCs, protective relays, meters, control panels, and other auxiliary devices. Additionally, they are widely used in electrical substations, data centers, and other power systems.

Section 37

PROVEN

Conformity to Standards:

UL 5085-2
CSA C22.2 No. 66.2
IEC 61558

Certifications:

UL File #: E541700

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

NOTE: The scope (range, description, price, specifications, dimensions, etc.) of the product featured in this section is subject to change without notice. Refer to c3controls.com for product updates.

CONTROL POWER TRANSFORMERS

NEW

At c3controls, we offer a comprehensive line of Control Power Transformers, part of our extensive portfolio designed to meet the specific needs of machine and panel builders. Our products are engineered for reliability and performance, ensuring durability in demanding applications while remaining cost-effective. With a focus on providing robust solutions, our transformers are built to last and are available at competitive price points. Explore the full range of features and benefits of our Series CPT to see how our transformers can elevate your project with both quality and value.

DELIVERING SUPERIOR PRODUCT QUALITY AND MANUFACTURING EXCELLENCE

✓ **Proven**	Our Control Power Transformers are certified to UL Standards and CE marked for global versatility.
✓ **Easy to Install**	Panel-mountable with four screws, one in each corner, for fast and simple installation as well as reliability in vibrating environments.
✓ **Simple Wiring**	Integrated molded terminal blocks, equipped with IP20 protection, facilitate simplified wiring and safeguard against accidental contact with the power source.
✓ **Limited Lifetime Warranty***	Every product is backed by our limited lifetime warranty—unmatched in the industry—bringing you quality components that perform in the most demanding applications.
✓ **Guaranteed Same-Day Shipping***	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 the same day.
✓ **Advantage Pricing**	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.

*See c3controls Terms & Conditions

CPT1-0050-RD-FD

CPT1-0250-RD-FD

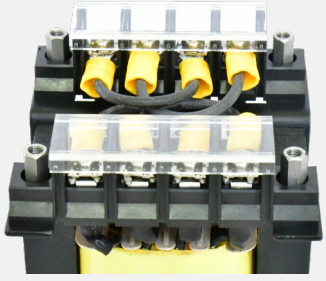
CPT1-3000-RD-FD

UNIQUE PRODUCT LINE FEATURES

WIDE RANGE OF VA RATINGS

Available in multiple VA ratings from 50VA to 5000VA.

EASE OF WIRING

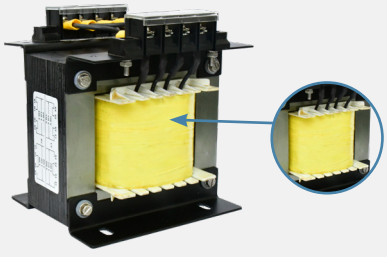


Integrated terminal blocks and a finger-safe terminal guard, with IP20 protection on primary as well as secondary sides.

CLEAR TERMINAL IDENTIFICATION

Improved terminal identification through clear labeling helps save time.

CLASS H

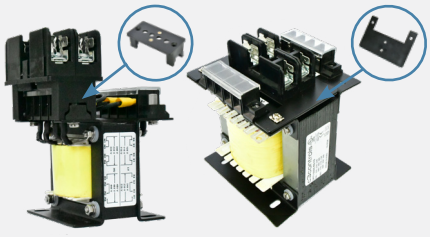


Each transformer variant features a Class H insulation system, ensuring the highest level of safety for your control application.

DUAL FREQUENCY RATING

With a versatile dual frequency rating of 50/60Hz, these products are well-suited for global applications.

FUSE MOUNTING ACCESSORY



An optional fuse block adapter kit can be added to a variant up to 3000VA (or a variant having current up to 30A) for overcurrent protection, applicable for both primary and secondary sides of the transformer.

IT'S EASY TO BUILD YOUR OWN CONTROL POWER TRANSFORMER

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

Control Power Transformer

CPT1 - ____ - ____

I II III

Example: To build one of our most popular Control Power Transformers, the part number would be CPT1 + II + III or CPT1-0050-RD-FD

I. PRODUCT TYPE

CODE	DESCRIPTION
CPT1	Control Power Transformer

II. ELECTRIC POWER

CODE	DESCRIPTION	FOR USE WITH PRIMARY-SECONDARY CODES	LIST
	FOR SINGLE SECONDARY OUTPUT		
0050	50 VA	RD-FD, TS-DS, RD-CS, PM-DS, RM-FD	$ 86.40
0075	75 VA		$ 95.10
0100	100 VA		$ 103.70
0150	150 VA		$ 122.90
0250	250 VA		$ 165.20
0350	350 VA		$ 222.70
0500	500 VA		$ 266.90
0750	750 VA		$ 361.10
1000	1000 VA		$ 409.10
1500	1500 VA		$ 531.90
2000	2000 VA		$ 760.50
3000	3000 VA		$1244.50
5000	5000VA*		$2036.55
	FOR DUAL SECONDARY OUTPUT		
0050	50 VA	TM-DD	$ 121.00
0075	75 VA		$ 133.10
0100	100 VA		$ 145.20
0150	150 VA		$ 172.10
0250	250 VA		$ 231.20
0350	350 VA		$ 311.90
0500	500 VA		$ 373.70
0750	750 VA		$ 505.50
1000	1000 VA		$ 572.70

III. PRIMARY-SECONDARY

CODE	PRIMARY	SECONDARY
	SINGLE SECONDARY OUTPUT	
RD-FD	220/230/240V, 440/460/480V	110/115/120V, 220/230/240V
TS-DS	550/575/600V*	110/115/120V*
RD-CS	240V, 480V*	24V*
PM-DS	208V, 277V*	120V*
RM-FD	380V, 400V, 415V*	110V, 220V*
	DUAL SECONDARY OUTPUT	
TM-DD	200/208V, 220/230/240V, 440/460/480V*	24/25/26V, 110/115/120V*

DISCOUNT SCHEDULE E

*NOTE: Products marked with * are not available for same-day shipping. Contact our Customer First Team for lead times and minimum order quantities.

Some of Our Popular Configurations:

CONTROL POWER TRANSFORMERS

CODE	DESCRIPTION	LIST
CPT1-0050-RD-FD	Control Power Transformer, 50VA, Pri: 220/230/240V, 440/460/480V, Sec: 110/115/120V, 220/230/240V, UL 5085-2, CE Marked	$ 86.40
CPT1-0100-RD-FD	Control Power Transformer, 100VA, Pri: 220/230/240V, 440/460/480V, Sec: 110/115/120V, 220/230/240V, UL 5085-2, CE Marked	$103.70
CPT1-0050-TM-DD	Control Power Transformer, 50VA, Pri: 200/208V, 220/230/240V, 440/460/480V, Sec: 24/25/26V, 110/115/120V, UL 5085-2, CE Marked	$121.00
CPT1-0150-TM-DD	Control Power Transformer, 150VA, Pri: 200/208V, 200/230/240V, 440/460/480V, Sec: 24/25/26V, 110/115/120V, UL 5085-2, CE Marked	$172.10

Control Power Transformers

c3controls offers a comprehensive range of Control Power Transformers (CPT) designed with precise attention to detail, catering to a wide array of applications. Whether it's Control Panels, Motor Control Centers, HVAC Systems, or the complex demands of industrial environments, these transformers offer versatile solutions with a wide range of options from 50 to 5000 VA with six distinct voltage variants. Our CPTs feature integrated terminal blocks for convenient and flexible connections.

Product features include:

- Transformer windings are subjected to a vacuum pressure impregnation (VPI) using insulating varnish to enhance dielectric strength and thermal performance.
- High-quality silicon steel laminations are used to reduce core losses and enhance performance.
- The integrated terminal block, equipped with a finger guard, enhances safety and reliability.
- Designed to optimize efficiency, reducing energy waste during conversion and isolation.
- Designed with high-quality materials to resist adverse environmental factors and rigorously evaluated to adhere to stringent UL safety standards, providing industry-leading safety for your peace of mind.
- The unrestricted airflow facilitated by the open design enables rapid cooling.
- Capable of handling dynamic loads effectively, suitable for industrial applications with fluctuating power demands.
- Ability to provide multiple voltage outputs from a single unit.

ACCESSORIES

Fuse Block Adapter Plates

The Fuse Block Adapter Plate facilitates the seamless installation of fuse blocks on transformers, ensuring a secure and efficient setup. Engineered for universal compatibility, it supports transformers across a wide range (50 – 3000 VA), providing enhanced flexibility for diverse applications.

Note: The Fuse Block Adapter Plate provides only the mechanical means of attaching a third-party aftermarket fuse block; electrical compatibility and wiring must be ensured separately.

CODE	FOR USE WITH	LIST
CPT1-FBAP1	50VA to 150VA Transformers	$ 10.60
CPT1-FBAP2	250VA to 3000VA Transformers	$ 10.60

DISCOUNT SCHEDULE E

TRANSFORMERS SELECTION GUIDE

Selection of Proper VA rating of Transformer:

In order to choose the appropriate transformer, you must first identify three characteristics of the load circuit: the total steady-state (sealed) VA, the total inrush VA, and the inrush load power factor.

1. The total steady-state (sealed) VA refers to the volt-amperes that the transformer needs to supply to the load circuit continuously. This represents the amount of current required to maintain the contact within the circuit. (Calculate by adding the total steady-state VA of all devices in your control circuit.)

2. Total inrush VA represents the volt-amperes that the transformer is required to supply when the control circuit is initially powered on. This value is determined by summing the inrush VA of all components that are energized at startup. Additionally, it is important to include the VA of components which do not have inrush VA, such as indicating lights, lamps, timers, etc, since they also impose a load on the transformer during peak inrush.

3. The total inrush VA can be computed using the following formula:

$$\text{Total Inrush VA} = \sqrt{(\text{VA sealed})^2 + (\text{VA inrush})^2}$$

4. To determine the appropriate VA rating, consult the Regulation Data Table. If the nominal supply voltage exhibits a fluctuation of no more than 5%, reference the 90% secondary voltage column. For supply voltage variations up to 10%, utilize the 95% secondary voltage column. The 85% secondary voltage column provides minimum values necessary for correct electromagnetic device operation and should be employed solely as a reference.

5. Using the provided regulation data table, select a transformer with a continuous VA rating that meets or exceeds the value calculated in Step 1, and with a maximum inrush VA rating that matches or surpasses the value determined in Step 3.

SERIES CPT VOLTAGE REGULATION TABLE

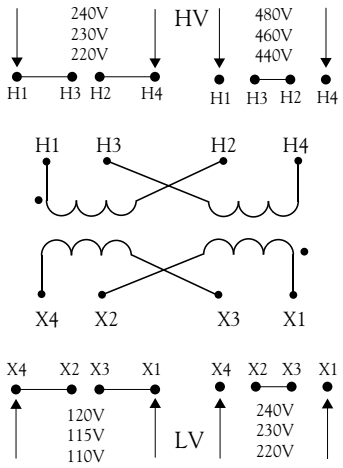
CONTINUOUS VA TRANSFORMER NAMEPLATE	INRUSH VA @ 40% POWER FACTOR		
	85% SECONDARY VOLTAGE	90% SECONDARY VOLTAGE	95% SECONDARY VOLTAGE
50	177	139	102
100	350	275	203
150	715	554	400
250	1653	1264	895
350	2604	1947	1321
500	4004	3023	2090
750	6933	5088	3352
1000	10087	7340	4764
1500	14178	10232	6508
2000	17604	12669	8080
3000	39213	27539	16780
5000	68344	47498	28803

Note: It is advisable to select a control transformer with a power factor of 40%. Many circuit components, particularly electromagnetic devices, exhibit inherently low power factors approximating this value. By choosing a transformer with a 40% power factor, sufficient capacity is ensured to accommodate the diverse load characteristics within the circuit.

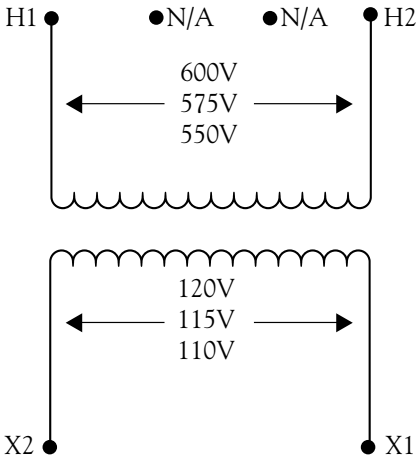
SPECIFICATIONS:

CONTROL POWER TRANSFORMER SPECIFICATIONS													
ELECTRICAL GENERAL													
	UNITS												
Rating	VA	50, 75, 100, 150, 250, 300, 500, 750, 1000, 1500, 2000, 3000, 5000											
Primary Voltage	V	220/230/240, 440/460/480		240, 480		550/575/600		0, 208, 277		0, 380, 400, 415		200/208, 220/230/240, 440/460/480	
Secondary Voltage	V	110/115/120, 220/230/240		24		110/115/120		120		110, 220		24/25/26, 110/115/120	
Frequency	Hz	50/60											
CURRENT RATINGS													
		Output Currents in Amp									**Approx. Heat Losses**	**Percentage Impedance (%Z)**	**Weight lb (kg)**
Output Voltage		**24**	**25**	**26**	**110**	**115**	**120**	**220**	**230**	**240**			
Rating in VA													
50		2.08	2	1.92	0.45	0.43	0.42	0.23	0.22	0.21	≤12W	10.30	2.50 [1.14]
75		3.13	3	2.88	0.68	0.65	0.63	0.34	0.33	0.31	≤16W	7.67	4.29 [1.95]
100		4.17	4	3.85	0.91	0.87	0.83	0.45	0.43	0.42	≤19W	7.74	4.41 [2.00]
150		6.25	6	5.77	1.36	1.30	1.25	0.68	0.65	0.63	≤27W	6.93	5.42 [2.46]
250		10.42	10	9.62	2.27	2.17	2.08	1.14	1.09	1.04	≤40W	4.23	10.39 [4.71]
300		12.50	12	11.54	2.73	2.61	2.50	1.36	1.30	1.25	≤47W	4.20	13.03 [5.91]
500		20.83	20	19.23	4.55	4.35	4.17	2.27	2.17	2.08	≤72W	4.53	13.23 [6.00]
750		31.25	30	28.85	6.82	6.52	6.25	3.41	3.26	3.13	≤102W	3.50	17.64 [8.00]
1000		40.00	38.40	36.92	8.73	8.35	8.00	4.55	4.35	4.17	≤130W	3.14	26.46 [12.00]
1500		-	-	-	13.64	13.04	12.50	6.82	6.52	6.25	≤185W	3.09	32.19 [14.60]
2000		-	-	-	18.18	17.39	16.67	9.09	8.70	8.33	≤222W	3.19	37.25 [16.89]
3000		-	-	-	27.27	26.09	25.00	13.64	13.04	12.50	≤315W	3.76	44.42 [20.15]
5000		-	-	-	45.45	43.48	41.67	22.73	21.74	20.83	≤500W	3.76	57.81 [26.22]
ENVIRONMENTAL													
Max. Operating Temperature	°C / °F	40 / 104											
Insulation Temperature	°C / °F	180 / 356											
MOUNTING/ WIRING													
Mounting Position		Any											
Fastening Method		Surface Mounting											
Type of Electrical Connection at Input/ Output for Main Circuit		Screw Type Terminal (Touch Safe)											
TERMINAL CAPACITY													
Wiring Size													
50 - 3000VA	AWG	18~10											
5000VA	AWG	16~6											
Terminal Torque													
50 - 3000VA	N.m	1.2											
5000VA	N.m	1.2											

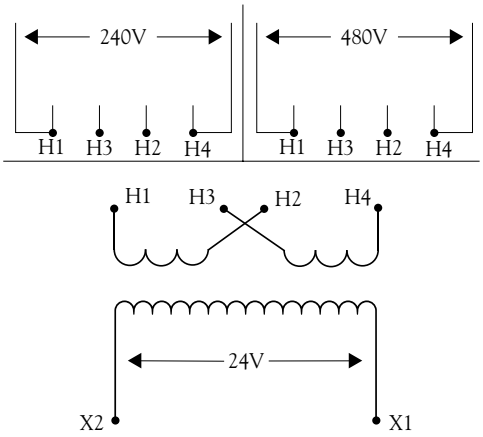
RD-FD (Pri: 220/230/240, 440/460/480V, Sec: 110/115/120 & 220/230/240V)



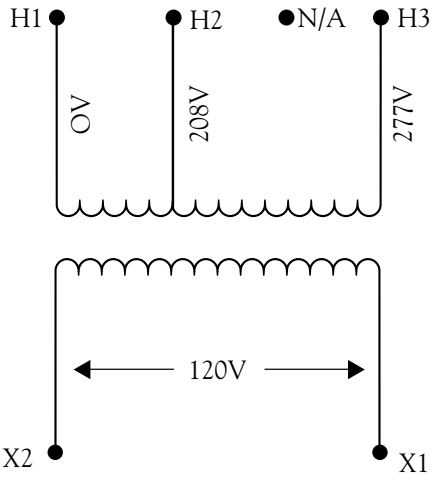
TS-DS (Pri: 550/575/600V, Sec: 110/115/120V)



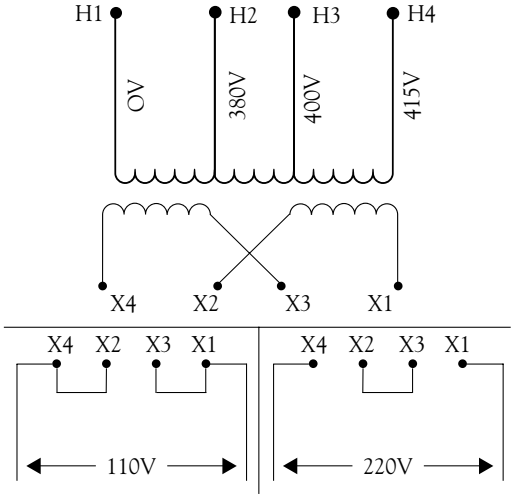
RD-CS (Pri: 240,480V, Sec: 24V)



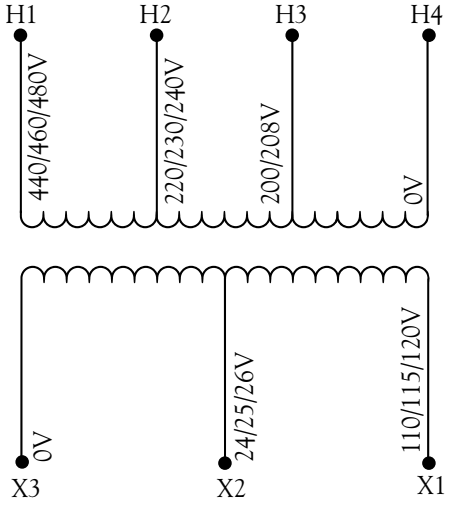
PM-DS (PRI: 208, 277V, SEC: 120V)



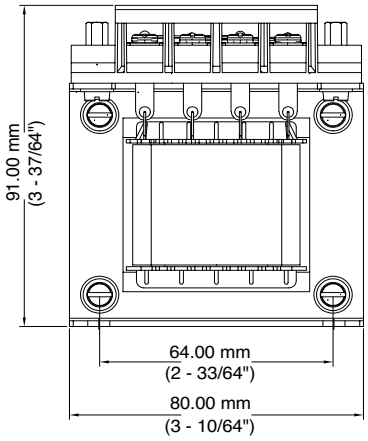
RM-FD (PRI: 380, 400, 415V, SEC: 110, 220V)



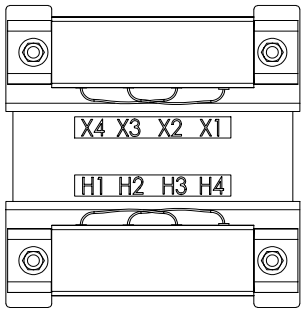
TM - DD (PRI: 200/208, 220/230/240, 440/460/480, SEC: 24/25/26, 110/115/120)



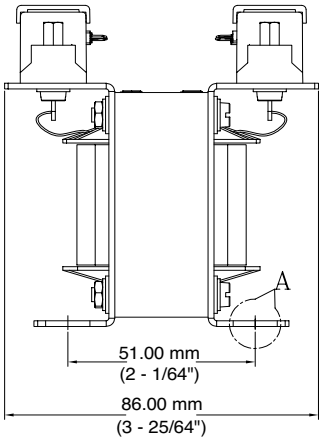
CPT1-0050- (RD-CS/RD-FD/TS-DS/PM-DS/RM-FD)



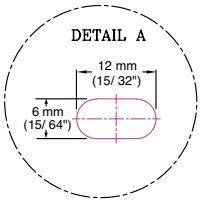
FRONT VIEW



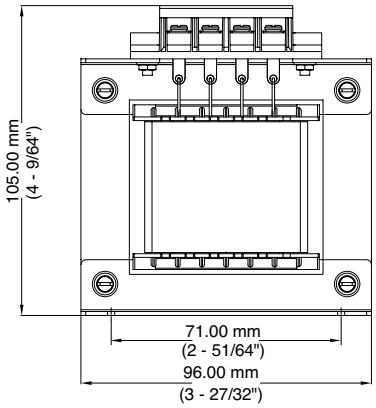
TOP VIEW



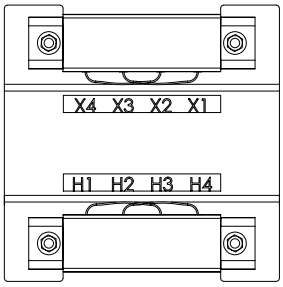
SIDE VIEW



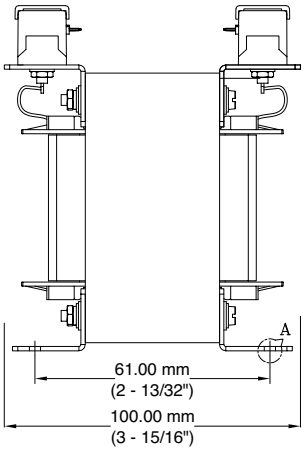
CPT1-0075/CPT1-0100- (RD-CS/RD-FD/TS-DS/PM-DS/RM-FD)



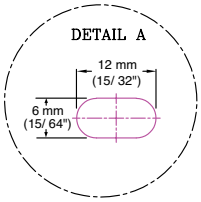
FRONT VIEW



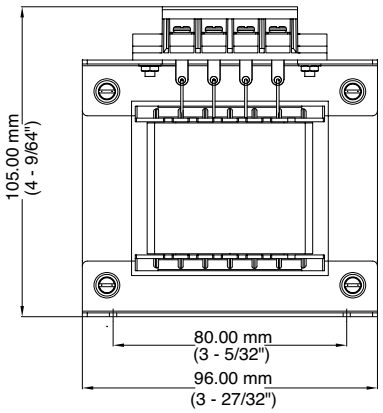
TOP VIEW



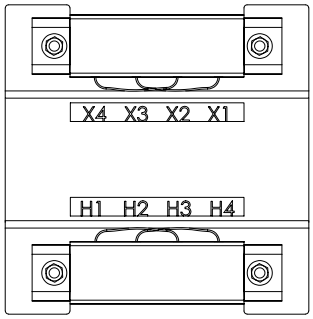
SIDE VIEW



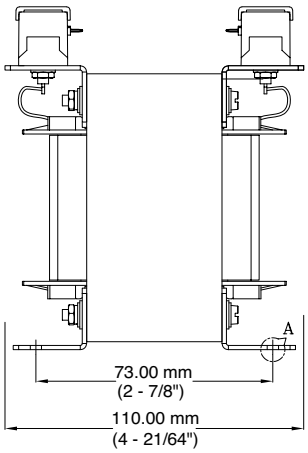
CPT1-0150- (RD-CS/RD-FD/TS-DS/PM-DS/RM-FD)



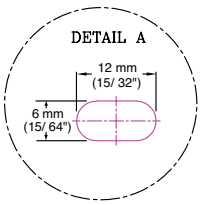
FRONT VIEW



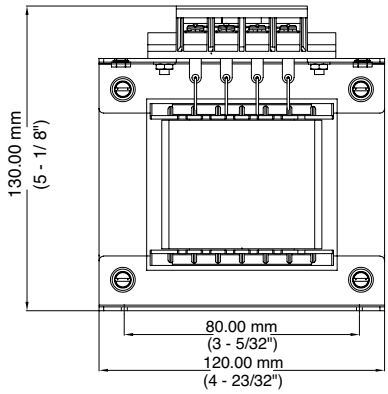
TOP VIEW



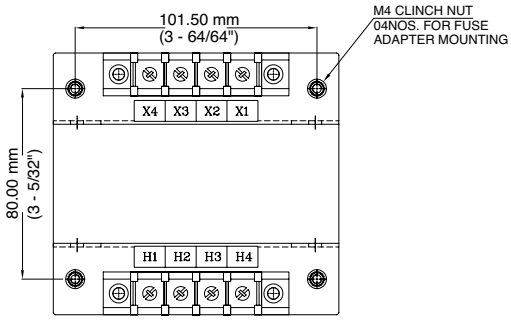
SIDE VIEW



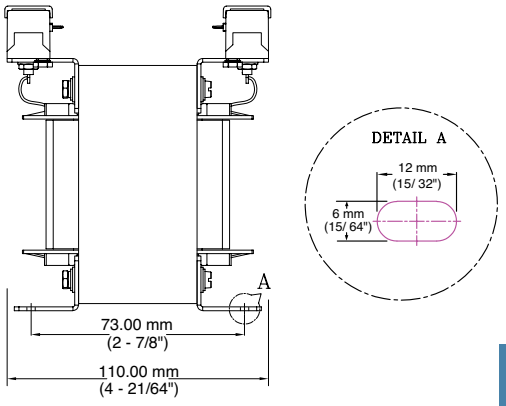
CPT1-0250- (RD-CS/RD-FD/TS-DS/PM-DS/RM-FD)



FRONT VIEW

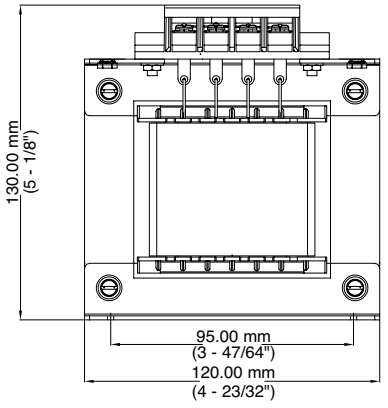


TOP VIEW

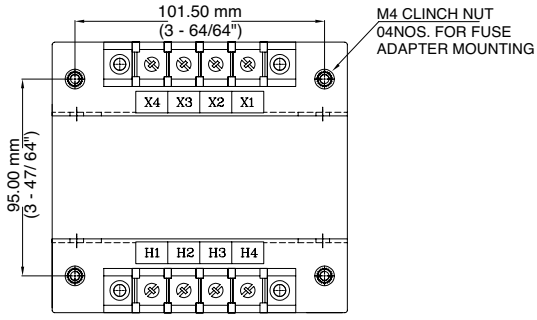


SIDE VIEW

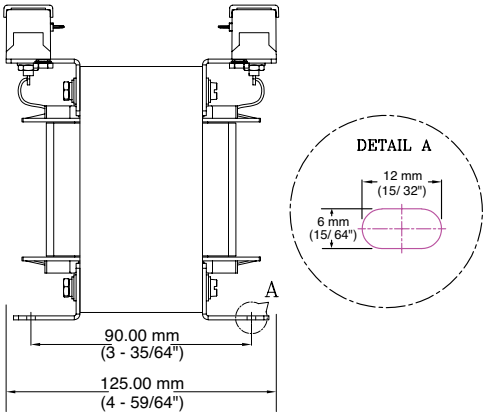
CPT1-0350- (RD-CS/RD-FD/TS-DS/PM-DS/RM-FD)



FRONT VIEW

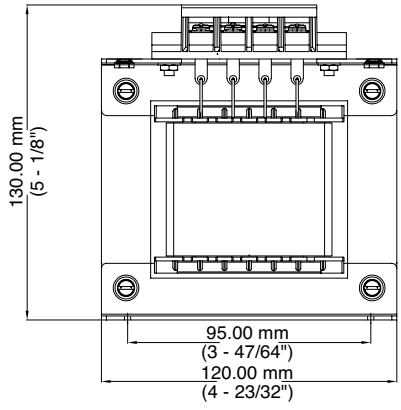


TOP VIEW

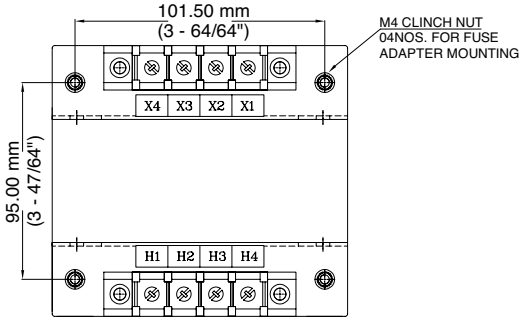


SIDE VIEW

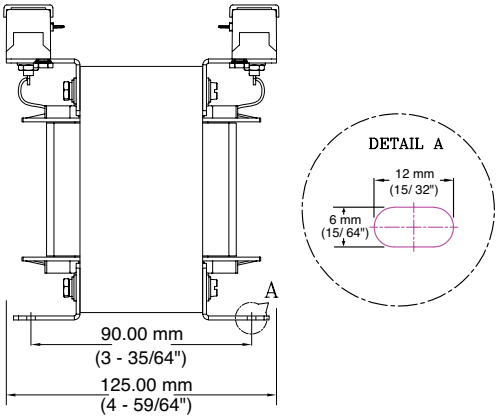
CPT1-0500- (RD-CS/RD-FD/TS-DS/PM-DS/RM-FD)



FRONT VIEW

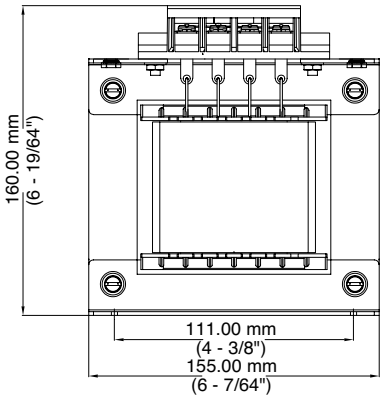


TOP VIEW

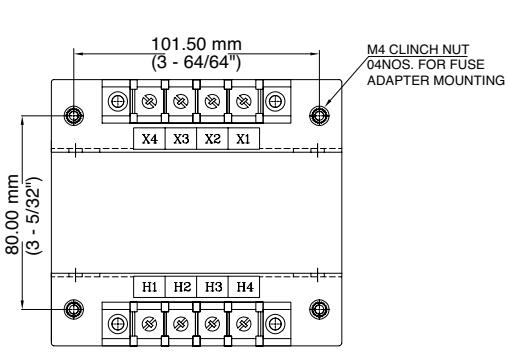


SIDE VIEW

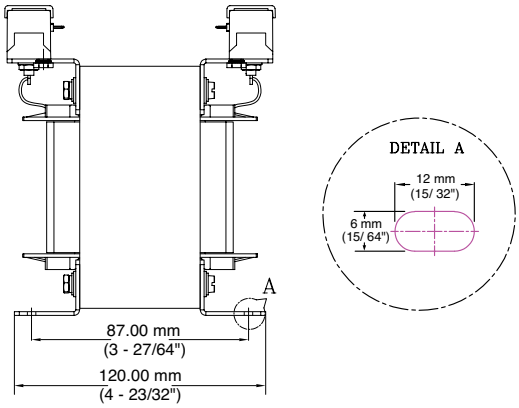
CPT1-0750- (RD-CS/RD-FD/TS-DS/PM-DS/RM-FD)



FRONT VIEW

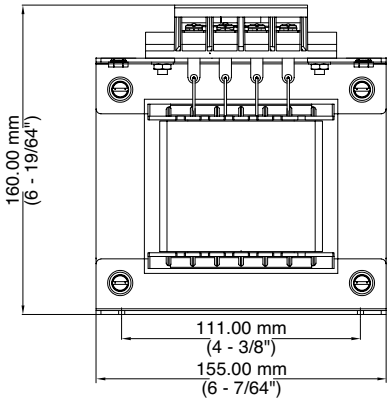


TOP VIEW

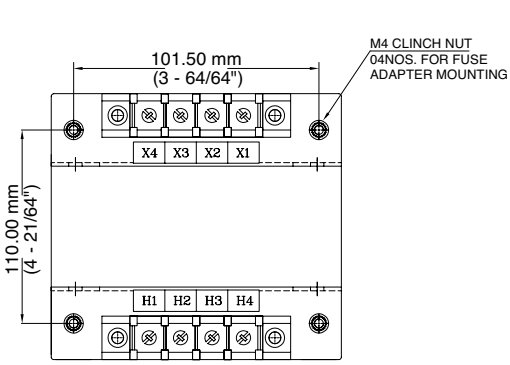


SIDE VIEW

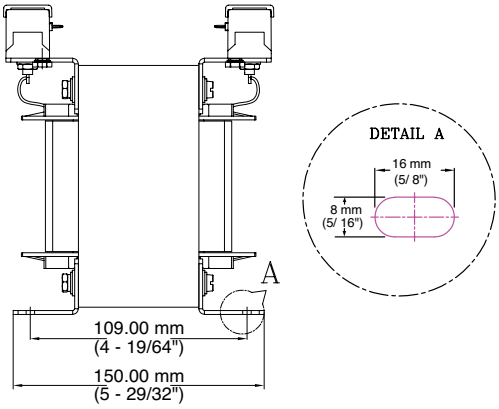
CPT1-1000- (RD-CS/RD-FD/TS-DS/PM-DS/RM-FD)



FRONT VIEW

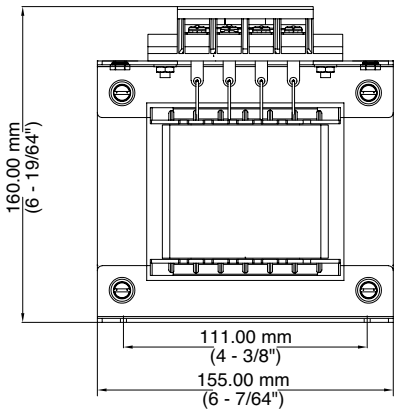


TOP VIEW

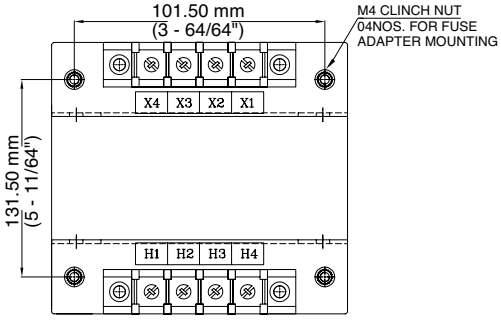


SIDE VIEW

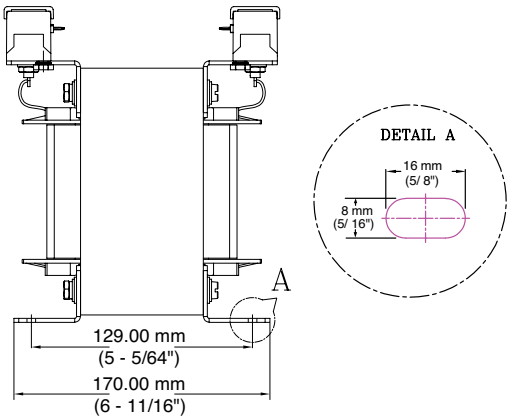
CPT1-1500- (RD-FD/TS-DS/PM-DS/RM-FD)



FRONT VIEW

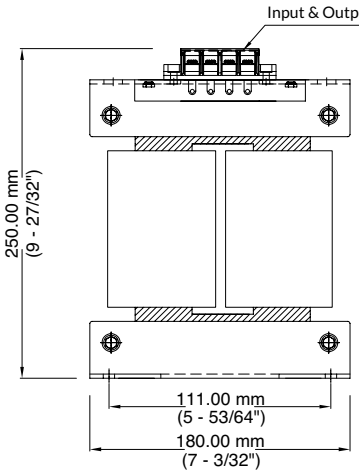


TOP VIEW

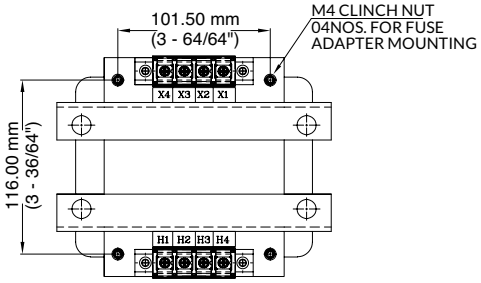


SIDE VIEW

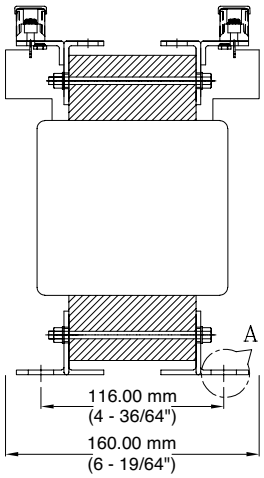
CPT1-2000- (RD-FD/TS-DS/PM-DS/RM-FD)



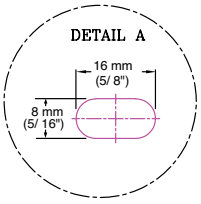
FRONT VIEW



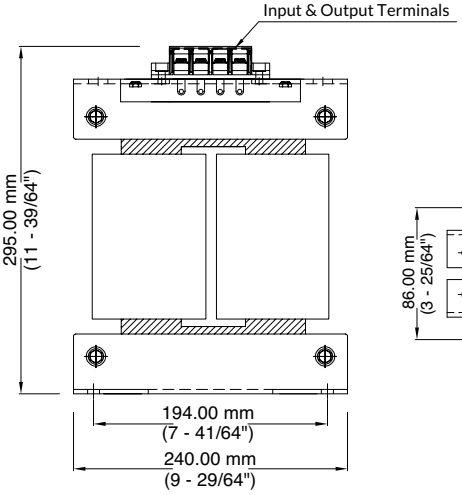
TOP VIEW



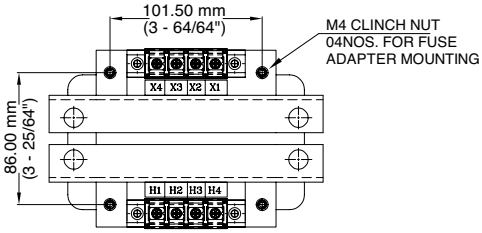
SIDE VIEW



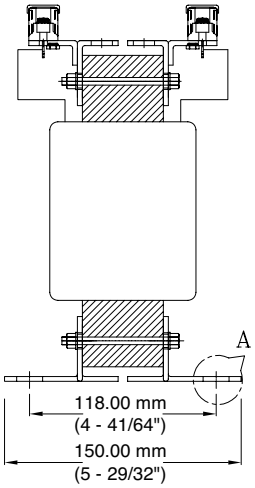
CPT1-3000- (RD-FD/TS-DS/PM-DS/RM-FD)



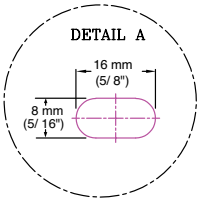
FRONT VIEW



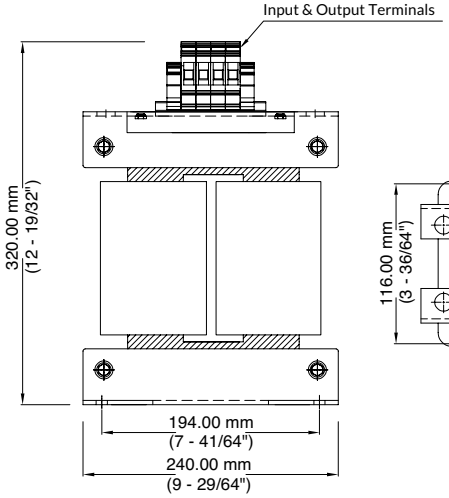
TOP VIEW



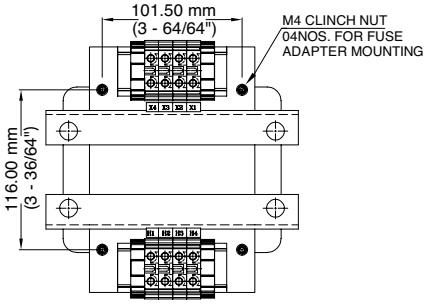
SIDE VIEW



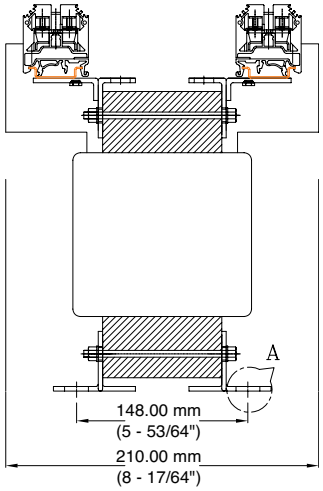
CPT1-5000- (RD-FD/TS-DS/PM-DS/RM-FD)



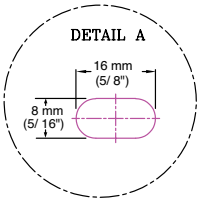
FRONT VIEW



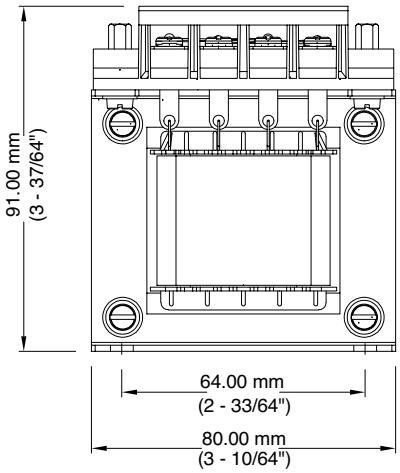
TOP VIEW



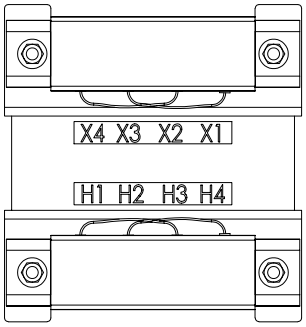
SIDE VIEW



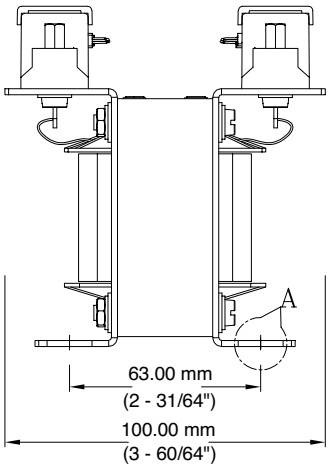
CPT1-0050-TM-DD



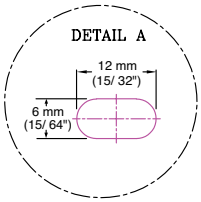
FRONT VIEW



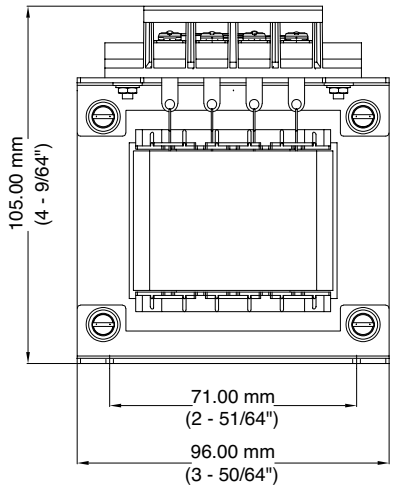
TOP VIEW



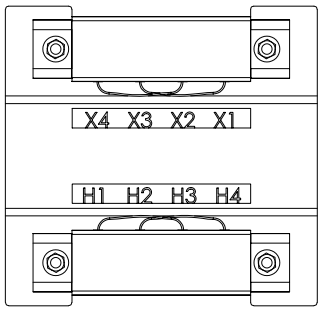
SIDE VIEW



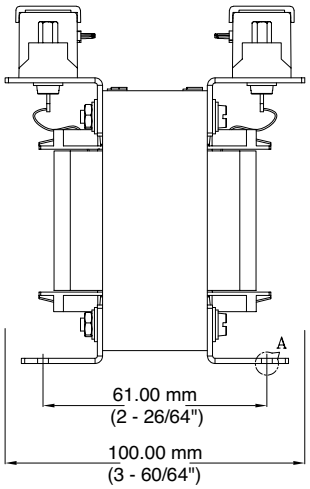
CPT1-0075-TM-DD



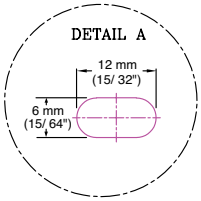
FRONT VIEW



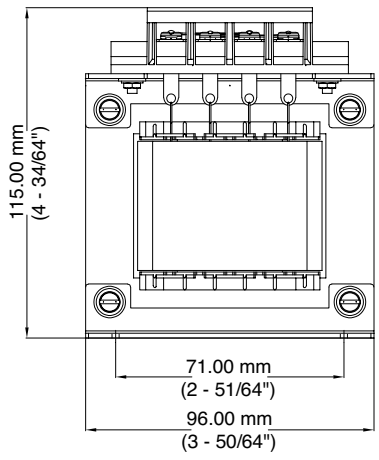
TOP VIEW



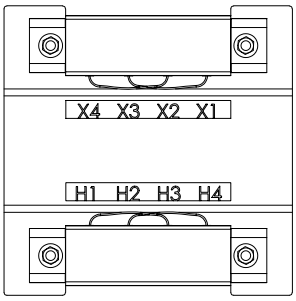
SIDE VIEW



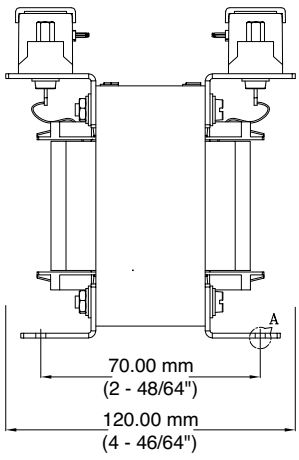
CPT1-0100-TM-DD



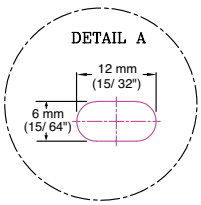
FRONT VIEW



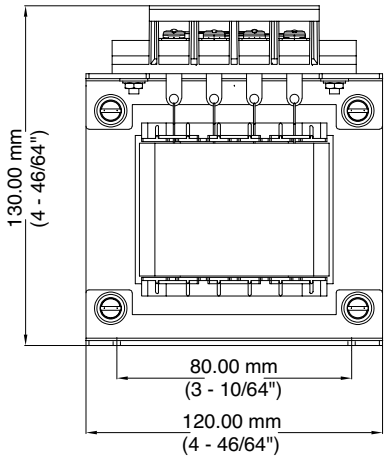
TOP VIEW



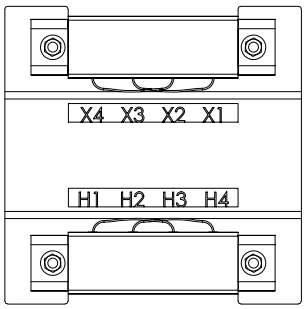
SIDE VIEW



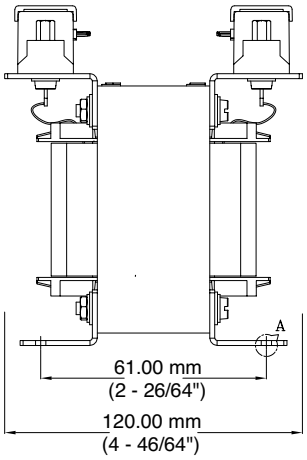
CPT1-0150-TM-DD



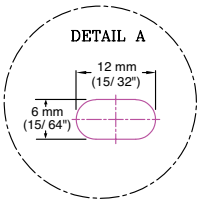
FRONT VIEW



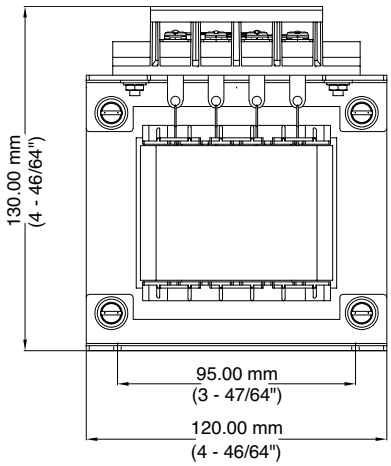
TOP VIEW



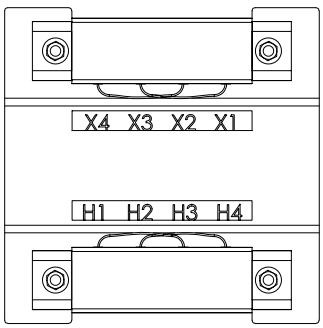
SIDE VIEW



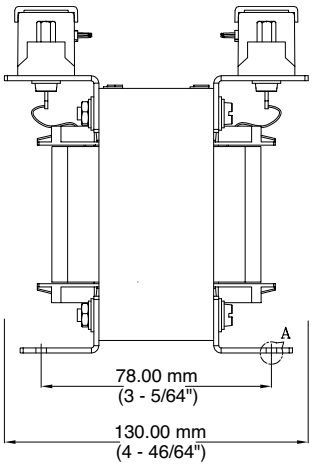
CPT1-0250-TM-DD



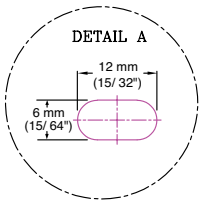
FRONT VIEW



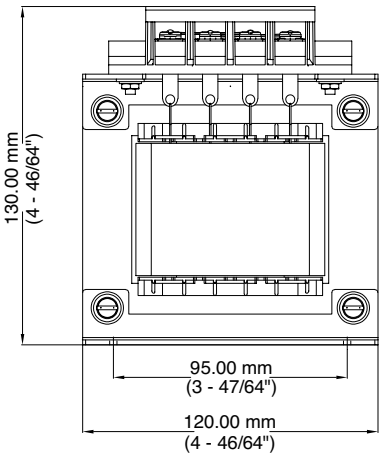
TOP VIEW



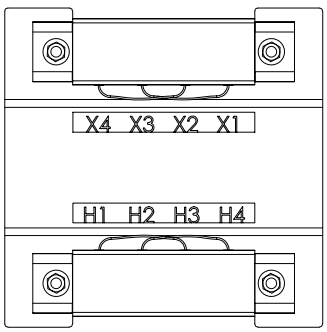
SIDE VIEW



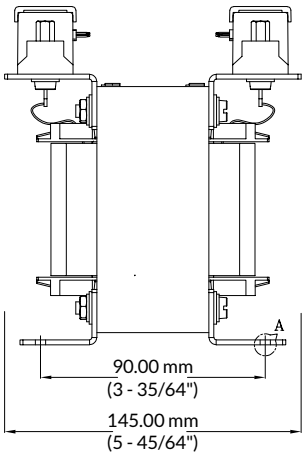
CPT1-0350-TM-DD



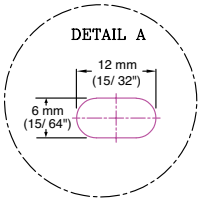
FRONT VIEW



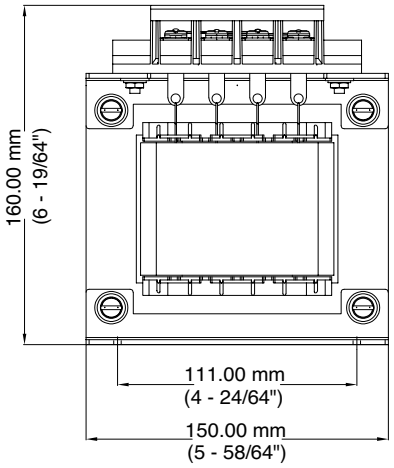
TOP VIEW



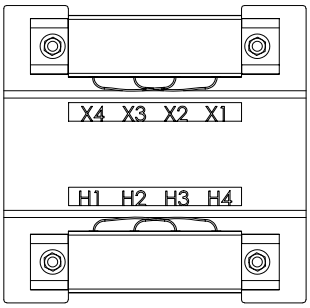
SIDE VIEW



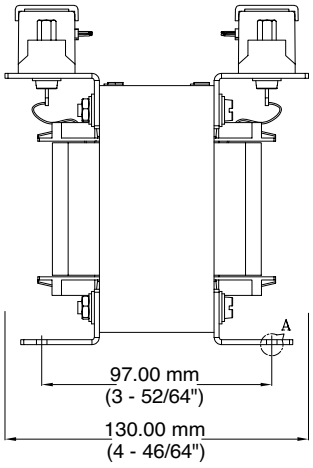
CPT1-0500-TM-DD



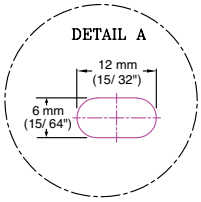
FRONT VIEW



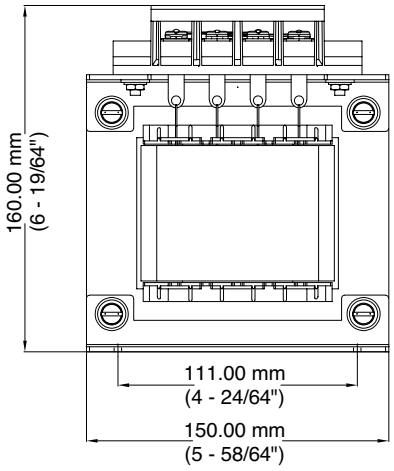
TOP VIEW



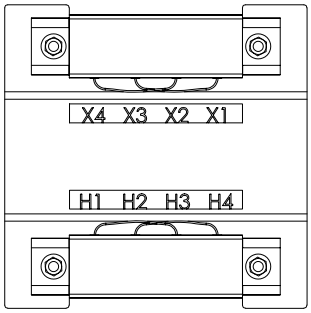
SIDE VIEW



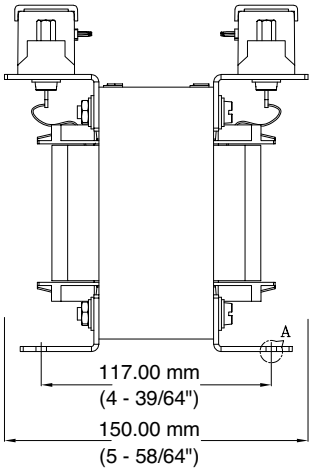
CPT-0750-TM-DD



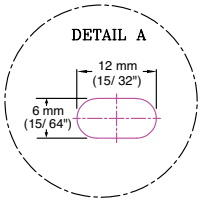
FRONT VIEW



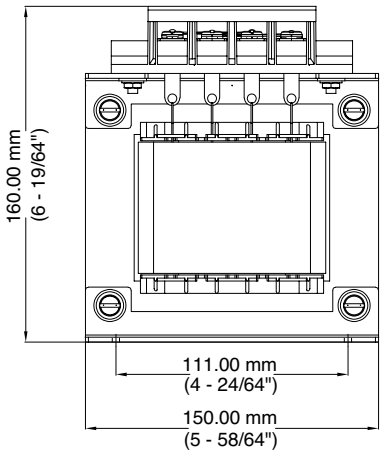
TOP VIEW



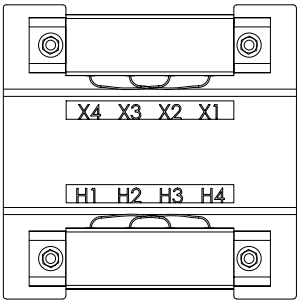
SIDE VIEW



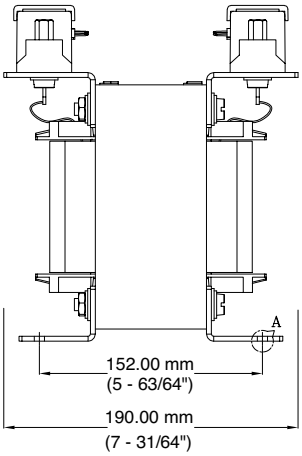
CPT1-1000-TM-DD



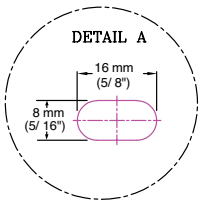
FRONT VIEW



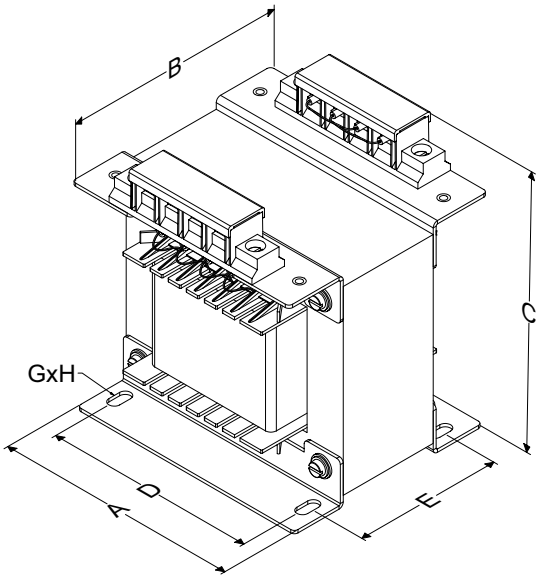
TOP VIEW



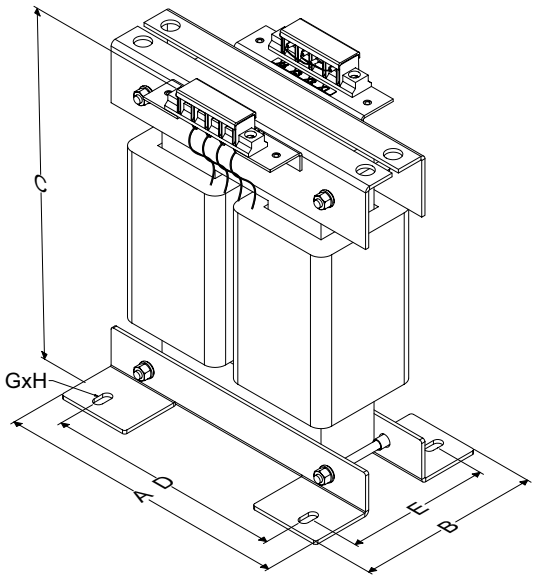
SIDE VIEW



CPT1-0050-XX-XX TO CPT1-1500-XX-XX



CPT1-2000-XX-XX TO CPT1-5000-XX-XX



DIMENSION TABLE

CODE	VA RATINGS	OVER ALL DIMENSION - IN[MM]			MOUNTING DIMENSION - IN[MM]		MOUNTING SLOT - IN[MM]
		A	B	C	D	E	G X H
RD-FD, TS-DS, RD-CS, PM-DS, RM-FD	50	3.15[80]	3.39[86]	3.58[91]	2.52[64]	2.01[51]	0.47[12] x 0.63[16]
	75	3.78[96]	3.94[100]	4.13[105]	2.8[71]	2.4[61]	0.47[12] x 0.63[16]
	100	3.78[96]	3.94[100]	4.13[105]	2.8[71]	2.4[61]	0.47[12] x 0.63[16]
	150	3.78[96]	4.33[110]	4.13[105]	3.15[80]	2.87[73]	0.47[12] x 0.63[16]
	250	4.72[120]	4.33[110]	5.12[130]	3.15[80]	2.87[73]	0.47[12] x 0.63[16]
	350	4.72[120]	4.92[125]	5.12[130]	3.74[95]	3.54[90]	0.47[12] x 0.63[16]
	500	4.72[120]	4.92[125]	5.12[130]	3.74[95]	3.54[90]	0.47[12] x 0.63[16]
	750	6.1[155]	4.72[120]	6.3[160]	4.37[111]	3.43[87]	0.47[12] x 0.63[16]
	1000	6.1[155]	5.91[150]	6.3[160]	4.37[111]	4.29[109]	0.63[16] x 0.31[8]
	1500	6.1[155]	6.69[170]	6.3[160]	4.37[111]	5.08[129]	0.63[16] x 0.31[8]
	2000	7.09[180	6.3[160]	9.84[250]	4.37[111]	4.57[116]	0.63[16] x 0.31[8]
	3000	9.45[240]	5.91[150]	11.61[295]	7.64[194]	4.65[118]	0.63[16] x 0.31[8]
	5000	9.45[240]	5.91[150]	11.61[295]	7.64[194]	5.83[148]	0.63[16] x 0.31[8]
TM-DD	50	3.15[80]	3.94[100]	3.58[91]	2.52[64]	2.48[63]	0.47[12] x 0.63[16]
	75	3.78[96]	3.94[100]	4.13[105]	2.8[71]	2.4[61]	0.47[12] x 0.63[16]
	100	3.78[96]	4.72[120]	4.55[115]	2.8[71]	2.76[70]	0.47[12] x 0.63[16]
	150	4.72[120]	4.72[120]	5.12[130]	3.15[80]	2.4[61]	0.47[12] x 0.63[16]
	250	4.72[120]	5.12[130]	5.12[130]	3.74[95]	3.07[78]	0.47[12] x 0.63[16]
	350	4.72[120]	5.71[145]	5.12[130]	3.74[95]	3.54[90]	0.47[12] x 0.63[16]
	500	5.91[150]	5.12[130]	6.3[160]	4.37[111]	3.82[97]	0.47[12] x 0.63[16]
	750	5.91[150]	5.91[150]	6.3[160]	4.37[111]	4.6[117]	0.47[12] x 0.63[16]
	960	5.91[150]	7.48[190]	6.3[160]	4.37[111]	5.98[152]	0.63[16] x 0.31[8]