

Honeywell

THESE TRANSFORMERS ARE USED FOR POWERING 24 VOLT SYSTEMS.

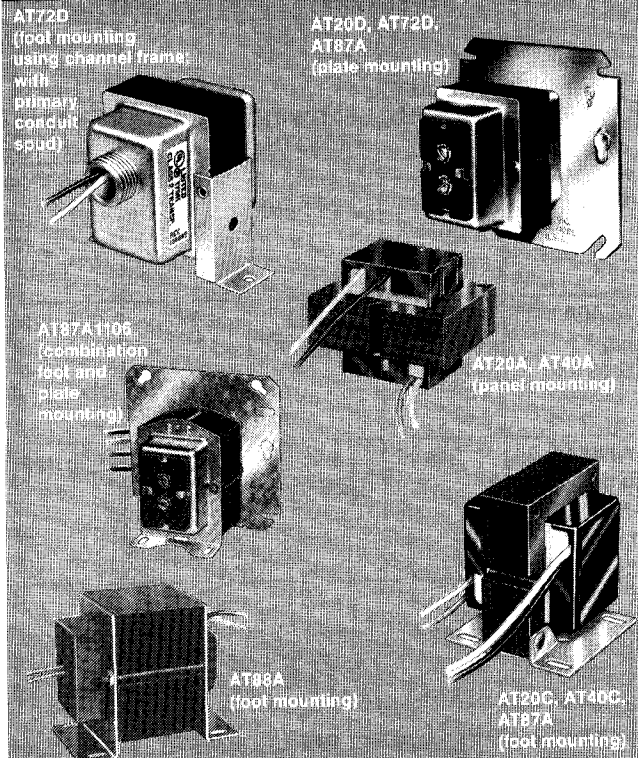
□ AT20,40,72 are designed to power thermostats, gas valves and relays.

- Meet "NEC Class 2 not wet, Class 3 wet" and U.L. 1585 requirements.
- Color-coded leadwires for primary connections.
- Color-coded leadwires or screw terminals for secondary connections.
- Mounting means available for panel, foot, plate or clamp mounting.
- Overload protection provided: energy-limited.

□ AT87,88 are primarily for powering air conditioning systems. Can also be used in other applications that do not exceed listed ratings.

- Meet "NEC Class 2 not wet, Class 3 wet" and U.L. 1585 requirements.
- Models available with multitap primary.
- Color-coded leadwires for primary connections.
- Color-coded leadwires or screw terminals for secondary connections.
- Foot or plate mounting available.
- Overload protection provided:
 - AT87A: energy-limited (except certain models).
 - AT88A: fuse in secondary.

TRANSFORMERS



**AT20A,C,D;
AT40A,C;
AT72D;
AT87A;
AT88A**

SPECIFICATIONS

SUPER TRADELINE/TRADELINE MODELS

SUPER TRADELINE controls offer features not available on TRADELINE or standard models, and are designed to replace a wide range of Honeywell and competitive controls.

TRADELINE models are selected and packaged to provide ease of stocking, ease of handling and maximum replacement value. Specifications of SUPER TRADELINE and TRADELINE controls are the same as those of standard models, except as noted below.

SUPER TRADELINE MODELS AVAILABLE:

AT72D Transformers with energy-limited burnout protection. Can be used for foot mounting; plate mounting (transformer all above or 3/4 above plate); for use on 4x4 in., 4 in. octagon, and 2x4 in. electrical boxes; and clamp mounting via a junction box knockout. See Table I for specifications.

AT87A Transformer with inherent overload protection (primary winding burnout). Can be used for foot or plate mounting on a 4x4 in. or octagonal outlet box. See Table I for specifications.

TABLE I—SUPER TRADELINE, TRADELINE MODELS.

MODEL ^e	PRIMARY		SECONDARY		OUTPUT RATING (VA)	NEMA TYPE	MOUNTING MEANS	DIMENSIONS SEE FIG.
	VOLTAGE 50/60 Hz (Vac)	LEADWIRE LENGTH	VOLTAGE (Vac)	CONNECTIONS (LEADWIRE LENGTH OR TERMINAL TYPE)				
AT20A1123 a,c	120	9 in. [229 mm]	24	9 in. [229 mm]	20	B	Vertical and Horizontal channel frame with mounting feet.	12
AT40A1121 a,c	120	9 in. [229 mm]	24	9 in. [229 mm]	40	D	Vertical and Horizontal channel frame with mounting feet.	12
AT40A1139 a,c	240	9 in. [229 mm]	24	9 in. [229 mm]	40	D	Vertical and Horizontal channel frame with mounting feet.	12

(continued on page 3)

ORDERING INFORMATION

WHEN PURCHASING REPLACEMENT AND MODERNIZATION PRODUCTS FROM YOUR TRADELINE WHOLESALE OR YOUR DISTRIBUTOR, REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLETE ORDERING NUMBER, OR SPECIFY—

1. Order number; SUPER TRADELINE or TRADELINE, if desired.
2. Primary voltage and frequency.
3. Primary and secondary connections.
4. Mounting means; size of mounting plate, if required.
5. Optional specifications, if desired.

IF YOU HAVE ADDITIONAL QUESTIONS, NEED FURTHER INFORMATION, OR WOULD LIKE TO COMMENT ON OUR PRODUCTS OR SERVICES, PLEASE WRITE OR PHONE:

1. YOUR LOCAL HONEYWELL RESIDENTIAL DIVISION SALES OFFICE (CHECK WHITE PAGES OF PHONE DIRECTORY).
2. RESIDENTIAL DIVISION CUSTOMER SERVICE
HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH
MINNEAPOLIS, MINNESOTA 55422-3992 (612) 542-7500

IN CANADA—HONEYWELL LIMITED/HONEYWELL LIMITEE, 740 ELLESMERE ROAD, SCARBOROUGH, ONTARIO M1P 2V9. INTERNATIONAL SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD.

TABLE I—SUPER TRADELINE, TRADELINE MODELS (con't.)

MODEL ^e	PRIMARY		SECONDARY		OUTPUT RATING (VA)	NEMA TYPE	MOUNTING MEANS	DIMENSIONS SEE FIG.
	VOLTAGE 50/60 Hz (Vac)	LEADWIRE LENGTH	VOLTAGE (Vac)	CONNECTIONS (LEADWIRE LENGTH OR TERMINAL TYPE)				
AT72D1683 b,d	120	9 in. [229 mm]	24	2 screw terminals	40	D	Combination plate, foot or knockout mounting.	13
AT72D1691 b,d	208/240	9 in. [229 mm]	24	2 screw terminals	40	D	Combination plate, foot or knockout mounting.	13
AT87A1106 b,d	120/208/ 240	13 in. [330 mm]	24	2 screw terminals	50	—	Combination foot or plate mounting.	14
AT88A1021 a,c	208/240	12 in. [305 mm]	24	12 in. [305 mm]	75	—	Foot mounting.	11

^aTRADELINE model.

^bSUPER TRADELINE model.

^cUnderwriters Laboratories Inc. component recognized, File No. E14881, Guide No. XOKV2 (U.L. 1585)..

^dUnderwriters Laboratories Inc. listed, File No. E14881, Guide No. XOKV (U.L. 1585).

^eAll Canadian Standards Association listed, File No. LR18190, Guide No. 400-R-2.

TRADELINE MODELS AVAILABLE:

AT20A, AT40A Transformers with energy-limited burnout protection. For panel mounting or horizontal or vertical foot mounting. Includes channel frame mounting feet. See Table I for specifications.

AT88A Transformer with internal fused secondary for overload protection. Foot mounting. See Table I for specifications.

ADDITIONAL TRADELINE FEATURE:

TRADELINE pack with cross reference label and special TRADELINE instruction sheet.

STANDARD MODELS

AT20, 40, 72, 87, 88 Transformers. See Table II for model specifications.

TABLE II—STANDARD MODELS

MODEL ^e	PRIMARY		SECONDARY		OUTPUT RATING (VA)	NEMA TYPE	MOUNTING MEANS	DIMENSIONS SEE FIG.
	VOLTAGE 50/60 Hz (Vac)	LEADWIRE LENGTH	VOLTAGE (Vac)	CONNECTIONS (LEADWIRE LENGTH OR TERMINAL TYPE)				
AT20A ^{e,g}	120 ^b	9 in. [229 mm]	24	9 in. [229 mm]	19	B	Panel ^a	1
	240	9 in. [229 mm]		9 and 20 in. [229 and 508 mm]				
AT20C ^{e,g}	120	9 or 12 in. [229 or 305 mm]	24	9 or 12 in. [229 or 305 mm]	19	B	Foot ^a	2
	208	9 in. [229 mm]		9 in. [229 mm]				
	240 ^b	9 or 14 in. [229 or 356 mm]		9 or 18 in. [229 or 457 mm]				
AT20D ^{f,g}	120	9 in. [229 mm]	24	Screw terminals or 9 in. [229 mm] leads	19	B	4x4 in. plate	10

(continued on page 4)

TABLE II—STANDARD MODELS (continued)

MODEL ^e	PRIMARY		SECONDARY		OUTPUT RATING (VA)	NEMA TYPE	MOUNTING MEANS	DIMENSIONS SEE FIG.
	VOLTAGE 50/60 Hz (Vac)	LEADWIRE LENGTH	VOLTAGE (Vac)	CONNECTIONS (LEADWIRE LENGTH OR TERMINAL TYPE)				
AT40A ^{e,g}	120 ^b	9 in. [229 mm]	24	9 in. [229 mm]	38	D	Panel ^a	1
	208	9 in. [229 mm]		9 in. [229 mm]				
	208/240 ^b	9 in. [229 mm]		9 in. [229 mm]				
	240 ^b	9 in. [229 mm]		9 in. [229 mm]				
AT40C ^{e,g}	120 ^b	9 in. [229 mm]	24	9 or 12 in. [229 or 305 mm]	38	D	Foot ^a	3
	208	9 in. [229 mm]		9 in. [229 mm]				
	208/240	9 or 15 in. [229 or 381 mm]		9 in. [229 mm]				
	240	9 in. [229 mm]		9 in. [229 mm]				
AT72D ^{f,g}	120 ^c	9 or 16 in. [229 or 406 mm]	24	9 in. [229 mm] leads, screw terminals or conduit with 32 in. [813 mm] leads	38	D	For mounting with 1/2-in. primary conduit spud, or 4 x 4 in. plate ^c	4, 5, 6, 7, 8, 9, 10
	208	9 in. [229 mm]						
	208/240	9 in. [229 mm]						
	240	9 in. [229 mm]						
	240	12 in. [305 mm] (no primary conduit)						
AT87A ^{f,g}	120	9 in. [229 mm]	24	Screw terminals	48	—	4x4 in. plate or foot mounting.	10, 14
AT87A ^{f,g,h}	120/208/240	13 in. [330 mm]	24	Screw terminals	50	—	4x4 in. plate	10
AT87A ^{e,g}	120	12 in. [305 mm]	24	12 in. [305 mm]	48	—	Foot ^a	3
	120/208/240 ^d	13 in. [330 mm]		13 in. [330 mm]			Foot ^d	11
	208/240	8, 12, or 24 in. [203, 305, or 610 mm]		5, 12, or 24 in. [127, 305, or 610 mm]			Foot ^a	3
	240	12 in. [305 mm]		12 in. [305 mm]				
	277	12 or 15 in. [305 or 381 mm]		12 in. [305 mm]				
	400	12 in. [305 mm]		12 in. [305 mm]				
	480	12 or 15 in. [305 or 381 mm]		12 or 30 in. [305 or 762 mm]				

(continued on page 5)

TABLE II—STANDARD MODELS (continued)

MODEL ^e	PRIMARY		SECONDARY		OUTPUT RATING (VA)	NEMA TYPE	MOUNTING MEANS	DIMENSIONS SEE FIG.
	VOLTAGE 50/60 Hz (Vac)	LEADWIRE LENGTH	VOLTAGE (Vac)	CONNECTIONS (LEADWIRE LENGTH OR TERMINAL TYPE)				
AT88A ^{e,g}	120	12 in. [305 mm]	24	12 in. [305 mm]	75	—	Foot ^d	11
	208/240	12 in. [305 mm]		12 in. [305 mm]				
	400	12 in. [305 mm]		12 in. [305 mm]				
	480 ^j	12 in. [305 mm]		12 in. [305 mm]				

^aWith black plastic end bells.

^bAvailable with wraparound channel frames for foot mounting.

^c120 V model available with 2x4 in. plate and screw terminals on secondary.

^dWithout end bells, with fuse in secondary.

^eUnderwriters Laboratories Inc. component recognized, File No. E14881, Guide No. XOKV2 (U.L. 1585).

^fUnderwriters Laboratories Inc. listed, File No. E14881, Guide No. XOKV (U.L. 1585).

^gCanadian Standards Association listed, File No. LR18190, Guide No. 400-R-2.

^hNon-energy-limited; with inherent overload protection: primary winding burnout.

^jAvailable with female quick-connect terminals on all leadwires.

LEADWIRE COLOR CODE:

120 VAC: White

208 VAC: Red

220 or 240 VAC: Orange

277 VAC: Brown

400 VAC: Violet

480 VAC: Black/Red

Common: Black (Common with respect to transformer winding only; not the external circuit)

Secondary connections are blue and yellow leadwires or screw terminals.

OPTIONAL SPECIFICATIONS: Transformers with special voltages and terminal arrangements available upon request.

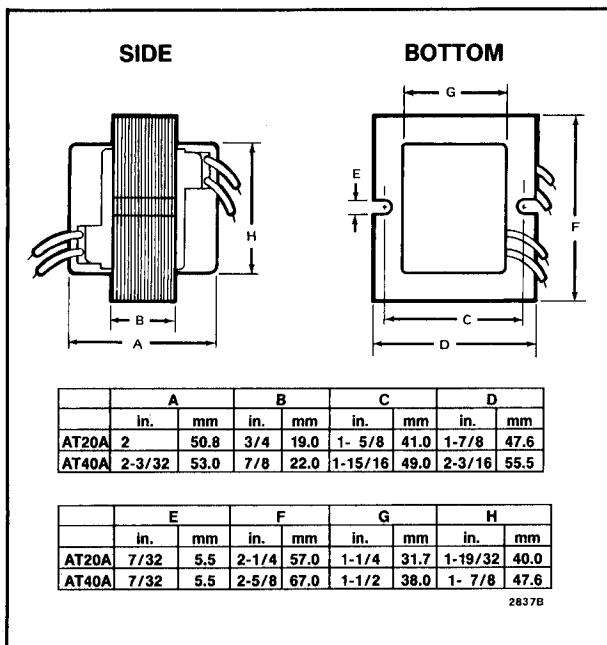


FIG. 1—AT20A, AT40A DIMENSIONS IN in. [mm IN BRACKETS].

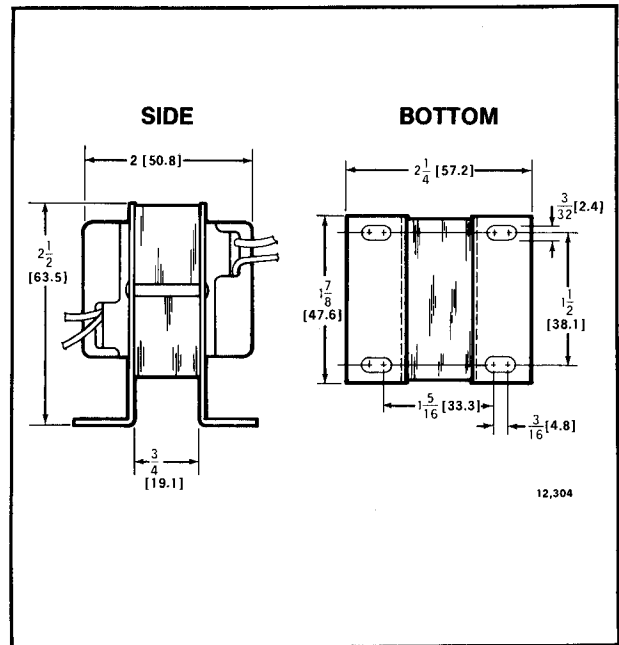


FIG. 2—AT20C DIMENSIONS IN in. [mm IN BRACKETS].

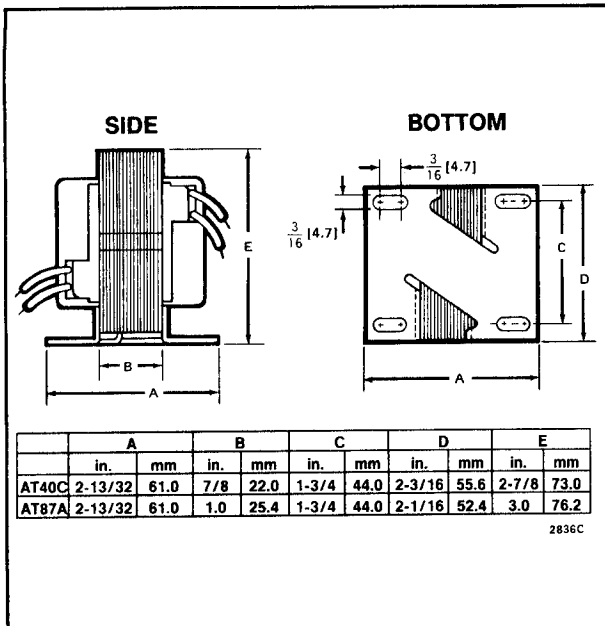


FIG. 3—AT40C, AT87A DIMENSIONS IN in. [mm IN BRACKETS].

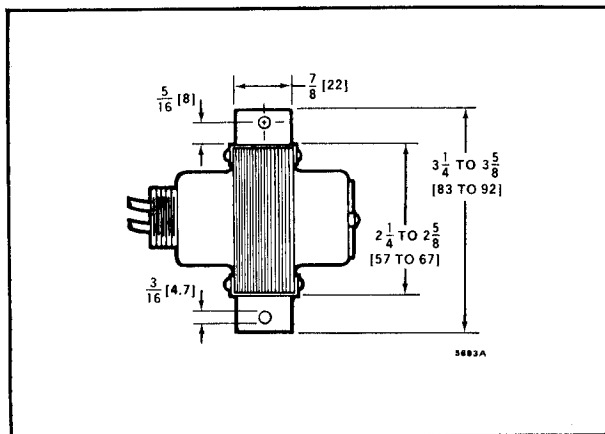


FIG. 4—AT72D DIMENSIONS IN in. [mm IN BRACKETS] WITH CONDUIT SPUD ON PRIMARY.

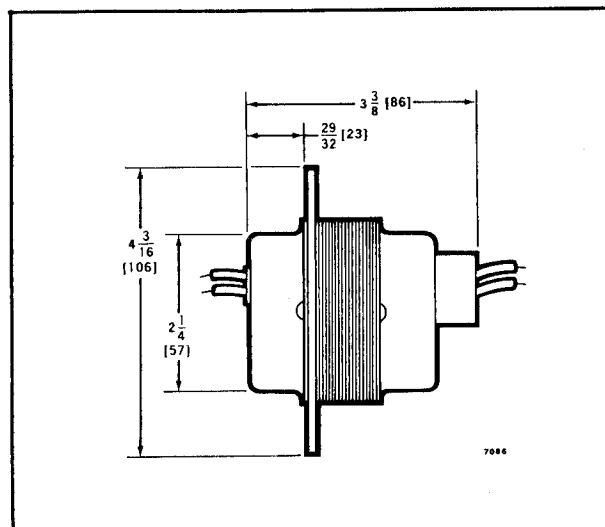


FIG. 5—AT72D DIMENSIONS IN in. [mm IN BRACKETS] WITH CONDUIT SPUD ON SECONDARY.

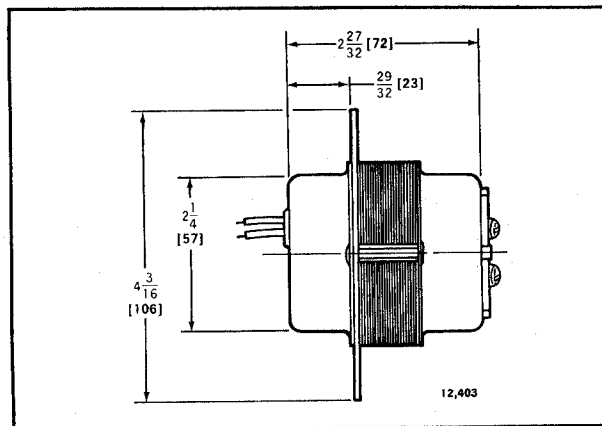


FIG. 6—AT72D DIMENSIONS IN in. [mm IN BRACKETS] WITH SECONDARY SCREW TERMINALS; 4x4 in. PLATE MOUNTING WITH PLATE MOUNTED AT THE LAMINATIONS.

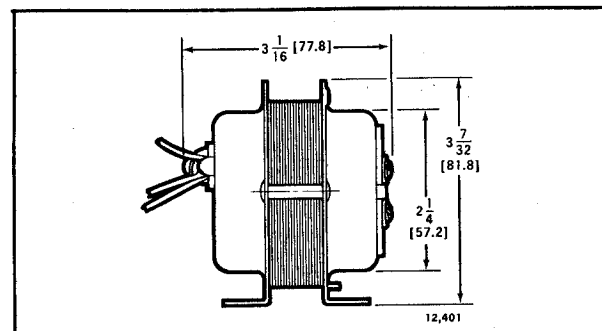


FIG. 7—AT72D DIMENSIONS IN in. [mm IN BRACKETS]; FOOT MOUNTING.

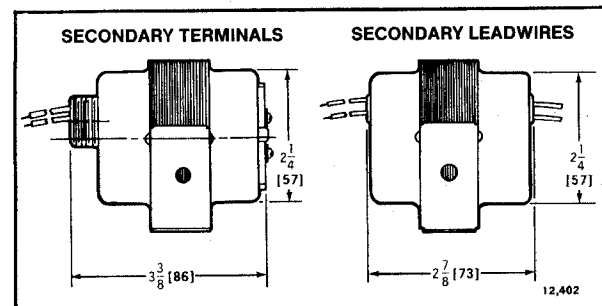


FIG. 8—AT72D DIMENSIONS IN in. [mm IN BRACKETS] WITH FOOT MOUNTING BRACKETS.

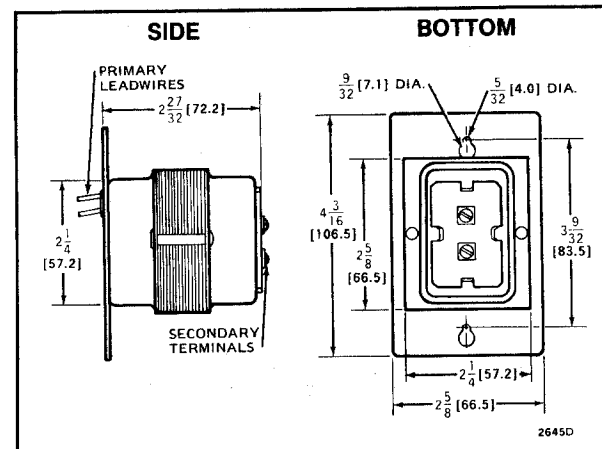


FIG. 9—AT72D DIMENSIONS IN in. [mm IN BRACKETS] WITH 2X4 in. MOUNTING PLATE.

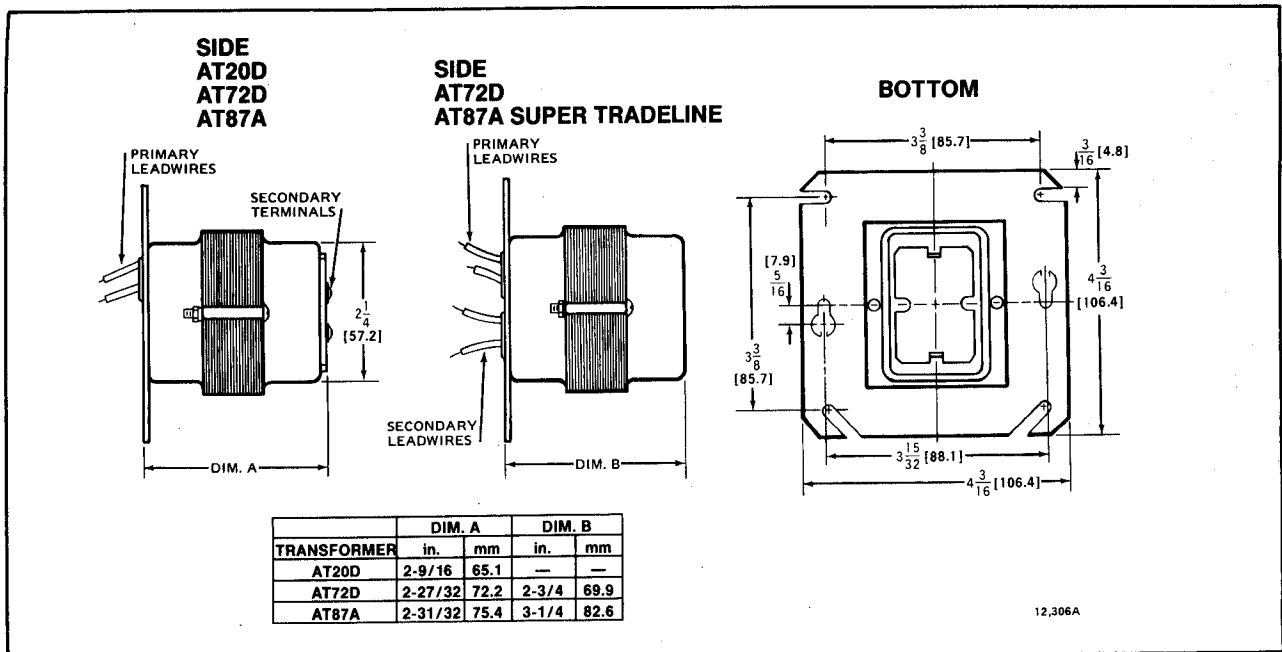


FIG. 10—AT20D, AT72D, AT87A DIMENSIONS IN in. [mm IN BRACKETS] WITH 4x4 in. MOUNTING PLATE.

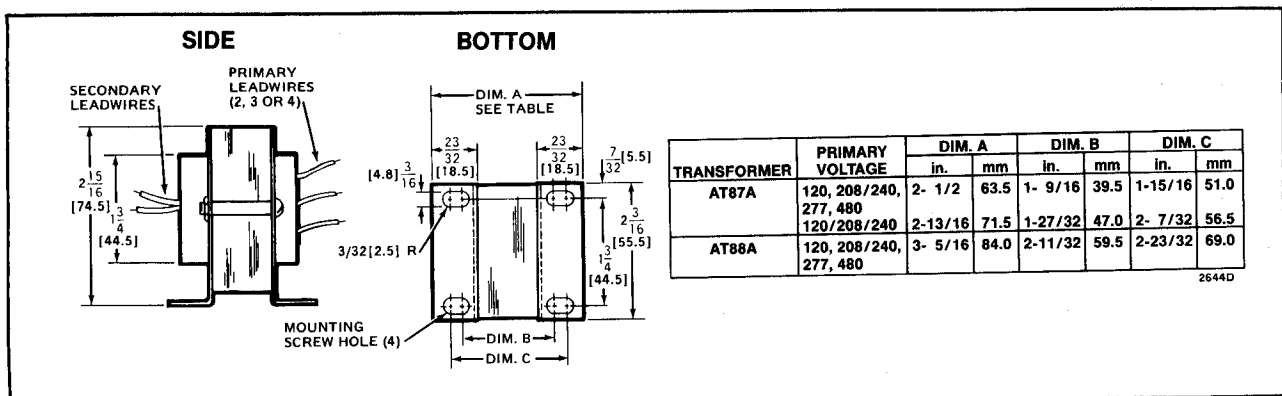


FIG. 11—AT87A, AT88A (FOOT MOUNTED) DIMENSIONS IN in. [mm IN BRACKETS].

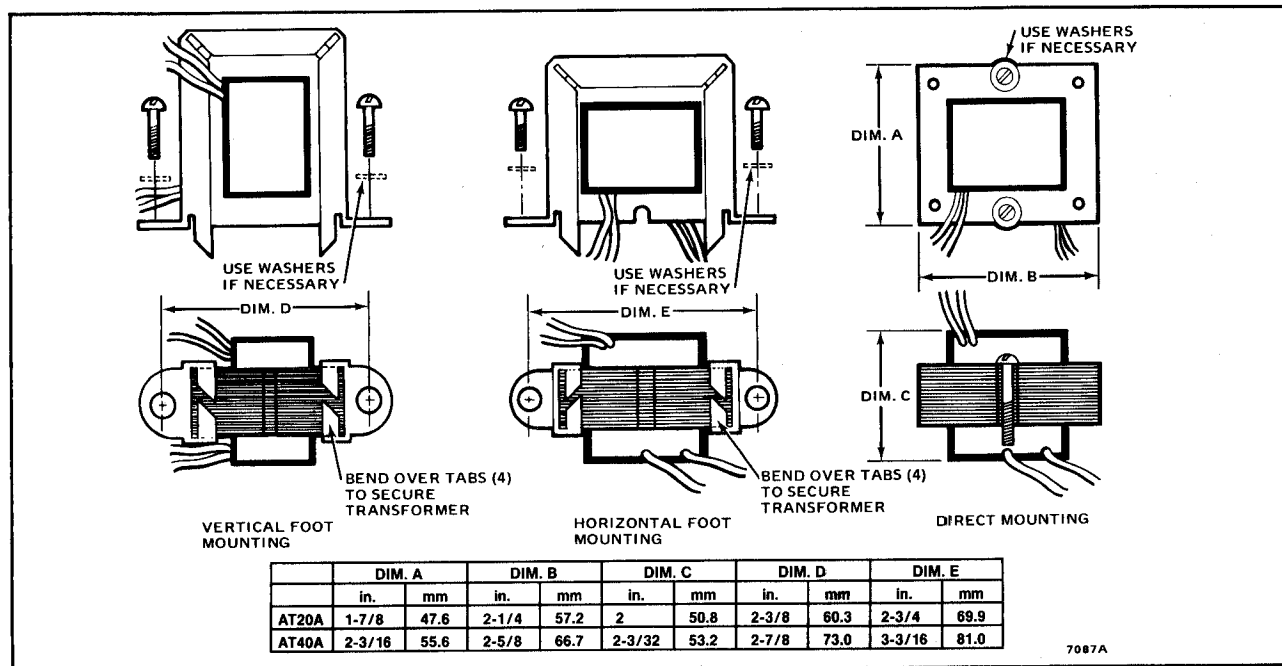


FIG. 12—TRADELINE AT20A, AT40A DIMENSIONS IN in. [mm IN BRACKETS].

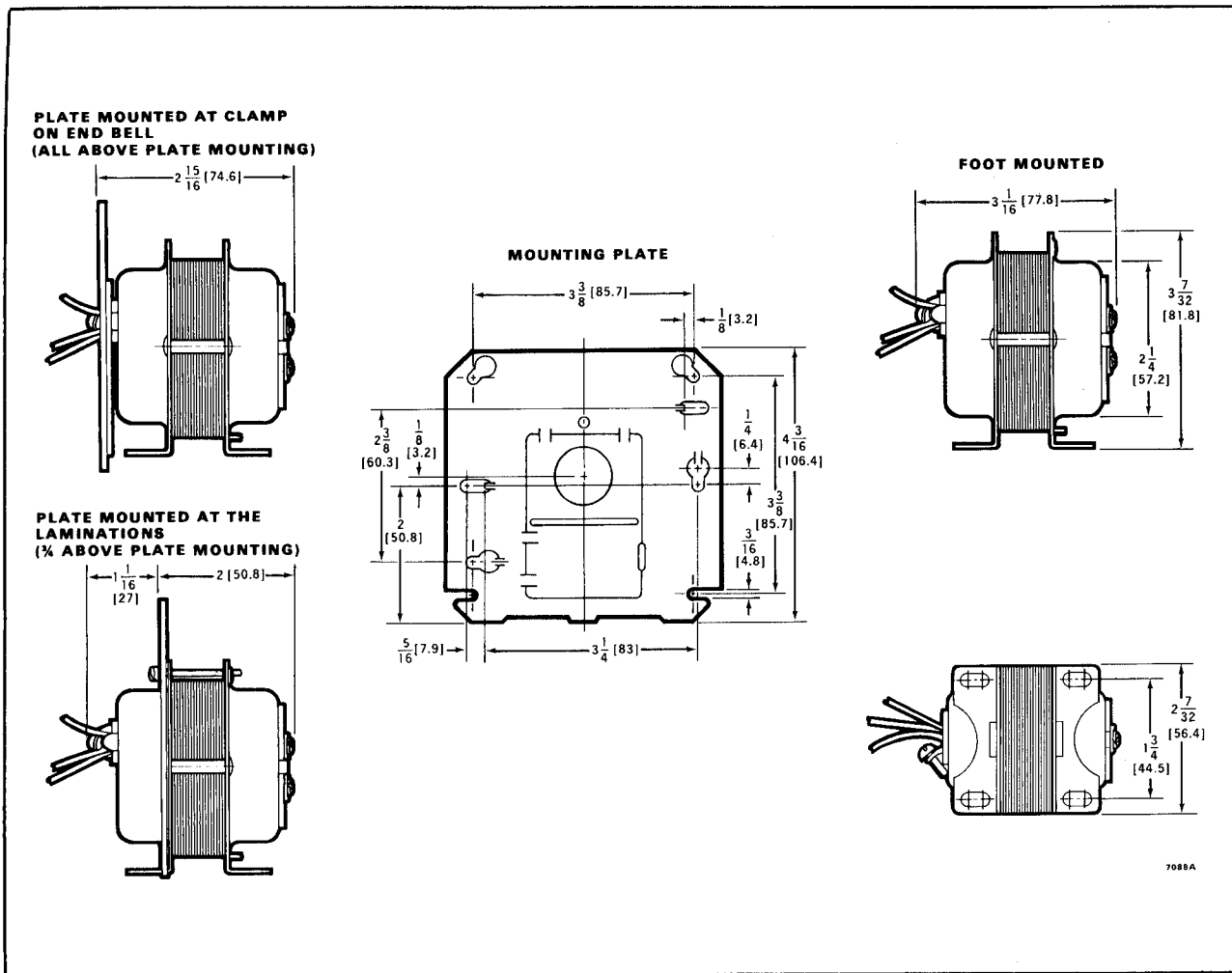


FIG. 13—SUPER TRADELINE AT72D DIMENSIONS IN in. [mm IN BRACKETS].

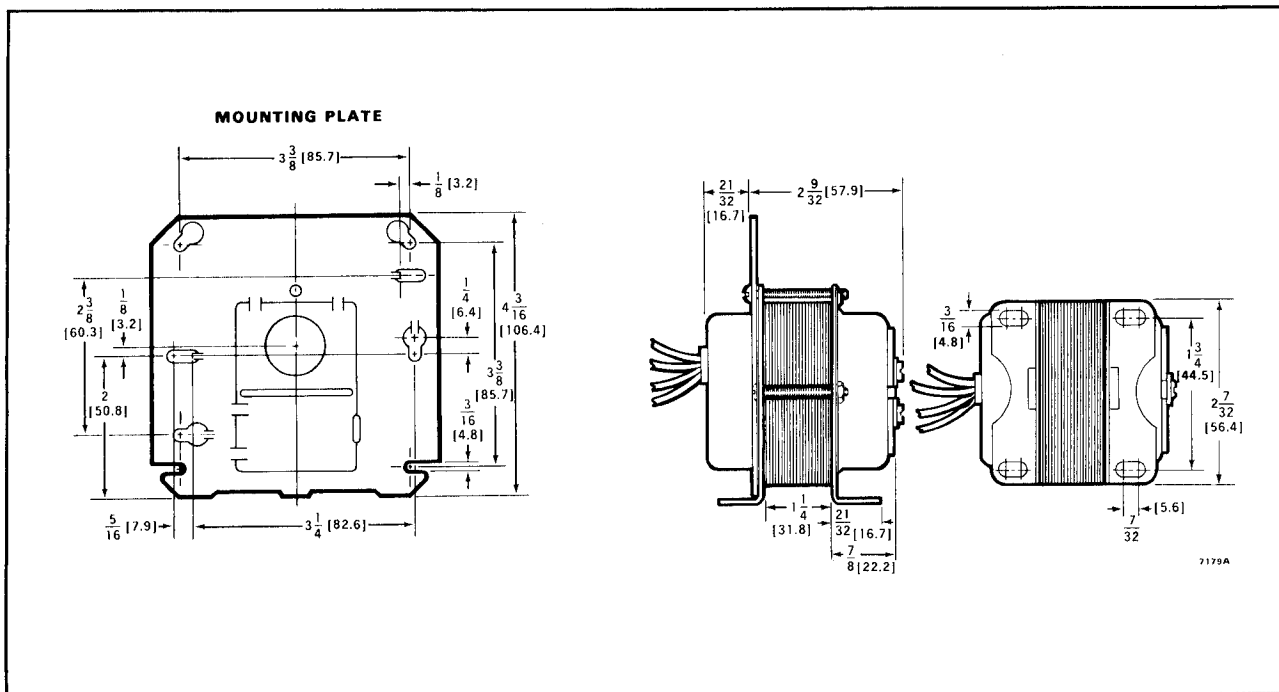


FIG. 14—AT87A1205 AND SUPER TRADELINE AT87A1106 (FOR COMBINATION 4x4 in. PLATE OR FOOT MOUNTING) DIMENSIONS IN in. [mm IN BRACKETS].

INSTALLATION

WHEN INSTALLING THIS PRODUCT . . .

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out system operation as suggested in these instructions.

CAUTION

Disconnect power supply before beginning installation to prevent electrical shock or equipment damage.

MOUNTING

Mount the transformer as best suits the individual application.

PANEL MOUNTING

Use bolts through slots in laminations (Fig. 15).

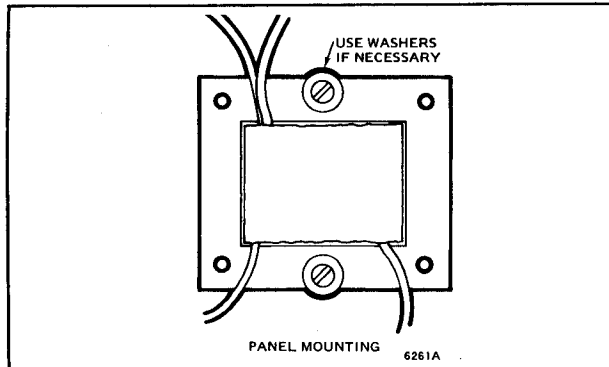


FIG. 15—USE BOLTS IN SLOTS FOR PANEL MOUNTING.

FOOT MOUNTING

For mounting foot-mounted transformers, use screws or bolts (not furnished) through slots in mounting feet to fasten transformer to mounting surface (Fig. 16). Discard mounting plate (if included).

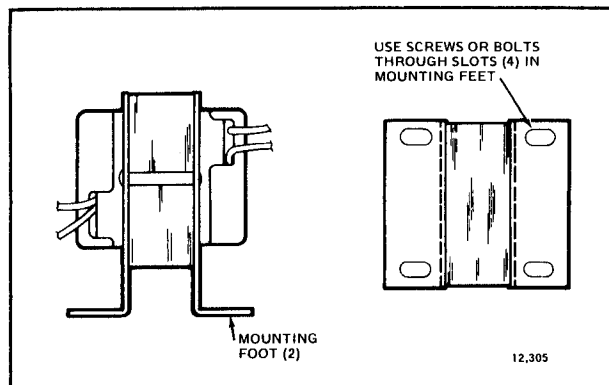


FIG. 16—FOOT MOUNTING (AT20C shown).

FOOT MOUNTING USING CHANNEL FRAMES

Place horizontal or vertical channel frame over laminations as shown in Fig. 17, and bend tabs over to hold transformer securely in place. Mount transformer through 3/16 in. holes in mounting feet.

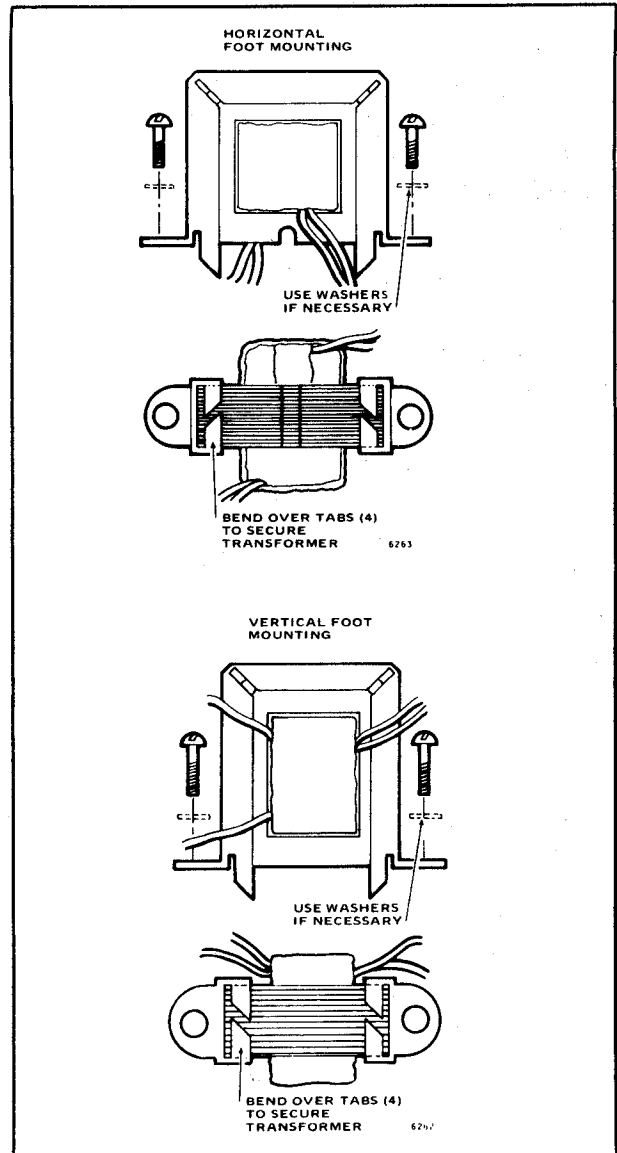


FIG. 17—USE HORIZONTAL CHANNEL FRAME FOR HORIZONTAL FOOT MOUNTING; VERTICAL CHANNEL FRAME FOR VERTICAL FOOT MOUNTING.

PLATE MOUNTING

If not already on transformer, mount plate to transformer. Then, mount transformer and plate to electrical box.

MOUNTING PLATE TO TRANSFORMER

The plate may be mounted to transformer in one of two positions: (1) at clamp on primary end bell (transformer all above plate), or (2) at the laminations (transformer 3/4 above plate). See Fig. 18.

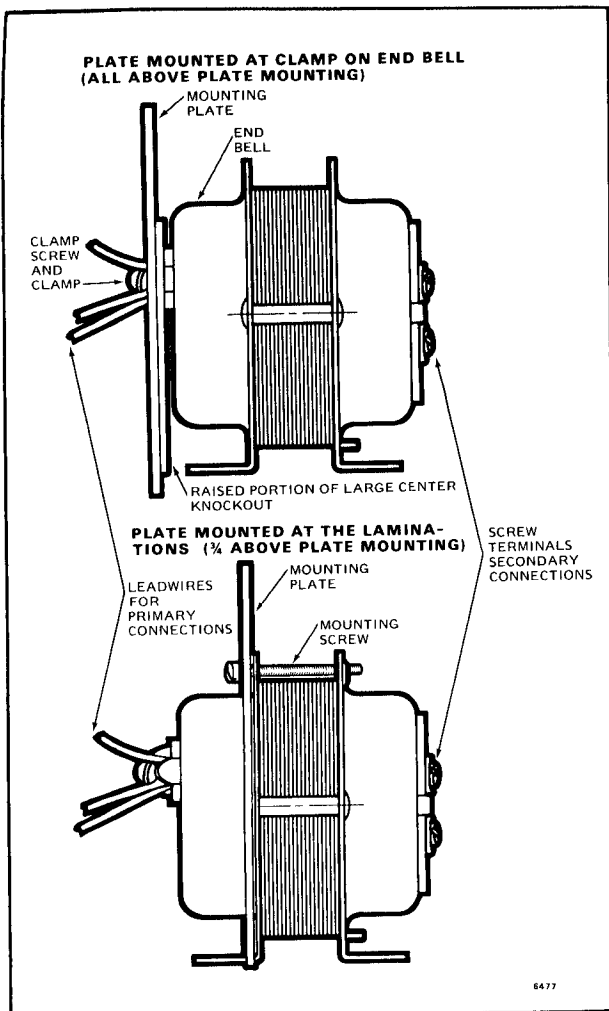


FIG. 18—PLATE MAY BE MOUNTED TO TRANSFORMER IN ONE OF TWO POSITIONS (AT72D shown).

To mount plate at clamp on primary end bell (for models with clamp): all-above-plate mounting:

1. Take mounting plate in one hand. Keep the keyhole slots up and the raised portion of the large center knockout toward you.
2. Fit hole in plate over clamp attached to the end bell. Clamp screw must be turned almost completely out.
3. With plate in place over clamp, tighten screw securely against rim of round hole. See Fig. 19. Avoid damaging the leadwires with the screwdriver.

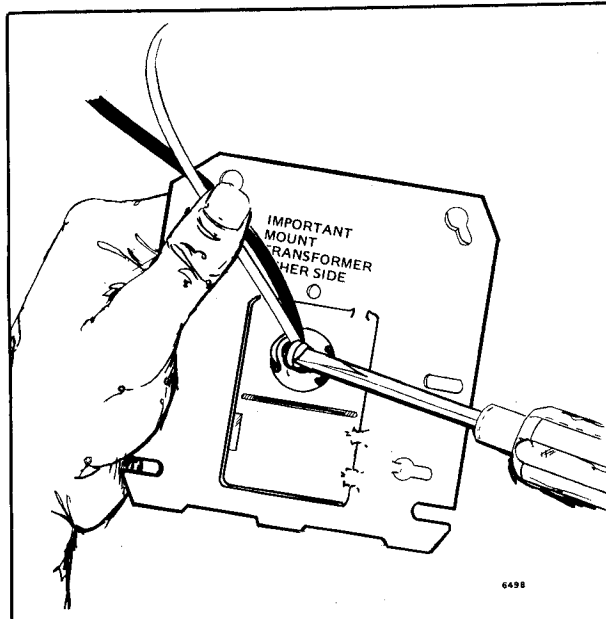


FIG. 19—TIGHTEN CLAMP SECURELY AGAINST RIM OF ROUND HOLE.

To mount plate at the laminations (3/4 above plate mounting):

1. Remove large center knockout in mounting plate as illustrated in Fig. 20.

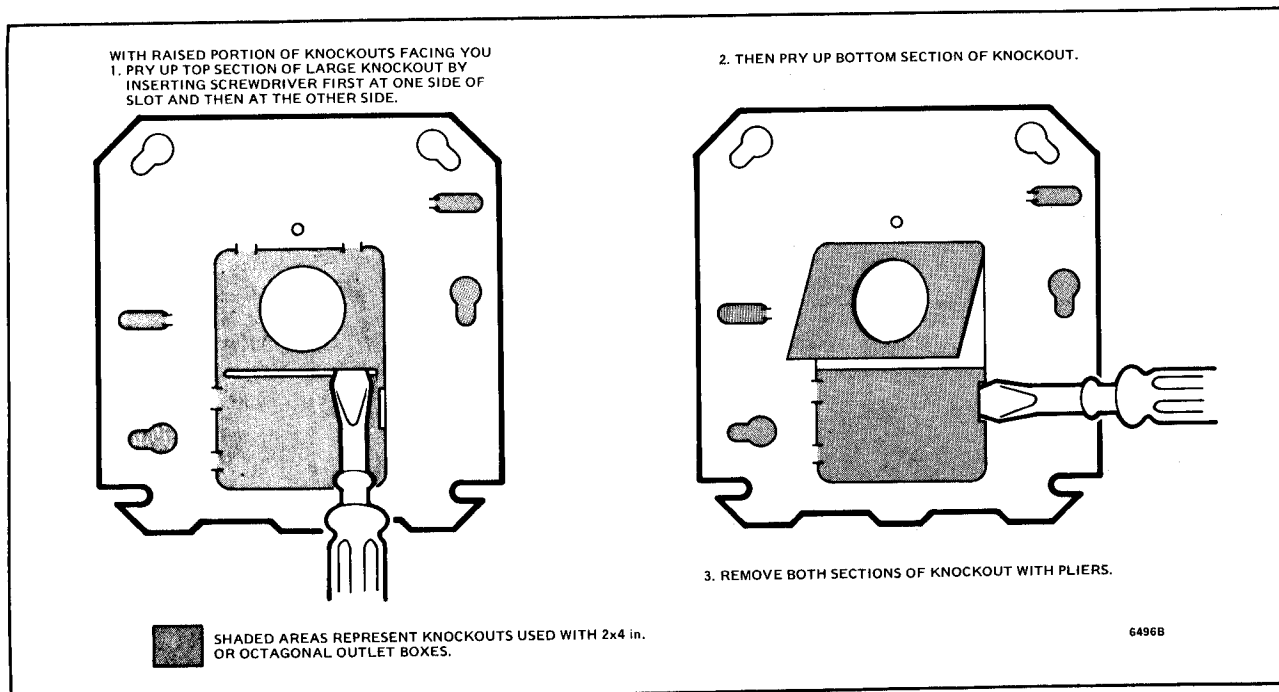


FIG. 20—REMOVING LARGE CENTER KNOCKOUT.

2. Take transformer in one hand. Primary end bell should face you.
3. Take the mounting plate in the other hand. Keyhole slots should be up.
4. Place large knockout in mounting plate over primary leadwires and end bell. Small tab at bottom center of plate fits in transformer mounting foot.
5. Insert mounting screw through holes as illustrated in Fig. 21. Secure plate to transformer. Do not over-tighten screw.

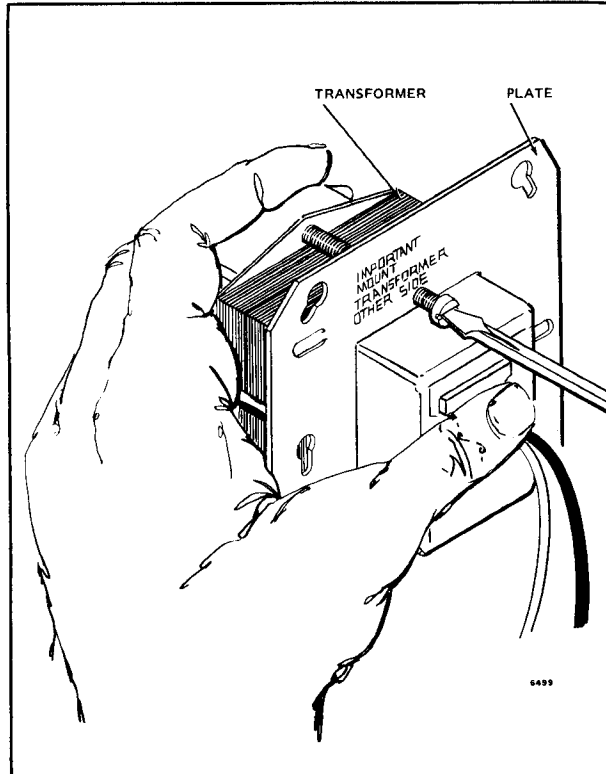


FIG. 21—SECURE PLATE TO TRANSFORMER WITH MOUNTING SCREW.

MOUNTING TRANSFORMER AND PLATE TO ELECTRICAL BOX

The mounting plate may be mounted to 4x4 in. boxes with regular- and irregular-spaced mounting holes, to 2x4 in. boxes and to 4 in. octagon boxes. See Fig. 22. Use the screws supplied with the electrical box. Place them through the proper mounting holes in the plate and secure transformer and plate to box. Punch out appropriate knockouts for plate mounting holes, if necessary.

NOTE: Transformer feet should always be outside of junction box.

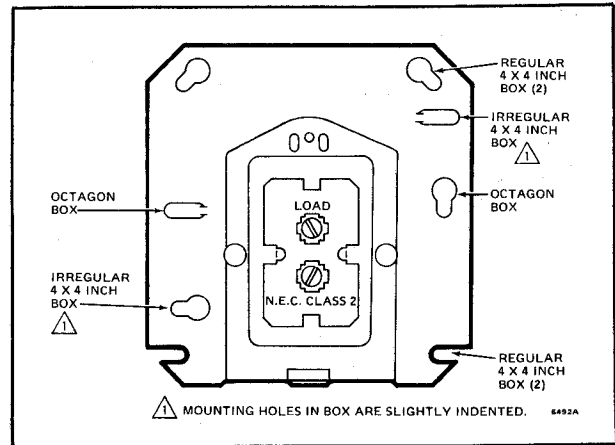


FIG. 22—LOCATION OF MOUNTING HOLES IN PLATE.

CLAMP MOUNTING VIA JUNCTION BOX KNOCKOUT

This mounting option does not require use of mounting plate. To mount transformer within knockout:

1. Insert primary leadwires, clamp and screw on transformer end bell through suitable 1/2 in. knockout in junction box. Clamp screw must be turned almost completely out in order to get clamp through knockout.
2. Tighten clamp screw securely against rim of knockout (Fig. 19). Avoid damaging the leadwires with the screwdriver.

WIRING

CAUTION

1. Disconnect power supply to prevent electrical shock or equipment damage.
2. Tape all unused, exposed leadwires separately. All wiring must comply with local electrical codes and ordinances.
3. Do NOT short transformer secondary terminals; this may burn out the overload protection.

1. Connect primary leadwires to line voltage power supply.
2. Connect transformer secondary to 24 Vac control system.

NOTE: Some models are available with a primary or secondary conduit spud. If used, connect wires first and then screw conduit onto spud.

See **SPECIFICATIONS** section for leadwire color-coding.

CHECKOUT

Before connecting transformer to system, check secondary voltage with a voltmeter.
After installation is complete, turn on power supply.

Place controlled equipment in operation and observe through at least one complete cycle. Make sure it functions as intended.

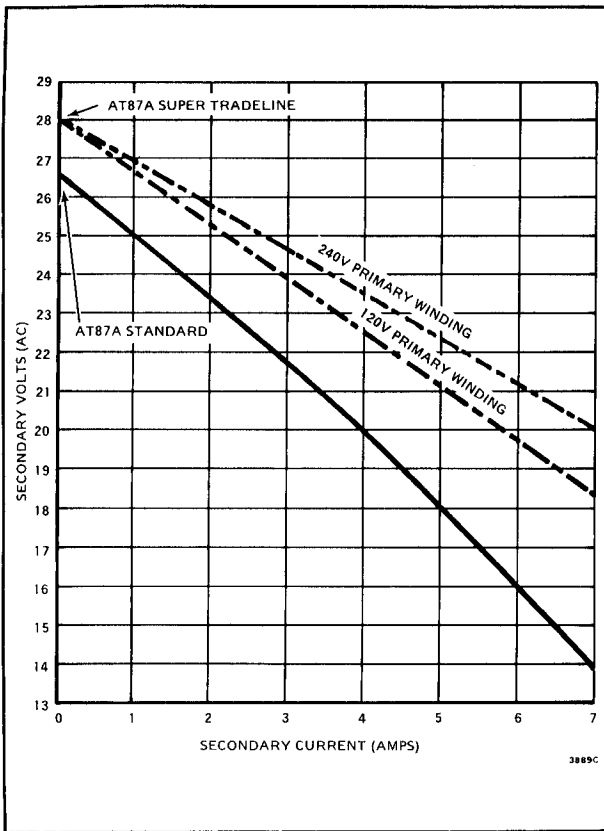


FIG. 23—REGULATION CURVE FOR AT87A.

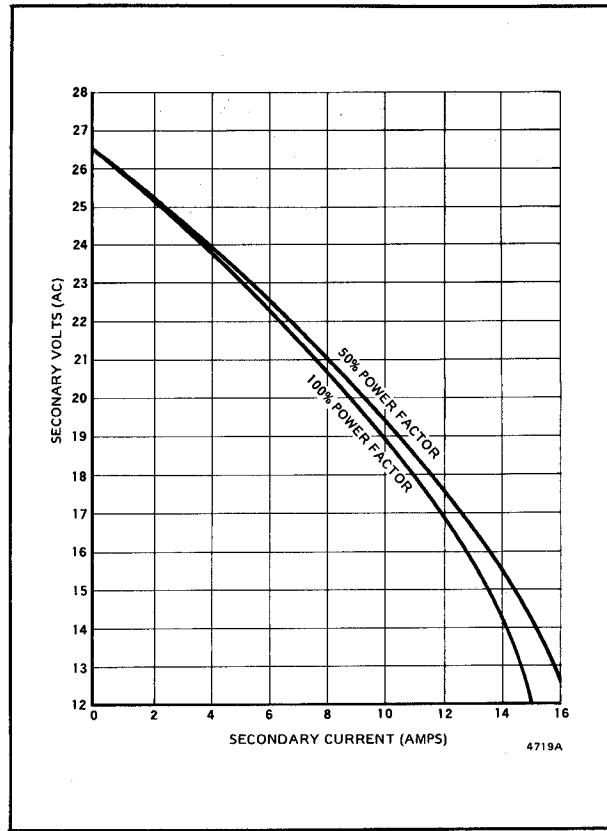


FIG. 24—REGULATION CURVE FOR AT88A.

Honeywell Inc.
1885 Douglas Drive N.
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